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PREFACE.

In presenting to the public this little book on floriculture we indulge the hope that it will prove practically helpful to those who are interested in the care and culture of flowers. It does not claim to be more than it is. In it one will not find every question that might be asked in floriculture, but we have presented as many topics as a book could be expected to contain at the small price which is asked for it, and we have tried to make a judicious selection of topics. The style in which "Flower Queries" is written (*i. e.*, questions and answers), permits of the succinct, practical treatment of the topics named, and the reader may rely implicitly on the authoritativeness of the answers given. This is not saying that the culture and treatment recommended herein for any given plant or flower is the only correct one; there may be others, but those methods given are drawn from experience and are practical, though they may not always be the best, and yet we believe them to be as good as what others may deem the "best."

The division of the matter into chapters is somewhat arbitrary, and yet for convenience of reference it will be found all that is necessary to the purpose.

That there is a demand for such a little treatise on flower culture as this, there seems to be good reason to believe. We have tried most satisfactorily this popular method of treating such subjects by questions and answers in our other little books written in the same style, viz., "Five Hundred Questions and Answers on Poultry Culture," "Questions and Answers on Cattle and the Dairy," and "Pigeon Queries," all of which have had a large sale. We ask the reader not to expect too much of "Flower Queries," but take it as it is, "for better or for worse."

THE PUBLISHER.

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CHAPTER I.

Soil and General Cultivation.

"Cleave the tough greensward with the spade;
Wide let its hollow bed be made;
There gently lay the roots, and there
Sift the dark mould with kindly care,
And press it o'er them tenderly."

Bryant.

Enriching Sandy Soil.—What is the best way of enriching a sandy soil?

Sandy soil requires plenty of rich, well-rotted stable manure and with this some heavy clay or marl.

Show Beds.—What plants should be used in show beds?

Any plant that will look well massed. Many varieties of foliage plants, close-growing, flowering plants, but nothing that needs to stand alone to show its beauty.

Improving Clayey Soil.—What can be done to improve clayey soil?

An admixture of sand and leaf mould, muck, or any kind of decayed vegetable matter, will greatly improve clayey soil. Add to this a generous supply of decomposed stable manure and you will have a good garden soil.

Frozen Plants.—What is the best way of saving plants touched by frost?

Darken them. Not partial darkness, but absolute and entire. Close every single avenue of light, exclude every ray and leave them to thaw gradually, according to nature's own plan. Give heat very gradually, and do not restore the light until the gradual change in temperature from natural or artificial causes, shows by the thermometer that they have warmth enough for a thaw. It is the sudden transition from cold to heat that bursts the cellular tissues of plants and destroys them after freezing.

Sowing Flower Seeds.—How should flower seeds be sown?

A hotbed is the best place to start tender seeds; hardier kinds may be sown in cold frames. Perhaps the most important part of sowing seeds either in hotbeds or open ground is the covering. There is much less risk in covering too little than too much. As a rule the smaller the seeds the more lightly they should be covered.

Depth of Soil.—What should be the consistency and depth of soil in flower beds?

The consistency and fertility of soil is of first consideration. It should be rich, light and mellow, yet retentive enough not to dry out too quickly. To attain the best results with flowers, the soil in the beds should be not less than 16 inches to two feet deep.

Starting Cuttings.—What is the simplest way of starting cuttings?

Take a pan or dish about three inches deep, place it on the window case where it will receive the full light of the sun. Fill the pan nearly to the top with sand, make the sand very wet, of the consistency of mud. The cuttings are to be inserted in the sand and kept very wet, never being allowed to become dry for a moment; if neglected in this respect the plants will surely be lost. Drainage is not necessary for the short period of time required for rooting. Evaporation will carry off moisture almost too rapidly, to say nothing of drainage.

Very Small Seeds.—How should very small seeds be sown?

Very lightly. They should simply be strewn thinly over smooth soil and not covered at all. In sowing seeds in pots it is a good plan to place the pot in lukewarm water, not deep enough to run over the brim, until the soil is thoroughly soaked. Then place the pot in a warm position, covered with a plate of glass and well shaded for a few days.

Soil for Potted Plants.—How should the soil be prepared for plants in pots?

Soil of light, friable texture, such as may be collected about fence corners where leaves have decayed, is essential for the most successful culture. It should be sifted through a sieve with half-inch meshes. When the plants to be potted require a little more enriching, put the heavier part of the soil at the bottom of the pot filling up with the well-sifted, light soil.

Starting Delicate Seeds.—What is the surest way of starting very delicate seeds?

Fill a common flower pot with fine loam and scatter the seeds over the surface, which should be first finely pulverized, and by jarring the pot settle the seeds well among the particles of soil. Do not press or pack the surface or any other part of the soil, but settle moderately by jarring the pot. Set the pot in shallow water, in a warm, sunny window, and keep sufficient water at the base of the pot to keep the surface of the soil wet.

Watering Foliage of Plants.—Is it well to wet the foliage of plants every day?

No. When watering plants avoid wetting the foliage as much as possible, as they will not bloom as freely as if the leaves were dry, except in cases of plants troubled with insects, for which many rules of spraying and syringing, even dipping in hot water, are given elsewhere.

Frost-Bitten Bedded Plants.—How may frost-bitten beds of plants be saved?

Whole beds of tender plants may be saved from death by early frost by rising before sunrise and completely drenching the leaves with water, immediately covering the plants with sheets, until all trace of frost is gone, when they may be exposed to the light.

Re-potting Plants.—Is there any special rule for or way of re-potting plants?

There is a great difference in plants. Some need to be set well down in the soil with a little groove about the base of the plant where the water will run, and so give water close to the stalk. Others utterly refuse to grow under such treatment, and almost before you know it they will have rotted off, and your plant is dead with no seeming cause. You will, however, find that it has rotted off at the base. The common Geranium, the Abutilon, the Chinese Hibiscus, all like to be set well into the soil, and no great harm is done if there is a lowering of soil about the stalk. The Chinese Primrose, the Begonia and other succulent plants must be set up well, for they will not bear too much wetting above the base. Both plants mentioned above dislike water upon the leaves too. The *Amaryllis Johnsonii*, the Sea Onion and many such plants need setting on top of the soil. There will be roots and these must be covered, but the bulbs must be placed well on top of the earth if you wish them to succeed. Palms may be shifted occasionally, but this should never be done while they are resting. It is never best to re-pot a plant when it is dormant, as this frequently causes death.

Transplanting, Method of.—What is the best method of transplanting?

A trowel is indispensable to lift the little plants so as to keep some soil around the tender little roots. Moisture is of first essential, and the best way to apply that is to puddle the soil where the transplants are to go. Then gently cover with dry soil and firm it a little around each. Shade with broad leaves or little leafy branches for a few days.

Layering Plants.—What plants may be multiplied by layering?

The list is long if given in full. Moss Roses, most of our hardy shrubs, Chrysanthemums, Heliotropes, Verbenas, nearly all kinds of hardy vines, such as the Clematis, Honeysuckle, Wistaria and many others are a partial list. In layering tender plants like Heliotrope, Verbenas, etc., it is often well to plunge pots a little way in the ground at the side of the main plant, that the branches need not be severely bent.

Transplanting Seedlings.—How should seedlings be transplanted?

Take the small seedlings and set them out closely in boxes or in a well-prepared little plot, where they can be shaded with branches till they get started again.

Watering Plants in Saucers.—Is it better to water plants from the saucer than from the top?

Decidedly better. The roots will drink up the moisture from the saucer as they need it. While a plant watered from the top may remain wet two or three days unless the air in the room is very hot and dry.

Wintering Heliotrope and Salvias.—Can Heliotrope and Salvia be wintered in cellars?

They can. Heliotrope roots, Geraniums, Salvias and even some Roses and Carnations, may be well kept in cellars, trenched in moderately moist sand. Many of these plants too large for window gardens may in this way be saved for another season.

Temperature of Window Garden.—What temperature is best for a successful window garden?

This question of temperature cannot be answered independently of the question of atmosphere. As careful a writer as James Sheehan, says: "Plants will not flourish, bloom, and be healthy, in a dry, dusty atmosphere, even though the best of care otherwise may be bestowed upon them; hence it is that those who attempt to raise plants in their dwellings meet with so little success. There is an immense contrast between the atmosphere of a well-regulated greenhouse and that of an ordinary dwelling. In the greenhouse, the atmosphere is moist and well-tempered to the healthful growth of plants; while that of the parlor or sitting-room is invariably dry and dusty, and plants will not flourish in it as they would in the conservatory. If the dwelling be heated by coal, there is more or less gas constantly discharged into the air of the room, which is of itself enough to destroy vegetation, or make it sickly. Houses heated by steam, are better adapted to the cultivation of plants." A moist atmosphere and temperature not above 80 degrees by day nor below 60 degrees at night is safe for most house plants.

Watering Potted Plants.—Can you give any general directions as to watering plants?

The tendency is to give plants, particularly in-doors, too much water. They should be watered when they need it. One authority has given this rule: "It will be evident that they require wetting if, on digging the earth in the pot it crumbles to pieces like dust; a sure sign is to knock on the side of the pot, near the middle, with the finger-knuckle. If it gives forth a hollow ring, the plant needs water; if there is a dull sound, there is still moisture enough to sustain the plant. Plants must not be wet more than once or twice a day; on dry, clear days they require more water than on damp, cloudy days. On the other hand, the earth must not be allowed to dry out entirely, for that is also very injurious. In wetting them, the water must be poured on in such a way that it will run out again through the whole in the bottom of the pot. If the earth gets too dry, it is best to place the pot in water, so that the water will saturate the soil very gradually."

Replanting Perennials.—When is the best time to plant perennials?

After a good, soaking rain is an excellent time to divide and transplant spring-blooming plants; it gives them an opportunity to establish themselves before winter sets in. Plants with thick roots, and which die down in winter, may be transplanted with good success any time before winter sets in.

Heliotrope Cuttings.—How can Heliotrope cuttings be successfully rooted?

Take young, growing shoots and place them in good soil—loam two parts and sand one—place them in a strong light in a temperature of 60 degrees and keep them moderately moist. When rooted, place them in a sunny window, keep moist and a wealth of flowers will follow.

Manure Water.—Will manure-water agree with all plants?

No. Apply manure water to strong, vigorous, rapidly-growing plants as you would give strength-producing food to a hard-working man. Strong plants can stand it, but poor, dyspeptic plants cannot digest strong food; they require a light diet.

Ammonia.—Is ammonia a good plant food?

Yes. It is used one tablespoonful in about eight quarts of water, and the plant watered with the solution.

Layering, Manner of.—What is the correct process of layering?

Bend the branch to be layered as low down as possible to prevent too acute a bend. In handling woody plants give a slight cut or twist at the point where roots are desired to arrest the flow of sap at this place. Bend the branch carefully down and after having been firmly pegged to keep it in place, cover with dirt, leaving the end or tip of the branch exposed. Only the middle of the branch containing the cut or abrasion should be covered. When these layers fail to produce roots by fall they should be left undisturbed, as another season will rarely fail to give good roots. Roots ought to form in a month.

Transplanting from Pots.—How should plants be handled in transplanting from pots?

Turn them bottom side upward on your left hand and rap sharply with the rim of the pot against a table or box, and the ball of earth will fall out. Loosen the roots gently and shake them out slightly. Have the larger pot ready with soil well moistened. Set the plant into the soil a little deeper than it was in the pot. Press the earth firmly around the stem of the plant, protect from the sun and you will not lose a plant.

Preserving Seeds.—What is the best way of preserving seeds?

Tie them in bags and hang them upon wires in a dry, cold place, hanging them about three feet from the ceiling to be safe from mice. Seeds will not be injured by the severest cold if atmosphere be pure and dry.

Wintering Plants in Cellars.—How should plants be treated for wintering in cellars?

As the object of wintering plants in cellars is to allow them to be dormant all winter, it is not necessary to give them any water, but keep the soil as dry as possible and not allow the plants to shrivel or wither. The leaves of all deciduous plants should be removed before they are put away in this manner.

Layering, Season of.—What is the proper season for layering?

Any time during the summer will do for plants containing no hard fibre. The fibre of woody plants, such as shrubbery, should contain sufficient sap to prevent their breaking when bent over.

Changing Colors of Flowers.—Is there any way of coloring flowers while growing by the use of vegetable pigments?

According to the view stated by August Vogel, in *Popular Science Monthly*, tannin is an important factor in the generation of vegetable colors; it is found in almost every plant, the petals not excepted, and by the action of the most varying re-agents—alkalies, earths, metallic salts, etc.—it assumes the most manifold hues, from pale rose to deep black. A darker color, therefore, is produced in flowers rich in tannin, when manured with iron salts, since, as everybody knows, tannin and iron salts dye black and produce ink. A practical use has been made of this fact in the raising of Hydrangeas and Dahlias. The former, which in ordinary soil blossomed pale red, became sky-blue when transplanted into soil heavily manured with iron ochre, or when occasionally watered with a dilute alum solution.

Soil for Potted Plants.—When one cannot get at loam, peat, sand and manure for the different plants, how can they have good soil for window gardens?

Procure good mellow garden soil which is neither sand, clay nor gravel; this will answer for nearly all kinds of plants. After plants have grown vigorously some months in the pots, it may be well to remove a little of the earth from the top and fill up with fresh soil. When one cannot get at good manure or compost of any kind, it is well to use ammonia—a weak solution—using it a few days in succession only, and always being careful not to sprinkle the leaves.

Turning Window Plants.—How often should window plants be turned?

They should be turned every few days so that every part may equally enjoy the light. This treatment, together with judicious pruning, will give better shaped plants and more blossoms than can possibly be obtained from one-sided plants produced by the never turn method.

Composts and Manures.—What makes the best compost?

In every garden there should be a place set apart for keeping manure, loam, peat and rotted leaves in, and those who have compost or heaps of any kind of fertilizers should bear in mind that manure and leaves require the most frequent turning over to prevent their heating too much. Should either appear dry, wet them thoroughly with water, or what is better, with the liquid from the barn-yard manure pile, the slops from the house, or, if there is such a thing near, the water from a stagnant pool or ditch. Every time this heap is turned over cover it up with a coating of earth. This will check the escaping gases which are the best part of the manure. If you can procure such a thing as a bushel or two of lime it will materially assist the decomposition of the heap and greatly increase its fitness for vegetable food. Make this heap as large as you can. It is the richness of your garden; without it, even with the best of management, your flowers will be poor and unsatisfactory. With it liberally applied, they will be rich in color and odor. Search, therefore, for material to increase its bulk as you would for gold in California. It is better than any of the wild chemical schemes now too prevalent in this country. It has been tried and proven for centuries and stands to-day the best fertilizer.

Sand in Plant Culture.—Is not sand a very essential element to success in floriculture—even equal to fertilizer?

Some say they would sooner omit the fertilizer than sand if they had to make a choice. Amateurs don't give it the attention it demands. Plenty of sand prevents the soil from becoming heavy and sour. It allows the air to penetrate to the roots easily, and the water to run out readily.

Commercial Fertilizers.—To what extent should commercial fertilizers be used on plants?

Care must be used in applying them as they are powerful and if too much is placed among the roots, it will kill the plant. Liquid manure may be used with good effect on plants enfeebled by blooming, and it is a good fertilizer to have on hand at all times. This may be applied with greater freedom than commercial fertilizer.

Manure for Potted Plants.—Is it well to use manure for potted plants?

Only in small quantities, and when the manure has been well rotted and then sifted several times.

Ammoniacal Carbonate of Copper.—How is the ammoniacal carbonate of copper prepared?

Take a half pint of spirits of ammonia, add three-fourths of an ounce of carbonate of copper. Shake until the copper-carbonate dissolves. Dilute this amount to six gallons.

Poultry Manure for Plants.—Would you advise the use of poultry manure in the flower garden?

This fertilizer is not extensively used because it is not fully appreciated. It is a very powerful plant stimulant, being very rich in ammonia. It should be composted with turf, muck, decayed leaves or other absorbents. Store it in barrels and reduce it to a powder before applying to the plant. This compost may be dissolved in water and applied in solution when it acts more powerfully than when dry.

Aquatics, Soil for.—What is the best soil for growing aquatics?

We quote from James Sheehan: "The best soil for growing aquatics, is that obtained from the bed of a pond, or a slow, swampy stream, but when this is not readily obtainable, a mixture of equal parts of good, rich garden loam and stable manure will be almost as good. Some use a mixture of muck and bog peat, from which they claim very satisfactory results in growing aquatics; either can be used with good success."

Special Soils.—Is not too much stress usually laid on the requirements of a specially prepared soil for different plants?

Possibly it is so. Most plants will thrive in a soil composed of a mixture of turfy loam, garden mold, well-rotted manure, and sharp sand, in the proportion of one-third of loam, one-third garden soil, and the other third made up of the manure and sand. For strong-rooted plants add less sand than for those having many small roots. Most plants will do well in almost any good soil. It is astonishing how readily plants accommodate themselves to circumstances different from those in their natural state.

CHAPTER II.

Bulbous Plants.

"So now you walk'd beside an odorous bed
Of gorgeous hues, purple, and gold, and red."
Leigh Hunt.

Cyclamen Seeds.—Do Cyclamen seeds propagate readily?

! The seeds propagate readily and there is no difficulty in raising bulbs; however, the bulbs cost so little and bloom so soon after planting that we recommend the purchase of bulbs.

Gloxinias, Propagation of.—How should Gloxinias be started from leaves?

Take a shallow pan, with holes for drainage, and filled with sandy soil; insert the leaf stems full length around the edges of the pan. Place it in a warm, shady place and keep it rather moist. When the leaf has dried up, young tubers will have formed. These should be left undisturbed during the winter, giving just water enough to keep alive. In early spring bring into the light, water more frequently and pot as they become large enough.

Gloxinias.—What are the requirements of the Gloxinia?

Gloxinias succeed best in partially shaded places, protected from rains and strong wind, yet they like a warm, moist atmosphere. It requires great care and patience to grow them from the seed, so we would advise our readers to buy the tubers. These should be potted in sandy soil and kept but moderately moist until growth commences, when they should be transferred into larger pots with good, rich soil. Leaf mould and well rotted manure make a good compost, but directly around the tuber should be a handful of very sandy soil. After blossoming they should be dried off and kept dormant until another season.

Chinese Primroses.—Will Chinese Primroses that have bloomed in the winter bloom again in the summer?

They will if after the winter blooming they are given a little rest by being set aside and given just water enough to keep the tiny rootlets from becoming too dry. As soon as the frost is past, give them a shady spot and plenty of water and they will bloom all summer. In repotting the Primrose, part of the old roots should be removed. With fairly good soil they require very little additional fertilizer.

The Iris.—When should the Iris be planted out? How often should bulbs be re-planted?

In autumn, about October; in a light, well-drained soil; treat them exactly like other Dutch bulbs, covering the bed with a mulch as winter comes on, uncovering in the spring. It is, however, necessary every few years to take up the bulbous species after the leaves have faded, and to replant them, as the new bulbs annually formed are below the old.

Tuberous Begonias, Culture of.—Do Tuberous Begonias require a sunny or shady place?

One may truly say either, for they do well in the sunshine and in the shade. The sunshiny blossoms may be a tint richer, but the shady ones are just as free and pretty. It is in every respect a most generous plant; it begins to blossom when only a few inches high and never ceases, and the more the blossoms are cut the more there are to follow. The amount of bloom from one thrifty plant is little short of marvellous.

Alpine Violet.—How long is the season of the Alpine Violet?

From four to five months and a most charming little flower it is. It adds a charm to any collection of plants. The broad, heart-shaped leaves, handsomely variegated with lighter shades, vigorous and freely produced in a graceful crown that covers and overlaps the jar, is handsome before the pink and white blossoms appear. The blooms are particularly graceful in the manner in which they are disposed upon the stem. Butterfly-like, tremulous and nodding with each stir of air, white tipped and bordered with what one calls "purplish-pink," another crimson-lake," but what in its beauty is like the intermingled roseate hue of the apple blossom of spring time. This unique little bulbous plant crowns the foliage with masses of bloom.

Cyclamen Bulbs.—How should Cyclamen Bulbs be planted?

The crown of the Cyclamen must be above the surface of the soil. Other bulbs require to be covered to the depth of several inches, but this one demands exposure to the air. Allow the crown to project a half inch above the soil else it will decay.

Spider Lilies.—Are Spider Lilies free bloomers?

Yes. If you have never had a Spider Lily get a bulb at once. The large bud grows slowly till ready to burst, disclosing smaller buds ready to develop into perfect flowers. They are very interesting when just ready to open, as they are closely folded bud will suddenly be seen to move and in less than ten minutes fully developed blossoms are before you filling the air with most delightful fragrance.

Agapanthus.—What soil should be used for the best growth of the Agapanthus?

Good loam, with a little rotted manure, is all that is necessary to start them growing strongly. As they make strong, fleshy roots, they require an abundance of water and a liberal supply of clear manure water while flowering. After the summer and fall blooming out of doors, the Agapanthus should be given rest in a cool room or cellar, safe from frost.

Holland Bulbs.—Are Tulips, Jonquils, Narcissuses and Hyacinths entirely hardy?

All of the above-named bulbs are entirely hardy and will stand in the ground without any surface protection through the severest winters.

Tuberous Begonias. Varieties of.—Please name some of the choice varieties of Tuberous Begonias.

Begonia Rubia. President Carnot. Begonia Vernon. Begonia Evansiana. Dewdrop Begonia.

Crocus, Forcing the.—Will Crocuses stand forcing? How used to the best advantage?

Severe forcing must not be attempted. They are naturally an out of door bulb, and while a few may be planted in shallow boxes and then lifted into hanging baskets or fancy boxes, yet their charm is out of doors in the early spring. They form a beautiful margin for a flower bed and show beautifully in beds of design.

Tulips and Jonquils.—Are Tulips and Jonquils desirable for house culture?

The above-named bulbs are especially desirable for house culture in winter. Plant them in fine, rich loam, water thoroughly and set away in a cool, dark place. In about three weeks bring them into the full light and water freely, they will surely bloom throughout the winter. After the bulbs are through blooming they may be left in the soil in which they grew through the winter and removed to a dry place to rest in preparation for starting them another fall.

Tulips and Hyacinths.—How should Tulip and Hyacinth bulbs be treated so as to produce bulbs for future use?

Tulips are readily increased by setting the little bulbs out in good, rich soil that will not cake or get hard and where they will not suffer from drought. In this way very fine bulbs may be grown for market in this country. Fair sized Hyacinth bulbs may be raised in a soil composed largely of chip dirt and woods soil, if the seasons are favorable; but as a rule, Hyacinth bulbs cannot be satisfactorily grown. It is better to purchase these than to attempt to grow them under the unfavorable conditions to which we must subject them.

Dahlias, Planting Out.—At what time should Dahlias be planted out?

They should be planted out in May, and well supported with stakes as they advance in growth. They are showy plants, easy of culture, like a deep mellow soil and plenty of water. Must rest in a dry cool place through the winter.

Gladiolus, Keeping Bulbs of.—What is the best way of keeping Gladiolus bulbs?

Spread them in shallow boxes about two inches deep covering the bottom evenly, but not two layers deep. Leave them in a warm dry place for a week or ten days, or till they are perfectly dry, then separate the bulbs and put them in a flat-bottom basket and hang in a cool dry place. Hanging them up allows the air to circulate freely around and through them.

Gladiolus, Propagation of.—How may the Gladiolus be best propagated?

Gladioli are as easily raised from seed as any vegetable grown. No more culture is needed to raise them in this way than is ordinarily expended on common flowers grown from seed. They should be sown in spring in beds prepared the same as for any annual and covered not deeper than one inch. The resulting bulbs should be taken up in the fall when they show signs of ripening, and stored in a dry cellar free from frost.

Colchicum.—When should the Colchicum be planted? When do they bloom?

In September, if possible. They require only ordinary garden soil. The only special care that they need is to be replanted every three years or so at a depth of about three inches. The bulbs have a tendency to get deeper in the ground thus developing root growth rather than flowers. The blossoms come in August and September.

Dahlias.—How may Dahlia roots be safely wintered?

Dahlia roots may be safely wintered in any cellar that will keep potatoes. They should be well dried before putting in the cellar and should be kept cool, but not cold enough to freeze. Moisture will either mould or rot them according to the temperature. Keep them dry.

Ixias, Half Hardy.—Are the Ixias hardy? Describe them. When can the bulbs be potted, and how?

No. They are only half hardy. They have small bulbs and narrow sword-shaped leaves, with slender, simple or slightly branched stems bearing spikes of large showy flowers, the centres of which are always different from the other parts so that they are exceedingly beautiful when in full bloom, the colors being rich, beautiful and varied. Few flowers attract more attention by their curious form and strange coloring, all showing three or four colors; there is a greater difference in the form and colors in the several species and varieties of Ixias than with any other class of plants. The bulbs can be potted at any time from September to December. The pots one-third filled with drainage will be none too much. Two-thirds turfy loam, one-third well decomposed manure or leaf mould, with a good sprinkling of sharp sand will be suitable. As many as six bulbs can be placed in a five-inch pot, covering them about an inch in depth. When first potted, water thoroughly and set in a dark cool place while roots are forming or for about six or eight weeks, then give them a light cool place in your window garden.

Callas in Small or Large Pots.—Will Callas do better in small or large pots, other things being equal?

As a rule, Callas should be planted in comparatively small pots, as in large ones they are apt to produce too luxuriant foliage, to the detriment of flowers. Plants that have been kept dry during summer, intended for winter flowering, should be watered more frequently as soon as they start into growth; when growing vigorously, they may be kept standing in a saucer filled with water at all times. Most amateurs are likely to give too little water to the Calla. And they require a very rich soil. If each flower is cut off as soon as it shows signs of withering a new bud will soon form.

Allium.—Are the Allium bulbs hardy? Are the plants difficult to cultivate?

They are all hardy, very showy and continue a long time in bloom. They are easy to cultivate, content with almost any kind of soil; can be grown indoors or outdoors.

Freesias.—What is the best soil for cultivating Freesias?

They succeed best in a mixture of good fibrous loam, leaf mould and well-rotted manure, in equal proportions, with sand to insure drainage. They force very easily, growing to a height of nine or ten inches and producing six to eight flowers on a stem. They are very valuable as cut flowers, opening delightfully in water, filling the air with a most delicate perfume.

Cannas.—Can Cannas be grown successfully from the seed and how should the seed be started?

Cannas may be grown from the seed. Make a hole through the shell and soak them in water. It is not necessary that the hole be large.

Gladioli, List of.—Please give a list of good varieties of Gladioli.

Their name is legion. It is hard, indeed, to know where to begin or to end. We will name some that have been well tested. Of red varieties: Brenchleyensis, Meyerbeer and Van Spandonk. Striped: Eugene Scribe, Milton and Shakespeare. Salmon or buff: Penelope and Mazeppa. White: La Candeur, John Bull and Virginalis. Yellow: Isaac Buchanan, Canari and Citrinus.

Chinese Sacred Lily.—What is the most satisfactory way of growing the Chinese Sacred Lily?

It grows well potted in a light, rich soil, but it is more charming grown in shallow ornamental bowls or vases containing water, the bulbs being held in place by pebbles. By slightly cutting the skin near the top of the bulb, the flowers may be increased. One bulb will produce by this treatment from eight to twelve spikes of bloom. The bulbs ought to bloom about eight weeks after planting or placing in the bowls.

Zephyranthes.—Are Zephyranthes bulbs hardy? By what other name is this plant known?

They are hardy and may be planted early in the spring. With a slight protection in the winter they may be left undisturbed several years. They are often called "Zephyr Flower and Fairy Lily."

Yucca.—Will the Yucca grow in the north? What soil do they require?

It is perfectly hardy at the north although being a native of the south. It blooms freely and soon forms a large-sized clump, sometimes attaining a height of twenty and even thirty feet. The flowers are produced in great abundance on long panicles, rising from the center of a leafy crown. The common name is "Adam's Needle." There are varieties of Yucca that are not hardy, growing beautifully in the tropics, but too tender for the open air in the northern States. They like light, sandy soil with plenty of drainage when grown in pots. Old rotted sods chopped up fine with an admixture of clean, gritty sand and no manure, is their delight.

Amaryllis not Flowering.—My Amaryllis does not bloom to suit me. What particular care does it require?

Rest after blooming, or after the leaves have attained their full size is the essential point in Amaryllis culture. Water should be withheld gradually, and entirely so after the leaves are drying off. During summer and autumn the bulbs are to be kept entirely dormant. When wanted to bloom again they are re-potted in rich, sandy loam and leaf mold, put in a warm place, and moderately watered. As soon as the leaves appear, and especially during the blooming season, water has to be given in abundance. The Amaryllis is an interesting plant, desirable for growing in pots, producing showy flowers, that are very attractive and handsome.

Narcissus.—How often should Narcissus bulbs, grown outdoors, be divided?

Every three or four years. The bulbs get overcrowded and lose strength unless divided. They should be replanted in groups of five or eight, in well enriched soil and about three inches apart. They like top dressing in the winter and when first starting in the spring. The size and beauty of the flowers can be very much increased by the use of liquid manure.

Trillium.—Will Trillium bear cultivation?

Although essentially a wild flower, the roots may be planted early in the fall in a shady place—under trees even. They like leaf mould and sand.

Scillas.—How should Scillas be treated?

The *Scilla* bulb is like the small varieties of *Hyacinth* and requires about the same culture. The soil should be rich and light and well-drained. It is often well to put a little sand around each bulb as they are apt to rot if kept very wet. It is better to plant early in the autumn that the bulbs may become established before winter. As the plants are dwarf, they should always be in clumps of at least a dozen; the smaller kinds should be set about two inches below the surface, the larger somewhat deeper. They increase rapidly and yet may be left undisturbed for several years.

Ranunculus.—What soil best suits the *Ranunculus*?

A strong, rich soil; rotted sod and well decomposed manure have the right kind of enriching properties. Good drainage is essential and plenty of water. The *Ranunculus* will not stand drought.

Fritillaria Meleagris.—What treatment does the *Fritillaria Meleagris* require?

The plant requires very little care. The bulbs should be planted in autumn. The plants grow from a foot to a foot and a half in height, bearing at the top drooping clusters of flowers shading from white to almost black.

Fritillaria Recurva.—Can the *Fritillaria Recurva* be successfully grown in pots?

Yes. Plant the bulbs about three inches deep in the pots in well drained soil. Water them only when the soil is quite dry and then do it thoroughly. It will bloom several years without resting but when it gets ready to rest it tells you so, very clearly, by sending up one big leaf. the next season it will bloom freely.

The Crinum.—What variety of the *Crinum* is the best for ordinary culture?

We would say the *Crinum Pedunculatum*. It sometimes takes several years to attain the right strength for blooming, but when ready, it blooms the entire year. It likes a rich soil and yet will do astonishingly well in the poorest kind of soil. It has few insect enemies and is altogether highly satisfactory.

Tigridias.—Are the bulbs of the *Tigridias* as hardy as those of the *Gladiolus*?

The bulbs are not as hardy as the *Gladiolus* and should not be planted until all danger of frost is over. They should be planted about two inches deep in light, rich soil.

Oxalis Cernua.—Is the *Oxalis Cernua* desirable for winter blooming?

The *Oxalis Cernua* is perhaps the most desirable of all varieties of *Oxalis* for window decoration. The large, yellow clusters are produced on long slender stems, and both foliage and flowers are of a drooping nature.

Caladiums and Colocasias.—Does the treatment differ for these two named foliage plants; if so, in what respects, either for the garden or indoor?

The garden treatment of both is the same. The tubers should be planted in the ground or turned out from pots, in which they have been started in a frame or greenhouse, about the last of May, in a rich, deep soil and in a warm exposure. If the season is dry, as they are naturally marsh plants, they should have liberal waterings. Under this treatment the *Colocasias* will develop enormous leaves and be conspicuous objects in the garden until killed by the frost. The tubers should then be taken up and stored in a frost-proof cellar until spring. The indoor treatment is simply to pot the tubers, in March, in rich soil, give plenty of heat and moisture, shade somewhat to prevent burning, and, when the leaves begin to turn yellow, gradually withhold water to ripen the root. Turn the pots upon their side and withhold water until the plants are again wanted. By successive pottings, plants may be had in perfection the whole year.

Anemones.—When is the blooming season of the *Anemone*?

The springtime. Bulbs planted in September or October about two inches deep and protected through the winter, will flower beautifully in the spring.

Ixias, Varieties of.—Name the most desirable varieties of *Ixias*.

Among the best are *Crateroides*, *Graktea*, *Viridiflora*, *Duchess*, *Lady Slade*, *Titus* and *Wonder*.

CHAPTER III.

Lilies, Culture and Care.

"The lily holds herself like some sweet saint
Apart from earthly grief, as is a star
Apart from any fear of earthly taint;"

Harper's.

Japan Lilies.—Are Japan lilies hardy? When should the bulbs be set?

They are perfectly hardy. If good, strong bulbs are set out in the ground in the fall, perhaps as late as October or November, planted about eight inches deep, they will throw up strong shoots the following summer, and bloom freely. Bulbs several years old produce the finest flowers, especially if they have been allowed to grow in one spot; they do not like to be disturbed. After several years of blooming, the bulbs can be dug up, the off-shoots removed, and the old bulbs re-set. The time to do this is in the fall. Although hardy, the lilies seem to like a little care through the winter, such as a light covering of leaves or straw that can be raked off in the early spring. They require very little manure and really like a light, well-drained, sandy soil.

Transplanting Lilies.—When is the best time to transplant lilies?

Lilies may be safely transplanted at almost any time. Their growth is continuous; when not blooming, they are growing under ground. The only thing to be avoided is letting the bulbs become too dry.

Lily-of-the-Valley.—What exposure should be given to the Lily-of-the-Valley?

The Lily-of-the-Valley thrives in a dense shade, where few other plants will live. It does better, however, in a partial shade, and blooms abundantly. The pips are planted out in either autumn or spring.

White Day-Lily.—Of what species is the White Day-Lily?

The white day-lily is not a true lily, but a species of *Funkia*. It has fleshy roots; likes a partially shaded, moist but well drained place, and is entirely hardy. The flowers are borne upon scapes or terminal clusters, and the flowers remain out but a short time, though new buds are constantly opening. For this reason it is called "day-lily." The roots may be planted either in the spring or fall.

Peruvian Lilies.—Are the Peruvian lilies desirable for summer blooming?

The summer is their season for blooming. The colors are varied; crimson, yellow, rose and purple, beautifully shaded and marked. The flowers are very desirable for cutting, lasting a long time after being cut.

Resting of Callas.—How long a rest do Calla lilies require?

They must rest at least three months if expected to bloom successfully. By "resting" we mean allowing the leaves and stalks to die down completely to the bulb, withholding water, and letting the soil dry up completely; this treatment kills the stalk but rests the bulb.

Wild Lilies.—What varieties of wild lilies can be successfully transplanted?

L. Canadense, *L. Superbum*, *L. Catesbaei* and *L. Philadelphicum*. All these can easily be taken up and grown in the garden.

Bermuda Easter Lilies.—Are Bermuda Easter lilies hardy?

Bermuda Easter lilies are hardy if planted eight inches deep and protected by careful mulching.

Easter Lilies.—How should Easter Lilies be treated when the blooming season is over?

Continue to water them until the foliage begins to decline, then gradually withhold the supply of water until the soil is almost dried out. Then set them in a cool, shady place until August, and then re-pot, or renew the soil, being careful not to injure the fleshy roots. If the Easter lily has not split up into small bulbs it will bloom again; if it has divided, however, it will not bloom, and should be set out in the garden, eight inches deep in well drained soil. Here it will live and grow, and form blooming bulbs in two or three years.

Easter Lily Bulbs.—When and how should Easter Lily bulbs be started?

Take large bulbs in autumn and put them in eight-inch pots, placing each bulb at least two inches below the surface of the soil. After watering, set the pots in a dark closet until roots form, then bring gradually to the light, giving them a cool, light window. They will bloom in about five months after potting.

Golden Banded Lily.—Has the Golden Banded Lily of Japan any other name?

It has. It is really the *Lilium Auratum* of the family of Japan lilies, and it is one of the most beautiful in size and coloring. A golden band runs through each petal, and the spots are a rich chocolate crimson. It is well suited to house culture, and yet makes beautiful growth in the garden.

Lily-of-the-Valley in Pots.—How should the Lily-of-the-Valley be started in pots; under what conditions?

Not more than five or seven pips should be placed in a six-inch pot. The soil should be an almost equal mixture of rich earth and sand. The pots should be given a southern exposure and a place where the roots can be kept warm. They should be watered with warm water. This treatment will force the blossoms on most rapidly.

Bermuda Lily.—How deep should the bulbs be planted, and how soon may flowers be expected?

The bulbs should be planted eight inches deep in well-drained, porous soil. The soil should be rich, but do not enrich it by mixing stable litter with it. Phosphate or decayed turf is better. After the plants come up in the spring the bed may be mulched with stable litter to keep it cool and moist, as heated soil injures the growth and causes the buds to blight. This lily, however, is usually grown in pots for spring blooming. For this purpose, get sound bulbs nine to eleven inches in circumference, and pot in eight-inch pots, setting the bulb two to three inches under the surface. Water, and set in a cool place to root. It is usually from four to five months in coming into bloom after the bulb is potted. Give the pot a place in the window as soon as the leaves show above the earth, and water regularly and liberally. It likes a moist, cool atmosphere and a rather sunny exposure. As the buds begin to develop, a little phosphate or guano may be worked into the surface-soil. If insects appear, syringe freely. After the buds develop, keep the plant in a cool room, and in a window where it will get but little direct sunlight. After the flowers fade, continue watering until the foliage turns yellow, then set the plant away in the cellar until autumn.

Little Gem Calla.—What is the nature of the Little Gem Calla? What soil and treatment does it require?

The Little Gem calla should be planted in rich soil, and during its growing season should have an abundance of water, and liquid fertilizer at least once a week. If you want it for a winter blooming plant it should be allowed to rest during the summer.

Lilium Candidum.—Is the *Lilium Candidum* hardy, and when does it bloom?

It is quite hardy, and blooms in May and June. The bulbs should be planted early in the fall in a light, sandy soil. They should be set not less than eight or ten inches below the surface. They do not require any protection during the winter, and the beautiful, bell-shaped, snow-white blossoms are rarely beautiful in the early summer.

Amaryllis Johnsonii.—How should this plant be treated to get best results?

A recent writer says: "There is no difficulty in getting *Amaryllis Johnsonii* to bloom if the bulb is of blooming size. Keep it in about an eight-inch pot, and sink in the open border during summer, if not too dry. On approach of cold weather remove to the house. It will soon show signs of resting. Then withhold water, letting the foliage die down. About January remove the top earth without disturbing the roots, put on a coating of rich soil, water well, and bring to the light. Soon growth will commence, and in due time the flower scape will appear at the side of the bulb. A little manure water may be given when the bulbs are in bloom, or while the bulb is forming."

Kaffir Lily.—How should the Kaffir lily be planted and cared for?

Plant the bulbs out-doors in the spring; in the autumn lift the plants and pot them. They will bloom for months at a time. The more the flowers are cut the more freely they bloom.

White Egyptian Calla.—How should the Egyptian Calla be treated? How many flowers should it produce?

Each summer let it rest by turning it on its side by the wall, or any sheltered spot, until early in September, when it should be re-potted with good, rich soil, using a six to eight-inch pot, giving it plenty of water, and light and heat in abundance. Feed it with barn-dressing reduced to a liquid form, using it sparingly—two large spoonfuls a week—and the result will be most satisfactory. The lily produces but one flower, and buds about the middle of February. It is large and very fragrant, filling the room with a delicate and pleasing odor. The flower measures four to five inches across the top, is two feet high, and keeps white and fresh a long time. We have said that this lily produces but one flower, and this is almost always true, yet one sometimes finds at the base of the first flower-scape another bud in embryo. If the old stem is removed as soon as the flower fades, cutting it low, and leaving the young bud uninjured, the plant will usually perfect another bloom.

Callas for Winter Bloom.—How should Callas be prepared for winter blooming?

An experienced writer says: "After three months of rest, or about the first of October, we 'dump' out the plant, shake off all the old soil from the bulb or bulbs, and re-pot in fine, rich soil, using pots one size larger than those used the previous year; place the plants in a cool, shady spot, and water freely. Let them remain for two or three weeks, until new roots have formed, after which all danger is passed, and they can be removed into full light and heat. When growing, water freely. An application of strong liquid manure once a week will add greatly to the growth of the plants, and to the number of blossoms produced. A very pretty effect can be obtained by arranging the plants about a fountain or pond where they will bloom freely throughout the summer season, presenting a tropical appearance. They will also grow well by standing the pots completely in the water."

Lilium Auratum.—Will the Japan lily, *Lilium Auratum*, thrive if grown in a pot? When should it be potted?

It does well potted, but should not be forced. Get a bulb from three to four inches in diameter, and pot in a nine-inch pot, setting it three inches under the soil. See that the drainage is good, and use rich, porous soil. Press the soil firmly when planting, then water, and set the pot in a cool, shady place. The plant should not be exposed to the noonday sun, or, at least, the pot and its contents should be shaded. If the sun is allowed to shine upon the pot or the soil, heating it, the bulbs are liable to blast. Potting may be done in the fall and the plant kept in the cellar till spring, or the bulb may be planted in the spring. In either case the bulb will throw up a fine blooming plant, and afford much satisfaction.

The Turk's Cap Lily.—Is the Turk's Cap lily hardy? Where is it native?

The Turk's Cap lily, or *Lilium Superbum*, is entirely hardy. It is exceedingly graceful in its growth, sometimes reaching seven feet in height, and developing as many as twenty of the beautiful brownish-scarlet flowers. It belongs to New Jersey, but is hardy enough to bear winters farther north.

Guernsey Lilies.—Are Guernsey lilies desirable for a window garden?

The Guernsey lily is one of the most beautiful of lilies for a window garden. It is easy to cultivate, of vigorous growth, and very sure to produce clusters of large, wavy-petaled flowers of the most brilliant vermilion scarlet. It should be left to grow and increase for several years without repotting.

Soil for Lilies.—What kind of soil is wanted for a good lily bed?

A dry soil where water is not liable to stand in winter. It is a good idea to raise the bed a few inches. They all delight in a light, rich soil, such as is afforded by a mixture of loam and well rotted manure. Give proper drainage, and if possible place the bed where they will have a partial shade from buildings or shrubbery.

Season for Planting Lilies.—Which is the better season for planting lilies, spring or autumn?

Autumn is the most desirable time for planting lilies. The bulbs start so early in the spring that they cannot always be planted early enough. In cultivating lilies the most essential point is never to have any standing water at their roots.

Water Lilies.—Can Water Lilies be easily cultivated?

James Sheehan says: "The cultivation of Water Lilies is very simple; they can be grown with success in tubs or tanks, or in little artificial ponds, constructed to accommodate them. A hogshead sunk in the ground in the open air, in some sunny location, will answer to grow them in. Fill a hogshead half full of the compost recommended for aquatics, then set the plants in the compost, press down firmly, and fill the cask with pure water. If possible connect a flow and waste pipe with the barrel, to keep the water fresh, as this is highly essential in growing these plants in this manner."

Barbadoes Spice Lily.—What treatment does the Barbadoes Spice lily require?

The Barbadoes Spice lily is perhaps the most gorgeous of the Amaryllis family. It requires the treatment given to all of that family of bulbs. Good rich soil, plenty of water while growing and blossoming, then its season of entire rest. The bulbs are very large, and if well planted are very sure to produce strong spikes of bloom. Single flowers will average from six to ten inches across; they are a rich-glowing scarlet, with a contrasting wide white stripe through each petal. Spikes often produce from four to eight flowers each.

CHAPTER IV.

Rose Culture.

"The rose is fairest when 'tis budding new,
And hope is brightest when it dawns from fears;
The rose is sweetest washed with morning dew,
And love is loveliest when embalmed in tears.
Scott.

Standard Roses.—How should standard roses be wintered?

Standard roses may be tied up in straw or laid down and covered with soil. In laying the plant down the soil should be taken from close to the stem, on the same side as the roots are growing. This loosens the roots and allows the plant to be safely turned down. Then cover with soil.

La France Rose.—Is the La France one of the old roses?

The La France rose was developed from the Tea rose as late as 1867. It is a rarely beautiful rose, lovely in color and profuse in bloom. It is adapted to both indoor and outdoor culture, being a hardy, vigorous grower, retaining in outdoor growth the size and quality of its hot-house development.

Monthly Roses, Fumigating.—Ought outdoor monthly roses to be fumigated?

It is not generally thought necessary to fumigate outdoor roses. Careful syringing ought to keep them in good condition.

Potted Roses in Cellars.—How should potted roses be kept through the winter?

The roses when taken up from the garden and potted should be kept in a dark room for a week or two before taking them to the cellar. This prepares them for the change, and they will rest during the winter and are ready for fine, strong growth a second summer.

Crimson Rambler Rose.—Is this rose hardy and easy to grow?

It is perfectly hardy, and the foliage is retained to a great extent during the winter, making it almost an evergreen. It is easy to grow, and in a single season makes shoots from six to ten feet in height.

Tea Roses, House Culture.—Name some varieties of the Tea rose for house culture.

The La France (Bourbon), bright lilac-rose, perpetual bloomer, fine form and half hardy; Perle de Jardins, sulphur yellow, full and double, an unusually fine rose; Hermosa (Bourbon), light rose color, a most perpetual bloomer; Bon Silene, flowers purplish carmine, highly scented; Niphetos, pure white, an incessant bloomer.

Monthly Roses in Winter.—How can Monthly roses be protected in winter?

As soon as the temperature gets below freezing they should be pegged down securely and covered to a depth of four or five inches with litter, leaves, and light covering. The covering should not be removed too early in the spring. Wait until the hard frosts come on before covering, and until April, at least, before uncovering the vines.

The Prairie Rose.—Will the Prairie rose bloom early in the season?

The Prairie rose is a late bloomer, sending out clusters of large beautiful flowers when almost all other roses are gone.

Blue Roses.—Is there such a flower as a Blue rose?

No. Blue roses are an utter impossibility. Mr. Henderson says: "It has long been known among the best observers of such matters, that in certain families of plants, particular colors prevail, and that in no single instance can we ever expect to see blue, yellow, and scarlet colors in varieties of the same species. If any one at all conversant with plants, will bring any family of them to mind, it will at once be seen how undeviating is this law. In the dahlia we have scarlet and yellow, but no approach to the blue; so in the rose, hollyhock, etc. Again in the verbenas and salvia, we have scarlet and blue, but no yellow. If we reflect, it will be seen that there is nothing out of the order of nature in this arrangement; why then should we expect nature to step outside of what seems to be her fixed laws, and give us a blue rose?"

Mulching Rose Beds.—Is mulching necessary or desirable for rose beds?

American Gardening says: "A mulching on the rose beds is decidedly beneficial during the hot weather, not only preventing the too rapid evaporation of moisture from the soil, but also keeping the roots cool, and the most convenient material for this purpose is found in the clippings from the lawn, this being a covering that has been frequently proved most satisfactory. Where it is possible to do so, the rose beds should be freely watered during dry weather, for by this means quite a sprinkling of flowers may be had from the June roses (hybrid perpetuals), later in the season, beside greatly improving both quality and quantity of flowers on the so-called ever-blooming sorts."

The Bridal Rose.—What soil does the Bridal rose require, and is it hardy?

The Bridal Rose needs a loose, porous soil with good drainage. It may be called hardy, although in the north it requires a little protection through the winter. It also likes partial shade.

Damask Roses.—Where did the Damask rose originate or receive its name?

The Damask rose came from the gardens of Damascus. It was introduced into Europe, and after many years was brought into this country.

The Sunset Rose.—From what variety does the Sunset rose originate?

The Sunset rose is a sport of the well-known *Perle de Jardins*. The flowers, like those of its parent, are very large, full, well formed, and borne on stiff stems. It is a good rose for winter forcing, and is also desirable for outdoor culture.

Fairy Roses.—To what class do the Fairy roses belong?

To the class of *Polyanthas*. They are a lovely and distinct class of ever-blooming roses, distinguished by their dwarf, bushy habit of growth, medium size and very double flowers, which are delightfully fragrant and are borne in large clusters and masses, frequently seeming to cover the whole plant with a sheet of bloom. They are good, vigorous growers and constant and most profuse bloomers, very pretty and highly recommended for general planting, also for edges and borders to beds of the larger growing varieties. They are not entirely hardy, but will often survive the winters in favorable situations, with usual protection.

Roses for the Window.—Name some roses that may be grown in the window.

Do not try the varieties often talked of, such as *Perle de Jardins* and *Catherine Mermet*; they can only be grown well by florists. Try *Queen's Scarlet*, *Hermosa*, *Marie Lambert* and *Francisca Kruger*. These can be depended upon to give satisfaction and pleasure in the house.

Rosa Wichuriana.—Will the *Rosa Wichuriana* make a good growth the first season?

This is a rapid grower, of trailing habit. It will sometimes run as much as twenty feet in one season. It likes unlimited space. The flowers are large, white, and very abundant.

Persian Rose.—How should the Persian rose be pruned and what are its habits of growth?

The blossoms of the Persian rose are produced on the previous year's growth, which fact prevents much pruning. The dead branches should be cut out. This rose should be placed by itself, as it is of rambling growth. The beautiful sulphur yellow blossoms come in early summer in great profusion, causing it to be a general favorite.

Climbing Roses.—Name some desirable varieties of climbing roses.

There are many varieties of climbing roses; some of them are hardy enough to make a very fair growth in the north, but the most luxuriant growth is produced in California and the southern States. In these localities the beautiful Lamarque stands first. Others almost as beautiful and of vigorous growth are the Banksian, Reine Marie Henriette, Cloth of Gold, Estelle Pradez, Marechal Niel, Rosa moschata, and the Cherokee rose.

Roses for Windows.—What is the best treatment for roses intended for window culture? Should they be planted during summer or kept in pots?

Two systems may be practiced. One is to pot the plants into five or six-inch size, using light, rich, turfy soil, and then sink the pots up to the rim in the ground. Cover with a light mulch to prevent evaporation, and give plenty of water. Soapsuds from the kitchen and weak liquid manure will assist growth. They may remain out of doors until the ground freezes. The other system is to plant them in the open ground early in the summer and let them remain there until late in the fall, then carefully lift and pot. Roses require a season of rest; they cannot be well forced the year around.

Tea Roses, Outdoors.—Can Tea roses be cultivated out of doors successfully?

As good an authority as James Sheehan says: "Tea roses may be cultivated out of doors with success, but they must be taken up in the fall and removed indoors. We know it is the custom of some gardeners to lay the bushes down in the fall, and cover them with earth and leaves; while in some cases this may preserve them, it cannot be depended on as a rule. To keep up a steady bloom, pinch off all flowers as soon as they begin to fade. It is best to not let the buds open fully while on the bush, but they should be cut in the bud, and placed in a vase of water, where they will expand and keep for a long while. All dead leaves and flower stems should be carefully removed, and the surface of the soil in the pots should be stirred up occasionally with a stick; this will keep the plants in a growing condition, and if they can be kept growing, they will bloom continuously."

Hermosa Rose.—Is this a winter bloomer, and what treatment does it require?

We quote from Park's Floral Magazine: "Hermosa rose blooms well either summer or winter. If wanted for winter-blooming get a young plant in the spring, pot it in a three-inch pot, and shift it as it grows to make strong roots and retard blooming. Cut the buds off as they appear. By autumn the plant should occupy a six-inch pot, and if given a sunny window will bloom freely under favorable conditions. Cut the flowers as they fade, with a portion of the branch, to induce new growth, on which the buds appear. For summer-blooming bed out in May, and mulch the bed with stable litter as the weather becomes warm. Thus treated they will bloom all summer, and bear the winter without protection, though a board frame around the bed, or a covering of evergreen boughs placed over the bed in December is often beneficial."

Rose Bed.—What is the best location for a rose bed?

To begin with the bed should be well sheltered from wind and yet sunny. It should not be near large trees, as the large roots of the trees will take all the nourishment from the soil, and will fairly starve the poor roses. The making of the bed is very important. It should be mellow and well worked to a depth of at least twelve inches; the soil should be rich and yet with a good deal of sand worked in, perhaps as much as one-third. With care in making the bed the roses will not need enriching until a second season, and even then it must be done with care: use only well-rotted manure and not too much of that. Too much enriching will burn the plants, yellow the leaves, and blast the buds. The plants should be set about twelve or eighteen inches apart. The roots must never be crowded.

Ten Roses.—Name ten roses for general culture.

We should name Clothilde Soupert, Mrs. Degrauw, rose color; Malmaison, flesh color and deliciously sweet; La France, clear soft pink; General Jacqueminot, crimson; Duchess of Albany, deep pink; Dinsmore, coral red; Empress Augusta Victoria, white and very fine; Papa Gontier, bright red, and Etoile de Lyon. The three last are not quite hardy.

Tea Rose Cuttings.—When should Tea rose cuttings be started for the next summer's use?

About September the cuttings should be made. They should be started in sand with a temperature of about 65 degrees. The process of rooting covers from twenty to thirty days, when they should be ready for transplanting into pots. Roses need rather large pots. They need constant syringing and fumigating with tobacco because of their deadly enemies, the aphid and the red spider. They require good soil and may be placed in beds as early as May.

Roses for the Garden.—Name some desirable varieties for garden culture.

"La France, Mrs. John Laing, John Hopper, General Jacqueminot, Paul Neyron, Maurice Bernardin, Ulrich Brunner, Baroness Rothschild, Merveille de Lyon, Hermosa, Anne de Diesbach, Eugene Verdier, Fisher Holmes, Coquette des Blanchés, Malmaison and Mdme. Plantier, the latter being a particularly free-blooming white variety, but belonging to the China section, and consequently only to be relied upon to produce one crop of flowers in the season." The above list is given by so good an authority as American Gardening.

Hardy Tea Roses.—Name some Tea roses that are hardy.

Very few Tea roses are hardy; we name some that may be relied upon in temperate localities, not north of New York City: Marie Van Houtte, Papa Gontier, Dinsmore, Marie Guillot, Perle de Jardins, Mdme. Lombard, Souvenir d'un Ami, and Catherine Mermet.

Roses, Indoors.—What varieties of roses are best for indoor culture?

The roses best adapted for indoor culture are Tea roses; these are tender, of a bushy growth, and will bloom the year round; the flowers have a strong tea-scent.

Moss Roses.—Are Moss roses entirely hardy?

They are entirely hardy, and can be wintered without any protection. They should be well, even severely pruned in the spring, carefully removing all the old wood. We would name the White Perpetual, pure white; the Crested, rose color, and perhaps the Salet, deep pink.

Dwarf Roses.—What are the most desirable dwarf roses?

American Gardening gives the following: "By repeated and careful selections a new race of roses has been produced, which, like annuals, germinate, flower, and produce seeds in less than a year. As to the word 'dwarf,' that is justified by the height, which in adult plants is only about twenty inches. The flowers are single, semi-double or double, in almost equal proportions, and present almost all the variations of color observed in cultivated roses. Flowering commences, as has been already said, in the first year, and even a few months after sowing. This precocity is one of the most remarkable and interesting features of this new type, in which, in fact, the rose assumes some of the characteristics of an annual. It is very curious to see a small rose tree, perhaps only about three inches high, with a very slender stem and a few small leaves, put forth in less than three months, numerous flower buds which soon open into pretty little semi-double roses the size of a florin or of a half crown, and resembling in appearance Lawrence's Bengal rose, or even more closely, the Rose Pompon de Mai. A young plant raised from seed sown on January 15, expanded its first flower three months later. Blooming is continuous throughout the summer, but is naturally more abundant in the second year, when the plant assumes the corymb character peculiar to *Rosa polyantha*."

Roses for Rock Gardens.—What roses can be grown best in a rockery?

There are several varieties of roses of rambling growth that makes them very desirable for a rockery. *R. blanda*, *R. caroliniana*, *R. lucida*, *R. foliolosa*, and the little Scotch rose, *R. spinosissima*, are all inclined to wild rambling growth.

Clothilde Soupert Rose.—Is the Clothilde Soupert rose a free bloomer?

Clothilde Soupert is a beautiful rose either in bud or fully blown, of a beautiful soft pink when first opening, changing to paler pink as it gets older, and some of the flowers are almost pure white. It is beautifully formed, very double, sweet-scented and a most prolific bloomer. It will continue in bloom from early spring till frost in the fall.

Mildew on Roses—Can rose mildew be prevented?

The best care cannot insure the absence of mildew. However, the use of sulphur will always destroy the germs of mildew.

The Cherokee Rose.—Is the Cherokee rose hardy, and what is the nature of its growth?

The Cherokee rose may be said to be hardy as far north as New Jersey. It is a climber of most luxuriant growth. It yields a profusion of large white flowers.

Black Spots on Roses.—What will remove black spots from roses?

The best remedy we know is cupram, an ammoniacal solution of carbonate of copper. All spotted leaves should be removed and burned, then spray the plant with cupram.

Rose Cuttings.—When should rose cuttings be made? How long a time is required for rooting?

September is the best time. After inserting the cuttings they should be kept in an even temperature of about sixty-five, watered carefully, not too profusely. The time required for rooting varies from three to four weeks.

The Sweetbriar.—Is the Sweetbriar rose hardy?

The Sweetbriar is hardy and is altogether a most charming rose. The blossoms, though single, are of a beautiful shade of pink, and the fragrance of its foliage is very delightful. It retains this fragrance for many months after being cut.

Hybrid Perpetuals.—In wintering Hybrid Perpetuals is it necessary to peg down the shoots?

It is entirely unnecessary. A much better way is to carefully prune the bush, then throw up soil around each plant to the depth of six or eight inches; cover the entire bed with a good mulching of half-rotted cow manure, and your roses will come beautifully in the spring.

Wintering Ten Roses.—Can Tea roses be wintered out of doors?

By cutting the plants back slightly and bending them down and securing them with leaves, not too heavily, they may be safely carried through the winter.

Sprinkling Roses.—How often ought roses to be sprinkled?

Rose foliage should be sprinkled every day. Both upper and under sides of the leaves should be wet; if this is not done thoroughly the small red spider will take possession and ruin the plant.

Transplanting Rose Cuttings—What soil should be used, and how should rose cuttings be transplanted?

The soil should be very carefully prepared; one-third cow manure, two-thirds turf, both well rotted and mixed together, and a small amount of sand. They should be potted in very small pots at first.

Pruning Roses.—Give suggestions for pruning roses.

We take the following excellent suggestions from Dingee and Conard's catalogue: "The different varieties of roses differ very much in habit of growth; many are neat and compact, requiring little or no attention, while others of the same class are vigorous and straggling, sending out long shoots which tend to outrun the limits assigned them. Pruning, therefore, is a matter to be governed by the judgment of the possessor of the plants. We will add, however, that plants of persistent growth should be trimmed back each fall or in early spring about one-half to two-thirds of the season's growth. Where plants, apparently healthy, fail to mature the buds which they bear, remove a large percentage of the undeveloped buds and imperfect blooms and prune severely. Also trim back about one-third when, after planting, they shed their leaves and exhibit signs of weakness; this gives the roots a chance to become vigorous.

CHAPTER V.

Vines or Climbers.

“Lurk’d a pavilion, a delicious sight,
Small, marble, well-proportion’d, mellowy white,
With yellow vine leaves sprinkled,—”

Leigh Hunt.

Ornamental Gourds.—Is any special culture necessary to success with ornamental gourds?

These gourds require but little care after the seeds are planted, except to train the vines. When the ground has become warm in spring, plant the seeds in rich soil where you want the gourds to grow, and should dry weather follow, water them liberally. The first frost kills the plants, but usually not until they have ripened an abundance of seeds. The growth of the gourd is proverbial and the plant will soon cover long trellises and produce a very beautiful effect. The Balsam Apple (*Momordica*) is nearly related to the gourd family. It is a slender climber with a delicate foliage. The seeds should be started in pots and the plants turned out early in June into rich, moist soil, where they can have a sunny exposure.

Cissus Heterophylla.—Is the *Cissus Heterophylla* of rank growth enough to be useful for shade?

It is one of the most beautiful and most desirable of vines. It grows luxuriantly, making a dense shade. It will grow in almost any kind of soil. The foliage is very beautiful, the leaves are a rich dark green with cream-white blotches. The blossoms are followed by berries, so the vine is at all times one of unusual beauty. It is entirely hardy, and the richness of the variegation increases with age. It is unusually free from insect pests. Altogether one of the most beautiful of vines for piazza decoration.

Plumbago Capensis.—Is the *Plumbago Capensis* easy to cultivate?

We very much admire the *Plumbago Capensis* and we quote a fine description of the vine from Park's Floral Magazine: “There is scarcely any other window flower of the same exquisite delicate blue, and I know of no other so successfully cultivated. A small plant bought in the spring or early summer will soon begin blooming, throwing out several trusses of lovely phlox-like flowers, and continue in bloom for months at a time, the plant constantly growing finer. The blooms are produced on the new wood, and for this reason as each branch finishes flowering it should be cut back rigorously, to induce a greater number of flowering branches. The plant should be turned every day or two to allow every side of it a fair exposure to the sun, then allow the new branches to grow any length desired before pinching out the top. If it is budded do not pinch it, as the flowers are too lovely to lose. If pinched in time, however, a great many more blooming shoots will be produced. I have had branches over three feet long on a year old plant, and these in turn branched nearly to the base, and at the end of every branch a large truss of the exquisite blue flowers. This *Plumbago* is not fastidious as to treatment, and will stand a good deal of neglect. It is also quite hardy, standing cold nights extremely well.” When these plants show fatigue let them rest on a back shelf, giving water only once a week. A few weeks of rest will do wonders for them.

Vines for the Veranda.—Name some Vines most desirable for growing about a veranda.

Ever-blooming roses are always beautiful. The Honeysuckle is a very clean, pleasant vine, with its delightful fragrance. The Wistaria is very showy, as is also the Trumpet Creeper. For temperate localities the Carolina Yellow Jasmine and the Plumbago Capensis are very desirable. The Moon-flowers, Maurandia and Cobœa Scandens are desirable for quick growth. The Madeira vine grows quickly too, and the flowers are inconspicuous and very fragrant. Many varieties of Clematis are very desirable. The dainty *Tropaeolum Canariensis* must not be forgotten. If vines are wanted simply for foliage or to cover walls, the English Ivy and *Ampelopsis Veitchii* are very beautiful.

Varieties of Clematis.—Please name some of the best varieties of Clematis.

There are many, but the following will give general satisfaction: *Alexandra*, color reddish-violet; *Flammula*, small white flowers; *Gem*, deep lavender-blue; *Gloire de St. Julian*, white; *Hendersoni*, bluish-purple; *Henryii*, white; *Imperatrice Eugenie*, white; *Jackmanii*, beautiful purple; *Jeanne d'Arc*, grayish-white; *Lanuginosa candida*, white; *Lanuginosa nivea*, white; *Lawsoniana*, bluish-purple; *Magnifica*, rich purple; *Otto Frœbel*, white; *Prince of Wales*, purple with red bar in centre of each petal; *Rubella*, claret color; *Rubra violacea*, maroon-purple; *Star of India*, violet-purple with turkey-red bars in the center of each flower leaf; *Velutina purpurea*, blackish-purple; *Viticella rubra grandiflora*, claret-crimson with green stamens; *Viticella venosa*, reddish-purple veined with crimson.

Morning Glories.—Is it well to let Morning Glories sow themselves?

Not if you want the choice colors and a variety of them. You can get much finer and more varied colors in a choice mixture procured from some reliable seedsman. Sow them in a box and transplant when the plants are large enough. Furnish support as soon as the plants show a disposition to climb. The variety and beauty of the flowers from such plants will be a source of much pleasure and satisfaction every morning during the summer and autumn. They are especially valuable for porches and screens.

Manettia Leaves Curling.—What causes the leaves of Manettia-vine to curl and dry up at the edges?

Manettia bicolor is troubled with blight, or the attack of a parasitic fungus, when the conditions for its growth are not entirely favorable. The vine needs plenty of room for its roots, plenty of heat, a moist atmosphere and partial shade. When the disease appears, remove all affected leaves, and change the conditions to promote the health of the plant.

Hardy Moon-flower.—How should Hardy Moon flower be cultivated? Is it a ready grower?

The Hardy Moon-flower (*Ipomœa pandurata*) is a wild vine found in fields in many sections of our country. The plant is found trailing on the ground, and bears large, white morning-glory-like flowers, with a rosy throat. These are always found open in the morning, and are often called morning-lilies. The roots are very large and lie beneath the reach of the plow, so that the farmer finds the vines troublesome to get rid of. All that need be said as to cultivation is, to plant the roots. The vines will take care of themselves.

Cinnamon Vine.—Where does the Cinnamon vine come from, and is it hardy?

This beautiful climber is extensively grown in the East and West Indies as an article of food where the roots grow to large size and very much resemble a sweet potato in shape. They are roasted and eaten as bread, and considered very nutritious. When introduced into this country they created quite a sensation, and although they are not considered a very valuable eatable, as beautiful, hardy climbers, they are highly appreciated. These vines are of easy culture. Before cold weather cover slightly with straw if where the winter is severe. As a covering for an arbor or veranda they are exceedingly desirable, not only on account of their beautiful foliage, but because of the profusion of the sweet-scented flowers which prove a source of constant delight.

English Ivy.—Is the English Ivy an evergreen?

The English Ivy (*Hedera Helix*) is a true ivy, and a hardy evergreen, the foliage remaining green throughout the winter.

Manettia Blight.—Are all varieties of Manettia-vine subject to blight?

Manettia cordifolia is not affected with blight. It is tuberous-rooted, blooms in summer, bearing a profusion of open, carmine flowers, and dies down in autumn. It is really more desirable than Manettia bicolor for the ordinary amateur, as it never fails to grow and bloom satisfactorily. For blight, give partial shade and water occasionally with soot tea.

Apios Tuberosa.—Is the Apios Tuberosa a wild vine?

The Apios Tuberosa is a wild vine and found in moist places. The tubers are about as large as a hen's egg, and joined together. The vine will grow from ten to twelve feet in height, and when well cared for produces clusters of bloom not unlike short clusters of black locust bloom, but of a peculiar brownish color. The plant is not satisfactory as an ornamental vine.

Wistarias.—When and how should the Wistaria be pruned?

In midsummer. The side shoots should be cut back to about one foot from the main stem. Other side shoots will quickly start, which should, when a few inches long, be pinched in again; in this way producing flower buds instead of leaf buds. If the young shoots make a strong growth during the season, they should be cut back again the following spring without waiting for the midsummer pruning.

Hoya Carnosa.—Can the Hoya Carnosa be started from a leaf?

From a well matured leaf it can be successfully started. It is slow in coming, but very sure. Do not re-pot for as many as four or five years. Even strong plants do not like to be disturbed. The soil may be strengthened by removing old soil from the top and filling up with fresh soil well enriched.

Clematis.—What is the easiest way of propagating Clematis?

The easiest way for the amateur is by layering. Plants used for propagation should be given very rich soil; as they grow, the stems should be pegged down and covered with soil at the joints. It is best not to cut off the layers before the following year.

Climbing Japanese Fern.—Is the Climbing Japanese Fern a vine?

It is a vine quite like the Cypress in its growth and foliage. It will cover a trellis or wall most charmingly, and it will quickly cover a small tree or shrub.

Torenia.—Is Torenia suitable for hanging baskets?

Torenia is very desirable for hanging baskets, as it starts quickly from seed, it bears transplanting well, and it much likes intense heat. It grows very rapidly and will of itself cover a basket and cling so closely to its sides that one can see but a mass of lovely green sprays covered with white and blue blossoms.

Japanese Hop.—Is the Japanese Hop an annual? How cultivated?

The Japanese Hop is an annual, easily grown from seeds and self-sows when once introduced. It is a coarse vine that grows rapidly, and some cultivators prize it highly, especially the variegated-leaved variety. Treat it as you would the old-fashioned Morning-glory.

Clematis Paniculata.—Is the Clematis Paniculata entirely hardy and what are its habits of growth?

It is a thrifty, robust-growing vine of graceful habit and attractive foliage. It is entirely hardy. The vine dies down in the fall, but the next spring it starts with added strength and makes very rapid growth. It grows well over woven wire, or it can be tacked to a wall. The pretty star-like florets with feathery stamens are very lovely.

Virginia Creeper.—Does the Virginia Creeper require protection in winter?

Not after the first season. The first year's growth should be slightly protected with evergreen boughs or branches of some kind. After the first winter it is strong enough to endure almost any amount of cold. It is a very desirable vine, because of its rapid growth and of its brilliant coloring in the autumn.

Climbers.—Name some desirable Climbers of easy growth.

Convolvulus, Canary Creeper, Sweet Pea, and Major. These are all easy to grow and pleasing in effect.

Boston Ivy.—Is Boston Ivy hardy? How best grown?

Boston Ivy (*Ampelopsis Veitchii*) is hardy unless it is taken into the extreme north. It must be grown against a wall. It is a deciduous, shrubby vine, losing its leaves in autumn.

German Ivy.—Give culture of German Ivy. What color are its blossoms?

The German or Parlor Ivy grows very rapidly. Planted in a large pot with rich porous soil, then trained about the room, its growth is almost marvellous. The blossoms are small and of a rather bright orange color.

Cobœa Scandens.—Is the Cobœa Scandens only a summer growing vine?

Cobœa Scandens really belongs to the south. It is not hardy at the north, indeed it will rarely even perfect seeds in this climate. As a summer vine it is charming, it grows rapidly and well, blooms freely, bearing large, purple, bell-shaped flowers from midsummer till frost. Seeds started in April bloom in July.

Stephanotis Floribunda.—Will the Stephanotis Floribunda grow outdoors?

This is a hot-house evergreen and cannot be grown in gardens. It is propagated by cuttings, and requires several re-pottings. The plant has to be cut back, and the soil very much enriched for two years before allowing it to develop. It then makes a reliable greenhouse vine, yielding a wealth of bloom annually.

Enslentia Albida.—When and how does the Enslentia Albida bloom?

It blooms late in the summer, the flowers are small, white and sweet-scented. The vine has a clean, smooth, green stem and the leaves are very distinctly veined, sometimes veined with white. It is a rapid grower.

Senecio Macroglossis.—Can the Senecio Macroglossis be propagated from slips?

It propagates readily from slips. This is one of the most beautiful of vines for house culture. The dark green, shiny leaves are beautiful even without the light yellow flower with its beautiful veins on the lower side. It is a high climbing vine of rapid growth.

Cypress Vine.—Will Cypress Vine bear transplanting?

The Cypress vine will not bear transplanting well. Plant the seeds, they germinate readily. The blossoms with their star-like beauty give rare pleasure as they unfold every morning. The fact that they only remain open a part of the day matters little, as the vine itself is so beautiful with its soft fern-like foliage.

Madeira Vine.—Give some information on the cultivation of the Madeira vine.

The Madeira vine will grow from either seed or tubers, but rather better from the tubers. It requires a rich soil and a shady position. The vine grows exceedingly rapidly, requiring constant training. The leaves are of a light green, waxy and glossy. The racemes of bloom are creamy white and very fragrant. The vine grows and blooms luxuriantly until frost.

Clematis Coccinea.—Is the Clematis Coccinea hardy in the north, and is it a desirable variety?

The Clematis Coccinea is entirely hardy and we consider it very desirable. Being herbaceous, it dies down every winter, and in spring throws up eight to twelve vines to a height of eight to ten feet. Early in July, and continuing till frost appears, its one to one and one-half inch long, bell-shaped flowers, of the most intense coral scarlet, shine as if polished. They are produced from the axil of each leaf, on strong, wiry peduncles, three to four inches long, standing out boldly from the foliage. The leaves are of a rich, deep, glossy green, deeply lobed, and of a firm texture. The foliage and entire habit of the plant is elegant, bright, and attractive,—indeed, even without flowers it would be a valuable addition to a garden. Its cultivation is of the easiest kind, as it thrives in any moderately rich soil, and in any situation where it gets the benefit of a few hours of sunshine a day. Another great point in its favor is that it is not subject to insect depredations, which prove so disastrous to many other climbers.

Kenilworth Ivy.—Is the Kenilworth Ivy hardy?

It is not. It is simply a dainty vine for house culture, and especially pleasing for hanging baskets or window brackets. It is a very free bloomer.

Ivy Cuttings.—Will cuttings of Ivy root easily, and what treatment does the vine require?

We quote from James Sheehan: "The Ivy may be easily cultivated from slips or layers. In soil, sand, or even in pure water, cuttings will root, and they will take up with almost any kind of soil, but that which can be easily kept loose is preferable. The Ivy is partial to shade, and if it never saw the sun it would make no difference, as it would grow and flourish just the same. There is no sight more attractive in a window-garden than a fine Ivy vine trained up the casement, over the wall and ceiling; its dark, rich, glossy leaves, and thrifty look, make it an object to be admired. If grown in pots in the house, the soil will soon become exhausted, if the plant is growing rapidly; and it should be changed or enriched with decayed manure at least once each year, care being taken not to disturb the roots to a great extent. It is a mistake to allow Ivies too much pot-room; they will do better if the roots are considerably confined. Soap-suds or liquid manure if applied once a month when the plants are growing, will promote a luxuriant growth. When dust accumulates on the leaves, as it will, if grown indoors, wash it off with a damp cloth or sponge; if this is long neglected you need not be surprised if you soon discover the leaves to be covered with red-spider or scale-lice. Cold water is the best wash, when washing be sure and treat the underside of the leaves as well as the upper surface. I would recommend the English Ivy as being the best sort for general cultivation."

Tropæolum Peregrinum.—Will the Tropæolum Peregrinum grow out of doors?

It will grow well outdoors if started in the house and transplanted. The foliage of the vine is very beautiful, and with the delicately fringed yellow flowers looking like yellow birds with wings outstretched the effect is charming. The Tropæolum is more commonly known as the Canary Bird flower.

The Honeysuckle.—Is the Honeysuckle subject to insect enemies?

We have always found the Honeysuckle to be unusually free from insects, which is a great recommendation for a vine to be grown near the house.

Variegated Hop.—Is the Variegated Hop of rapid growth?

The Variegated Hop grows rapidly, the foliage is not as dense as that of the common hop, but much more beautiful. The vine self-sows, and the second year vines are often much stronger in growth than those of the first season.

Yellow Jasmine.—Will the Yellow Jasmine live in the north, and what soil does it require?

The Yellow Jasmine may be called hardy until taken into the extreme north. It makes a beautiful trellis vine, although it will not grow with its southern luxuriance. In its own climate it covers fences and shrubs and even tall pines. It grows best in a soil composed of sod, leaf mould, and sand in about equal parts.

Solanums.—Will Solanums bloom in the winter?

By taking cuttings in midsummer, which root very easily, blossoms may be produced in the winter. The vine is, however, most truly a summer vine. If set outdoors in the spring in a sunny corner and given deep, rich soil and some kind of lattice for support, it will grow to a height of twenty feet or more, giving all the time a wealth of airy clusters of starry blossoms.

The Hoya.—How may the Hoya be most satisfactorily grown?

Hoya is a plant that gives the best satisfaction as a house plant. Its large waxen leaves are very beautiful when sponged and kept free from dust. It may be new to many to know that the buds of the Hoya form in the joint between the stem and the leaf one year before it blooms. It is a little crooked stem, turned down, and a little head at the end which makes one think of a snake's head. The next year this stem raises up and the buds expand; and we have a cluster of five-sided waxen lumps, each on the end of a stem. When opened, a lovely five-pointed star, with a velvety look and bright as with dew, is a delight to the eye and nostril. When these lovely flowers fade and drop off, be sure to leave the little stump on the vine, for the next year a similar bunch of buds will grow out of the center of that little stump; and more flowers will gladden the heart of the possessor of the blooming Hoya.

CHAPTER VI.

Shrubs.

"It was a shallow dell, set in a mould
Of sloping shrubs, that mounted by degrees—
The birch and poplar mixed in heavier trees;"
Leigh Hunt.

Rhododendrons.—When should Rhododendrons be planted?

In the Northern States spring planting is preferable, and also wherever the ground is not perfectly drained. The proper selection of varieties is of the greatest importance. More plants are lost from not being suited to outdoor culture than from any other cause. In the south, they may be planted in either autumn or spring.

Starting Slips.—Is there any particular kind of soil better than another for starting slips?

The best medium in which to place cuttings of nearly all the ordinary house-plants is pure building-sand. This is to be kept very wet until the cuttings become rooted. The young plants are then to be transplanted in small pots—two to two and a half inches in diameter—in soil consisting of equal parts of well-decomposed manure, loamy garden soil, and sand.

Hardy Rhododendron.—What soil does the Rhododendron require, and is it hardy?

The Rhododendron thrives in a loose, porous, well-drained soil. It is hardy even in the north if planted in a protected, partially shaded place. The flowers are very beautiful and borne in June in great clusters.

Fairy Shrub.—What is the Fairy shrub?

It is a species of shrubby Clematis. A very dainty shrub well deserving the name of Fairy shrub. A native of the south.

Native Spiræas.—Will the Native Spiræas bear transplanting?

The native Spiræas are very much improved by cultivation. In choosing the shrubs, select only young plants of symmetrical growth; cut out the dead wood and rank-growing stems. Work the soil lightly about the roots to encourage a strong fibrous growth, and when the leaves have fallen the bushes will be ready to transplant. They are entirely hardy and with proper care will flourish wonderfully.

Spiræa Callosa Alba.—Is the Spiræa Callosa Alba a dwarf shrub?

It is a dwarf, of bushy yet symmetrical growth; yielding most profuse bloom during the summer months. It requires a deep, moderately rich soil and a sunny situation. Occasional top dressings of well-decayed manure increase its growth. The branches should be cut back in the early spring enough to keep good shape, but they should not be severely pruned.

Cape Jasmine.—To what extent is the Cape Jasmine hardy, and what culture does it require?

The Cape Jasmine is only hardy at the south. In the north it can only be grown in pots. It is easy to cultivate, requiring a mixture of loam and sand, plenty of water while in blossom and very little water while it is resting. The flowers must be cut with short stems. After the flowering season, the plant may be cut back. The flowers are double, white and delightfully fragrant. It is often called the Gardenia.

Syringa Vulgaris.—What is the *Syringa Vulgaris*, and how is it propagated?

It is really the common Lilac. There are numerous varieties, ranging in color from white to deep purple. Most of them are perfectly hardy, and all are extremely ornamental. They are readily propagated from the numerous suckers which they send forth. Simply separate the shoot from the old bush.

The Syringa.—When does the *Syringa* blossom, and what is its growth?

It blossoms in June and is indigenous to the United States. It is a strong grower and makes a large-sized shrub unless kept in hand by pruning. The flowers, which are pure white and fragrant, are produced in great profusion in June.

Fruit-Bearing Shrubs.—Are any of the fruit-bearing shrubs decorative?

Several of them are. The foliage of the Buffalo Berry is silvery white with large clusters of rich crimson berries. The Tree Cranberry is a very pretty shrub, about the size of the Lilac and with drooping clusters of bright red berries. The dwarf Rocky Mountain Cherry grows about four feet high and bears an enormous amount of fruit every year. The dwarf Juneberry is a beautiful shrub, growing very quickly and bearing fruit when very small. The lovely little blossoms come before the leaves start. The fruit is purple when ripe and about the size of a cherry. All of these named are ornamental as shrubs.

The Spirea.—Is the *Spirea* a free blooming shrub?

The *Spirea* is a very free bloomer. The blossoms come early in May and continue long on the shrub. The ordinary growth of the bush is from five to seven feet in height.

Jasminum Grandiflorum.—Is the *Jasminum Grandiflorum* a vine or a shrub?

It is inclined to climb, yet with proper pruning it makes a most satisfactory shrub. By pinching off the top when it has reached the height you desire, you will cause it to throw out lateral shoots, and pinching these off in turn produces a bushy symmetrical shrub with delicate foliage and small, sweet flowers.

Althaea.—Is the *Althaea* an early bloomer?

No. The *Althaea* or *Hibiscus Syriacus*, is a most desirable shrub, easy of culture but it will not bloom before August or September.

A Hardy Border.—When and how should a hardy border be planted?

A hardy border may be planted either in the spring or autumn. Large, well-grown clumps, such as some nurserymen sell, will make a really fine display the first season. They should be set out in their permanent places so as to become well established before winter. In planting, remember one principle: hardy plants produce their best effects when arranged in groups or masses, the size of these depending on the extent of the grounds and length of the border. Never plant fewer than six or twelve plants of a kind, and plant them near enough together to form, when grown, a solid mass of foliage and bloom. Arrange the various groups irregularly in the border, planting the taller and coarser varieties in the background, having due regard to season and bloom. Make a plan of the border in advance, and study carefully the characteristics of the plants in making their arrangement. The following list is well arranged in classes according to height; Low—*Achillea alba*, *Phlox subulata*, various Pinks, Carnations, *Gallardia*, Iceland Poppy, *Coreopsis lanceolata*, *Plumbago larpendæ*. Medium—*Pæonies*, Oriental Poppy, Hardy *Phlox*, *Platycodon*, *Iris Germanica*. Tall—*Delphinium* (Hardy Larkspur), *Aquilegia* (Columbine), *Campanula* (Canterbury Bell), *Digitalis* (Fox Glove), *Hollyhock*, *Dahlia*, Sunflower, *Hibiscus*, *Iris Kœmpeferii*.

Hydrangeas.—Are *Hydrangeas* hardy, and when should cuttings be rooted?

Some varieties of *Hydrangeas* are entirely hardy, others are half hardy. The most satisfactory varieties for permanent shrubberies are *Paniculata*, *Grandiflora*, *Hortensia* and *Thomas Hogg*. Of the half hardy varieties perhaps the *Otaska*, *Thunbergii* and the *Lindleyi* are the most desirable. The cuttings should be rooted in July, then potted in a rich, peaty loam. By taking later cuttings in the autumn, a succession may be established and one may have *Hydrangeas* in blossom at almost any season.

Oleanders—Are Oleanders easy to cultivate? Should they be watered freely?

The Oleander is not difficult to cultivate, and when in full bloom nothing can be prettier. It likes a rich soil and plenty of pot room. During its growing season it should be watered abundantly, in fact, it never should become entirely dry at that period, else the flower buds will drop off.

Pyrus Japonica.—Is the *Pyrus Japonica* an early flowering shrub?

The *Pyrus Japonica*, or Japan Quince, is one of the very earliest flowering shrubs and produces a great quantity of bright scarlet flowers, not fragrant, but exceedingly brilliant. The bush requires careful pruning as its natural growth is straggling. It is entirely hardy.

Deutzia Crenata.—Is the blossom of the *Deutzia Crenata* single or double?

Double. The growth of the shrub is from three to six feet in height. There is a dwarf single variety that may be said to be more generally satisfactory, as it blooms more freely and the blossoms come early in June.

Japanese Desmodium.—Describe the growth of the Japanese *Desmodium* and culture. Can it be propagated by cuttings?

The Japanese *Desmodium*, or Sweet Pea shrub, is a very beautiful, hardy perennial. It dies to the ground every fall, and the following spring it throws up robust shoots to the height of four or five feet; the shoots branch freely, and by autumn the plant assumes the proportion of a medium-sized bush, with gracefully curved branches. The foliage is a bright green color, and the deep rosy-purple, pea-shaped flowers are produced in pendulous racemes all along the curving branches in the greatest profusion. It is perfectly hardy and free from all insect pests; it well deserves a place in all collections. It prefers a very deep, moderately enriched soil, a sunny situation and sufficient space in which to properly develop its growth. Every fall a good top dressing should be given and dug in the following spring. The *Desmodium* can be readily increased by cuttings of the half-ripened wood. It will not bear being disturbed for transplanting.

Forsithia.—Is the *Forsithia* a hardy shrub? What soil is best adapted to it?

The dark leaved *Forsithia*, also popularly known as Golden Bell, is a very beautiful, hardy, ornamental shrub. It attains a height of from four to six feet by as much in breadth. The leaves appear after the flowers, and are retained until the late autumn months. The pendulous, bell-shaped, bright yellow flowers are produced in clusters, or tufts of two or three on all parts of the rod-like branches, and in the greatest profusion about the last of April or the first of May. *Forsithia* does best when given a deep, well enriched loamy soil. It will not bear neglect for any length of time, grass or weeds should not be permitted to grow around it. It is also well to give it a good top dressing of stable manure occasionally, and this if possible should be dug in early the ensuing spring. Never trim the Golden Bell in the fall, but pinch back the shoots in the spring when they show a tendency to grow out of place.

Weigela Rosea.—Does the *Weigela Rosea* require a rich soil?

It will grow in almost any soil, but a good, rich soil greatly intensifies the beauty of the blossoms. It is a most showy shrub, making rapid growth early in the season, coming into full bloom in June.

Transplanting Magnolias.—How early can the *Magnolia* be safely transplanted?

In the spring, just as early as the ground can be dug; lift carefully, so that all the small, fibrous roots are preserved; protect them against sun and wind, and move with as little delay as possible. *Magnolias* require a dry, warm, and rich soil.

Hibiscus Sunset.—Is the *Hibiscus* a plant that will bloom late in the fall?

The *Hibiscus* will bloom late in the fall as well as all through the summer, in fact, until severe frosts come. It is a shrubby perennial which blooms in two months from seed; and bears large mallow-like flowers from six to eight inches across, of a rich cream color with a velvety maroon center. The plant usually bears from ten to fifteen flowers at a time.

CHAPTER VII.

Ferns and Palms.

"New measures sung to tunes divine;
But none, O palm, should equal mine!"
Bayard Taylor.

Filafera Palm.—Does the Filafera Palm require much sun?

This palm does not like strong sunlight. Partial shade, sweet soil and good drainage will usually give fine growth. This palm is easily propagated from seeds, which germinate in from three to six weeks. The first leaves are long, unparted and slender, and do not show filaments or threads along the margin. The second leaves are the true, cut leaves. This palm is known as the *Brahea filamentosa*, or *Washingtonia filifera*.

Yellow Foliage on Palms.—What does yellow foliage on palms indicate?

Yellow foliage on palms indicates that the plants are either starved at the roots and need feeding, or that the foliage through exposure to sun and wind, has become, comparatively speaking, dried out, and unless a stimulant is given to the roots and likewise to the leaves, the plants will ultimately become stunted; and instead of being ornamental and useful, they will become an eyesore. If the plants be in this condition, and yet in fair good condition at the root, watering twice a week with liquid cow or sheep manure, and syringing the foliage twice or three times a week with water in which a little ammonia has been mixed, should rapidly bring back a healthy green color to the plants. About a dozen drops of spirits of ammonia to a four-gallon can of water will soften the water, and materially aid toward feeding the foliage. This is recommended by American Gardening.

The Tree Fern.—How is the Tree Fern propagated, and how should it be cared for?

The Tree Fern (*Acacia lophantha*) starts readily from seeds and requires only ordinary care. It grows about two feet in height with dainty little paint-brush-like bloom.

Scale on Palm.—Is it possible to destroy scale on palms?

It is difficult to find a remedy that will kill scale on palms, without at the same time injuring the plant itself. Kerosene emulsion is an excellent aid. At the same time remember the scale has to be removed by hand. The best plan is to first wash the affected parts with the insecticide then go over the leaf with a bit of wood which has been reduced to a thin edge and made smooth, dislodging all the scales; then wash again. This is the only possible way to clean a palm that is badly affected.

An Aesthetic Palm.—What Palm of easy culture may be called most decorative?

For an æsthetic-looking pot plant we recommend a graceful palm, *Kentia australis*. The *Kentia* flourishes like a green bay tree. The only care required is to sponge the leaves about once a week, and water it when dry. It must not be dried out, but neither must it be soddened. It looks wonderfully handsome standing in a bowl-like pot of red Japanese ware. The ordinary flower-pot is plunged inside this, when an ordinary pot stands inside a glazed one, there is no danger of any "muss" from watering. Only, don't let water stand in the outer pot.

Rustic Fern Tray.—What is the easiest way of making a rustic fern tray, and what varieties of ferns are most desirable for that use?

A very neat and inexpensive tray can be made of boards, and covered with the bark of trees or split branches. The box can be of any size, most convenient to fit the recess of a window. Three feet by fifteen inches, and eight inches deep, are good dimensions. The box should be lined with sheet lead, zinc, or tin, painted; at one end a small pipe, of about two inches in length, should be firmly soldered into the lining. This may be stopped by an ordinary bottle-cork, or what is better, have a small tap or stopcock attached, to draw off the superfluous water. The bottom of the tray should be covered, to a depth of an inch or an inch and a half, with coarse gravel or pieces of broken flower-pots, to effect perfect drainage. The remaining space is then filled with dark soil from the woods, such as is found among rocks. Where this is not obtainable, a mixture of loam, sand and a small portion of decayed manure may be used. In digging up the plants, small specimens are to be preferred, as with these the roots are less liable to be injured, as is almost unavoidable with large ones. A damp or cloudy day should be chosen, and the roots covered with soil at once. When planted in the box, all decayed matter should be removed, and the roots placed in their natural position; fine soil should be drawn around them, firmly pressed, and covered but little deeper than the plant stood in the woods. When all are planted, give a good watering with a fine rose, and apply no more water till the soil becomes dry. Some of the ferns most desirable for this use of the evergreen species are *Polypodium vulgare* and *Aspidium acrostichoides*; then there are the delicate Maiden-hair, *Adiantum pedatum*, and the Bladder Fern, *Cystopteris fragilis*, the Sensitive Fern, *Onoclea sensibilis*, and many excellent kinds of *Aspidium*, *Asplenium*, *Woodsia*, *Dicksonia* and *Botrychium*. To protect the Ferns from the dust arising in sweeping, which is especially injurious to plants, a light, cheap wire frame may be constructed, to stand over the box, which should be covered with a cloth or newspaper when the room is being swept, and when the doors and windows are open during freezing weather. The box

should be so arranged that it may occasionally, during mild weather, be taken out-of-doors, and the plants washed off with water sprayed through a fine rose. This will remove the dust from the leaves, and prove exceedingly beneficial to the general condition of the plants.

Palms.—Should a novice attempt to grow Palms from the seed, and what soil is best suited to these plants?

You can grow them from seed, but as the young plants can be purchased of seedsmen at very moderate prices, it is hardly worth while to try to raise them. Window Palms can be bought for 25 cents, and large sizes for 50 cents and \$1.00, and it is usually better to buy the larger ones. Young plants, of most varieties, are best grown in rather peaty soil, well mixed with sand. As they increase in size and it becomes desirable to retard their growth, substitute sandy loam with but very little peat or leaf-mould mixed through it. In this kind of soil they grow slower, at the same time maintaining their healthy, green appearance. They should have a regular but not excessive supply of water, though in summer it may be quite liberal. It is a good plan to syringe or spray the leaves daily, particularly in winter, if they are in a room with dry furnace heat.

The Sword Fern.—What is the nature of the growth of the Sword Fern?

The Sword Fern (*Nephrolepis exaltata*) forms a fine mass of more or less upright fronds that will sometimes attain a length of three to four feet, and as this beautiful species has a habit of sending out runners somewhat in the same manner as a strawberry, it is comparatively easy to increase it by this means.

Re-potting Palms.—When should palms for summer decoration be re-potted?

January is the time to re-pot palms for the summer. They then have time to make vigorous growth before being exposed.

Germinating Palm Seeds.—What is the surest method of germinating palm seeds?

A bed of sphagnum moss and fine sand in equal parts. Then, if possible, give bottom heat.

Hardening Palms.—When is it safe to take palms outdoors?

They may be taken out quite early in the summer, but they ought to be thoroughly hardened for weeks beforehand by careful ventilation at night.

North Window Palm.—Name a desirable palm for a north window.

The *Seaforthia* is one of the best palms for house-culture. Its special beauty is the long, graceful, divided leaf. It endures the dry air of the house and a north window gives it just the right light.

Maidenhair Fern.—How can one successfully transplant the Maidenhair Fern?

In taking it up from its native heath, the woods, preserve the roots and the half-decayed matter that clings to them. It requires a soil of leaf-mould and a little sand, and it should be kept in the shade at least a part of the time, that is where the sun cannot strike it continually. Don't apply much water to the foliage.

Varieties of Palms.—Please name some of the most popular varieties of the Palm.

Grevillea Robusta (The Silk Oak.) A magnificent plant for decorative purposes, of easy growth, finely cut foliage, rivaling a rare fern. The young growths are a light bronze color, the tips being covered with a soft down closely resembling raw silk, hence the name of "Silk Oak." *Latania Borbonica*. (Fan Palm.) The typical Palm and recognized as being indispensable in every collection. *Areca Lutescens*. (The Ostrich Feather Palm.) One of the grandest and most useful Palms in cultivation, full of grace and beauty. *Dracena Indivisa*. (The Fountain Plant.) This plant is unsurpassed for hardness in the house and eminently fitted to contrast with palms and other decorative plants. *Kentia Belmoreana*. (The Curly Palm.) The finest, perhaps, of all Palms for house culture, and very beautiful in form. *Cyperus Alternifolius*. (The Umbrella Palm.) Styled "The Umbrella Palm" as the leaves radiate from the stem and curve downward in graceful fashion. *Livistonia Rotundifolia*. One of the prettiest Palms in cultivation. The foliage, which is similar to *Latania Borbonica*, but smaller, is gracefully recurved so as to form almost

perfectly round plants. *Seaforthia Elegans*. This is the beautiful "Feather Palm" of Queensland, where it is one of the most conspicuous and stately objects in the landscape, growing as it does to a height of 70 to 80 feet. The pinnate leaves are a lovely soft light green and most gracefully arched. *Cocos Weddellana*. This beautiful Palm is unquestionably one of the most elegant and graceful in cultivation. The finely cut leaves are recurved with exquisite grace. *Aracaria Excelsa*. (Norfolk Island Pine.) Deep green, feathery foliage, arranged in whorls, rising one above the other at regular distances; its symmetry of form, grace and beauty of foliage are unequalled in the vegetable kingdom. *Phoenix rupicola*. A beautiful plant for decorative purposes. The leaves are mostly pinnate, beautifully arched and well furnished to the surface of the pot. This makes a very attractive plant for the window, never growing to a large size.

House Culture of Palms.—What are the conditions necessary for the successful culture of Palms in the house?

A recent writer has answered this question very well by saying that as a rule the culture of palms in the ordinary living room is far from satisfactory. The larger proportion are stove plants and require a considerable amount of heat and moisture; good drainage is indispensable. Authorities recommend equal proportions of loam, vegetable mould, peat and sand as a compost. Yellow loam and plenty of sand and some charcoal intermixed makes a good soil; they require heat, but not sun. As a fertilizer, use manure water made of cow manure and soot. Thorough drainage and a liberal supply of water are essentials to success.

Potting Palms.—How should palms be potted? Do they require much water?

The tendency of Palm roots is to run down; for this reason they need a rather deep pot with plenty of charcoal in the bottom for drainage. After potting they should be watered only when the surface has a dry appearance; do not allow water to remain in the saucers as it is liable to bring disease. Palms require a good light but not strong sunlight.

Ferns for House Culture.—Name ferns adapted to house culture.

Nephrolepis davalloides, *Aspidium angulare proliferum*, *Pteris cretica*, *Aspidium capense*, *Pteris serrulata*, *Platynerium aleicorne*, *Aspidium falcatum* and *Nephrodium molle*.

Hartford Fern.—Is the Hartford Fern a climber?

The Hartford Fern (*Lygodium palmatum*) is a climbing fern and one of the most graceful species. It is native to New England. From a running root-stock it sends up slender, twining stems with smooth, palmate leaves, like a miniature ivy.

Walking Fern.—Can the Walking Fern be transplanted successfully?

Transplanted in September and handled with care, the Walking Fern (*Camptosorus rhizophyllus*) may be successfully grown. It is quite an oddity with its heart-shaped leaves that gradually taper into a slender runner, which strikes root at the end and forms a new plant.

Cultivation of Maidenhair.—What are some essentials to the successful cultivation of this fern?

Maidenhair is one of the most delicate and graceful of ferns and one of the easiest to care for. Plenty of moisture and a shady situation are the essential requirements. Dust either outdoors or indoors is its worst enemy. It needs moisture, but not on the leaves.

Palms as House Plants.—Are palms difficult to cultivate as house plants? In what temperature do they flourish?

Palms are of easy culture, especially those known as *Brahea filamentosa*, *Latania borbonica* and *Phoenix reclinata*. They should be potted in a compost of rich, porous loam, with good drainage. Water freely in summer and keep in partial shade. In winter, keep the earth moist, but not wet. Palms should have a temperature ranging from forty-five to seventy-five; cool through the night. Re-pot the plants in the spring in pots two sizes larger than the ones they occupy. Sponge the foliage once a week and wash the pots occasionally to promote drainage. This simple treatment will generally be found satisfactory.

Starting Palm Seeds.—How should palm seeds be started?

The Palm seed should be fresh, as at best they are slow in starting, varying from three weeks to three months. They should be planted from one to three inches deep according to the size of the seed. The soil should be kept moist until the plants appear; it should be loose and porous.

Ferns for Cutting.—Name some kinds of ferns that can be raised for cutting?

The best kinds for cutting are *Adiantum farleyense*, *Adiantum cuneatum*, *Adiantum gracillimum*, *Adiantum decorum*, *Adiantum affine*, *Adiantum assinile*. Also some of the *Pteris*, the *Pteris tremula*, *Pteris serrulata* and *Pteris argyrea*.

CHAPTER VIII.

Insects and Diseases.

"The worm was punished, sir, for early rising!"

John G. Saxe.

Petunias and Red Spider.—Will the red spider trouble Petunias?

Petunias are very apt to be troubled with red spider. If the leaves begin to turn brown and die off, you may be pretty sure the spider is at work. Frequent sprinkling of the foliage will prevent the coming of the pest, the more to be dreaded as it is so insidious. It is a good plan to spray every day, if the plants are grown in a common sitting-room where the air is apt to be hot and dry, just the sort to suit the red spider, but death to the plants.

Kerosene Emulsion.—Give the recipe for making this useful remedy.

Kerosene, two parts. Slightly sour milk, one part. Churn together until the two liquids unite. When small quantities are prepared, use an egg beater. If a larger amount is desired, use a large brass syringe, which may be inserted in the liquid and used like a pump. Much agitation is needed to make the liquids unite. Use one part of the "butter" to twelve parts water. Spray the plants with this emulsion.

Garden Moles.—How can moles be kept out of flower beds?

To prevent moles from burrowing under the flower beds, excavate the bed to the depth of two feet, and board the sides, allowing the boards to extend three or four inches above the surface; then put in some porous material for draining, and fill with turfy loam, decayed manure and sand, well mixed. The bed will be all the better for this preparation, while the boards surrounding it will effectually prevent burrowing of moles.

Mildew on Flowers.—What is the white substance that sometimes appears on roses and other flowers, and how removed or prevented?

It is mildew. A good remedy is flowers of sulphur dusted over the plants when they are moist.

The Black Fly.—My Begonia drops its leaves prematurely. What ails it?

It is probable that the small black fly is getting in its work. It deposits its eggs in the soil and from these are developed the worms that injure the roots of the plant. Use lime water, and take a lump of fresh lime as large as a teacup to a pail of water, to make it. Apply the clear water, thoroughly saturating the soil of the pot.

Red Spider on Fuchsias.—Are Fuchsias subject to red spider?

Fuchsias are often troubled with red spider. Wash the leaves thoroughly with soap-suds, and as thoroughly rinse with cold water. Do this twice a week until the pest is eradicated. When plants are badly "spidered," the best way is to strip off the leaves and burn them, and depend upon new growth to clothe the naked plants.

Plant Lice.—What will kill plant lice?

Wood ashes sprinkled on before a rain, or watering the plant with a tea made of wood ashes or soot.

Wood-lice.—How can wood-lice be destroyed?

By vigorous use of an old toothbrush dipped in either strong soap-suds, kerosene or alcohol.

The Mealy Bug.—Name some remedies for the mealy bug.

The best remedy we know is a mixture of strong soap-suds and soot, applied with an old tooth-brush. The mealy bugs gets into all the small cracks of the bark, so that sprinkling or using the syringe will not be effective. Soap-suds with a little sulphur will sometimes do the work. Kerosene may be used successfully. Alcohol diluted will be sure death. Powdered white hellebore is used sometimes with good success.

Scale on Ivy.—How can scale be removed from ivy?

Scraping with a knife is the only sure way. Treatment of any other kind is useless, yet care must be taken to not injure the bark of the plant.

Aster-Worms.—What will destroy Aster-worms?

Nothing has been discovered as yet that will destroy the real Aster-worm. The plant should be carefully watched, and stalks showing worms at once removed.

Red Spider.—What will prevent the coming of the red spider?

Place a quart bowl of boiling water on the table among the plants every morning. The steam acts as a preventive.

Green Fly.—What will exterminate green fly? How should tobacco be used?

Tobacco in some form. Make a strong solution by soaking tobacco stems in water, and syringe the plants thoroughly. Another way is to burn the tobacco stems, allowing the smoke to circulate among the leaves. Repeat the dose several times; it will surely do the work if used carefully and with a fair amount of patience.

Bulbs Rotting.—Am troubled with bulbs rotting. How can I prevent it?

Bulbs may become infected by various diseases, and some forms will remain in the ground for several years, attacking all the bulbs that may be planted in it, but the most frequent cause of rot is want of drainage. In deep, light, and well-drained soil there is little danger of bulbs rotting.

Earth-Worms.—How may earth-worms be removed from the soil in which plants are grown?

In many ways. Small bits of camphor dug in the earth among the roots will kill them. A turnip cut in small bits and left on the surface of the soil at night will attract the worms to the surface, where it is easy to kill them. To sprinkle wood ashes over the surface of the soil will destroy them. Another exceedingly good preparation is carbonate of ammonia, one ounce to a gallon of water.

Rose-Bugs.—What will conquer the rose-bug?

Patient picking off by hand is the surest way of conquering the rose-bug. Air-slacked lime on the bushes before a shower will sometimes prevent their coming. A strong tea of quassia-bark will sometimes destroy them. One always safe remedy is warm soap-suds, after using which the foliage should be carefully sprayed with clear warm water.

Rose Slugs.—What can you recommend to destroy these pests of the rose bushes? Give several remedies.

Sprinkle the plant with a liquid prepared as follows: To three gallons of water add one-fourth of an ounce of Paris green and one-fourth of an ounce of quicklime. Stir briskly, and apply while in motion. This material may be applied upon any plants troubled with enemies which eat the leaves or flowers.

Whale-oil soap, one pound to eight gallons of water, and applied with a syringe for several days in succession. A strong suds made of soft soap is also good. Dusting the plants with powdered lime, Persian powder or sulphur is effective. A solution of carbonate of ammonia is perhaps one of the best remedies. Yet we would add one more, the best of all, wood ashes sifted on when the leaves are damp.

Paraffine Oil for Lice.—How should Paraffine oil be used to destroy lice?

The oil should be diluted in the proportion of a half pint of oil to a gallon of water. This should be used on plants troubled with lice as often as twice a week.

Wire-Worms.—How can I rid plant jars of wire-worms?

Salt, either dry or in diluted solution will prove very effective.

Preventing Insect Pests.—Can trouble with insects be averted?

It is sometimes possible to keep off troublesome insects by the systematic use of tobacco tea, using the tea as often as once in two weeks.

Cold Water Injurious.—Does cold water injure plants to which it is applied?

Possibly. The water should be of about the temperature of the room where the plants are, although good authorities claim that water at 40° may be used when temperature is 80°. It is, however, likely that cold water has a tendency to check growth of tender roots.

Insects on Rubber Plant.—Brown and black spots appear on my rubber plant. What causes them?

They may come from an insect. Examine for the red spider. If found, shower the plant freely every day. See that the roots have ample pot room.

Yellow Geranium Leaves.—What is the cause of and remedy for geranium leaves turning yellow?

Defective drainage or poor soil will cause the geranium leaves to turn yellow, curl up and fall off. The plant should be re-potted in loam, leaf-mould and sand.

Thrips.—What is the best way of destroying thrips? How would you use the tobacco remedy?

We consider tobacco the surest remedy, and fumigating the best way of administering it. Where this cannot conveniently be done, the syringe may be used with good results. When using the liquid tobacco for thrips it is well to add soap enough to make a strong suds; this rarely fails to finish the pests. With small plants in pots it is sometimes easier and surer to use your tobacco and soap-suds with a sponge, taking each leaf gently enough to not disturb the thrip, which will be found on the under side of the leaf, and wiping it carefully and yet firmly enough to kill every one.

Lime Water.—Is there any danger of using too much lime water in treating insects?

No, as only a certain quantity of the element which causes death to the insect can be held in suspension, and this quantity is not sufficient to cause injury to the plants.

The Aphis.—Is tobacco the only remedy for the aphis?

No. There are many ways of getting rid of the aphis or green fly. Laurel leaves thoroughly bruised and placed on the soil under the plant, the plant then being covered for a few hours, will usually kill the aphis. Quassia tea will also destroy it. Two ounces of quassia chips steeped in a gallon of hot water makes the tea in which to dip the plant. Carbolic soap-suds at a temperature of about 120 degrees is another good remedy. The plants after being dipped in the carbolic soap-suds should be carefully dipped into clean water, thoroughly washing the leaves. Clear hot water will also kill the aphis if used at a temperature as high as 150 degrees.

Lice on Roses.—What will keep lice off roses?

To keep lice off your roses, fumigate them at least twice a week by burning tobacco stems. Syringing them daily will to a great extent prevent the coming of lice. Another method is to take a large pail or tub, fill it with water that is warm to the touch, not scalding, just so you can hold your hand in; and turn the roses top down and hold the entire plant in the water for three or four minutes; take it out for a few minutes, then repeat the bath, and you will find the lice all gone. After a few days repeat the process to kill what may have hatched since the first bath. Many house plants will amply repay one for this simple treatment, by more thrifty growth, aside from the benefit of getting rid of insect life.

The Scale.—Will white hellebore destroy the scale?

White hellebore and soap-suds will destroy the scale. Persian insecticide and many of the solutions used for aphis will also be effective with the scale.

Red Ants.—How can red ants be exterminated?

Various remedies are popularly supposed to be effective for getting rid of them, among which are mentioned chalk lines, i. e., lines made with white chalk upon the floor or shelves, or around boxes. These, it is asserted, will stop their progress, as they will not cross them. Another is the free use of powdered cinnamon in the cupboards and closets and on the edge of the boxes. For this purpose, it would be best to get the cinnamon bark and have it ground, as that sold in the shops is undoubtedly very much adulterated. Brushing the floors and shelves with a solution of carbolic acid is recommended, and where there are no children, and care is exercised in the use of it, corrosive sublimate may be used, either in the solution or in a powdered form. Still another remedy, which a housekeeper of some years experience used with entire success, was kerosene, used freely in the cracks in the floor and on the shelves. Benzine would probably be equally successful. But first, and most necessary of all, is to do away with the source of attraction to them. Shelves and floors, and all of their resorts, must be made scrupulously clean.

Grubs in Pots.—Is there any sure way of destroying grubs?

The only safe and sure way of removing grubs is to turn the plant out of the pot and find the grub. Almost anything powerful enough to kill the grub will also kill the plant.

Tobacco Tea.—What is the best way of making tobacco tea?

Simply take a handful of tobacco stems and steep them by pouring boiling water over them until it looks like strong tea. When it is cool pour it over the plants.

Heliotrope Turning Brown.—What is the cause of the heliotrope sometimes turning brown?

Either from lack of water or lack of root room. It is difficult for the water to percolate through the very fine roots of this plant.

White Worms.—What will destroy white worms?

Camphor. One teaspoon of liquid camphor in a pint of water. This will destroy instantly, but should be repeated occasionally. Camphor water not only destroys the insects but acts as a stimulant to many plants, such as geraniums, lilies, roses, cacti, begonias, and many others. Lime-water is another good remedy; a tablespoonful twice a week.

Insects on Chrysanthemums.—Please give remedies for black aphides and thrips which infest chrysanthemums and other plants.

The chrysanthemum, although more exempt from insect enemies than almost any other genus of plants, becomes sometimes infested with black aphides, which may be easily removed by fumigation in the house, or by sprinkling the plants with tobacco dust, if outdoors. The white and black thrips are also troublesome occasionally, but yield to the same treatment and plenty of water.

Angle-Worms.—How may the angle-worm be destroyed?

A few applications of lime-water will generally destroy the angle-worm.

Ants.—What will drive ants away from flower beds?

Scatter powdered borax among the flower beds troubled with ants.

CHAPTER IX.

Miscellaneous Queries.

"Your voiceless lips, O flowers! are living preachers,
Each cup a pulpit, every leaf a book,
Supplying to my fancy numerous teachers,
From loneliest hook."

Horace Smith.

Scarlet Sage.—What is the best way of growing the Scarlet Sage?

The Scarlet Sage, or *Salvia splendens*, may be grown from cuttings or from seed, the latter method being the better. The seed should be sown very early in the spring and transplanted into small pots, and again in May into open ground. It is a rank grower, and should be pinched back in its early growth to form compact plants. It requires a deep, rich soil and plenty of water. The flowers come in the early fall and continue till frost comes, and are exceedingly beautiful.

The Godetia.—When should the seed of the *Godetia* be sown, and what are its requirements?

The seed should be sown early in the spring in hot-beds or in the house. In transplanting they should not be crowded, as the sun needs to get at the soil around the roots to produce flowers. They are very showy, with a profusion of rosy-lilac blossoms. When grown in the house the seed should be sown in autumn. They require a mellow, light soil.

Castor Beans.—What are the best varieties of Castor Beans for bedding?

R. Borboniensis *Arboreus*, (*Giganteus*), immense green foliage; *Sanguineus*, a distinct variety with beautiful brownish-red foliage and bright seed pods, and is very effective; *Cambodgensis*, large palm-like leaves of the darkest bronzy maroon; stalk and stem nearly black.

Balsams.—How soon after planting seed will Balsams be large enough to transplant?

In about six or eight weeks they should be sufficiently large for transplanting.

Panacratium.—Is the *Panacratium* suitable for a window garden?

We cannot recommend the *Panacratium* for the window. It belongs to the southern states, and when brought north thrives better with hot-house care. It can be grown in a dwelling house, but requires the most watchful care and very even temperature.

The Antirrhinum.—Will the *Antirrhinum* bloom the first summer?

It will not only bloom well the first summer but often so profusely as to weaken the plant. By using a little care and cutting off some of the flower stalks the growth will be more vigorous, and they will sometimes blossom three seasons in succession. Still it is usually better to raise new plants every other year. They require a light covering to protect them from the severity of the winter.

The Flame Flower.—What soil is required for the Flame flower, and is it hardy?

The Flame flower will grow in any well-drained soil, the deeper and richer the better. They are not entirely hardy, and to be on the safe side their roots should either be taken up before severe frosts occur or else covered with leaves or light mulching material.

Nicotiana Affinis.—Tell the nature and requirements of *Nicotiana affinis*.

It grows most easily from seed. Its growth is most luxuriant, a single plant sometimes holding sixty flowers at a time. The flowers are pure white and they give out at evening a most delightful fragrance. When grown outdoors the seeds sow themselves. When potted the plant after flowering should be cut down and allowed to rest, after which resume watering, and new growth will quickly come.

Delphiniums.—Are Delphiniums hardy, and how should they be started and cared for?

Delphiniums are hardy herbaceous plants. The seed should be sown in midsummer and protected by a frame or heavy covering of leaves in the winter. The flowers come early in the season and after flowering the plants may be cut back, after which they will make new growth and flower freely in the autumn.

Winter-blooming Plants.—Please name a select list of winter-blooming plants, with brief references as to culture.

Among the best winter-bloomers are the following: *Bouvardias*.—Pot them in August or early September and get them well rooted before cold weather. They are very tender. Handle carefully. *Gloxinias*.—Lift the bulbs in October and store them in boxes of earth or sand. They require three or four months' solid rest. *Poinsettias*.—These should not be planted out in summer, as they lift poorly. Keep them dry after finishing blooming. They require warmth and water. *Cinerarias*.—Seedlings should be re-potted before they get pot-bound. Old plants should be broken up and each sprout treated as a separate plant. Give plenty of water. *Calceolarias*.—Treat similar to *Cinerarias*, and if seedlings be very careful about keeping them cool and clean. *Chinese Primroses*.—Grow them in a cool, lightly-shaded cold frame; do not let them get dry; re-pot them when they need it. *Callas*.—Get them well-rooted before cold weather comes. They need a rich, turfy soil and plenty of water. *Nasturtiums*.—Grow young plants from seeds or cuttings, in pots out-of-doors. They are long bloomers and fine window plants. *Violets*.—Confine the plants to nice crowns by cutting off the runners. Choose young plants.

Heliotropes.—Lift and pot old plants early and they will bloom in spring. Late potted plants may bloom well but cannot be relied on. *Carnations*.—

If flower shoots have been pinched off during early summer, by August they should be quite stocky. Do not pot them until September. People who do not have greenhouses—nothing but their windows to depend on for their winter blossoms—had better begin to lift and pot their plants early, in order to have them well rooted and established in the pots while the weather is warm and favorable. Such plants bloom better and sooner than poorly rooted ones. See to it that all plants are properly cleaned and free from mealy bugs, red spider, and scale. These insects increase immensely on indoor plants. Have soil and clean pots ready, and as soon as you pot a plant, if it needs it, stake and tie it.

Mignonette.—Can Mignonette be successfully grown in the house?

One very easy way of growing Mignonette in the house is to simply scatter seed on the top of the soil of your potted *Geraniums*. Pots that are in partial shade will give a rank growth of leaves and flowers. Sweet Alyssum and Candytuft can be grown in the same way, only that they require more sun.

Dwarf Convolvulus.—Are the flowers of the Dwarf convolvulus as large as those of the ordinary morning glory? What soil does it require?

They are not as large, though of the same shape and colors. The dwarf convolvulus is a beautiful bedding plant, very easy to cultivate. The seed should be sown in deep, rich soil as early in the spring as the ground can be worked, and covered about an inch deep. It is also a beautiful flower for use in hanging baskets.

Classification of Pansies.—What are the general divisions of pansies?

They are generally divided into self-colored, of an even shade of color. Three-spotted, or face pansies, a distinct face in the center; five-spotted, or odier pansies, a dark spot on each petal; edged, or bordered pansies, with a distinct border around each petal; and fancy pansies. Show pansies must have special merits for exhibition purposes.

Sowing Pansies.—When should Pansy seed be sown?

The best answer to this is given by James Sheehan, as follows: "The general custom is to sow pansy seed in the fall, but we are in favor of spring sowing. We have tried sowing seed at both seasons, and find that plants grown from spring-sown seed bloom more freely throughout the hot months of summer, while plants raised by fall sowing become exhausted, and ceased flowering much sooner. Seed sown in March, in light, rich soil, will make fine blooming plants the same season. Pansies are hardy, if they have good protection with a litter of leaves or straw, or any light covering, which should be removed very early in the spring, or as soon as danger of heavy frosts is over. Plants remaining in ground through the winter, if proper care is given them, will bloom very early in the spring, as soon as the frost is out of the ground. We have even seen the frail blossoms peeping up through the snow, but the plants become exhausted and cease flowering before midsummer. It is possible to have them bloom throughout the entire winter by taking up old plants from the open ground in October, and carefully planting them in a tight, cold frame in a sheltered location, covering the frame with glazed sash. This is often done by florists whose trade demands the flowers at that season of the year, and especially early in spring. Treated thus, they flower abundantly. The same can be done with violets. Pansies require a partial shade and a good, rich, loamy soil, and an occasional watering through the dry season will help them."

Coleus.—Can Coleus be grown quickly from seeds?

Coleus are easily grown from seeds and will come with great variety in the foliage. They are most desirable for decorative beds cut in lawns. They can be kept trimmed so as to produce most beautiful effects.

Primula Obconica.—Is the Primrose, *Primula obconica*, a free bloomer?

The *Primula obconica* is one of the loveliest of all Primroses. A very free bloomer, having as many as ten flower scapes at a time. The flowers are white, faintly tinged with lilac, and have the true primrose fragrance.

Fuchsia Procumbens.—Is the Fuchsia procumbens of trailing growth?

The Fuchsia procumbens is of slender, trailing habit. A beautiful plant for brackets or hanging baskets. The flowers are small but a bright red.

Canterbury Bells.—Do Canterbury Bells require any unusual soil?

No; they are among the old-fashioned garden favorites and require only ordinary conditions and care.

Care of Geraniums.—How should Geraniums be treated to secure winter blooming, and what fertilizer would you recommend?

Geranium plants that have flowered during the summer should not be expected to continue to bloom equally well in the winter. They should be specially grown during summer, and the best specimens should be selected for the purpose. In potting, says Mr. Chas. E. Parnell, select porous or soft-baked pots, proportionate to the size of the plant, and place in the bottom of each at least an inch of broken pots to insure a perfect drainage. Keep the plants in the center of the pots, and firm the soil well around their roots. When the plants are potted, water thoroughly, and place in a shady situation for a week or ten days, after which they should be exposed to the sun. Have them well supplied with water, and remove all flower buds until it is time to bring them inside, which will be on the approach of cool weather. Give them a light, sunny situation, and an average temperature of 55 degrees. Do not crowd the plants, and turn them occasionally, so as to develop an even, symmetrical shape. When large specimens are desired the plants should be re-potted as often as the pots become filled with roots, or until they have reached the desired size, when they can be treated as above advised.

The most suitable compost for Geraniums is a mixture of two-thirds well-rotted sods from an old pasture; one-third well-decayed manure, and a fair sprinkling of bone-dust, thoroughly mixed and pulverized before using. Water should be given as often as necessary, care being taken to give an ample supply, and when the pots become filled with roots, liquid manure water should be given twice a week. One ounce of guano, dissolved in two gallons of water, will be a proper proportion for this purpose.

Carnations.—Are there any varieties of Carnations that will bloom the first summer from seed?

The *Guillaud carnation*] and the *Mad. Guillaud*.

Carnations for Winter.—What must be done to prepare Carnations for winter bloom?

When only a few inches high the pruning of the plants should begin to produce side shoots and an abundance of buds. They should be kept moderately moist and watered occasionally with liquid manure. During the winter they require an even temperature of about 40 degrees to produce the most perfect blossoms.

Azaleas in Summer.—What care does the *Azalea* require during the summer?

The plant should be placed outdoors in an airy, partially shady place. If the pots are filled with roots, or root-bound as we often say, the plant should be given a large pot with rich soil and plenty of drainage. *Azaleas* suffer greatly from over-watering, yet excessive dryness will do quite as much harm.

Umbrella Plant.—What soil does the umbrella plant require?

The *Umbrella* plant will grow in almost any kind of soil if it is kept damp. The whole secret is moisture, without flooding the plant.

The Godetia.—What is the best exposure for the *Godetia*.

The *Godetia* will endure almost any exposure, although its delicate, almost transparent petals thrives best in a sheltered, partially shaded situation.

Orchids.—Name some varieties of Orchids for house culture.

The *Cypripedium pubiflorum*, *C. adnatum*, *C. spectabile*, *C. pubescens* are the most desirable for house culture.

The Lantana.—Will the *Lantana* do as well in pots as bedded out?

Almost as well. The *Lantana* has been most generally used as an outdoor plant for summer blooming, but carefully potted and freely watered it makes a beautiful plant for a window garden; especially one variety called the *Don Calmet*.

Salpiglossis.—When should the seed of the *Salpiglossis* be sown, and are the plants hardy?

Seeds should not be sown in the open ground before the latter part of May or first of June. They will do best in light, warm soils. They do not bloom until late in summer, and show best when arranged in clumps of from three to five plants. Seed should be sown in shallow pans, in light, rich soil mixture of equal parts of peat, loam and leaf-mold, or peat may be omitted. The plants are not entirely hardy.

Camellias.—When should *Camellias* be started for winter blooming?

James Sheehan says in "Your Plants": "*Camellias* bloom in the winter, and at no other season of the year. Plants should be purchased of the florist in the fall or early in winter, and such plants as have flower-buds already formed; those plants, if kept in the right atmosphere, will bloom profusely, but they must have an atmosphere of 50 degrees until the buds are all expanded, after which there will be no danger of the flowers blasting. As soon as the bloom has all passed off, the plants should be taken from their cool quarters, and placed with the other plants in a warm temperature, and watered freely, to encourage a vigorous growth previous to removing them out-of-doors in the spring. As soon as all danger of heavy frosts is over in the spring, the plants should be taken from the house and removed to some shady location, under a grape-arbor, in a pit or frame covered with shades; here leave them standing in the pots, 'plunging' the pots in earth or sand to prevent too rapid drying out. The summer is the period in which the flower-buds are formed that bloom in winter; the plants should be kept growing, and watered freely throughout the summer. They must be left out-of-doors as long as the weather will permit, but, on the approach of frost, take the plants into the house, and let them stand in a cool room, where the temperature is not over 50 degrees. This is the critical time, for if they are removed into a warm temperature of 70 or 80 degrees the buds will all blast and drop-off, and no flowers will be produced. If the plants are large and well-budded, a succession of bloom will be yielded throughout the entire winter."

The Cactus.—Will you give some hints on the cultivation of the Cactus?

It is a very difficult matter for the amateur florist to grow the Cactus from seed. It is quite as hard as it is to kill the plant after it is once well grown. In purchasing these plants ascertain if possible their native home, and then try to make the conditions surrounding them as nearly similar as possible to those of their habitat. Study their habits and apply common-sense methods in their care. Sandy soil is not absolutely necessary for cacti. A mixture of other soils often proves advantageous. It should be porous and easily drained. Loam, leaf-mould or common garden soil mixed with sand will often make finer plants. During winter keep the soil as dry as possible and give plenty of light and air; little heat and sunshine. When growth begins in spring, increase the moisture and give full sunlight and keep plants growing rapidly. Do not fertilize too heavily; a weak liquid fertilizer is sufficient. Avoid exposing the plants to the protracted and fierce rays of the sun if grown in small pots of sandy soil. In setting the pot in the ground, excavate a hole for it and put in a layer of coal ashes and cinders. Set the pot on those and fill in around it with soil.

Ten-week Stock.—Is Ten-week Stock a good winter bloomer?

It is if you grow the plant intended for winter use, in pots, through the season. Sow the seed in pots, and allow half a dozen or so plants to grow in each pot until they bloom. A large proportion of them will be single; pull these up, and keep the others growing through the summer, not permitting them to bloom much. Pinch in frequently to insure stocky growth. Never allow seed to form if flowers are wanted. The greatest enemy to this plant in the house is the red spider. As a preventive, apply water to under side of foliage every day.

Ivy-leaved Geraniums.—What soil should be used in potting Ivy-leaved Geraniums?

A good, rich garden soil, with a small quantity of lime. Liquid manure about once a month is the best fertilizer for the ivy-leaved geranium. Cuttings should be planted late in August. They grow very rapidly and require frequent re-potting.

Propagation of Fuchsias.—Are Fuchsias easily propagated?

James Sheehan says: "They are easily propagated, either from cuttings or by layers, and the amount of bloom one strong, healthy plant is capable of producing under favorable circumstances, is truly wonderful. The right kind of soil has everything to do with success in growing fine fuchsias; it should be of a light, peaty quality, with one-third cow manure, and thoroughly mixed together until well decayed. They also relish an abundance of water; and if they have, while growing, an application of liquid manure once or twice a week, it will be beneficial; never allow the roots to become pot-bound, but when the roots begin to form a mat on the outside of the ball of earth, it is time to shift the plant into a pot of the next larger size, and so on as the plant requires it. This is a very important point, and should not be overlooked if strong, healthy plants are expected."

The Ageratum.—How can the Ageratum be best propagated, from cuttings or from the seed, and can they be grown under glass in winter successfully?

The Ageratum may be propagated from either cuttings or seeds, the latter being the best method of procuring the superior varieties. Yet it is not always easy to procure cuttings, and seed-propagation must be adopted. Seeds should be sown about the end of March, in a well-drained pot or pan filled with light, sandy soil. Sow them thinly, cover with a mere dusting of soil, and place in a warm, moist place close to the glass. So soon as the young plants are strong enough to handle, they should be transferred into shallow boxes filled with light, loamy soil, in rows an inch and a half apart each way. These young plants should be kept close and moist until they become well established and growth commences, when they are to be removed to a cooler and more airy situation until all danger of frost is over, when they can be planted outside.

Oxalis.—How should the Oxalis be potted?

The pots should be well-filled; as many as twelve bulbs in a six-inch pot. Leaf mould and sand suits them well. They grow readily and bloom steadily.

Nasturtiums.—Would you choose Nasturtiums for summer or for winter blooming?

Both. Enough can hardly be said in favor of Nasturtiums, the cheeriest, most generous of flowers. Try this plan: Purchase a large packet of mixed varieties; plant half the seed outside. They will soon begin to bloom, and will produce quantities of blossoms all summer, until killed by the frosts. About the middle of summer a few seeds, from the half packet, are planted in a pot, and sunk in the open border, and the vines trained on a fancy trellis fastened securely in the pot. This will be entirely covered with the beautiful foliage, and many blossoms will begin to appear, when it is time to take it in the house. A few seeds may be started in a pot of good garden soil at any time, and as they will begin to bloom about nine or ten weeks from the time of planting, you may plan to have a large pot of the blooming beauties, ready to present to an invalid, or friend, whenever you wish, during the winter. But late in the fall you will find many green seed pods, even if the blossoms have been picked before fading, many down back of the leaves, will form seeds before you notice them and just before the frost, the last blossoms may be allowed to "go to seed"; and you will be surprised to find what a quantity of these pods may be gathered from a few feet of trellis which has been covered with the vines all summer.

Azaleas.—Can Azaleas be well grown in the house?

There is no plant more easily cultivated, when once understood, than the Azalea. They bloom in the winter and must rest in some shady, cool spot during the entire summer. It is during this season of rest that they throw out the branches that give the luxuriant bloom of the winter. They need not be brought into the house until just before severe frosts; then given good care, and an atmosphere not far from or above 60 degrees, they will give constant pleasure for months.

Gladiolus, the First Season.—Will the Gladiolus blossom the first season?

Sometimes, but they cannot be depended upon to do so. Ordinarily, it takes a second year's culture of the bulb to produce good flowers.

Sweet Violets.—Will Sweet Violets blossom in the house?

Yes. Place them in pots early in the fall, but do not bring them in till cold weather really comes; then put them in a room where they can have sun but only stove or furnace heat enough to keep them from freezing. When ready to bloom, bring them into a warmer room, but keep them as far from the heat as possible. They must have water in abundance, both on soil and foliage.

Propagating Verbenas.—Is there any "best way" of propagating the Verbena?

A good way, which may not be the best, however, is as follows: At the close of the bedding season select the best in color, and place a handful of the runners in a shallow box, three or four inches deep, and throw over them a shovel of road sand. Water them and put them in the shady side of a cold frame or pit. Don't let them grow over the edge of the box from November until March. In March pinch off every terminal eye, cover with an inch or two of swamp moss mixed with a little bone-dust, say one-twentieth its bulk, and set the box in the sun. Then you will see them grow, and you will have all the plants you wish.

Shad Bush.—Will the ordinary Shad Bush bear transplanting?

The Shad Bush bears transplanting admirably. Few indigenous trees or shrubs repay one better for cultivation. The flowers become larger and more abundant, the general character of the plant is improved. The earlier in the spring the bushes are dug up the better and for one year after transplanting they should be severely pruned and kept from blossoming.

Wintering of Oleanders.—How should Oleanders be wintered?

Oleanders may be wintered in a light, cool cellar, giving them but little water. They should be transplanted in the spring and at this time, the long straggling branches should be cut back; they will soon throw out young shoots, forming handsome, bushy plants. Oleanders are apt to be troubled with a whitish scale. Frequent syringing will usually prevent its coming.

The Lemoine Gladiolus.—Can you tell me of a choice variety of hardy Gladiolus?

Yes. The Lemoine. This variety is some two or three weeks earlier than other varieties. In shape they somewhat resemble a beautiful orchid and yellow, white, brown, crimson, pink are blended together producing an effect seen in no other flowers. They are said to be hardy, but have not been tested many seasons through northern winters.

Pomegranate.—Can the Pomegranate be wintered outdoors?

No. The Pomegranate is only hardy in the south. In the north it must be kept in cellars and watered very sparingly. The plants are easily propagated either from roots or from cuttings. They require judicious pruning; large branches should be cut rather than the little twigs, as the little twigs bear the flowers.

Night-blooming Cereus.—How may the Night-blooming Cereus be made to blossom freely?

James Sheehan says: "These plants can be made to bloom freely by keeping the soil quite dry, and allowing them very little pot-room, as they depend more upon the atmosphere than the soil for their growth. We have known large plants of *cereus grandiflorus* to produce as many as twenty-five fine blossoms each in the course of a season. We have found that liquid manure, if applied to these plants about once a month, and when the soil about them is very dry, will work wonders in their growth, and when a rapid growth can be obtained, there will be no trouble in having an abundance of flowers at regular intervals. Care must be taken not to have the liquid too strong. A small quantity of brick dust, mixed with the soil in which they are growing, will be beneficial."

Reserve Beds.—What is the best plan for a reserve bed?

The plan of a kitchen garden; that is plant your seeds or roots in rows. All quick-growing, free-blooming flowers desirable for picking should be in a reserve bed. This kind of a bed usually makes a good place for plants that are weary with winter confinement—a place where they may grow without being forced.

Bluets.—How may Bluets be propagated?

Bluets are easily grown from seeds. The botanical name is *Houstonia cœrulea*.

Tecoma Mackenii.—Where does the *Tecoma Mackenii* come from, and what are its habits of growth?

It is a native of Caffraria in South Africa. It is a strikingly beautiful vine. One specimen of it is thus well described in Park's Floral Magazine: "It had formed a great sheaf of shoots ten feet through and fifteen feet high, and held hundreds of very large racemes of trumpet-shaped flowers quite three inches long and broad, colored bright rosy lilac, with a few darker pencillings and a blotch of yellow in the throat. The mass was a glorious picture."

Chrysanthemums in Pots.—Can Chrysanthemums be brought to as great perfection out-of-doors as when grown continuously in pots?

To obtain the best results in shape and color of flowers and the highest development in general, pot-growing of this plant is preferable. That well-known authority, John Thorpe, gives his plants the following treatment: Take the cuttings, or suckers, from the parent plant when they are three to four inches in length. About the first week in March the young plants are potted in three-inch pots in ordinary potting soil. As soon as required, they are re-potted into four-inch pots in soil to which about a fiftieth part of bone-dust is added. The next shift is into six-inch pots, well drained, and in soil composed of rich, turfy loam, with a good sprinkling of bone-dust. The plants are kept in the house until the first of May, "stopped" from time to time as required, and afterward plunged outside in an easterly exposure. They have to be kept carefully watered all the time, and given occasional soakings of guano water—one ounce of guano to three gallons of water being a good proportion. By the first of June all are potted into their blooming pots, stopping and tying the shoots as required. From the beginning of July until taken in the house in October, they have to be watered several times a day, every two or three hours sometimes; and this, although expensive, is absolutely necessary for the production of the best developed flowers. The last "stopping" is made the last week in July.

CHAPTER X.

Floral Hints.

"Fresh buds are these, of red, and pink, and gold,
Most delicately fringed, while fold on fold,
They grace the slender stem, and all day long,
Wave gently to the tune of glad bird-song."

Mt. Lebanon Cedar Boughs.

Dahlias love a moist atmosphere.
Moisture is sure death to red spider.
The best flowers make the best seeds.

Mignonette does not require much water.

Begonias like a moist shady place in summer.

A Tulip bed should be re-made every three years.

Nearly all ferns like a moist, cool atmosphere.

Small plants are best cleansed by dipping them.

Few plants will succeed in a hot, dry atmosphere.

Salt to slimy worms or snails is a terrible dressing.

Baking the earth in an oven will kill all insect life.

Place your Primroses in an east window if possible.

The Fuchsia likes partial shade and plenty of moisture.

Cacti will endure all the sun that may be given them.

Plants require water less frequently in hard-burned pots.

Do not water a plant till it needs it, then do it thoroughly.

Small pots tend to dwarf the growth of most plants.

Heliotropes should be established in pots before September.

Most ferns thrive better in partial shade than in sunlight.

The odor of the alder is very obnoxious to most insects.

Lifting plants should be done, if possible on cloudy days.

Hyacinths potted in September will bloom at Christmas time.

Carbonate of ammonia is a good preventive for most insects.

Take Coleus slips from as near the top of the plant as possible.

Do not try to root bulbs in a temperature under sixty degrees.

All Dutch bulbs and lilies must be protected through the winter.

In keeping plants in summer avoid exposure of the pots to the sun.

Hydrangeas may be fed with liquid manure until the flowers appear.

Cinerarias and Calceolarias love the light, but dislike direct sunshine.

A freshly potted plant will not stand stimulant, but a mass of roots will.

Deep trenching and liberal manuring is one secret of a good Rose bed.

Gloxinia seedlings raised in March will bloom in August or September.

Porous flower pots are better than glazed or hard-burned for general use.

When seed is not to be saved, plants should never be allowed to bear seed.

Heliotropes should never be allowed to become completely dry at the roots.

The best medicine for a sick plant is sunshine, charcoal and good drainage.

Orchids are essentially heat lovers; like Palms, they are children of the sun.

If shrubs are pruned too late in the season, the new wood will not ripen well.

Annuals for cut flower work should be planted out in May and watered freely.

A few plants in your sleeping room will not harm you, but unless the room is ventilated at night, you will harm them.

Narcissus bulbs should be transplanted every two years to insure blooming.

Don't bring your bulbs from the dark cellar to the sunniest window in the house.

All perennial plants and bulbs should have a light covering during the winter.

Cayenne pepper or capsicum is very hard on caterpillars and other soft insects.

The secret of handsome Coleus in the house is changing the pot as soon as full of roots.

A layer of moss over the drainage in large pots will keep the soil from washing down.

Flat dishes filled with wet sand are useful for short-stalked or heavy-headed flowers.

Chrysanthemums should have partial shade in summer, and a liberal supply of water.

Callas should rest through the summer till August or September, then lift and re-pot them.

Spireas require very little pruning if the flowers are carefully cut during the season of blossoming.

A little fine dust lime mixed with soil will destroy many plant enemies and improve the fertility.

Most biennials sown in the fall will bloom the following summer, if lightly protected during the winter.

Self-sown seedlings are generally better and will bloom earlier than those from the spring-sown seed.

In arranging flowers in vases, if there are to be many of them, use the delicate shades; if few, the deeper tones.

Violets should be planted in frames in September, runners removed and watered copiously while growing and blossoming.

Bone dust is clean, nearly scentless and suits the purpose of a stimulant very well, but should be used in very small quantities.

Rose bushes may be pruned rather severely in the early spring to encourage the growth of quantities of blooming branches.

Verbenas to do their best must have rich soil and a sunny position; have the branches pegged down and all fading flowers cut off.

Cleanliness among people, cleanliness among plants (it all amounts to the same thing), means better health and better appearance.

The water for watering plants, summer or winter, should be warm enough not to chill the hand.

For large vases, *Cyperus alternifolia* or Umbrella plant can also be used as a water plant and so may the Calla lily.

The Chrysanthemum is a gross feeder. It requires rich soil. Never allow it to become pot-bound in its early stages of growth.

Don't be afraid to leave your pots in the cellar after planting the bulbs. Nature's plan is to start root growth slowly, and in the dark.

Do not let your plants set always in the same position; move them around at least every week, and they will not grow so one sided.

By keeping beds and borders clean and thoroughly and frequently cultivated during the summer months, we much reduce the need of watering.

The general remedy for white scale is to scrub the infested plant with a bristle brush and soap-suds, but the best remedy is to throw it in the fire.

Eben E. Rexford, a good authority, says: "If I were obliged to confine myself to one plant for a hanging basket, that plant would be the *Oxalis*."

Plant lice can often be gotten rid of by pinning a white cloth over the plant at night. The insects will leave the plant for the cloth and can then be burned.

All fern leaves, before being used after they are cut, should be submerged for half an hour or so in water; they will last much longer and keep their color better.

Don't over water Herbaceous Calceolarias as they will decay. They are likely to be infested with aphides to prevent which frequent smoking or syringing with tobacco water is necessary.

The India Rubber plant (*Ficus elastica*) requires a warm room in winter. It will cast its foliage when in a cool room. It likes plenty of moisture at the roots when in full growth, but avoid too much water in winter culture.

A great many tender summer blooming bulbs may be potted in March; they will make a good growth, and can be planted out in May. They will then get the benefit of two months' start. Your Gladioli, Maderia Vines and Tigredias may so be treated.

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