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A

SIMPLE FLOWER GARDEN

FOR COUNTRY HOMES.

A PRACTICAL GUIDE FOR EVERY LADY.

*How to Start It.—What It will Cost.—How to Stock It
to have Flowers the Year Round.*

13
BY

CHARLES BARNARD,

Author of "My Ten-Rod Farm," "Farming by Inches," "The Soprano," etc.

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“FRANK, my dear, it is six months to-day since we were married, and five months since we came to live in this cosy little cottage. We have passed a delightful winter, and, now that the spring has come, I wish to carry out my pet project, — start a flower garden.”

“ Where, pray ? ‘ The lawn and the brick walk from the front door to the gate occupy all the available space we have ? ”

“Yes, but can we not have two narrow borders cut out on either side of the walk, and therein plant and tend our flowers?”

"To be sure. Nothing could be more simple or easy. Let us go and look at it before I start for town."

These two young people, Frank and Gertrude, stepped from their cottage door into the soft, April morning air, and proceeded to inspect the little fifty-foot lawn before the house.

"You see, Frank, nothing prevents our having such a little garden, if we choose to take the trouble or spend the small sum that it will cost. It will be a great pleasure to me, when you are away in town, to be able to have something to attend to besides that perpetual sewing-machine and tiresome cook. Gardening will be a cheerful, attractive employment, and a sanitary measure, at the same time."

"I appreciate all that; — but the cost and trouble of the thing? We must consider these. In the first place, we city-bred people know nothing about gardening. If we did, who is to do the work? I cannot. Business forbids. Then there is the expense. We can hardly afford to hire a gardener at present."

"Could I not attempt it myself?"

"Perhaps you might make the attempt; yet when the weeds appear, insects gather, and the long hot days of August arrive, I fear the garden would prove a costly trouble, with a few flowers and much vexation for the final result, — a thing to be abandoned as not worth the labor."

"All that may be true; but let me tell you of a late experience. As I was walking up from the station yesterday I passed Aunt Louisa's mite of a cottage. Seeing her seated at the window among her lovely flowering plants, I stepped in for a call. While there the conversation turned to house and garden plants. Aware of her wonderful success in her scrap of a garden, and having those splendid

pot-plants before my eyes, I asked if she employed a gardener.

“‘I am my own gardener,’ said she.

“‘Really!’ I replied. ‘Do you plant and tend everything yourself, without assistance?’

“‘Almost. I hire a lad for a while in the spring and fall. He does the heavy digging and other rough work. The rest I do with my own hands.’

“‘But is it not very hard work, and is not your garden a costly thing to maintain?’

“‘Neither; I am not the person to spend much money upon such an affair. I cannot afford it. As for the work, I think I rather enjoy it.’

“These things surprised me greatly, and I pursued the subject still farther. The upshot of the matter is, Aunt Louisa has promised to call here once or twice a month and show us what to do and how to do it. The cost of such a garden as I want, she tells me, will not be great.”

“Well, Gertrude, as a prospective gardener you are a success. The garden shall be yours; only you must bear this in mind, — when the garden is once well started, you, and you alone, must attend to it. I have not the time, and our income does not admit of even a small boy, except for a day or so in the spring and fall.”

“Delightful! I am not afraid to try. Now let’s to business. I must read up at once. Bring from the city the best books upon gardening to be found.”

“Books are well enough; but not upon them alone must you rely. Aunt Louisa must be your guide and teacher in this venture. Then, too, we must keep our eyes open, and observe carefully everything of interest in other people’s gardens. We can learn a deal by mere inspection. There is Squire Bent’s place, with its fanciful borders cut out in the wide lawn before the dwelling-house. He keeps a gardener. From the garden, and perhaps from the man himself, we can gather much information. There is Farmer Brown’s roomy mansion just up the road. Only a few simple flowers hide under the scraggy lilac-bushes in the front yard; but even there something may be learned. Lastly, there stands Lawyer Wilson’s desolate house, with neither lawn nor garden. There we can see what a mistake it is to have one’s home surrounded by so much barrenness and rural wretchedness.”

“Yes, and would it not be a good idea to make notes of all we learn? They would not only be useful to ourselves, but might one day serve to aid some rural house-keeper, who wants a flower garden, and has no Aunt Louisa to help her.”

“Agreed. Who knows but it may in time rise to the dignity of print?”

So it was that this garden came to be established, and these notes expanded into this little book.

Here follow the notes as made up from the books, keen observations of sundry real gardens, Aunt Louisa’s directions,

and Gertrude's own experience as an amateur young lady gardener. All reference to the doings and sayings of these people must now be condensed into a bare statement of what is to be done upon such a mere handkerchief garden as here described. To fully understand this matter, it must be kept in mind that the entire garden was comprised in two narrow beds or borders, each fifty feet long by three wide, — in all three hundred square feet, more or less.

SOIL.

By this is meant the loose material that covers the surface of the earth and in which plants grow. In this garden, it was of that dark-brown color and open texture peculiar to the loam that covers the best of our New England farms. Some soils are better adapted to the growth of plants than others. Some are not capable of sustaining any kind of vegetable life. These are to be avoided. In distinguishing the good from the bad, we have one simple guide. Any soil in which our native weeds grow freely is suitable for the culture of flowers. Where the potato and cabbage will thrive, there the tea-rose and heliotrope may be cultivated with success. A certain depth is also necessary. The brownish surface soil must be at least twelve inches deep. If more, so much the better. Any soil, therefore, that answers these requirements, and is not too wet, will serve for a flower garden. This objectionable feature, dampness, may be remedied by

DRAINAGE.

Any spot of ground where the water, from melting snow or spring rains, lingers on the surface far into April, is too wet for a garden, and must be drained. Any spot where the water even lingers just under the surface for some time after it has disappeared from the sight is also unsuitable. To ascertain this, dig a small hole three feet deep. If water gathers in it during April, or after a rain-storm, drainage must be resorted to before planting. No plant, nor animal, can live in health, with its feet continually wet. A water-soaked garden will bring death to the flowers, and consumption to the gardener, in one short season.

HOW TO DO IT

is a very perplexing question. Every garden has some peculiarity that must be taken into account in preparing for proper drainage. In a very small garden a few holes about the size of a flour-barrel, and well filled with loose stones, over which brush and the surface soil are spread, will answer the purpose. Still better, have a trench, at least three feet deep, made, so arranged that one end is lower than the other, and placed so that the water can escape. Fill it one-third full of stones. Over these place the soil. In the garden described, the barrel-holes answered every purpose. Should these not carry away the water, consult an expert, and have this most important work done properly. In this whole matter, it must be kept in mind, that while all gar-

dens do not actually need drainage, yet all are benefited by it. The why and wherefore cannot now be explained in detail. The principal advantage results from the increased power that the soil acquires of receiving heat of the sun. Undrained soil is much later in the spring in absorbing that degree of warmth necessary for successful plant life.

MANUFACTURED SOILS.

It often happens that the spot of ground is deficient in the materials of a good soil. The house may have been placed upon a sand-bank, or some other barren site. If it is desired to have a flower garden upon such a spot, the loam, sand, and other materials must be procured from some other spot, and spread over the place to the depth of, at least, eighteen inches. Good common soil from a wheat or potato field, mingled with one-fourth its bulk of fine sand, will make a mixture suitable for such a garden. To this must afterwards be added barn manure and other fertilizers, to which reference is made further on. The cost of such a prepared and manufactured garden will not exceed, in the neighborhood of great cities, two dollars per square of six feet.

BORDERS.

By this is meant the prepared beds or spaces in which the plants are to grow. They may be of any size or shape. The best method of laying out will be discussed farther on. At present we have to do with the two narrow borders on

either side of the walk before described, — each fifty feet long and three wide. All the directions, lists of plants, etc., in this work have reference to these two borders.

TO PREPARE THE BORDERS.

A man must be employed to cut out the sod, shake out and remove the turf, and fork up the soil. This will take one day, and cost the sum of two dollars. The turf and other refuse must not be thrown away, but carefully piled in a heap for compost.

MANURE

is next in order. No soil will long maintain vegetation successfully unless enriched by the addition of some fertilizer. The product of the barn or stable is perhaps the best material for this purpose. It should be well decomposed and broken up fine. To accomplish the first, let it be piled in heaps for several months, and repeated turning of the mass will do the rest. When it is known that all plants take up their food dissolved in water, and cannot admit into their pores the smallest visible particle of solid food, the importance of having the plant-food finely pulverized will be plain. The action of the soil upon the manure will do this in time, but the process is hastened by the chemistry of decay and the mechanics of breaking and dividing.

There are other materials used for the enriching of the soil, such as marl, guano, and the various manufactured

fertilizers. All of them are more or less useful, but for a simple country garden like this, the barn will furnish all we need. One-half a cord of manure is the least that will be needed, and this having been spread over the surface of the borders, and one-half barrel of lime having been scattered among it, the whole must be dug under the surface with a digging-fork. The expense will be, for manure four dollars; lime, one dollar; labor, one dollar: total, six dollars.

THE EARTH CLOSETS

recently introduced will save a portion of this expense. By their use, a dry, clean, inodorous, and very valuable manure is produced, at a low cost. When it is known that every creature that walks the earth returns to it each year sufficient material to reproduce from the ground enough food to sustain its life for that year, it will be plain that every family, by the use of earth closets, or similar apparatus, could have enough fertilizing material to maintain a garden twenty times as large as the one under consideration. The cost of manure cannot, therefore, be a bar to having a flower or kitchen garden.

TOOLS

are essential in every garden, however small. The following are all that will be needed:—

Tin watering-pot,	\$1 00
A four-pronged digging-fork,	2 00
Shuffle hoe,	1 00

Trowel,	30
Small garden syringe,	4 00
Iron rake with fine teeth,	1 50
“ “ “ coarse “	1 50
A good stout knife,	1 00
Watering-pot with movable rose, or sprinkler,	1 00
Ball of twine (shoemaker's linen),	12
Bundle of long stakes (laths sawn in two),	50
Lot of old newspapers.	

\$13 92

STOCK.

The various flowering plants now used by the florists are divided into hardy and tender shrubs, seedling, bedding, green-house, and herbaceous plants, and are called by the general name of stock. Each of these kinds may be still farther divided, and the whole are included in two general classes: the soft-wooded and the hard-wooded plants. The first includes those rapid growing plants whose stems never attain that stiff, rigid form that characterizes our forest trees. To this class belong the geranium, aster, and spirea. The hard-wooded plants grow slowly, and their stems in time stiffen and become solid wood, which retains its shape during the life of the plant. To this class belong the azalia, orange, and heath. The importance of the distinction will be made plain when we come to treat of soils for pot plants.

SHRUBS

are divided into two classes: hardy and tender. The

hardy shrubs are those which in our climate survive the winter, and live for two or more years. It is impossible to give full lists of them all. Only those used in our garden, or planted in the lawn, are here mentioned. These kinds are all small, and bear flowers suitable for cutting.

<i>Deutzia gracilis</i> .	Wisteria, vine.
<i>Spirea reevisi</i> flore pleno.	Honeysuckle, vine.
<i>Wigelia rosea</i> or <i>alba</i> .	Hardy Azalia.

TO PLANT SHRUBS,

prepare holes at least two feet across, and from twelve to eighteen inches deep. Make the bottom of the hole slightly higher in the centre than at the sides. Select small plants that are of a good shape, that is, having an equal number of branches on every side, and, having cut off the ends of the roots that have become bruised by transportation, set the plant upright upon the mound in the hole. When in this position, the crown, or top, of the roots must be upon a level with the surface of the soil. Then carefully fill in the soil around and among the roots till the hole is full. Press the soil in gently with the spade or foot, and the planting is finished. Unless the day is very warm, or the plant dry from long carriage, give no water at this time, or any other. Leave the plant to its own resources. If it cannot grow without artificial aid, let it die; it is not worth the keeping. The time for planting shrubs is in April or October. April is to be preferred, as at this time the risk

attending the first winter before becoming established is upon the nursery-man and not on the purchaser.

PRUNING

should be applied to every plant, of whatever size, that is forcibly removed from one place to another. It not only restores the balance between the leaves and mutilated roots, but insures quick and vigorous growth when the leaves are put forth and the plant begins to grow again. At least one-half of all the stems should be cut away. This, to the beginner, may seem excessive; but the compiler of these notes knows, past peradventure, that severe and thorough pruning, or cutting back, is one great secret of success in the culture of each and every plant. In pruning, cut close to a bud that points outward, away from the centre of the shrub, and so arrange it that when finished the shrub shall be of a round and symmetrical shape.

TENDER SHRUBS

are those that cannot stand our winter without injury. During the winter they are cultivated in the window or stored in the house cellar. For list and culture see Chapters VI. and VII.

HERBACEOUS PLANTS

are those, the roots of which survive the winter, but that lose their tops, or visible part, each season. In the fall the stem and leaves perish and decay, only to start up again upon the return of the spring. The following

LIST OF HERBACEOUS PLANTS

includes those suitable for our little garden and adapted to our wants, namely, cut flowers : —

Astilbe Japonica,
Garden Pinks,

Lily of the Valley.
Day Lily.

PLANTING

is always done in April. The roots are just starting into growth, and if they are simply set out in good soil, with the crown just below the surface, will be almost sure to thrive. If the root is too large, it may easily be divided into as many parts as there are growing points, or eyes. Each eye will produce a plant. A clump of several eyes will, as can readily be seen, make a larger and finer plant; but if economy is an object, the single eyes may be used.

Give no water at planting, or any other time.

THE QUANTITY REQUIRED,

for a place of the size under consideration, is limited. Six small shrubs, and as many herbaceous plants, will be quite enough.

ROSES

make a class by themselves. They are naturally divided into two smaller classes, hardy and tender. These are still farther divided into a number of species. To the gardener, these subdivisions are important. For our present purposes we need only know that the hardy roses include Climbing,

June, and Hybrid Perpetuals. The following lists comprise all the hardy roses useful in our garden : —

CLIMBING ROSES.

Queen of the Prairie,	Baltimore Belle.
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JUNE ROSES.

Madam Planter,	Adalaide, — moss,
Madam Hardy,	William Lobb, — moss,
Perfecta,	Crimson, — moss.

HYBRID PERPETUAL ROSES.

Giant de Battailles,	Madame Laffay,
Jules Margottin,	Caroline de Sansal,
La Reine,	Pius IX.

The planting, pruning, and after culture of these roses is precisely that of hardy shrubs.

TENDER ROSES

are, as their name implies, not suitable for permanent planting. They must be removed to the window or cellar each winter. The only varieties we need to consider, are

THE TEA-ROSES. These, for continual flowering and general use are the best of all the roses mentioned, and should have a place in every garden. The following kinds are the best: —

Bon Silene,	Soffrano.
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THE COST

of these plants is not high. A good shrub of the kinds

mentioned can be bought for fifty cents. Roses are the same, and herbaceous plants can be procured for from twelve to twenty-five cents per clump. If not obtained directly of the florist, the expense of packing and transportation must be included. For persons ordering from a distance, it is always best to pay for, and insist upon, thorough and careful packing. To receive plants in a damaged condition is, to say the least, vexatious and discouraging.

CHAPTER II.

MAY.

SEEDS.

THE seeds used for the flower garden are divided into two great classes, — annuals and perennials, or biennials. These may be still farther divided into hardy and tender. The annuals are the only seeds we shall plant in our small garden.

THE HARDY ANNUALS

are sown in the open ground in the spring. The term hardy does not here mean that the plants will stand our winter; but that they are of a more robust and vigorous habit, and not liable to be injured by the cold storms of early spring. They also have the advantage of coming to maturity in the open air without artificial aid

For our garden and for cutting, the following sorts are desirable : —

Allyssum,
Candytuft,
Clarkia,
Larkspur,

Murandia,
Nasturtium,
Sweet Pea,
Stocks, or Gilliflowers.

Mignonette.

THE TIME TO PLANT

depends upon the location and season. It is useless to put seeds into the ground before the soil becomes warm and dry. This seldom happens, in the latitude of Boston, before the first week in May. The season also varies. One year the proper time for planting may be delayed for a few days. This must be taken into account by the planter. One guide in this will be to take up a handful of the garden loam and close the fingers tightly upon it. If, on opening the hand, the soil remains in a hard lump, and retains the imprint of the fingers, it is too wet. If it falls apart in an irregular heap upon the palm, planting is in order. Another guide will be found in the forest trees. When they put forth their young leaves, all nature is ready for active work. Seeds planted then germinate at once, and seldom fail to come up and grow vigorously. Nothing is gained by very early planting. Better be a grain late than too early.

HOW TO PLANT.

How deep and how thickly puzzles the beginner. The size of the seed settles these questions. The larger the seeds, the wider apart they may be scattered. The smaller the seeds, the slighter the covering. To plant very small seeds, smooth the soil down fine and level with the back of the trowel. Scatter the seed thickly over the surface, and then simply pat the soil with the trowel, and so press the seeds into it. A very gentle shower from the water-

ing-pot will finish the operation. Spread newspapers over the spot during sunny days till the seeds come up, then remove them. This will assist germination by keeping away the light and the extreme heat of the sun, and by preventing evaporation.

To plant seeds of a large size, like the mignonette, roughen the surface by drawing the fine iron rake over it, and then scatter the seed thinly. By drawing the rake backward and forward over the spot a few times, the seeds will be covered, and the operation complete. Water as before. The newspaper shelter may be used, but is not absolutely essential.

Larger seeds, like the sweet pea, are carefully sown in narrow trenches, and about one inch deep and two inches apart, in the row. These are made with the trowel, and the seeds when dropped in the depression are simply covered by turning back the soil with the rake or trowel. Water as directed, but do not shade.

TENDER ANNUALS

are plants that reach maturity in one season, but whose time of growth is longer than our short northern summer. To enable them, then, to reach a flowering state, they must be cultivated for the first few weeks under glass, in a greenhouse or hot-bed. This is best done by the commercial florists. From them the young plants can be procured at a very low cost. They are furnished either in clumps, or

singly in small pots. The following list embraces the best common sorts for cutting from during blooming: —

Amaranthus tricolor,	Marigolds,
Asters,	Celosia,
Balsams,	Cobea scandens.

THE TIME TO PLANT

must necessarily be later than that for seeds. The seeds are put in the ground out of sight. A cold storm the next day does no harm. The tender annuals are young plants already started, and liable to injury if planted before the weather becomes settled. The tenth of May is the very earliest suitable time. Nothing is gained by haste in horticulture.

TO PLANT TENDER ANNUALS

is simple in the extreme. If the bed where they are to stand is properly prepared, and the season sufficiently advanced, the soil will be light, dry, and pleasant to handle. Tools are not needed. The hand alone is enough, and in this connection it must be borne in mind that no young lady need fear, or must hesitate, to use her hands freely in the culture of flowers. Gloves are useful to keep away the effects of the sun, but should never be used for any other purpose. The common loam of the flower garden will not seriously soil or injure the most delicate hand.

If the seedling plants are in pots, turn them out by holding

the pot upside down, with the fingers spread over the soil. A gentle rap upon the bottom of the pot will cause the plant to fall out uninjured. Then, with the hand, make a small hole in the ground, drop the roots of the plant undisturbed into it, so that the soil is about level with the surface; press the loam gently around the plant, and the operation is finished. After all the plants are set out, smooth down the broken surface with the fine iron rake, and sprinkle freely with water.

If the plants are not in pots, but in clumps, defer the planting till a cloudy day, or when the dew is falling in the evening. Separate the plants carefully and set out one at a time. If the soil is in order, one thrust of the forefinger, or a small pointed stick, will make a hole into which the tender roots of the plant may be dropped. A slight pressure with the fingers will fasten the plant upright where it is to grow. A shower of water and the use of the rake will make all complete. Should the next three days be clear, these plants must be shaded from the sun with old newspapers, or anything else that is convenient.

DISTANCES TO PLANT.

This is something about which definite rules cannot be laid down. No plant should stand nearer to another than one-half its own height. A plant two feet high should not stand less than twelve inches from another of the same size. As the catalogues of the florists, or seedsmen, always

specify this, the information can be easily obtained from them.

THE COST

of seeds varies with the kinds. From five to twenty-five cents per paper is the usual retail price. One paper of each kind will be sufficient for our garden. The tender annuals in pots will be about seventy-five cents a dozen; without the pots, fifty cents. Three dozen plants will be enough.

BEDDING PLANTS

are raised from cuttings, and are for sale in the spring by the florists. They are grown in pots, but of a larger size than those used for the tender annuals. The following list includes those desirable for our garden. The tea-roses, it will be noticed, are called bedding plants, and should be placed at the head. The other plants are in the order of their merit.

Tea-roses,	Lemon Verbenas,
Heliotropes,	Geraniums,
Carnations,	Feverfews,
Verbenas,	Salvias.

THE TIME TO PLANT

varies with the season. In New England it is the same as that for tender annuals, — from the twentieth of May to the tenth of June.

PLANTING

is a very simple affair. Turn from the pots, and set out as

directed for tender annuals in pots. With these plants, the distance they are to stand from each other depends upon the habit of the individual. If the plant, like the verbena, is inclined to creep over the ground, sufficient space must be allowed for it to ramble at will. Two or three feet will be very near the right distance. Climbing vines must be placed near a trellis of some sort, or have room allowed for them to roam over the ground. For vines, this last plan may seem careless and negligent; but, if they are kept within reasonable limits, the effect is pretty and peculiar. In regard to all others the same guide before given must answer.

ARRANGING PLANTS

for effect, in such a very small garden, can hardly be attempted. Beyond placing them so that a tall one will not hide nor shade from the sun a low one, the cultivator's own taste must be the only guide.

ARRANGING FOR COLOR

is something about which, if we had a large garden, we might fill whole pages. The planter's taste must, in this matter also, be the guide. Should she not know what the colors are, any florist's catalogue will supply the needed information. This naturally leads to a new and valuable class of garden plants, called : —

FOLIAGE PLANTS.

They are in every respect, save one, like bedding plants, they have no flowers of any value. Their sole beauty consists in the coloring of the leaves. To compensate for their few and feeble flowers, nature has endowed them with the most remarkable and striking foliage. The best common kinds are in the following list: —

Achyranthus,	Cineraria maratima,
Amaranthus tricolor,	Centaurea candida,
Coleus,	Centaurea gymnocarpa,
Japanese maize.	

THEIR USE

is easily seen, — decoration, not cutting. It is true, the leaves are sometimes used with great effect in flower work; but their principal value is for garden ornamentation. By arranging them in groups or masses, most wonderful effects are produced. One color may be contrasted with another, or several colors combined in harmony. The so-called “ribbon gardening” is produced by their use. This is merely planting in long rows, or bands, one or more colors and kinds, thus producing the effect of an immense colored ribbon trailing over the lawn, or through the borders of the garden. The arranging of these plants in masses, or ribbons, is a matter of taste. To understand the effect, and to try the experiments, in combining colors, set the plants when young, and while in their pots, upon the garden walk or

other smooth place, and there arrange to suit the taste. When a pattern is made that seems good, transfer the plants one at a time, to the border, as described for bedding plants, keeping the pattern intact. In such a small garden as the one under consideration, the use of foliage plants is limited. It requires a much larger place to display the most striking effects of ribbon gardening, or even to show these plants in masses.

A LONG LOOK AHEAD

is essential in all gardening operations. If it is desired to have flowers at any particular time, it will be necessary to make preparations six months in advance. To have flowers all the year round, the cultivator must be continually looking ahead for months, and preparing each season for those plants that are to bloom half a year afterward. In May we must get ready the plants that are to bloom in November. Among the plants used for window gardening are the following : —

Steevia,	Eupatorium,
Bouvardia,	Carnations, La Purite
Jasmine,	and President Degraw.

These are procured in May, and set out in some corner of the border. They are of about the size of bedding plants, and are planted and treated in precisely the same way. As they are not expected to bear flowers during the summer, it is not important where they stand. Their after treatment

is quite different from that of other plants and will be found in the next chapter.

THE COST

of bedding, window, and foliage plants varies greatly with the kinds. Tea-roses are worth about fifty cents each; verbenas one dollar and a half a dozen; the others, two dollars. Foliage plants are from two to three dollars; small plants for the window about one dollar a dozen. Two roses, one dozen verbenas, one dozen foliage plants, and two plants each of the other kinds, will be enough.

CHAPTER III.

JUNE.

WEEDING

Is the horticultural terror that deters many people from having a garden. Weeds always will come up, and the richer the soil, the more readily they do so. Yet, if properly managed, they present no serious obstacle to success. The true method of treating them is to destroy them when very young—not over one-half inch high. They never need be pulled up by hand, except from those few spots where the hoe cannot reach them. The hoe used is known as a long-handled shuffle hoe, and is pushed about over the surface, cutting off and destroying the young weeds. If they are thus taken in hand early, before they acquire a firm hold in the ground, the trouble of removing is very slight. Choose a bright, sunny morning, when the wind and sun will wilt the tiny plants thrown out by the hoe. As soon as they appear again, repeat the dose. The iron rake will here come in play to remove the marks of the hoe and any lingering weed not killed by the sun. No weeds must be suffered to remain on the ground over night, because, if not utterly dead, the cool air and dew may revive them and

they will start again into new life and trouble. The surface of the garden is much improved by this hoeing and raking, and, if possible, it should be done after every rain, or at least once a week. One hour will be sufficient to enable one to go over both borders.

INSECTS

appear in June, and, if allowed to have full freedom, will do great harm. The best friends the grower can have are the birds. If treated kindly, and made to feel at home in the garden, they will do more to remove troublesome insects than any other one thing, except toads. Toads should be treated with respect and kindness. If there are none in the garden, hire a boy to procure a dozen, and give them free range over the grass and borders. They destroy great quantities of vermin, and must, therefore, have all the consideration due to floricultural benefactors. The lady-bird, a small and well-known insect, also seems to keep down destructive creatures of its own kind. Plaster, or wood ashes, sprinkled over the leaves of young plants, if applied early in the morning, will keep away several kinds of destructive bugs. The following mixture, if showered with a syringe over rose bushes or other plants infested with the rose slug, will be found useful. It can be procured from any chemist, and when once prepared will last a long time : —

Sol Sulphuret of Lime,	
Quicklime,	1 lb.
Sulphur (flowers),	2 “
Water,	10 “

Boil for an hour; cool and decant the clear solution. Mix a half pint in four gallons of water and use freely.

THINNING SEEDLINGS

is something that must be attended to, if good plants are desired. On the spots where the seeds were sown a mat of green plants will appear, and probably growing too thickly together for health and comfort. Having determined, from the height and habit of the plant, how many can stand there, pull up and destroy the rest, beginning at the weakest, so that those left for growth shall be the finest and strongest.

PINCHING.

Our common garden plants grow, and increase in size, by what is called "the extension of the growing point." That is, they push out the tip ends of their shoots and elongate them in that one direction. When a plant is in vigorous growth, it will not only extend its shoots in one direction, but in several. From the sides of a shoot other growing points start out. These in turn repeat themselves, and in this way the plant becomes filled with growing ends or shoots. As the flowers are always borne upon the ends of the shoots, it is plain that the more shoots, the more flowers. If by any means the number of shoots is still farther increased, the gain in flowers will correspond. This is easily done by pinching between the thumb and finger the soft and tender tip of the shoot. The plant, disap-

pointed in that direction, at once puts forth two or more shoots just below the injured one, and growth goes on in two new directions, instead of one. The advantage to the grower is plain. So long, however, as the pinching is carried on, no flowers will appear. Therefore, when it is desired that the plant should put forth buds, the pinching must cease. A plant pinched in June will flower in July. If pinched through July, the flower will come in August, and in greatly increased quantities.

PINCHING HOUSE PLANTS

is carried on all summer. Those carnations, bouvardias, salvia, and other plants to be used in the house during the coming winter are not allowed to bloom at all, but are pinched as often as the shoots become a few inches long. This will occur about twice a month through the entire season. The effect of this is to produce thick, compact plants, filled with hundreds of short shoots, every one of which will bear a bud, and return to the careful grower an overflowing harvest of blooming flowers.

CHAPTER IV.

JULY.

TRAINING.

WITH the warm weather of this month comes the lighter work of training and guiding the now luxuriant plants. In this, the habit or manner of growth must be considered. Vines, like the climbing roses, murandia, and nasturtium, must have suitable trellises to which they may cling or be fastened. The grower's taste must be the guide in the matter of style and position of the trellis. The only point to be observed is, that the trellis shall not shade any other plant. Sometimes vines are allowed to sweep over the ground in seeming freedom. The effect is very pretty, if care is taken not to let the vine invade other plants. Plants like the carnation, that need the support of a stake, to which they are tied, must now receive attention. A common lath, sawn in two, will make a cheap stake. The plants must not be fastened tightly, but have room to expand as they grow. Plants that creep over the ground, like the verbena, are greatly improved by being pegged down. This is nothing more than using old hair-pins, or twigs from a tree, so cut that one end can grasp the stem

of the plant and the other be thrust into the ground. The best twine for tying plants, or for any other work about flowers or plants, is what is known as shoemaker's linen thread. It can be found at the shoe-finding stores. This matter of training plants, either in the house or garden, is one that the grower's own taste must mainly guide as best it may.

CUTTING FLOWERS

in the garden seems a very simple affair; yet upon the way it is done depends the size of the crop. The usual way is to cut all flowers with a long stem. It may seem unnatural and almost barbarous to do so, but the true way, for the greater part of our flowers, is to remove them without a stem. Roses of all kinds should be cut with a long stem. The longer the better, provided other buds are not destroyed. The carnation, and all plants that bear their flowers in clusters, should be removed without stems. The heliotrope should have a very short stem, and the verbena should only be cut off as far down as the first leaf. A bit of iron wire will serve for a stem if it is desired to make the flowers into a bouquet. If they are placed in shallow dishes, which is the best way to display them, stems are of no consequence. The best method of arranging flowers in bouquets will be found in Chapter XII.

THE TIME FOR CUTTING

is always just after sundown, unless a storm is feared, that

will destroy them before they can be cut in the evening. On cloudy days it does not make so much difference. The explanation of this is to be found in the state of the sap in the plant at different times of the day. From the earliest dawn until sundown the leaves are actively drawing upon the roots, and the sap is flowing freely. At sundown this ceases, and the leaves are nearly dormant till morning. The plant is taking its rest, — is asleep. The sap may be accumulating, but is not flowing rapidly as during the day. A flower cut in the sunshine will wilt at once, and if not put into water will quickly perish. A flower cut at sunset will remain fresh all night, even if it is not put in water. If put in a close, hot room it will fade in an hour, but in a cool place will not appear to change for many hours. Flowers cut, therefore, at evening, will keep the longest and afford the most pleasure. In this connection, it must be kept in mind that no rose should be allowed to expand fully. Cut them all while in bud. This may be applied to every flower. It costs more to bring one flower to full maturity than to produce a dozen buds. Therefore, cut as soon as in condition, and cut them all. To suffer the flowers to fade on a plant, and to go to seed, is to lose nine-tenths of the whole crop. Freedom and generosity in the matter of cutting flowers is the best policy and the truest economy.

THE TUBEROSE

can hardly be called a simple flower; yet, as it costs no more

to grow a good plant than a poor one, this splendid flower should be admitted into our little handkerchief garden. The simplest way to cultivate one is to purchase a bulb, already started, from some reliable florist. It should be growing, during July, in what is called a seven-inch pot, and should have a cluster of well-developed leaves. The price will be about fifty cents. When the plant arrives, it should be sunk in the ground up to the rim of the pot. During dry weather it must be watered whenever the soil in the pot becomes dry. Nothing more need be done to it, except to tie the flower-stem to a stake as soon as it is a foot high. In September it will be removed to the house for blooming. Concerning its after treatment, see Chapter VI.

CHAPTER V.

AUGUST.

THE work in the garden for this month consists of a repetition of the work for July, with the addition of some slight preparations for the future. A part of the plants will run out, and

SOWING FOR A SUCCESSION

will be in order. Sowing for the garden comes first. It will be found, about this time, that many of the annuals planted in April and May have become exhausted. To keep up a supply, and have flowers during the entire summer, it will be necessary to replant many of the annuals. As seed-planting has already been spoken of, it need not be repeated now.

SOWING FOR WINTER USE

is done in August. By this is meant the sowing of certain kinds of seeds (in pots or boxes) that will be eventually removed to the house, and there allowed to bloom during the winter months. The following kinds are found to be useful : —

Chinese primrose,

Stocks.

Mignonette,

Allyssum.

A couple of raisin boxes, a paper of each kind of seed, and a peck of soil, will be all we need. To make the soil, sift some dry loam, from the garden, through a coal-sieve, and mix it with one-half its weight of common mason's sand. Having filled the boxes, sow the seed in them, as directed for fine seeds in Chapter I. Set the boxes in some shady place till the seeds come up, then sink the boxes to the rim in the garden loam. In about three weeks, the young plants will require setting out in pots for the winter. How to do this is told in the next chapter.

CHAPTER VI.

SEPTEMBER.

SOILS FOR POTTING.

ALL of our so-called house plants, like those of the garden, are divided into two classes, — soft and hard wooded. Each of these require a soil suitable to its wants. There is a theory that every variety of plant should have a peculiar soil adapted to its particular wants. This theory has been a leading one in horticulture for a long time, and the practice of most gardeners, and the teachings of all horticultural books, save one, has been, that for nineteen different plants, nineteen different soils must be prepared. Many books contain long lists of soils suitable for potting. Measuring off by quarts and pints, sand, peaty loam, turf, and a hundred other mixtures of known and unknown substances, they lead the ignorant reader to think the potting of a few house plants a profound and almost terrifying mystery. In practice this is perfectly idle and useless. One soil, easily prepared by any child, will suit all soft-wooded plants. A still more simple soil will meet the wants of the hard-wooded plants. In our little sitting-room we have but three windows, one on the east, and two

on the south side of the room. These will accommodate, during the winter about fifty plants. Not all at one time, but during the season extending from September to May. The soil in which these plants are to grow must be procured in September, and in sufficient quantities to last the entire eight months between this and spring.

THE SOFT-WOODDED PLANTS

will need, of good common loam, from a potato-field, three barrels; of well-decomposed barn manure, three barrels; of mason's sand, one barrel. A flour-barrel is used for a measure, because it gives the right proportions, the right quantity, and is convenient to keep the soils in during the winter. Each of these three materials must be sifted through a common wire sieve, and the barrels, when filled, placed out of the reach of frost and wet.

THE HARD-WOODDED PLANTS

will require one barrel of sand and two of peat. Great care must be used in procuring this latter. It must be thoroughly decomposed by the action of sun and frost. To do this, it must be dug from the peat-bog, and allowed to lay exposed to the weather for nine or more months. It is then fine, soft, and in condition to sustain plant life. These two lists show to which class each plant, we shall use in our window, belongs. It will serve for a guide in potting them.

Soft-wooded.

Astilbe,	Allyssum,
Bouvardia,	Carnation,
Cape Jasmine,	Eupatorium,
Mignonette,	Chinese Primrose,
Stocks,	Salvia,
Tuberose,	Smilax,
Murandia,	Ivy,
Heliotrope,	Fuchsia,
Jasmine.	

Hard-wooded.

Azalia,	Orange,
Lemon,	Camelia.

TOOLS

are essential, if window plants are to be carried through the winter. A small work-bench, about two feet wide, and at least four feet long, will be useful in various ways. A trowel, coarse iron sieve, bundle of small sticks for holding plants upright, some twine, a lot of "crops," or flower-pots broken up into inch pieces, and a quantity of flower-pots, will be needed. These last need not be described. They should be of a light brick-red color, sound, and having a suitable hole in the bottom. In speaking of pots, it must be remembered that each one is of a certain size. The size is determined by the width of the pot across the top; hence the names, two-inch, three-inch, seven-inch, ten-inch, etc.

THE WINDOWS

where the plants are to stand during the winter, their shape and aspect, are matters of importance. First, they must have a movable sash that can be opened at top or bottom; secondly, roll-up, not drapery, curtains must be provided, and, lastly, the windows must face the east, south, south-east, or south-west. No other aspect will answer. If you have no such window, do not attempt window gardening. If a bay-window with the right aspect, is at command, so much the better.

STAND FOR PLANTS.

In order to accommodate as many plants as possible, something more than the narrow window-sill is needed. A small, narrow table placed close to the window will answer. Still better, make a table two feet in width and as long as the window is wide, having a flat top with a rim or ledge, about two inches high, around the edge. If this tray-like top is lined with zinc, it will last the longer. Into this tray put clean sand till it is nearly full. Upon this sand-covered table the plants are to stand. The stand itself need not be quite as high as the edge of the window. It will be of no consequence if the pots are not in the sunlight. The side towards the room may be closed up by a curtain, or other covering, as the owner may fancy.

POTTING

is next in order. The young seedlings in the raisin boxes will require attention first. The early part of September will see them up and waiting for more room. Upon the work-bench make up a heap of soil, as for soft-wooded plants, taking of each kind the proportions the barrels contain, — that is, three parts of loam, three parts manure, one part sand. After this, in mixing soils for any plant, the kind to which it belongs, and the proportions of materials contained in the barrels, will settle the whole perplexing matter of potting at a glance. The mixing can be left to the native ingenuity of the mixer. The only thing essential is not to be afraid of dirty hands, and to have the mixing well done. Having a heap of soil ready and the box of plants at hand, next see that enough clean, three-inch pots are in reach. If the pots are dirty, leave everything till they have been well washed. When all is ready, put a bit of crock in the bottom of the pot to prevent the soil from escaping, and then fill heaping full of soil. Pry up from the box a number of the young plants, then, having made a hole with the finger in the pot of soil, drop the roots of a little plant into it. Give the soil a gentle squeeze with the fingers, take the pot in the hand, and give it a light rap on the bench, and the work is done. A child of twelve could readily do it, and a smart lad ought to pot many hundred a day. When all the plants are potted set them in a shady place, on the floor, or on the north side of

a wall out of doors, and shower them freely with water. In about four days they will be fit to be removed to the full sun in the window.

The potting of other plants from the garden is similar, except that, as the roots of the plant are very much larger, a larger pot must be used, and the soil, with the exception of an inch or two in the bottom, is put in after the roots are placed in the pot. This potting of plants is something easily acquired, and no young lady need hesitate to do it. About the middle of September the following plants must be dug up from the garden, and carefully potted in large pots : —

Bouvardia,	Jasmine,
Carnation,	Steevia,
Eupatorium,	Salvia.

A cloudy day, or cool afternoon, will be the best time, and after the work has been done the plants should be kept damp and shady for a few days before going to their places in the window. About the last of the month, the tea-roses and geraniums in the garden can be taken up, about one-half of their tops cut away, and then potted in as small pot as will contain the roots. After this they may be set in a shady place till signs of frost appear. Their final destination is the house cellar.

THE TUBEROSES,

in pots, that were standing in the garden, must now be taken

up, the pots washed, and then moved to a sunny place in the window.

MORE PLANTS

than those we have now on hand can be accommodated in the window, and, to keep up a succession, and have a variety, others must be bought. We have already nearly all that our garden will afford, and the plants still there are, with a few exceptions, no longer of any value. The new plants can be obtained of the florists, and will be already potted, and in order for immediate use. The only attention they will require will be to see that both pots and plants are perfectly clean. Having in mind our original object, — plants from which flowers may be cut, — the following list will aid us by giving the right kinds and quantities : —

2 Azalias,	4 Heliotropes,
1 Orange,	6 Smilax,
1 Lemon,	2 Murandias,
2 Cape Jasmines,	4 Ivies,
2 Camellias.	

The smilax and murandias and ivies are vines, and as they are trained upon long strings, and grow where nothing else will, and are valuable for green in flower-work, the number advised is not excessive. There are two more plants left in the garden, that, when the frost takes away their leaves, will be removed to the house cellar, and eventually reach the window. Of them, more in Chapters VII. and XI.

THE POSITION IN THE WINDOW

of these plants must now be considered. The soil in which plants grow does not, within certain limits, seem to make much difference; but the temperature of the air in which they live does make a great deal. Here, into our one room with its three windows, we have brought plants that require very different treatment. At a well-regulated commercial establishment, each kind would have a separate house and treatment, — a cool house for one kind, a warm one for another. Here, all we can do is to compromise the matter as best we may. We can, however, remedy this in part, by standing the plants in different positions.

The following can stand in the warmest and sunniest places in the south windows: —

Bouvardia,	Heliotrope,
Allyssum,	Tea-rose,
Eupatorium,	Astilbe,
Chinese Primrose,	Mignonette,
Fuchsia,	Jasmine.

The following may stand behind these in the partial shade and cooler air: —

Carnation,	Tuberose,
Cape Jasmine,	Salvia,
Murandia,	Smilax.

These may go to the east window, where there is the least sun and lowest temperature: —

Azalia,	Orange,
Lemon,	Camellia,
Ivy.	

THE COST

of all these soils, materials, etc., may interest the reader. The soils will be about one dollar a barrel, perhaps less. The tools can easily be estimated from Chapter I. The pots cost per. dozen, in cents as follows:—

2½ in.	3 in.	5 in.	7 in.	8 in.	10 in.
18;	24;	65;	1.25;	1.60;	2.70.

The stock plants will average each somewhat as follows:—

Azalia, . . .	\$2 00	Cape Jasmine, . . .	\$2 00
Orange, . . .	2 00	Murandia,	25
Lemon, . . .	2 00	Ivy,	50
Smilax, . . .	75	Camellia,	3 00
Heliotrope, . . .	50		

By paying more, larger and better plants can be procured of the azalia, camellia, lemon and orange; but, even at this low price, blooming plants will be furnished by the florists.

CHAPTER VII.

OCTOBER.

"THE harvest now is over; the summer days are gone;" the floricultural performance is finished, and nothing remains to be done except to clear up the ruins. Before we do so, two plants must be saved from the wreck. The deutzia, when the frost kills its leaves, and the astilbe japonica, when its top fades away, must be dug up, put into large pots, and after being watered, sent to keep the tea-roses and geraniums company in the cellar, safe from frost, mice, and daylight. If it is desired to have a fuchsia bloom in February, it must now be procured from the florist and treated in the same way, — sent to rest, and sleep till the spring returns in January, when the season turns. What this means will be explained in due time.

CLEARING UP THE GARDEN

should be done in October; all traces of the dead plants taken away, and the borders raked clean. Over the lawn and border, and around every rose and shrub, a good coating of coarse manure must be spread, there to remain till April. This may seem costly advice; but without such a

dressing at least once a year, success in lawn or garden need not be expected. The manure applied in the spring need not be repeated the coming season. It should have been done the previous fall, but could not, as the house was not occupied by its present tenants at that time.

SEED-SAVING

is not advised. It is the best economy not to save seeds of the garden flowers, but to buy new and other kinds of some reliable seed merchant. In this connection the abandoning of all the bedding and other plants in the garden may be touched upon. • It is possible to take up nearly all of the plants, and save them over through the winter; but it is not advisable. With the exception of those plants that have been taken up and stored in the cellar, the rest are not worth the trouble and expense of keeping. By actual experiment it has been proved to be cheaper to throw away all the garden plants each fall, and buy new the next spring.

CHAPTER VIII.

NOVEMBER.

ALL out-of-door work is now over, and for the next five months the window plants alone command our attention. The amount of work necessary to be done in watering, airing, and otherwise caring for them, is small, but the details are many.

A plant in a pot follows an essentially artificial life. The sun alone ministers to its wants. The dew, rain, air, and all else it needs, are supplied by human hands. As it has no voice and cannot make its wants known, the only course for the cultivator to pursue is to supply each and every want before it exists. By doing this, regularly and persistently, success may be assured.

Watering is one of the most important things to be attended to in the care of house-plants. The time to do it is always the early morning, about breakfast time. Which days to give water can be ascertained from the plant or the weather. Of course, if the plant has wilted, it must be watered at once, be the time what it may.

The surface of the soil in the pot, and the pot itself, will serve for guides in this matter. Give water when the soil is

dry, and when the pot loses its color and seems to fade, or become of a lighter red. When water is given, fill the pot brimful. Do it thoroughly, if at all. This water-giving is done with a watering-pot, having the rose, or sprinkler, removed. Showering the plants must be done occasionally. To do this, remove the plants to the sink, and give them a free and liberal bath. The water-pot-rain-storm will benefit them greatly, by removing dust and other dirt upon the leaves.

As regards the weather, it will be found that on cloudy and stormy days no water will be needed. This will save much trouble. Only on bright, sunny mornings should water be given in any form; but if cloudy weather continue for several days, it may become necessary to give water without waiting for the sun.

The temperature of the water should never be below forty degrees. The half-empty urn upon the deserted breakfast table will be found convenient to temper the water.

GIVING AIR

is another important point to be observed. Fresh air must be supplied to plants, or people for that matter, if health is expected. Opening the doors or windows will do this. In opening the latter, care must be taken that no cold draughts blow upon the plants. Sickness and death will result to plants, as surely as to men, by such exposures.

The best thing for a room where plants are kept is an open fire. The worst, a hot-air furnace, — the last invention for producing that arch-enemy of men and plants, bad air. If it is possible, a tight coal, or wood-burning stove is still worse. A steam, or hot-water furnace is safe and unobjectionable, provided the radiators or pipes are not in the room. The greatest destroyer of pure air is

GAS.

The effect of burning gas upon plants is too well known to need discussion. Unless a gas-lighted room is aired freely, successful plants, or healthy people, need not hope to live there. An accidental experiment, which illustrated the effect of bad air upon plants, once came under the writer's observation. Two fine, healthy, and thrifty fuchsias were one evening brought into a large hall that had been used all the preceding day for a school-room. During the evening the place was crowded with people till quite late. The next morning every leaf had dropped from the plants, and in twenty-four hours they were quite dead. How the men and women there assembled, survived, is past finding out.

CLEANLINESS

is another essential to successful plant life. The soil, pots, and plants must be kept perfectly clean at all times.

THE SOIL

should never have litter of any kind allowed to lodge

upon it, nor any mould or weeds growing over it. If the soil is, about once a month, stirred or scraped an inch deep, cleanliness will be secured. The plants themselves will be improved by thus stirring the soil and keeping it light, and open to the influence of sun, air, and water.

THE POTS

should be washed occasionally, and the green, slimy mould that gathers upon the sides of the pot kept away. Another advantage results from this; that is, the pots are kept porous, which seems to be of great benefit to all plants growing in them.

THE PLANTS

must be kept free from all broken stems, dead leaves, dust, or mould. In the garden the wind and rain will do all this, but in the house these are wanting. The hand, watering-pot, syringe, and bath must take their place.

TEMPERATURE.

This is the last, and most important of all matters connected with the care of house plants. The right degree of heat to maintain in the room varies with the weather. On sunny days the thermometer may rise to seventy or even seventy-five. On cloudy days a lower temperature is desirable. Sixty-five, or from that to sixty-eight, will be found nearly right. It will not suit them all; but as the growing of so many kinds in one room is at best a compromise, this

point will be most favorable for all. At night the temperature must be maintained at about fifty or fifty-five. If the glass often falls below this point, failure may be expected. The plants will perhaps manage to live in a night temperature of forty, but bloom they will not.

Lastly, do not let the temperature vary greatly. Uniformity in this respect is the great secret of success in all artificial culture of plants, whether in "stoves," "fern-eries," "camellia houses," or parlors.

MOISTURE

in the air is essential to the health of house plants. The dry, half-burnt air from a furnace is the chief cause of failure. Various methods are resorted to in order to add to the amount of vapor held in the air. A dish of water upon the stove aids greatly. Fresh air from the open window, and the damp sand in the window-stand will both help, and the syringe will help still more. By this, it is not meant that the plants shall be showered as they stand in the room, but in the kitchen sink. The moisture that clings to the foliage after such a bath will dry away, and float in vapor in the air, to be returned with interest to the plants.

BULBS

have not been spoken of, because this work merely relates to those few simple and cheap flowers adapted to a very small garden. In the parlor a few may be used with pleasure and

profit. The single white hyacinths "*hyacinthus romanus*," are the best. They can be forced into flower at any time during the winter. Their culture is easy. Plant one bulb in a four-inch pot, or a number in a larger one, using the soft-wood soil. The bulbs must be sunk in the soil so that the top just shows above the surface. After being watered they must be covered completely, pot and all, in sand. The sand may be in anything that will hold it, and the whole affair must be put in the warmest corner to be found in the house. In about a month they may be taken out of the sand, and if the roots have started they can be placed in the window. After blooming, keep the plant still growing till it shows signs of turning yellow; then give it less and less water till it utterly dries up. In the spring the bulb can be shaken out of the pot, and put away in a dry place till needed another season.

CHAPTER IX.

DECEMBER.

DURING this month house plants require but little attention beyond keeping things clean and in order. It is now the dead of winter, and all vegetable life is inclined to rest and sleep. Very little growth can be expected from any plants, and if the *steevia*, *bouvardia*, *salvia*, and *tubérose* give a few flowers, it is all that can be expected during this dark and stormy month.

The young seedlings in three-inch pots may need re-potting into the next size; but they will be the only plants that require much attention. To tell when a plant needs re-potting, turn it out of the pot and examine the roots. If the plant is in a small pot, and has not come into full flower, and the roots have twined and matted themselves about the soil, a new and larger pot is needed.

TO RE-POT A PLANT.

Prepare the soil and pots, with a bit of crock in the bottom of each, and having turned the plant from its pot, pick out the crocks, and pare or brush away a little of the surface soil that clings about the roots. Having put

enough soil in the new pot to raise the plant to the proper level, place it in the centre and fill in around the sides with fresh soil. Give it a gentle shower of water, and keep it cool and shady for one day; then it may return to the window. Many old gardeners, and all the books, say that in re-potting, the bottom of the pot must be filled with crocks. In the writer's experience this is pure fiction. One piece answers every purpose.

THE TURN OF THE SEASON

occurs in this month. On or about the twenty-first the sun reaches its lowest point, and then returns. At once the days grow longer, and in a little while all plants in greenhouse, wardian case, or parlor window, feel the change. Their slumber is at an end, and with livelier sap and newly bursting buds they proclaim that spring has come again. Previous to this turn of the season but few plants would bloom, and none were inclined to grow. Now all is changed. Anything will grow if it has a chance, and bloom if by any possibility it can. Even the sleepy potato, in the bin in the cellar, opens pallid eyes, and blindly seeks the returning light and heat. The deutzia and astilbe feel it in their torpid veins, and if brought up to the light and air, and well supplied with water, will start out into sudden flowers.

A JUDICIOUS THROWING AWAY

of plants must now be adopted. The salvia and steevia

having passed their bloom, should be thrown away, and the pot saved for future use. More room will be gained, and plants no longer yielding a paying crop put where they will give no further trouble. It may occur to the reader, why not save them for another year? Simply because it will not pay.

CHAPTER X.

JANUARY.

WITH the advancing season and renewed growth come again the insects, so troublesome to the cultivator of heliotrope and carnations. The airing, watering, and other wants of the plants also increase; but with added cares come new floral rewards, new surprises in bud and blossom. First, of

INSECTS.

The most troublesome in the house is the green fly, or aphid. There is but one thing to be done, — remove them, or lose your plants. To one cure only will they yield, — tobacco smoke. This must be given in quantities sufficient to destroy animal life. No mere wreath from a cigar will answer. A cloud of smoke that will fill an entire room must be raised. First, place all the plants that are affected upon the floor of the wood-shed, or other small room, and, having sprinkled them with water, get the tobacco ready for burning. Tobacco-stems are used for this purpose, as they cost but a trifle. Wet the floor about the plants, to prevent any accident from fire, and also wet about a peck of the tobacco. When it has ceased dripping procure several

live coals upon the fire-shovel. Set it upon the wet floor, and sprinkle over the coals a handful of dry tobacco, broken up fine. When it is fairly lighted and smoking freely, place the wet tobacco over it. When the smoke begins to pour out in clouds shut the room up tight, and leave the bugs to their fate. In about an hour a good sprinkling of water may be given to remove the dead or dying insects, and when the dripping has ceased the plants may be returned to their places. Should the flies reappear, repeat the dose. Another troublesome pest is the mealy bug, or woolly aphis. It is a small, downy, white, sluggish creature that clings to the stems of the cape jasmine and other plants. The only way to rid the plants of this pest is to wash them with warm soap-suds, using an old tooth-brush to sweep them away. The red spider, an almost invisible, red-colored, and very troublesome insect, sometimes appears upon house plants. The vigorous use of the syringe and cold water will keep it away. If a plant becomes very badly affected by them, the best way is to throw it away at once. The white scale, that appears upon the ivy, must be treated as was his cousin, the mealy bug.

Mildew and black rust sometimes attack window plants in the spring. The sulphur solution mentioned in Chapter III. will quickly cure both troubles.

TURNING TO THE LIGHT

must be resorted to from this time till spring. By this

is meant turning the plant round occasionally, so that every side will have its share of the sunshine. If this is not done, the plant, in its endeavors to reach the sunlight, will become "drawn," or misshapen. It may perhaps produce as many flowers, but they are not alone sufficient. Handsome, well-shaped plants, properly balanced, and presenting beautiful forms as well as colors, are what we wish. Just how often to turn a plant, each one must learn for herself by experiment.

POT-BOUND PLANTS.

All plants growing in flower-pots eventually become "pot-bound;" that is, the roots fill the pot, twisting around the sides and ramifying through the soil till but little appears to be left, and the pot becomes full of roots instead. If the plant is turned out of the pot, and vigorously shaken, it will be found that one-half of the soil has been destroyed, eaten up, — and its place occupied by a tangled and knotty mass of roots. Having thus reached the limit of its supplies, it sends out its roots beyond their confined quarters in search of fresh food. They overflow the edge of the pot, or creep through the drainage hole in the bottom. If no more food can be found, — if the exploring and venturesome roots meet a cold and barren reception, — they stop and go no farther. The plant then seems in a blind and vague way to conclude that its end is near. It therefore follows the one great instinct of all life, — reproduction, — puts forth its flowers, perfects its seeds, and then dies.

The intelligent cultivator, knowing this, and desiring to have a plant bear flowers at any time, allows it to become pot-bound. The blooms appear, supply the grower's wants, and then the plant is suffered to perish, or is re-potted, planted out, or otherwise treated so that life is preserved for another season.

The curious part of this is that the size of the pot makes no difference. A young plant that becomes pot-bound in a three-inch pot will certainly flower in that pot. If, on the other hand, it is not allowed to become pot-bound, but is supplied with fresh soil as fast as needed, it will not flower until it becomes mature through the lapse of time, and blooms naturally.

From this we may make these rules: To cause a plant to bloom in advance of maturity, let it become pot-bound. To cause a plant to bloom in any particular pot, let it become pot-bound in it. When a plant approaches maturity through natural causes, by reaching its full growth, let it become pot-bound, as nothing will be gained by re-potting.

The practical application of this to the plants now in hand is, that those young seedlings raised in the fall must be re-potted as soon as they begin to become pot-bound. Unless a partial crop, or a crop produced at any particular time is desired, keep re-potting, from one size to the next, until a seven-inch pot is reached; then stop. In this size let them bloom, as it is a convenient and profitable one for them to occupy.

It may occur to the reader that it would be as well to jump at once from the three to the seven inch pot, or even transfer the young seedlings directly from the seed boxes to the large pot. It would not, most certainly. Why not, cannot be here explained in detail. The principal, and quite a sufficient, reason is, that long before the plant became pot-bound, or reached maturity, the soil would undergo chemical changes which would render it unfit for plant-food. This naturally leads to the subject of

LIQUID MANURE.

All plants growing in pots lead an artificial life. They must be assisted in every way, if success is desired. The roots, being confined to a limited space, cannot roam abroad, as in the garden, for new fields and fresh food. To enable them to bear heavy crops, and produce more than they naturally would, resort must be had to liquid manure. Solid manure might be given them; but, as it must be first reduced to a liquid to be used by the plant, and is unsightly and disagreeable, liquid manure is to be preferred.

GUANO,

dissolved in water, makes the most convenient liquid fertilizer. Great care must be used in applying it, as it is very dangerous. An over-dose will either kill a plant, or cause it to drop its leaves. To mix it properly, stir into the water used a spoonful of guano. If this gives the water the

color of pale ale, it is enough. If not, keep adding and stirring till that light-brownish shade is reached. Apply this weak solution with the spout of the watering-pot in such a way as not to touch the leaves. Twice a week, during the sunny weather, will be enough for all purposes.

A safer and cheaper liquid can be obtained by draining water through stable manure. The black liquid that results may be mixed with twenty times its bulk of clear water and used freely.

CHAPTER XI.

FEBRUARY.

WITH the increasing light and heat from the sun, more attention must be given to the airing, watering, and showering of the plants in the window. Fresh air must be given upon sunny days, and, as a natural result, more water will be needed. Opportunities for showering the plants will be more frequent, and should be improved. The growth of the plant will be more rapid, and flowers will be produced, and consequently greater care will be needed. Liquid manure will be demanded, and cleanliness required, if healthy plants and heavy crops are expected. Some of the plants will go out of flower, and new ones to take their place will be required.

FORCING

must be now tried upon the plants in the cellar. The geraniums, tea-roses, fuchsias, deutzias, and astilbes must be brought up, watered freely, and placed in the window. This process in detail is something like this: bring one or more of the plants from the cellar, wash and shower them heavily as they stand in the sink; when the drip has

ceased, they must be examined carefully to see that no injury from mice, accident, or destructive insects has happened to them. The tea-roses and geraniums must be cut back; that is, one-half of the wood must be cut off, unless it was done in the fall. The deutzia must not be cut at all. The astilbe, having no visible top, needs no further attention. In placing these plants in the window they need not be put in the full sun, or great heat. A partially shaded and cool place will answer for the first few weeks. Until the leaves come out, little or no water must be given; enough to keep the soil from becoming dry will be sufficient. If it is desired to extend the season, but one plant need be brought up and forced at once. If it is desired to have white flowers on any particular day during the months of February, March, April, or May, plants of the deutzia or astilbe may be forced about six weeks before the required date; for instance, if flowers are wanted at Easter (March 17, or thereabouts), begin forcing February first.

RE-POTTING AZALIAS,

oranges, lemons, camellias, and other hard-wooded plants, is generally done but once a year. The proper time to do this is immediately after the plant has bloomed. If it is young, give it a pot one size larger; if old, and already as large as is convenient, cut and pare away a portion of the roots at the top and bottom, and put into a clean pot of the same size. After potting, prune the plant into a good

shape, by cutting off a few inches of the last year's growth ; give one good showering and return to the window. Till the new growth starts out, give but little water. When the young leaves expand, increase the supply of water. Liquid manure must not be given to plants recently forced or re-potted.

CHAPTER XII.

MARCH.

WITH this month we complete the year. Spring has returned, and the garden again demands our attention.

ROTATION

of crops is one of the great principles of agriculture. No less is it important in horticulture. The crops of our flower garden must be treated to the same rotation as is applied to our farm crops. The verbena, heliotrope, and rose must change their position each year, precisely as do the potato, squash, and turnip. How to accomplish this in our two little borders is not so very easy to decide. The best we can do is to change the number and kinds of our bedding plants, and to set them out, as far as possible, in other places than those they occupied last year.

A very much better way than this is not to rotate the crops, but the garden. If the entire garden is taken up and removed to another place, the desired end is attained. All of the plants have new and fresh soil, and all have had the benefit of rotation.

To do this, cut out new borders of any desired size or

shape, in some other part of the lawn, and with the turf re-sod the abandoned border. Those shrubs and hardy roses that are in the border can remain, and each have its own little border around it. The new border must be manured, and treated precisely as described in Chapter I. It is true, this rotation need not be done the second spring. For two years the first border will answer very fairly; but beyond that it is almost useless. Even the hardy shrubs, roses, and herbaceous plants require moving every few years. The soil will surely become exhausted, even if manure is regularly supplied. There seem to be certain elements in the soil that only nature can supply. One or two crops will exhaust it. If a third crop is tried, failure results. Another crop of some other kind put into the ground will succeed easily. Still another will do as well, and on the following season after that, the first crop may be tried, and it will be found that the soil before exhausted has recovered, and is ready to be used again.

If the garden was a large one, it would not require moving. We could select a proper course of rotation from among our plants, and change them from place to place to suit their needs. Here we have many plants and a small garden. Manifestly, it is easier to rotate the garden than the plants.

THE PLANT GARDEN.

This is a term that the writer is obliged to invent, to describe a new idea recently carried out in our best com-

mercial gardens. In such places the only object is money. As flowers bring the money, they are all the cultivator seeks. To do this he uses, what, for want of a name, may be called a plant garden. This is a garden where flowering-plants are grown for the crop, without regard to appearances. To those who have but a very small piece of ground, and have not the time to attend to decoration, such a garden might be useful.

This garden consists of borders prepared in any suitable soil, having a good aspect, and sheltered from the north or west winds. The border should be three feet wide, and as long as may be needed. In these borders set out the plants in solid rows, from side to side, and as close together as the plants will stand and not crowd each other. The after culture may be as simple and rough as is consistent with thoroughness. Beyond keeping the plants clean and in health, no particular pains need be taken. By planting the stock in this way, each plant is easy of access for pinching, pruning, or cutting. The expense of such a garden is much less, as the cultivator can easily see for herself.

HOUSE PLANTS IN THE SPRING.

Through March and April the care of the house plants will continue to be very much as described in the previous chapters. With the return of warm weather the plants will be moved out of doors. With the exception of the smilax vines, no plant must remain in house through the summer.

Each plant, or group of plants, requires a different treatment. Below are the plants and directions for their treatment.

Tea-roses,	Jasmine,
Heliotrope,	Cape Jasmine,

Geranium :—

To be cut back slightly and planted in the garden.

Carnations,	Stoeke,
Murandia,	Chinese Primrose,
Mignonette,	Allyssum :—

To be thrown away as valueless.

Azalia,	Camellia,
Orange,	Ivy,

Lemon :—

To be kept in the pots, and placed on the north side of a fence or building where there is a partial shade. Under a tree will not do, as the drip during rain is injurious. Do not set them on the bare ground, but upon a bed of ashes, or a board. It will be plain that, during their stay out of doors, they must be watered when they require it. This will not occur every day, as each rain will aid in the matter.

Smilax.

This may be cut down as soon as it goes to seed, or ceases to grow, and allowed to dry up. The plant, pot and all, may be put away on some dry shelf till wanted next season.

Bouvardia,

Eupatorium.

These must be cut quite down to the roots and then planted in the garden.

Fuchsia.

This may be allowed to stay in the house longer than any other plant. In June, or even later, the plant still in its pot may be plunged in the soil in some shady place in the garden.

THE CONCLUSION OF THE WHOLE MATTER.

The year having been carried around, and those operations necessary to the care of house and garden culture briefly sketched, it is not important to repeat the directions for the approaching season. The reader can easily refer to the chapter on April, and learn therefrom what steps to take. In gardening, one year is, in the main, precisely like all others. Each operation, when once learned, need but be repeated, with such improvements as suggest themselves to the intelligent cultivator.

THE EXPENSE

of all the various materials and processes set forth in these notes can be easily estimated from the prices scattered through the work. To know the cost of any one thing, refer to that chapter where it is first used. The whole cost the reader can easily add up without assistance. The

expense will not be great, even if every plant, tool, or process here mentioned is bought or carried out. If the grower does not care to do so much, any part may be selected, and the cost readily found.

TO MAKE A BOUQUET.

Having given directions for raising flowers, a few words upon their use may not be inappropriate. The simplest and best way to exhibit cut flowers to advantage in the house is to place them in shallow dishes, vases, or wine-glasses. Taste must be the guide in this matter. The making of crosses, wreaths, or other floral decorations, is an art in itself, and would require more pages than we can here give.

The simplest way to put up flowers to carry is what is known as a hand-bouquet. A slender stick, about a foot long — some annealed iron wire, size No. 21, and a ball of linen twine, such as is used in the garden, are necessary if economy of flowers and ease of manipulation are considered. Have the flowers prepared, by putting wire stems to those that have none, and the leaves stripped from those that have them. The leaves are of no consequence, and only crowd the bunch when made up; besides, the flowers keep better. Having spread the flowers on a table, each kind by itself, and fastened one end of the twine to the tip of the stick, take it in the left hand, holding it by the finger and thumb to tighten the twine. First, select some light flower,

and fasten it to the top of the stick, by twisting the twine around it. Next add one small flower of another kind, just below the first; then turn the stick half way round, and add another of the same kind. Then turn it quarter way round, and put in one of another kind or color; turn half way round again, and repeat the flowers. Close under these flowers set a ring of green of some kind,—geranium leaves, smiláx, etc. Here you can stop, as the bouquet is finished, as far as it goes. If a button-hole bouquet is wanted, it is at hand. To increase the size, add more flowers of another kind, having a longer stem. Repeat by turning half round, quarter round, and half round again. Then add a new kind between two of these, and repeat the turning as before. A ring of green must be tucked in close under these eight flowers, and another bouquet is done. To make it larger add more flowers, but do not let them project as far. Put in more green, and add more flowers with still longer stems. Keep on in this way, changing each circle so that a variety will be obtained. Symmetry of shape will take care of itself. If the directions for turning are followed, the bouquet will be round and well proportioned of itself without trouble.

As can be easily imagined, there will be difficulties attending the first efforts in making a bouquet. The best way is to take a quantity of cheap flowers in summer, and keep experimenting until the art is acquired. It is not an easy thing to make a bouquet, that shall be at once graceful,

natural, and symmetrical; yet, by the aid of these simple directions, no one need to hesitate in making the attempt. Try it, experiment, and practise upon it. With patience and perseverance, success will be eventually reached, and a really artistic bunch of flowers produced.

THE ARRANGING OF COLORS

is something each one must learn for herself by practice and study. No space now at command would begin to do justice to the subject.

A GARDEN A SANITARY MEASURE.

Here an end must be made to these few horticultural notes. Many things have been omitted. The wardian case has not been alluded to, nor ferns even suggested. A score of flowers that can be cultivated in the parlor, or the garden, have been passed without notice. The object has been to present simple and concise directions, for the care of a few of the more common flowers, and to show that, even with the expenditure of a very small sum of money, flowers can be had in abundance. To conclude, a few words upon the garden as a sanitary measure will be in order.

The labor to be performed, as set forth in these notes, is by no means hard, nor is the needed attention wearisome. Any girl of fourteen, or boy of twelve, might undertake the whole affair, and would doubtless succeed, if possessed of an ordinary amount of pluck. Every young lady, who

has the control of a piece of ground, be it ever so small, or, lacking that, has but a window, should cultivate a few plants; should go out under the open sky, and work in the ground with her own hands.

“What a monstrous idea!” exclaims the fine lady reader.

“Young ladies work on the ground, — dig in the dirt! It is not to be thought of a moment.”

“No doubt of it. Neither is health to be thought of beside the demands of fashionable and elegant society. It is not the thing to have ruddy cheeks and vigorous limbs. To be able to walk five miles over the open country, to row a boat across the pond, or swing a rake in a breezy, fragrant hayfield, may be well enough for girls, but young ladies never do such things.”

At this we are utterly extinguished. We haven’t another word to say.

But this may fall into the hands of some young men or women who are so fortunate as to care for flowers, and who are aware of the rich mine of pleasure, health, study, and amusement to be found in a flower garden. It may be, too, that they belong to that large class known as “semi-invalids.” For them we have a word.

“Come into the garden, Maud,” Jenny, Edward, and all the rest of you. Get out into the open air and unfashionable sunshine. Shut your books and study nature; leave your needle and take the trowel and rake. A hoe-handle is an excellent tonic, and the smell of the ground is an

appetizer that will add an unknown pleasure to a good dinner. Plant-growing is a scientific pursuit, warranted to sharpen the keenest wits. Seed-planting and flower-gathering are innocent dissipations, without the usual headache, — pleasures that do not have to be paid for with pains, or tears. In short, a garden is a sanitary measure, pleasant in its operation, and delightful in its results.

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