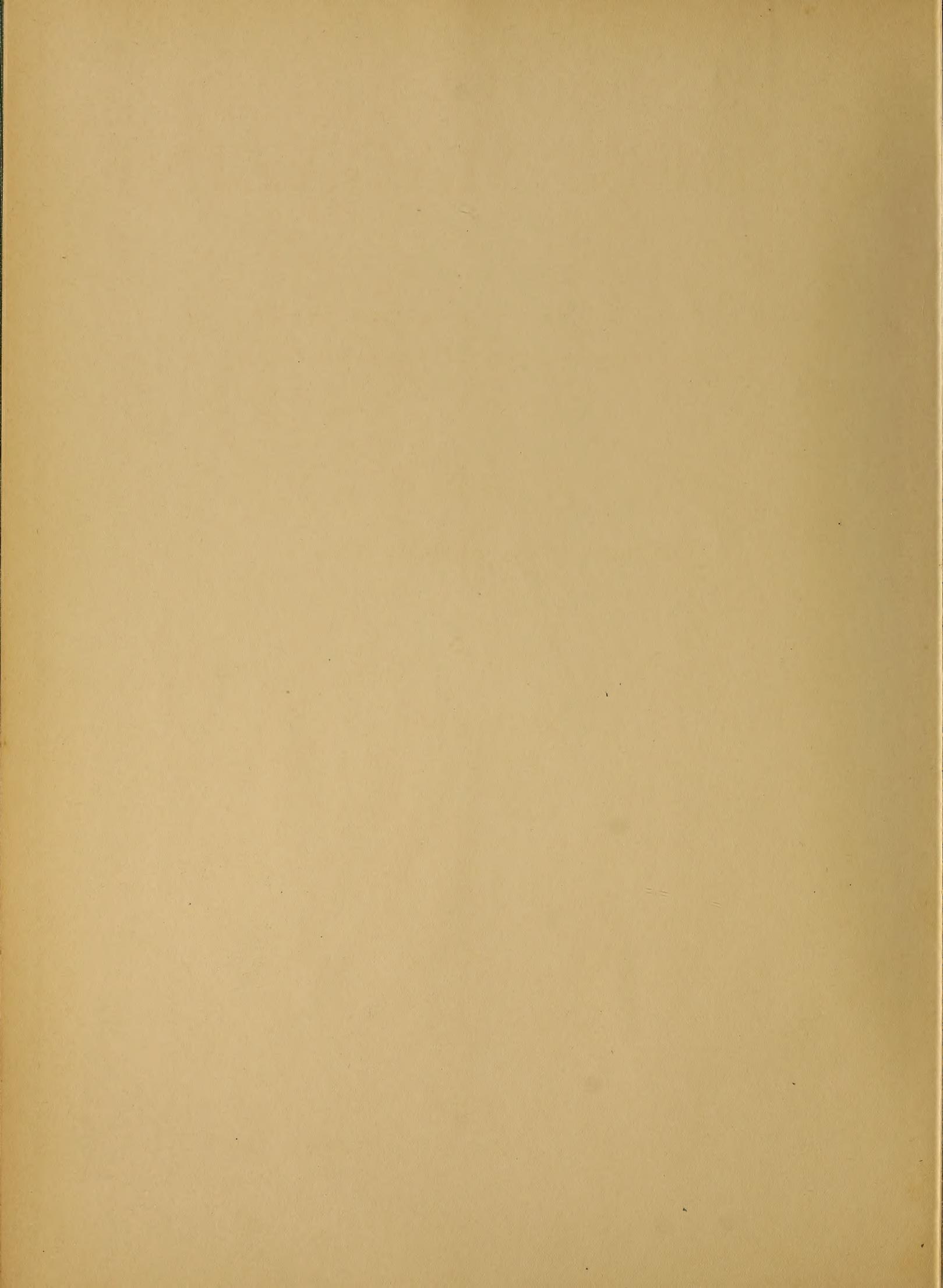


THE GARDEN MAGAZINE





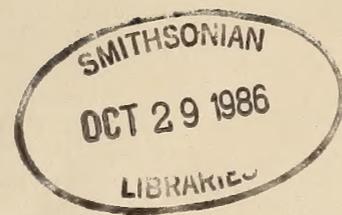
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and to the Cultivation of Fruits, Vegetables and Flowers*

Volume IX

February, 1909, to July, 1909



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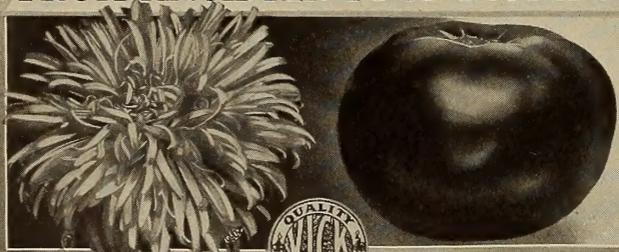


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One of the best-known figures in the poultry world is I. K. Felch. Many years ago Mr. Felch published his breeding chart, but later, realizing its value, he withdrew it and kept the information for himself. He has now given Mr. Boyer permission to use this information, and it is included in this book.

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Boyer's secret of securing fertile eggs by alternating males we believe is worth \$100 to any big producer of setting eggs. It is something new, and the diagrammatic illustration furnished by Mr. Boyer makes the matter so plain that the novice can easily understand it.

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An enterprising poultryman has been advertising this secret for \$5.00 and pledging those who buy it not to disclose it to any one else; it has, however, long been known to a few poultrymen, Mr. Boyer among them, and the method is fully explained in "Poultry Secrets."

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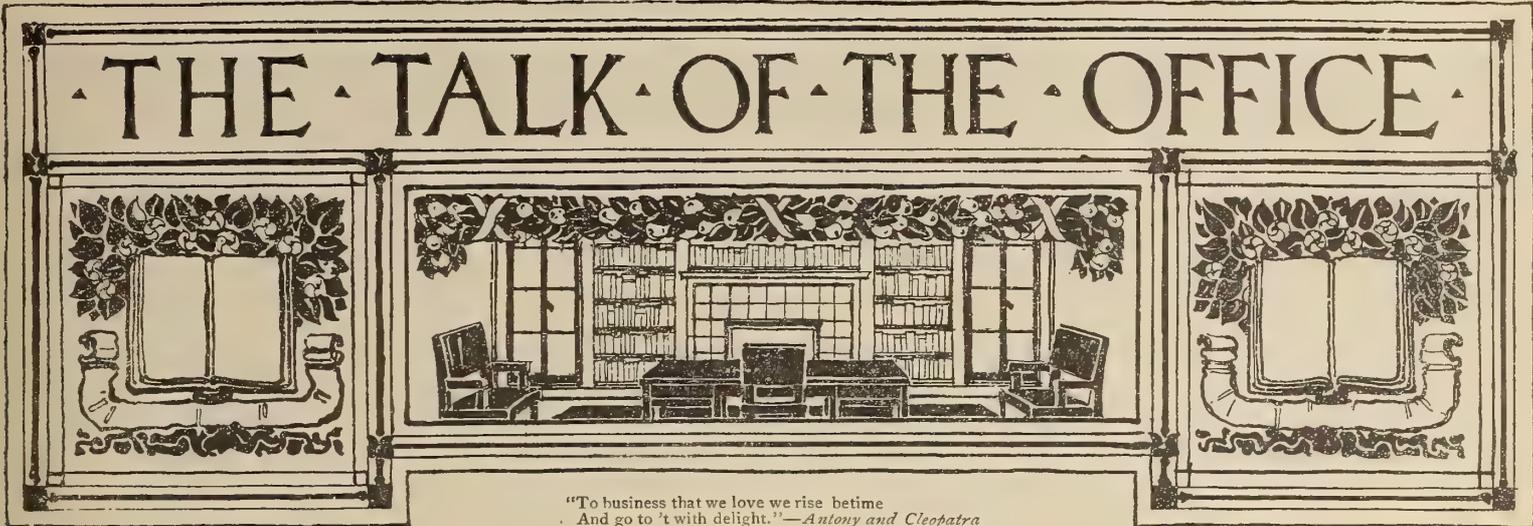


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Doubleday, Page & Company have already in process of making the best collection of new books it has been their good fortune to put forth.

Among those now on hand (and there will be others) for publication during the next six months, are books by:

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- Mary Dillon
- Perceval Gibbon
- O. Henry
- Wallace Irwin
- Rudyard Kipling
- Edwin Markham
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What a pleasure it is to add a new book friend to your acquaintances, and Christmas is not the only season for achieving this pleasure.

In this connection we wish to call your attention to prizes offered by us on page 53 of this magazine, for suggestions to help accomplish this purpose.

of the year. The price is 25 cents postpaid, and every page is full of facts that everyone wants to know.

JANUARY PUBLICATIONS

In January we have the pleasure of publishing the following books, which we believe are sure to have a lasting success, and which will speak for themselves:

The Death of Lincoln (The Story of Booth's Plot, His Deed, and the Penalty), by Clara E. Laughlin.

Lincoln's Love Story, by Eleanor Atkinson.

The Climber, by E. F. Benson.

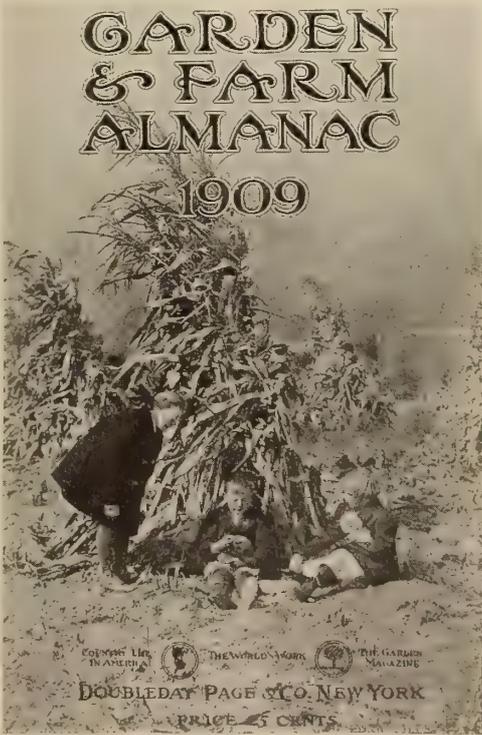
Comrades, by Thomas Dixon, Jr.

The Bishop and the Boogerman, by Joel Chandler Harris.

COUNTRY LIFE FOR EVERYONE

The President thinks that life in the open is so important that he has appointed the Country Life Commission to foster its extension and improve its condition. We feel that our magazines, *Country Life in America* and *The Garden Magazine-Farming*, *The Garden and Farm Almanac*, and all of our open-air books should prove to be good tools for advancing this interest.

We started this campaign when we first began business nine years ago, and it has occupied the attention of a large proportion of more than three hundred people who work in our shop. What we want now is three thousand people of equal calibre and enthusiasm working on this fascinating campaign outside of our shop, in the country where the out-door life is enjoyed, and among the town and city people who should enjoy it. The effort is good, and it should be profitable. If the reader of this paragraph wants to join in this campaign to do some good work, and make some money, he or she will please send their name and address on this blank.



THE 1909 GARDEN AND FARM ALMANAC

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THE WORLD'S WORK



THE GARDEN MAGAZINE

DOUBLEDAY PAGE & CO. NEW YORK.

A Splendid New Crop for the South

BUR clover is closely related to alfalfa instead of the true clovers. While alfalfa, being mostly a summer grower, requires choice land and almost ideal conditions, bur clover grows in winter and early spring, and will thrive on any kind of land with rainfall enough to bring up the seed in the fall, and without any particular effort in the way of preparation. Alfalfa will probably not grow profitably on the great majority of rather thin, sandy or clay uplands of East and South Texas. Bur clover is perfectly at home on these locations after once getting a start.

In nutritive value, this plant is probably equal to alfalfa; but since it completes its growth and dies by April or May, it is not generally considered of much value for hay. It would give only one crop of hay, and that not a heavy one. Therefore, it is generally grazed through winter and early spring.

In this climate bur clover always gives good grazing from one to two months before Bermuda and other summer grasses are ready. It thus enables us to almost fatten cattle before flies, heat, and other annoying conditions appear.

Bur clover on Bermuda grass is the finest kind of combination for an all-the-year-around pasture. The clover grows in winter, while the Bermuda is dormant, and in the early spring before the latter gets a start. The grass sod holds up the stock while the clover is being grazed. The clover dies root and top in time to begin to rot and fertilize the soil by the time the weather is warm enough to start the grass.

The nitrogen gathered from the air by the clover, and gradually given to the grass through the summer as the clover stems, roots and leaves rot, makes the nutritious grass.

As a cover crop to protect and fertilize and improve the soil, it is one of the very best crops we have. As indicated above, if land is once well stocked with bur clover seed, it may be cultivated three years, and a volunteer clover crop will come up every fall and clothe the land for the winter.

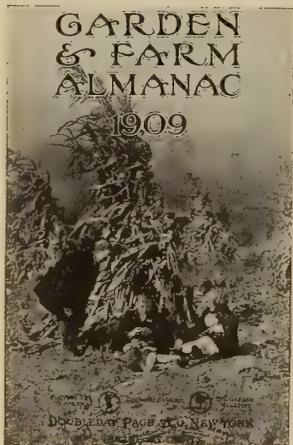
Bur clover for the orchard is undoubtedly a much better crop than cowpeas, and probably the best crop we can get for this purpose. Some say cowpeas foster certain root-knot diseases of fruit trees. Cowpeas must make heavy drafts on the soil for moisture and food at a time when the trees may need these to make growth or mature fruit.

Bur clover completes its growth in April, when there is still plenty of moisture for it and for the trees—sometimes too much, so it is an advantage to have some of it drawn out. If plowed under promptly, it begins to rot in time to feed the fruit trees while making their best growth, or doing their greatest work—making fruit.

The above is taken from Bulletin 108 of the Texas Experiment Station.

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The calendar shows the moon and sun and the various divisions of time.



THE WORLD'S WORK



THE GARDEN MAGAZINE

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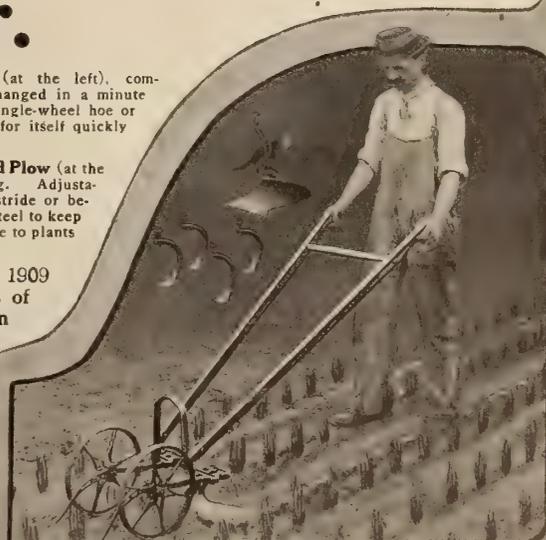
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A Visit to a Famous Nursery—By Rogers Dickinson, Illinois

THE WRONG IDEA A LAYMAN HAD OF A NURSERY AND HIS ENLIGHTENMENT

I HAD always thought of a nursery as a great field in which rows upon rows of uninteresting miniature trees were standing like regiments of tin soldiers—a sort of open where a house of growing things stuck up in the bare ground as crockery is stood on counters in a great china shop.

Instead, on the gentle hills overlooking the lovely winding Fox River, I found a veritable garden of evergreen trees dotting the slopes like a verdant blanket, of varying shades of green, with a spot of brilliant color here and there, where a group of maples grew, or the dull reds of the oaks showed.

On the main automobile road running between Wheaton, Illinois, and Lake Geneva the Dundee Nurseries are wonderfully situated. In the Fox River valley the soil and climatic conditions are exactly right for the growing of hardy trees and shrubs to the utmost perfection.

Here William Hill established the Dundee Nurseries in 1855, and here ever since his nephew, David Hill, the present owner, and his sons, have been developing the growing of evergreen and other trees and shrubs. These experts are devoting their lives to the development of this nursery, and each discovery, every development of forestry and horticulture, has contributed to the perfection of the stock for over fifty-three years.

While the trees of the Dundee Nursery grow on hills where they get the advantage of alternating sun and shade, the soil is the rich prairie land that has made Illinois famous for its crops. In winter the cold is severe and the snows lie deep, which insures hardy stock. In addition to the natural advantages, the long years of development have enabled the owners of this great nursery to grow wind break trees and to establish groves of large, perfect specimen trees.

From the very beginning, D. Hill has grown stock from seed; he has not been a fattener of stock (to borrow a phrase from the cattle raiser), but an originator. Buying or raising the best seed, and then growing the tree from the ground up under the best possible conditions for that particular variety, enables the Dundee Nursery to tell accurately what the plant will do under given conditions.

To me, the raising of a tree from seed was a fascinating process. Somehow it had never occurred to me that great trees grow from seed planted in thick-set rows in a bed like radishes. There, at the Dundee Nurseries, I saw beds of pines set in rows almost as thick as bristles of a hair brush, beds a hundred feet long, on which millions of little trees were growing under the shelter of wooden slats. Young trees require shelter from the full glare of the sun.

In other beds the transplanted trees were given more room to reach up and out into the sunlight. In a half acre there were a half dozen beds as carefully kept as a rose garden. Trees ranging from the little sprout a couple of inches high, under the sheltering slats, to the vigorous young trees of a foot or more in height, were planted side by side in the long, narrow beds. They looked like long strips of green carpet of varying naps. Here in this great nursery could be studied the history from babyhood to sturdy old age.

The little trees are transplanted and retransplanted so as to encourage strong, compact root growth. Each time a tree is moved it is given a little more room to allow of its perfect development.

There were many plots such as described above, each protected by a windbreak of closely set spruces, and so arranged as to get just the proper amount of sun and shade.

The Dundee Nurseries supply trees, both

evergreen and deciduous, from the little seedling size to the tree mature enough to produce an immediate effect.

Nurserymen is a good term to apply to the growers of trees, for their care of the young forest children is much like that bestowed by a mother on her babies. The bedding, the food, the protection from the strong sun and high winds, while applied differently, of course, by the nurseryman, is almost as tender and generally much more effective than the mother's care. Even when the young trees are sent away, they are as carefully wrapped as a child.

For three generations this family has made a study of the growing of trees in this country and abroad, improving the quality of native trees, developing and increasing the quantity of trees and shrubs suitable for this climate from other countries.

The Dundee Nurseries have found that it does not pay to grow poor stock, and their experience is great.

Some members of the Hill family are constantly traveling throughout this country and Canada, studying conditions, searching for new varieties, working out the problems that confront the planter of trees. This wide acquaintance with conditions in all parts of the country, and the long years of experience, make the Dundee Nurseries of particular value to their customers. Only by seeing the work actually under way, however, can one realize the care necessary to produce perfect trees. A visit to the nursery is worth while; it is a mighty pleasant experience in the first place, and one can find out more about the growth and care of trees in a few hours at the Dundee Nurseries than a week's study of books will give. Besides, it adds much to the satisfaction of buying if you pick out your own trees.

Dundee is easily reached from Chicago, and D. Hill and his sons would welcome you.



"Like long strips of green carpet"



"Given more room for perfect growth"

The Garden Magazine

VOL. IX—No. 1
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FEBRUARY, 1909

ONE DOLLAR A YEAR
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[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

Make Your Seed Lists Now

THE most important thing to do this month is to make out your seed list. Figure out the quantities of each kind wanted, particularly vegetables, make your plans well in advance, and err rather on the side of buying too much seed than too little. In very few cases will it be lost; any large surplus can be held until next year.

Send for the catalogues, they are ready by this time, and make a judicious selection of the season's novelties. Don't rely upon the novelties for your main supplies of flowers or vegetables, but you should always try out a few each year, and once in a while you will find something particularly adapted to your special requirements, although it may not please your next-door neighbor.

TESTING THE VITALITY

If you have any old seed as to the vitality of which you are doubtful, it is very easy to test it. Count out a number of seeds so that the percentage of germination can be told. Place these test seeds in a shallow basin or flower-pot saucer, spreading them out and keeping them moist. Or they may be placed on a sheet of blotting paper on an ordinary plate.

Kept moist, and in an ordinary living-room, the seeds will germinate in a few days. Quicker results will be had by putting the test saucer in the greenhouse. If the seeds start irregularly and take an unduly long time, better discard the whole lot and buy fresh. And remember that seeds are, after all, the least expensive item in making the garden. Always buy the best seeds that the trade offers. Low-priced seed will give low-quality crops.

WORK FOR THE HOTBED

This month is the time when one appreciates the possession of a hotbed. While

everybody can't have a greenhouse, there is nobody who has a garden of any sort who can honestly excuse himself for not having a hotbed. The only thing that is necessary is a few glazed sash to cover the beds. The frames or sides may be made of any sort of old lumber. Full directions for making hotbeds have been given in *THE GARDEN MAGAZINE* for March, 1905. Earlier and more tender vegetables can be raised in a hotbed.

By the middle of March all of these crops should be under way: Spinach, dwarf peas, beans, radishes, lettuces, beets. No matter if you devote all the available space to the slower-growing, larger crops, catch crops of radishes, mustard, cress, and other salads can be had by intercropping. By the end of the month seeds of tomatoes and peppers should be started for transplanting later.

You can gain a month on nearly all the vegetable crops by starting seeds in the hotbeds during February.

THE GARDEN SITE

Did you ever notice that some parts of the garden are colder than others — that the snow and ice hang there longer? This is of some importance in making the plans for your vegetable garden. No matter how small the garden, there will be some differences to note. By selecting the part best sheltered from cold winds, but well exposed to the sun, especially on the south side, you can gain a week in outdoor sowings. Lightening a heavy soil by adding ashes or sand will also help wonderfully. Reserve the heavier and wetter portions for planting to celery.

STARTING THE FLOWER GARDEN

All hardy annuals can be sown indoors now or in the hotbed, and seedlings will be ready for transplanting as soon as the ground is warmed up. Half-hardy annuals, such as China aster, gaillardia, cobea, dahlia, pansy, castor-oil weed, should all be sown in head during this month. Start up canna roots; otherwise you will not get flowers until quite late in the summer.

If you want more bedding stock — geraniums, coleus, and such like — propagate rapidly now.

Hyacinths and other bulbs that were potted in the fall should now be coming along, and can be brought into a cool place and full light, either in the window garden or in the greenhouse.

If you want the most effective and surest plant for a flower-bed in a shaded corner, get tuberous begonias. You can buy dormant roots during February, placing them in

flats in gentle heat, and have them ready with growth started for planting out when the weather becomes warmer.

Look over the fruit trees and shrubs with a view to pruning any that really need it. Always do this work before the buds start.

Newly transplanted stock should have been cut back at least one-third. If this was omitted, do it now. Remember that flowering shrubs must be pruned after they have flowered; therefore, it is only safe now to prune those kinds which flower on the new wood.

FEED THE SOIL

Of course, you cannot get maximum crops in poor soil. This month is the best possible time for spreading stable manure, especially in the vegetable garden. Spread it evenly over the surface at any time, and the digging in may be left until later.

Look over stored root crops in the cellar. With the approach of spring they are liable to rot rapidly. Open the cellar doors on all fine days and admit as much air as possible. Pick out and destroy diseased specimens.

If the parsley in the garden was killed during the winter—or, as sometimes happens, eaten by mice—sow seed in heat toward the end of February, so as to have vigorous plants ready for planting out as soon as the weather is favorable. Soak the seed for twenty-four hours in warm water—90 degrees or so.

GROW SOME NASTURTIUMS

If you want an annual that is the easiest to grow, adapted to all kinds of situations, and suitable for both foliage and flower effects, the nasturtiums will surely satisfy you. The recent improvements are remarkable. (See page 15.)

Both the seeds and the young plants of the nasturtium are sufficiently hardy, so that the plantings may be made early in the spring, when the maple trees are starting out in leaf, or as soon as the soil can be properly prepared. This early planting gives a long season of bloom, starting early in the summer and continuing until the plants are killed by heavy frosts late in the fall. After cool weather comes in the fall the flowers become larger and the hues of the mottled or parti-colored varieties are much more brilliant.

A well-rotted compost or manure dug into the beds the previous fall will give the best results with this flower, as a too generous supply of fresh manure put in the ground in the spring will cause a rank growth of vine and foliage and will greatly delay the period of bloom.



Lift the plants from outdoors in August, taking all soil possible with the roots. Note how the spade is used to secure this result; plunging down deeply and then prying over

The Best All-around Flower of Winter — By W. C. McCollom, ^{New York}

CARNATION CULTURE FROM THE VIEWPOINT OF THE AMATEUR WITH A SMALL GREENHOUSE — POINTS HE MUST OBSERVE IN MANAGEMENT TO HAVE FLOWERS ALL THE SEASON — BEST VARIETIES FOR GENERAL CULTIVATION

CARNATIONS are the most popular of all greenhouse plants for cut flowers during winter for the following well-founded reasons: First, the colors are of such purity as to please the most critical, and are sufficiently diverse to suit all purposes of decoration; second, the flowers are borne on long stems which make them valuable as cut flowers; third, their fragrance is of a delicious, clove-like odor; fourth, the carnation is a good keeper and a good shipper. This is important when you think what a very small percentage of the flowers used are grown near big cities. Fifth, no great heat is required, about 55 degrees and plenty of fresh air giving the best results. Can you think of another flower that answers all these requirements?

Now, although the largest interest in carnation growing is the commercial florist's, I am going to tell the amateur owner of a small greenhouse how he can produce better and larger flowers than he can buy. The florist measures his results in the return of so many cents per square foot of space, as a rule; we will look rather for superlative quality. Nor is it necessary to devote an entire house to the one flower. A dozen

plants in a house with other favorites can be so managed as to yield all one may desire, if the needs of the carnations are kept in mind at all times and they are made the controlling factors in management.

The present time is the height of the season for carnations, for they produce flowers most freely in February, and cuttings may best be taken just a little earlier. True, they can be propagated almost any time of the year, but from December to the end of January is the best. It is very important that the cuttings be taken from flowering stems. Take them low down, where they are about three inches long, or break them off to that length. Place them in a sand propagating bed (which has been previously prepared by hard pounding) about one-half inch apart, in the sun, with about two inches between the rows, and again pound the sand firm around the cuttings. Water them with a watering-pot and rose spray to settle the sand, and shade from strong light until they have started to emit roots. This will be in from two to four weeks, according to the kind of cutting, temperature of beds, etc.

The rooted cuttings are potted in two-inch pots, using a rather light soil and one which

has no fresh manure of any kind in it. If your soil is heavy, add some sand for the first potting. The plants should then be placed in a light house and watered carefully until they are established.

About three or four weeks after the first potting a second one will be necessary. For this use the soil from a compost heap, and a four-inch pot is about the right size. The one great caution needed here is ample drainage, for carnations are especially resentful of "wet feet," meaning roots in standing moisture. Be very careful even about watering at all in the larger pot until they have started to grow. Look over them carefully, picking out and watering only the plants that are dry — don't water them all because one or two are dry. By the time the plants are well rooted in the four-inch pots it will be about time to think of planting them out. Some say plant in the field, others in the house, and a few insist that the best way is to plant in deep boxes and place out of doors. I prefer to plant in the field because the plants then require far less care, and the check they receive when lifted does not amount to anything. One carnation grower claims that different varieties behaved differently under similar



Open a hole in the soil with the left hand, holding plant in the right hand, ready to set

Insert the plant just as it comes from outside. Note the proper depth with all soil attached

Firm the soil around the plants, using fingers and knuckles (not the fist) and the thumb at the collar

Finally level the surface about the newly set plant and water just to settle the soil. Don't over-water



The fringed type of flower is the most popular to-day. Mrs. Patten, "variegated," i.e., red splashes on white, shown here, is markedly fringed.

conditions, asserting that the curly-leaved sorts were best for all-indoor culture, while the straight-leaved kinds (such as Enchantress) were best planted out during summer.

The only gain of all-indoor culture is earlier flowers, but for the average amateur this may be a real disadvantage, as there will usually be chrysanthemums to give flowers up to December. Growing in boxes is, I think, of no value unless chrysanthemums are grown in the same house with carnations.

Planting out is not safe before April 15th. The site selected should be high ground, well drained in order to escape stem rot, a troublesome disease when it occurs. Set the plants fifteen inches apart in the row and have twenty-four inches between the rows. I dig over the ground, doing it thoroughly and deeply, and at the same time add about four inches of good farmyard manure just before planting. And here let me suggest that the varieties be distinctly identified by a good stout label driven into the ground, so that when lifting time comes in the fall there will be nothing left to chance or memory.

The more the carnations in the field are cultivated the better they will be next winter. Outside of attention to that detail but little need be done all summer. Never let the ground get hard and baked between the plants, and if you take care to cultivate often, and particularly after each rain, it will probably obviate the necessity of watering the plants, a process which I think is very dangerous, because if you water on bright days you are liable to scald the foliage; if, on the other hand, you water on dark days, or evenings, you are courting rust. If you must water the plants, do it early in the morning so that they will be dry before the sun gets very hot. I often hear of people losing a great many plants in the field through stem rot, and, although I may be a bit harsh in my judgment, I am inclined to think that the greater part of these losses may be charged to negligence. Every year I raise about one thousand plants in the

field, and in no season has my loss exceeded half a dozen plants. I cultivate every week and always after rain, and spray the plants every week, using Bordeaux mixture one week and Copperdine the next. But in the light, sandy soil on Long Island it is much easier to avoid stem rot than on a heavy clayey soil.

Occasionally during the summer, the shoots must be pinched or shortened. Don't allow half a dozen long shoots to develop and then go pinch them all off at one time. Look over the plants every week at least and pinch off the long shoots, leaving about three inches of growth.

PLANTING INDOORS

If you want early flowers, and have a fairly well-ventilated house, it is safe to plant in July; but if your houses are low, and therefore insufficiently ventilated, I advise

waiting until the last of August. I bench about August 15th, and we are always cutting by the end of October.

A good mixture for benching soil is three barrels of soil (or sod is better if it can be procured), one barrel of well-rotted manure, and one good shovelful of bone meal. Don't fill the benches until you are ready to plant, but the compost should be mixed in spring and let lie all summer, turning it several times.

The ideal planting day is a dark one with drizzling rain. Lift the plants from the field rows with a spade, and leave all the soil possible clinging to the roots. Plant about ten inches apart in the rows, leaving about one foot between the rows for best results and greatest comfort later on in working around them. First mark out where each plant is to be set, then go over the benches with some good commercial



Enchantress, delicate light pink, is perhaps the best all-purpose modern variety, thriving over the widest area. There are white and deeper pink sports of this

fertilizer, dropping a big pinch at each spot where a plant is to go. This is beneficial to root action and helps the plant to establish itself quickly. After you finish planting, water each plant separately to settle the soil around the roots, using a sprinkling pot, and remember that carnations are not aquatics.

To provide against any accidents I always pot up a few extra plants at the same time; they can be used later for filling in any blanks where plants have for some reason succumbed.

Until the plants have started to make roots in their new quarters, keep the sun off the plants. This will take about one week, and can be told by the fresh appearance of the foliage. Painting the glass with plain whitewash will afford good shade. The enemy to look out for now is rust, a fungus that attacks the plants, showing red-brown pustules on the leaves. To avoid this, do not let the house get hot and stuffy and then suddenly cool at night. Keep the house as cool as possible during the day, opening all doors and ventilators, and be sure to have them dry at night; don't let the temperature fall below 20 degrees.

From the time of planting keep on spraying the plants, and if a leaf shows any sign of rust, pick it off and *burn* it. The rust will be found most prevalent among the scarlet and crimson varieties.

The plants can stand some direct sunshine in about a week. Don't take all the shade off the house at one time, but remove a little every day with a dry brush. After the plants are well established and making growth they need supporting. For the amateur, growing only a few plants, the individual wire supports sold by the sundries man will be found very handy. They are effective and neat, and may be stored away after use for a future occasion. All kinds of supports are offered, and the reader must make his own choice according to fancy. All that is really necessary is to keep the shoots from sprawling over the soil, and so admit air and light to the base which otherwise would become too damp.

For a number of plants this scheme works well, and is inexpensive: Stretch a wire in back of the bench about six inches above the



The form of the flower depends largely on the calyx. The longer reaching it is the less inclined to burst.

soil, stretch other wires between each plant lengthwise of the bench and also one on the outside. Tie strings to the back wire, stretch them to the front wire, lapping each intervening wire with the string, and each string should be between the rows of plants. Thus each plant will be in a square space. Another series of wires, etc., must be drawn about eight inches above the first to support the flower stalks.

As the flowering time approaches you will find by investigating that the benches are crowded with roots, and extra feeding may be done. I like cow-manure water given once a week. Any other liquid manure or guano or soluble fertilizer can be used. Nitrate of soda (using a four-inch potful to a barrel of water) once every two weeks is very beneficial. But do not feed in excess of these directions.

Toward the end of January apply a mulch of equal parts of bone meal, sheep manure, and soil. About one inch of this should be applied to the benches. Go over the plants every week and pick off all yellow or diseased leaves, and scratch the surface of the soil

but if the roots are near the surface and there is danger of injuring them, the benches should be hand weeded instead.

Toward April the season nears its end, as a rule. The sun gets very strong, and colors of the flowers bleach, but if shaded good flowers can be cut up to the end of June. Painting the glass for shade would make the plants soft and lanky because of insufficient light. So I make a lattice work of shingle laths and plaster laths. Lay two shingle laths about three feet apart, and nail the plaster laths to these crosswise, leaving the width of a lath between each two. This still admits enough light to ripen the wood and insure healthy growth.

Now as to temperatures: The carnation, as has been said, is a "cool" plant, and the aim must be to keep the temperature at from 50 degrees to 55 degrees. During the day the temperature can be let run up to 65 degrees on bright days when the ventilators are open, or even 70 degrees won't hurt them; but on dull days, when the fires are the only means of heat, do not let the temperature exceed 60 degrees. This is imperative for large flowers, bright colors, and stiff stems.

Flowers in abundance will be ready by December. Some attention must be given to gathering them. Do it every day, taking them when about three-quarters expanded, letting them open fully in water in a cool, darkened place. Never use a knife; break the stems. You can tell the condition of the plant by the way the stalks break. If they break clean, with a snap, all is well; but if they are soft and sappy, and you have almost to tear the stem in two, there is something wrong — either too much heat or poor soil.

What varieties do I recommend? To answer this fully I must know where you live. Certain varieties do best in certain zones, and, with very few exceptions, are not interchangeable. It is fortunate for the amateur, however, that some few, of pretty general adaptation, are also among the most pleasing and most productive. The amateur wants varieties that are not "croppers," but give flower over the season. My selections, given on page 32, are made with these facts in view.



Outdoors practically the only attention necessary is cultivation



Indoors the secret of success is fresh air and low temperature

Orchard Fruit Grown in Pots—By Richard Barton, ^{Connec-}ticut

THE EASIEST GLASSHOUSE CROP TO HANDLE AND THE ONE THAT GIVES THE QUICKEST AND MOST SURPRISING RESULTS—AN UNUSUAL OPPORTUNITY FOR THE OWNER OF A SMALL GREENHOUSE

IT HAS always seemed to me that the amateur gardener who possesses a greenhouse can get more real results from devoting it to the raising of fruits in pots than in any other way. Everybody appreciates luscious peaches or pears or plums, and if they can be had of superlative quality and some time earlier than those from the orchard a person does not have to be a connoisseur to fully appreciate the results. Moreover there is an untold satisfaction in raising perfect dessert fruits that, it seems to me, is never associated with flowers, be they never so fine. And then, too, you can easily buy all the flowers you want as good as you want; but where can you look for hothouse fruits?

That I am not alone in this opinion is attested by the fact that nowadays a great deal more attention is paid to pot fruits for forcing than formerly. The great advantage that a pot tree has over a tree planted out in the greenhouse is that it can be controlled more easily, and also that the greenhouse can be devoted to another purpose for one-half of the year.

Most of the pot trees which are forced in this country are imported from Europe, principally from England. One reason that they are not produced more extensively in this country is that the ordinary market calls for a tree which will quickly grow to large dimensions, and so the nurserymen manufacture to supply this demand, while finding it convenient to act as middlemen only in supplying the more limited demand for dwarf or potted trees.

To be successfully grown in pots fruit trees must be kept dwarf, and to help

accomplish this purpose nectarines and peaches are budded on to a naturally dwarf and slow-growing stock, usually the mussel plum; pears are budded on to the quince stock, and apples on to the paradise, which is a dwarf apple of French origin.

A tree cannot be dug up out of the open ground, where it has become established, and its roots trimmed, and then potted and be expected to thrive. The tree must have been grown in a pot from the start, so that its roots form only a mass of fibres. Such trees can be purchased two years old (that is, two years from the time of budding) in popular varieties of nectarines and peaches, and three years old for pears and apples, for \$2 to \$2.50 each.

Some of the best varieties useful for pot work are:

Nectarines: Early Rivers, Lord Napier, Elruge, Rivers' Orange, Humboldt.

Peaches: Hale's Early, Rivers' Early York, Goshawk, Noblesse, Thomas Rivers.

Pears: Conference, Pitmaston Duchess, Doyenne du Comice (the best pear grown).

Apples: Irish Peach, Red Astrachan, Cox's Orange Pippin, King of the Pippins, for table; Lord Suffield and Emperor Alexander for baking. There are very many others available, but these would ripen in the order named.

The imported trees will arrive removed from the original pots, the roots neatly sewn up in burlap, and generally November is the time of arrival. They are at once potted into large pots, using a moderately heavy loam, but first thoroughly mixing about one half-pint of quarter-inch bone to the soil for each tree, also a little charcoal broken to small pieces and, if possible, some old mortar or plaster refuse from a torndown building. If this latter cannot be obtained a little air-slacked lime should be used in its place, but it is not so good.

The tree must be potted very firmly, using a short stick to firm the soil between the roots and the side of the pot. If large pots are used, say sixteen inches in diameter, it would be best to fill only to within five inches from the top, thus allowing room for a good top-dressing the following winter.

The greatest care must be taken not to over-water the newly potted trees or the soil will become sour and the trees unhealthy. When the pots become filled with roots so much care will not be necessary, as there will not be so much danger of souring. If it is too early to put them directly into the greenhouse, they can be put into a shed or cellar, if light and airy, where the temperature would not be likely to go much below freezing, but where they would not be subjected to any artificial heat, until about the middle of January, which is time to start growth.

Trees may possibly be obtained from the



The fruits raised under glass mature earlier and are more luscious than the outdoor crop

dealers at that time all ready for the season's work. Now, although they are placed in a greenhouse and "forced" the process is so slight that but little heat is required — indeed, a great heat is ruination to the trees.

At first a night temperature of 40 degrees is quite sufficient, and in the day time they must have plenty of air. In the case of nectarines and peaches, if the trees are unduly forced in the early stages the blossom buds will shrivel and fall off.

My record of the trees placed in the house about the middle of January last year shows that it was a full month before the buds showed color, and another two weeks before the flowers expanded, as shown in the illustration on page 14. From March 1st development is rapid, and on March 31st the tree (see illustration) had been disbudded and the fruit finally thinned. By May 31st the fruit was ripening, several fruits having really been gathered before the photograph was made. The variety was Early Rivers nectarine. The variety Humboldt did not finish ripening its fruit until July 20th; the other varieties kept an unbroken succession between the earliest and the latest. The peaches, varieties already mentioned, will begin to ripen by the middle of July and continue until the end of August.

The Conference pear will be ready to gather by the middle of August, but will require, as is best with all pears, to be kept a week or ten days until mellow before using. Pitmaston Duchess and Doyenne du Comice will follow at intervals of ten days respectively.



Thinning the set is important. The first year eighteen peaches or a dozen pears is ample



March 1st. In full flower six weeks after starting growth in a temperature of 40°

At the early flowering period under glass there will be no bees to do the pollenating, and in order to insure a good set of fruit the flowers should be gone over each day about noon with a camel's hair brush to carry the pollen to the stigma. A light touch to each flower is all that is needed, and it is a surer way to set the fruit than merely shaking the tree to cause the pollen to fall.

If the trees have been kept clean and healthy a great many more fruits will set than can be successfully brought to maturity. For the first year's forcing two dozen nectarines, one and a half dozen peaches, and ten to twelve pears or apples will be ample for a crop. Of course, as the trees grow larger year by year the crop may be increased proportionately, and eventually, with careful feeding, may be expected to carry successfully from sixty to seventy-five fruits; but with a greater number the size of the fruits would have to be sacrificed for quantity.

"Thinning" is, therefore, resorted to, but this should not be done all at one time. It is preferable first to pick off all the deformed fruits and those which are found in the angles of the branches where they could not properly develop, and to single them where they are set in pairs. After this

first thinning those remaining will grow very fast, and one can more easily determine which to pick off.

At this period (about March 15th) the first "disbudding" should be attended to. Nectarines and peaches produce so many wood buds that if all were left the growth would be too thick for good results. Therefore remove all wood buds not necessary to preserve the symmetry of the tree, and to grow into shoots for producing the next year's crop.

As it is not desirable for a pot tree to attain great dimensions, it is best to treat them on what is known as the "replacing system," that is, to grow a new shoot from as near as possible the base of the fruiting wood, and pinching back the terminal shoot, allowing it only a few inches of growth in order to insure the flow of sap to the fruit;



March 31st. The final thinning and disbudding done. These three photographs are of the same tree

then, when the fruit has been gathered, the old wood can be cut out, leaving the new in its place. This will be the only pruning needed if attention is paid to pinching back the strong shoots, not allowing one or two to develop at the expense of the others. The fruit also will be much better if the wood is not allowed to grow too thickly, for the sun will color it and not only add much to the beauty of its appearance, but also add to its flavor.

After the fruit has been gathered the trees must not be neglected, but placed out of doors in an open space, plunging the pots about half-way in the earth. This will serve the two purposes of preventing the wind from blowing them over and of keeping the roots cool and moist.

The trees should be taken out of the pots each winter and the soil reduced, and fresh

drainage put in the bottom, taking great care, after adding all the fresh soil needed to fill the pot within three inches of the top, to firm the soil thoroughly with a short wooden rammer. No larger size than sixteen-inch pots would be needed for several years, but then a shift into eighteen-inch tubs would be best. For top-dressing as growth develops each season the same soil, with the same proportion of quarter-inch bone, should be used as was used in the original potting.

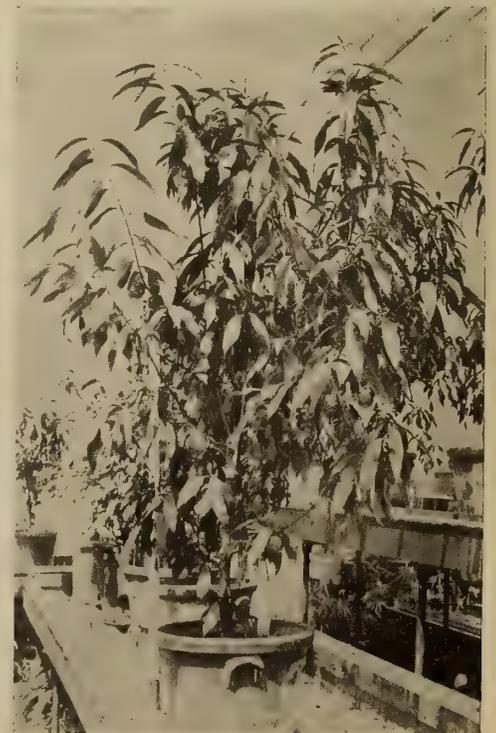
The best fertilizer to use is a liquid made by diluting fresh cow-manure. It should be used sparingly during the stoning period, but at other times a good application should be made at least once a week.

PITFALLS TO AVOID

All stone fruits have three distinct periods of development: (1) the "first swelling," (2) the "stoning," and (3) the "second swelling" and ripening periods.

The stoning period lasts about forty days, and during this time the fruit gains but very little in size. If the trees are over-forced or unduly excited with fertilizers during this time imperfect stones will result, sometimes causing the fruit later on to split open, and, in any case to ripen prematurely. Therefore great care must be taken to keep an even temperature, with abundance of fresh air during the day, and even a little air at night will be beneficial.

The trees must also be kept perfectly clean and free from red spider, thrips, and other pests. The best way to accomplish this is by copiously spraying with clear water both morning and afternoon on all bright days from the time the fruit is set. However, should mildew appear (which is not very likely), dust the affected parts with



May 31. The crop matured. Several fruits have been picked already. Early Rivers nectarine

flowers of sulphur and keep the atmosphere of the house a little dry until it disappears.

Watering needs attention at all times. Never let the trees get thoroughly dry, yet guard against keeping them too wet. Beginners sometimes make the mistake of giving too little water at one time, so that the surface will be moist while the rest of the soil is absolutely dry. This condition will be avoided if one raps the pots before watering, and waters all those which have a hollow sound, giving ample water to

thoroughly wet the soil through. If the trees are healthy the foliage will be a deep green.

The color of the leaves is the best index of a tree's condition, and if any paling or yellowing occurs the cause is most likely the souring of the soil due to over-watering. If the drainage becomes clogged, the holes at the bottom of the pot should be cleaned out and the soil allowed to become fairly dry before giving any more water.

A light spraying on the mornings of bright

days will do good until the buds begin to show color, when the spraying should be discontinued for a time. A gradual rise of temperature should be allowed so that by the time the flowers expand the greenhouse will be kept at from 48 degrees to 50 degrees at night.

During the period from the flowering until the fruit is finally thinned the temperature of the house should be gradually raised until a night temperature of 58 degrees to 60 degrees is reached.

Nasturtium—The Best Flower for the Million—By E. D. Darlington

EASIER TO GROW THAN ANY OTHER ANNUAL, AND ADAPTED TO MORE USES AND GIVES MORE FOR THE EFFORT EXPENDED—ARTISTIC WAYS TO USE IT AND IMPORTANT NEW TYPES

[EDITOR'S NOTE.—We fear that this is the last important paper by Mr. Darlington that we shall have the privilege of publishing. It was prepared shortly before his death, when he had the inspiration of living with a glorious collection of nasturtiums. Mr. Darlington was for many years superintendent of Fordhook Farms at Doylestown, Pa., and was noted for his good judgment and painstaking accuracy. Although he died when his powers were at their best, he left an excellent series of booklets and leaflets, covering the whole field of vegetable gardening and the art of growing flowers from seed.]



The old and the new types; note the great difference in size and vigor

THE nasturtium is, in my opinion unequaled as a popular flower because of the ease with which it may be grown, the profusion and brilliant coloring of the flowers, the many purposes for which it can be used, and its adaptability to widely different conditions of soil, climate, and surroundings. It is used for window gardens in city flats, veranda boxes, vases, hanging-baskets, and flower

borders in cottage homes, and for large mass effects on the lawns and in the gardens of great estates. In a communication from the Yukon Territory the statement was made that nasturtiums were in fine flower in *six weeks* from the time the seed was planted. Thus it would seem that the range of territory or climate under which the nasturtium may be grown is practically without limit.

The seed of the nasturtium costs less in bulk than that of many other flowers, and owing to the vigorous growth of the plants a moderate quantity will plant quite a large area. There is sometimes a slight mixture of colors in varieties, when the seed is purchased in separate varieties from the seedsman and in the case of new varieties of hybrid parentage; and there is always a greater or less tendency to revert to the parent sorts or to develop sports of new and diverse colorings. However, these mixtures, sports, and reversions are much less troublesome than with any other flower when nasturtiums are planted to produce a bed or

border of solid color, because the "rogues" can be pulled out as soon as the first flowers appear, and the remaining plants of the true variety or color will by their quick growth quickly hide the vacant space where the objectionable plant has been removed.

The two chief groups among nasturtiums are those in which the plants are of small, compact, bushy growth and those which throw out long running branches. The dwarf or bush type, which is commonly known as the Tom Thumb, makes a neat, rounded bush about ten inches high with comparatively small leaves, and in the older varieties the flowers are relatively small; but in the newer introductions the flowers come much larger in size and with broader and more fully rounded petals which, by overlapping at their outer edges, make a broad or bold-faced flower that is distinctly showier than the smaller and more open flower of the older types.

The dwarf type of nasturtium is most desirable for edging flower beds and garden walks, as it makes a close, neat row of low, rounded growth, relieved by the profusion of highly colored flowers. It is also useful when the space is very limited but comes bushy only in well-drained soil or in a raised bed in the full sunlight, for if planted in low, wet ground or in partial shade there will be a very dense growth of leaves and stalks which is apt to blight and rot off during wet weather.

The tall or running varieties are the most generally grown. For pot culture, hanging-baskets, vases, boxes on the porch or lawn, or for window boxes, they are by far the most satisfactory type. They are also best for planting along the fences, walls etc., or for a long border where there is ample room for the branches to spread as they increase in growth. Also they are most desirable for growing in solid beds or masses, as the long shoots or runners interlace and mingle freely over the entire bed or border, and will not rot off in wet weather as the very compact

bush plants do. In any case they must have plenty of light and air. If planted in a shady place they will make long, slender runners and very few flowers.

One of the best plans for growing the running nasturtiums in a small garden is to plant them in a long row like peas and provide brush or a poultry-wire netting for their support. Treated in this way they will come into flower earlier and blossom more profusely than they will if left to run at will on the ground. If a narrow border or bed is dug along the bottom of a paling or light ornamental iron fence, the shoots will climb and twist through the fence, with very little assistance in starting the early shoots in the proper direction, and make a most pleasing and ornamental effect.

When planted in pots a slender stake should be provided and the shoots carefully trained or tied at intervals to this support, but for baskets, vases, boxes, etc., the runners should be allowed to hang over the edges and to grow



The newest of the vine type; with mottled and marbled foliage, creamy white on green



The ivy-leaved type is very variable in form. Very slender vine-like shoots and small open flower

nasturtiums is the old *Tropaeolum minus*, which makes long, slender, vine-like runners with small, smoothly rounded leaves which are thickly set with small, bright flowers. This type is not as well adapted for long rows or masses as the larger-flowered kinds, but is especially pretty and graceful for hanging-baskets and vases or for trailing over rock work and other broken surfaces.

Many orderly flower gardeners will of course prefer to plant everything in separate varieties and colors, but to my mind the general effect of the mixtures of the newer large-flowered varieties as offered by seedsmen is more showy and pleasing than a bed or row of a single color. The regular mixtures as offered in the seed catalogues run largely to solid colors, but include also varieties having small spots of contrasting color at the base of the lower petals and delicate lines in the throat of the two upper



Improved large-flowered running type. Note crinkled texture. In the fall flowers are larger still

at will as trailing vines. This effect is more readily obtained if the seeds are planted or the young plants set around the outer edges of the boxes or vases in which they are planted, using taller erect-growing plants, like geraniums, etc., for the middle portion.

Among the running nasturtiums, the ordinary type is the strongest grower, and has the largest leaves, while the newer varieties have the largest flowers. The Lobbianum type is more compact in growth, with shorter and thicker and much darker and richer colorings in both the foliage and flowers, but the flowers are not as large nor as widely expanded as in the older type.

In the new ivy-leaved type there is considerable variation in the foliage, some kinds having the leaves more distinctly lobed or serrated than others, but the shoots are always more slender and vine-like than in the common running nasturtiums, while the flowers are of open form, the slender petals standing well apart from each other, and are distinctly toothed or serrated at the outer edges.

The most distinct type among the running



The old *Tropaeolum minus* with small round leaves is the most distinct of the running kinds. The flowers are considerably smaller than in modern kinds

petals, so that for the richest and most varied effect in colors I would recommend the choosing of the special mixtures such as the Hotspur Harlequin, which has the red-spurred flowers, French Chameleon, Caprice, and Coquette. These selections comprise colors ranging from pale primrose or cream to deep golden tints, but are more or less overlaid by marbled shadings of bright red, scarlet, and soft rosy tints. They are bright and showy throughout the summer, but when cool weather comes in the fall they become still more varied, as the brilliant markings then deepen in tint and cover a much larger portion of the petals. These fall shadings are beautiful beyond description, and have been the cause of despair among flower lovers who have sought to fix these grand autumn tints by saving the seed from some especially fine flower. Such selections result in a more diverse coloring, but the most gorgeous tints and markings can be had only when the nights become cool in the fall.

The planting of the seed is one of the simplest garden operations. Dig the soil early in the spring, making a fine, loose surface as you would for other flowers, then open a shallow trench or drill one to two inches deep and scatter the seed thinly along



Tropaeolum Lobbianum of compact habit, has the richest colors in leaf and flower



The Tom Thumb type is the best bush form; useful for edgings. Modern varieties have large flowers



Queen of Tom Thumbs, the first variety with marbled (yellow) foliage. Dwarf, with small flowers

the bottom. Another and better plan for a small quantity of seed is to push the finger or a small round stick into the soil about two inches deep and drop a single seed in each hole, making a separate hole where each plant is to grow. In either case cover the seed with fine soil, pressing it firmly on the seed so that it may come into close contact with all the corrugations that compose the shell or outer covering of the seed. This firming of the soil is necessary to insure good germination; otherwise the seed is liable to rot in the ground. If the young plants come up too thickly in the row or if it is desired to give them an early start in a special seed-bed, they can readily be transplanted to another bed or location when three to four inches high and when they show two to four true leaves. Any further thinning that may become necessary can be done at any time during the summer until the vines or runners become interlaced or tangled together.

Here follows a selection of the most showy and distinct varieties in the different types:

TOM THUMB OR DWARF BUSH VARIETIES

Aurora. Leaves small, light green. Flowers good size, pale buff with suffused rose shadings.

Beauty. A bright orange-scarlet self.

Beauty of Malvern. Scarlet, darker and more nearly red than Beauty.

Brilliant Yellow. Large flowered; bright sulphur-yellow.

Bronze Colored. Small flowered, dark chocolate or bronze; odd but not pleasing.

Carmine King. Very bright deep rose. One of the finest and most distinct.

Chameleon. A variable strain of light bright shades and beautiful markings.

Golden Midnight. Golden leaves, brownish crimson flowers. Richer and more velvety than Cloth of Gold.

General Jacqueminot. Very dark reddish-crimson flowers.

Golden King. Leaves deep green. Flowers extra large and broad-petaled. A rich orange-yellow.

Golden Queen. Light golden leaves and straw-yellow flowers.

King Theodore. Dark purple leaves. Very large velvety crimson flowers.

Lady Bird. Dark leaved. Flowers rich orange yellow with carmine blotches and reddish spurs.

Prince Henry. Deep primrose tint, heavily suffused with rose.

Spotted King. Deep yellow flowers. Large size with dark crimson blotches, ivy leaved.

Vesuvius. Large flowered; bright salmon tints.

Queen of Tom Thumbs. Leaves marbled green and white; small bright scarlet flowers.

Rudolph Virchow. Flowers large. A soft tint of pale rose.

Variiegated Queen. Leaves marbled green and white, like Queen of Tom Thumbs, but this has pale yellow flowers.

LOBBIANUM TYPE

Aureum. Deep orange yellow.

Black Prince. Dark purplish leaves. Rather small but very dark velvety-brownish maroon flowers.

Brilliant. Dark leaved, bright rich scarlet flowers.

Cardinal. Dark leaved. Flowers crimson scarlet, large and showy.

Defiance. Light salmon scarlet. A large well-spread flower.

Firefly. Dark green leaves with reddish stems, rich deep orange-yellow flowers, carmine blotches and red spur.

Giant of Battles. Pale straw yellow, spotted with carmine.

Gold Garnet. Deep rich yellow, reddish brown spots at base of petals.

Lucifer. Dark leaved and large flowers; bright rich scarlet, nearly red.

Marguerite. Large creamy yellow flowers, rosy carmine spots and splashes, red spurred.

Monsieur Colmet. Distinct brownish-red, rich and velvety.

Primrose. Dark leaved. Flowers light primrose, velvety-brown blotch, dark stripes in throat.

Rudolph Virchow. Light green leaves. Flowers self-colored in a soft light rose tint.

TALL OR CLIMBING TYPE

Butterfly. Large flowered; light lemon-yellow with red spots or blotches on three lower petals.

Caprice. A variable strain of light colors, spotted, striped and mottled with contrasting shades. Very large flowers.

Coquette. Even more diverse and showy in varied colors and markings than Caprice. Same style flowers.

Crystal Queen. Large light green leaves heavily marbled

Salmon Queen. Very large flowers, richly shaded with salmon on primrose ground. An improved Vesuvius.

Sunlight. Very large golden yellow flowers, petals wrinkled or crape-like in texture.

Twilight. Large flowered, light salmon and rich buff tints suffused on light yellow ground.

Von Moltke. Large flowered. A dark rosy red, very bright and distinct.

TALL IVY-LEAVED

Golden Gem. Light green sharply lobed leaves, bright golden yellow flowers. Very showy.

Flamingo. Dark, heavily veined leaves. Flowers rich



For quick screen effects, or in partially shaded places, use the tall running nasturtium

with creamy white. Large pale yellow or primrose tinted flowers.

Fordhook Fashion. Extra large flowers, ecru tints or light crimson shadings on primrose ground.

Golden-leaved Scarlet. Large golden leaves, bright scarlet flowers.

King Theodore. Dark green leaves, dark velvety maroon or brownish red flowers.

Midnight. Deep maroon, darker and richer than King Theodore.

Moonlight. Very large flowers, crinkled or crape-like petals, pale lemon yellow.

Prince Henry. Lemon yellow flowers with carmine blotches.

orange scarlet. More ivy-like in leaf and larger, richer flowers than the original "Ivy Leaf."

Fordhook Fancy. Large open or star-like flowers. Petals golden-yellow spotted and splashed with carmine.

Spotted King. Large bright yellow flowers spotted and mottled with dark-brown red.

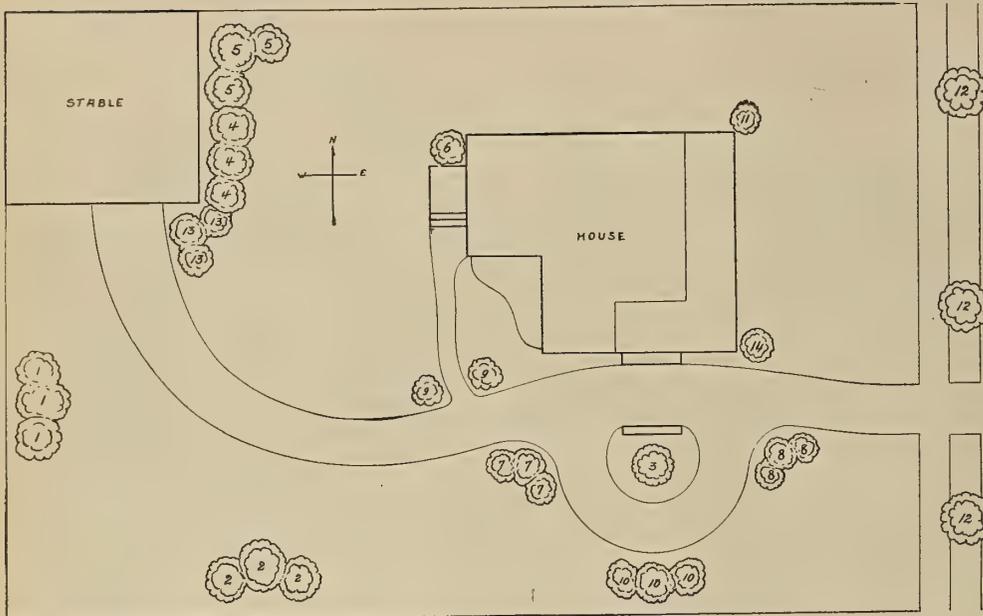
TROPAEOLUM MINUS

Minus. Long slender shoots with small round leaves. Flowers small, cup-shaped; deep orange with scarlet spots and long reddish spur.

Minus coccineus. Identical with Minus, except that the flowers are dark rich scarlet.

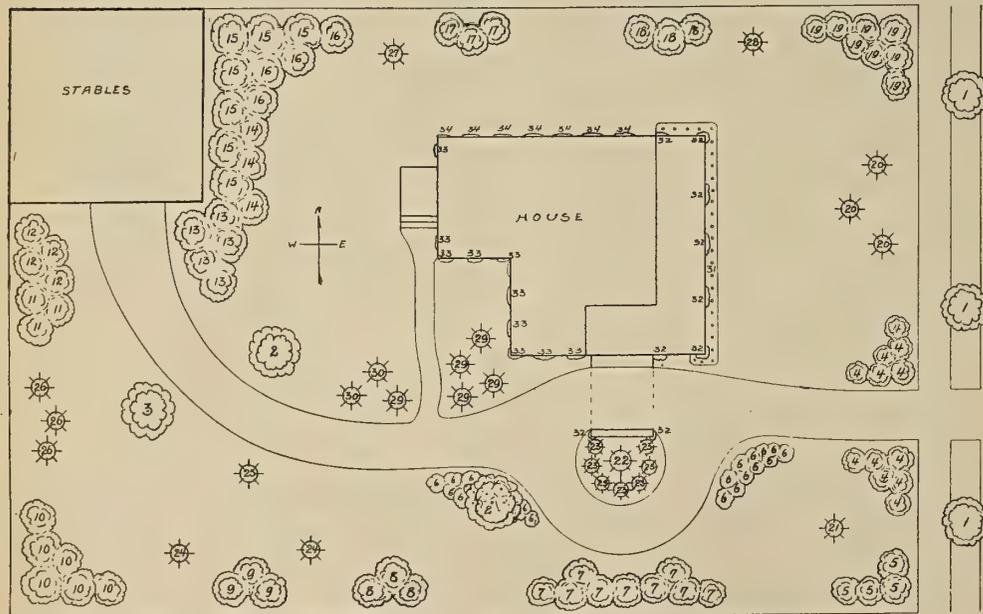
Four Plans for a 100x150 Ft. Lot—By F. C. Leible, ^{New} York

THE TENTH OF A SERIES OF ARTICLES ON THE "CHEAPEST GARDENS FOR THE SMALLEST LOTS," EACH OF WHICH GIVES FOUR SOLUTIONS COSTING \$25, \$50, \$75, and \$100, RESPECTIVELY



- | | |
|---|--|
| 1. Three alternate-leaved dogwood (<i>Cornus alternifolia</i>). | 8. Three spreading cornel (<i>Cornus stolonifera</i> , var. <i>aurea</i>). |
| 2. Three flowering dogwood (<i>Cornus florida</i>). | 9. Two Japanese barberry (<i>Berberis thunbergii</i>). |
| 3. One red-flowering dogwood (<i>Cornus florida</i> , var. <i>rubra</i>). | 10. Three weigela (<i>Diervilla florida</i> , var. <i>rubra</i>). |
| 4. Three Siberian dogwood (<i>Cornus alba</i> , var. <i>Sibirica</i>). | 11. One weigela (<i>Diervilla hybrida</i> , var. <i>Eva Rathke</i>). |
| 5. Three Cornelian cherry (<i>Cornus mas</i>). | 12. Three buttonball tree (<i>Platanus occidentalis</i>). |
| 6. Three red osier dogwood (<i>Cornus stolonifera</i>). | 13. Three golden bell (<i>Forsythia suspensa</i>). |
| 7. Three European red osier dogwood (<i>Cornus sanguinea</i>). | 14. One blue spirea (<i>Caryopteris mastacanthus</i>). |

If only \$25 is to be expended, buy shrubs



- | | |
|---|---|
| 1. Three sugar maple (<i>Acer saccharum</i>). | 17. Three common barberry (<i>Berberis vulgaris</i>). |
| 2. Two American linden (<i>Tilia americana</i>). | 18. Three golden bell (<i>Forsythia suspensa</i>). |
| 3. One white birch (<i>Betula alba</i> , var. <i>Sibirica</i>). | 19. Eight yellow-twigged dogwood (<i>Cornus alba</i>). |
| 4. Two Japanese barberry (<i>Berberis thunbergii</i>). | 20. Three white spruce (<i>Picea alba</i>). |
| 5. Three kerria (<i>Kerria japonica</i>). | 21. One Nordman's fir (<i>Abies Nordmanniana</i>). |
| 6. Twenty-eight coral berry (<i>Symphoricarpos vulgaris</i>). | 22. One silver retinispore (<i>Retinispora squarrosa</i> , var. <i>Veitchii</i>). |
| 7. Nine red-twigged dogwood (<i>Cornus alba</i>). | 23. Seven globe arborvitae (<i>Thuja occidentalis</i> , var. <i>globosa</i>). |
| 8. Three golden bell (<i>Forsythia suspensa</i> , var. <i>Fortunei</i>). | 24. Two oriental spruce (<i>Picea orientalis</i>). |
| 9. Three Morrow's bush honeysuckle (<i>Lonicera Morrowii</i>). | 25. One plume-like Japanese cypress (<i>Retinispora plumosa</i>). |
| 10. Six rose of Sharon (<i>Hibiscus Syriacus</i>). | 26. Three hemlock (<i>Tsuga Canadensis</i>). |
| 11. Three variegated red-twigged dogwood (<i>Cornus alba</i> , var. <i>delegantissima</i>). | 27. One Austrian pine (<i>Pinus Austriaca</i>). |
| 12. Four deutzia (<i>Deutzia crenata</i>). | 28. One white fir (<i>Abies concolor</i>). |
| 13. Five winterberries (<i>Ilex verticillata</i>). | 29. Five thread-branched Japanese cypress (<i>Retinispora filifera</i>). |
| 14. Three weigela (<i>Diervilla hybrida</i> , var. <i>rosea</i>). | 30. Two obtuse-leaved Japanese cypress (<i>Retinispora obtusa</i>). |
| 15. Seven salmon-barked willow (<i>Salix vitellina</i> , var. <i>Brüdensis</i>). | 31. Twenty-six plantain lily (<i>Funkia subcordata</i>). |
| 16. Four red osier dogwood (<i>Cornus stolonifera</i>). | 32. Seven Japanese virgin's bower (<i>Clematis paniculata</i>). |
| 34. Seven English ivy (<i>Hedera Helix</i>). | 33. Fourteen Boston ivy (<i>Ampelopsis Veitchii</i>). |

One hundred dollars is less than half what should be spent on 150 x 100 ft.

THE 100 x 150 ft. lot is about ideal for people who can afford to spend six thousand to eight thousand dollars on house and lot, but who generally cannot afford to keep a gardener or even a man-of-all-work steadily employed. The depth of the lot is sufficient for a good-sized kitchen garden without harming the ornamental features of the place; but in the plans here given I have assumed that the owner does not care to bother with growing vegetables. In many first-class suburban towns it is possible to get fresh vegetables from farmers, and many people prefer to have the whole of a lot of this size given up to ornamental features rather than to take any space for vegetables, particularly as it is impossible to raise enough potatoes and other vegetables for winter use on a lot as small as this.

I. THE CHEAPEST SOLUTION — \$25

While it is possible to buy a few more plants for twenty-five dollars than those listed in plan No. 1, such plants would be so small that they would be several years longer in giving a mature effect to the place. The only value of plan No. 1 is to show how inadequate twenty-five dollars is to plant a place on which \$240 ought to be spent. For we can never get a good effect in planting home grounds for much, if any, less than \$100, and a good working rule is to reserve 4 per cent. of the total cost of the place for the outdoor features.

This plan, however, has one interest in showing that even on this small scale it is possible to have a modest collection of such very interesting bushes as the dogwoods. At first thought it may seem absurd to specialize in any direction on so small a scale, and, indeed, specialization in the ordinary sense would not be justified; but the genus *Cornus* is composed of such widely different species that the passer-by would never imagine that the place had any specialty. For instance, the flowering dogwood is a tree with exceedingly showy bracts; the alternate-leaved dogwood is interesting for the formality of the tree, as it bears its branches in regular platforms or tiers; the Cornelian dogwood is unique in having yellow flowers that appear in March; the Siberian dogwood has red berries that are attractive all winter; and all the species are attractive both in flower and fruit, as they have flat clusters of usually white flowers borne in May or June, while in the autumn they have ornamental berries of various colors.

2. A BETTER SOLUTION FOR \$50

Plan No. 2 is far from perfect, but at least the place comes nearer to being well furnished, and this solution is also interesting as containing a collection of viburnums. These shrubs resemble the dogwoods in

being attractive both in flower and fruit, and they vary remarkably in the color of their berries. Cornus and Viburnum are two of the most important groups of American shrubs, and anyone who plants a collection of either or both may feel that his place will have a strong American element in it.

One beauty of a lot of such generous size is that four or five good-sized shade trees can be grown upon it. In this particular case I have specified a sugar maple, Norway maple, pin oak, and linden. Also, I have put in a small flowering tree, namely Bechtel's crab, which is a tree with large double pink flowers.

3. A FLOWER-LOVER'S SOLUTION FOR \$75

I would recommend such a plan as No. 3 only to some one who is an enthusiast about hardy flowers and is willing to give an average of an hour a day to their care.

The most effective way of arranging hardy flowers is to give them some sort of a background. This I have tried to do with what shrubbery could be had for the money.

This is the only solution in which I have indicated a considerable space for a drying-yard. Such an institution would add considerably to the neatness and order of a place, and if the privet hedge surrounding it is allowed to grow eight feet high, the home grounds would not present an unsightly appearance on wash-days. On other days the drying-yard might be used as a children's playground.

In selecting the flowers I have avoided all tender bedding material, and have concentrated on hardy perennial flowers, so that there will be a maximum of floral effect with a minimum of effort. Such a garden, once started, can be maintained indefinitely with the same materials, but should any gaps occur they can be cheaply filled with annual flowers.

4. ATTRACTIVE ALL THE YEAR FOR \$100

The fourth plan is, of course, the best of all, since it shows a well-furnished, but not overcrowded, place which will have something of interest every day during the year. It has been particularly planted with reference to winter effect.

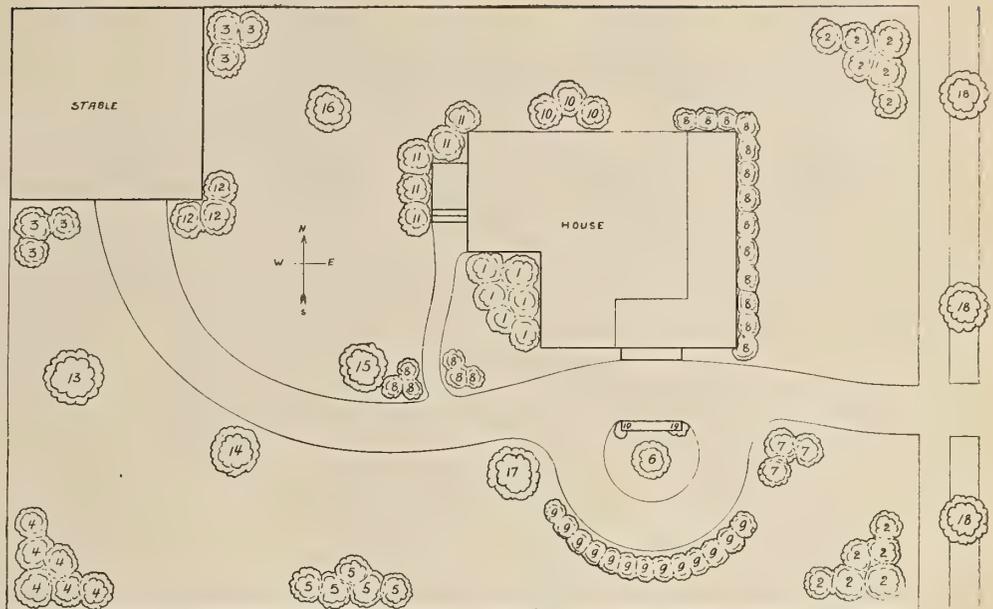
The material can be grouped about as follows:

First, evergreen trees, of which the tallest and most permanent are Nordmann's fir and the Oriental and white spruces.

Second, shrubs with berries that are attractive in winter, such as the Indian currants which are grouped under the linden tree, as they have the rare faculty of growing well in rather dense shade beneath trees.

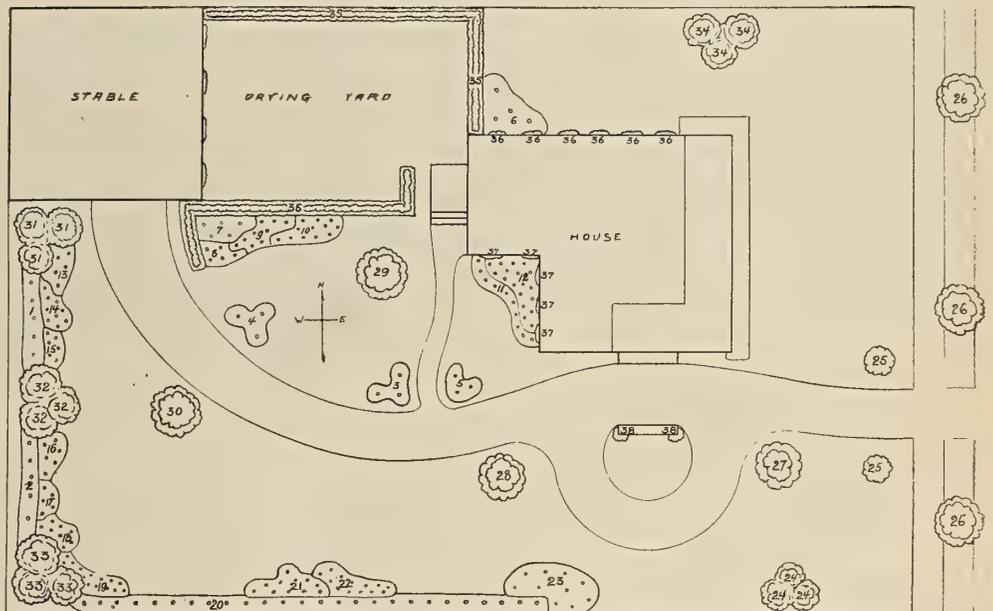
Third, shrubs with brightly colored bark, such as the salmon-barked willow and *Kerria Japonica* (which has attractive green branches), and the Siberian dogwood, the twigs of which are bright red all winter.

Fourth, the broad-leaved evergreens. I have specified only seven vines of the English ivy. North of New York I substitute for this the climbing euonymus (*Euonymus radicans*).



1. Six Japanese snowball (*Viburnum tomentosum*, var. *plicatum*).
2. Twelve single snowball (*Viburnum plicatum*).
3. Six cranberry bush (*Viburnum Opulus*).
4. Six soft-leaved viburnum (*Viburnum molle*).
5. Five white rod (*Viburnum cassinoides*).
6. One white rod (*Viburnum Sieboldii*).
7. Three hardy hydrangea (*Hydrangea paniculata*, var. *grandiflora*).
8. Nineteen Japanese barberry (*Berberis Thunbergii*).
9. Thirteen coral berry (*Symphoricarpos vulgaris*).
10. Three black haw (*Viburnum prunifolium*).
11. Five golden bell (*Forsythia suspensa*).
12. Three weigela (*Dierilla florida*).
13. One Bechtel's double-flowered crab apple (*Pyrus Iowensis*, var. *Bechteli*).
14. One sugar maple (*Acer saccharum*).
15. One Norway maple (*Acer platanoides*).
16. One pin oak (*Quercus palustris*).
17. One American linden (*Tilia Americana*).
18. Three white ash (*Fraxinus alba*).
19. Two wistaria (*Wistaria Sinensis*).

For \$50 a good collection of viburnums can be bought



1. Five banded eulalia (*Miscanthus Sinensis*, var. *zebrinus*).
2. Five striped eulalia (*Miscanthus Sinensis*, var. *variegatus*).
3. Three fine leaved eulalia (*Miscanthus Sinensis*, var. *gracillimus*).
4. Three plume grass (*Erianthus Ravenae*).
5. Three blue limegrass (*Elymus glaucus*).
6. Four bamboo (*Bambusa Metake*).
7. Five hollyhock (*Althaea rosea*).
8. Five peach leaved bell flower (*Campanula persicifolia*, var. *Moerheimii*).
9. Nine blackberry lily (*Pardanthus Sinensis*).
10. Twelve ever-blooming larkspur (*Delphinium belladonna*).
11. Twelve St. Bruno's lily (*Anthericum liliastrum*).
12. Eighteen Japanese windflower (*Anemone Japonica*).
13. Five summer hyacinth (*Galltonia candicans*).
14. Nine Japanese iris (*Iris laevigata*, I. *Kempferi*).
15. Six Chilian lily (*Alstromeria Chilensis*).
16. Six yarrow (*Achillea ptarmicoides*, var. *The Pearl*).
17. Five larkspur (*Delphinium jormosum*).
18. Eight coneflower (*Rudbeckia Newmanni*).
19. Fourteen sweet William (*Dianthus barbatus*).
20. Twenty-six pompon chrysanthemum (*Chrysanthemum Indicum*).
21. Eleven Japanese iris (*Iris laevigata*).
22. Fifteen montbretia (*Tritonia crocosmaeflora*).
23. Ten Chinese peonies (*Paeonia albiflora* fl. pl.).
24. Three cotoneaster (*Cotoneaster buxifolia*).
25. Two Adam's needle (*Yucca filamentosa*).
26. Three Norway maple (*Acer platanoides*).
27. One maidenhair tree (*Salisburia adiantifolia*).
28. One purple beech (*Fagus sylvatica*, var. *purpurea*).
29. One sugar maple (*Acer saccharum*).
30. One American ash (*Fraxinus alba*).
31. Three white fringe (*Chionanthus Virginica*).
32. Three weigela (*Dierilla florida*).
33. Three purple fringe (*Rhus cotinus*).
34. Three drooping andromeda (*Leucothoe Catesbaei*).
35. One hundred privet (*Ligustrum ovalifolium*).
36. Six English ivy (*Hedera Helix*).
37. Five Boston ivy (*Ampelopsis Veitchii*).
38. Two wistaria (*Wistaria Sinensis*).

A flower-lover's garden for \$75 and one hour a day

Quality Even in the Cabbage Tribe—By Effie M. Barron, ^{New York}

WHY CABBAGE AS ORDINARILY GROWN AND COOKED IS A COARSE AND POOR FOOD—THE REFINED MEMBERS OF THE GROUP AND HOW TO MAKE THEM DELICATE AND DIGESTIBLE

[NOTE.—The last of a series of articles on quality vegetables for the Home Garden. Mrs. Barron was formerly teacher of cookery under the London School Board.]

IF YOU believe that cabbage is coarse in flavor and texture it is only because you have never tried the Savoy type. You can always tell this variety by its crinkled leaves. It is, without doubt, the best variety for the private gardener to grow, for any time of planting, fall, summer, or winter. It is specially suited for salads and using raw; though the general idea is to use a white-headed, very solid cabbage and slice across the grain. One of the best strains of the Savoy cabbage is Perfection Drumhead.

Unfortunately the Savoy cannot be had in every market, because other varieties are more profitable. It is a pity that the public knows less about quality in vegetables than in fruit. Consequently, the market gardeners think only of technical points, such as ability to ship a long distance and last a long time in storage. The huge cabbages we see everywhere in America would, in England, be thought fit only for cattle. There the best cabbages are small ones, say, a fourth the size of ours, and the English people like a rather green cabbage, not one that is wholly blanched.

The most delicate cabbage is undoubtedly that which is most perfectly blanched. It does not pay to grow any members of the cabbage family in a small garden because they take up a great deal of room, and some of them require a long season. However, in many places it is impossible to get them fresh, and quality in the cabbage tribe depends more on freshness and cooking than on methods of cultivation.

The earliest cabbages are all pointed, and they have to sacrifice size and keeping quality to earliness. They are sown indoors in February, and are ready to use by midsummer, whereas the main crop is for winter use, and this is sown in June or July.

The second earlies and intermediate cabbages mature a little later, and are larger than the earlies, but they are not generally good keepers. However, it is not necessary

for them to be so, as the late or winter cabbages are for that purpose. These are principally derived from the Late Flat Dutch type. They have very big, round, firm heads.

Red cabbages are grown the same as the green ones in all respects but the color. When boiled they look so unappetizing on the table that they are seldom used this way. The addition of salt or vinegar, however, changes the color to a brilliant red, so that red cabbages are popular for pickles.

CULTIVATION OF CABBAGE

In small gardens it is the general practice to plant only once during the entire year—in July or August. In large gardens it is well to sow "for succession." Always start the plants in the hotbed.

The first planting should be the end of January and early February, planting the very early cabbages; transplant later, and be very careful that the plants get no check, as that spoils the quality of the vegetable.



The early cabbages have pointed heads and are not so large as the late flat-headed type

The second planting should be in the last week of March—they will then be ready for use from July to November. Plant the early kinds and coleworts, which are really delicious summer cabbage, fresh, green, tender and succulent.

The third planting takes place the first half of May, and can be planted out whenever there is any space in the garden. They will be useful till quite late in the year. For this use the main crop varieties.

The most important sowing is the fourth and last. Sow seed for spring cabbage about the middle of July to the end of August. These can be planted out in the place of peas, beans, and potatoes when they are over.

The whole secret of growing delicious cabbage is comprised tersely in these three rules: (1) Grow quickly, without a check

at any time—transplanting included. (2) Give them good, strong, soil made rich by vegetable compost. (3) Do not allow them to suffer from drought.

STORING CABBAGES

Cabbages with firm, solid, compact heads are good keepers, and the only sort that are any good for storage purposes. Heads that are spotted, or show any signs of decay, or have started to burst will only waste time and space if stored—feed these to the cattle.

Two dangers must be carefully guarded against if the storing is to be successful. If the cabbages get too warm they will rot, and if they are allowed to freeze too hard they will be spoiled when the frost breaks in the spring.

Always do your storing in dry weather. There is no fixed date to begin, but the usual time is about the end of October. The ideal way to store is to keep them where trees will partially protect them. Stack them upside down, fitting them closely one into the other, and cover the pile to the depth of about six inches with leaves, putting brush or branches over the latter to prevent them from blowing away.

If woods and orchards are out of the question the open field will do, and the cabbages can then be covered with stalks or straw. In any case plow the ground well so that the warm moisture from the bottom will filter through the pile.

Another way of storing is to fill barrels with the ends knocked out and the earth banked around them to the depth of two or three inches. Then in the colder weather salt hay must be put over to prevent freezing.

Another excellent way is to dig a trench about four feet wide and one foot deep. Pack in the cabbages heads down, stalk upward, fitting one layer into the other. Wrap the outer leaves round the heads. Cover two or three inches deep with straw,



Jersey Wakefield, the early type, is a very popular market variety, and is the favorite all-around cabbage for the amateur



Kale, or borecole, a non-heading type very hardy. The leaves are beautifully colored and curled



Kale, cabbage and broccoli. The earliest sowings are made in heat in February. Sow for main crop and for winter in June and July

then three or four inches of earth. As the weather gets colder add more earth to the depth of about a foot.

Another way is simply to keep them in cold frames. Any house or cellar is fatal to them, as they always rot or grow. They can, however, be stored on shelves in an open shed.

It is an astonishing fact that such strikingly different plants as kale, cauliflower, collards, and Brussels sprouts have all been developed by man from the cabbage. Yet it is impossible to tell one from the other by the seed alone.

COLEWORT, COLLARDS, AND KALE

The prototype of the cabbage family is the colewort, which still grows wild in parts of Europe and Asia. It was originally boiled and eaten as an accompaniment to meat. The cultivated colewort of to-day is finer in texture and milder in flavor, being, in fact, young cabbage picked before it has started to make a heart. The leaves are picked when about the size of a man's hand, and if perfectly fresh make a dainty and wholesome dish.

Georgia collards are much like coleworts, but are especially adapted for growing in warm, dry climates.

Kale, or borecole, is another non-heading type, which is strikingly beautiful because of its fluted leaves. It is supposed to have come from the Savoy cabbage. It is essentially a winter crop, as the leaves become tender and sweet only after being exposed to frost. It is used only for greens, and is coarser in flavor than cabbage but easier to grow. There are several variegated kales of great beauty in form and color, which are useful for garnishing. Do not pick kale while the frost is on it.

BRUSSELS SPROUTS

Brussels sprouts are considered by some to be the most delicately flavored member of the cabbage family. The leaves do not all unite to make one large cabbage, but miniature cabbages, or "sprouts" are formed all the way up a long stalk, which sometimes grows as high as three feet. They make an expensive dish, as they cost about fifteen cents a basket, and two baskets are required to make a dish large enough for a good-sized

family. This makes the cost about twice that of cabbage. It is a great pity this vegetable cannot be grown in larger quantities and sold cheaper. The flavor resembles the Savoy rather than the common cabbage.

The most delicate, both in texture and flavor, are the small, compact specimens. The large, loose-leaved strains have coarser leaves and are not so sweet. They are, however, often demanded from the erroneous idea that the hard ones are stronger flavored than the loose. Freshness counts for everything in this case. Moreover, with stale ones so much has to be cut away and wasted.

Brussels sprouts require the longest growing season of all the cabbage tribe. They are usually sown for the first time about the middle of March, and they will not be ready for the table until about the end of October. If wanted "for succession," sow some again the middle of April and transplant in July. The sprouts will be sweeter and tenderer if they are allowed a touch of frost before picking. In the autumn the leaves should be cut off near the stem, so as to allow the sprouts to develop.



Cauliflower, the most refined and most nutritive of the cabbage family. Buy only the very best seed offered

Begin to store them about the end of October or the first week in November, if frost has started. An excellent way is to dig up the whole plant, leaving plenty of root and earth on. Plant them very close together in a sheltered part of your ground in patches that will be easy to get at, say about five rows to each patch. Cover the patches with litter, leaves, or salt hay. They can also be stored in coldframes. Good strains are Long Island Improved and Paris Market.

CAULIFLOWERS AND BROCCOLI

Cauliflower is generally considered to be the most refined member of the cabbage family. I believe it is also the most nutritious. Cauliflower and broccoli are the only members of the family in which the flower is greatly developed. In the other cases it is the leaves which we eat.

Broccoli is hardier and easier to grow than cauliflower, but the whole plant is coarser and not nearly so much esteemed. It is absolutely essential that this plant be fresh when eaten, for if it has lain around any time it often becomes intensely bitter. The only way to get good broccoli is to grow it yourself, and pick and eat it within the hour.

In both vegetables the flower must be compact, solid, and snowy white — not loose, branching or "stemmy" — for a branched cauliflower is rougher in texture and stronger in flavor. It should be crisp, *i. e.*, the stalks should snap easily; flabby stalks that bend instead of breaking are not fresh.



Volga, of the flat-headed type. This is used for salad and winter storage

While cauliflowers are growing the leaves must be tied up over the flowers to whiten them and to prevent sunburn, which causes the pure whiteness of the flower to be marred by unsightly black specks, thus spoiling the table appearance, although the flavor may be satisfactory.

It is impossible to get the best cauliflower from seed costing less than twenty-five cents a packet. You want the kind that costs the seedsman \$90 a pound, not the kind that costs \$2.50.

Good strains are: Best Early, Snowball, Dwarf Erfurt.

Cauliflower and broccoli can be stored in the same ways as cabbage. In piling have the heads downward, the stalks up.



Brussels Sprouts are most delicately flavored, but should be touched by frost to be in perfection

Cauliflowers that are wanted for storing should be planted in the early part of September.

HOW TO COOK THE CABBAGE TRIBE

There is Great Art, with capital letters, in cooking cabbages, and, in fact, all "greens," to perfection. In order to preserve their color and flavor properly put them into plenty of *fast boiling* water, cook quickly till done, and take them up *the moment* they become tender. Over-cooking fades the color. Old, dark-green, thick-ribbed, coarse-leaved cabbages are better not cooked for the table at all, but if they must be used boil them in three separate waters, and do not forget to use boiling water each time.

Cauliflower and broccoli must be put into the water with the flower part down to keep them white. Otherwise the scum that arises will discolor them. If left in the water after they become tender the heads



Georgia collards, a non-heading cabbage suitable for dry and warm regions

will break, the color will be spoiled, and the crispness will depart. Steaming is an ideal way of cooking cauliflower.

In selecting for the table choose cabbages that are fresh, brilliant in color, fine and crisp in texture, neither stringy nor hard, but sweet, succulent, and tender. Coarse, dark-green leaves are strong in flavor and odor, and take an immense time to cook — very long, thick midribs also should be avoided as much as possible, as they take so much longer to cook than the leaves that the latter are overdone and spoiled before the stalks are cooked.

Old, large cabbages are best not used for the table, but given to the cattle who are not particular as to quality. Wilted cabbages, or, in fact, "greens" of any sort, that are flabby and yellowish with the commencement of decay, are unfit for food. If greens are slightly withered stand them in very cold water for about half an hour, and their crispness will be restored.

Cabbages that have been frozen must be placed in cold water till thawed out again, but even then the quality of a frozen cabbage is very inferior to a really fresh one.

All vegetables must be thoroughly cleaned before cooking. First, pour boiling water over them, to get the insects out (they will die and drop out), then wash several times in cold water. If the vegetable is to be served raw, do not pour boiling water over



The Savoy cabbage, known by its crinkled leaf, is the acme of flavor of the true cabbage type

it, as that gives it a sort of "cooked" flavor, but let it stand in cold salt-and-water or vinegar-and-water for twenty minutes or so, after which wash thoroughly. To boil, have a large saucepan full of boiling water. To each half gallon of water allow one table-spoonful of salt and a heaped teaspoonful of sugar. Soda can be used, either bicarbonate or even plain washing soda. The purpose is to soften the water, and the sugar does this without the danger of making it slimy or soapy, as too much soda is likely to do.

Boil all greens with the lid of the kettle off. This makes a wonderful difference in the appearance of the vegetables. Boiling with the lid on darkens the color; boiling with the lid off keeps the color fresh and bright. When draining cabbage be careful to press out all the water with a presser or saucer.

VARIETIES FOR THE HOME GARDEN

Name	Early	Late
Cabbage	E. Jersey Wakefield E. Winningsstadt Extra E. Express E. Stonehead E. Summer Burpee's All-Head	Succession, All Seasons Large Wakefield Late Stonehead Premium Flat Dutch Fettler's Brunswick Surehead, Volga, Autumn King
Savoys	Ulm, Very Early Paris	Perfection Drumhead
Red-pickling	Dwarf Blood Red	Red Flat Dutch
Cauliflower	Snowball, First and Best Best Early	Dwarf Erfurt, Algiers Autumn Mammoth
Broccoli	Early White — E. Purple Walcheren — Purple Cape	Late Queen Champion
Brussels sprouts	Dwarf — Sutton's Matchless, Dalkeith	Dwarf Gem Fall Long Is. Improved

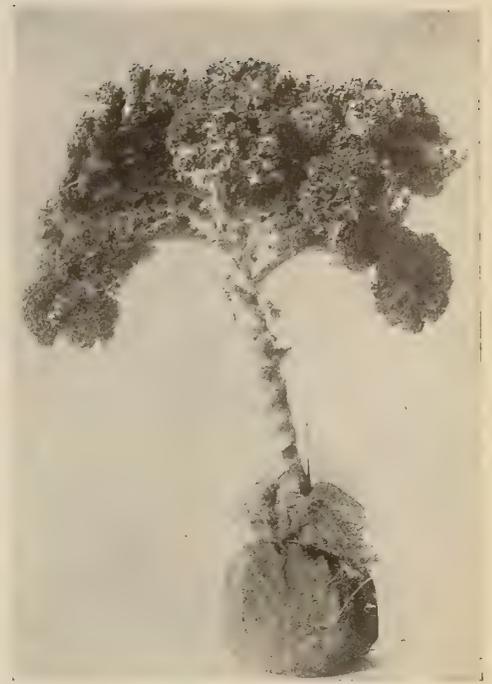
Cabbage should be drained in the colander and then pressed hard and cut across and across before serving. Long strings and large leaves of cabbage are unsightly and unappetizing on the plate. Also cabbage swimming in greenish water is disgusting. Brussels sprouts, cauliflowers, and broccoli should be drained in the colander also, but cannot be pressed dry, as that would break them. Serve cauliflower or broccoli with drawn butter sauce.

Brussels sprouts are boiled the same way as cabbage, and served *very hot* with plain melted butter, pepper, and salt. These look well if piled in a pyramid on the vegetable dish, but any arrangement must be made very quickly; as the sprouts are so small they cool rapidly.

Red cabbage is never served boiled, as the color is so disgusting; as a pickle with vinegar, however, it is much esteemed, and the brilliance of color is delightful. It can also be stewed and served masked in sauce, when it becomes the correct accompaniment to partridge. The Chinese cabbage, or Pe-tsai, seem to be principally stalk; it looks somewhat like a cos lettuce, and is good for growing in mild climates. It is milder flavored than the European cabbage, and can therefore be eaten raw as a salad, or cooked. Boiled, minced, and served with butter it is delicate and somewhat like boiled endive.

The uses for the different members of the family are:

Cabbage and Savoy: Plain boiled, soups, hot or cold slaw, salad, sauerkraut, stuffed and boiled, etc.



Kale leaves are gathered as wanted over a long season, the head not being cut off

Red cabbage: Pickles and stews.

Cauliflower and broccoli: Soups, entrées, and pickles.

Brussels sprouts: Boiled as an accompaniment to meat. Stewed with gravy as an entrée. Made into fritters with batter.

Coleworts, kale, borecole, collards: Are generally served plain boiled, without sauce. Can be added to spring soups.

English Effects with Hardy Trees—By Wilhelm Miller, New York

THE TWO FALSE GODS WE WORSHIP—THE ONLY WAY IN WHICH WE CAN GET THE BEST ENGLISH EFFECTS, AND THE ONLY WAY IN WHICH WE CAN SURPASS ENGLAND

[EDITOR'S NOTE.—This is the second of a series of twelve articles on the *materials of gardening*, while the companion series in *Country Life in America* is devoted to *styles of gardening*. Both are the result of an extended visit to England made by the author last year.]

I DO not blame the hundred thousand Americans who annually visit England for desiring to duplicate the best English tree effects. For the English landscape possesses more luxuriance and mellowness than ours, and this is largely due to the tree growth, since trees grow taller and live longer than other plants. Also, I am sorry when cultured people plant English trees and they die. But I believe we are wholly mistaken in throwing the blame for such failures on our *methods*, when the real defect is in our *spirit*. The trouble is we worship two false gods—Speed and Show.

For instance, we Americans have an insane passion for shade by the speediest and cheapest route. The only method we can conceive is to plant "fast growers." Yet there are two better methods, one of which is actually quicker, while the other is cheaper in the end. It is legitimate to alternate silver maples or box elders with long-lived trees, but even this is usually a bad plan, for some one will lack the sense

or courage to chop down the temporary trees before they injure the permanent ones. And every time we plant fast-growing trees only, as most of us do, we are sure to reap disappointment, for they are bound to die or become unsightly at an early age.

Again, we may be quite unconscious that we worship Show, but we do. For we go about our friends' country places admiring their golden elders, weeping hemlocks, cut-leaved maples, and other "horticultural varieties." These things do not exist in Nature but are, in a sense, creations of the nurserymen. They are like jewelry or spice or slang—to be used in moderation, but we ordinarily make them the dominant features of our home grounds. I believe that the readers of THE GARDEN MAGAZINE are not immoderately fond of loud clothes, cheap jewelry, rag-time, or slang, but the trees Americans plant most are analogous to these things. We can never achieve the mellowness of the English landscape by such a route. For, even at their best

horticultural varieties are transitory and undignified compared with their prototypes. They make for restlessness, not repose.

If I could deliver to the American people a golden treasure-box containing the most precious thought that England has to give her sister about her trees, that thought might be expressed somewhat as follows: The most valuable quality in any landscape is mellowness, and this can be attained only when long-lived tree are in the majority. Two thousand years of change have made the English people enthusiastic lovers of enduring things. A thousand years from now the Americans will have the same spirit and America will be quite as mellow as England. For half the trees one can then see in any direction will be a century or more old. And they will not be the trees we now plant by the million, such as poplars, willows, soft maples, and others. They will be oaks, beeches, lindens, and the like, for slow-growing trees are the only ones that can achieve great age and stature. Our job, as

individuals, is to recognize this law of evolution and put our home grounds in harmony with it.

How can we do this? In two ways. First, by transplanting all the large trees we can afford. Second, by planting enough slow-growing native trees to dominate the land we own. The fast growers and horticultural forms should be reduced to a minimum. The former are only for temporary luxuriance; the latter only for spice. This is the only true perspective.

What a different programme this is from the one we have hitherto been following! Until a few years ago, it was the regular thing for nurseries to have only the English oak, elm, beech, and linden; there was no demand for the American equivalents. Now the whole attitude is changing. We see that we can never get English effects merely by planting English species. We have abundant proof that European trees, as a rule, are not long-lived in America, except on the Pacific Coast. But, even if they did thrive here, it would be slavish imitation to have them in preponderance. We want an American landscape, not an English one. Formerly we aimed at the letter and missed the spirit. Now we see that mellowness resides, not in English trees as such, but in the great age and stature of tree growth, and that we can have mellow country places only by preserving and planting our own long-lived trees.

But my theme is to show how to reproduce all the most important English effects with material that will really be hardy and long-lived in America. In my judgment there are about eight main effects.

THE PRIVATE FORESTRY EFFECT

Everywhere in England you see private forests planted for profit. England first won her naval supremacy in ships built of English oak trees which were practically planted for the purpose on private estates. Public or state forestry hardly exists in England. Here we commonly think that forestry concerns the Government only. A few Americans will plant catalpa, locust, or some other tree crop that matures in seven to fifteen years, but when the passion for enduring things becomes a national trait with us we will plant oaks and other species that require a hundred years or more to mature. Meanwhile, the Bureau of Forestry

at Washington, D. C., has a plan for cooperating with any one who has a forest in which profit is the chief consideration.

THE LANDSCAPE FORESTRY

By "landscape forestry" I mean the art of managing woods for pleasure. There are thousands upon thousands of private deer parks and game preserves in England, while here they are comparatively rare. One can always tell a park by the abundance of grass and the peculiar shape of the trees. Most of these are nicely rounded, and all have a flat base at a uniform height above the ground—the height to which deer and cattle can reach. It would be childish in us to imitate this effect. If one keeps cattle for breeding purposes the effect will come naturally and will be appropriate. But if one wants a park for beauty it is



The English landscape possesses more luxuriance and mellowness than ours, and this is largely due to the tree growth, since trees grow taller and live longer than other plants

much better to have the branches of specimen trees come right down to the ground.

In sporting woods, the characteristic effect is a dense undergrowth of English laurel, a broad-leaved evergreen shrub of great beauty which is not hardy here. We can never duplicate this effect, but even if our rhododendrons are narrower, darker, and duller of leaf, the fact is of small consequence. When America is as crowded as England we shall doubtless pay much attention to breeding cattle and making game preserves, but it would be the shallowest sort of affectation for us to imitate now her cattle-pruned trees or laurel coverts.

The private arboretum is occasionally seen in England. Its object is to cultivate every kind of hardy tree. Some examples that I saw were too haphazard, some too botanical. We have a good many wrong kinds in America. The best pattern for us is the Arnold

Arboretum. Mr. Thomas Proctor has a very good private arboretum at Topsfield, Mass.

The commonest point of view toward pleasure woods in America is to "let them alone." That is why our woods are so uninteresting. American woods are full of diseased, crooked, and spindly trees, and there is no comfort in walking among them because of mosquitoes, brambles, and burs. The slowest and most imperfect way to restore a piece of woods to its primeval grandeur is to let it alone. We can make it wilder and more interesting at once by planting great quantities of wild flowers that will spread out of their own accord. I saw acres of bluebells in English woods, and this effect we can reproduce literally. The cheapest methods of carpeting the forest floor with wild flowers I hope to explain in July. At present I can speak only of wild garden- ing in which trees are dominant and flowers incidental.

The loveliest effect of this kind I saw in England was that of beech woods. The beeches themselves are a constant revelation of beauty. All have exquisite, smooth bark, and retain much of their foliage all winter. Some are beautiful, others grotesque; some are high branched, others low branched; some are developed on all sides, others only on one; some are spotted with gray lichens; others uniformly coated with green. The finest moss in the world grows under beech trees. Holly grows to perfection under beech, and makes an ideal

companion for it, but there is an atmosphere in beech woods that is positively not of this world, and therein lies its mystic charm. Tennyson reproduces it in "Pelleas and Ettare."

But I realize that private forestry is only for people with good-sized country places.* Most of us can have only a few trees on the lawn or in the garden. All the other effects I shall describe are from this point of view and I must omit street trees† and conifers.‡

THE FLOWERING EFFECT

The grandest flowering tree I saw in England is the horse chesnut. There is

* Let them buy and study Forbes's "English Estate Forestry."

† Because the point of view is generally public, not private. Let the student consult THE GARDEN MAGAZINE, Vol. VI, p. 128, and Vol. VIII, pp. 118-121.

‡ I wrote something about conifers last month, but there are better articles by Mr. Berckmans in THE GARDEN MAGAZINE for January and March, 1908.

an avenue of horse chestnuts about a mile long at Bushey Park, and I fancy the trees are eighty feet high. (Pictured on page 26.) When "Chestnut Sunday" approaches, the London papers tell their readers, and great crowds flock to see the spectacle. We can grow the horse chestnut quite as well as England, but we commonly use it for shade or street planting, for both of which purposes it is ill adapted. Street robberies are easily committed under its too dense shade, and the ground beneath horse chestnuts is often clammy.

There are only a few flowering trees that grow to great size, and since large trees are not wanted in a flower garden, these are fittest for a large lawn. Next to the horse chestnut the best tall flowering trees are tulip tree, false acacia, empress tree and Japanese varnish tree, all of which, I believe, we ought to grow better than the English can.

The most popular flowering trees are the small ones, since the flowers can be seen and picked easily. Many people who have not been to England suppose that the commonest flowering tree there is the hawthorn with double red flowers, and consequently our yards are full of it. This is an unfortunate mistake, for the common English hawthorn is white and single. All the red and double hawthorns have come from a wholly different species (*Crataegus monogyna*), although hundreds of nursery catalogues still indicate that they were derived from *Crataegus Oxyacantha* — an immortal error. You do not see double red hawthorns everywhere in England because double flowers and unnatural colors are not considered suitable for lawns. The principle has been well stated by our great American landscape designer, Mr. Warren H. Manning: *Horticultural forms originated in the garden; they should be restricted to it, and not allowed to dominate the landscape.* The showy thing we do is to put pink dogwood and Bechtel's flowering crab on the lawn. The refined thing is to plant white dogwood on the lawn or pink dogwood in the garden.

I did not see any flowering effects with trees that struck me as particularly English. I believe we can get the equivalent of their hawthorns with our native species, but not with the European. Our strong card, however, is our native dogwood. We can grow magnolias quite as well, and our western catalpa is suitable for lawns, but until the day of public spraying comes we should go slow on everything of the rose tribe, because these plants are subject to San José scale. I refer to Prunus and Pyrus, which include the flowering cherries, plums, peaches, apples, pears, and quinces.*

THE COLORED FOLIAGE EFFECT

Fortunately flowering trees are showy, as a rule, only when in bloom. Otherwise they would get stale, like a bed of Baby Rambler rose or any other "ever-blooming" bore. But purple leaves are vociferously



An American catalpa in England, showing the breadth and nobility we could get by planting our own trees and giving them plenty of room to grow

purple for months at a time, and that is why we love them. Trees with abnormally colored foliage make the most show for the money, and we love to advertise. The English don't. Nature almost never gives us purple or yellow leaves — except in autumn. No place can be restful unless green is dominant. Of purple, golden, and silver tones we get plenty for daily purposes in our ordinary trees, but bronze-leaved ashes and purple elms, plums, and catalpas are tiresome to live with. You may be greatly excited at the first sight of a huge blotch of yellow on the landscape, but when you come close you find that it is only an elm, oak, poplar, or box elder gone wrong. And after you have resolved about twenty

such cases into mere yellow journalism, the sensation gets a bit sickening.

The plants just mentioned are what William Robinson calls "tree rubbish." The dignified and lasting members of the group are the purple beech and purple Norway maple. It is right, also, that we should pay big sums for Japanese maples, although they are uncertain about growing. But even these we overdo.

THE CUT-LEAVED EFFECT

Only one degree less vulgar than a preponderance of abnormally colored foliage is a preponderance of cut-leaved trees. Must everything be shredded for us from breakfast food to the trees on our lawn?



The English love the oak best of all trees because it lives longest. Some day oaks will be first in our hearts also. We have many kinds, England only two

*For important articles on flowering trees see THE GARDEN MAGAZINE, Vol. VI, p. 128, and Vol. VIII, pp. 330-332.

Why does anyone want a mountain ash with leaves like an oak, or a hawthorn with leaves like celery, or an elm with leaves like a nettle, or anything with curled or hooded leaves?

The legitimate way to get cut-leaved effects is to use trees that are normally fine-leaved, not the abnormal varieties of maple, alder, beech, oak, elm, and linden. Whenever we want trees for thin, open effects, let us use our own deciduous cypress, Kentucky coffee tree, black locust, or Hercules's club, or else the Japanese varnish tree. The light filters down beautifully through their pinnate leaves, and these trees live long.

We grossly overdo all trees with "tropical" or spectacular foliage, such as the large-leaved magnolia and the ginkgo. They are perfectly hardy and are not creations of man, but is that any reason why we should fill a peaceful scene with objects startlingly different from our environment? Our country, as a whole, can beat England all hollow on variety, but too great variety on any one place is our national failing. I heard some Englishmen complain that the English landscape is monotonous. On the contrary, it is all the more home-like, because a few tried and true kinds of trees appear everywhere. Some day our landscape, too, may look like the home of one big, happy family.

THE EFFECT OF FORMAL OUTLINES

What possesses us to plant so many trees that are living cubes, globes, cones, and columns? They may be appropriate in the garden, but rarely on the lawn. The most conspicuous of these forms is the columnar or fastigate. The Lombardy poplar is a living exclamation point. It was the first ornamental tree we bought in quantity. It spread like wildfire in America and ruins many a fine landscape. A group of three or five makes a splendid break in

the skyline, but whole streets lined with it are most unnatural and tiresome.

The nurseries are full of "tree pretenders" — such as the oak that mimics a cypress in outline. Let us forget these horticultural forms. After you have learned to know and love beech, tulip tree, hawthorn, horse chestnut, and other broadish trees, their columnar varieties look pinched and unhappy. When we want cones let us go to the trees that naturally make cones, but "not too all-fired perfect" cones, viz., the spruces and other evergreens.

I wish I could come back in 500 years so as to find all the Kilmarnock weeping willows gone. The original mulberry has some dignity and interest, but Tea's weeping mulberry on a lawn is simply ludicrous. May the good Lord send a special bug to devour all the horticultural "weepers," especially the maples, dogwoods, lindens, and oaks. In the garden the bug should spare them, especially if they form tea-houses or summer-houses for children, but let no guilty weeper on the lawn escape. If we need pendulous foliage somewhere why not plant something that is naturally pendulous, like the Wisconsin willow?*

THE SHADE EFFECT

There is no sense in planting any of the trees that we commonly plant solely for shade, because they die too soon or get unsightly. If we need shade without delay we can build a veranda or summer-house or transplant a big tree. And if we plant long-lived trees for other purposes the shade problem will be solved incidentally.

The English have an equally foolish passion for retaining old trees that are in the way simply because they are old. "Most of us plant too thickly," says William

* Weeping trees were reviewed in THE GARDEN MAGAZINE Vol. V. p. 76.



We can grow magnolias better than they can in England. These large flowers are specially welcome for early spring effects on lawns

Robinson, the trees "get too close and we neglect to thin them, the result being moldy, close avenues, dripping, sunless groves and dismal shrubberies."

Whenever our houses are made damp and moldy by trees it is usually because trees with horizontal branches overhang them, so that there is no chance for air to circulate. The ideal tree near a house is an American elm, not the English, which is a most treacherous tree, dropping great limbs without warning.

Anyone who wishes an inspiring new point of view toward shade trees should read the chapter in the "English Flower Garden," called "Air and Shade."

THE AGE EFFECT

If your grounds are large enough for a tree that will grow a hundred feet high or more, plant an oak. The grandest of American oaks is the white oak (*Q. alba*), and this is also the nearest equivalent of the English, which generally fails here. But the white oak is impossible to transplant and very slow. The quickest growing oaks are the pin, red, and scarlet.

Plant American beech and linden in preference to their English equivalents. Plant red and sugar maples in preference to the sycamore maple.

The following characteristic American trees will grow better here than in England, and have often attained more than 100 feet or 100 years: Honey locust, black walnut, pin oak, red oak, black oak, white oak.

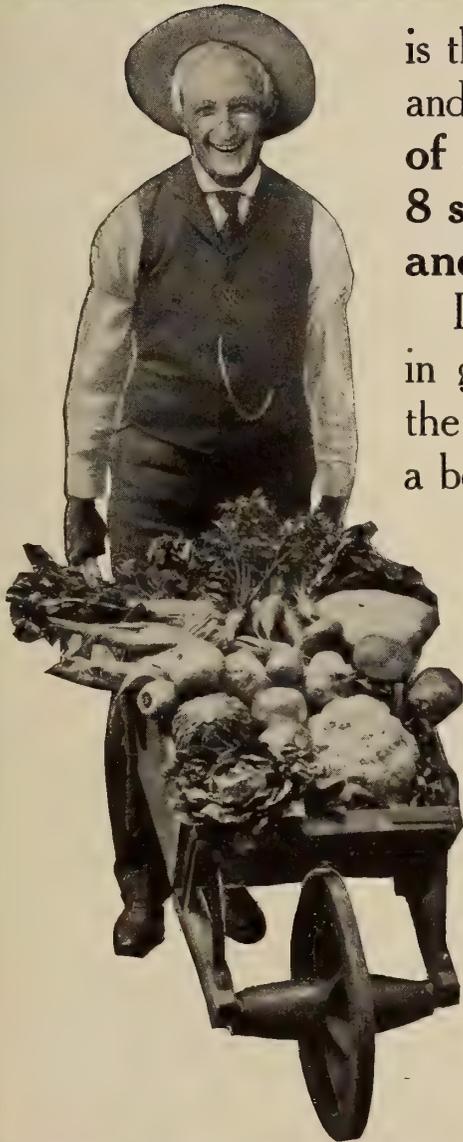
The following cannot be expected to last a century: Birches, elms, poplars, willows, ailanthus, catalpa, box elder, silver maple, English hawthorn, or any kind of chestnut.

There are many ancient trees in Britain that seem thoroughly at home, but they were originally foreigners, *e. g.*, chestnuts, linden, larch, Norway spruce, and service tree. But practically all came from a related climate — that of Europe. A thousand years from now many foreign trees will be naturalized in America, and practically all will be from the Far East. But America will never "find herself" until her own trees are everywhere in the majority.



An English park, showing why the trees are all flat-bottomed—the deer trim them. An avenue of horse chestnuts about a mile long at Bushey Park

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Callas in California

IN THIS section of the country the calla is often used as a boundary fence between two estates, and there is no reason why it should not be as freely used in the gardens of the North, with as much success as dahlias or any other summer-flowering plant.

The cultivation of the calla is very easy. While it is a moisture-loving plant, it luxu-

riates in a rich, well-drained soil, but it must never be permitted to suffer for lack of water at any time during its growing season. It is a gross feeder, and the soil in which it is planted should first be thoroughly mixed with well-decayed manure. Callas can be grown to perfection in good dahlia soil with about half the care required for perfect dahlias.

The plant likes a position sheltered from the wind but with no overhanging shade. The season of growth extends from the end of February to the last of August, during which time dozens of flowers are produced. When a flower has almost opened, cut it and place it in water; when fully expanded it will be a more delicate white than those which open out-of-doors.

Callas and geraniums can be safely planted outdoors at the same time. Do not be alarmed if the leaves turn gray after being first set out; they will become a dark green and increase in size as the tubers gain roots.

When the planting out is completed, cover the surface of the soil for about two feet around the plants with a one-inch mulch of fine decomposed manure. This, not being a medium of capillary attraction, will cut off evaporation and help maintain an even soil moisture. If the weather is such that the plants need watering, the mulch will also keep the soil from hardening on the surface afterward. A good idea that will be found of benefit to callas in hot weather is to draw up with the hoe around the plants a little wall of dirt about four inches high. Do this at the time of planting, for after the mulch has been put on all cultivation of the soil ceases.

As soon as the first killing frost appears carefully lift the tubers and cut off the tops about three inches from the crown of the tubers. When the remaining part is dry, clean the tubers of all dead material and lay them in dry sand placed in a dry, cool, frost-proof place. Examine the tubers several times during the winter; if any decay shows upon them, cut it out and sprinkle dry slacked lime upon the cuts.

The variety generally cultivated is *Richardia Africana*, which grows from three to four feet high. The flowers are large and spreading, of an ivory white, changing with age to a paper white.

A very pretty variety of *Richardia Africana*, with smaller leaves, is Little Gem. It grows two feet high and has medium-sized, funnel-shaped flowers with a little spread. They are pure white.

Richardia Elliottiana has flowers of a beautiful pure golden yellow. This variety is of more recent introduction and is valuable for cut flowers. Its growth is not so strong as the white varieties, and, as far as I have been able to judge, it prefers partial shade.

Santa Barbara.

W. H. MORSE.



In California callas bloom from February until August if planted in a position sheltered from wind

How to Increase Your Tomato Crop

A GOVERNMENT employee in Washington, D. C., by the following method of pruning and staking his tomato plants, greatly increased the yield of fruit. He not only had enough for his own family, but liberally supplied his neighbors and had enough preserves to last a whole year. His garden was only the back yard of a small-sized city lot:

He set the plants as closely as one and one-half feet in rows three feet apart (2 x 4 in the very rank growing varieties). He secured a sharpened stake five or six feet long for each plant and when the plants were fifteen to eighteen inches high began to train them. He removed all the laterals except one or two, which, with the main stem, were tied to the stake with strings of white cotton cloth (which would not break the stem). As these continued to grow they were tied loosely to the stake, the side shoots being constantly pinched off. The increased productiveness was not so much per plant as in the fact that so many more plants could be grown upon the same area of land.

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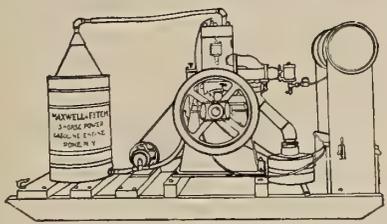
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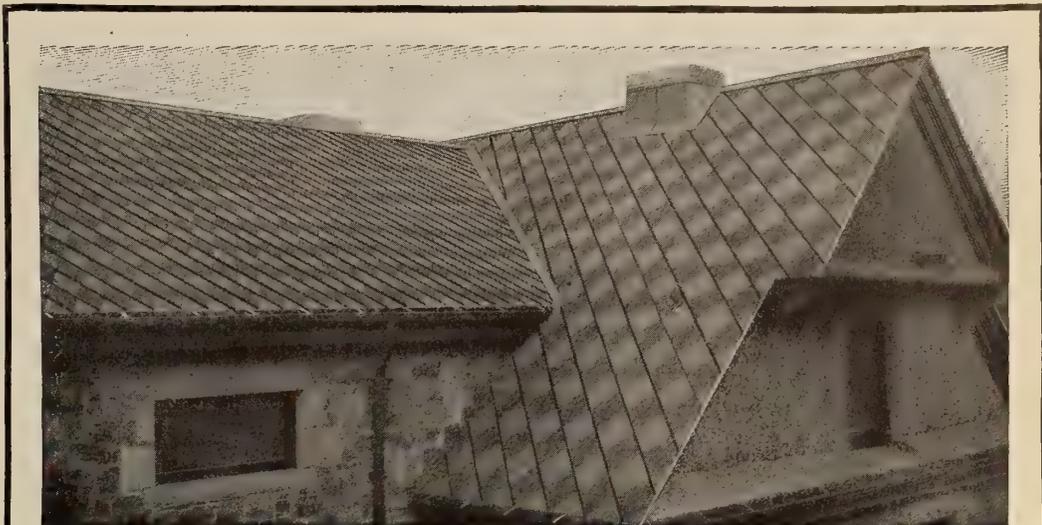
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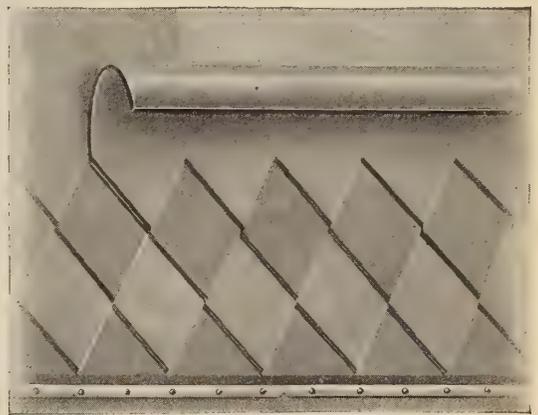
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Tomatoes from the Garden in June

BY GROWING tomatoes on stakes and watering in a rather novel way I obtained a crop of unusually large tomatoes on June 21st, many of the fruits weighing over a pound.

I did not possess a hotbed, but prepared a seedbed in the sunniest spot in the garden. Three feet of the old soil was removed and replaced by two feet of manure, on top of which one foot of good potting soil was firmly packed. Early in February I planted seed of Chalk's Early Jewel, fitted over the top of the seedbed an old glass window sash, banked manure around the sides, and covered the glass with straw mats.

As soon as the tiny plants appeared I gave them light, using the mats at night only. During warm, sunny days I raised the glass to admit air, so that the plants would harden.

On May 6th I set in permanent places in the garden 110 thrifty plants, most of which were budded. They were planted two and one-half feet apart each way and trained to stakes, and I thereby secured from the same ground about three times as many tomatoes, which were larger, better, and much earlier than those produced by the usual methods.

Between each row of plants a piece of pipe was set on end (a leaky tin can would do as well) and filled with water twice a day during dry weather. The plants more than paid for this little trouble by rapid and sturdy growth.

Ohio.

MRS. JOSEPH C. BROWN.



How to Grow Peppers

THE pepper plant, being a lover of warm soil and warm weather, is well suited for the South, and a good crop can be had with but little care. Peppers succeed best in a rich, warm, sandy soil, but can be grown successfully almost anywhere.

Poultry manure and guano are the best fertilizers, and should be liberally applied before planting.

Start the seed in hotbeds or in small boxes about the first of February. The plants will then be ready to set out in the open ground the first of April. Have the ground well pulverized; make the furrows three feet apart with a shovel plow, and put a good quantity of fertilizer in each. Then run a shovel plow along the sides of the furrows, making beds or ridges on the manure. After a good rain set out the plants on these beds or ridges, placing the large varieties from eighteen inches to two feet apart in the row, and the small varieties from twelve to fifteen inches apart.

Plow or hoe the soil around the plants every two weeks to keep it loose and free from weeds and to encourage rapid growth. Put a tablespoonful of nitrate of soda around each plant after it is well started. Pepper seed requires from one hundred and twenty-five to one hundred and fifty days to mature, the largest varieties, of course, requiring the longest time.

Of the large sweet peppers, grow the Chinese Giant and Sweet Mountain. The former is the largest variety grown, and is better than Sweet Mountain, although not so early. I have seen pods of it so large



The largest pepper grown is Chinese Giant, a single pod nearly filling a quart measure

that one would nearly fill a quart measure. The Neapolitan is claimed to be the earliest of all the large early varieties. It should be given a trial in the South as well as in the North.

The best varieties of the small, hot, red pepper are Tabasco, Long Red Cayenne, and Bird's Eye or Creole. T. J. S.

Early Spring in the Garden

IN THIS locality February is really the first spring month, and, if the weather is favorable, seed of all hardy flowers and vegetables can safely be sown in the open ground after the first week or two. All hardy plants may now be placed in the open ground provided they have been first hardened off in the coldframe.

Set out some cabbage plants and you will have this vegetable for use at least a month earlier than you would from seed sown now.

The best celery I have ever seen grown in the South was from seed sown during February. If it is planted here late in the spring it never succeeds unless the soil is moist and the weather very favorable; therefore it is best to sow the seed early in February in a hotbed so that the plants can get a

good start before the warm, dry weather comes. The soil must be rich (but neither excessively wet nor dry), as the plants must make a rapid growth to be of good quality. Those interested in growing celery for home use should read THE GARDEN MAGAZINE for August, 1907, page 8.

Select and order chrysanthemum plants now for delivery early next month. Do not buy the unnamed sorts because they are cheap, for in the end you will find them much cheaper in quality than in price. The beds where chrysanthemums are to grow should be spaded at least twelve inches deep, and one inch of well-decayed manure spread over the surface. Spade the beds again just deep enough to mix the manure with the soil.

A little pamphlet of directions usually comes with plants bought from nurserymen, and this should be read over carefully, as the information contained therein is of the utmost importance.

Remove the winter protection from around the pansy plants now so that the sun can get to them. At night cover with heavy paper to keep out the frost.

Everyone who has a garden, no matter what the size is, should own a small spraying apparatus. From March until the end of the season the insect enemies of vegetables and flowers must be destroyed.

Georgia.

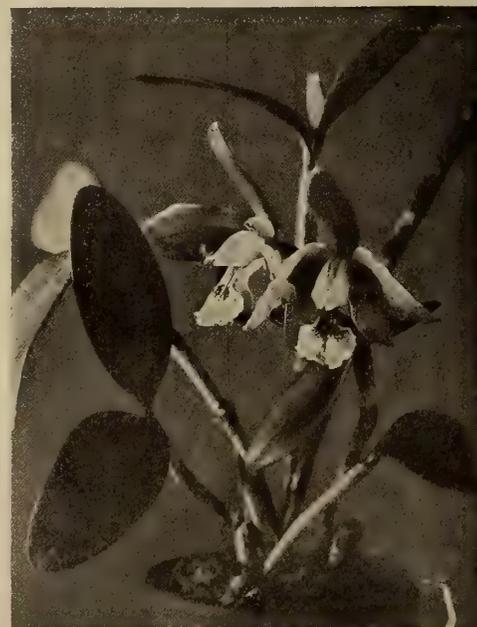
THOMAS J. STEED.

A Cattleya With Thick Fleshy Flowers

THE orchid here pictured is *Cattleya granulosa*, which differs from the favorite cut flowers of this genus in having blossoms of a thick, fleshy texture. The sepals are olive green spotted with red. The lip has three lobes, the side lobes being yellow inside and whitish outside. The middle lobe is white, covered with numerous purple papillæ. This orchid is a native of Guatemala.

New Jersey.

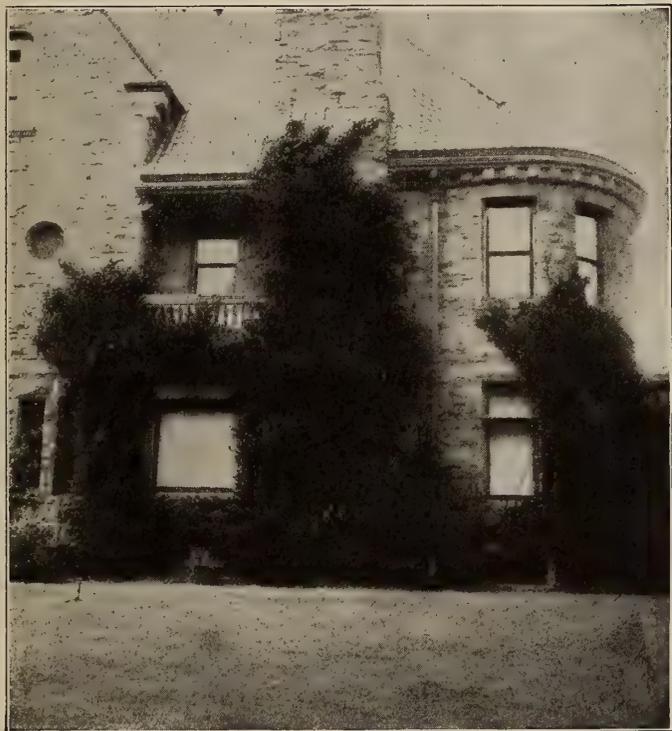
R. G. CHASE.



Cattleya granulosa, a native of Guatemala. The lip is distinctly three-lobed

A Splendid Evergreen Vine

Euonymus Radicans



WHY PLANT the Boston Ivy or *Ampelopsis Veitchi* which loses its leaves with the first frost, when you can have a more beautiful vine that holds its leaves all winter and is perfectly hardy? More beautiful than the English Ivy, which is not hardy. For covering stone or brick walls this *Euonymus* is unsurpassed. The leaves are small, of a rich lustrous green, and look just as well in winter as they do in summer. This vine can also be used instead of Box, which is not very hardy north of Washington, for making garden edges or little hedges, and nothing is more beautiful for the purpose.

20 cents each; \$2 per dozen; \$14 per 100

Extra Strong Plants:

30 cents each; \$3 per dozen; \$20 per 100

We have the largest, finest and most comprehensive stock of Hardy Plants in America, including 300 varieties of the choicest Peonies, one hundred varieties of Japanese and European Tree Peonies, and also the largest collection of Japanese Iris in the world, and an unsurpassed collection of named Phloxes. Our illustrated catalogue describing these and hundreds of other Hardy Plants, Trees, Rhododendrons, Azaleas and Shrubs, will be sent on request.

"A PLEA FOR HARDY PLANTS," by J. Wilkinson Elliott, contains much information about Hardy Gardens, with plans for their arrangement. We have made arrangements with the publishers of this book to furnish it to customers at a very low price. Particulars on request.

Elliott Nursery Company

336 Fourth Avenue

PITTSBURG, PA.

Stone house in Erie, Pa., covered with *Euonymus Radicans*

Thorburn's Seeds

Our catalogue—the acme of perfection in catalogue making—is the most instructive, the most useful, the most concise, and contains the least extravagant descriptions, of any seed annual published.

A Veritable Mine of Information.

You will agree with us when you have secured a copy.

Ready now—Mailed free—Postal sufficient.

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107 Years in Business in New York City

Proofs of the Quality of Biltmore Trees and Plants

The quality of goods sold by a firm and treatment accorded customers in its dealings with them can best be determined by the degree to which they buy again.

**Established
20 Years**

Two years ago Biltmore Nursery first offered its product to the general public. A large volume of business was the immediate result.

**Satisfied
Customers**

Last year our trade more than doubled, and a gratifying proportion of the orders we received came from customers of the preceding year.

**Increasing
Trade**

For the current year we have already enough orders to assure a still larger business, including no inconsiderable number from pleased patrons of 1907 and 1908.

**Approval of
Buying Public**

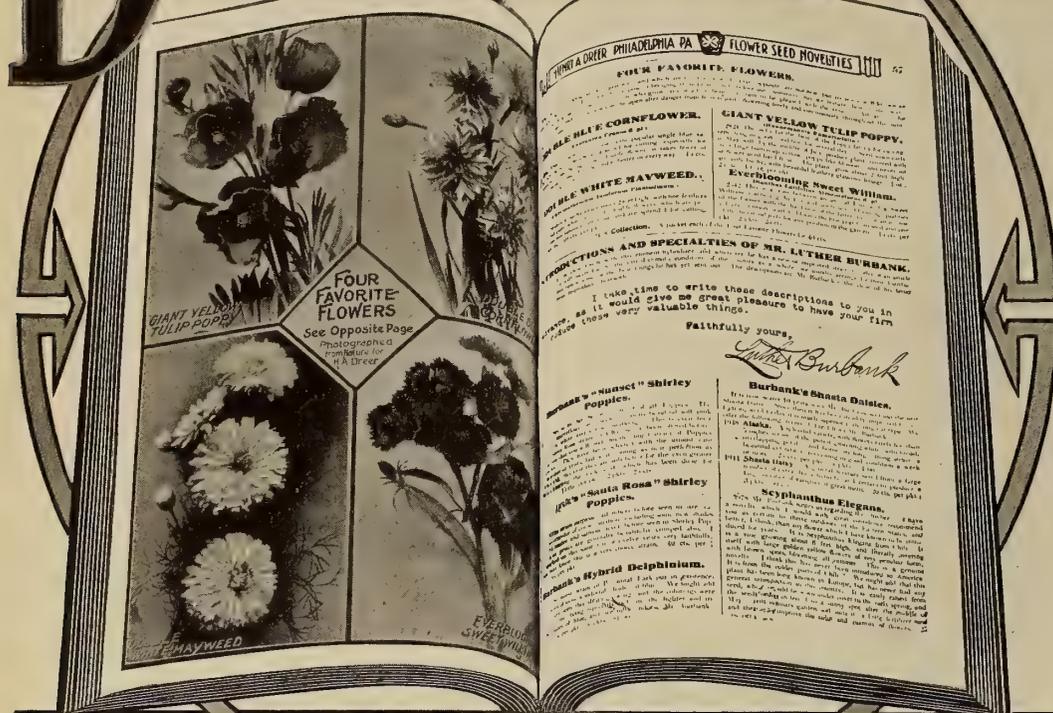
The buying public has placed its seal of approval on our claims as to the superior stock and superior service supplied by Biltmore Nursery, after trying out our plants, shrubs and trees.

This year we hope to have *your* order, whether or not *you* have been a customer before. If you have not seen our complete catalogue, send for a *free copy*.

BILTMORE NURSERY

Box 422, BILTMORE, N. C.

Dreer's Garden Book



LAST summer we determined, regardless of labor or cost, to make our **Garden Book for 1909** a New Kind of Catalogue by incorporating clear, concise, down-to-date cultural notes which would enable amateurs to grow their favorite flowers or vegetables to perfection.

With this end in view we secured the cooperation of a number of the leading horticultural authorities, including:

- Mrs. H. Rutherford Ely, author of "A Woman's Hardy Garden," etc.;
- Prof. L. H. Bailey, editor of "Encyclopedia of American Horticulture;"
- Mr. William Falconer, former editor of "Gardening;"
- Mr. George W. Oliver, expert plantsman and writer;
- Mr. W. C. Egan, the eminent amateur;
- Mr. Eben E. Rexford, the well-known writer on house plants;
- Mr. T. Greiner, author of "How to Make the Garden Pay," etc., etc., besides the practical experience of our own corps of experts.

The result is that **Dreer's Garden Book for 1909**, in addition to being the most complete catalogue published, is now the most valuable guide to the growing of vegetables, flowers, etc., that has ever been printed. Enlarged to 256 pages, 4 color and 4 duotone plates and hundreds of photographic illustrations.

The one hundred and more **Special Cultural Articles** by the leading horticulturists of America are invaluable to every amateur grower of flowers and vegetables.

It would cost at least \$25 for the various horticultural books to cover the information contained in "**Dreer's Garden Book for 1909.**"

But we will send a copy free to every one mentioning "*The Garden Magazine.*" Write to-day.

HENRY A. DREER
714 Chestnut St. Philadelphia

The Best Carnations for the Amateur

A FIRST-CLASS carnation should comprise these important points: The flower must be not less than three inches in diameter, of good form, and well built up. By this I mean the outer petals should reflex until they are at right angles with the stem, and the centre should be so high that the flower forms a perfect semi-circle, with a sufficient quantity of petals to have a "full" appearance. The calyx must be strong and not inclined to burst at a little extra heat or a trifle overfeeding. The stems should be not less than twenty inches, and rigid enough to hold the flower erect, but with a little suppleness to give a graceful arching. The flower must have enough vitality to stand shipping and to keep well after cutting.

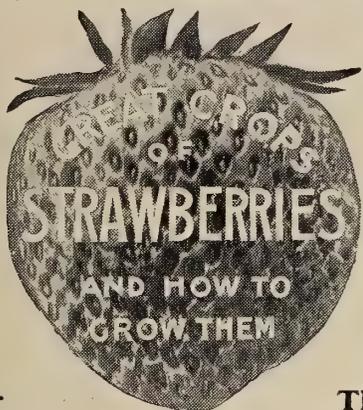
Bad cultivation will destroy any of the good points in the best carnation, whether it be size, stem, calyx, or keeping qualities, and the one great evil to guard against is too high a temperature. Carnations cannot stand heat, and when grown at too high a temperature the weak points in certain varieties will quickly develop, size being usually the first point to suffer, then stem and form.

The bursting of the calyx and consequent loss of form in flower is, in nearly all cases, caused by too high a temperature; other causes are too much water at the roots, insufficient drainage, and a very sudden change of temperature. The short-calyx varieties (such as Mrs. G. Bradt) are, of course, more inclined to burst than the long-calyx type (such as Beacon). Stems can be controlled to a marked degree. A temperature of 45 degrees is best for stems, but the plants don't flower freely at that point, so we must raise the temperature a trifle; but above 55 degrees good stems cease. Another cause of poor stems is insufficient nourish-



Pick the flowers every morning, but do not cut them off; plunge them into cool water and place in a cool, dark place for a few hours

FREE BOOK
FREE BOOK



Your Name and Address That's All

OUR 1909 EDITION is the most practical text book on Strawberry growing ever written. It's worth its weight in gold because it teaches the Kellogg method of growing the world's record crops of big red berries. Every detail of the work is illustrated by photo-engravings. You read it by pictures. They show you just how to do everything from beginning to end. Strawberry growers who follow the Kellogg way are getting more fancy berries from one acre than the other fellow gets from two. The book makes you acquainted with some of these top-notch growers; shows pictures of their strawberry fields and gives their yields. This book for your address. We'll trade even.

R. M. KELLOGG COMPANY, Box 690 Three Rivers, Mich.

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Ferry's are best because every year the retailer gets a new supply, freshly tested and put up. You run no risk of poorly kept or remnant stocks. We take the pains; you get the results. Buy of the best equipped and most expert seed growers in America. It is to our advantage to satisfy you. We will. For sale everywhere. Our 1909 Seed Annual free. Write to

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 (Established 1856)
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LANDSCAPE WORK a specialty. No proposition so large but that we are equipped to handle it.

SPRAY

It will pay you to spray your Fruit Trees and Vines for protection from scale and all insect pests and fungus diseases. **FREE Instruction Book** shows the famous **Garfield, Empire King, Orchard, Monarch, Leader,** and other sprayers; also gives a lot of formulas and other valuable information.

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The GILL Engraving Company
 140 Fifth Avenue New York



PAINT TALKS
 No. 1—Paint for Exterior Work

"I am going to tell a number of specific and money-saving facts in this magazine from month to month. Space is limited and bare facts only can be stated. Those who want reasons, explanations, fuller information, etc., need only write National Lead Company.

Exterior paint is exposed to the weather, hot—cold—rainy—freezing. No risk should be run with faulty materials or faulty methods. The priming coat should not be ochre. It is cheap but fatal. The best primer—our pure White Lead mixed with linseed oil, some turpentine (enough to drive the paint into the pores of the wood) and a bit of Japan drier. The body and finishing coats need exactly the same materials but they should be mixed thicker.

Points to Avoid—(a) adulteration in pigment (a guaranty of absolute purity goes with our White Lead)—(b) adulteration in oil—(c) too much turpentine—(d) inferior drier—(e) also stale paint should not be used. Have your painter mix the ingredients fresh for each job.



NATIONAL LEAD COMPANY

An office in each of the following cities:
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Find in the Iron Age Book devices of which they never dreamed for the easy, economical, exact cultivation of the pleasure-profit garden. Think of one pair of easy-going handles performing every operation from the opening of the soil to the gathering of Nature's reward and you have a slight idea of Iron Age methods.

Whether you plant a hill, a row or an acre, whether you do it yourself or employ others, you must know about these Iron Age labor saving, yield-increasing implements if you want to get the full return for your labor or investment. The Iron Age Book will be forwarded upon request to readers of Garden Magazine-Farming. Read it and be a better gardener.

BATEMAN MFG. CO., Box C, GRENLOCH, N. J.

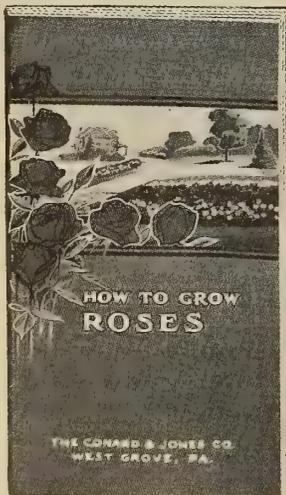
The Right Roses for Your Locality



The successful growing of roses depends:

- (1) On the selection of the right varieties for your locality.
- (2) On getting plants with thrifty root-growth and sturdy tops.
- (3) On proper planting, cultivating, fertilizing and pruning.
- (4) On keeping them free from insect pests and fungus diseases.

Comply with these conditions and success is assured.



The sure and easy way of growing out-door roses is all clearly explained in our new little manual

"How to Grow Roses"

in which will be found an answer to every important question that can be asked by the amateur rose-grower.

And the right roses for your locality will be found among the list of "101 Best Roses that thrive best and bloom best in America." Among them are roses sure to bloom profusely in your garden.

The price of "How to Grow Roses" is 10 cents in stamps or silver. We want every reader of "THE GARDEN MAGAZINE" to have this trusty little manual "How to Grow

Roses" and as an incentive we will send to everyone complying with conditions of coupon opposite, a 25-cent Guaranteed to Bloom Rose free of charge.

Write to-day for a copy of our catalogue "The Best Roses in America." It's free.

The Conard and Jones Co.
THE BEST ROSES IN AMERICA
West Grove, Pa.

Remember the Star

Box 24-B

ment in the soil, when the stems get thin and fibrous. Keeping the plants too dry will also cause poor stems.

Taste differs as to whether the ideal carnation should be shell or fringe edged. The fringe edge is by far the most popular today, and all the newer carnations are extreme specimens of this type. The shell or plain-edged varieties have a full, wavy effect on each petal.

Beacon, without any doubt, is the best in the scarlet class, the color being a brilliant orange scarlet; the flower has size, combined with good stem, and the plant is truly wonderful in quantity of flowers. *Victory* is my choice as second best in this class.

Harlowarden is the best of the crimson type, but the crimson carnations are about five years behind the other colors. *Crimson Glow* I place second.

Imperial I prefer in the variegated class; a good grower, the flowers large, the color pinkish white with scarlet variegation. *Mrs. M. A. Patten*, a pure white sort, with scarlet markings, for second choice.

White Enchantress possesses more quality than any other white, long-stemmed variety, with large, well-formed flowers. You will probably get more flowers from *White Perfection*, but the quality is not up to the standard of *White Enchantress*. I have a failing for *Lady Bountiful*, a lovely pure white, of excellent form, but it is not nearly so good in yield as the two former.

Enchantress I consider the best of the light pinks, and it is probably the best all-around carnation on the market to-day. *Winsor* is a good free-flowering variety, and although the stem is shorter and the flower smaller than in *Enchantress*, it has more color.

Pink Imperial is a solid pink, with long stem, and large, well-built flowers, but I would certainly consider *Pink Enchantress* the best of the dark pinks if the color did not bleach out from the ends of the petals.

New York.

W. C. McC.

Flavor in Muskmelons

THERE are more "fool notions" afloat about muskmelons than about any other fruit or vegetable. The funniest of these popular fallacies is the idea that muskmelons will have their flavor spoiled if you grow pumpkins, squashes, or cucumbers near them. It is true that cross-fertilization takes place but the results cannot be detected until the second year. Plantings have often been made to determine the point, and no one has ever been able to detect the slightest change during the first year. Perhaps, you will accept the highest horticultural authority in the land? Professor Bailey in his book "Principles of Vegetable Gardening" says (page 417): "The notion that muskmelons are contaminated by cucumbers that grow near them is an error."

It is just the kind of picturesque fable that we all dearly love to swallow. The story about the vitality of mummy wheat is another.

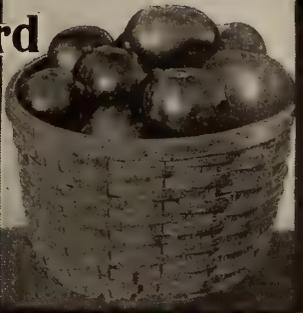
Pennsylvania.

E. D. D.

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The Conard & Jones Co., West Grove, Pa.
and send me without charge, at proper planting time,
a 25-cent Guaranteed to Bloom Rose selected especially for my locality.
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Address _____
24-B

Enclosed find ten

Stokes' Standard Seeds



will bring you results. If your experience with ordinary seeds has been discouraging you will all the more appreciate the strength and fertility of my standard seeds.

My Handsome New Free Catalogue for 1909

tells you all about "Stokes' Standards" and my special system of selling them. Richly illustrated with photographs. Complete directions for obtaining sure results. Write for a copy to-day.

My "Bonny Best" Early Tomato is a large, full-red, handsome tomato that is ready for the table before other varieties. The finest and most prolific strain ever produced.

Special 10c Combination Offer. Send me 10c in stamps and mention The Garden Magazine and I will send you my 1909 Catalogue and Three 10c packets of Seed—one each of my "Bonny Best" Early Tomatoes, "Stokes' Standard" Sweet Peas, and "Stokes' Standard" Single Poppy (the famous Luther Burbank strain). Each unequaled in its class.

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If you want to be sure of a growing crop, plant Gregory's Seeds. Always sold under three warrants. For over fifty years they have been the standard for purity and reliability.

Gregory's Seed Book—FREE

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The U. S. POMOLOGIST

COL. GEO. B. BRACKETT, says:
"I always told you I consider Delicious the best of all varieties you have introduced."

COMPLIMENTARY SPECIMENS of this famous Stark Delicious apple will be sent on request. Delicious is the greatest quality apple of the day; selling at 50% more than Jonathan. Delicious trees are healthy, hardy, dependable everywhere, and bear incomparable quality fruit. Without Delicious no orchard is complete. Send for the apples and our book "The Apple Delicious" which shows Delicious and King David in full color and tells about other profitable sorts. **Stark Trees** are best; grown on scientific principles in our 10 nurseries and each tree has the Stark reputation of 84 years behind it. Stock is most complete and of highest quality; apple, peach, pear, cherry, plum, grape, gooseberry, currant, blackberry, roses, Norway Maple, etc.,—Everything. Write today for the Stark Fruit Book.

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Victor V \$60

You think you can tell the difference between hearing grand-opera artists sing and hearing their beautiful voices on the *Victor*. But can you?

In the opera-house corridor scene in "The Pit" at Ye Liberty Theatre, Oakland, Cal., the famous quartet from Rigoletto was sung by Caruso, Abott, Homer and Scotti on the *Victor*, and the delighted audience thought they were listening to the singers themselves.

Every day at the Waldorf-Astoria, New York, the grand-opera stars sing, accompanied by the hotel orchestra of sixteen pieces. The diners listen with rapt attention, craning their necks to get a glimpse of the singer. But it is a *Victor*.

In the rotunda of Wanamaker's famous Philadelphia store, the great pipe organ accompanied Melba on the *Victor*, and the people rushed from all directions to see the singer.

Even in the *Victor* laboratory, employes often imagine they are listening to a singer making a record while they really hear the *Victor*.

Why not hear the *Victor* for yourself? Any *Victor* dealer will gladly play any *Victor Records* you want to hear.

There is a *Victor* for every purse—\$10 to \$300.

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Victor

Copyright 1908 Victor Talking Machine Co.

To get best results, use only Victor Needles on Victor Records

A complete list of new Victor Records for February will be found in the February number of Munsey's, Scribner's, McClure's, Century, Everybody's, and March Cosmopolitan

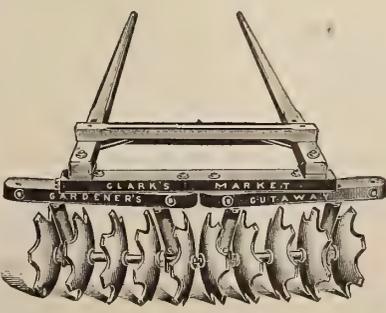
"CUTAWAY" TOOLS

Clark's One Horse Market Garden or Grove Harrow is made reversible to throw the soil either to or from the plant. It is especially desirable for the small garden, truck or market garden's use. This tool is used extensively among gardeners, and in Florida it is also used for orchard culture. It's a great labor saver.

Made in Three Sizes:

- No. 0, 1 horse with two gangs of 5 1/4 inch disks each.
- No. 00, Light 2 horse, two gangs, 6 1/4 inch disks each.
- No. 000, Heavy 2 horse, two gangs, 7 1/4 inch disks each.

Send today for our FREE booklet describing 120 styles and sizes of Cutaway Tools.



CUTAWAY HARROW CO.
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Season 1908-9
Order Now for Future Delivery

If your trees are purchased from the Fancher Creek Nurseries, they will be true to name, well developed, with good roots.

For 25 years we have been engaged in growing reliable nursery stock.

Last season we did the largest business in our history. This year our stock of deciduous, citrus and ornamental trees, grape vines and rose bushes is more complete and better than ever.

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Valuable Burbank booklet illustrated in colors mailed for 25c.

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Box 39 Fresno, California U. S. A.

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MICE




Exterminates field mice, house mice, and other rodents in houses, greenhouses, hotbeds, barns and stables. Package (containing enough Ubet Kill to kill 1,000 mice) 60 cents, carriage paid.

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MEN AND WOMEN

Write to-day for our new 32-page FREE BOOKLET and learn how to grow mushrooms for big profits all the year in cellars, stables, sheds, boxes, etc. Surprising returns from small space with little expense. Markets waiting for all you can raise. Previous experience unnecessary. We make and sell best spawn and teach you our methods free.

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TARGET BRAND SCALE DESTROYER



The Standardized Soluble Oil for San Jose Scale

Guaranteed to kill every scale it hits when applied at a strength of 1 to 20. More economical than home made remedies. Send for proofs and name of nearest dealer.

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Late Petoskey Will Do it

Our new seedling. A prodigious yielder of Large, Round, Smooth, White, Deliciously flavored tubers. Vigorous grower; handsome in appearance. Splendid shipper. Cooks dry and mealy.

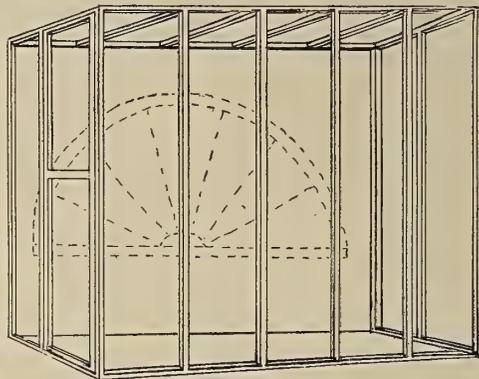
For 25c (stamps or coin) will mail 1 lb. late Petoskey, 1909 catalog of sure to grow Northern Grown Seeds and coupon good for 50c Worth Free Seeds. Catalog alone mailed free. Write quick.

DARLING & BEAHAN, 885 Mich. St., Petoskey, Mich.

A Conservatory Made of Newspapers

LIVING in a house lighted with gas, I feared it would be impossible to have bulbs flower in the living-rooms with any degree of success, so I built a paper conservatory in the attic. It cost \$2.11 and was in use for six winters; and although the thermometer frequently registered 10 degrees below zero, and on two occasions even more than 20 degrees below outside, and water froze in the attic, frost never penetrated the paper covering.

The architect planned for a room in the attic, but this was omitted when the house was built. The furnace pipe, however, was carried up to that floor. A large semi-circular window faced south, and around this I put up a frame-work seven feet six inches long, four feet one inch wide and six feet two inches high, using factory strips two inches wide and one inch thick, placed eighteen inches apart. The size of the window and the position of the attic stairs prevented greater length and width. The



This framework covered with newspapers served as a conservatory for six winters

frame of the door (which was two feet wide and five feet ten inches high) was made of strips one and one-quarter inches wide and one inch thick.

Four newspapers placed on top of each other and folded once were tacked to the floor, and these were overlapped by four more papers which had also been folded once.

By this arrangement sixteen thicknesses of paper covered both inside and outside of the conservatory, and the door was also made in the same way. The doorknob consisted of a spool nailed to the door. To prevent the tacks from tearing the newspapers, a piece of cardboard about an inch square was stuck on each tack, making a very large head. Later I obtained some large sheets of wrapping paper, which I tacked over the newspapers on the outside to give a better appearance.

Six lengths of 6-inch stove pipe and a 6-inch elbow connected the conservatory with the furnace pipe in the attic floor. To prevent loss of heat and to avoid any possible danger from fire, five square yards of asbestos paper were used to cover the pipes, and a piece of the same material, eighteen

OUT OF DOOR WORKERS

Men who cannot stop for a rainy day - will find the greatest comfort and freedom of bodily movement



in **TOWER'S FISH BRAND WATERPROOF OILED GARMENTS**

SLICKERS \$3.00
SUITS \$3.00
(BLACK OR YELLOW)

IF NOT AT YOUR DEALERS
SENT PREPAID ON RECEIPT OF PRICE
CATALOG \$16 FREE

A. J. TOWER CO. BOSTON, U. S. A. TOWER CANADIAN CO. LIMITED TORONTO CAN.



A Mess of **Mushrooms** at all seasons Growing in your Cellar

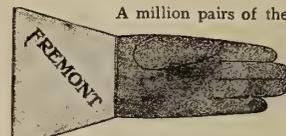
40 cts. in postage stamps together with the name of your dealer will bring you, postpaid, direct from the manufacturer, a fresh sample brick of

Lambert's Pure Culture MUSHROOM SPAWN the best high-grade spawn in the market, together with large illustrated book on **Mushroom Culture**, containing simple and practical methods of raising, preserving and cooking mushrooms. Not more than one sample brick will be sent to the same party. Further orders must come through your dealer.

Address: **American Spawn Co., St. Paul, Minn.**

WOMEN'S HANDS ALWAYS KEPT WHITE AND SOFT

A million pairs of these women's work gloves sold every year. Used in sweeping, clothes-hanging, tending furnace, etc. Protects hands; Automobile 25c Cuff protects wrist. Five pairs, prepaid \$1.00.



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MAKES PLANTS GROW

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The Sweetest and Daintiest Flowers. You can make money all the year growing them outdoors in cheap cold frames and gardens, or in the house in pots and boxes. Hundreds of blossoms easily grown and quickly sold at handsome profit. A fascinating occupation or paying business for both men and women. Write to-day for our FREE BOOKLET, "Money Making With Violets." It will interest and surprise you.

Dept. 8 Elite Conservatories, Boston, Mass.

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HARDY SHRUBS, TREES, VINES
EVERGREENS AND PERENNIALS

A large and fine stock of well-rooted plants grown in sandy loam. Good plants; best sizes for planting; very cheap. Priced catalogue free on application.

T. R. WATSON : **Plymouth, Mass.**



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Surprise Collection

THREE DISTINCT NEW DAHLIAS

for \$1.00, postage paid, containing one root each of the following:

- No. 1. H. Hornsveld, delicate salmon pink
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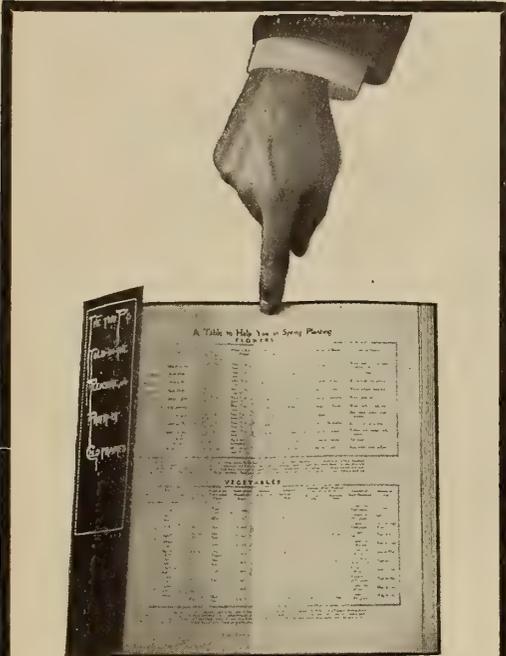
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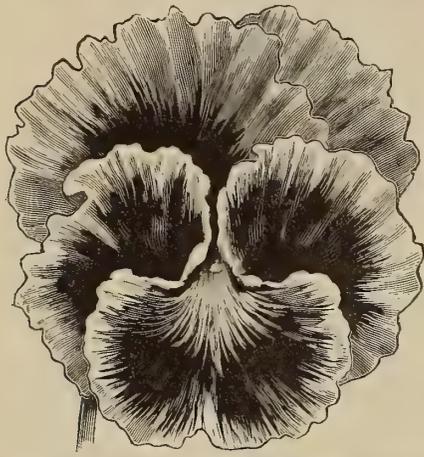
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The Family Cow

THE surbanite, or country home dweller, who keeps a cow is in a class by himself. There is more truth than poetry in the family cow proposition. If one is scientifically inclined and constantly suspects that food and wearing apparel are lurking places for microbes, all argument is against the family cow. Conditions of cleanliness to the extreme degree are impossible in an ordinary household.

In the so-called certified milk plants everything is so thoroughly sterilized by means of concrete construction, fumigating chambers, and so on, that milk has been produced absolutely free from microbes. This was during blizzard weather when there was no dust.

In most states, the health authorities will certify milk as being practically pure which has no more than ten thousand microbes in a cubic centimetre (a quantity a little less than a teaspoonful). Under ordinary circumstances on a farm or country home the milk that is obtained from the family cow contains anywhere from one-half million to two million germs in a cubic centimetre. The sceptic says that this is the kind of milk that our ancestors were brought up on, and which to-day is the bone and sinew of the rural districts; but no one but the unthinking questions the enormous advantages that have resulted from the pure-milk crusade. In some cities the mortality among children under one year of age has decreased 50 per cent. because of pure milk.

The family cow may be a source of intense gratification for her owner, or she may be a nightmare. This will depend on what facilities the owner has to care for her. She must be milked with the utmost regularity, and demands attention constantly. She will produce enough milk for several families, or will produce an abundance of milk, butter, buttermilk, and pot-cheese for a large household. She will cost about sixty dollars, if fresh; she will be at the height of her usefulness for seven years; and when she has outlived her day and generation you will be able to sell her to the butcher for perhaps twenty-five dollars. If, by that time, you will have become so attached to her that you regard her as a family pet, her maintenance will be a positive financial loss, because she will not be able to produce as much as her food and lodging amount to.

If you are in a community where milk is readily obtained at a fair price, the argument is against keeping a family cow.

New Jersey.

B. ADAMS.

Growing Fence Posts and Railroad Ties

ONE of the fastest growing trees, with wood which is adapted to many uses, is *Catalpa speciosa*. This is a native of Indiana, but the Bureau of Forestry gives it a wide range — Ohio, Maryland, Illinois, Iowa, Mississippi, and the eastern portions of Nebraska, Kansas, and Oklahoma. While



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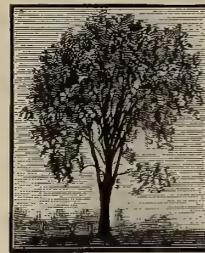
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G. S. JONES.

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Massachusetts.

ALFRED REHDER.

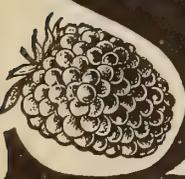
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There is no corner so shady but that certain ferns and plants will thrive there. There is no soil so light and sandy but that some of our hardy wild ferns will beautify it. For 25 years we have been growing these hardy ferns and flowers and know what is suited to each condition. We can supply ferns for the dark corner by the porch, or ferns and flowers, including our native orchids, in quantity, to make beautiful country estates. Wet and swampy spots, rocky hillsides, dry woods, each may be made beautiful by plants especially adapted to them. Nothing adds greater charm to the home grounds than clumps of thrifty ferns. We also grow the hardy flowers which require open sunlight—primroses, campanulas, digitalis, violets, etc.

Write for my descriptive catalogue. It tells about this class of plants.

EDWARD GILLETT, Box C, Southwick, Mass.



A spray of flowering dogwood, showing the red berries which make the tree attractive in the fall

TREE CURRANT **TREE GOOSEBERRY**
NOVELTIES
THOROUGHLY TESTED

These novelties are new but they have been thoroughly tested and we commend them as being worthy of a trial by our customers. These trees are budded on very hardy stems about 5 or 6 feet high, of the Ribes family, to which the Currant and Gooseberry belong. Just as hardy as in the ordinary way of growing them from the bush. Will do well wherever Currants and Gooseberries grow. They have been propagated for years in Europe and

Are In Almost Every Garden

You will find the berries on the trees larger and sweeter, and of course easier to pick than from the ordinary bush. Very ornamental in garden, lawn or along walks. Our catalog gives full description and prices, write for it today. Mailed free. We carry a complete line of best Nursery Stock and Seeds.

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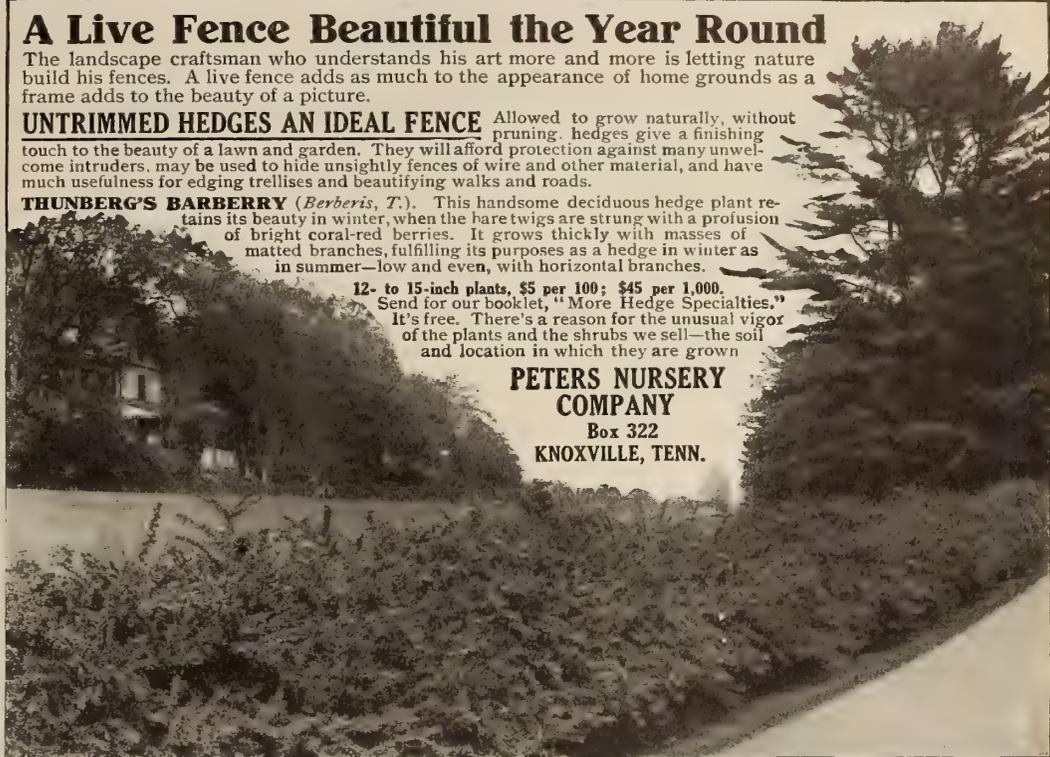
The landscape craftsman who understands his art more and more is letting nature build his fences. A live fence adds as much to the appearance of home grounds as a frame adds to the beauty of a picture.

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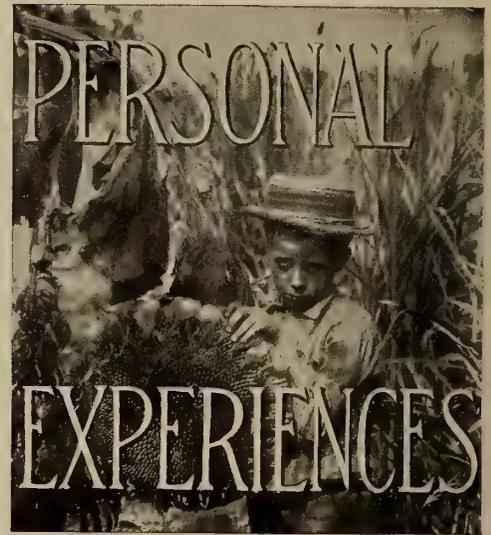
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We use early Ohio, as it is not only a good eating variety but seems well adapted to our sandy soil. We plant the first tubers in a protected part of the garden as early as it is possible to work the ground, running the risk of late frosts. One year the frost was late in leaving the ground and planting could not be done until the middle of April, but, as THE GARDEN MAGAZINE for March, 1906 (page 75), recommended planting potatoes that had already sprouted, we made up for the loss of time by planting ours with 2-inch sprouts. The plants grew rapidly, the first potatoes being ready for use the middle of June, with tubers two inches in diameter. The markets were then asking \$1.25 a bushel for new potatoes, and they were much smaller than ours.

We never dig the potatoes until we want to use them, for potatoes wilt as quickly and lose as much of their quality as any other vegetable that has been out of the ground for any length of time. A freshly dug potato cooks quickly and is very mealy.

After the potatoes are out of the way I plant celery on the same ground, as the cultivation and digging necessary for potatoes make the soil mellow and easily worked.

Minnesota. MARIE I. DEGRAFF.

Hardy Plants for Western Nebraska

IN THE September, 1908, number of THE GARDEN MAGAZINE, Professor S. W. Fletcher gave a list of trees, shrubs and vines suitable for planting in Northern



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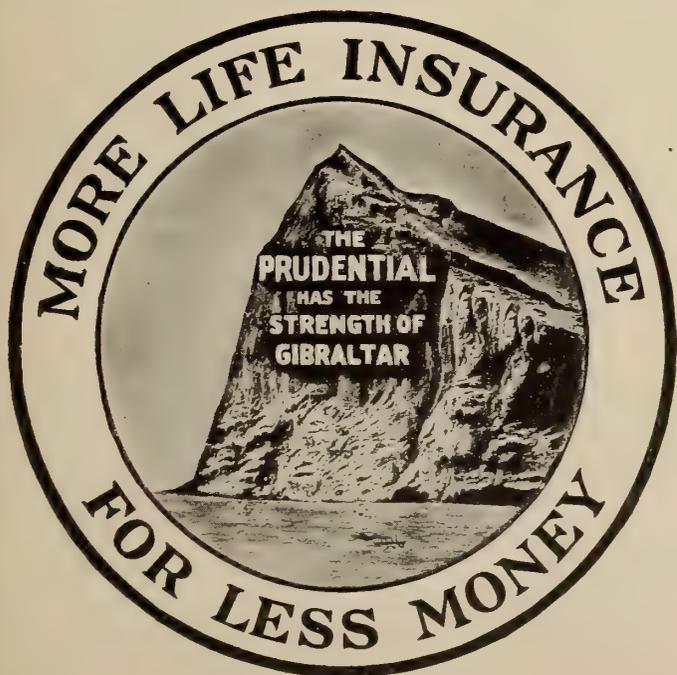
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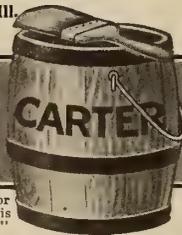
never cracks, scales or checks—why it forms a durable, elastic film which contracts and expands with the weather changes—why Carter is **whiter** than other leads—why it makes brighter, truer and more durable colors. The book tells how Carter will save you money and trouble.

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Michigan. The following is a similar list for western Nebraska, Kansas and Colorado, most of the plants being of sufficient hardiness, I believe, for general planting in these states, where, in the improvement of home grounds, there is but little conception of plants best suited to the conditions. It seems to be the general impression that there is but a small number of trees, shrubs, and other decorative plants that can be grown there, yet comparatively many will succeed in that region.

Where the rainfall is scanty, all planting must be done in the spring, for a fall-planted tree or shrub cannot sufficiently establish itself to endure the dry winter before the ground freezes. I do my spring planting fairly early—from April 1st until April 15th—because later on the hot sun will often dry and bake the plant so that it cannot grow. Small-sized plants are preferable, for these adapt themselves more readily to conditions than larger plants and will therefore give better and quicker results. After planting and during the first season I water the newly set plants very often, and I consider it best to prune most kinds severely.

TREES

- | | |
|-------------------------------|------------------------------|
| Ash, green | *Maple, native dwarf |
| Ash, white | Maple, soft |
| Birch, European white | Maple, sugar |
| Birch, cut-leaved weeping | Mulberry, Russian |
| Catalpa, western | Oak, pin |
| Cedar, Virginia | Oak, red |
| *Cedar, Rocky Mountain silver | Olive, Russian |
| *Cottonwood | Pine, Austrian |
| Crab, Bechtel's | Pine, dwarf mountain |
| *Elder, box | *Pine, Rocky Mountain yellow |
| Elm, American white | Pine, Scotch |
| Elm, red, | Plane, Oriental |
| *Fir, white | Poplar, Lombardy |
| *Fir, balsam | Poplar, white or silver |
| Hackberry | *Spruce, Colorado blue |
| Hop | *Spruce, Douglas |
| Locust, black | *Spruce, Englemann's |
| Locust, honey | Walnut, black |
| *Locust, purple | Willow, golden |
| Locust, thornless | Willow, Russian |

SHRUBS

- | | |
|----------------------------|--------------------------------|
| Barberry, common | Lilac, Persian |
| Barberry, Japanese | Meadow sweet |
| Barberry, purple | Maple, Tartarian |
| Bladder senna | New Jersey tea |
| Bridal wreath | Ninebark |
| Buckthorn | Privet, common |
| *Buffalo berry | Privet, Ibota |
| Currant, Indian | Raspberry, flowering |
| *Currant, wild | Rose, sweet briar |
| Dogwood, red osier | Rose, Japanese |
| Dogwood, red twigged | Sand cherry |
| Elder, common | Silverthorn |
| Elder, cut-leaved | Snowball |
| Euonymus, cork-barked | <i>Spiraea Van Houttei</i> |
| <i>Euonymus Europeus</i> | <i>Spiraea arguta</i> |
| Five-finger | <i>Spiraea Anthony Waterer</i> |
| Golden bell | Sumach, smooth |
| Hazel | Sumach, smooth cut-leaved |
| Highbush cranberry | Sumach, staghorn |
| *Holly, mountain | Sumach, staghorn cut-leaved |
| Honeysuckle, Tartarian | *Sumach, three-leaved |
| Indigo shrub | Syringa |
| * <i>Jamesia Americana</i> | Tamarix |
| Kerria, white | |
| Lilac, common | |

CLIMBERS

- | | |
|--------------------|------------------|
| Clematis, Japanese | Matrimony vine |
| *Clematis, native | Trumpet creeper |
| *Grape, wild | Virginia creeper |
| Honeysuckle | |

Colorado.

H. W. HOCHBAUM.

*Native to Colorado



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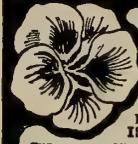
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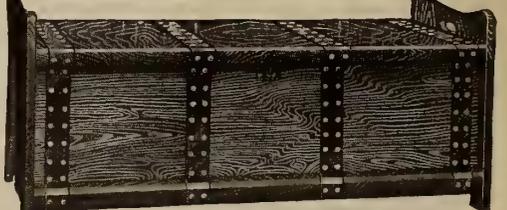
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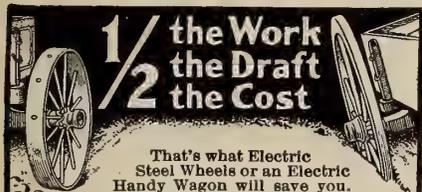
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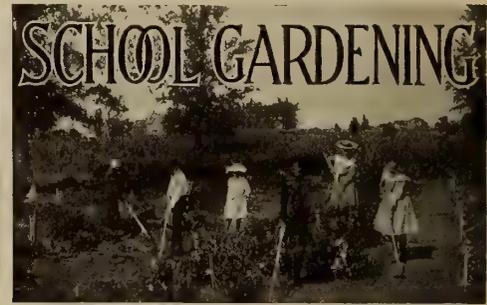
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IN THE schools of the District of Columbia gardening has been very successfully taught for some time. The schools have improved their grounds through the efforts of the children, who during October, 1907, bought and planted 75,000 bulbs. There are few school buildings in the city having sufficient space around them for vegetable gardens, but nearby land that is available is used.

The boys of the sixth grade, Buchanan School, procured the use of an ordinary city backyard in the neighborhood, and one load of manure was spread over the heavy clay soil. For the first spading the help of a strong colored man was necessary but the balance was wholly boys' labor. The yard was carefully measured and the garden planned on the school-room blackboard before outside work was begun.

A broad, central path separated two rows of plots, and in each row were nine plots, measuring 4½ x 10 ft. The broad path was bordered by corn flowers on one side and California poppies on the other. Then followed a row each of radishes, lettuce, onions, beets, two rows of dwarf string beans and three of dwarf tomato plants. Scarlet runner and moonflower vine were planted to screen the whitewashed fence.

Last year the first lesson was not given until the middle of May, owing to the late spring. The boys, eighteen in number, reported for gardening once a week thereafter until the middle of June. In all four lessons were given during school time, but these were supplemented in the school-room by experiments to prove the value of soil mulching, seed vitality tests, and germination.

At the close of school fifteen of the boys



An ordinary city backyard near Buchanan School, before the boys commenced gardening

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Water Your Flowers Once in 2 Weeks

That's all that is necessary if you use the time-saving, labor saving, all metal, rust-proof and leak-proof

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You will have better, hardier, longer lived plants. Our box is for indoor or outdoor use. It is inexpensive and sold on 30 days FREE Trial. Descriptive booklet FREE

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1,000,000 STRAWBERRY PLANTS

Of the famous new "HERITAGE" variety. Finest all-round strawberry grown. Berries very large, well-shaped, beautiful dark crimson color; plants, deep rooted and hardy, rapid growers and produce runners very fast. Fruit ripens just before mid-season, and continues until very late. One of the heaviest bearers of all strawberry plants. Fruit has a fine flavor, is attractive and very popular; ideal commercial strawberry because it sells well, keeps well, and on account of its large size, is handled very economically. Price per 1,000 lots \$2.50; special prices on larger orders. Write today for my Catalogue with Strawberry Culture.

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BEFORE TREATMENT OF CAVITIES

Don't Let the Old Trees Die

Young trees may not equal the old ones in size and beauty during your life. Insecticides, fertilizers, bolting, pruning, tree surgery, and cavity-filling are only part of the practical means of restoring sick and dying trees to health and beauty. We examine estates, suggest improvements in planting new stock, and direct the work of saving diseased trees and shrubs. Trained assistants equipped with proper tools are furnished when desired. A booklet entitled "The Care of Trees" is sent on request.

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It has always been a problem with us as to how to best make known to planters the merits of our Vegetable and Flower Seeds. As a solution to this problem, we have arranged an offer by which we will send \$1.00 worth of our specialties, without charge, to those who purchase from our catalogue Vegetable and Flower Seeds of their own choosing to the value of \$1.00 or more. The varieties are as follows

1 Large Pkt. **NORTHRUP, KING & CO.'S Minnesota Red Globe Onion.** Surpasses in every particular all other Red Globe varieties. Value 10c.

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Roses From Seeds in 3 mos. The above splendid sorts are valued at \$1.00. We are sure this offer will long be remembered by those who avail themselves of the opportunity it affords; but, in order to make it still more remarkable, we add to every one of these collections a package of Rosa Polyantha Nana Multiflora, a remarkable race of miniature roses which bloom the first year from seed. The plants begin blooming three months after the seed is sown; excellent for pot culture and charming for small beds or borders. The flowers are double and semi-double, pale pink, and produced in great profusion throughout the summer. Height 12 inches. Value 15c.

Our offer is therefore \$1.15 worth of seeds free with every order for Vegetable and Flower seeds amounting to \$1.00 or more.

HOW TO GET THIS OFFER

This collection is not for sale. It is given away only to those who purchase from our catalogue Vegetable and Flower Seeds to the amount of at least \$1.00. These varieties are particularly choice and the packages are regular size.

NORTHRUP, KING & CO., Seedsmen
10 BRIDGE SQUARE, MINNEAPOLIS, MINN.

25th Anniversary Catalogue

In commemoration of our 25th Anniversary, we have issued an exceptionally fine edition. We have spared no expense in its preparation. It is richly embellished with numerous colored plates, and is a book of 152 pages, filled with suggestions which are useful and valuable. Every seed planter, whether he may have a large or small garden or farms thousands of acres, should have this book. It tells of the best varieties of seeds for all purposes; for the home garden, for market gardeners, for lovers of beautiful flowers, for the farm and lawn. It is profusely illustrated with photographs. You will find our seeds earlier, hardier and more productive than seeds from any other locality.

Our catalogue is very expensive. We cannot afford to distribute them indiscriminately, but to any one interested in good seeds we shall be glad to send this catalogue without charge. Send us your name and address at once.

DINGEE ROSES
Famed for Quality
Through Two Generations



THE GREATEST OF ROSE BOOKS

Dingee's famous West Grove Rose-growing establishment this year celebrates its 60th anniversary. In these three-score years Dingee Roses have become known throughout the world as the aristocrats of the garden. The name Dingee is the "sterling" mark for quality, and Dingee Roses are the strongest, best grown and most satisfactory in America.

We have just completed a great new book at a cost of \$10,000. It gives you the benefit of our 60 years' experience in growing Roses; describes over 600 leading kinds; tells you the best Roses for your locality; how to secure them; how to make them, as well as other desirable flowers grow and bloom. Flower and vegetable seeds receive special attention. 116 large pages, beautifully illustrated from photographs. Four full-page pictures in natural colors—in all the soft and delicate tints of nature, real, rich, charming photographic reproductions. Our firm was established in 1850, so we have given this book, which summarizes the life work of its founder-member, the appropriate title of

"Sixty Years Among the Roses" OR THE DINGEE GUIDE TO ROSE CULTURE.

Send us a dime, silver or stamps, and you will get a copy of "Sixty Years Among the Roses," with due bill for 20 cents on the first order you forward us for \$1 or more. The book is sent free with every order for the Dingee Collection of Roses. The demand for this great, new, original work promises to exceed the supply. No other book on Roses compares with it. If you have failed in growing Roses in the past, secure this book—you will succeed. The edition is limited. Write today.

10 Best Roses of All, \$1—The Great Dingee Collection

We want you to help us celebrate our 60th birthday by starting a Dingee Rose Garden, and we guarantee you will never regret it. Our part is set forth in this great offer of 10 Premier Roses—the very best out of 600 kinds which we carry in our 70 large greenhouses. In all our 60 years' experience we have found no Roses surpassing these. They are simply the best. We stake our reputation on the merits of this collection. Worth five times their number in inferior, common kinds. Sent postpaid. Safe arrival guaranteed anywhere in the United States.

Ten superb, hardy, vigorous varieties. Will bloom early and continuously this year. No two alike. Guaranteed to grow and bloom. ALL labeled. One plant each of: American Beauty, the Queen of all Roses; Pink Maman Cochet; Yellow Maman Cochet; Helen Gould, crimson; Freiherr von Marschall, red; White Maman Cochet; Killarney, pink; Souv. de Pierre Notting, fancy yellow; Pink La France; J. B. Clark, crimson. All postpaid for a dollar bill. Order now. Delivery made when wanted. Please order as the *Dingee Collection*.

With Each Order We Send a Copy of "Sixty Years Among the Roses," Described above

Established 1850. 70 Greenhouses

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The Leading Rose Growers of America

SPECIAL—Send for our matchless special offers. They are the cream of the season's buying chances in Roses, Plants, Bulbs and Seeds—FREE

10 ROSES
will give you \$1 POST PAID
Garden like you paid
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Fifteen to Twenty-five Years of Your Time Saved by Planting Hicks Big Trees



Norway Maples, 4 to 6 in. diam. planted 12 to 25 ft. apart for perfect development.

Trees up to 28 ft. high, 15 ft. spread and 8 in. diameter may be shipped and successfully planted. The roots are wrapped in damp moss, straw and burlap, and tied in radiating bundles. The tops are trained with single leaders and flexible branches which tie in for shipping. Over 1000 numbered specimens are ready for you to choose from.

Now is the time to write and select the shape you prefer—tall trees with ovate tops or broad, round-topped trees.

	Diam. inches	Height feet	Spread feet	Age years	Price f.o.b.
Norway Maple,	3½	18	6	13	\$ 8.00
" "	5	22	10	18	20.00
" "	5½	24	10	20	30.00
" "	6	26	12	22	35.00
Silver Maple,	4½	22	10	12	9.00
" "	5	24	10	12	18.00
" "	6	26	12	16	25.00
" "	6	28	12	16	35.00
American Linde	6	20	15	16	25.00
Pin Oak,	6	22	15	15	25.00
" "	6	24	12	20	30.00
" "	6	26	12	20	40.00

Small Cheap Trees. Pines, Spruce, Oak, etc., 1 to 15 years old, by the 1000, for landscape and forest planting and private nurseries.

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Isaac Hicks & Son, Nurserymen and Scientific Treemovers, Westbury Station, Long Island, N. Y.

volunteered to attend to their gardens once a week throughout the summer. The boys kept a record of their crops during July and August, and, as part of each lesson, calculated the value at current market



A schoolboys' garden which produced during one summer vegetables worth \$35.12

prices. The following report does not give absolutely complete returns, as much was stolen from them:

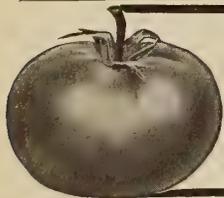
167 qts. beans	20 bunches onions
347 heads lettuce	50 " beets
176 bunches radishes	26 pecks tomatoes
Value at current market prices, \$35.12	

The only expenses attached to the work were the laborer's hire of three dollars and the cost of one load of manure, \$1.75. The seeds were given to the school by the Department of Agriculture, the tools were brought from home and the stakes to mark off the individual plots were made from broom-sticks.

Washington, D. C. SUSAN B. SIPE.

KILL SAN JOSE SCALE
 You need not lose your fruit crop this season. Spray your orchard early with a strong solution of
Good's CAUSTIC POTASH SOAP No. 3
 WHALE OIL
 It will positively destroy scale, apple scab, aphids, lice, bugs, worms, and all other insects and parasites which infest your trees, plants and shrubs. It contains no poisonous or injurious ingredients; no salt, sulphur or mineral oils. It fertilizes the soil, and quickens growth. Endorsed by the
U. S. DEPARTMENT OF AGRICULTURE
 50 lbs., \$2.50; 100 lbs., \$4.50; larger quantities proportionately less. Write for free booklet, "A Manual of Plant Diseases."
JAMES GOOD
 Original Maker, 931 N. Front St., Philadelphia

2HP Stationary Engine \$29.50
 ENGINE ONLY
 Runs pumps, cream separators, churns, grist mills, corn shellers, washing machines, lathes, sawing machinery, etc. Uses alcohol, gasoline, naphtha, distillate, kerosene, etc., without change in equipment. Starts without cranking, drop forged crank shafts, best grade babbit bearings, steel I-beam connecting rods. Other sizes proportionate prices. Free catalog tells how to save ½ cost of hired help. All sizes ready to ship
 Detroit Engine Works, 229 Bellevue Ave., Detroit, Mich.



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Let us tell you about them in our 1909 Catalogue. Revised from cover to cover. It is mailed free.

H. E. FISKE SEED CO.

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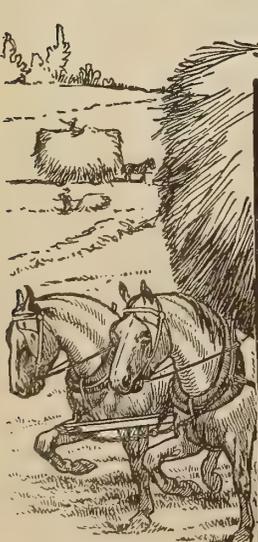
Profit in Flax Seed

THERE is a good demand for flax seed and a fair profit in growing it. It may be successfully grown in any of the Northern States from New England to the Pacific Coast and the acreage should be steadily increased.

Good corn lands are well adapted to the cultivation of flax, but the very best soils both for seed and fibre are the rich, moist, but well-drained, heavy loams. The plant will reach maturity some ninety days after seeding and is not so exhaustive of soil fertility as are either corn or oats.

Flax absorbs most of the mineral nutrients necessary for its growth in the first half of the growing period, and for this reason it is important that the ground be

Nitrate of Soda



Nitrate of Soda applied as a top dressing, produces not only more tons to the acre, but cleaner and higher grade

TIMOTHY

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Apply at once for Nitrate of Soda by post card, as this offer is necessarily limited. "Grass Growing for Profit," another book of useful information, will be sent free to farmers while the present edition lasts, if paper is mentioned in which this advertisement is seen.

Send name and complete address on post card.

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Artistic designs and superior workmanship, with carefully selected and properly burned clay, assure individuality in all Galloway productions. The kind that add character to your house and grounds.

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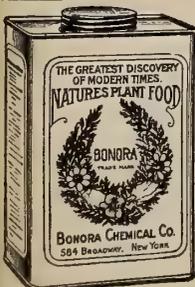
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Now is the time to use "Bonora"



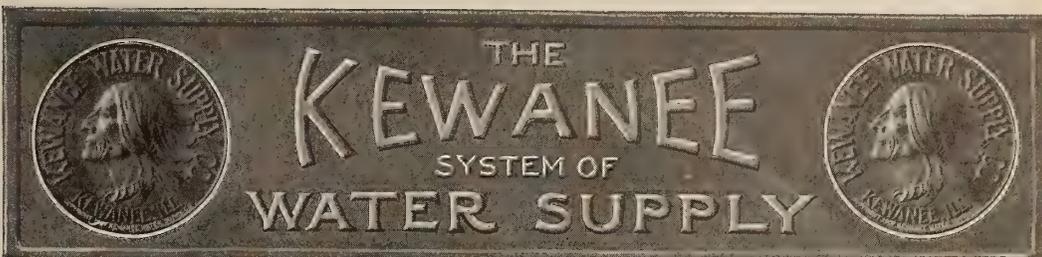
It will make your house plants bloom profusely throughout the Winter, and put them in fine condition for the Spring. For flowers or vegetables under glass there is nothing to equal "BONORA"

Order now through your seedsmen or direct. Descriptive circular on application

Put up in dry form in all size packages as follows:

1 lb. making	28 gallons, post paid	.65
5 lbs. "	140 "	\$2.50
10 lbs. "	280 "	4.75
50 lbs. "	1120 "	22.50

BONORA CHEMICAL CO. 488-492 Broadway, Cor. Broome St., New York



A Frozen Elevated Tank

This illustration is reproduced from an actual photograph of a frozen elevated tank at Libertyville, Ill., owned by the C. & M. Electric R. R. Co. From the following letter by A. W. Litchfield, it will be seen that an elevated tank exposed to the extreme cold of winter, will freeze and an attempt to thaw it out, only adds to its disadvantages.

"Enclosed you will find a photograph of the third tank erected for the C. & M. Electric R. R. at Libertyville in three years. You will see how the tank is covered with ice and all frozen up. The first tank was destroyed by fire, by trying to thaw it out and it was burned to the ground."

This undesirable condition can be entirely avoided. There is a water supply system in which the tank cannot freeze, leak, overflow or collapse. That system is



The Kewanee System of Water Supply

In the Kewanee System, the tank is buried in the ground or located in the cellar. It rests on solid ground where it can do no damage and it is not exposed to extremes in weather. Water from your own well, cistern or other source, is pumped into the Kewanee Tank; and then the water is delivered to the fixtures and hydrants by air pressure.

The C. & M. Electric R. R. Co. mentioned above is now using four Kewanee Systems, and these plants are giving satisfactory service.

There are over 9000 Kewanee Systems in successful operation. These plants are supplying water for country and suburban homes, public institutions, schools, country clubs, hotels, apartment buildings, villages, etc.

The Kewanee System is the original water supply system, involving the use of air pressure instead of gravity pressure. There are imitations now—avoid them. Get the genuine and you will take no chances—we guarantee that. Look for our trade mark and name plates on tank and pumping machinery.

No charge for expert engineering service. Let us help you solve your water supply problem. Write for our sixty-four page illustrated catalog No. 16. It is free.

Kewanee Water Supply Co., Kewanee, Ill.

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This book is of great value to those especially interested in rare Evergreens, Rhododendrons and Japanese Azaleas. A copy will be mailed FREE to prospective purchasers.

COTTAGE GARDENS COMPANY, INC.

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QUEENS, LONG ISLAND, NEW YORK

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Do YOU know what the above four words convey to the rose lover of to-day?

Can you imagine what they mean to the proprietor of this business as he sees in them the realization of fond hopes—the result of fifteen years of earnest, untiring effort, until to-day "PETERSON ROSES" are spoken of as in a class by themselves?

And they are.

For ten years as an amateur I lived in an atmosphere of roses, toiled among them and—yes—loved them.

With me rose growing was a hobby—passion—call it what you will. And to-day, after five years

144 RUTHVEN ST., ROXBURY, MASS.
 "Thank you many times for your charming 'Little Book About Roses.' It is a delight every moment, from cover to cover, and is exactly what I need. I have all winter been reading books on the Rose and Rose culture, and while I have received much and varied information, nothing has so completely suited me—telling me so plainly what I desire—as your little book. (MRS.) CAROLINE L. SWIFT."

of business, "THE HOUSE OF PETERSON" stands supreme—unequaled—unapproached.

Why?

It's too long a story to tell you here, but let me send you a copy of my "Little Book About Roses" (1909 edition, ready February 1st.)

It's different from most catalogues—very different. It appeals to intelligent, thinking people—it tells the truth. It tells you in detail how, from the time you take up the spade until the flowers are gathered, to achieve the fullest success.

It's sent on request to intending purchasers—to anyone, without obligation to purchase, for ten cents in coin or stamps.

Write for it now—to-day.

George H. Peterson

ROSE AND PEONY Box 50
 SPECIALIST FAIR LAWN, N. J.

deeply and thoroughly prepared. A mellow seed-bed is required in order that the plant food shall be readily available. If grown for fibre, weeds must be carefully avoided as they decrease its value. For this reason it is well to follow some inter-tilled crop with flax, and avoid the direct use of barnyard manure. Nitrogen is the controlling element of fertility, so it is good practice to follow clover or some legume with flax unless too many weeds are present. Planting on new or fallow land is desirable, to avoid weeds. Most thorough use of the harrow is the main essential of success. Insufficient harrowing cannot be overcome later on.

WHEN TO SOW SEED

Sow the seed as soon as the ground has settled and begun to warm up, which is usually in May in the Northern States. When grown for seed, sow one-half to three-fourth bushel to an acre which will give the stalks room to branch and produce more flowers and seed. For fibre production it is best to sow one and one-half to two bushels of seed, so that the plants will be closer together and produce single straight stems instead of branching stalks. Broadcasting and light covering by the harrow is practised for fibre crops. On light soils it is essential to follow with the roller. For seed crops drilling will be most satisfactory if the seed is not planted too deep.

If the ground is clean, the crop requires no further culture; but if it is grown for fibre and weeds are numerous they must be pulled out when the flax is but a few inches high, else the damage by trampling will be greater than the injury done by the weeds.

For seed the crop should be harvested with a binder when the seeds are plump and full. For fibre it must be pulled either by hand or machine. The time to pull is when the straw is beginning to show a yellow color and the lower leaves drop.

The yield of seed per acre varies from ten to fifteen bushels and the price varies from about 80 cents to \$1.75. The principal use of the seed is in the manufacture of linseed oil; and the linseed meal which is left after the oil has been expressed has a high value as a concentrated stock food, being rich in protein. Flax is sometimes cut just after blossoming and cured for hay, making a very desirable fodder.

DISEASES TO GUARD AGAINST

A fungus disease, flax wilt, which is commonly known as "flax sick soil," often attacks and ruins the crop. It is transmitted by the seed and may be controlled by treating the seed with formalin as described for smut of oats and wheat in THE GARDEN MAGAZINE for October, 1908. When soil has become badly infected the only remedy is to employ a crop rotation in which flax does not occur oftener than once in five or six years, and thus starve out the fungus. As with other grains, it is important to sow only clean, plump, heavy seed for best results.

Pennsylvania.

F. E. B.

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By T. V. MUNSON

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A sterling writer whose each new work commands a larger audience than the last

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 The Lady of Dreams Desire
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 133-137 EAST SIXTEENTH ST., NEW YORK CITY

THE COUNTRY HOME

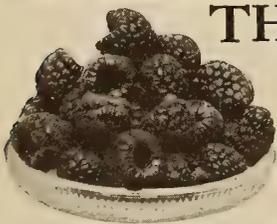
will be the more beautiful and attractive if well planted with SHADE and ORNAMENTAL TREES, HEDGES, VINES, SHRUBS and ROSES, and furnished with its orchard and garden of carefully selected

FRUIT TREES AND SMALL FRUITS

Our assortment is complete in both fruit and ornamental departments BUY DIRECT FROM THE GROWER AT WHOLESALE PRICES.

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A Genuine Red Cedar Chest gives Absolute Protection against Moths

Only one of many styles.
 This Old Colonial Chest with its broad copper bands and dull natural finish, makes a beautiful Wedding or Birthday Gift. Freight prepaid. We pay return charges if unsatisfactory. Send for catalog today. Piedmont Red Cedar Chest Co., Department 42 Statesville, N. C.

MORRIS NURSERY COMPANY

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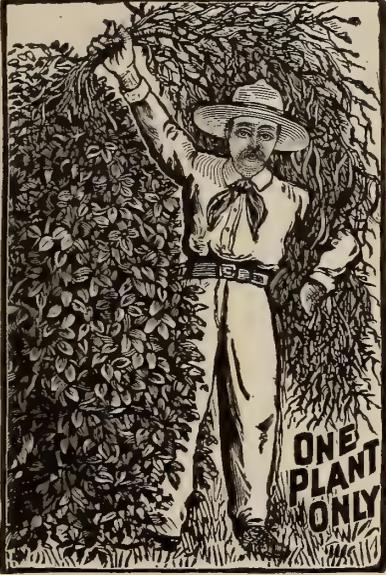
- Rhododendron hybrids choice hardy vars. and colors 18-24" and 2-3'
- Rhododendron maximum 1-8' selected plants in car lots.
- Kalmia latifolia 1-5' selected plants in car lots.
- Blue spruce Koster variety 4-5' and 5-6'
- Evergreens in assortment 1-6'
- Cal. Privet 20-30"; 2-3' and 3-4' X— all 2 yrs. old.
- Carolina poplars 10-12', 1 1/2" dia.
- Azalea mollis 15-18" bushy plants well budded.
- Norway maples 10-12', 1 1/2" dia. selected.
- Norway maples 12-14', 2-2 1/2" dia. selected.
- Norway maples 14-16', 2 1/2-3" selected
- Box dwarf 5-6"
- Box dwarf 6"

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EX. GOV. H. C. WISCONSIN, from 30 acres sown to Salzer's 20th Century Alfalfa, harvested within 24 weeks after seeding \$2,500.00 worth of magnificent hay, or at the rate of \$83.33 per acre.



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It's the most original seed book published and is gladly mailed to intending purchasers free. Or remit 10c and get lots of remarkable farm seed samples, including Alfalfa, Clover, etc., or send 14c and we add a package of Farm Seed never seen by you before.
JOHN A. SALZER SEED CO., La Crosse, Wis.

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182 photographs. Net \$2.00 (postage 22c)
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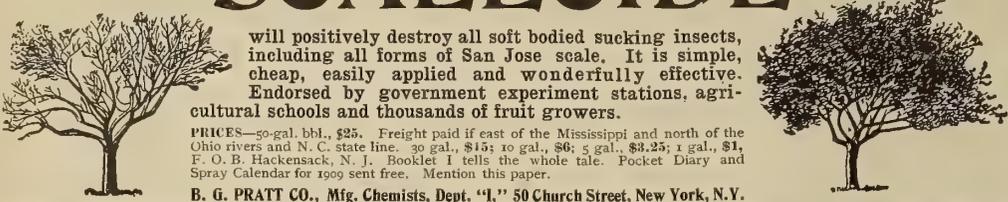
The celery seed is sown in small beds, and when the plants are large enough they are set six inches apart in rows three and one-half feet apart. The field is kept clear of weeds by horse cultivation. When the plants have attained some size they are blanched by being almost buried in soil, which is ridged up on either side of the row. When harvesting, the plants are pulled up whole. They are then taken to the washing plant to be washed, the roots trimmed, the plants bunched (one-half dozen to a bunch), and crated for shipment.

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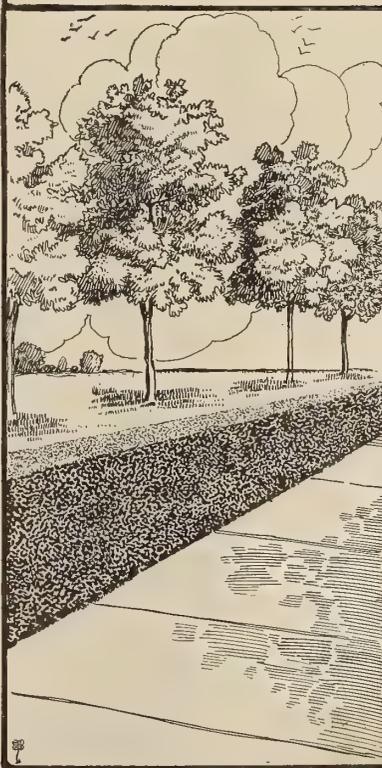
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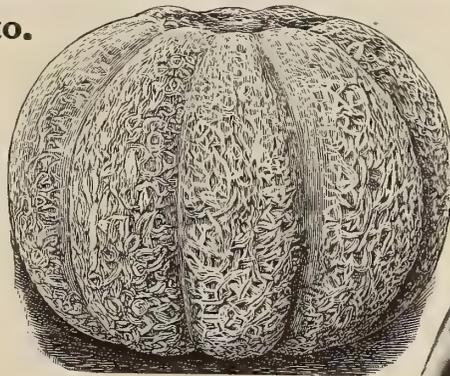
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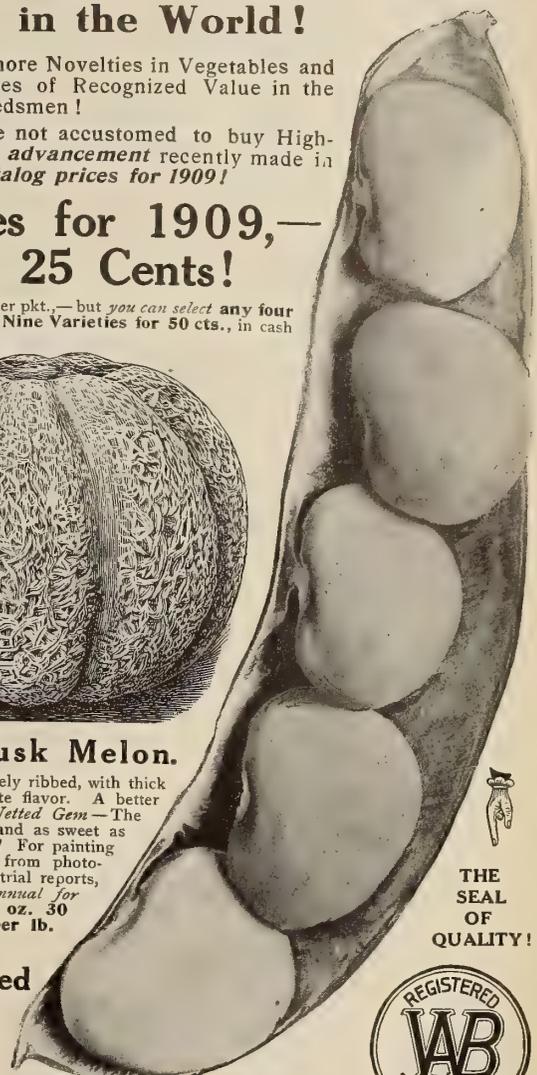


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MARCH

1909

Vol. IX. No. 2

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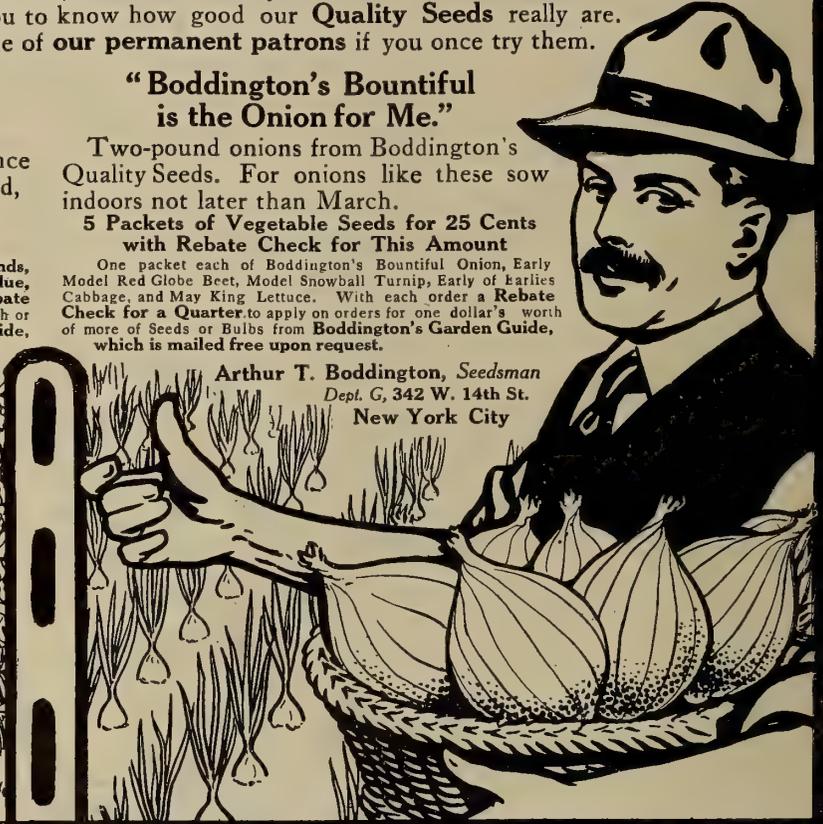
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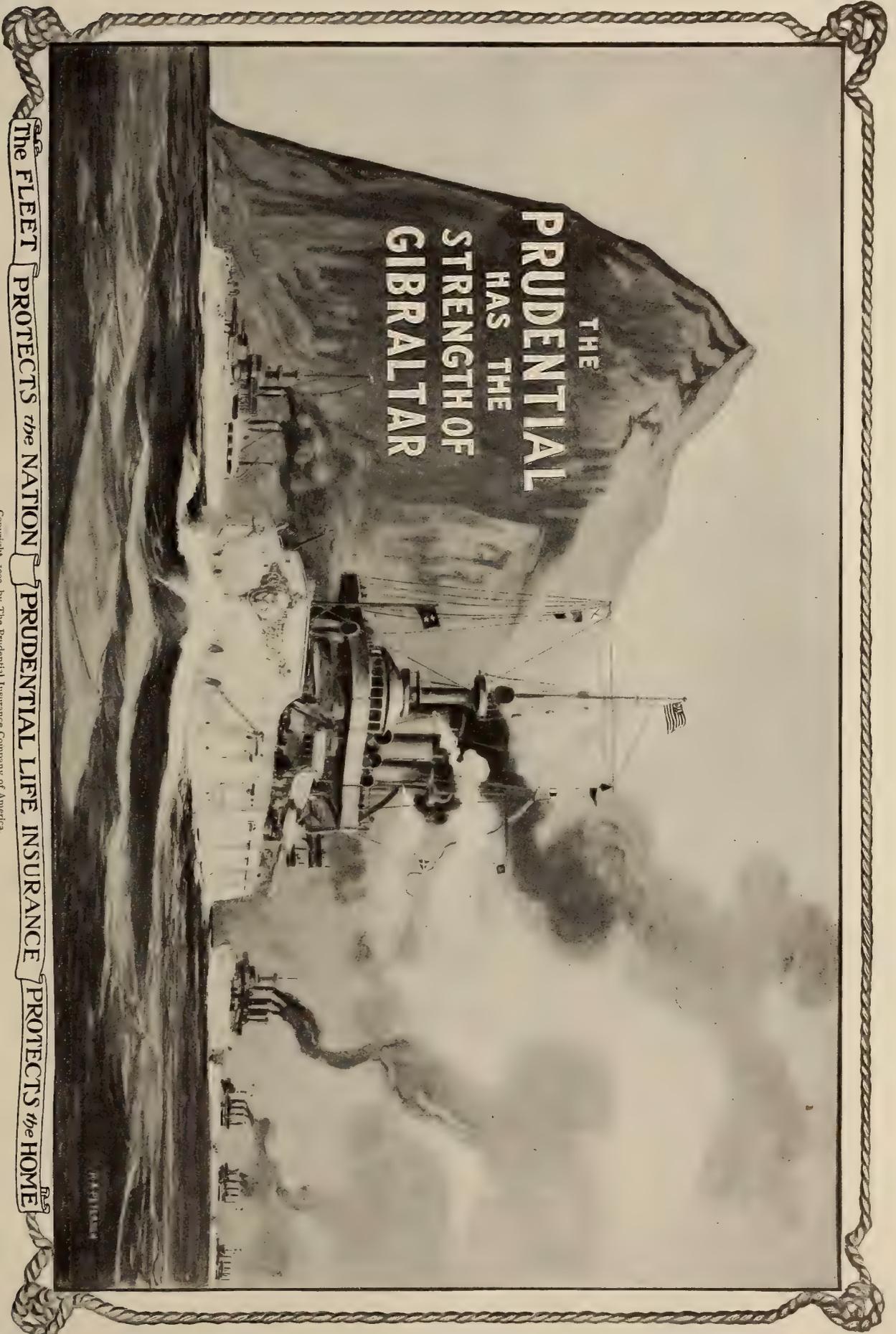
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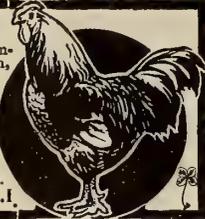
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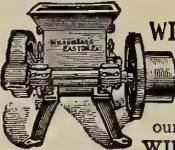
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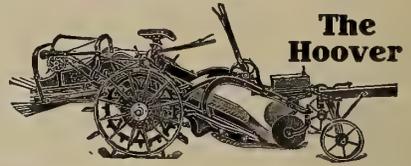
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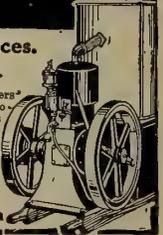
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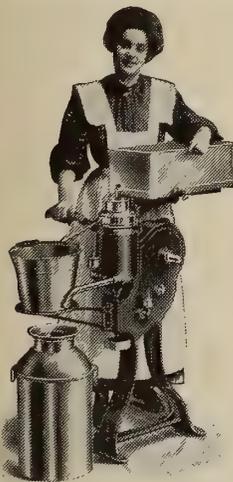
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Michael K. Boyer, our poultry editor, has had exceptional opportunities and the closest friendship with poultrymen all over the country. They have freely told him many of their most jealously treasured secrets, many others we have bought, and this scattered material, together with several of Mr. Boyer's own valued methods, has now been collected in book form. It must be clearly understood that *every secret printed has been obtained in an honorable way.*

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I. K. Felch's Mating Secret

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Secret of Feed at 15c a Bushel

An enterprising poultryman has been advertising this secret for \$5.00 and pledging those who buy it not to disclose it to anyone else; it has, however, long been known to a few poultrymen, Mr. Boyer among them, and the method is fully explained in "Poultry Secrets."

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A number of "systems" and secret recipes have been and are still sold at high prices. Some are good, but not new; some are new but of little value. Some are worth the money paid for them. Poultry Secrets gives the facts.

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Of course we cannot go to the length of saying that all the information in the book is new to every one. It is said there is nothing new under the sun, and the Egyptians were hatching eggs by artificial heat centuries ago; but we do say that to the great majority of poultrymen these secrets are unknown.



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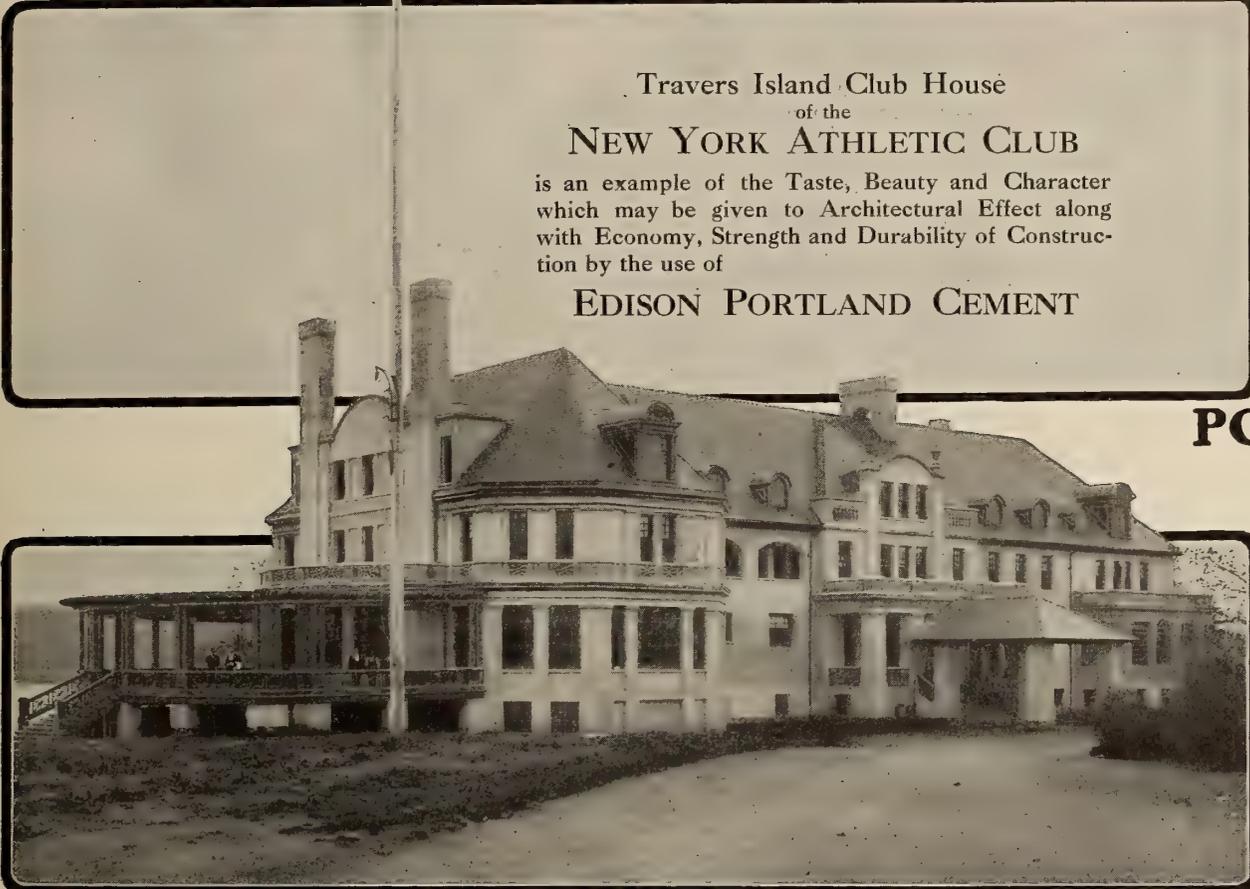
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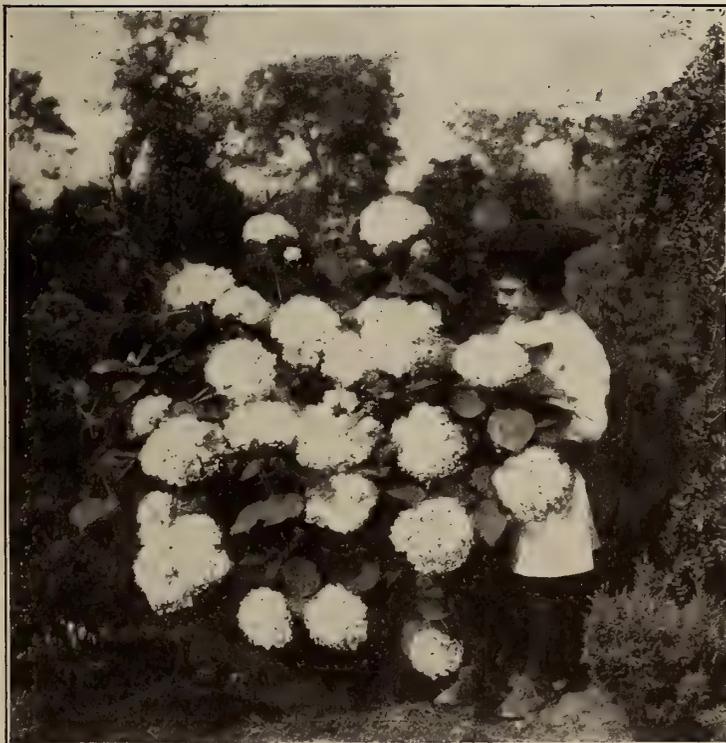
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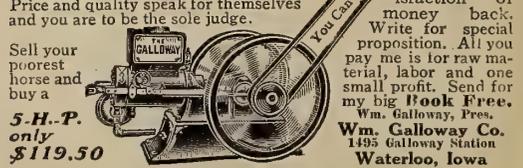
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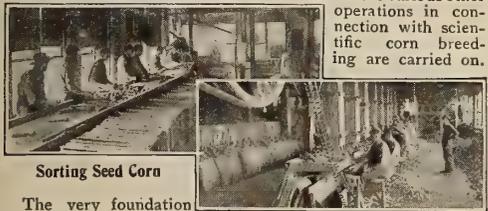
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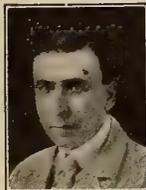
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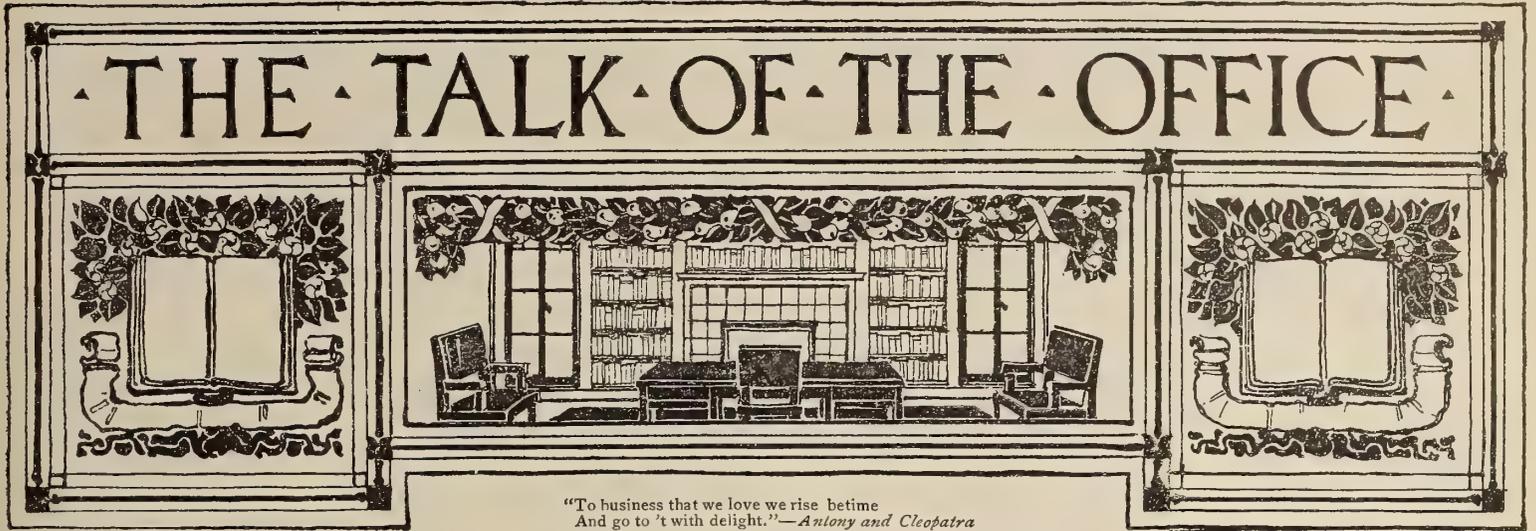
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COUNTRY LIFE IN AMERICA THE WORLD'S WORK THE GARDEN MAGAZINE



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THE AMERICAN FLOWER GARDEN NEARLY
READY

After several years of preparation, "The American Flower Garden," by Neltje Blanchan, is nearly ready, and will be published about March 15th.

This sumptuous work (an overworked adjective, perhaps, but justified in this case), represents a new kind of contribution to our garden literature. Books covering the wide field of garden design, and the selection and artistic use of horticultural material, are a recognized class in England, but "The American Flower Garden," by the author of "Nature's Garden," and "Bird Neighbors," written in a popular style, is the first adequate example of this kind of book adapted to the use of the American amateur. It makes a strong plea for gardening as a fine art.

Its practical value may be judged from the following list of chapters, and its planting tables present to the garden-lover the cream of the best plants available for certain uses, without burdening the text with very rare and unusual plants which only a few people are likely to use. The principles which underly the composing of various types of gardens, and simple directions for their making, are given to add to the book's completeness:

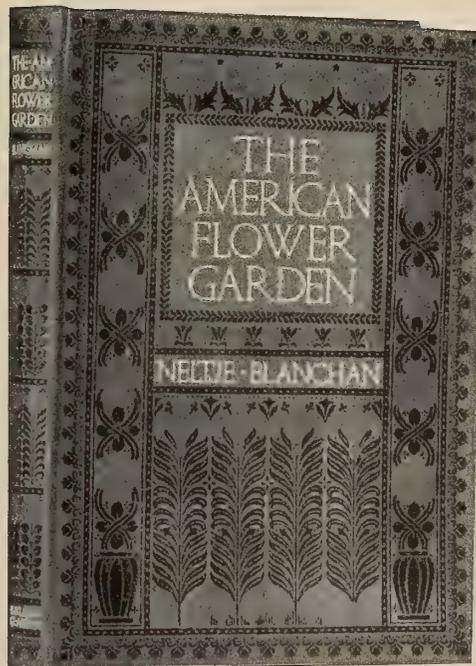
- The Partnership Between Nature and Art.
- Situation and Design.
- The Formal Garden.
- The Old-fashioned Garden.
- The Naturalistic Garden.
- The Wild Garden.
- The Rock Garden.
- The Water Garden.
- Trees.
- Shrubs.
- Perennials.
- Annuals.
- Bulbs and Tuberous Plants.
- The Rose Garden.
- Vines.
- Garden Furniture.

The seed dealers' and nurserymen's catalogues offer a bewildering array of seeds, plants, shrubs, vines, and trees to charm the purchaser. This book is intended to help him to use all the best of these materials, and in the right way; to show him how to dignify gardening into an art of never-failing delight; and to offer suggestion and help for developing one's garden into a satisfying whole, as distinguished from

the impulsive, haphazard methods too often employed.

The 100 full-page plates, of which many are colored, have been selected from thousands of photographs, not alone for their unusually great beauty, but also to truly illustrate the ideas set forth in the text, and make them of practical value.

A limited and numbered edition of one thousand and fifty copies has been prepared, one thousand for sale, of which more than six hundred have been ordered by purchasers in advance. A special circular will be sent to anyone on request, and it is expected that the entire edition will be exhausted about the time of publication. Copies may be ordered through



your bookseller, or direct from Doubleday, Page & Company. The publishers reserve the right to raise the price, which, until publication, will be \$10 net.

THE GARDEN AND FARM ALMANAC FOR 1909

This is the time when this unique book is most valuable. It has one department, of which we have said little, but which has

undoubted value. Each copy contains a dozen "Inquiry Coupons." These coupons may be sent to our Service Department, which will at once answer any question relating to the home and garden, provide information about where any sort of tools, seeds, plants, and country-house appliances may be secured, prices, quality, etc.

The Information Service Department has grown into an institution. It has at its command the advice and knowledge of our twenty editors of magazines and books, and the experience of some years has greatly developed its efficiency. It is a pleasure to know that thousands of readers have been assisted to information not always easy to command.

The price of "The Garden and Farm Almanac" for 1909 is 25 cents.

THE GARDEN ANNUAL OF COUNTRY LIFE IN
AMERICA

The really great and joyous issue of the year is the March number. The cover, from a Lumière color photograph, is, we think, very beautiful. There is also a section of garden pictures in color photography, now a regular feature, and this is the only magazine which has attempted this difficult task, as yet, month by month. Double spring number 50c at all newsstands.

No lover of country living should miss *Country Life in America* for the year 1909. The April issue will have color photographs of live trout, and each month will have its own special, unique color feature. Four dollars per year, including three double numbers.

THE WORLD'S WORK

We wish that every reader of *The Garden Magazine* - Farming knew about *The World's Work*. Here is what one reader says of it:

The only magazine that is any good at all as a steady diet is *The World's Work*. It is good from the first advertisement to the back page.

We are not great believers in sample copies, but to any reader of this paragraph, we will be pleased to send a copy, with our compliments, to show what kind of a magazine it is.

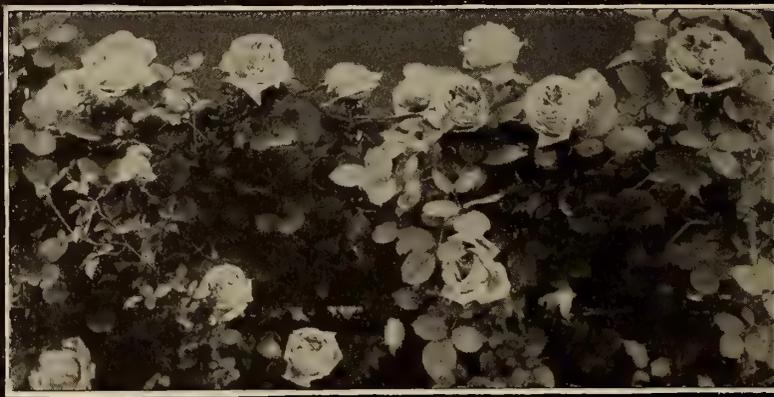
The World's Work family has been enlarged by about 50,000 new people within the last six months. Twenty-five cents a number; \$3 a year.

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Is the common and regretful expression, upon first reading a Heller Brothers advertisement or book, of persons who have tried and failed—because they didn't start right. These very words were used just this way by Mrs. Bessie R. Mansfield, of Westborough, Mass., who wrote us last summer as follows: "If I could grow roses as the ad says I can! I wondered as I cut it out and sent for some of your Roses, four years ago. The Roses came and they grew! I sent to you for more. And, Oh, what luck! My Roses are the talk of the place—for truly they are so beautiful! Each and every sort does just as you recommended it to do. Friends ask me, 'Where did you get your bushes?' I proudly answer, 'from Heller Brothers—and they paid the express charges, too.' If you ever go to Boston by way of B. & A., don't forget to look out of the car window and see my Rose garden." You can do as well; you can have Roses growing in your yard and blooming freely all summer and fall; you can have a Rose garden that will be the talk of your town, for less than the cost of a florist's bouquet, and a little pleasurable work.

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"I have Grown Roses"

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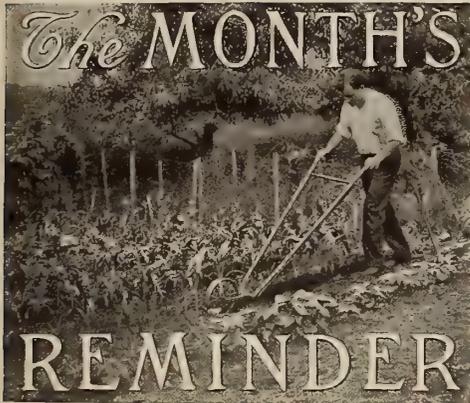
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[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

The Spring Rush Begins

WITH the return of long days and brighter sunshine, growth of plants under glass will become quite active, and all such as need it may be repotted into larger sized pots. Examine the ball of earth, and if found to be a matted mass of roots, it is safe to conclude that the shift is necessary.

Cuttings taken last month will be probably rooted, and may be shifted now. Continue propagation of bedding stock and all other tender plants required for summer use.

In a cool greenhouse a great deal of time can be gained with the hardy annuals by sowing in shallow, two-inch deep boxes. These young plants will be ready for setting out in the garden by the time it will be safe to sow seeds in the open.

Start bougainvilleas, root crotons, chrysanthemums, and so on. Pot up carnations, and look after all bulbous stock that is to be had in time for Easter. Easter falls on April 11th.

In the Flower Garden

IF YOUR garden is on a light soil, dig over the flower beds during this month, so as to forward the general spring work. Cold, heavy soils cannot be touched so early as light ones.

As soon as the ground outdoors can be worked, sow seeds of the hardiest annuals.

Rearrange and replant hardy perennials wherever necessary. Take up and divide old, dense clumps, giving them room to spread.

Take note of your losses during the last winter, and buy whatever is necessary to replenish or fill up the vacancies.

In the Fruit Garden

DO NOT forget to prune fruit trees during the latter part of February and the beginning of March.

Repair all damage by accident, storm,

frost, or other mechanical injury. Read Professor Fletcher's article in this month's GARDEN MAGAZINE, pages 72 to 74.

Set out new orchards. Prune back all transplanted trees at least one-third. Don't be faint-hearted in this matter. Trees will be all the better for severe treatment now.

Now is the time to set out all the stone fruits, magnolias, birches, and all other thick-rooted or thin-barked trees that could not be handled in the fall.

Be careful not to expose the roots of trees more than necessary in transplanting; particularly never leave them exposed to frost.

About the Lawn

MAKE new lawns. Seed down any lawn areas that were prepared last year; don't wait until next month.

Give established lawns a good dressing of fertilizer early in the month.

Rake over others with a sharp steel rake, pulling off all coarse growth and rough material, and top dress with fine, short manure or rich garden soil. This acts both as top dressing and mulch, and will help early spring growth wonderfully.

Look to the shrubbery. All deciduous, ornamental shrubs are best planted now, pruning back severely the same as the fruit trees, but thereafter prune back flowering shrubs only after they have done flowering.

Give abundance of water when setting out, trusting to the water to wash the soil in and around the roots rather than tamping, but do both.

Give clean cultivation, and mulch all newly set shrubs. You will be glad of it later on, especially if the season is a dry one.

In the Vegetable Garden

THIS is a busy month wherever the frost has left the ground; if it is not still wet, sow seeds of the hardy vegetables as soon as possible.

In the Southern States all tender vegetables, such as egg-plant, okra, sweet potatoes, melons, squash, potatoes, and tomatoes may be sown and planted.

In the North, sow all tender vegetables in hotbeds. This includes tomatoes, egg-plants, melons, and, perhaps, lima beans. Read the late Mr. Darlington's article on egg-plants in this number if you would have this vegetable at its very best.

Sow in the open ground during March, as soon as the soil can be worked, asparagus, carrot, chickory, corn salad, mangel wurzel, parsnip, salsify, seakale, and spinach.

How to have seakale within the year was told in THE GARDEN MAGAZINE for March, 1908.

Start in the greenhouse or hotbed, for planting out when the weather is fit, beets, broccoli, all kinds of cabbages and cauliflower, cardoons, celeriac, celery, egg-plants, kohlrabi, leeks, lettuce, okra, onions, parsley, pepper, squash, and tomato.

Sow in heat (hotbed or greenhouse) but not outdoors, during this month, bush beans, cucumbers, and melons should be sown, and thus get an early start.

Sow cress every week in the greenhouse or coldframe to have succession. Also mustard and radishes. Nothing is more welcome than a succession of radishes and lettuces.

This is the last opportunity for planting mushrooms on prepared beds out of doors. Mushrooms cannot be depended on to grow during the hot summer months. If you can get spawn of the hardy *Agaricus subrufescens* you may be able to carry the beds much later than with the ordinary mushroom.

Sprays, Spraying, and Insects

BEFORE the buds burst is the last opportunity to use the lime sulphur wash, which is the surest means of fighting San José scale. If you have only one or two trees to bother with, it would probably be more convenient to use some of the miscible oils. Even if they may not be quite as efficient, their convenience is a great recommendation; but the "ready for use" lime-sulphur preparations have given good results.

Destroy all diseased twigs and any branches infested with eggs of plant lice, tree crickets, and buffalo egg hoppers. Make a clean sweep now and lessen the intensity of the fight in the summer.

The fall web worm is always a pest, but its cocoons can be found and attacked now.

If the canker worm is troublesome, put greased bands on the fruit trees that were attacked last year.

The eggs of the tent caterpillar can be seen in masses; clean them off with a wire brush dipped in kerosene or crude oil.

Scraping off the loose bark from the trunks of trees will destroy the hiding places of hosts of insects. A sharp hoe may be used for this purpose.

Wherever soft scale is present use sprays of kerosene emulsion, and do not use strong sprays on stone fruits, because they are more susceptible to injury than any other orchard tree or ornamental shrub.

Encourage the birds. Even if they do eat some fruit, you will find they will eat many more insects, and the great prevalence of insect pests is very largely due to the upset of the balance of Nature in the destruction of our native birds.



Tramp down snow around the trunks to forestall injury from mice. Shake the branches after a heavy snow or ice storm to prevent breaking

Practically ruined by ice. Could have been prevented by promptness in shaking the limbs. It will take many years for the trees to recover

Incidental Care of the Fruit Garden—By S. W. Fletcher, Virginia

REMEDYING THE ACCIDENTS OF WINTER—PREVENTION AND TREATMENT OF SUNSCALD—INJURIES FROM RABBITS—WHY YOU SHOULD PRESERVE THE BIRDS

ASSOCIATED with the four operations most necessary in the average fruit garden—tillage (or its substitute, mulching); pruning and training; fertilizing; spraying—are some others of less general importance, but often equally necessary to success in special cases. The gardener who is most successful has a watchful eye for these details. The incidental care of the fruit garden is naturally less capable of being formulated into rules and advice than the principles, for each locality has its local problems.

STAKING AND SHADING YOUNG TREES

In localities having strong winds during the summer, it may be necessary to stake some of the smaller newly set trees, but if they are planted deeply this precaution ought not to be needed. If young trees are bent over by the cultivator, or in any other way, staking will help to remedy the difficulty. The method of planting trees obliquely against the wind, so that they will be blown up straight, is common. It is preferable to drive two stakes, one on each side of the tree, and tie it with strips of burlap, cloth, or other soft material, removing the stakes as soon as the trees are established. Older trees that have blown over may often be brought back into good form in this way. A little staking may save some trees from becoming misshapen for life.

PROTECTION FROM SUNSCALD

In some parts of the country, especially in the Mississippi Valley, in California, and other Western States, young trees need to be protected from sunscald. This is not caused, as many still suppose, by the hot summer sun, but by alternate freezing and thawing of the bark in early spring, when severe cold is apt to be quickly followed by warm sun-

shine. The injury is mainly on the south and southwest sides of the trunk; sometimes the larger limbs are injured, especially after a heavy pruning. Some varieties are injured worse than others. The effect upon the tree is easily recognizable. Brownish blisters are raised, the bark begins to blacken and decay, and eventually may slough off and leave the wood exposed. Borers are apt to begin work in these exposed places.

The preventives of sunscald are low heading, and shading. Fruit trees are commonly headed one-half to two-thirds lower in the West than in the East, mainly for this reason.

Avoid very heavy pruning in regions where

there is danger of sunscald; it is especially dangerous to take out many limbs from the middle of the tree, leaving the centre open. Newly planted trees (which are most liable to injury) should be shaded. In California and some other parts of the West it is customary to thrust a "shake"—a board three feet long and six inches wide—into the ground on the southwest side of the tree, so that it shades the trunk from the afternoon sun. In the Middle West young trees are commonly enclosed with some kind of a "tree protector." These are of wood, paper, wire netting, laths, and other material. The light-colored protectors are preferred. Straw, tied about the trunk, affords a cheap, effective protection. A roll of mosquito wire netting is excellent, but does not last long. Serviceable veneer protectors, from one to three feet high, may now be bought very cheaply. If the tree is headed low, and inclined slightly toward the south when planted no protector may be needed on the hardier varieties. Leave the protector on no longer than is necessary, as it is apt to make the bark tender, and it offers a convenient hiding-place for insects.

INJURIES FROM MICE, RABBITS, AND GOPHERS

In all parts of the country field mice are likely to girdle newly planted fruit trees. The amateur is likely to overlook these small enemies until after a severe winter, when he finds half his young trees ruined.

Two things can be done: the mice may be kept away, and the injury may be repaired. There are as many things recommended for keeping mice from girdling fruit trees as for keeping away borers. Most of them are vile-smelling or poisonous washes, which are supposed to keep away the mice or to kill them when they begin to eat. Few



Bridge grafting, a bad wound made by mice in winter. The cions are cut wedge-shape on each end and slipped beneath the bark

washes are uniformly successful, although some work all right in certain sections. The most practical method for the home fruit grower is to bank the trees with soil from six to twelve inches high each fall, continuing this until the trees are six or seven years old. Mice will not climb these mounds. The banking also serves to steady the trees in the wind, and provides drainage. Before leaving the tree for the winter, level off the hole from which the soil for banking is taken.

If banking is not done, it will be necessary to remove all litter, as mulch, weeds, sod, or a cover crop, for a foot each side of the trunk. When snow comes, tramp it around the base of the tree. These precautions usually prevent mice from getting at the tree. A roll of wire netting, such as is used for protecting a tree from sunscald, will also protect it from mice.

Rabbits are a nuisance to the fruit garden only in thinly settled parts of the country. I counted seventy-five of them one morning in a large orchard in the state of Washington. Preventives are of two kinds: protecting the body of the tree with wire netting, as for mice; and applying an obnoxious or poisonous wash. In the East a boy and a dog are more effective against them than most washes.

Gophers make trouble in some fruit gardens, and are much more difficult to handle than rabbits, as a rule. They may be poisoned by putting a few grains of strychnine into a piece of fruit or vegetable, the poison being inserted into a knife cut. Place these baits far down into the fresh burrows with a long-handled spoon. Various gopher traps are offered for sale, and may catch some if the trapper has patience. The trap should be inserted into the hole its full length, pressed into the soil, and lightly covered with grass or weeds.

REPAIRING GIRDLED TREES

If a tree is so badly girdled that there is little prospect of its closing the wound by the growth of callus, it may pay to bridge-graft it. Only choice trees would repay this trouble. In early spring, when cleft-grafting



Whitewashing softens the bark and promotes vigorous growth. Strong soapsuds or lye are equally effective

is done, trim the edges of the wound down to green bark, cut cions as for cleft-grafting, but wedge shape at each end, and long enough to reach across the wound. Insert one end under the inner bark flatwise on the upper side of the wound, and the other end under the bark on the lower side of it. Put the cions within two inches of each other, preferably closer. Tie strips of cloth tightly around the upper and lower ends of the cions so as to bring the two cambium layers together firmly. Cover the whole, both cions and exposed wood, with melted wax. Rub off shoots from the cions. The cions should grow together, and completely bridge the wound in a few years. Other bad body wounds can be treated in the same way, provided they are not too long or too old.

HOW TO HANDLE BIRDS THAT STEAL FRUIT

In many parts of the country certain birds are a nuisance to the gardener when the

fruit is ripening. Cherries, strawberries, grapes, and Japanese persimmons are most commonly attacked, but none of the soft fruits are exempt. The chief offenders, aside from the robins, are various finches, and sometimes quails. Some of these disbud the trees in winter, and some eat the fruit. Aside from humane considerations, which ought to be sufficient to secure pardon for the offenders in most cases, the bug-killing services of the birds are usually worth more to the gardener than the fruits they eat. In some parts of the country the birds that attack fruit are often poisoned, and unavoidably some harmless birds with them. It is not necessary to resort to this method in the fruit garden.

Three things may be done to alleviate the bird nuisance: the first is to grow enough fruit so that the birds can have a share. This is a charitable, easy-going sort of plan, but it commends itself to many people. If Russian mulberries are planted near cherries, the robins will leave the cherries and go to the mulberries. Other people, perhaps more energetic, demand some means of scaring off the pests. Scarecrows are sometimes serviceable, but a keen-witted robin usually sees through this transparent device. One of the best ways is to fire off blank cartridges at the birds; the noise will scare them away for a time. The most successful method is to cover the fruit plants with bird netting. This can be bought cheaply, and lasts several seasons. It can be used most easily on strawberries, but can also be used to cover cherry, Japanese persimmon, and other trees on which the fruit is badly pecked by birds. The use of bird netting in the fruit garden is entirely practicable. Probably it could not be made practicable in a commercial orchard, but it will save much disappointment to the gardener, and he can enjoy the robins during the remainder of the year.

SCRAPING, WHITEWASHING, SOAPING, AND SLITTING THE TRUNKS

If fruit trees have received good care, especially if they have been sprayed with Bordeaux or lime-sulphur, there is no ad-



Prevent trees from splitting before too late. A brace of iron bolts, with nuts screwed on the ends. Don't girdle the limbs



A living brace in an apple tree. Two suckers, one from each limb, were twisted together when small and have grown together firmly



Damaged by mice when the tree was young. Mounding young trees with soil during the winter prevents this. The twisted trunk is caused by wet soil

vantage in scraping the trunks. Old, neglected trees, with trunks covered with lichens and rough bark, will be benefited by a vigorous scraping. Rough bark serves as a hiding place for insects, especially for the codling moth; lichens on the bark may smother it to a very slight extent, but they make the trees look neglected. An old hoe answers very well for scraping, which may be done at any time of the year. Trees sprayed regularly with a fungicide are not likely to have either old rough bark or lichens.

Whitewashing, scraping, and slitting the trunks of trees all serve the same purpose; enabling the bark to expand when it has be-

come hard. The bark of trees that have been growing slowly, from neglect or other causes, is apt to become rigid, or "set." If these trees are stimulated into vigorous growth as would follow the ploughing up of an old sod orchard, the bark may not expand fast enough to meet the new energies of the tree; it is thus said to be bark-bound. The bark of such trees may be softened by washing it in early spring with whitewash, lye, soap-suds; or the way may be opened for the growth of new bark by making several long slits with a knife up and down the trunk and main limbs, the knife penetrating only to the wood. These slits expand and fill in with new growth. Washing is preferable to slitting, since it does not leave a wound through which diseases or borers might effect an entrance. The wash may be put on with a scrubbing brush or old broom. Since a whitewashed tree is obtrusively conspicuous, lye or soda washing is usually preferable. Spraying the trunks with Bordeaux or the lime-sulphur spray answers the same purpose.

THINNING THE FRUIT

Where quality ideals in fruit growing are dominant, as they should be in the fruit garden, thinning the fruit is nearly or quite as essential as spraying. Some varieties habitually overload every year, so that the fruit becomes smaller and poorer as the tree gets older and weaker. Some varieties have the reputation of "bearing themselves to death" in a few years if unmolested. Certain varieties of apples, especially, have the habit of bearing full crops only in alternate years. The reason for this is mainly that the trees bear so heavy a crop one season that they cannot develop strong fruit buds at the same time, and so prepare a crop for the next season. The main reason for thinning the fruit, therefore, is to husband the strength of the tree so that it may bear annually for many years. This applies with greatest force to the

fruits that most commonly overload, as peaches, plums, and apples.

The stone fruits, especially peaches, apricots, and Japanese plums, are most benefited by thinning. This is mainly because these fruits more commonly overbear than the pome-fruits—apples, pears and quinces—producing more blossoms in proportion to their bearing surface and do not have the self-thinning device of the apple and the pear—the centrifugal opening of the blossoms in a cluster.

Another advantage of thinning, especially from the home fruit grower's point of view, is an increase in the size of the fruit and a diminution of injury from some insects and diseases. Naturally enough, if half or two-thirds of the crop is removed, the remainder will have a better chance to grow. The increase in size is most marked in those varieties that naturally bear large fruits under favorable circumstances, as Bradshaw and Yellow Egg plum, Bartlett pear, and Globe peach. Varieties that naturally bear small fruits, as the Damson plums, are usually not benefited so much by thinning; but some small varieties, as Seckel pear, are considerably increased in size by thinning. Some sorts respond to thinning by increased size, and some do not; but even if not, the other benefits may be sufficient to justify the practice.

The diminution of injury from insects and diseases by thinning is quite noticeable. This is brought about in two ways: If the fruits are thinned, so that they do not touch



Removing diseased, wormy and imperfect fruits saves the vitality of the tree. Apples, pears, plums and peaches need thinning



Branches of trees may be broken by the weight of fruit. Thinning the fruit early in the season would have prevented this. Let none remain closer than four inches apart

each other, the various fruit rots (especially the brown rot of plums, cherries, and peaches) do not as readily pass from one fruit to another; and the wormy, diseased, and curculio-slung fruits are largely removed in thinning. I know several good gardeners who are convinced that it pays them to thin apples for the sake of lessened injury from codling moth and scab, if for no other reason.

Of these three benefits of thinning—saving the strength of the tree, increasing the size of the fruit, and lessening injury from insects and diseases, the first is always gained, the second frequently, and the third sometimes.

What America Can Teach England About Shrubs—By W. Miller, New York

THE ONLY IMPORTANT MATERIAL IN WHICH WE HAVE A STRIKING CLIMATIC ADVANTAGE OVER ENGLAND—WHY WE HAVE IGNORED OUR OPPORTUNITY AND HAVE EVEN STARTED ON A FALSE SCENT

THE only material in which America has a striking climatic advantage over England is shrubbery. When my colleague, Mr. Leonard Barron, came to America, the one horticultural feature that struck him as new and strange was the burst of spring, especially the dramatic fortnight when the fruit trees are in bloom. For in England spring comes so early and gradually that March is a month of unique floral charm, with its thousands of daffodils and Lenten lilies, its exquisite blue carpets of Grecian windflowers, and its lambent sheets of gold wrought by the winter aconite. But in America March is a rough and flowerless month in the North, and spring comes with a rush when the orchards bloom. England's fruit trees are mostly hidden from view behind high brick walls in private gardens. And while we know nothing about amateur fruit growing for quality, we lead the world in commercial orcharding; consequently our whole landscape is a mass of shimmering white at the poetic moment of the year, just before the trees leaf out. Now, the largest group of flowering shrubs belongs to the same family as the fruit trees, and ninety per cent. of all our shrubs join the mighty chorus that celebrates the death of our atrocious winter.

Another dramatic moment comes in October, when the American landscape has vividder foliage effects than the English. True, the biggest masses of color are supplied by the trees, but the shrubs give the finishing touch to a perfect picture. England can never enjoy such an autumn show because her cool and

moist summers prolong growth, while our hot and dry ones promote maturity. England can never produce so thrilling a spring flower show, because her autumn is cool and moist and therefore the shrubs cannot properly ripen their wood and make good buds.

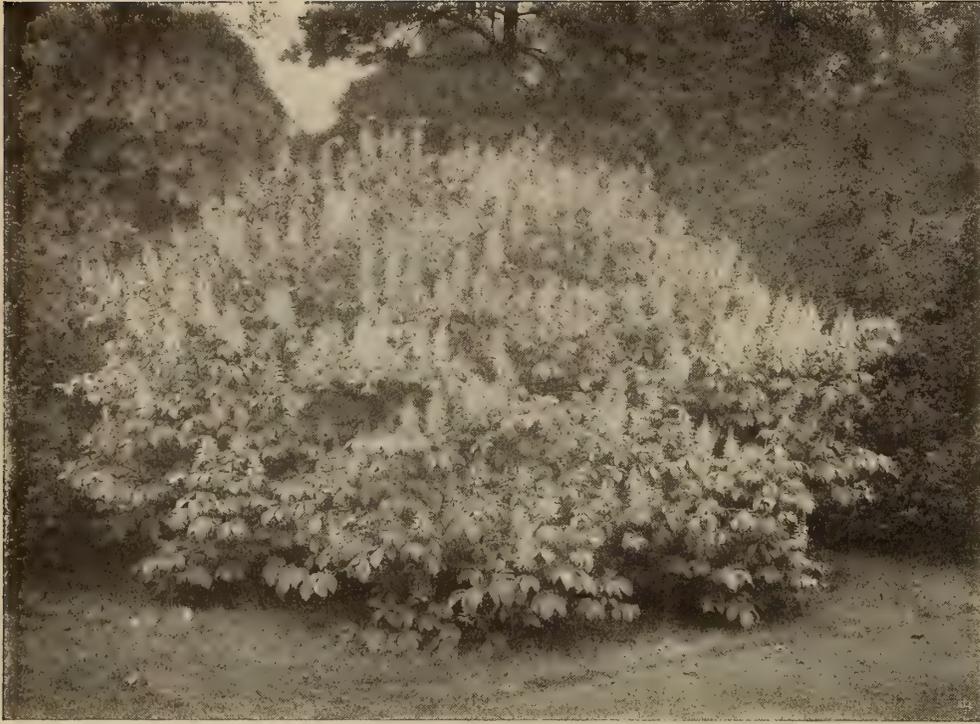
The neglect of shrubs in English gardens will be apparent if you examine any of the sumptuously illustrated books on English gardening. The greatest collection of large photographs on this subject is called "The

Gardens of England," yet I have just turned over the 272 plates thus far published without finding a single picture in which flowering shrubs play an important part! In American gardens shrubs have always been a common feature, and the most precious old gardens we possess generally contain a few grand old bushes of such height and magnificence as one never sees in the ordinary mixed shrubbery.

But we need not "throw out our chest like a Russian sleigh" because of this one advantage. For it will be at least three hundred years, in my opinion, before America becomes one great garden, as England is. And our advantage in deciduous shrubs is more than counterbalanced by her advantage in evergreen shrubs, especially hybrid rhododendrons. For these gorgeous plants not only have their showy bloom, but their magnificent foliage is full of inspiration all winter, while deciduous shrubs, broadly speaking, look naked and shivery in our climate. The English winter is naturally mild, but the ubiquitous English laurel (which we cannot grow) makes it cheerful and beautiful, while ours is bleak and ugly. I cannot understand why horticultural writers nearly always jumble these two elements in the same article on "shrubs." For good landscape gardeners never put both in the same shrubbery border. And we can have no clear thinking or good design unless we make a sharp distinction between precious and worthless material for winter since, in the North, this comprises five-eighths of the year, or from the middle of October to



An ash-leaved sorbaria from Afghanistan that ought to run out of our gardens the miserable summer-blooming spireas that have stiff cones of purplish flowers (*Sorbaria Aitchisoni*)



Dwarf horse-chestnut (*Aesculus parviflora*), example of the many slow-growing bushes that are crowded to death in the ordinary mixed border by the quick-growing kinds

the middle of April. Therefore, the present article deals only with the deciduous bushes.

And now comes the third great advantage of our shrubbery, for we can beat England on red berries that last all winter and on shrubs with brightly colored bark. And just as the Canadians have made their long, steady winter an attractive season for tourists by their picturesque sports, so the fickle winter of the northern United States can be made to draw people from all parts of the world to experience the unique charm of highly colored berries and branches.

Now, then, the threefold superiority of our shrubs is apparent — the burst of flowers in spring, the vivid foliage in autumn, the brilliant berries and branches in winter. But have we developed our shrubberies along these natural lines? Not at all. On the contrary we have blindly and slavishly followed European precedents. We import all their man-made freaks and dot our lawns with them, so that they look like Joseph's coat turned inside out or the side-shows of a circus. For, every great personality among the shrubs that we ought to know and love for its own sake has its cut-leaved, weeping or purple-foliaged variety, and as to such gaudy stuff we are simply mad. It is worse than a crime to plant one's place chiefly with such truck; it is a *blunder*. I explained the reason of this last month in the article on trees.

The only one of nature's suggestions we have followed is that which culminates in the "spring garden." The most superb example of this, I suppose, is the estate of Mr. H. McK. Twombly, at Madison, N. J., where nearly every plant was chosen because of some attraction it presents between the middle of April and the first of June. Personally, I like better the year-round-home of Professor Sargent, where the spring garden

is only one of many beautiful features, all well proportioned, related, and secluded. But I have no quarrel with wealthy Americans who choose to glorify spring to the utmost, so that they may walk amid a dream of beauty for the six weeks such an estate is used by the family. For private specializing on a princely scale gives us visions of new and better things that everyone may enjoy when the world gets better organized.

But for the ordinary person an exclusive specialty is all wrong. The quickest way to make America beautiful is not to have a

rosarian in one house, a dahlia crank next door, and so on, but to have every place interesting the year round. The obvious reason is that the vast majority of us cannot afford more than one home at a time. And in order to make a place attractive 365 days in the year we ought to put more thought on shrubs than on any other plants. There are many reasons for this. One is that they give us brighter color in winter than evergreens and at less expense. On a great estate trees are a bigger item, because they form the framework of every home picture, while shrubs are only the trim. But city and suburban lots are so small that only a few large trees, if any, are desirable, and therefore we must always look to shrubs as the main attractions, because they are more permanent than other flowers and cheaper than evergreens.

Therefore, I believe, the instinct of the American people in making shrubbery a national institution is thoroughly sound. The American idea is to have the front yard of every small place composed of an unbroken lawn flanked by irregular borders of shrubbery. This frank, open treatment, which subordinates the individual's rights to the park-like effect of the whole street, is a fit expression of a democratic people. But such publicity is abhorrent to the English, with whom privacy is the dominant passion. Therefore in England front yards in city or suburbs are surrounded by a hedge or wall, and generally contain straight rows of broad-leaved evergreens, such as holly, box, and aucuba. The almost daily showers in England keep these noble decorative plants free from dust. In all parts of America the summer is too dry for mile after mile of streets lined with broad-leaved evergreens.

But if we have the right instinct about shrubbery, we are pitifully weak in carrying



Japanese crab (*Pyrus floribunda*), example of the many April-flowering shrubs which bloom before the leaves and therefore show best against an evergreen background

out the idea. For the ordinary mixed shrubbery is attractive only two months of the year and an eyesore for five. This is simply because the only shrubs we all know are those with showy flowers. Consequently, when ordering plants for a new shrubbery we merely write down the names of all the glorious old-time favorites such as lilacs, azalea, mock orange, spirea, and hydrangea, all of which are totally devoid of interest for at least five-eighths of the year, while most of them are also commonplace in foliage. The same is true of the vast majority of shrubs that are famous for their flowers. It is absolutely impossible to get artistic effects by this method. We must get rid of the pestilential old idea that shrubs are only good for flowers. The nurserymen ought to stop writing "flowering shrubs" in their catalogues instead of "deciduous shrubs." And they ought to quit booming the few shrubs that flower in July and August because we do not need excitement in hot weather; we need repose, and the most reposeful color then is green. Summer is the natural resting time for shrubbery, between spring flowers and autumn fruits, and our natural time to enjoy the texture of foliage. It is all wrong to try to make the shrubbery brilliant in midsummer with a lot of loud-mouthed purplish-magenta spireas like Anthony Waterer, or "ever-bloomingbores" like hydrangeas. It is bad enough to have our autumn landscape made monotonous by too many top-heavy hydrangeas in every yard, without filling the shrubbery in summer with these unnatural double flowers. A "night shift" may be proper at the glue factory, but we don't want our shrubberies to look as if they were working overtime. In other words, what we ought to have in every home shrubbery is flowers in spring; foliage in summer; colors in autumn; and berries and branches in winter.

All this we can have by planning our home grounds with reference to twelve months instead of two or three. Forget all about the old-time favorites for a minute. You need not sacrifice any of them, but try this easy plan and your eyes will be opened to a new world of beauty. It is not even necessary to know one kind of shrub from another. All I ask is that you make a list of the twelve months and have two or three attractions for each month. Now list your favorites and you will see that they help you

only in two or three months. The best way to fill the big gaps is to employ a landscape gardener. If you can't afford that, go to a nursery and fill in your blanks from the shrubs themselves, instead of checking off names in an alphabetical list. If you can't do that, make up your list with the help of good classified catalogues and the lists of shrubs for special purposes referred to at the end of this article.

The only part of this programme that seems hard is the selection of summer or foliage effects. But here's the answer to that—Cornus and Viburnum. We've got to have lots of those bushes anyhow for autumn and winter effects. They may not be the showiest things in the world when in bloom, but for texture of foliage, play of light and shade, and individuality of bush they are hard to beat. If you want to wake right up to our "heaven-born opportunity" with shrubs,



A glimpse of the famous azalea garden at Kew, but the best azalea gardens in England have a background of rhododendrons

go to Boston in summer and drive through the Arnold Arboretum. For there you will see all the long-lived American and Japanese bushes that have the noblest or most graceful personality, and you will see how cheap and tawdry in comparison are such Coney Island muckers as the golden elder and purple-leaved plum. And then you will understand what the best landscape designers and nurserymen mean by such words as these: "Flowers are not the main object; they are only an incident. The principal thing is the form, texture, and density of the foliage masses and their way of carrying lights and shadows." I used to think that such talk was only "hot air" by the picayune brand of expert who exalts the technical above the human—the letter above the spirit. But it's plain, horse sense. For any particular shrub blooms only a fortnight or so; what you have to live with every day for seven months is foliage.

I am sorry to disappoint you if you were expecting me to tell you how to copy English effects with shrubbery, for there are n't any worth worrying about. Of course, I took about a bushel of notes on beautiful shrubs I saw there, but when I came back I threw them away, for they are no use to us. We have got to hew out an entirely new path. And it would be a sin and a shame for me to crow about Cornus and Viburnum and Hydrangea, simply because England can never touch us there. For, the big fact is that we are three hundred years behind England on gardening and we ought to get busy. The irregular shrubbery border is "our game," but we play it in the wrong way, and so the one thing we need most is not a list of material, but a *better way to plan a border!*

No magazine can teach the people the art of design. But here are a few rules that anyone can use with better results than the haphazard methods we commonly employ. First, draw a diagram of your home grounds to scale. Then place your trees where they will shut out unsightly things and frame pictures of beautiful objects in the distance, such as a church spire. Then indicate where big bushes are necessary to hide what you don't want to see, and leave blanks where they would cut off the good views. Then make a bold, irregular outline for your shrubbery border, leaving room in front of the tall shrubs for low ones. The rest should be unbroken lawn.

Next comes the selection of the best bushes for the chief mass effects—say twelve kinds, one for each month, and then the arrangement of these. Don't try to select all your bushes now, and don't put off arranging them until the shrubs arrive. Make twelve slips, or one for each important period—April effect, May effect, and so on. Add to each slip the ultimate height of the bush and the color of the flowers. This is the easiest way to secure "finish" and avoid color discords.

The next job is to separate the slow growers from the quick-growers, for the former cost most and are soon crowded to death by the latter in the ordinary mixed border. The quick-growers are privet, spirea, mock orange, hydrangea, golden bells, deutzias, red-twigged dogwood—anything you can buy in the form of one or two year old plants at \$8 to \$20 a hundred.

This is the stuff that will attain the height of a man in three or four years. The reason you can buy it so cheaply is that it can all be easily raised from cuttings; whereas the costly shrubs have to be propagated by slow methods, such as grafting, layering, or seeds.

The quick-growers are to go in the back and the slow-growers in the front of the border. Typical slow-growers are lilacs, Japanese maple, white fringe, pearl bush, Japanese redbud, dwarf horse-chestnuts, and azaleas. These cost about fifty cents each or more.

Now draw the foundation line of your house and indicate all the most important windows, because we want a beautiful picture from each window and each view is to be strikingly different from every other. Nearly all the foundation line should be hidden and the ideal material for banking against a house is broad-leaved evergreens. Consider this material first, as it is the costliest of all.

Then take the view from each window in turn. Don't put your big flower show opposite the most important window, because flowers are short-lived. Put a winter effect there, and be sure it has good foliage in summer. Hold the list of effects by months in your hand and think how twelve bushes of each kind would look from each window when the plants have grown to the height of a man. Thus you will be sure of strong, simple mass effects that are good to live with, not a weak, spotty, distracting mixture.

Next indicate directly on the plan where the conifers or other evergreens are to stand. You must do this now, because your winter berries and branches will be ten times as effective if seen against an evergreen background. The same is true of forsythias and all the April flowers, since these bloom before the leaves.

Now it is safe to indicate where each tall

bush is to stand. When these are full grown they will be six feet apart and for the finished picture you may not need more than six of a kind in any one group. But the right way is to order three times as many small plants as you need and set them two to four feet apart. This always seems wrong to a beginner. It looks just like a nurseryman's scheme to sell more plants. But landscape gardeners and park superintendents have no such interest and at a recent convention the sentiment was practically unanimous in favor of the old rule, "Plant thick, thin quick." One reason is that if you plant far apart, the place looks raw the first two years. Again, it costs more for cultivation. Again, the bushes actually do not grow as fast, because they are too far apart to shelter one another from drying winds, etc. On the other hand, if you plant thickly and begin thinning the second year, you can sell the larger plants you don't need or move them to some other part of your grounds. That's the cheapest and quickest way to get the best bushes. Don't try to save three years by buying extra large bushes, except in the case of a few near the house or in the garden where immediate effect must be had. In three years small shrubs will catch up with big ones. That is not the case with trees.

THE FINISHING TOUCHES

Last of all come the finishing touches. You want some edging plants that arch over to the grass, so as to make an easy transition from lawn to tall shrubbery; therefore, choose arching bushes that grow one to three feet high, like *Deutzia Lemoinei*, Japanese barberry, Thunberg's spirea, stephanandra, and yellow-root (*Xanthorrhiza*). The first thing the beginner thinks of is the spice—such as purple-leaved barberry and variegated dogwood. It should be the last to enter into the garden scheme.



The wayfaring tree (*Viburnum Lantana*) a type of beauty in which, with the aid of Japanese species, we can beat Europe to a standstill

When planting time comes interlace your big masses instead of keeping each kind in an absolutely solid mass. For instance, suppose you have twelve cranberry bushes that are to stand next to twelve common barberries. Place one or two cranberries a little inside the barberry mass and *vice versa*. Then your mass effects will be just as pure and strong as ever, but they will not seem too studied. That is the last touch that foresight can give. The crowning loveliness age alone can bring.

THE BEST ARTICLES ON TREES AND SHRUBS

Anyone who wishes more specific knowledge about shrubs may find the following articles helpful. (G. M. and C. L. mean THE GARDEN MAGAZINE and *Country Life in America*. The numbers refer to volume and page.)

- "Shrubs and Where to Put Them," C. L. 4 : 207.
- "How to Buy Trees and Shrubs Economically," C. L. 12 : 48.
- "What Must be Planted in Spring, not Autumn," G. M. 7 : 140.
- "Shrubs for Fall Planting," G. M. 6 : 129 and 131.
- "Planting for Winter Comfort and Beauty," C. L. 9 : 155.
- "Shrubs Attractive both in Flower and Fruit," C. L. 15 : 490.
- "Ornamental Fruits," G. M. 7 : 296, 344; 8 : 10, 70, 134, 184, 236, 292.
- "Flowers the Year Round," C. L. 11 : 534.
- "Shrubs That will Bloom the First Year," C. L. 13 : 500.
- "Trees and Shrubs that Bloom Before the Leaves," G. M. 5 : 138.
- "Flowering Shrubs from April to November," G. M. 3 : 30.
- Azaleas, C. L. 11 : 495, and G. M. 5 : 218.
- Barberries, G. M. 4 : 122.
- Cornus, C. L. 11 : 35.
- Hydrangeas, G. M. 2 : 66.
- Lilacs, G. M. 1 : 232.
- Spiraea, G. M. 3 : 206; 7 : 284, 384.
- Viburnums, C. L. 11 : 38.
- "Prune Your Own Shrubs," G. M. 1 : 225.
- "How to Prune Shrubs," C. L. 3 : 164.



Japanese snowball (*Viburnum tomentosum*, var. *plicatum*), showing the strength and purity that comes from massing many plants of one variety instead of mixing several. It has very beautiful foliage; most shrubs famous for their flowers do not have

For any particular shrub, the "Cyclopedia of American Horticulture" is generally the most helpful. Among the nursery catalogues one tells the autumn color of the foliage, another is strongest on American shrubs, another gives the hardy equivalents of the European kinds and at least two are rich in pictures of shrubs.

Wisconsin Cranberries

Growing

A West Virginia Apple Survey

Sensible, Valuable Christmas Presents

WISCONSIN is one of the leading cranberry states, and the experiment station at Madison is quite active in promoting the interests of the cranberry growers. Experiments show the superiority of the clean-culture treatment—that is, sanding and drainage—as compared with the older methods of bog management. Most of the new bogs of the state are being started by the clean-culture method.



Hauling Sand in Wheelbarrows in Preparing a Peat Bog for Planting to Cranberries

The attempts of some growers to reclaim old bogs by sanding the top of the bog after weeding, but without taking measures to secure good drainage, have not been successful, partly because the large amount of moisture in the soil is favorable to the growth of moss. The so-called blight of the vines, which prevents the developing of the fruit after blooming, seems to be largely due to insufficient drainage.

Grafting Old Grapevines

IT IS not difficult to regraft old grapevines of any of the species. This is a fairly common practice in Europe and in California, where such regrafting is done either to change varieties or to secure vinifera varieties on resistant American stocks. It is well known that in all cases the vinifera varieties when grown on their own roots are severely attacked by phylloxera.

Almost any type of grafting will serve the purpose, as the grape can be handled rather easily, provided the work is done at the proper time and with any sort of skill. The common methods of budding will also answer, following the style of shield budding described in all textbooks. This budding is usually done in the spring as soon as the bark will slip well on the stock and before the heavy spring run of sap. It requires a little attention to the vineyard to determine this time, but there need be no difficulty if the workman is reasonably observant. Buds are taken from the desired vines, usually cut as budding sticks, and kept in a cool place until the stocks are ready for budding.

As a rule, however, grapevines are changed over by various grafting processes, such as side grafting or cleft grafting, in which cions containing two or three buds and a piece of wood are used. The customary way is to cut off the vine near the root and to insert the cions, either as side grafts or cleft grafts, in the stump. Naturally this will be more easily accomplished with comparatively young vines than with old ones. In the case of old vines it is better to make the graft on one of the side branches. Immediately after the cions are set they should be waxed with soft grafting wax.

Grafting is usually done in February or March, depending upon the latitude. The work should be performed very early before the flow of sap commences. Grafting may also be done during the latter part of the summer, usually in August. **F. A. WAUGH.**

has recently made a survey of Jefferson County, in the eastern panhandle of that state. The investigation was limited to apple orchards of more than four acres, and reports were secured on 181 orchards. This county has about 200,000 apple trees, of which about half are in bearing. Some orchards are as large as 320 acres, but the typical size is ten acres. The large orchards as a rule show a greater income to the acre than the smaller ones.

The chief commercial varieties are: York Imperial, Ben Davis, Grimes, Arkansas, Stayman Winesap, and Winesap. Many of the recent plantings are of Jonathan, Winesap, Delicious and Gano. Plantings of Ben Davis have decreased in the past few years. The young orchards are generally grown on land that is planted in the usual cultivated grain and grass crops of the section. Most of the bearing orchards are in sod, although cultivated orchards are more profitable.

It seems to be profitable to fertilize orchards, and a combination of manure and commercial fertilizer is most profitable. Annual pruning is practiced in two-thirds of the orchards. Spraying pays; and spraying three times a year yields a much larger net profit than one or two times.

Two Barrels to Siam

A RECENT Government trade report sets it down that in 1913—the last figures available—two barrels of apples were exported to Siam. This is cited as an illustration of the statement that “fresh apples from this country find their way to almost every country on the globe.”

Why shouldn't they? The apple is equally acceptable in the tropics and in the arctics. It is both a luxury and a staple article of food wherever civilization penetrates. And the world-wide market depends upon the United States of America in a rather unusual degree, for this country is by very far the largest producer of apples on the map. In fact, outside this country the regions of commercial apple growing are remarkably few and small. Restricted areas in Canada, small districts in Northern Italy and in Bohemia, and some orchards in Southern Australia and Tasmania—these small and scattered territories are our only competitors in the world markets.

These world markets really include all the rest of the civilized globe. It is a big field, principally ours, and we ought to occupy it. Two barrels of apples to Siam merely signifies that all nations are properly our customers.

ORCHARD surveys began in 1903 when G. F. Warren, of Cornell, made a survey of Wayne County, New York. Since then many fruit regions have been studied. Such studies disclose information about the actual condition of the orchard industry that can be obtained in no other way.

The West Virginia Experiment Station



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Planting of Cions in Wisconsin Marsh Headed Under Clean Cultural Methods

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ORNAMENTAL shrubs are propagated in three principal ways—by cuttings, by layers and by seeds. The quickest results are obtained by cuttings, and the type of the parent plant is always best preserved by this method or by layering, though layering is slower and is usually resorted to only in the case of shrubs that are propagated with difficulty by cuttings. Propagation by seeds is an easy but slow method, and does not always preserve all the desirable qualities of the parent plant.

Propagation by cuttings is performed in two ways: The first consists in taking from the parent shrub in summer what are usually called soft, or green, wood cuttings, or in some cases half-ripe wood cuttings of that season's growth; a greenhouse or conservatory, or hotbed or cold frame, is necessary for the successful rooting of such cuttings. The second method is to take from the parent shrub, after it is entirely dormant, usually in December or January, cuttings of mature wood of the previous summer's growth; these may be placed in a cool, frost-proof cellar to begin the process of rooting.

When a greenhouse or conservatory is available a propagating bench should be built, preferably on the north side, where it will be least exposed to the sun. This bench is simply a table with strong legs, of convenient height, about three feet wide, and of any desired length, the boards of the top being placed a quarter to half an inch apart, to provide drainage. Along the four edges of this table are nailed strips four inches wide, transforming it into a shallow box.

If a greenhouse is not available a hotbed or cold frame may be used. Instead of a propagating bench it will be necessary to make boxes about sixteen inches square and four inches deep, with cracks between the bottom boards for drainage, which may be set level in the shadiest part of the bed or frame.

The propagating bench or boxes should be filled with pure, clean sand, such as masons use in making mortar or concrete, the cracks between the boards being covered with clean pebbles or coal cinders. The sand should be leveled and firmly compacted by striking it with a brick, and then wet thoroughly. This makes the bench or box ready to receive the cuttings.

Rooting in Moist Sand

Cuttings may be taken from the rather firm green wood or, in the case of some shrubs, from the half-ripe shoots of the season's growth in June, July and August. These shoots, from four to six inches long, should be removed from the parent shrub with a sharp knife, not with shears, and wrapped at once in wet newspaper to keep them from wilting. Before they are placed in the propagating bench or box they may be trimmed by cutting off half an inch to an inch from the tender tips, all the leaves for about two inches from the butts, which will be buried, and one-third of each of the remaining leaves, if they are large.

See that the sand is wet throughout. Then make a wooden peg about six inches long, half an inch in diameter at one end and tapering to a point at the other. With a straight-edged, narrow board placed across the bench from back to front as a guide draw lines in the sand three inches apart, and with the peg make holes along the lines two or three inches apart and one and a half to two inches deep.

Place a cutting in each hole and make the sand about it very firm. Sprinkle the cuttings after they are placed in the sand.

During the first ten days only a little air should be admitted, by raising the greenhouse ventilator or the

hotbed sash. After that a larger volume of air may be admitted, but never enough to make a draft.

The important points in this process of rooting green-wood cuttings are: Keeping the cuttings from wilting before they are placed in the sand; keeping the sand always moist, but not wet; admitting pure air, but no direct draft; and carefully shading until roots begin to form.

After the cuttings have formed roots an inch long they should be lifted out of the sand with a trowel and transplanted into mellow soil in the garden or field, about six inches apart in rows. They should be set out firmly, watered freely when planted, and shaded by newspapers or thin cloth.

Propagating by dormant cuttings of the previous summer's growth is the simplest and easiest of all methods. In December or January, when the shrubs are dormant and the foliage has fallen, cuttings from four to six inches long may be taken with a sharp knife. A shoot that is long enough may be divided into two or more cuttings. Remove all side twigs.

Fill one or more boxes about twelve inches square and eight inches deep with sand, firmly compacted to within an inch of the top of the box. Moisten the sand thoroughly and with the peg make holes an inch apart. Put in the cuttings top end up so only two of the dormant buds are above the sand. Place the box in a cool, frost-proof cellar or garden pit and leave them until spring.

Propagation by Seeds

In spring, as early as the ground can be worked, these cuttings, most of which will have formed calluses on the ends that were buried in the sand, should be planted in the garden or field, about six inches apart in the row. A year after this planting they may be transplanted to permanent positions.

Propagation by layering is an excellent method in the case of almost all ornamental shrubs when only a few new plants are desired. Natural layering is common. One of the lower branches of a shrub becomes decumbent, and a portion of it near the body, perhaps including one or two joints, becomes covered with soil and leaves. Roots are usually sent out at these joints. When they are well developed the shoot is cut off between the roots and the parent, and is transplanted.

Propagation by seeds requires a longer time to obtain a shrub of suitable size for permanent planting. Seeds of shrubs may be divided into two general classes—those contained in a dry, herbaceous ovary, or seed pod, as the seed of syringa or hydrangea, and those covered with a fleshy substance, as the seed of viburnum and barberry.

Shrub seeds should be planted either in the autumn, soon after they are gathered, or in the following spring. Seeds covered with a fleshy substance should be removed from it by rubbing them between the hands after they have soaked for several hours in water as warm as the hand can bear. The seeds may be sown in a mellow garden or cold frame in shallow drills, the depth depending on the size of the seeds, or they may be stratified or placed in alternate layers with pure, moist sand, in a box which is kept in a cool cellar or garden pit, or, with a

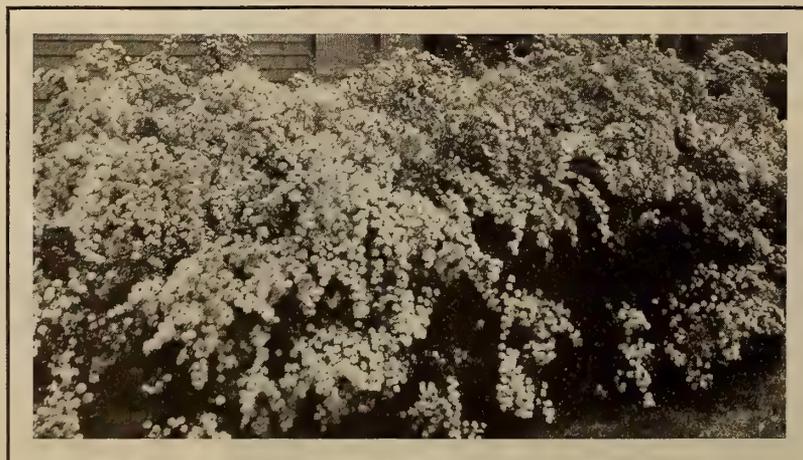
cover, buried below the frost line in the garden. In spring these stratified seeds are sown in drills in the garden.

Most shrub seeds, whether sown in fall or in spring, germinate the following summer, but some, as holly and viburnum, usually do not germinate until the second year. The seedlings may be transplanted when they are one year old.

The following ornamentals, which are among the most



The Hardy Hydrangea is Propagated From Green-Wood Cuttings



Spiraea Can be Propagated in Four Different Ways

desirable and popular, maybe propagated by one or more of the previously described methods:

Japanese maple, *Acer japonicum*, from seeds, or with some difficulty from green or ripe wood cuttings under glass.

Bastard indigo, *Amorpha fruticosa*, from seeds, or from green-wood cuttings under glass.

Japanese barberry, *Berberis Thunbergii*, from seeds, or from green-wood cuttings in June under glass.

Sweet-scented shrub, *Calycanthus*, from seeds thinly sown in a cold frame in April, or by layering.

Red bud, *Cercis japonica*, from layers, or from green-wood cuttings under glass; other species of *Cercis* from seeds sown in March in light soil, with gentle heat under glass.

Fringe tree, *Chionanthus Virginica*, from seeds sown in autumn, or from stratified seeds sown in spring, or from layers.

Hawthorn, *Crataegus*, from seeds, which germinate the second year and need to be covered with a mulch of straw or hay the first summer to keep them from drying out.

Japan quince, *Cydonia japonica*, from seeds, or from dormant cuttings of the previous season's growth, or from layers.

Daphne, *Daphne cneorum*, by "tongued" layers covered with soil and moss.

Clematis, by stratified seeds sown in a sandy, light soil in a gentle heat under glass, or by layers.

Sweet pepper bush, *Clethra*, from layers, or from cuttings of half-ripened wood in gentle heat under glass.

Osier, *Cornus*, the willowlike species, from seeds, layers or cuttings of half-ripened wood under glass.

Deutzia, from half-ripened green-wood cuttings under glass, from dormant cuttings of previous season's growth, or from layers.

Weigela, *Diervilla*, from half-ripened green-wood cuttings under glass, or from dormant cuttings of the previous season's growth.

Oleaster, *Elæagnus longipes*, from cuttings of half-ripened wood in June or July under glass.

Burning bush, *Euonymus*, the deciduous species from dormant cuttings of the previous season's growth; the evergreen species from cuttings of green or half-ripened wood under glass; or both deciduous and evergreen from seeds and layers.

Pearl bush, *Exochorda*, from seeds, or from layers in June.

Golden bell, *Forsythia*, from green-wood cuttings under glass, or from dormant cuttings of the previous season's growth.

Silver-bell or snowdrop tree, *Halesia*, from layers, or from stratified seeds, which do not germinate until the second year.

Hardy hydrangea, *Hydrangea paniculata*, from green-wood cuttings in June.

Holly, *Ilex*, from stratified seeds which germinate the second year.

Mountain laurel, *Kalmia*, from layers, or from seeds sown in shallow boxes of sphagnum moss or peat, placed in a cold frame until seedlings are large enough to harden off and transplant.

Globe flower, *Kerria japonica*, from layers, or from dormant cuttings of the previous season's growth.

Koelreuteria, from seeds sown in the spring, or from cuttings of green wood in spring, or from layers in autumn.

Golden chain, *Laburnum*, from layers or from seeds.

Laurel, *Laurus*, from layers or from seeds.

Woodbine, honeysuckle, *Lonicera*, both the upright and the creeping species, the former from dormant cuttings of previous season's growth or from layers; the latter from dormant cuttings or, to obtain new varieties, from seeds sown as soon as ripe, or from stratified seeds sown in spring.

Crape myrtle, *Lagerstræmia*, from layers, or from seeds which, sown in boxes in well-firmed soil late in September, covered with sifted peat or leaf mold and kept in a cold frame or pit, will germinate in spring.

Privet, *Ligustrum*, from green-wood cuttings; or very easily from dormant cuttings of the previous season's growth; or from stratified seeds, which sometimes do not germinate till the second year.

Magnolia, from seeds sown in autumn as soon as ripe; or from layering early, before the plant begins to grow; or from green-wood cuttings taken off close back to the branch or body so as to leave a heel on the end, under glass.

Mock orange, syringa, *Philadelphus*, from cuttings of green wood under glass, or from dormant cuttings of wood of previous year's growth, or from layers and seeds.

Rhododendrons, low-growing plants, may be propagated from layers, other methods—from seeds, cuttings and grafts—being too difficult for an amateur.

Sumach, *Rhus*, from cuttings of green or half-ripe wood under glass, or from seeds or layers.

Rose acacia, *Robinia pseudacacia*, from layers, or from seeds after they have been soaked in hot water, sown in autumn or spring.

Roses, hybrid perpetual, climbers and ramblers, from cuttings of ripened wood in late autumn placed in a cool greenhouse or a cold frame; other roses from cuttings of nearly ripened wood, taken from rose bushes growing in greenhouse, started in a propagating bench with bottom heat.

Spiræa from green-wood cuttings, or from dormant cuttings of the previous season's growth, or from layers in spring from seeds sown as soon as ripe, or from stratified seeds sown in spring.

Bladder nut, *Staphylea*, from layers, or from dormant cuttings, or from seeds sown as soon as ripe, or from stratified seeds sown in spring.

Lilac, *Syringa*, from green-wood cuttings under glass, or, less frequently, from dormant cuttings, or from layers or stratified seeds sown in spring.

Wistaria, from seeds, or from layers, or from cuttings of ripened wood under glass.



Raising Vines From Eyes, Showing Them in Position in a Pot Before Covering

Three Ways at Yonkers, New York, for Six Hundred Boys and Girls

because the garden is one of the largest in the country, one of the oldest in the commercially—although the children keep the produce—and because it has been access from every standpoint. The article is intended to help those interested in analyze the elements of success.



Yonkers School Has for Eleven Years Lived Independently, Trusting to its Own Merits to Attract the Children

The requirements for the children are: First, that they pay the rental; second, that they attend to their plots at least twice a week; third, that they conduct themselves properly while so doing. The garden is open from three to five P. M. each school day during the months in which school is in session, and all day on Saturday. In vacation time it is open all day every day.

The superintendent says that in eleven years much of the elaboration of school-garden conduct has been discarded as unnecessary. At first a careful record of attendance was kept. Now attendance is kept by looking at the plot.

Formerly the children were required to keep notebooks; but not now. Once upon a time there were prizes for the best plots and vegetables. Now there are no prizes. If the children want to compete for prizes awarded by outside institutions they may, and usually a number enter the exhibitions of the Yonkers Agricultural Society.

Records of the returns from plots were kept carefully for a number of years. Allowing for the space used by necessary tool houses, paths, and the extra plots given to things other than vegetables, about three acres and a half is in actual vegetable production. This raised in 1909:

8,120 quarts of string beans	4,640 bunches of parsley
34,800 beets	11,600 parsnips
1,740 pecks of Swiss chard	5,060 quarts of onions
23,200 carrots	70,480 radishes
14,500 heads of lettuce	6,960 stalks of celery

There were other vegetables, uncounted—tomatoes, for one—and the entire product was valued at \$3306, this at the prices at which vegetables were sold by pushcart men in the neighborhood. The gardens are expected to average at least five dollars a plot, a round sum of \$3000 for the whole. Against this, as a commercial proposition, is the statement of expenses:

Salaries	\$2585
Fertilizer	300
Seeds	100
Office printing and stationery	125
Water rents	30
Sundries	60
Insurance	5
Exhibits, entertainment	50
Total	\$3255



The garden equipment consists of a well-made fence, two tool houses and a summer house, a greenhouse, cold frames and all the necessary tools.

For every six children in the garden there is a set of tools consisting of rake, hoe, spade, trowel, watering pot and garden line. The greenhouse and cold frames raise all the tomatoes, celery and lettuce, and so forth, for the garden, and in addition are busy all winter with the special class of

boys raising plants for sale, the money for these adding to the garden fund.

The third test of a garden is the effect upon the children and upon the neighborhood. The Fairview Garden School began as a gift from one man—a small garden for thirty-six boys.

It is now supported by the voluntary contributions of more than 200 persons who have watched it grow.

Despite its avowed commercial intent it is most carefully and attractively planned, with many ornamental beds of flowers, borders that are filled with luxuriant blooms. Among all these are other beds without commercial intent, given over to cotton, flax, sugar cane, jute and sugar beets.

Seeds are Sold for Home Garden

Instruction concerning these and the more practical matters is in the hands of three teachers. No pretense is made at a program of theoretical instruction, but with the practical the teacher is able to give a great deal of theory.

Just what effect both practical and theoretical instruction have had is not a matter of record, but last spring the children put up 50,000 packets of seeds for distribution to the public schools of the city, from which they were sold. Every packet was disposed of, to be grown in the home gardens, which only lack of funds prevents the garden school from supervising.

The social interest, fostered by the parents of the children, who are constant visitors, and by the garden graduates, has resulted in the establishing of a garden house, just back of the garden proper, where winter instruction in home economics is given to girls, and where clubs of both sexes, young and old, gather for recreation, study and entertainment. And, farther even than the neighborhood, the Yonkers garden has, by a free supply of reports, lantern slides and photographs sent out on request, stimulated the beginnings of gardens uncounted. The noteworthy school gardens of Portland, Oregon, openly acknowledge their debt to the Yonkers garden:

PORTLAND, Oregon, March 22, 1912.

MR. LAWSON SANDFORD.

Dear Mr. Sandford: The garden school cabinet of photographs has been returned

by express, and by this means I want you to accept my personal thanks and the thanks of the community. The pictures have been reproduced, exhibited, talked about, and have been instrumental in causing the establishment of a garden branch in all the public schools in Portland, which I think will be extended to all the public schools in the very shortly.

How to Multiply Your Hydrangeas—By Luke J. Doogue, Massachusetts

DO NOT BE SATISFIED WITH MERELY SETTING OUT THE OLD PLANTS THAT HAVE BEEN WINTERED IN THE CELLAR—WORK UP A FRESH LOT AND GET BETTER, BIGGER FLOWERS



Trim the leaves of the cutting to reduce transpiration

IF you do not have a sufficiently large number of tender hydrangeas, (hortensias) it is a very simple matter to increase the stock at this time of year.

Hydrangea hortensis, and all its forms—Thomas Hogg, Otaksa, etc.—can be most

easily propagated from cuttings, using the old plants that have been carried over winter in a cool cellar, a pit, or even outdoors. Some forms of the plant are much more hardy than others, and will even prove quite hardy in the neighborhood of New York in well-drained soil. The hortensis hydrangea will always be a popular garden plant, because its immense flower heads attain perfection at a time when the flowering season of the majority of plants is past. Old hydrangea plants often get ugly and ragged looking; how much better to raise your own plants each season!

Early in the spring, when the growth made is just sufficient to give decent-sized cuttings, every single shoot that has developed can be taken off, using a sharp knife, and cutting at a joint. The only thing to observe is that the wood has passed just beyond the first stage of succulency. If it is too tender, too watery, it will not strike roots, but will rot. If one crop of cuttings is insufficient a second supply can be taken from the old plants by merely letting them continue growing. The cuttings will grow if put into any well-drained, open soil, such as a mixture of loam, sand, and leaf mold, or coarse sand can be used alone.

Where space is of some importance, place the cuttings in the sand or loam close together in rows in shallow boxes. But watch carefully, as cuttings thus packed are always liable to rot if given too much water and too little air. The box of cuttings should now be put into a light place, with some gentle bottom heat. Or the cuttings may be put directly into very small pots—thumbs they are called—and kept there until crowded with roots.

The rooted cuttings may be put into four- or six-inch pots, if convenient, or, if the weather is favorable, they may be set out in the ground at once. Otherwise, the best thing to do is to put the potted plants into a coldframe.

From now on keep the plants well watered and the surface of the soil around them thoroughly cultivated, to prevent caking and the possible shedding of water. Hydrangeas demand a great deal of water, and the measure of success in their cultiva-

tion depends very largely on frequent watering, and an occasional feeding of manure water accomplishes wonders.

Little remains to be done from this time on—merely such pinching as may be desirable to give the plant proper shape. If the plants are grown in pots entirely, the soil must be rammed firmly about the roots by means of a stick.

For the winter storage of the old plants it is only necessary to see that they are in a frost-proof cellar, but sufficiently cool, that growth will be suspended. In other words, keep them dormant. Also, note that the cellar is well ventilated and not choked with coal gas, and sufficient water must be given, if necessary, to prevent the roots from becoming dust dry.



The cuttings may be put into large pots at once, or several into one pot and shifted when ready, in about two weeks. These rooted cuttings are all two weeks old



Twenty-five cuttings were taken from this plant at the first cutting in spring



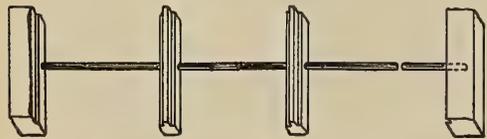
Two weeks later it looked like this, and was developing another crop

Why You Should Have a Coldframe—By Philip Cox, New Jersey

EARLY FRESH VEGETABLES, FLOWERING PLANTS OF GREATER VIGOR AND SOMETHING OUT OF THE ORDINARY ALL THE YEAR ROUND, INCLUDING VIOLETS FOR CHRISTMAS—ECONOMY OF UP-TO-DATE CONSTRUCTION

SINCE I have contracted the coldframe habit I have been able to keep my garden enthusiasm warm all winter. I am an enthusiast for coldframes, and only wish that I may convey to others some feeling of the satisfaction to be had from their use. It is not everybody who can possess a greenhouse, but surely no one having any garden space at all can give justification for not possessing some coldframes.

The common notion that coldframes are useful merely in the early days of spring for starting hardy plants, so as to get them a little bit earlier than the outdoor sowings, and for giving protection to the tender plants before the outdoor weather is safe, is very far from the whole story. By proper manipulation coldframes can be made very adequate substitutes for a greenhouse, giving results all the winter through. If you do not already possess one or more coldframes, I urge you to delay no longer, but to install some this very month. Immediate



The best kind of brace for the sash is an iron rod; it casts very little shade

results can be had in starting nearly all the flowering annuals, and such more tender plants as tomatoes; or lima beans can be germinated here ready for planting out when the ground is warmer. See THE GARDEN MAGAZINE for March, 1906, page 82.

For three years past I have been keeping a careful record of what has been done with two coldframes, five sash each, working them all the year round and raising in them both vegetables and flowers. I advise working with two frames because it is much easier to handle a rotation of crops. What I shall tell about is what any amateur can do, producing identical results; it is not necessary to be a skilled, experienced gardener.

THE ROUND OF THE YEAR

Most people begin to think about coldframes at this season, but the real "year of the coldframe" may be said to begin in October when, with the coming of frost, outdoor operations cease. But preparations for the winter will have been under way well in advance of that. By about the twentieth of August, indeed, I make a sowing of black-seeded Tennis Ball lettuce, following this by another September 5th. The seed is sown in a shallow box and transplanted to the ground inside the coldframe when the second pair of leaves has been well developed. If, however, the frames are not ready at that time, the seedlings may be transplanted into the open ground, removing them into the

frames later, giving them then a distance of nine inches each way. The plants from the first sowing should be ready for use the first week in November, those of the second sowing following about three weeks later.

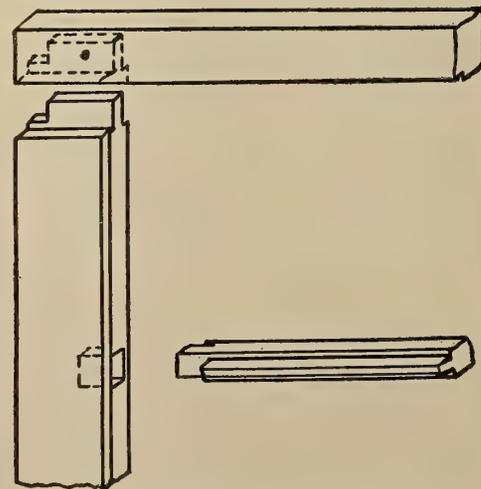
Lettuce may be had in succession all winter through by management of the sash. Giving plenty of air on all bright days by lifting one end of the sash, the crop of lettuce can be made to yield all through the winter, even up to the present time (March), when, of course, whatever is in the frame will be cleared out to make room for the annuals and vegetable plants already mentioned.

A still further sowing of lettuce made about October 1st will not give very large plants during the winter, but they will be well established and strong for transplanting in the earliest spring into hotbeds, or for planting out in the garden. Those intended for hotbeds may be transplanted anytime after February 1st, giving heads for use in April.

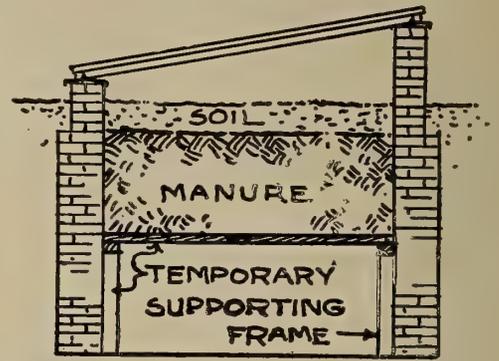
Among the early spring vegetables, spinach is one of the most welcome and one of the most easily grown with the assistance of the coldframes, sowing the seed in January in the place from which the first crop of lettuce has been removed. Norfolk Savoy spinach I have found well adapted for frame culture, and from seed sown January 5th is ready for use April 1st. Seeds are sown in drills eight inches apart, the bed being not over eight inches from the glass at the lowest point, which also is the proper arrangement for lettuce; so the one crop follows the other without any alteration of the seed-bed.

The soil, of course, must have been thoroughly enriched with well-rotted manure in the fall. If this has been done, the spinach crop will yield up to the last days of May, or within two weeks of the time when the outside crop is ready for use.

About the first of April is time to sow melons. These should be in pots so that



A blind and shouldered mortise joint gives little chance for water to enter and prevents rot



Combined coldframe, hotbed, and pit with masonry walls. Almost as good as a greenhouse

they may be transplanted without disturbance of the roots. Seeds had best be started in 2-inch pots, shifting into 4-inch pots as soon as the first are filled with roots. Some of the plants thus started can be shifted later into the open ground, but for the very earliest results select the strongest growing plants for continued growth under the sash, planting two in a hill in the center of each sash as soon as the spinach is cleared off. Early melons are particularly appreciated, and are not difficult to raise if you bear in mind always that the plants are easily chilled. Therefore keep the sash on the frames during the day as well as night until the plants are thoroughly well started in the bed.

Emerald Gem is a reliable melon for frame culture, and started on the first of April should give fruits from July 10th and until the outdoor crop is ready for use in August. This rotation of crops is an easy and complete one for the twelve months, occupying the frames all the time.

The only special attention needed is during the winter when there are more than five degrees of frost. Then put some sort of covering or protection over the glass. Mats of straw (the making of which was described in the February, 1906, GARDEN MAGAZINE) or of burlap can be used, the latter being the most lasting, and those made 6 x 6 ft., with waterproof duck on one side, are the best.

When the temperature falls very much below freezing, place wooden shutters over the mats, which will not only help to hold the latter snugly in place, but keep the weight of snow and ice from pressing too heavily upon the frames. The shutters are also easily removed. The sides of the frames should be banked up all around with rough manure, leaves, or salt hay, or any sort of convenient mulch to help keep out the frost. That is the essential point. For if once the frost is allowed to enter the frame, everything else is done in vain.

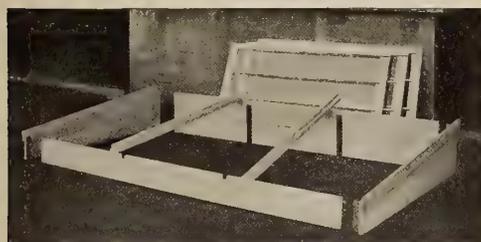
SOME OTHER POSSIBILITIES

But the possibilities of coldframes are by no means summed up in the rotation just



See how the through mortise will rot

outlined. The possession of a coldframe opens up a great field of opportunities. For instance: Do you want violets? And there is no more delightful flower in the winter. Plant rooted cuttings in the frame in July, allowing ten inches in each direction for the double kinds and twelve inches for the singles. Before planting violets, work over the soil thoroughly, incorporating with it at



For shifting around use the frame made with dovetailed joints and angle-iron corners

least one-fourth its bulk of thoroughly well-rotted horse or cow manure. After planting, cover the frames with lattice shades to break the direct rays of the sun, for violets revel in cool air. If they are once properly started, further attention during the summer will consist of merely an occasional watering and slight cultivation of the surface of the soil, breaking off all runners and decayed leaves. About the middle of October flowers will begin appearing, and should continue until Christmas time.

In a mild winter, such as that through which we have just passed, when the plants can be exposed to light and air almost daily, the production of flowers will continue all winter. In severe seasons, when the frames have to be protected and subsequently darkened, the plants may be counted upon to start flowering again by the first of March and continue until the first of May.

Pansies may be wintered over in the same way as violets, but do not require a like amount of protection. For flowers during winter sow seed about June 15th, and for the early spring flowering a month later.

Cauliflower may be planted in frames where pansies have been all winter, first renewing the soil to at least twelve inches. Plants should be procured from a florist, in order to get them large and well established. Eight plants to sash is about right. They will be ready for use about the middle of May.

One of the most useful and easily grown

crops of all is Swiss chard. Sow it between July 15th and the first dog days. When it is cold enough to put on the sash, the outside leaves will be up above the frames. Cut these leaves back and you will have a cut-and-come-again crop pretty much all winter.

If you want tomatoes a month ahead of the man next door, get well-established potted plants from a florist the middle of March or first of April, and transplant them in the frames, three to a sash, down the centre. If, when the plants get so tall they strike the sash, it is still too cool to leave the sash off altogether, raise them up on

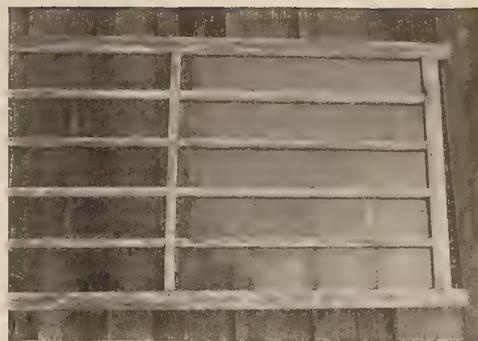


Ventilate the frame by raising the sash on the lee side or end. Use lattice to break the sun's heat

stilts six inches or so from the plants. Cut off all laterals and tie the one stem to a stake. Leave them right in the frames. When the month of roses comes, at the first joint of the vines will be ripe fruit, the next just ripening, while the topmost one will be in bloom.

POINTS IN "CONSTRUCTION"

A coldframe is essentially a bottomless box set on the earth and covered with glass. Anyone can make such a thing and get some results, but I am thoroughly convinced that for systematic work it never pays to use "make-shift affairs" — you simply lose time and money. If you want results with coldframes — absolutely satisfactory, reimbursing results — then at least buy sash that are especially made for the purpose. They will be constructed to last, to cast the least possible



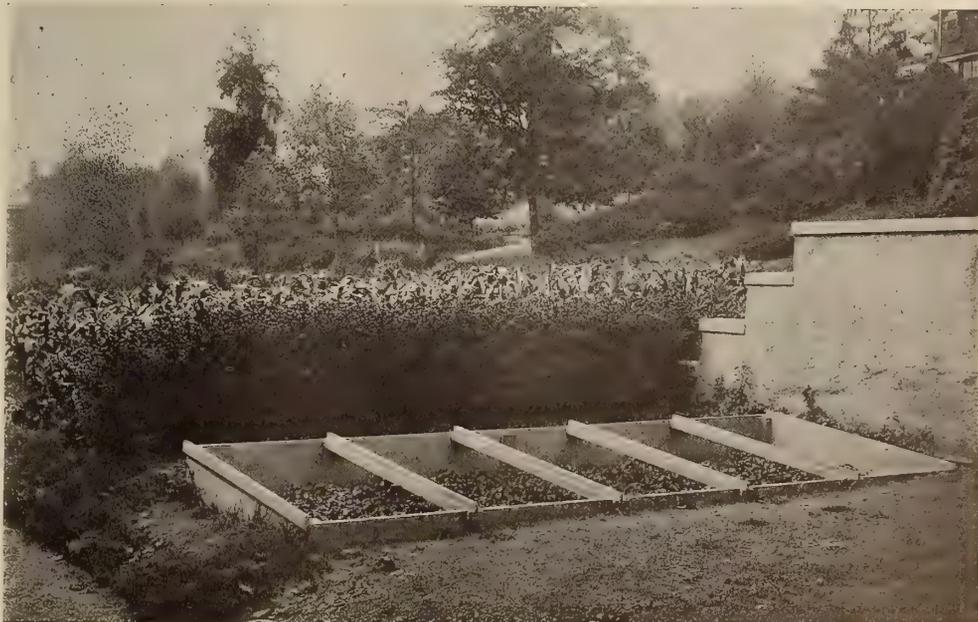
The simplest kind of stay-nails or dowels and the cross-bar "cut in," a weak point

shade, and be light to handle. If you want to be sure of the sash sliding perfectly and resting tightly on the frames, buy your frames also.

The efficiency of a coldframe depends entirely upon its conserving the sun's heat. Hotbeds, on the contrary, have sub-frames which confine a closely packed bed of manure the fermenting of which gives off enough heat to the soil above to sufficiently warm the frames in the very midst of winter, and carry them six weeks to two months without need of replenishing.

The least expensive frame is all wood, and of good quality; two-sash size costs \$7.50, or say \$30 for a frame of five, all complete with sash. Sap-free cypress has been found to be the most enduring of woods for the purpose. Greater strength and portability are secured by having the corners joined by angle irons bolted or screwed in place.

The rafter bars placed between each sash, and upon which they must slide, should be dovetailed into the front and back of frame, and will then require no nailing, which makes them readily removable should you want to take the frame down to change its location — a thing that often occurs. This dove-tailing also insures its exact position, so the sash will not bind at any point.



In this five-sash frame the writer has raised violets all winter. Note the windbreak hedge



Frost must be kept out! Use mats to cover the frames and shutters on top so snow can be removed easily

Drip grooves had best be provided on the upper part of the rafters under the sash, to carry off the condensation moisture, which otherwise falls back on the plants, often to their injury.

If you want a sub-frame to hold the manure (making it a hotbed), dig out about three feet deep all around, and set a 2 x 4 post in each corner and nail your boards to it. Better have them not less than two inches thick if you want strength and endurance.

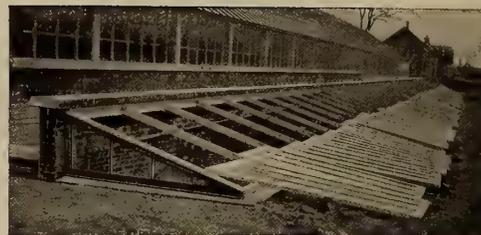
The most substantial construction, that will last practically for all time, is made with masonry walls covered on top with a cast-iron capping to which T iron rafters are bolted for supporting the sash. Moreover,

it is more nearly frost proof. By making it five or six feet deep, it can be used as an admirable storage pit for hydrangeas, palms, semi-hardy roses, bulbs, azaleas, and so on. Such a frame or pit, complete, may cost nearly two hundred dollars for five sash, including masonry and excavating.

If at any time you want to temporarily convert it into a coldframe or hotbed, all you need do is put in a false bottom sixteen inches from the ground line if for a coldframe, and three feet for the hotbed.

This bottom can easily be arranged by placing 2 x 4 inch hemlock joist along the sides of the frame and resting on legs made of the same material. It is better to brace the legs apart by nailing on light strips. (I use shingle lath.) Then all you have to do is get your loose boards, place them crosswise on the frame work, and it is ready for putting in the soil. Hemlock boards 1 1/4 x 10 in. will answer, but be sure to saw them a little short and also leave at least a half inch between the boards in laying, so they can swell without twisting out of shape.

When the frame is again wanted for storage, and more head room is required, you have but to remove the boards — and all is in shape again.



All modern improvements, including masonry walls and heating pipe. The clear space at back is a great convenience, and receives snow, etc., from the house

Even in the construction of the sash there are points to be remembered. The ordinary open mortise will endure less than half the term of years of the sunk style, where the mortise does not go clear through. Sash of the latter type in use eighteen years are sound and watertight to-day. Again look at the strengthening cross-piece. If of wood, cut into the rafters and fastened by nail or dowel, there is an evident weakness at the very centre; but a slender iron rod run through adds strength, and besides cannot cast any appreciable shade on the plants — a small factor; one not to be ignored, however, in the dullest months of the year.

Getting Quality in the Egg-plant—By E. D. Darlington

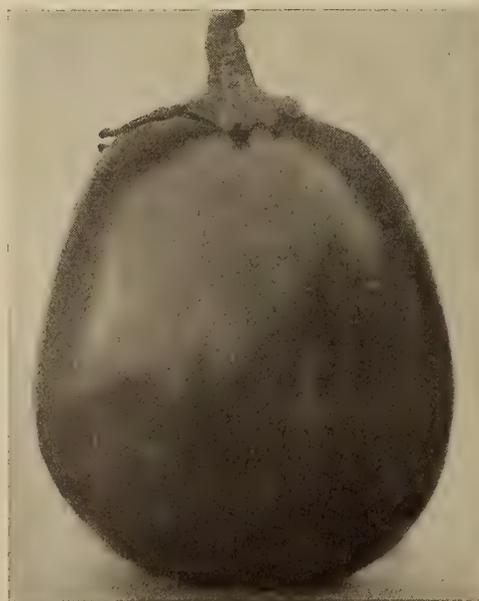
IF YOU DO NOT GROW THIS VEGETABLE WITH REGARD TO ITS TROPICAL NATURE YOU DO NOT KNOW WHAT DELICACY MEANS—IT CAN BE GROWN TILL FROST IF STARTED PROPERLY

TO MY thinking the fruit of the egg-plant is one of the most delightful products of the well-supplied garden. The Italian name of "delicatesse" seems to be most appropriate. Freshly gathered fruit, grown and developed in warm sunshine and properly cooked, surpasses in delicacy and flavor anything in the line of fried young squashes or simlins. But it is essentially a hot-climate plant, and can only be had in perfection when its nature is understood and the proper conditions given. These are a rich, mellow, deep, warm soil and an adequate supply of water. The plants must be started in heat, and never allowed to suffer a check. Better, indeed, defer planting a few days than to run the risk of shock by chills. Since it is such a lover of warmth, and must be kept in quick, strong growth from the start, a moderately warm greenhouse or a hotbed is an essential for starting the plants in a northern climate.

By starting the seeds in February or the first part of March, you should have fruits for use by the last of July, and the plants should continue to bear until killed by freezing in the fall.

Plant the seeds thinly in rich compost. The bed or greenhouse where the seed is sown should have a temperature of about 60 degrees at night. The hotbed should be covered with mats or old carpet at night during severe cold weather. In sowing the seed in a greenhouse I use shallow boxes or

flats about three inches deep, filled with a very rich, light compost, such as old manure from a hotbed passed through an ordinary coal sieve. This makes a spongy, loose seed-bed that holds moisture and promotes quick growth. As soon as the plants show one or two true leaves, transplant them to flower-pots three inches in diameter, or to the hot-



Black Beauty, probably the best variety for the amateur. Dark color, fairly early and productive

bed, setting them six inches apart, so that they will have plenty of room in which to grow. In potting, use the same rich compost as for the seed-box; it is almost impossible to overfeed if the manure is thoroughly rotted. When planted in the three-inch pots it will probably be necessary to repot them to larger pots or boxes before they can be planted out.

Do not allow the young plants to suffer any check in growth by becoming root-bound or from the soil becoming too dry, as the stem or stalk will become hardened and the plants dwarfed in growth. Give each plant plenty of room, and keep the soil constantly moist, but not muddy from over watering. If grown in a hotbed the surface of the soil between the young plants must be stirred frequently, both to admit air to the roots and to enable it to dry out quickly. Neglecting this is frequently the cause of young seedlings rotting in the seed-bed or boxes, as a hard crust forms on the top of the soil and it is impossible to properly judge of the condition of moisture underneath.

PLANTING IN THE GARDEN

Do not set out the plants in the open ground until the nights become quite warm and the trees are fully in leaf. For the average family a dozen well-grown plants should give a good supply of fruits, but I like to set fifty or sixty plants each season; the rows three feet apart, in the sunniest place in the

garden, a space of two feet being allowed for each plant. Before setting, a hole one foot deep and one foot across is dug for each plant, with six inches of well-rotted manure or rich compost placed in the bottom. The potted plants are then carried out to the rows, each plant carefully removed from the pot and set directly on the compost or on a thin covering of fine soil, disturbing the roots as little as possible. Fill in around the plants with fine soil, packing it firmly around the stem so as to hold the plant in an erect position. If the ground is dry at time of planting, pour one or two quarts of water on the compost in each hole before setting the plant, and then draw the dry soil in around the plant; this is a much better plan than to water after the plants have been set. I have seen well-hardened young plants with-



The early varieties, smaller than the later ones, are best for the Northern States. Early Round Purple and Early Long Purple

stand a severe frost after they had been planted out on well-drained ground, and although the lower leaves turned yellow and dropped off the plants recovered and made a good growth and a large crop of fine fruits.

CULTIVATION

As soon as the plants have taken root in the soil, or about a week after they have been planted out, make the surrounding soil as fine and loose as possible with a hoe or small rake, repeating the treatment once or twice a week until the bushes are of good size and the fruits starting to form. In addition to the hand hoeing directly around the plants the soil between the rows is worked and made fine with the horse cultivator at least once a week.

When there is danger of frost in the fall the plants may be covered with carpet or other material and the fruiting season prolonged until severe cold weather sets in, but my plan is to go over the plants when I expect a hard freeze and cut off all the fruits of two inches or more in diameter, putting

them in slatted crates in the cellar. Treated in this way, many of the fruits can be kept in good condition for several weeks.

The only insect which bothers the egg-plant is the striped potato beetle, and this is easily kept in check by hand picking or by light applications of Paris green during the earlier stages of growth, before the fruits develop.

FINAL PREPARATION

A great deal of the ultimate quality on the table depends upon the freshness and crispness of the fruit. To have it at the best, go into the garden early in the morning and select one or more half-grown fruits, having a glossy lustrous skin, and in which the seeds have not started to develop. Sever them from the plant with a sharp knife — do not pull them, as that might bruise the flesh or skin — take them at once to the kitchen where they are sliced into half-inch layers, and at once fried in hot fat deep enough to float them, the skin being first removed in a thin paring. All cook-book receipts call for a dipping in beaten egg and then cracker or bread crumbs, but to my mind this only serves to hold additional grease, and greatly detracts from the natural delicacy and richness of flavor. Another old-time way of preparing them was to slice and pare the fruit in the evening, salt slightly, and then put a weight on them to draw out as much of the juice as possible; but this is quite as unreasonable as the German way of slicing cucumbers and soaking them in salt water all day to take out the cucumber taste.

MAIN CROP VARIETIES

The type most generally grown is the New York Improved, which makes a large, thick fruit, having a purple skin of satin-like lustre. In the original type the stem and thick green calyx were set with short sharp spines or prickles, which also appeared to some extent on the stalks and under side of the leaves. These spines or prickles have, by continued selection of seed parents, been entirely eliminated and the spineless type is now most generally offered.

White Pearl is identical with the New York Improved in growth, size, and form of fruit and flavor, but the skin is unattractive, being a pale greenish-yellow.

Black Beauty is a development of the New York Improved, nearly two weeks earlier in fruiting, and having a very dark or rich purplish-black skin. On account of its rich coloring, early fruiting, and productiveness it is probably the best all-round variety.

Florida High Bush. This is a tall, strong-growing plant from three to four feet in height. Very popular in the extreme South, where it is very productive, but the summer in the North is not long enough for it to develop fruit.

SOME OF THE EARLY KINDS

Early Round Purple is the earliest of all and chiefly desirable for growing in the short, cool summers of the Northern States, as it takes quite a number of these small fruits to equal one of the larger New York Improved type. It makes branching, purple-



The largest, heaviest fruits are of the New York type; modern selections are spineless, too

stemmed bushes about eighteen inches high, and bearing a large number of black-skinned fruits, about three inches long and two inches in diameter, and of very fine flavor.

Early Long Purple is similar in growth and fruiting to the Early Round, but possibly not quite as early, and differing otherwise only in having larger and more elongated fruits. There are also several Japanese varieties of this type having fruits from eight to twelve inches in length, and in diameter from one to one and a half inches. These are grown only as curiosities.

Jersey Belle is a new variety which originated at the New Jersey Experiment Station grounds, a cross between the New York Improved type and the Early Long Purple, and bears a large fruit which is longer than the ordinary market fruits. It is claimed that the flavor is distinctly finer than that of the large oval fruited sorts.

Black Pekin is one of the old varieties, having a nearly round, very dark-skinned fruit of only fair size. It is chiefly esteemed for earliness.



By continued selection an absolutely spineless type of eggplant has been developed and is most generally offered

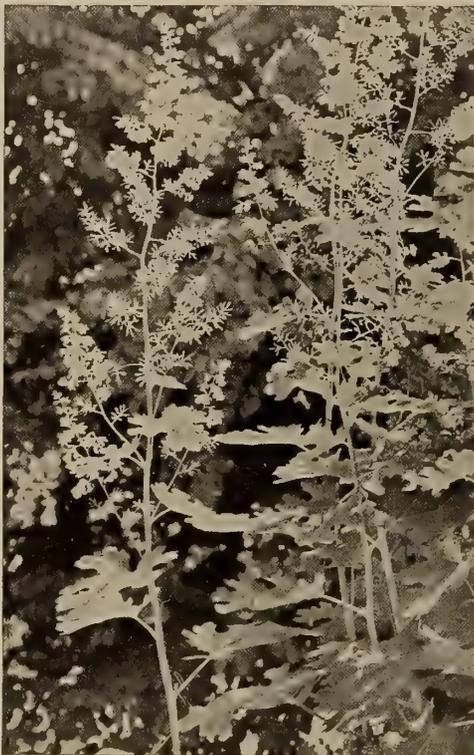
The Relatives of the Poppy—By Leonard Barron, ^{New York}

THESE COMPRISE A HANDFUL OF PLANTS WITH SHOWY FLOWERS OF SINGULAR BEAUTY, WHICH MAY BE GROWN IN ANY GARDEN, IF ONLY ATTENTION BE GIVEN TO TWO SMALL DETAILS

THE whole poppy family is remarkable for its very bright or strikingly showy flowers. The true poppies give us the most notable, gorgeous, large red flowers of the herbaceous garden. They are transcendently beautiful in the perennial oriental poppy, but so emphatic and so dazzling as to make the plant a somewhat dangerous subject in garden effects, except when used sparingly, to give occasional tone and relief in stretches of shrubbery. Equally brilliant, but more delicate and fragile in appearance, the corn poppy has its own place in the annual garden, and a hint of the beautiful colorings of the other members of this gorgeous family may be seen in some of the varieties of the Iceland and Alpine poppies.

While red is the dominating color of the poppies, gorgeous yellow is the striking characteristic of most of the allied members, a few, however, being equally striking white flowers, and in one of the Indian genera, *Meconopsis*, almost every other color of the spectrum. Of wonderful silky or satiny texture, one can almost tell from a glance at the petals whether a given plant is one of the poppy allies; and the relationship is carried generally in the foliage, which is either glaucous or set with coarse hairs. So marked, indeed, is the family relationship that nearly all the other members have been given popular names as being some form of poppy, such as horned, prickly, Matilija, and so forth.

One striking exception to the even tenor of things occurs in the plume poppy, which, entirely devoid of petals, makes a plummy or



The plume poppy (*Bocconia cordata*), the most important tall perennial of the family. Flowers white and plummy, no petals

feathery mass, with a profusion of stamens, recalling the general effect of the thalictrums.

An interesting peculiarity that is characteristic of the entire poppy family is that the flowers shed their sepals immediately upon opening, and further, they all have milky, colored, or specially acrid juice. Aside from any individual preference as to situation and soil, as noted below, the successful cultivation of the poppy allies, as a group, seems to rely upon observing these two factors: Fresh seed, and not transplanting.

TWO GOOD GARDEN ANNUALS

To the amateur, the most important and most interesting relative of the real poppy is its yellow-flowered companion of the Pacific Coast, *Eschscholzia Californica* — the California poppy — a plant that anyone can grow, being of the easiest culture, and thriving in almost any sort of soil. The California poppy is one of the few Pacific Coast plants that is absolutely at home when removed to the Eastern States, perfectly hardy, and even self-sowing at times. Although considered here, and usually treated, as an annual in our gardens, the California poppy is really a perennial, and plants may be carried over from year to year if well protected, such plants giving bloom very early the following spring. On account of the peculiarly glaucous, bluish foliage, it is one of the most valuable plants for edging purposes, and it flowers over a considerable period. The large flowers, two to three inches

across, which open in the sunshine, are produced in great profusion, and have a tone of brilliant yellow or orange that is unmatched by any other hardy annual. It is interesting to note the method in which the extinguisher-like cone, formed by the sepals, is pushed off entire by the expanding flower.

Several varieties have been introduced from time to time, including some almost, but not quite, white; one double form, and more recently, the Burbank varieties, in which a pinkish color has been considerably developed. Other varieties show variation in the foliage and other characters of the plant.

The only other annual genus, from a horticultural standpoint, that is of great importance, is the prickly poppies, *Argemone*. The best-known species is *A. Mexicana*, which has leaves and stems uncommonly like those of the common thistle. The plant grows one to two feet high, but has a sprawling, somewhat ungracious habit. The flowers are borne on very short stems, about two inches across, orange or lemon colored. A native of tropical America, it has become naturalized in the Eastern States and in the Old World. The variety most commonly grown is *ochroleuca*, with much paler flowers.

Growing slightly taller — to about three feet — and practically destitute of prickles, except on the pod, is *A. grandiflora*, with white flowers — a very useful border plant of easy culture, and very useful where any loose-habited, glaucous-leaved plant is wanted. Its cultural peculiarity is a mild disaffection for moist soils; in the Southern States in dry



The California poppy (*Eschscholzia Californica*), the most important hardy annual, having flowers of orange yellow



The Matilija poppy (*Romneya Coulteri*), most beautiful and largest-flowered relative, but difficult to grow



The tree poppy (*Dendromecon rigidum*) is the only true shrub, attaining ten feet in California

situations it becomes a hardy perennial. There is an especially spiny form of this, var. *hispida*. Equally with the California poppy this should be sown where it is to stand, as it shares the peculiarity common to the poppy family of disliking transplanting. Give a light soil and full sun.

Inferior to the California poppy in vigor of growth, in brilliancy and variety of color, and in size of flowers, is the cream cups (*Platystemon Californicus*), which is frequently confused with *Eschscholzia* as the "California poppy." Its chief interest lies in the fact that it is one of the few members of the poppy family having entire leaves; and further, that the petals, instead of falling, wither and remain attached to the ripening fruit. It does not appear to be of easy cultivation in the East.

Very similar is the closely allied genus *Platystigma*, which is also Californian. The flowers are smaller, less than an inch across, and pale yellow. This genus does not seem to be offered in any of the American seed catalogues, and is, in all probability, difficult of cultivation.

THE TWO SHRUBBY KINDS

The delicate beauty and immense flower of the Matilija poppy (*Romneya Coulteri*) is matched only by the single Moutan peonies. Not so large as they, however, the absolute purity of the white petals, with their peculiarly crimped texture, surrounding a great cluster of prominent yellow stamens, and delicate fragrance (recalling that of the magnolia), places the Matilija poppy on a par with it, if, indeed, it is not superior in actual beauty — a shrubby perennial, with deeply cut, glaucous foliage, that does not come to its own because of certain difficulties in its cultivation. Not generally considered hardy in the East, it is grown successfully in Westchester County, N. Y., and in northern New Jersey.

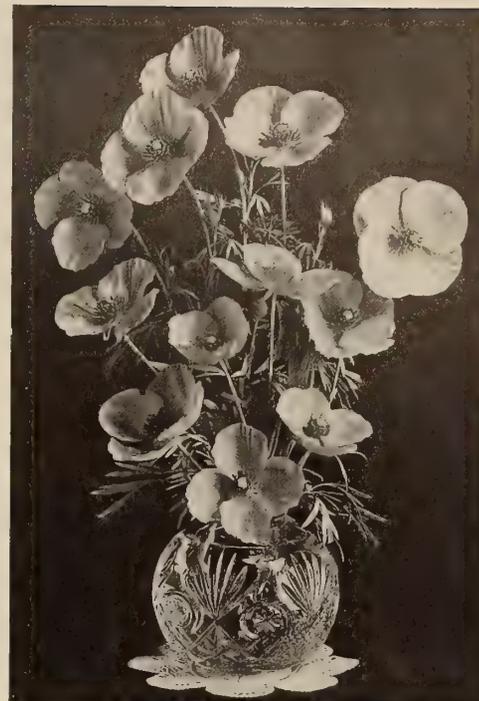
Romneya is difficult to transplant because

it has very few fibrous roots. It has been transplanted successfully when cut to the ground before lifting, and the operation done just before it starts into growth but is still dormant. Surely it is well worth the effort to try to grow this beautiful plant with its flower as large as that of the oriental poppy. The great secret of its success is to get fresh seed, which germinates slowly. Give it a warm, deep, well-drained loam, if possible one overlying rocks. But in regions where the plant is not hardy, the trouble and uncertainty of handling the seed is often more than the final result may be worth.

The only true shrub in the poppy family is another California genus, *Dendromecon*, or tree poppy, which popular name, however, is sometimes applied to the preceding genus. I do not know of anyone in the East who has succeeded in growing this plant, which is only successfully grown in a few isolated spots, even in England. Normally, the flowers are bright yellow, up to three inches in diameter. The plant is said to attain a height of ten feet.

THE BEST LOW PERENNIAL HERB

The nearest approach that Eastern gardens can have to this giant tree poppy is the erect-growing, herbaceous perennial, *Hunnemannia fumariæfolia*, usually treated as an annual, however. It attains a height of three feet or less, and throughout the season is literally covered with its profusely produced



Hunnemannia (H. fumariæfolia). A profuse blooming herbaceous perennial, having yellow flowers all the year

bright yellow flowers, like small editions of the California poppy, to which it shows a distinct alliance, also, in its finely cut and glaucous foliage. Sow seed early in May, and from the middle of July until hard frost the bed will never be without flowers. It is one of the most showy, larger-growing, hardy annuals, that may be wintered over with moderate protection, although it is so easily raised from seed that it hardly pays to do so. It can be grown in the open border in any ordinary garden soil.

THREE WHITE-FLOWERED PLANTS

The horned poppies (*Glaucium*) are a straggly looking lot of plants, mostly biennials — some are perennials — but the two species that are found in gardens are usually grown as annuals. They are low-branched herbs, attaining a height of from one to two feet, with somewhat succulent stems and large flowers of orange-yellow varying to reddish and purple. The flowers fade quickly, but are borne in quick succession. Their proper place in the garden is for foliage effects in so-called sub-tropical beds and borders. The long, horn-like seed-pod is very characteristic. Grown in an open, sunny situation, they will thrive in any sort of good soil. They may be raised by seed sown in the open air. There are two species — one, *luteum*, has yellow flowers; the other, *corniculatum*, red or purplish, with a black spot at the base of the petals.

The rarest of the hardy herbaceous perennials of the poppy family is the Eastern or cyclamen poppy (*Eomecon chionantha*), having white flowers two inches across, borne one foot high on reddish stalks. The "Cyclopedia of American Horticulture" states that "this plant is destined to no great popularity, but interesting to lovers of hardy borders." It is hardy in the neighborhood



The blood root (*Sanguinaria Canadensis*) one of the earliest spring flowers, and a valuable rockery plant

of New York, and would seem to merit attention from plant lovers who like something a little out of the ordinary run. The root-stocks are creeping, like those of our native bloodroot, and increase rapidly. The leaves are all straight from the root, heart-shaped, and very much like those of the cyclamen. William Robinson, in "The English Flower Garden," speaks of the cyclamen poppy as being effective as a carpeting plant beneath tea roses.

The native bloodroot (*Sanguinaria Canadensis*) is almost too well known to need more than mere calling attention to. It is one of the most highly esteemed of our wild flowers, and its peculiar, mealy-white foliage and flower scapes bursting through the



Horned poppy (*Glaucium luteum*) makes a good light edging plant. Note the curved seed pods

ground in early spring, possess a peculiarity that is shared in by no other plant. The solitary, white flowers, borne four to six inches above the ground, are one inch across, and are sometimes inclined to a pinkish tinge. It thrives in moist bottom land, and likes a well-drained, but open, rich soil. It is one of the best plants for rockeries, and should never be grown in open places where its spreading is likely to become troublesome, as the creeping root-stocks will run easily beyond imaginary boundaries. The bloodroot is one of the showiest of our spring flowers, and although usually found in woodlands, is not a true shade-loving plant. The

best time to transplant is after the leaves have ripened, or while in full flower. It is also offered in nurseries. There is a double variety having more numerous and narrower petals, but I think the typical form is preferable.

TWO YELLOW-FLOWERED DWARFS

The common celandine (*Chelidonium majus*), now run wild in waste places, is an old-time garden plant, a low-growing herb, with small, yellow flowers produced in umbels. It cannot be regarded as a valuable garden plant, but is interesting because of its associations. The name suggests that it might probably be called the "swallow flower." The whole plant is brittle, hairy, and the leaves are a light, glaucous green underneath. It grows almost anywhere.

Somewhat resembling this, but much finer in every respect, with larger, brighter yellow flowers produced freely all the summer, and making, indeed, quite a showy plant, is the celandine poppy (*Stylophorum diphyllum*), which makes a stout root-stock. The plant is a hardy perennial one foot high, and makes large, solid clumps. The flowers, two inches across, are produced in clusters of three or five in May and June. One can grow the celandine poppy in any rich, loose soil, especially if in partial shade, but it will thrive in reasonably loose soil even in the open.

THE ONE GOOD TALL-GROWING PERENNIAL

Among the best dozen tall-growing, herbaceous perennials of absolute hardiness, the plume poppy (*Bocconia cordata*) would surely find a place. For, growing six to eight feet high, it serves a purpose in the garden that is filled by no other plant of similar hardiness and general character. The flowers are borne in great, plummy, terminal feathery masses high above the large, bold foliage. For semi-wild and wild effects, the plume poppy is one of our very best plants. It also makes an equally well-furnished plant as a single lawn specimen, and again for massed groups for distant effects, it is equally satisfactory. What, then, are its demerits? Only this one thing do I know: That its greatest fault arises from its greatest virtue.



A field of California poppies (*Eschscholzia Californica*), showing the profusion in which the large yellow flowers are produced. In the east it does almost as well



Mexican poppy (*Argemone Mexicana*). A favorite plant in annual borders. Flowers white, leaves thistle-like

So free-growing it is that, through its rapid spreading by suckers, it may overrun the entire plantation. It should never be placed in situations that are likely to be much disturbed, because every little piece of a sucker broken off will make a strong plant in a single season. One will be much surprised at the stupendous growth that the plume poppy will make if planted in very rich soil, the suckers cut off, and the clump fed extravagantly with liquid manure in the spring. On the borders of woodlands or as a means of quickly planting out fallen tree trunks, etc., no plant is superior.

THE DIGNIFIED INDIAN POPPY

The Indian poppy (*Meconopsis*), apparently not known in American gardens, is another tall-growing biennial, comparable only to the hollyhock, carrying its flowers the entire length of the stem, and of beautiful colors, ranging from pale yellow to bright reddish and violet. There is, however, one representative sometimes met—the Welsh poppy (*M. Cambrica*), a perennial attaining a height of only one foot, and bearing nodding, pale yellow flowers in summer. It recalls very much, in its general appearance, *Argemone*, without the prickly leaves. It grows well in ordinary garden soil if given a sunny situation, and besides being raised from seed, may be propagated by division.

Edible Beans a Yard Long—By Henry Maxwell ^{Connec-}_{ticut}

NOT A MERE CURIOSITY, BUT A GOOD VEGETABLE OF WHICH THE LONG, SLENDER PODS ARE COOKED AND EATEN LIKE ASPARAGUS

ANY man who is careful of his reputation for veracity is inclined to shy away from writing about beans a yard long, for the idea seems preposterous on the face of it; yet there is a pretty good vegetable known as the asparagus bean, which often has pods two to four feet long. These pods are not valued for their seeds, as the ordinary white beans are, since the seeds are few and far between; but the whole pods are boiled and eaten like asparagus, or like the sugar podded peas.

The accompanying photograph, made in Southern California, shows the extraordinary length and slenderness of the pods and the quantity of pods that may be expected in a warm country. "The smaller the product, the better the quality," is the general rule among vegetables, and there is no special point in allowing these beans to grow more than a foot and a half long, as the best pods for cooking are the tender young ones.

These pods are usually straight, but sometimes take very curious twists and turns, so that the specific name of this vegetable (it

is called *Dolichos sesquipedalis*) seems doubly appropriate, for the Latin word "sesquipedalis" means "a foot and a half long," and the very act of pronouncing it requires a certain contortion.

I shall not seriously recommend the asparagus bean for northern gardens in competition with the lima bean, as I believe the latter has greater food value and produces the crop in less time. The asparagus bean is easy to grow and is cultivated like the lima bean, but it requires so long a growing season that it is better adapted to the warmer parts of the United States.

It is only the largest seedsmen who offer seeds of the asparagus bean, and generally the catalogues call it "French Yard-Long." There is also a Chinese form called the Tau Kok, which is practically the same.

The plant grows six to nine feet high, but it must be supported upon poles, as it is a twiner. The flowers are not showy, but are rather interesting. They are rather large, greenish-yellow, and roughly resemble those of the sweet pea, but the standard is bent

backward and the flower is remarkable for having two small parallel, ear-like appendages, which compress the wings and the keel.

A very interesting relative of the asparagus bean is the hyacinth bean (*Dolichos Lablab*), which is cultivated for ornament, because of its showy purple flowers and short, but handsome, pods. This is an excellent annual vine, sometimes attaining twenty feet in good garden soil. The foliage is attractive and the leaf consists of three ovate leaflets.

It is hard to find, even in the best horticultural books, any frank statement of the limitations of any vegetable or ornamental plant. I hope that this article will induce some Southern gardener to tell us more about the comparative yield, flavor, and cultivation of the asparagus and other beans.

Another interesting and unusual vegetable which will appeal to anyone who is anxious to experiment is found in the sugar or edible-podded peas, which might be grown under the same conditions and on the same support as some of these beans.



In Southern California the asparagus bean grows pods four feet long which are cooked and eaten whole. In the East pods may reach one and a half feet

SOUTHERN DEPARTMENT

Chrysanthemums in Georgia

FEW plants produce so beautiful a display of large flowers with as little trouble to the grower as the chrysanthemum, and their already great popularity with Southern people is rapidly increasing.

In this section, chrysanthemums will succeed on any garden soil if planted in a sunny situation, but their preference is for a rich loamy soil that is neither too dry nor too wet.

Two or three weeks before planting, spade up the soil at least a foot deep and spread well-decayed manure over it, digging it in at once. Select and order the plants at least



The large-flowered chrysanthemum is one of the best border flowers in the South, succeeding everywhere. Plant in March

two or three weeks before they are actually needed, and specify exactly when you want to have them sent. By sending your order in early you will get better plants, for the first orders received are usually the first ones filled. Always buy the named sorts.

Plants can be set out at almost any time during the winter when the soil is not frozen, provided they are covered lightly with straw, but the best time for this work is during the early spring. I prefer March to any other month.

Where the bed is to be devoted to chrysanthemums only, and the soil is not very wet, set the plants eighteen inches or two feet apart each way; but if they are to grow

in a mixed border, allow a space of sixteen inches. Be careful to firm the soil about each plant and shade the plants for about a week after they are planted out. When they begin their growth keep the soil free from weeds and grass by giving a thorough cultivation at least every two or three weeks until the first of September.

During the hot, dry weather the plants must be mulched with oat straw or green grass to keep the soil cool and to aid in holding the moisture. If it becomes necessary to water the plants in order to keep their growth from being checked, make trenches on one side of each row three or four inches deep, five or six inches wide, and the length of the row, and apply the water in these trenches late in the evening two or three times a week. Allow at least a gallon of water for each plant, and cover over the trenches after the water has thoroughly soaked into the soil. Remember that a light watering is worse than none.

To keep the plants from being beaten down by the wind and to hold the flowers well up from the soil, put a strong stake in the ground at each plant and tie the plant to it loosely.

If big flowers are desired, do not allow more than three shoots to a large plant and two to a small one, though better results are had with just one to a plant. Keep all the buds cut off except one or two of the central ones to each shoot. Give liquid manure (or nitrate of soda) every week or two from the middle of August until large-sized buds have formed, allowing one gallon of liquid manure (or one-half ounce of nitrate of soda in a gallon of water) to each plant. The flowers produced are about double the size of those not disbudded and given the fertilizer.

After the flowering season, spread coarse, straw manure lightly around each plant, not only to protect them from possible freezing, but also to aid in promoting a rapid, healthy, sturdy growth the following spring.

A Trial Ground for Cotton

COTTON would certainly be a paying crop if Southern farmers would plant only the best improved seed. You will find it cheaper in the end to pay as much as a dollar a bushel for seed, provided, of course, that the variety purchased is suited to your soil and section. Have your own trial patch and buy the seed from a reliable grower near by. Small packets containing two or three ounces of seed can be obtained, however, from almost any seed house for five or ten cents apiece.

Continue the trial patch from year to year, and experiment with seed corn as well as with cotton. If you expect to give the improved seeds a trial, it would be better to order them now.

The cotton and corn culture bulletins of the various state experiment stations are also very helpful in selecting varieties for planting. They are free, and anyone can have them sent to him regularly by applying to the director of his state experiment station.

Fertilize fruit trees, vines, shade trees, rose bushes, and other shrubs now. Don't spread the fertilizer too close to the tree or vine, and do not leave it unmixed with the soil. In that condition it will be likely to injure the trees.

A fertilizer rich in nitrogenous matters should be used when a great amount of growth is desired; but if flowers or fruit are wanted, use a fertilizer rich in potash and phosphoric acid.

In my opinion the frame cucumber is the best for the table. Plant the seed the last week in the month in open ground, as in this vicinity it must be started early to succeed in open ground. If cool, frosty weather comes, spread thick paper over them at night. Keep the soil loose and free from weeds and the plants well supplied with water during dry weather. They will produce fine fruit over a long season provided none is allowed to ripen.

Georgia.

THOMAS J. STEED.



A Seed-Bed for Annual Flowers

INSTEAD of scattering seed broadcast when making your garden, why not make a little seed-bed and transplant from that the largest and best plants as they are needed elsewhere?

If you sow seed broadcast the plants will come up too close together, and few people have the moral courage to thin them out properly — it seems such a waste of good material — but if it is not done promptly and rigorously the result is sure to be spindly plants and few flowers.

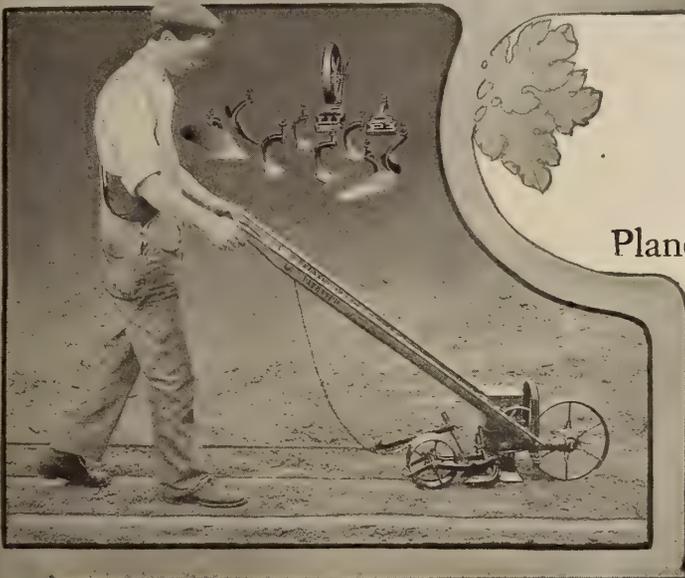
Make a seed-bed for your annual flowers in a shaded place near the house, where you can watch it daily. Transplant from this whenever gaps in the garden occur, and see if you do not get better results.

New Jersey.

GEORGE JACKSON.



Make a seed-bed for starting plants, from which you can transplant later as gaps occur elsewhere



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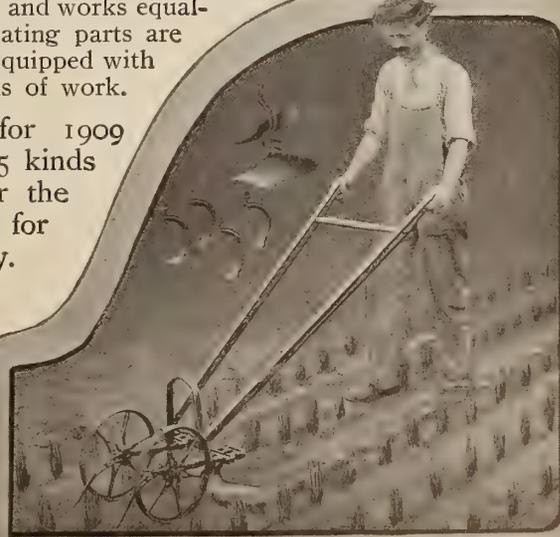
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Some Garden Annuals that will Self-sow

ANYTHING that self-sows makes a strong appeal to the amateur because of the saving of time, effort, and expense for seed, with the certainty of results. Some annual flowers that may be relied upon to reappear after having been once sown are obviously valuable in the hardy border. The wisest way to start a bed for these flowers is to set aside a strip of ground about a yard wide and of any length, procure the best possible seed, and sow it not too thickly. As the plants bloom all those showing flowers of undesirable shapes and colors should be pulled out as soon as discovered. Keep the ground well weeded and worked early in the season so that as the seeds ripen they will have a mellow spot upon which to fall. After the ground freezes in the fall a covering of coarse material should be placed over the entire bed, removing it before the plants start into life in the spring. After the late-starting sorts have had a chance to show, the finest plants are transplanted to form rows or borders elsewhere, the poorer plants, properly thinned, being left in the bed to supply cut flowers.

Cornflowers furnish one of the rarest colors seen in gardens — a bright, clear blue — but the second generation often shows new and attractive combinations. Twenty different shades have been counted in a self-sown garden, among them pure white, bright pink, a dark dahlia-like red, lavender, and stripes of every shade. Cornflowers have an early and long-continued season of bloom; the seed germinates readily, the plants are of great hardiness; they are easy to transplant and to cultivate, and, when not overcrowded, form strong, upright bushes, two feet or more in height, and make a very satisfactory border if set out in small clumps a half yard apart. A wider and more striking border can be made with a double row, one or two yards in breadth. In July trim back severely the plants from



Morning-glories persistent self-sowers, are useful for screening unsightly objects

which flowers are to be cut and on which the seed is not to be permitted to ripen. Preserve a few choice plants for next season's supply of seed, and under these every fall will be found dozens of seedlings which will bloom the following May, a month before spring-sown seed will have reached the flowering stage. A late planting of cornflowers will bloom for weeks after early frosts.

Sweet alyssum, when full grown, is actually covered with bloom, a dome-like mass of white, measuring a half yard across.



Larkspurs, with pink, purple and white flowers, from one parent plant were enough for a sixty-foot border

The plants begin to flower when an inch and a half high, and keep at it until long after the first frosts have blackened tender annuals. They are not specially useful for cutting, but make an excellent edging and self-sow lavishly.

Another plant of the same general size and shape as alyssum is portulaca. Portulaca makes a rather late appearance, germinating after earlier plants have made a good start, but the two will be blooming simultaneously during a good part of the season. If both be set out alternately, one foot apart, the tender portulaca may be removed after the early frosts have destroyed it, and the alyssum will preserve the appearance of the border until severely cold weather checks its growth.

More than enough plants of annual larkspur were supplied by a small patch of seedlings, sown by one plant, to make a border sixty feet long. They were pink, purple, and white; in the second generation many pink flowers, with decided purple streaks, appeared.

The poppy is splendid for an irregular bed if it can be left where it starts. It



Portulaca seed germinates rather late, but the plants bloom profusely till frost

is almost useless to attempt to transplant it, for, unless the plants are lifted in clumps, while very small, and on a wet day, the roots will be exposed and they will either die outright, or linger along, stunted and yellow, an easy prey to aphides. It is much better to sow the original plants where they can self-sow and be left undisturbed the following summer. Even those that germinate in the fall will survive the winter if covered lightly, and will be large, blooming plants before the spring-sown seedlings are more than a few inches in height.

Morning-glories are persistent self-sowers to the point of becoming weeds, but they are attractive for screening unsightly places. All the varieties seem to be equally reliable in this respect.

Nasturtiums do not self-sow as freely as the plants already mentioned.

Gourds are always useful as screen plants to transplant when very small. Calendula (all shades of yellow) blooms until snow flies, the second generation showing stripes and markings of darker color. The flowers of coreopsis are rich in color and have a remarkably airy appearance on their slender stems. Marigolds, four-o'clocks, balsam, verbenas, and petunias are commonly known, and each one self-sows satisfactorily.

A small patch of self-sowing vegetables supplies a profitable experiment. Lettuce, mustard, tomatoes, and squash frequently yield a crop of importance from self-sown seedlings. Pumpkins, potatoes and corn also occasionally self sow.

New York.

I. M. ANGELL.



A double row of alyssum, with a row of portulaca between

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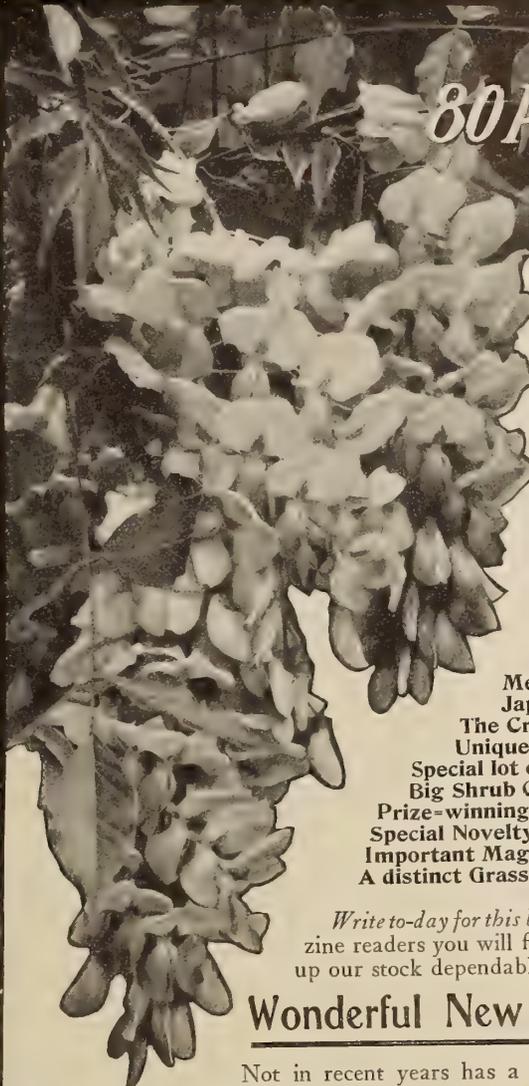
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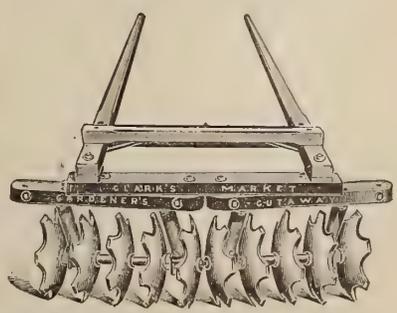
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Wild Flowers Worth Improving

II. — Annual and Biennial Gentians

THE most beautiful of all native American gentians, in the popular estimation, and the most difficult to grow, is the fringed gentian (*Gentiana crinita*). This is often considered the most beautiful blue wild flower of America. Strictly speaking, however, the color is more nearly violet. The peculiar beauty of the flower is due largely to its long fringes, which are often compared to eyelashes, and to the exquisite bud which winds and unwinds in the most fascinating manner as the flower closes at night and opens in the morning.

A gold medal was awarded by THE GARDEN MAGAZINE to Mr. Thomas Murray for discovering the process of raising the fringed gentian. A full account will be found in the Christmas number for 1905. In brief, the directions are as follows: Sow the seeds the first week in April in a flat filled with sphagnum moss. Never sprinkle water on this, but when the moss gets dry, dip the flat into a tub of water, and let the water rise slowly through the drainage hole in the bottom. In about six weeks the seedlings will be the size of pin heads, and then must be transplanted and set about two and a half inches apart. Two months later they will be ready to move into 4-inch crocks. They are wintered in a frame, and the following spring set outdoors in their permanent quarters.

I hope that Mr. Murray and others will be able to establish the fringed gentian in some situation where it will "self sow," as the ideal is to produce great colonies containing thousands of flowers, such as we sometimes see in the wild. I therefore suggest that the seeds be sown on the snow in early winter.

This judgment is based upon twenty-four years' experience in collecting gentian seeds. I believe I have established the fact that the occasional failure of fringed gentian seed is generally due to their being caught by a severe frost coming at an unusually early date. The fringed and closed gentians often continue to flower after the middle of October. The seed-pods ripen so slowly that they remain soft long after frosts have killed cucumber and tomato plants. They are able to withstand a remarkable degree of frost, but if it is cold enough to make ice before the pods are fully ripened, the pods will be cooked. The ruined seeds may be

known by their light weight and small size. As a general rule, the seeds are not well-ripened until after our early snows. They then continue in the dry, dead pods until suitable weather comes for their dispersion, when the pods will slowly open, beginning at the top.

The seeds are carried by the winds, the process being aided in the perennial gentians by the narrow wings of the white or yellowish flat seeds, and in the annual gentians by the black, rough, scaly furriness of the angular seeds. So long as the seeds of the fringed gentians are borne onward by the strong winter winds, their peculiar covering helps them along, but as soon as they fall upon the snow, especially in crevices in rough snow, they stick. Let a warm day come in winter, and you will see the snow melting about these black, rough, scaly, furry seeds, for their covering has the same effect upon the snow as a black piece of woolen cloth — it absorbs the heat rays of the sun, and thus causes the snow or ice to melt.

Everybody knows that the fringed gentian is erratic — you cannot be sure of finding the flowers where they grew last year. But by imitating the process above described, I believe that country gentlemen can be reasonably sure of having a big display of fringed gentians every year.

The finest fringed gentians I have ever seen grew in sandy soil where the water level was within a foot of the surface in quite dry weather.

What a great achievement it would be if some plant breeder would cross the fringed gentian with a perennial gentian, so that the



The fringed gentian (*Gentiana crinita*) is the most beautiful native blue flower. Can be grown from seed

exquisite flower of the former would become associated with a plant easy to grow and easy to keep indefinitely! No one knows, of course, if this is possible. Yet there are instances in other families of annuals that have been crossed with perennials, and with that hope in view I shall describe the perennial gentians in another issue.

OTHER DESIRABLE VARIETIES

Meanwhile, however, I wish to point out the merits of two other gentians — one annual, the other positively a biennial in some places, but said to be annual in others, which might possibly be more easily crossed with the fringed gentian.

The stiff gentian, or ague-plant (*G. quinquefolia*), has the great merit of being easily grown from its round seeds. The flowers lack the beautiful fringe and are smaller, but they make a fair mass effect, the numerous branches bearing the flowers in clusters of about five, whereas the fringed gentian has only one flower on each branch.

The most desirable form of this species is the western (*G. quinquefolia*, var. *occidentalis*), which grows twice as high as the eastern (two or three feet). In some parts of the country it is said to be an annual with blue flowers, but in southeastern Michigan it is positively a biennial — the first year bearing simply a whorl of very broad leaves flat on the surface of the ground, becoming in the autumn of the second year a tall, very branching plant, bearing very many light reddish-purple flowers.

The smaller fringed gentian (*G. detonsa*) is a very rare and lovely flower, having the petals strongly fringed at the sides, but around the apex they may be simply notched or even entire. Dr. Britton figures a beautiful form of this gentian in which the apex of each petal is regularly fimbriated, giving a lace-like effect to the flower. I have not seen this gentian for twenty years or more. It was common in southeastern Michigan when I was a boy, but in my locality, so far as I know, it has entirely disappeared because of pasturage and draining. As I remember it, the branches started mostly from near the ground, always curving outward from the stem, very unlike the branches of the larger fringed gentian, which rise at a sharp angle, this making these species easy to distinguish even when not in flower.

Michigan.

W. A. BROTHERTON.

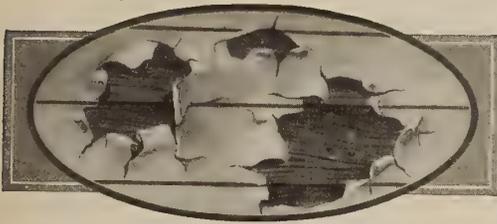
Toads for the Pea Louse

A FEW years ago my garden peas were badly infested with the pea louse. I put several toads in the garden, and in a very short time the lice had disappeared. It was amusing to watch the toads at work; they would jump as high as they could on the vines, shake down the lice, and then feast on the result of their labors.

I should advise Mr. Howard Earl, whose article about the louse on nasturtium vines appeared in the January, 1909, number of THE GARDEN MAGAZINE, to try this simple remedy.

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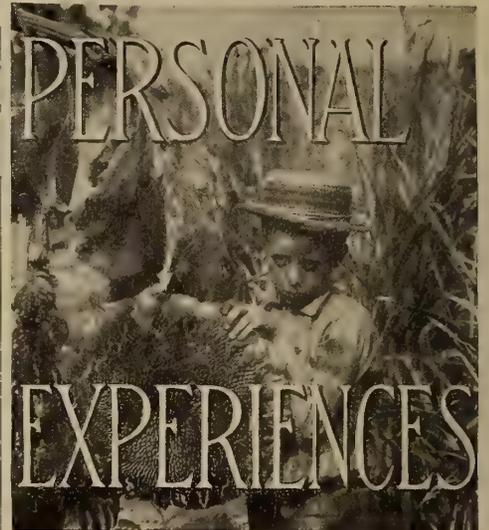
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Rooting Cuttings on the Kitchen Stove

I HAVE found it so hard to root slips or cuttings in wet sand in the house in the ordinary way that I have been trying a new method by utilizing the heat from the stove to help the rooting of geraniums and salvias. A large saucer belonging to a common earthen flower-pot was filled with two-thirds sand and one-third rich potting soil. This was made very wet, and after the cuttings were inserted the saucer was set on two bricks laid side by side on the back of the kitchen range, where the fire is kept night and day. The temperature of the bricks during the day averaged 78 degrees. A piece of sheet iron was put between the saucer and the stove pipe, and if the fire became very hot the saucer was placed for a while on a shelf back of the stove. The first few days the soil was kept wet, after that only moist. A 10-inch saucer will hold twenty-five cuttings.

The two geraniums that provided the slips were old ones that had been taken up the preceding fall. The salvia slips were from a plant that was also lifted very late in the season. When it was cut back the



How an amateur can give "bottom heat" in rooting cuttings of geranium, salvia, etc.



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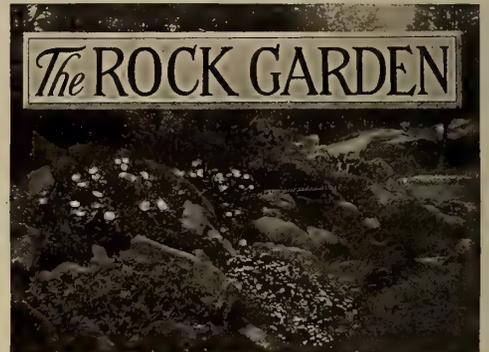
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first of March I got fifteen good slips from it. The cutting back did the plant good, for a vigorous new growth started, and on the twelfth of April ten more slips were taken from it, making twenty-five young plants from the old one. The local florist charged \$1.25 a dozen for bedding plants, so I estimated that mine were worth \$2.50; and they proved to be better plants than those sold by the florist because they were pinched back and hardened off before being planted out-of-doors.

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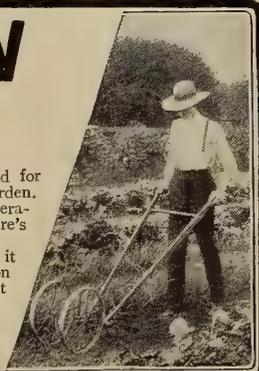
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WE OWN EXCLUSIVELY FIVE SUPERIOR COPYRIGHTED FRUITS, in themselves worth a fortune—U. S. Standard Plum, Money Maker Plum, Pure Gold Peach, Uncle Seth Strawberry and Frank's Currant. Each of these magnificent new fruits, which can be obtained only of us, is superior to anything else in its class, and all have stood the most severe tests, receiving unstinted praise from fruit-growing experts. Complete line of nursery stock.

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in an "Old Hickory"—just once? Then you'll know the real comfort of an "easy chair" that is easy! Enjoy that elastic, springy feeling—like the gentle sway of the young tree itself.

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hardy enough to withstand the alternate freezings and thawings of the cold northern winters and will do well on an ordinary rockery, among them being the moss pink, rose moss, rock cress, sea pink, etc.

The forget-me-not is extremely satisfactory on a rockery, and gives a profusion of flowers. The accompanying photograph shows it planted with primroses in a Massachusetts garden.

Maine. SAMUEL JOHNSON.



Tomatoes on Irrigated Land

THE wisdom of intensive culture on irrigated lands has been demonstrated by the Arizona Agricultural Experiment Station near Yuma, Arizona. The ground on which the experiment was conducted was a warm, sandy loam, which had been leveled and irrigated the preceding fall. One-half acre of ground was laid off in borders two feet wide, with ditches between of the same width.

Burpee's Quarter Century and Dwarf Champion tomatoes were grown, these bushy varieties being best adapted to the climatic conditions. More diffuse and branching sorts lose blossoms and fruit by sun-burning, as soon as the hot weather sets in. Part of the plants were started in a coldframe and transplanted to the open field in March; others were sown directly in the open ground as soon as danger from frost had passed.

The plants were set two and one-half feet apart in a row on the edges of each of the raised borders, the whole half acre containing about 3,300 plants. The crop began to ripen early in June, harvesting continuing during July and until the first week in September.

The quantity of fruit harvested and sold from this half acre during the season was 13,530 pounds, not including 1,800 pounds of waste fruit cracked by rain storms. The bulk of the crop brought from two to six and a half cents a pound at Yuma, according to market conditions. The first fruits, picked about June 10th, sold for thirty cents a pound.

The total receipts for the crop were \$624.60; the cost of seed, irrigating water, and shipping boxes was \$72.72. The profits would have been not far from \$550 for the small farmer who could have managed this half acre with very little outlay for labor.

Arizona.

R. H. FORBES.

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Adams' Little Green Book is more than a seed catalogue; it is a pocket manual for the amateur gardener, containing a list of seeds that you want to know about without the trash and the uncertain varieties. Instead of confusing lists that interest the market gardener alone, my little book gives a selection of flowers and vegetables, the best tested and known varieties in each class. Furthermore it tells the real truth about each variety.

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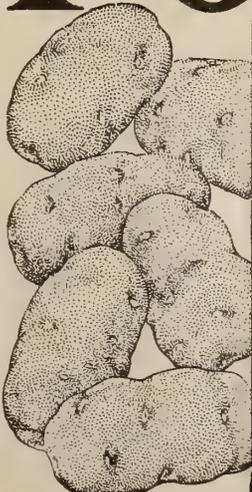


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Ideas vary as to what constitutes a good cow—whether she should produce large quantities of milk or an excess of butter fat. A dairyman once tested two cows which were being fed the same ration. One showed 5 per cent. and gave seven pounds of butter fat in ten days; the other tested 3 per cent. and gave ten pounds of butter fat in seven days, which showed that the 3 per cent. cow was worth about twice as much as the other.

With a milk scale and Babcock tester one can ascertain at any time whether the cow is paying for her maintenance. A quart of milk containing 5 per cent. of butter fat should weigh 2.14 pounds; if the butter fat content is less the milk weighs slightly more, and vice versa. A quart of the average skimmed milk weighs 2.1635 pounds.

If the cows are housed in a well-ventilated barn, and fed a liberal balanced ration during winter, there should not be any great shrinkage in the milk supply. Water the cows twice a day with clean, pure water, and give them ample bedding. If the cows are fed before milking time, be sure to allow all the dust to thoroughly settle before commencing to milk.

As soon as a cow becomes a losing item, get rid of her, but keep her as long as she earns her board, no matter what her age may be.

Ohio.

G. S. J.



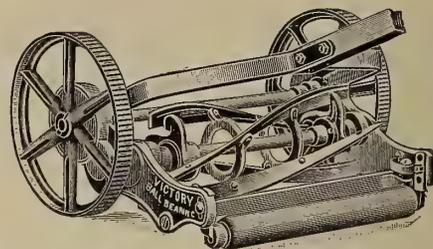
The Hoop-petticoat Daffodil

THE accompanying illustration shows a lovely little pale yellow flower known as the hoop-petticoat daffodil, from the extraordinary width of its crown. In this case the petals or perianth segments are reduced almost to insignificance.

The hoop-petticoat flowers during three and four weeks of April and is sometimes grown outdoors in America, especially on rockeries, but is better suited for growing in pots for indoor bloom, as this species requires better drainage than the common daffodils.

Unlike the ordinary daffodils, this little

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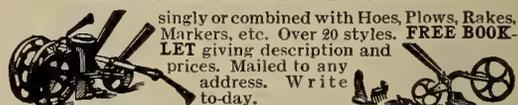
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The hoop petticoat, a pale yellow daffodil with an extraordinarily wide crown and small narrow petals. It is easily grown from seed and blooms in three years (*Narcissus Bulbocodium*)

hoop petticoat is easily grown from seed, and blooms in three years instead of six or seven. Use a gritty or sandy soil, and put plenty of drainage material into the pot.

There are two varieties of the hoop petticoat—one a light lemon color, and the other a deep yellow or orange color. The leaves are almost round, instead of being flat. Ohio. D. P. H.



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It is a light golden variety, and produces an abundance of large, well-formed ears. Matures in ten weeks. Plant at intervals to secure succession of crop. No matter how many other varieties you have, make room for a few hills of this variety, and next year you will plant no other.

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Trial packet, enough for 35 hills, 10c. Half-pint, 20c; pint, 35c; quart, 65c. 15c per ear.

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Mother Nature develops her sturdiest children on the mountain plateaus, and they carry the vigor of the hills with them when transplanted to the plains and valleys. Experience has shown that trees, shrubs and plants grown in high elevations are remarkably hardy and vigorous when transplanted to lower levels, growing year after year in the new locations with scarcely diminished vigor.

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Is located in the heart of the Southern Alleghenies, where the fertile soil, long season of growth, and short, sharp winters give its product unequalled hardiness and vigor. The plants, trees, shrubs and vines grown in this nursery have been widely purchased by discriminating buyers who bear witness to their possession of quality.

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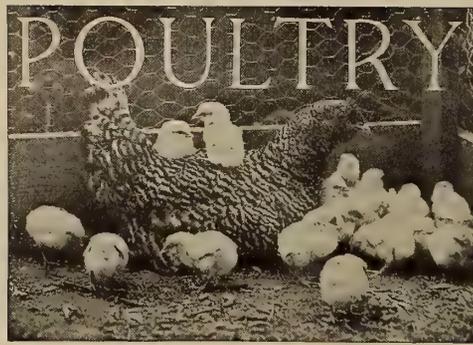
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A Profit of \$3.28 per Hen

AT THE Poultry Institute held in Rocky Ford by the Colorado Agricultural College, O. C. Frantz gave a statement of his experience with poultry which shows the profits under skilled management. Mr. Frantz started January 1, 1908, with ninety White Leghorn pullets. In the seven months ending July 31st, they laid 10,730 eggs, an average of 119 eggs per hen.

He spent for feed, grit, advertising, and incidentals for his hens and for 500 chicks which he hatched, \$170.96.

During the seven months he sold eggs for \$326.37, chickens for \$107.15, and used in the family eggs worth at market price \$33.15, a total gross receipt of \$466.67, and a net return above cost of keep of \$295.71. This is a net return in seven months of \$3.28 per hen.

Mr. Frantz sold many of his eggs for hatching at breeders' prices. Figuring the eggs at market prices they would have brought \$214.60, and the cost of keeping the hens alone was \$78.75, a net profit in seven months from ninety hens of \$135.85 — \$1.50 per hen.

Mr. Frantz exhibited a pen of five months' old pullets at the Poultry Institute, August 22nd, and all of them laid eggs during the meeting. He intends gradually to enlarge his plant to the full capacity of his land.

Colorado. H. M. COTTRELL.

Preserving Eggs for Next Winter's Use

WHEN eggs are plentiful and so cheap that they hardly pay to sell, any surplus should be put away for next winter's use when the price will be high or against the time when the hens do not lay. If the eggs are perfectly fresh when stored they will have the flavor of newly laid eggs when taken from the preservative next winter.

Water glass (sodium silicate) is perhaps the best preservative for eggs. A solution containing from 2 per cent. to 5 per cent. of water glass gives the best results. To make dissolve two to five pounds of water glass in ten gallons of water.

The eggs must be completely immersed in this solution. Although not necessary to the preservation of eggs in a sound condition, a temperature of 40 to 45 degrees will materially assist toward retaining good flavor, or rather counteract any risk of that stale

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If you love flowers, you should by all means send for my new catalogue. It will be sent to any address upon request. It describes over 1000 varieties, the kind of plants that will stand the cold because grown in cold Vermont. We sell only the hardiest of hardy plants. Write to-day for a copy.

Here are a few of the hardy plants we sell, the kind that will last for years:

Lilies, Perennial Larkspurs, Columbines, Wind Flowers, Hardy Ferns, Perennial Phlox, Wild Assters, Perennial Sunflowers, German and Japanese Iris, Paeonies, Evening Primroses, Wild Violets, Hardy Pinks, Roses, Shrubs, Trees, Vines, and hundreds of others.

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40 cts. in postage stamps together with the name of your dealer will bring you, postpaid, direct from the manufacturer, a fresh sample brick of

Lambert's Pure Culture MUSHROOM SPAWN

the best high-grade spawn in the market, together with large illustrated book on **Mushroom Culture**, containing simple and practical methods of raising, preserving and cooking mushrooms. Not more than one sample brick will be sent to the same party. Further orders must come through your dealer.

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Send for catalogue of all the really beautiful hardy perennials, the best hardy Shrubs and Roses.

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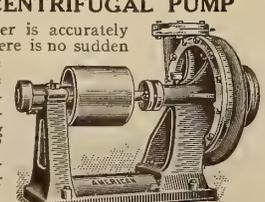
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I have had many other letters from persons whom I have taught how, and I want to help you. My lessons on "Success with Flowers for Pleasure and Profit" tell just how to grow and market flowers. Start early! Write today for full particulars, which I will gladly send free, enclosing two-cent stamp for postage.

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Young trees may not equal the old ones in size and beauty during your life. Insecticides, fertilizers, bolting, pruning, tree surgery, and cavity-filling are only part of the practical means of restoring sick and dying trees to health and beauty. We examine estates, suggest improvements in planting new stock, and direct the work of saving diseased trees and shrubs. Trained assistants equipped with proper tools are furnished when desired. A booklet entitled "The Care of Trees" is sent on request.

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AFTER TREATMENT OF CAVITIES

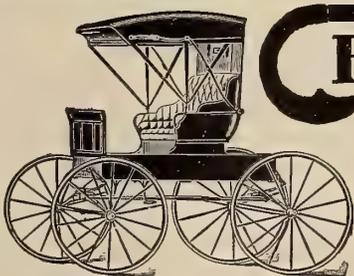
HARDY NEW ENGLAND GROWN NURSERY STOCK

WE GROW EVERYTHING FOR PLANTING THE HOME GROUNDS
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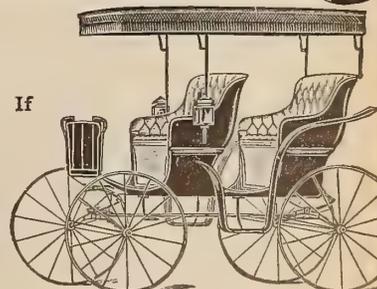
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that is

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Lens and shutter and camera all play their part, but upon the film depends the picture. Insist upon Kodak N. C. Film, the film that has twenty-five years experience behind it—the film that is *not* in the experimental stage.

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ON THE SPOOL END

LOOK FOR KODAK



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For Ornament, Usefulness and Profit

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Everybody Needs Them. Anyone Can Grow Them.

Among our thirty acres of Perennials and Old Fashioned Flowers we grow Herb Plants of all kinds commercially. If they interest you, send 50c and we will send by mail seed and plants of ten best sorts with our booklet of Herbs telling some of their Folk-lore history, general usefulness, cultivation, etc. and our economic price list of Hardy Old Fashioned Flowers.

PALISADES NURSERIES

Dept. 3. Sparkill, N. Y.

flavor, so often characteristic of packed eggs. The months from March to June are perhaps the best for preserving, but it may be done at any time.

It has been shown by experiment that unfertilized eggs can be better and longer preserved than fertile eggs, and they bring a better price in the summer, for the reason that they possess a more agreeable flavor.

New York. G. C. HOWARD.

How to Be a Chicken Fancier

IN SOME localities, a considerable business is done by enterprising farmers in raising pure-bred poultry for near-by fanciers. Some of the latter have small places, and are not able to raise the number of chickens required for their business, or to give them the free range requisite for their best development. Some fanciers, too, handle several breeds, and like to have different breeds raised on separate farms. This is the farmer's opportunity. Sometimes the fowls are turned over to him already mated for business, his work being to produce the eggs, then turn them into chicks to be raised into the future prize winners. Many a farmer has become a fancier himself by this means. Many have found it a profitable business proposition, and there is opportunity for many more. Methods of paying for this service vary, but in general, something above the price of straight market poultry is realized.

Ohio. W. D. S.

Whitewash as a Disinfectant

NOT only in the spring but all during the year chicken houses and coops need to be kept clean and free from any possible chance of becoming infested with vermin. Whitewash is the best and easiest thing for the purpose, and can be made without much trouble. Slake half a bushel of lime, covering it to keep in the steam; then strain. Dissolve a peck of salt in warm water, and add to the lime. Boil three pounds of rice to a thin paste, and stir this in while it is hot. Add one-half pound whiting, one pound of dissolved glue, and five gallons of water. Stir well, and let it stand for a few days.

If brooders have been in use during the winter, clean them thoroughly before storing. Use the whitewash for them also, but add one ounce of carbolic acid as a disinfectant.

Illinois. G. SHERMAN.

Tile Drainage

NO other single improvement in the management of New York soils promises to give as large net returns as thorough drainage," says Elmer O. Fippin, who is urging people to try tile drainage. We will pay \$25 to any amateur or private gardener who will send us a first-class, true story of experience with tile drainage in a home garden. Write to the Cornell Experiment Station at Ithaca, N. Y., for a copy of Mr. Fippin's bulletin, and see if you can't apply it to the home garden.

Imitation is
not always
Flattery



PEARLINE

IS THE ORIGINAL WASHING POWDER. DO YOU THINK IT WOULD HAVE BEEN SO WIDELY IMITATED IF IT HAD NOT JUSTIFIED OUR CLAIMS?

Every Inducement is offered to buy Imitations of PEARLINE but one—More Bulk, Less Price, Brummagem Jewelry, Knocking at Doors and Ringing of Door-bells, no end of Begging and Teasing by Peddlers and Coupons—

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PEARLINE needs no such Helps. PEARLINE does More Work and No Harm; it Costs Less Money a Wash-day, any Day, a Week, a Month—a Great Deal Less a Year; for it keeps your Clothes like New, even Better than New as to Color; Keeps you Young; Saves Wrinkles—all but the Cheerful ones—Makes them!

WHICH SORT OF WRINKLES DO YOU PREFER: THE TIRED OR JOLLY ONES?

THIS IS FOR YOU TO ANSWER—TELL YOUR GROCER.

Thorburn's Seeds

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The opinion of a new customer in Louisiana.

No reason why this should not be your experience.

Send for our Catalogue in any event. It is different from other Seed Annuals.

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LIKE A THIEF AT NIGHT THE CREAM SEPARATOR THAT CAN'T SKIM CLEAN

Dairy authorities the world over agree that the centrifugal separator is indispensable to the man who owns milk cows. And why? Simply because it saves his cream, hence his money. The more cream saved, the more money, that's sure. But unfortunately, many separators do not save all the cream. And worse still, the biggest of claims are made for these machines. Such separators are like a thief at night or the pickpocket who, with an innocent face, rubs our elbow and then robs us of our wallet. Because of inferior and out-of-date bowl construction, these separators, unknown to the users of them, daily lose a big percentage of the cream.

It is easy to be deceived into buying a "pickpocket" separator, but it is just as easy to avoid buying one if we will but take the advice of those whom we know are experienced separator judges. 99½ per cent. of all expert creamery-men, butter manufacturers, and real separator authorities living to-day use DE LAVAL separators exclusively, for they have learned by experience that the DE LAVAL is the only separator that will save all the cream all the time under all conditions. And the reason for this fact is plain. It is found in the improved patent protected DE LAVAL "Alpha-Disc" separating bowl. It is different from any other bowl, and its peculiar construction is the secret of DE LAVAL clean skimming. Ask for our illustrated catalog which explains the DE LAVAL bowl in detail, as well as many other interesting features.

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THIS IS A CATALOG THAT EVERY ONE WHO IS GOING TO PLANT TREES OR SHRUBBERY SHOULD HAVE
 WRITE FOR IT



THE WM. H. MOON COMPANY
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Nursery News from Rosedale

Roses for Your Garden

Planting time will soon be here — make your plans now. If you want roses — and no garden ever contained too many — remember that roses are the specialty of the Rosedale Nurseries. The illustration above, from a photograph, shows how well Rosedale Roses grow in cold Minneapolis. We are now offering more than 200 superb kinds, including world-famed Irish Roses imported direct from Dickson & Sons of Ireland. When you buy Rosedale Roses you secure strong, thrifty plants that bloom in profusion. Complete directions for their care are supplied to our customers with every order.



Evergreens for Your Yard

Nothing frames a home more prettily than the right selection of evergreens, tastefully arranged. If a tree is not perfect we burn it, because we will not hurt our reputation by selling poor stock. In the Colorado Blue Spruce we have the genuine Koster variety, also the new pendulous form. Other specimen evergreens, Box and Formal Trees, Azaleas, Maples, Lindens, Poplars, etc., in full selection of varieties, and the best Shrubs and Vines for immediate effect. Our landscape specialists will gladly advise you as to the most effective way of decorating your grounds.

My new illustrated catalogue will interest you; contains over 100 superb photo engravings gives correct gardening methods — insures success from the start. Mailed, postpaid on request.

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TRINIDAD LAKE ASPHALT

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Genasco Ready Roofing

Genasco is the stuff that makes your roof proof against leaks and repairs. There is no mystery about what it is made of. You know Trinidad Lake Asphalt—and you know it makes roofing that lasts.

Write for samples and the Good Roof Guide Book. Mineral and smooth surface. Ask your dealer for Genasco. Insist on the roofing with the hemisphere trade-mark, and the thirty-million-dollar guarantee.

THE BARBER ASPHALT PAVING COMPANY

LARGEST PRODUCERS OF ASPHALT AND LARGEST MANUFACTURERS OF READY ROOFING IN THE WORLD



PHILADELPHIA
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Do You Know this Plant?

II.—THE TURQUOISE BERRY

THE turquoise berry (*Ampelopsis heterophylla*) is a hardy deciduous vine native to eastern Asia. In habit it is much like the grape and does not climb very high, though it sometimes reaches a height of from ten to twelve feet. The leaves are ovate in outline, with slight lobes, or deeply three- to five-lobed. The upper surface of the leaf is smooth and of a satisfactory green. The flowers are small, greenish, and of very little value. The fruit is abundant, about the size of a pea, and extremely attractive. In color it varies from pale blue to peacock blue, and some of the shades are most enchanting. The berries are borne abundantly each year. They ripen in late September or early October and retain their charm until touched by frost.

When once established this vine is a strong and quick grower. For best results it needs somewhat severe pruning in the spring. It is particularly desirable for growing about rocks, over walls and fences, and on low lattice work.

Massachusetts. DANIEL A. CLARKE.

5 Strong, Hardy, Three-Year-Old GRAPEVINES \$1.00 SENT PREPAID



No garden is complete without a few grapevines. It is not much trouble to grow grapes, and we offer you five strong, hardy, three-year-old vines for \$1.00. These vines will bear the year after planting. They are the best varieties, as shown by the following list, from which a choice can be made:

(Red) **Brighton, Delaware, Lindley**; (White) **Niagara, Diamond, Pocklington**; (Black) **Concord, Worden, Moore's Early, Wilder**.

We carry the largest stock of grape vines and small fruit in the country, and we have a national reputation for selling only choicest varieties. All our vines are guaranteed to be just as represented or money refunded. Order now and vines will be sent proper time to plant.

We also offer 10 strong, hardy, two-year-old vines for \$1.00, sent postpaid. These vines will grow anywhere. Just what the farmer needs for planting along fences and buildings. With every order we send our valuable booklet full of information about grape culture, pruning, etc. Grapevines add beauty and value to the place, and furnish fresh fruit for the table.

T. S. HUBBARD COMPANY, Grapevine Specialists, FREDONIA, N. Y. (Established 42 years.)

SEEDS

\$1.50 Worth to Test Only 10 Cents

We ask you to try our Superior Seeds. One trial will make a Customer. We will mail one Full Packet each of the following 15 Grand New Sorts for only 10 cts. These would cost at least \$1.50 elsewhere.

BEEF, Perfected Red Turnip, earliest, best.
CABBAGE, Winter Header, sure header, fine.
CARROT, Perfected Half Long, best table sort.
CELERY, Winter Giant, large, crisp, good.
CUCUMBER, Family Favorite, favorite sort.
LETTUCE, Iceberg, heads early, tender.
MUSK MELON, Luscious Gem, best grown.
WATERMELON, Bell's Early, extra fine.

This 10 cts. returned on first 25c. order.

ONION, Prizetaker, wt. 3 lbs. 1000 bush. per acre.
PARSNIP, White Sugar, long, smooth, sweet.
RADISH, White Icicle, long crisp, tender, best.
TOMATO, Earliest in World, large, smooth, fine.
TURNIP, Sweetest German, sweet, large.
Flower Seeds, 500 sorts mixed, large packet.
Sweet Peas, 1/2 oz. California Giants Grand Mxd.
Catalogue and Check for 10 cts. free with order.
J. J. BELL SEED CO., Deposit, N. Y.

Growing Tomatoes for Quality, Quantity and Earliness

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The cut herewith shows one of a large number of vines in my garden this season. Notice that each stalk is loaded with large, perfect fruit from top to bottom. This is the result of my method. It is easy to raise this kind of fruit when you know how. Just send for my book—price 50c., postage or money order. Your money back if not satisfactory.

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The turquoise berry (*Ampelopsis heterophylla*) is interesting for its abundant blue fruits





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PATENTED TILE ROOFING



Hints for Planting Beans

IN PLANTING the bush limas, the best plan is to make a slight ridge and plant the beans about twelve inches apart, being careful to push the edge of the bean into the soil with the eye down. My own plan of planting the bush limas, upon which I depend for my entire supply, is radically different, but needs very rich soil to produce good results. I wait until the ground has become thoroughly warm, or until about the end of May; then open a furrow with the small hand-plow, sow the beans thickly—one quart to 100 feet of row—and cover with a slight ridge by plowing in on the beans on both sides of the row. This seems like a rough way of planting, but in the warm, loose soil the beans come up quickly, make a strong growth, and bear a large crop of pods until killed by frost in the fall. It should be remembered, however, that the soil has been heavily manured and fertilized on this plot for about fifteen years, and that while my lima beans have not had a single hoeing during the past two summers, the space between the rows is worked with a horse cultivator at least twice a week during the spring and summer. This is continued even after the plants in the rows nearly meet across the cultivated space between the rows.

The bush limas will grow in any rich soil, but will produce most heavily on well-drained land and are especially well adapted for growing on a light, sandy soil, as the dense growth serves to shade the roots and to keep the soil comparatively cool. On heavy, moist soils they make too much growth of foliage, setting pods sparingly, and also later in the season. The pole kinds give better results on such soils because the vines are supported by the poles and receive a much larger amount of sunlight.

The dwarf bush beans as commonly grown for use as snap-shorts are very easily raised, the chief difficulty being the liability of the foliage and pods to the disease known as "anthracnose," or as it is more commonly called "rust," which results in checking the growth of the foliage and making brownish or discolored spots on the young pods. Spraying with a weak solution of Bordeaux mixture has been recommended as a preventive, but as this trouble is chiefly or almost entirely confined to cool, rainy weather, it is difficult to use the spray in such weather so as to afford any real protection, and to my mind the best plan is to keep on making successional plantings in the hope of a change

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ABRAHAM LINCOLN
1809

the background another of his great masterpieces, really the invention in which he took greatest pride, namely the

Hot-Air Pump

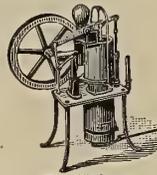
which to-day brings into the homes of all mankind the domestic comforts that follow an abundance of water easily and cheaply brought to hand. *Every pump is a monument to the immortal genius of John Ericsson.* The cheapening of raw materials and the saving in the cost of manufacture accomplished within recent years, place his wonderful invention within easy reach of the man of moderate means.

Be sure that the name **REECO-ERICSSON** appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day. Write for Catalogue U, and ask for reduced price-list.

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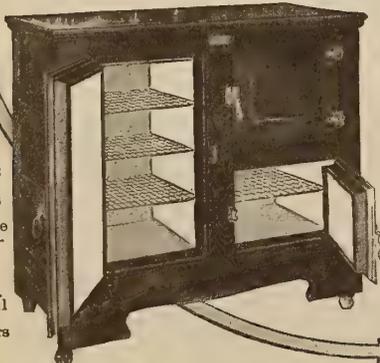
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in the weather conditions. While an early planting may be entirely destroyed by the disease, a planting made a week or two later will be entirely free from it.

Planting on a slightly elevated ridge and drawing loose earth up around the stalks of the plants while hoeing so as to support them in a stiffly erect position which will hold the pods well above the soil obviates much of the trouble from rusted or discolored pods in the early plantings or during a wet summer.

When planting pole beans put a good shovelful of well-rotted manure or compost in the hill around the bottom of the pole to give the young vines a quick start into growth. Poultry droppings, or night soil, mixed with sifted coal ashes or fine dry soil some time in advance of being needed for use, is an excellent compost. Where the young vines start at once into a strong, vigorous growth there is no difficulty about their climbing the poles, but if the early growth is slow and stunted, it is better to tie them to the poles with soft string or strips of rag until they have started to climb.

Five or six seeds should be planted around each pole for the tall kinds and, with the large, flat beans, take time to press each one into the soil with the eye down so that the large seed leaves may have no difficulty in getting through the soil in an erect position. Distorted or crooked stalks and a check in growth are liable to result from a careless planting of the broad, flat beans, if indeed the seed does not rot in the ground. Place the poles at a good distance apart, say three and a half feet each way, especially with the strong-growing sorts, so that there may be a free circulation of light and air through the vines as well as to the soil about the roots. If grown too closely together, the blossoms will drop off and fail to form pods. There is seldom any trouble with the rust or anthracnose with the pole varieties, excepting a few of the European snap beans which are not acclimated to our hot summers. Pennsylvania E. D. D.

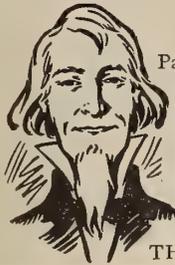


Timely Advice

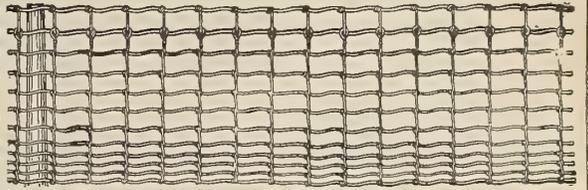
NINE people out of ten who complain about patchy lawns in summer have never fed the grass. Have you? Before you try any costly, radical change, get ten pounds of nitrate of soda at a local seed store. Don't put the dry nitrate on the growing grass, but use it on the bare spots. Then water the soil, and in a week you will be astonished and delighted. Persevere, and you will take pride in your lawn and a new interest in gardening.

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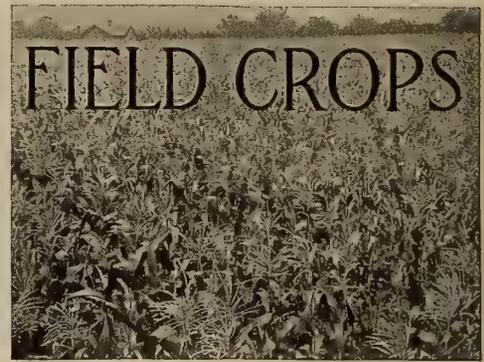
A complete list of new Victor Records for March will be found in the March number of *Munsey's*, *Scribner's*, *McClure's*, *Century*, *Everybody's*, *Current Literature*, and *April Cosmopolitan*.

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Early Spring Suggestions

THE first half of March is the best period in this section for an early sowing of oats. The best seed-bed is made by breaking the ground with a disk harrow and disk drill. After harrowing once, seed with the drill crosswise. Leave the surface reasonably level by dragging or rolling. Use no commercial fertilizer, but all the barnyard manure you can, applying it in a pulverized condition and not too heavily.

Whenever a rest crop is needed for a field that has become worn out, sow orchard grass and clover, which will also hold the soil. Sow the grass thick so that it will not grow in tufts, but will form an even sod. Broadcast the seed and harrow or roll it in lightly. When sown alone, two bushels an acre is the usual amount. Sow the seed in this locality in February or early March, if the ground is dry enough. The seed generally ripens in June. Clover seed can be sown with the timothy and orchard grass, planting only one at a time crosswise.

Spread a light coating of the manure over those parts of the field where there has been difficulty in getting a good stand. Old pastures and meadows can be thickened and patched by reseeding the bare spots with clover and bluegrass. When patching, use a little manure.

Buy only the best, re-cleaned grass and clover seed.

Kentucky.

E. W. JONES.

The Truth About Cantaloup

THE word cantaloup (also written canteloupe, etc.), according to the *Century Dictionary*, comes from “Cantalupo, a town in Italy, where it was first grown in Europe.” Others say “Cantelloupi, an estate near Rome belonging to the Pope.” Certainly the type did not originate there (it is supposed to have come from Armenia) and certainly the *Century Dictionary's* definition is wrong and must give way to that accepted by the “*Cyclopedia of American Horticulture*” and “*Vilmorin's Vegetable Garden*.” Strictly speaking, a cantaloup is a melon with a hard and warty rind, as opposed to the nutmeg type, which has a netted rind. The cantaloup type is practically unknown in this country and the Southern use of the word as exactly synonymous with muskmelon is simply the result of that natural law by which every word in common use comes to have two meanings—a narrow one and a broad one.

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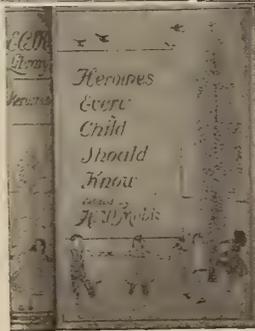
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Should Know Library } A Dollar Bill
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a full year }**

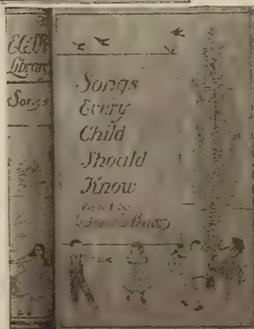
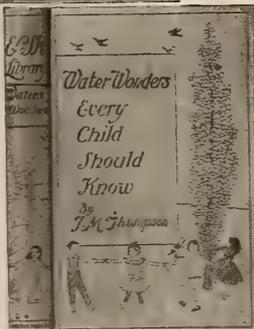
All parents, and those interested in the education of children, know how difficult it is to secure just the right kind of reading for them. Childhood is the decisive period of life, for it is then that habits and tastes are formed that have most to do with the development of character. In this library the work that you would do yourself, if you had the time, money and literary judgment, has been done for you by the best critics who have spent their lives in the study of literature and in whose opinion you may have perfect confidence.

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In order to make it possible for every parent, and for everyone interested in children, to see this set, we will send it for your approval so you may pass your own judgment. Mail the coupon with one dollar. We will forward the eight volumes at once, carriage paid, and enter you for *The World's Work* for a full year. If you don't agree with us return the books, carriage collect, and we will refund your first payment. The library is worth \$12.00. *The World's Work* is worth \$3.00. You can have the \$15.00 worth for \$1.00 now and \$1.00 a month for eight months. Sending the coupon puts you under no obligation whatever but it does give you an opportunity to see these delightful volumes. **WRITE TO-DAY.**



"My opportunities in youth for acquiring an education were limited, but I had the great good fortune of being well supplied with useful books, and these gave me my start in life."—DANIEL WEBSTER.

There Are No Better Books for the Children

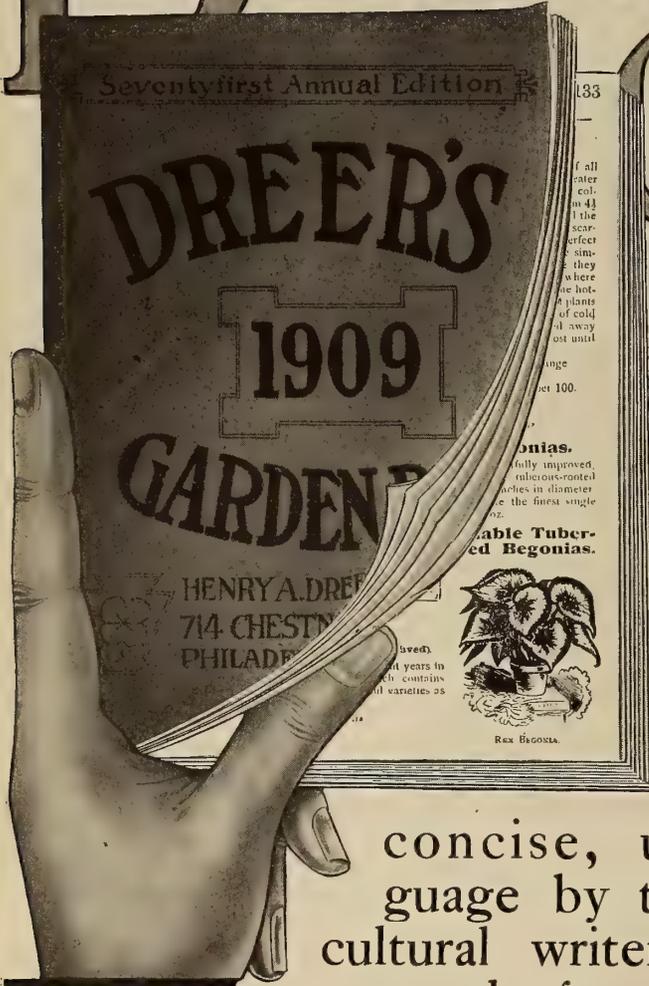
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133 East 16th St., New York
Gentlemen: I accept your offer and enclose \$1.00 for which you are to enter me for a year's subscription to *The World's Work* and send me the "Every Child Should Know Library." After examination I will either return the books to you or send you \$1.00 a month for eight months.

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Dreer's Garden Book



Just what every amateur wants to know about growing flowers and vegetables, told in clear,

concise, untechnical language by the ablest horticultural writers of the day, expressly for

Dreer's Garden Book for 1909.
Over 100 Special Cultural Articles by such well-known specialists and authorities as

HELENA RUTHERFURD ELY, author of "A Woman's Hardy Garden," etc.
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 And our own corps of experts.

Dreer's Garden Book for 1909 has been enlarged to 256 pages, and contains in addition to the invaluable garden information referred to above, color and duotone plates and photographic illustrations of worthy novelties and the dependable standard varieties of vegetables and flowers.

We will send a copy without charge if you mention this magazine

HENRY A. DREER, 714 Chestnut St.
PHILADELPHIA



A Spraying Outfit for \$8.50

MY SPRAYING tank cost exactly \$8.50 and was made by my brother from lumber that we had on hand. If we had had to purchase the lumber, wheels, etc., it would probably have amounted to two or three dollars more, but even then the entire cost would not have been much in comparison with the usefulness of the outfit and the length of time it will last. I have used mine for five years and it will probably last five years longer.

I never leave any mixture in the tank and pump, but always wash them thoroughly, even though I expect to spray again within twenty-four hours. About once a year I paint the pump and the tank outside, and inside as far as I can reach, especially along the seams, using any paint that is convenient.

The sides, ends and bottom of the tank were of single width boards; the top of short narrow boards running crosswise. The seams were filled with white lead to prevent leaking after the boards were nailed together. The wheels (two feet four inches in diameter) and axletree were quite heavy and were at one time part of a similar cart. The handles were made of oak strips about 2 x 2 in., screwed to the tank. The legs were at first made of oak strips the same size as the handles, but they proved to be too weak and were apt to sink into the ground. I bought some broad tire-iron and had it bent so that it would form two right angles, holes being put at each end so that it could be screwed on to the tank.

The tank, which is eleven inches high, eighteen inches wide, and three feet seven inches long, can be more easily cleaned



Two useful carts for the garden made at small cost



How Any One Can Grow Mushrooms

Delightful Occupation — Delicious Delicacy for the Home Table and a Good Income if you Wish.

I have been growing mushrooms for over twelve years. I probably know more about the subject of mushroom culture than anyone else in America. From a start with a few dollars' capital I built up the largest mushroom farm in America, with acres of bed space in cultivation. By actual experience I have learned just how mushrooms can be grown and what's even more important, how they can not be grown.

Growing mushrooms is really no more difficult than growing radishes.

It's just a matter of knowing how.

Every failure in the mushroom business can be traced to poor spawn and unreliable information.

I have shown thousands of men and women how to grow mushrooms successfully. Most all of them are now in the business growing for profit and making a good income without interfering with their regular occupation with this wonderful, easy, pleasant pastime. I hope soon that a mushroom bed will be as common as vegetable gardens.

I have written a little book which gives truthful, reliable, experienced information about mushroom culture, where mushrooms can be grown, how to have a mushroom bed in your cellar, etc. It also tells about spawn and how to secure really reliable spawn. I shall gladly send you this book FREE.

If you have never tried mushroom growing, or if you have tried and failed because of the causes of which I have spoken, write for my free book in which I will show you beyond the shadow of a doubt that you can have a fine mushroom bed. Address

A. V. JACKSON

Jackson Mushroom Farm

3481 Northwestern Ave.

CHICAGO, ILL.

The Modern Peony—Queen of Hardy Flowers

Is justly entitled to its increasing popularity. Easy to grow, hardy everywhere without protection, free from disease and insects, permanent when once established, the Peony is equally at home as a single clump beside the doorway of the humblest cottage or in broad vistas of gorgeous color effects on the grounds of a large estate. This magnificent flower has no equal for garden display, and for decorative purposes. Fall is the best time to plant Peonies, but, if you didn't get yours out last autumn, it will be better to plant this spring than to wait until autumn. The start secured by roots put out this spring will show in earlier and better blooms next year. **But plant early**—as soon as the frost is out of the ground. Order the roots now.

It is Safe to Buy only from a Specialist

The high price of many choice kinds has led to unscrupulous substitutions, and Peonies untrue to name and inferior in quality are likely to be had if bought from general dealers. My collection of 600 varieties is unequaled in many respects; eight years' careful attention was given it before any stock was offered for sale. Duplicates have been eliminated, synonymous names noted and less desirable kinds discarded. I know every Peony I offer, grow and sell all my stock, and guarantee everything true to name. Hence such commendations as these:

"The Peonies were very, very beautiful and so much admired."—Mrs. A. Frame, Reading, Pa. "The Peonies arrived O. K. Thank you for the selection and pains taken in shipping them."—H. W. Clark Providence, R. I. "The Peonies arrived promptly, all good, healthy roots and I am much pleased with them." Two weeks later: "The second lot of Peonies arrived Thursday, the time specified. The roots were strong and robust and gave great satisfaction."—Lyman Hoysradt, New York.

My Catalogue Free—Write today for a copy and let us become acquainted

B. H. FARR, Wyomissing Nurseries, 809D Penn Street, Reading, Pa.

IRISES—My collection of these beautiful plants has been pronounced the finest in this country
ROSES—Very heavy, dormant plants, two years old, from Dickson's famous Irish stock



1909

VICK'S

GARDEN & FLORAL GUIDE

Vick's Quality Vegetables

Vick's Golden Nugget Corn, an extra choice new variety. Packet, 15c; ½ pint, 25c.

Laxtonian Pea, extra large and very productive. Packet, 15c; ½ pint, 40c.

Vick's New Swastika Pea; vines dwarf, pods five inches long, containing from seven to ten large peas. Packet, 10c; ½ pint, 20c.

Vick's Earliana Tomato. Earliest and best, large, smooth, perfect form, bright red color and delicious flavor. Packet, 10c; ½ ounce, 35c.

Vick's Mikado Pink Aster. Color, an exquisite shade of pink; petals long, narrow and gracefully reflexed; blooms from six to seven inches in diameter, with stems two feet or more in length. Packet, 25c.

Vick's Garden and Floral Guide
The finest seed catalogue of the year. Tells how to grow Vick Quality Vegetables and Flowers. Sent gratis upon request.

JAMES VICK'S SONS, 362 Main St., Rochester, N. Y.



VICKS GOLDEN NUGGET CORN
PAGE 14



VICKS EARLIANA TOMATO
PAGE 30



VICKS SWASTIKA PEA
PAGE 27

James Vick's Sons
ROCHESTER, N. Y.

Select Southern-Grown Roses



THE most satisfactory Roses are from plants grown in the South — many Northern florists get their stock from this section. The long growing season and abundance of sunshine help to give the plants large size and great vigor in the shortest possible time. Fairfax Roses are grown far enough South to develop under these exceedingly favorable conditions. On the other hand, my nurseries are far enough North to ripen properly my two-year-old plants and afford them a long season of rest. My large Roses are wintered in cold-frames, and are in the best possible condition for spring planting.

Every facility that means well-matured, thrifty plants is at my command. I am offering every Rose, new and old,

that has proved to be of value for garden planting, especially in the hybrid tea class. My superior growing advantages, because of ideal location, enable me to quote extremely reasonable prices.

W. R. GRAY, Box 6, OAKTON, VA.

For Large Yields Spray With Brown's AUTO-SPRAY

Most Efficient, Rapid and Convenient

No careful, experienced gardener omits a good sprayer from his equipment. The garden and field crops, fruits and vines must be protected from the ravages of insects and plant diseases.

Why not follow the example of practically all the Government and State Experiment Stations and 300,000 Gardeners, Farmers and Fruit Growers, and use one of Brown's sprayers.

Auto-Spray No. 1, Hand Power, capacity 4 gallons, is just the thing for all round work for small orchards or field crops up to 5 acres. Fitted with the Auto-Pop Nozzle, this sprayer does more work and does it better than three men can do with ordinary sprayers. It is made in two styles, brass and galvanized iron, is non-corrodible, and suited for spraying all kinds of solutions without clogging. It is the best machine obtainable for whitewashing and disinfecting poultry houses and stables.

We Make 40 Styles and Sizes of the Auto-Spray and Sell Direct at Factory Prices

Our Traction Power Rigs for large orchard work are superior to all other power sprayers built because most simple, dependable and capable of developing and sustaining greatest pressure. No expert or experienced help is needed to operate them. Power costs nothing. Fear of breakage and costly delay eliminated.

Write for Free Spraying Guide and Catalogue. Let us send you this spraying guide compiled by Prof. Slingerland of Cornell University College of Agriculture. Let us prove to you that we are Headquarters for the sprayer that will produce for you the most gratifying and profitable results.

Every Auto-Spray is Guaranteed to Satisfy

THE E. C. BROWN CO., 34 Jay St., ROCHESTER, N. Y.



Hand Power Auto-Spray No. 1



Using Auto-Spray No. 1

than a barrel and holds nearly the same amount of fluid. It tips down in front about four inches so that all the fluid can be pumped out. The pump is at the end nearest the handles, and at the other, near the bottom, is a faucet for emptying the contents. The tank is so low that the pump can be worked easily.

The spraying mixtures are poured through an opening in the top and whenever the mixture needs straining a piece of burlap is tacked loosely over this opening. The pump is a brass-lined force pump, which, when first bought, was fitted with an agitator, also with a Vermorel nozzle on four feet of 1/4-inch hose. The agitator was useless, however, as the mixture was kept well stirred by the tank being drawn over the ground.

The Vermorel nozzle became too easily clogged, so I purchased a Bordeaux nozzle. This I found to be of more use for Bordeaux and other mixtures containing lime. Four feet of hose was much too short for our requirements, so fifteen feet of the same size was added to our equipment. The nozzle was fastened to an elbow on the end of a 1/4-inch iron tube ten feet long (a strong, slender strip of lumber might also be used for the purpose), which will lift both nozzle and hose high enough to thoroughly spray the top branches of peach, plum, cherry and young apple trees. I find this outfit is all I need for fifty fruit trees, twenty-five currant bushes and a large patch of raspberry bushes.

The cost of this spraying outfit was:

Pump	\$6.00
15 ft. hose	1.50
Bordeaux nozzle	.60
White lead	.10
Nails and screws	.05
Legs	.25
Total	\$8.50

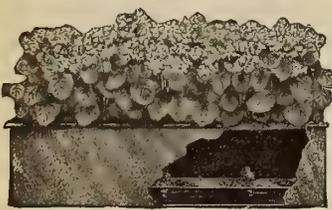
My garden cart is also home-made. The wheels and axletrees were from an old carriage. A box six inches deep, three feet wide and three and three-fourths feet long was made from old fence boards. Two strips of wood about 2 x 2 in. were nailed along each side at the bottom and extend two feet beyond the box. Another strip nailed across the ends of the long strips forms a handle for the cart. The box is mounted on the axletree at the centre, which, with the wheels, formed part of an old carriage. The cart may be pushed, but is more easily pulled.

I have never had any legs on it, as it tips back when it is pulled along, and by tipping it forward while it is being loaded, part of the load does not roll off when the cart is being drawn. I use this cart to draw in the produce from two acres of land which yield well; also to draw brush, rakings, corn stalks, manure, chicken coops, or whatever needs to be carted around. It is much better to use in the garden than a wheelbarrow or a small 4-wheeled cart, as it does not tip over easily, rides over bumps and hollows without balking, will carry a large quantity and is easily unloaded.

Michigan.

FLOY WARNER.

Grow Your Flowers in Illinois Self-Watering Flower Boxes and Water Them Only Once in Two Weeks



YOU will then have better, hardier, longer-lived plants with less time and trouble. It's the natural way of growing flowers. The roots absorb just the necessary amount of water from reservoir at bottom of metal

box, which is filled about once in two weeks. Boxes neatly made of metal; rust and leak-proof. Inexpensive—Sold on 30 days' FREE trial. Illustrated descriptive book with prices FREE. Write to-day.

Special.—96-page book "Miniature and Window Gardening" Instructive and interesting. Tells all about growing flowers. Regular price 75 cents; our Special Price for limited edition, 50 cents, prepaid.

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Trees, Shrubs and Roses at Wholesale Prices

You cannot afford to place your order this year for trees, shrubs, roses, vines, small fruits, perennials, etc., in fact, anything for grounds, orchard or fruit garden until you have the **New Grover Book for 1909**.

We supply the choicest select stock, Northern grown, hardy and healthy, graded to the highest standard, at a saving of one-third to one-half prices others ask, selling to you direct from the nursery at bed rock wholesale prices.

You save all commissions and dealers' profits, buying as low as any dealer. Write today for our new book and our offer of **Free Landscape Designing**. We prepare, without cost to customers, plans and sketches for properly planting your grounds, garden or park. If you are going to plant anything this spring, send for this free book now and save half. Address

Grover Nursery Co.
84 Trust Building, Rochester, N. Y.

Miss White's FLOWER SEEDS

A GIFT FIVE PACKETS—YOUR SELECTION

WITH my handsome 1909 catalog (if no one in your family has received a copy and you so state) I will send you a coupon good for five full packets to be sent postpaid, your choice from 40 popular kinds I list in my catalog at 3 cts. each—provided you send me the addresses of two other flower growers.

Write now—a postal—why not?

MISS EMMA V. WHITE, Seedswoman
8014 Aldrich Avenue So., Minneapolis, Minn.

KING GRAPE

THIS is the splendid large blue sort, originated on the **Vinecroft Farm**, which was so well described in Prof. Fletcher's illustrated article in the **GARDEN MAGAZINE** of Febr., 1908

I now have some of these **KING** vines for sale. Write for description and prices to the originator,

WM. K. MUNSON

Vinecroft Farm

GRAND RAPIDS - - MICHIGAN

SCARFF'S Money Making

BLACKBERRIES

Better be sure of a big crop when you buy. You may save a mite by trading with some traveling agent or irresponsible dealer. But you risk a lot. Fruiting time might bring great disappointment. Rest easy. Order "Scarff's Bearing Strains" of blackberries and other small fruits.

Our bargain collection of blackberries ought to strike you just right. It's on the back of our new Catalog. All money-makers; 5 varieties; early, medium, late; fruiting begins July 1st, ends September 1st. Book on "Transplanting" sent with each order. Write for new catalog. If you ask we will send free with catalog 1 fine small-fruit plant.

W. N. SCARFF, New Carlisle, Ohio.

\$300
Per Acre
Profit

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SPECIMEN DECIDUOUS and EVERGREEN TREES

Ready for shipment this spring, a large number of specimen Norway and sugar maples, pyramidal maples, oaks, beeches, Koster and Colorado blue spruce, golden retinosporas and other hardy trees. These are part of 250,000 trees collected in 1905 in England, Holland and France, by the late Major Orlando J. Smith, and developed by him on his nursery at Amawalk, N. Y., as specimen trees. This is the first time any have been offered for sale.

Only perfect specimen trees are sold.

Illustrated catalogue, containing prices, sent on request.

The prices are the lowest at which specimen trees have ever been offered.

AMAWALK NURSERY

Box C, AMAWALK, N. Y.

ESTATE OF ORLANDO J. SMITH

E. W. and M. F. Smith, Managers

Stephen Bradley, Superintendent

The Amawalk Nursery is situated on the Putnam Division of the New York Central. It is on the state road from New York to Lake Mahopac, and is nine miles east of Peekskill and eleven miles north of Briarcliff Manor.



The Sugar Maple on the lawn. Our specimen trees will produce a like effect in an incredibly short time



The Norway Maple as a street tree. The quick effect of our specimen trees makes their use decided economy

\$3,600 NET PROFIT ON 9 ACRES OF CABBAGE

Mr. George Federolf, who lives five miles north of Brownsville, Texas, in the Gulf Coast Country, planted 9 acres in cabbages, from which he marketed 227,000 pounds. He sold the entire crop to McDavitt Brothers, Commission Merchants of Brownsville, for \$4,000. According to Mr. Federolf's statement, it only cost him \$400 to grow the entire crop and load it on the cars. His net profit, above all cost, was \$3,600. This crop was planted in December and sold in March, a pretty good showing for four months' work. The same land will produce two or three crops a year.

Do you wonder that so many men are leaving their jobs in the North and going down to the Gulf Coast Country to find fortune and independence?

Why don't you do the same? Anyone can raise fruits and vegetables in the Gulf Coast Country—even the city man. It is simply "making garden" on a larger scale. You will only need a few acres and can buy the land on easy terms. If properly cared for, the first crop should more than pay for the land.

The Gulf Coast Country has passed the experimental stage—irrigation, and quick transportation facilities to the large markets of the Mississippi Valley and the East, have made large yields and big profits a practical certainty.

Growers can reach the northern markets weeks ahead of the products of other sections, thus insuring enormous profits.

The Gulf Coast Country is a delightful place in which to live. Mild sunny winters, summers pleasantly tempered by Gulf breezes.

A great change has been wrought in the Gulf Coast Country within the past two or three years. Prosperous towns and cities have sprung up—irrigation has been systematized and extended—methods of marketing have been improved.

Investigate this proposition while the land is within your reach. Next year it will cost more.

A trip of investigation will be inexpensive. Twice each month you can buy round trip tickets via the Rock Island-Frisco-C. & E. I. Lines to any point in the Gulf Coast Country at the following very low fares:

Chicago \$30.00 St. Louis \$25.00 St. Paul 32.50
Peoria 30.00 Kansas City 25.00 Minneapolis 32.50

These tickets will be good for 25 days and allow liberal stop-over privileges.

On excursion days tourist sleepers run through from Chicago, St. Louis, St. Paul, Minneapolis and Kansas City to Brownsville, Texas, via Rock Island-Frisco Lines.

If you would like to know more of the big profits growers are making in the Gulf Coast Country, write me to-day for some very interesting literature we have prepared for free distribution.

The Winter Vegetable Garden of America



JOHN SEBASTIAN, Passenger Traffic Manager, Rock-Island-Frisco-C. & E. I. Lines
1978 LaSalle Station, Chicago, or 1978 Frisco Bldg., St. Louis

BOBBINK & ATKINS'

World's Choicest Nursery Products

It is advisable to order now to get your choice of our World's Choicest Nursery Products. Never before have we had a selection as handsome as we offer for planting this season. Intending purchasers will do well to visit our Nurseries to inspect our products. If you cannot, we shall be pleased to give prices on your list of wants for Spring planting.

Roses—We have many thousands of two year old plants ready for shipment, consisting of all the most suitable for the American climate.

Evergreens and Conifers—Many acres of our Nursery are planted with the most attractive specimens ever produced in this country. Our collection has been admired by visitors from all parts of the world.

Pines—We grow many thousands in all the most useful and striking kinds. No grounds are complete without a proper number of them, as they are healthful, and add attractiveness to the Landscape.

Rhododendrons—Are among our specialties. Everybody intending to plant should certainly see our stock. We can give prices on large or small quantities in all the hardiest and most attractive varieties.

Boxwood—Our stock is probably unsurpassed, as we have thousands in all sizes, suitable for Boxwood gardens.

Trees and Shrubs—Our Trees and Shrubs are hardy, vigorous and free from disease.

Hedge Plants—We grow thousands for any kind of hedge desired.

Vines and Climbers—We have large quantities for every style of covering.

Bay Trees—The largest collection in this country in all sizes can now be seen in our storehouses.

Old Fashioned Flowers—For old fashioned gardens, beds and borders. Many acres of our Nursery are planted with the largest and most complete collection in this country. Thousands of people visit our Nursery annually to see them when in bloom.

Fruits—We can supply Trained, Dwarf and Ordinary Fruit Trees to make a complete fruit garden. In addition, we have a fine selection of all kinds of small Fruits, Strawberries, etc.

English Pot Grown Grape Vines—We have an especially fine lot of these for early Spring delivery.

Tubs—We make them in all sizes and shapes for Plants and Trees.

Our Illustrated General Catalog No. 25 will be mailed to prospective purchasers. VISIT OUR NURSERIES.

Nurserymen and Florists

Rutherford, N. J.

2c a Week Pays Wash Bill!

Electricity or Water-Power Does the Work

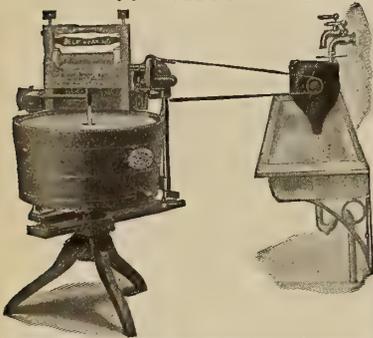
Write for FREE Book

Just a "Twist of the Wrist" Starts or Stops the Machine!

The 1900 Motor Washers are now at work in thousands of homes. They are doing the work formerly done by women, at a cost of 2 cents a week for power! Saving thousands upon thousands of dollars in wash bills. Saving worlds of wash-day troubles. Leaving the women free to do other work while the machines are doing the washing.

The 1900 Motor Washer

Washes a Tubful in Six Minutes!



Handles heavy blankets or dainty laces.

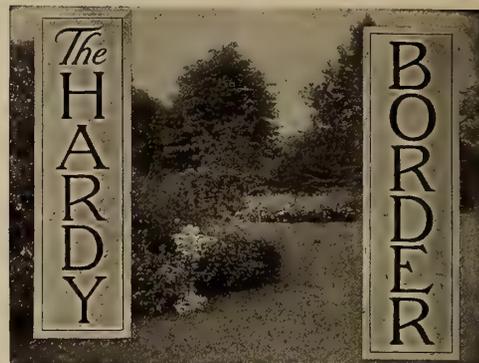
The outfit consists of the famous 1900 Washer with either Electric Motor or Water Motor. You turn on the power as easily as you turn on the light, and back and forth goes the tub, washing the clothes for dear life. And it's all so simple and easy that overseeing its work is mere child's play.

A Self-Working Wringer Free With Every Washer

1900 Electric Motor Washer
Can be connected with any ordinary Electric Light Fixture

The motor runs Washer and Wringer. We guarantee the perfect working of both. No extra charge for Wringer, which is one of the finest made. **Write for FREE BOOK and 30 Days' FREE TRIAL OFFER!** Don't doubt! Don't say it can't be done! The free book proves that it can. But we do not ask you to take our word for it. We offer to send a 1900 Motor Washer on absolute **Free Trial** for an entire month to any responsible person. Not a cent of security—nor a promise to buy. Just your word that you will give it a test. We even agree to **pay the freight**, and will take it back if it fails to do all we claim for it. A postal card with your name and address sent to us **today** will bring you the book free by **return mail**. Address, The 1900 Washer Co., 3298 Henry St., Binghamton, N. Y. Or, if you live in Canada, write to the Canadian 1900 Washer Co., 355 Yonge St., Toronto, Canada.

1900 Water Motor Washer
Can be connected with any water tap instantly



Beauty Around Barns

OUTBUILDINGS, sheds, cow barns, etc., on country places are usually about as bare as bean poles in winter, but that they can be easily redeemed and made more beautiful is seen by the accompanying picture, which shows one side of the cow barns at Biltmore, N. C. The buildings extend about five hundred feet northwest to southeast, with three wings toward the southwest. The rear buildings, parallel to the barn, include silos and engine room.

Between the buildings is an alley-way about ten feet in width, having a curb on each side, and between the curbing and the wall of the

Walsh's Hand Book of ROSES

AND DESCRIPTIVE PRICE LIST

Contains all the leading varieties of Everblooming and other popular Roses for the garden, beautifully illustrated with Cultural directions for the Amateur. Also Hollyhocks, Paeonies and Phlox.

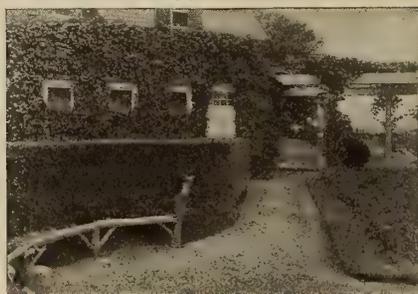
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M. H. WALSH, Rose Specialist

WOODS HOLE, MASS.

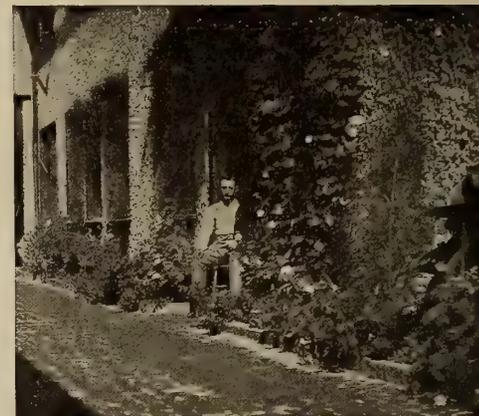
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More than a thousand homes have been made beautiful by our treatment. Our methods are practical and appeal directly to owners of suburban estates. Expert advice on all questions pertaining to the planting of Home Grounds. Tell us your needs. We can help you.



Our collection of **TREES, SHRUBS, ROSES** and **OLD-FASHIONED FLOWERS**, is the largest in New England, Large General Catalog mailed **FREE** on request. Write today

The New England Nurseries, Inc.
Bedford, Massachusetts



A space eighteen inches wide and 100 feet long, left between the wall of this barn and the curbing, was utilized as a flower bed, and filled with fast-growing annuals

building is a width of eighteen inches filled with earth and now utilized as a border for growing plants.

The original intention was to cover the buildings with English ivy, but this failed in some places, leaving stretches of bare ground and uncovered wall. It was decided to make these stretches into flower beds, using quick-growing annuals and the more common bedding plants. About one hundred running feet of space was thus utilized, giving a great burst of color and making the barns look like cottage dwellings in some countryside rather than mere outbuildings.

Among the more satisfactory plants were ageratum, balsam, fibrous begonias, cannas, cypress vine, dahlias, fuchsias, marigold, morning glory, nasturtium, pansies, snapdragon, verbena, violets, and for very late fall bloom zinnias, in variety.

North Carolina

J. W. R.

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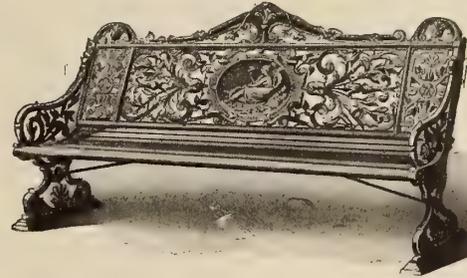
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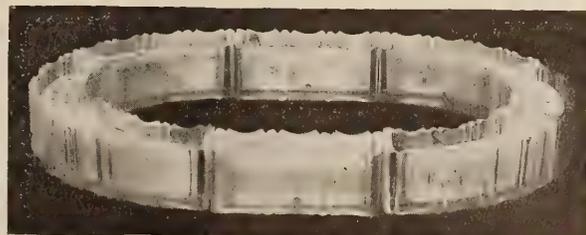
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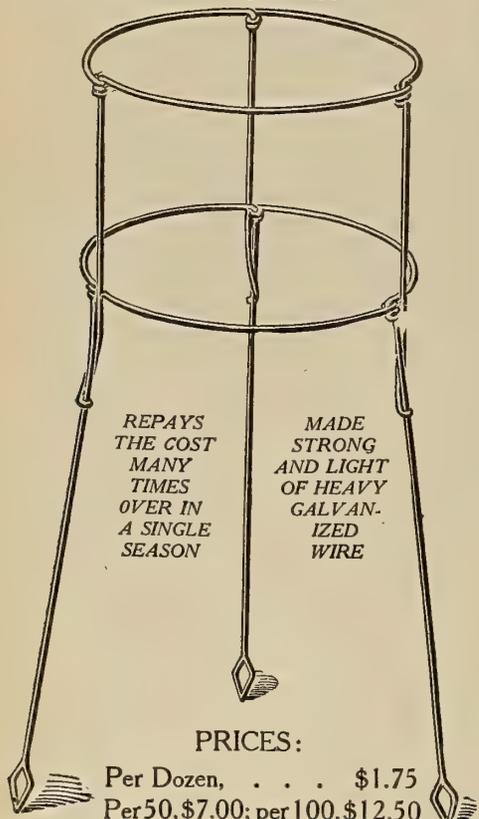
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GROWING CURRANTS AND GRAPES FROM CUTTINGS

C. H. G., N. Y. — Currants will surely grow if cuttings are made and put into the ground in the spring. Give the grape-vines time to callus before they are set out; otherwise, the bud will start into growth at once and take all the life from the cutting before it has made root. Make your grape cuttings as early as possible, bury them in moist sand in a cold cellar, and by the time the ground is ready to be worked they will have made a strong callus and be ready to put forth roots.

ASPARAGUS AND RHUBARB IN THE KITCHEN GARDEN

C. T. H., N. J. — Palmetto asparagus is considered by many as being superior to any other. Preferably three or four-year old roots should be planted; if older than that they are difficult to move, and if younger than that they will take longer to get established. It will, however, take two years to properly establish a bed under the best of conditions. Asparagus does not have staminate and pistillate flowers on separate plants. In an article in the April, 1907, number of THE GARDEN MAGAZINE full instructions were given for planting and cultivating. Among rhubarbs Burbank is recommended as a quick-maturing kind, while other very popular varieties are Champagne and Linnæus. The difference in these is more in the color of the skin than in anything else.

HOW TO GET GOOD MELONS

R. A. S., N. Y. — Melons and tomatoes are rank feeders, and there is little danger of making the ground too rich with manure. Put a good handful around each hill. If the vines show a tendency not to set fruit, rake in a handful of wood ashes around the hills. The best melons are those borne near the ends of the main shoots, and by pinching off the side shoots more vitality is thrown into them. Commercial growers rarely pinch their plants, but it is often practised by gardeners who wish to raise fewer melons of larger size and better flavor. The vines ought to be from four to six inches high in the hotbed to transplant well, or as large as they will grow without commencing to run. Melon and tomato vines will grow stocky in a hotbed if the temperature and ventilation are right. The principal cause of their spindling is too much heat or close air. A less common one is having the glass too high above the plants, which has the tendency to draw them up.

GROWING VEGETABLES IN BOXES

R. J. E., N. Y. — From the first to the middle of March is the best time to start most vegetables in boxes. Do not allow the night temperature to go below 50 degrees, and beware of coal gas or escaping illuminating gas after the plants are up. A good soil for the purpose may be prepared from two parts garden soil, one part sand, and one part leafmold. If any well-rotted manure is available use one part of that in place of half the garden loam. A very common mistake is to have the soil too rich. The idea of starting plants in boxes is to have them develop a good root system before transplanting; therefore if you force them while in the boxes it will be at the expense of root formation. A too-concentrated plant food will stunt, distort, and kill vegetables instead of helping. A table-spoonful of dry poultry droppings dissolved in a gallon of water, used to water the plants twice a week, is enough. If the soil appears to be poor, improve it by a mixture of one pound of commercial acid phosphate of lime, half a pound of sulphate of potash, and one-fourth of a pound of nitrate of soda. Mix this evenly with from 600 to 800 pounds of soil. These materials are all soluble and immediately available, and are worth from ten to twenty cents a pound in small quantities.

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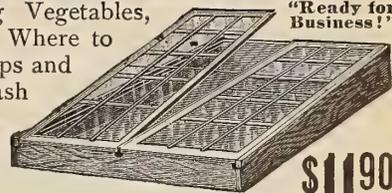
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WHEN TO TRANSPLANT FERNS

E. J. S., N. J.—Hardy ferns may be transplanted any time during the season, but care must be taken to see that, when transplanted, they have an environment similar to the one from which they were taken; and in transplanting take care not to injure the roots.

POULTRY-RAISING HINTS

G. C., L. I.—Generally speaking the Leghorns and Minorcas are considered the best breeds of chickens for egg production, principally because they are non-setters. In tests that have been held, however, their superiority has by no means been clearly established. In a contest held in Pennsylvania, of the seven best that were in competition for egg production, the winners were Barred Plymouth Rocks, with Leghorns second and Plymouth Rocks third. Unless one has coop accommodations which will keep the temperature above the freezing point in winter, probably some of the heavier breeds, such as Wyandottes, Rhode Island Reds, or Plymouth Rocks will be almost as productive of eggs as the Leghorns, but under the best of conditions probably the Leghorns will excel. The Leghorn eggs are pure white, and will bring a higher price in market than the brown eggs of the general-purpose breeds.

RECLAIMING WORN-OUT LAND

M. R. F., N. Y.—The reclamation of land which has been farmed out depends in a large measure upon the plowing under of green manures. Considerable humus can be added to the soil by sowing rye upon it in the fall and plowing it under in the spring. On a place of five acres, where the soil is sandy and well drained and where the maximum amount of output is desired, plant as much as possible of the land near the house for a garden and berry patch. Each spring plant as many additional fruit trees and berry bushes as possible, and in order to keep a cow and provide some feed for chickens, plant a considerable portion of the property to corn, provided the land is not too badly worn out. About the first of August, or at the last cultivation, sow in the corn about ten pounds of red clover to the acre, with a small amount of timothy. If the condition of the soil is doubtful, lime the land, using about 1,000 pounds to the acre, before planting the corn, which by the middle of summer will make the land in much better shape to receive the clover seed. L. G. DODGE.

DESTROYING THE CLOVER MITE

B. J. B., Ohio.—The so-called clover mite (*Bryobia pratensis*) is very common on a considerable variety of plants, and is apt to be somewhat injurious, particularly toward the end of a dry season. It is closely related to the red spider, so annoying in greenhouses, and its injuries are of a similar character. Leaves badly affected by this insect present a yellowish or sickly appearance, as though attacked by fungus. This insect winters in the characteristic reddish, rather large eggs, measuring about .01 of an inch in diameter. Fruit growers in the West have found early spring applications of lime-sulphur wash most effective in controlling this pest. The standard kerosene emulsion (diluted with five parts of water) is also a very efficient destroyer of the eggs. This mite and its ally, the red spider, can be controlled in midsummer by spraying with kerosene emulsion, the standard formula being diluted with 10 parts of water; or a whale-oil soap solution may be used at the rate of one pound of soap to 8 or 9 gallons of water. We have a strong preference for a lime-sulphur wash, since it is a very efficient fungicide as well as destructive to a number of insect pests of the worst type. E. P. FELT.

ADVANTAGES OF A COLD GRAPERY

I. H. B., Can.—In a small greenhouse such as you describe—a lean-to glass house with cement foundation, unheated except by a coal-oil stove in early spring—the best results will undoubtedly be had by growing grapes. Asparagus and rhubarb might be forced; but in the absence of any sort of extra heat the gain in time would be very slight indeed. They could, however, be forced by using manure beds inside the house into which the asparagus and rhubarb roots could be plunged. It would hardly be advisable to try to force melons and cucumbers under glass, because nothing would be gained in time unless an abundant supply of heat and moisture was provided. If the house is to be used as a cool grapery, grow a few fruit trees in pots and later in the summer use the house for growing chrysanthemums and begonias, in the latter case, of course, giving the proper shading to the glass. In a house of this nature, Black Hamburg is the best grape to grow. In the summer the house can be thrown open and the bench space used for the summer storage of house plants.

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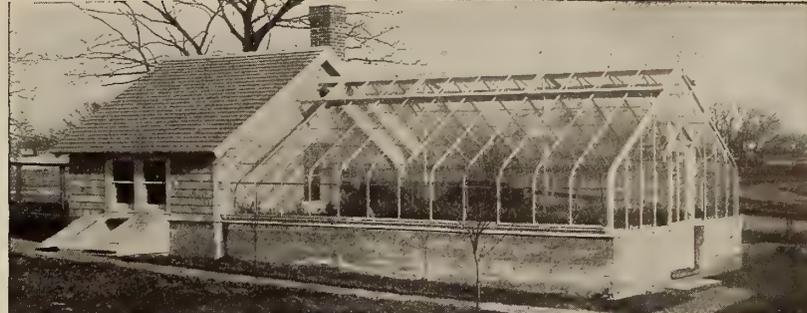
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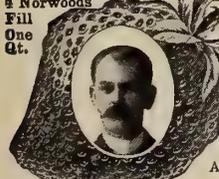
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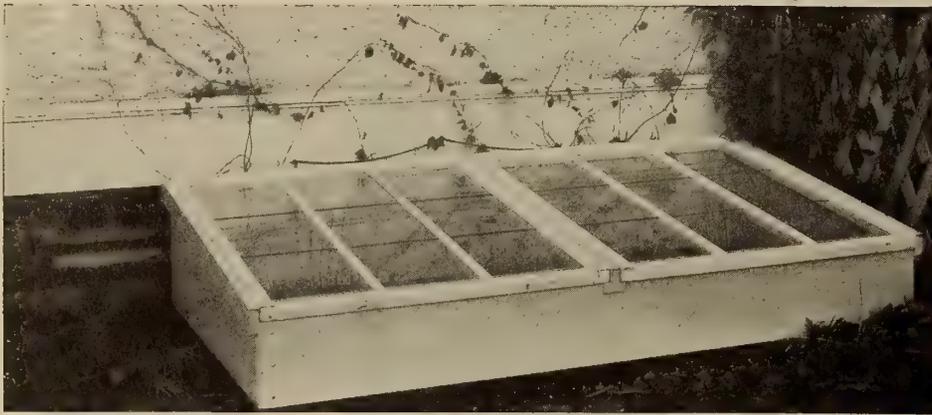
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Oftimes our standard frames, 6 feet wide, are too large for a limited space one may have. Besides, if they cannot be located so as to be worked from both sides, it means a stretch of 6 feet, which is a pretty uncomfortable position for most of us. So for just these reasons we have made the new Junior Frames, with Sash that are only 34 x 38½ inches and weigh but 17½ lbs. Plenty light enough, you see, for even the women who so keenly enjoy doing some of their own gardening.

We make these frames for one, two or three sash, just as you like.

They are priced so no real garden enthusiast can afford to be without them.

While we are about it, just a word also concerning our new Melon Frames. Originally, they were intended for starting hills of melons directly in the garden, but they proved to be "such handy little chaps" that now they are being used for no end of things. Saw two a day or so ago that were set over clumps of peonies to bring them into bloom a month earlier. Another was over some pansies, and still another a patch of garden violets. It is plain enough there are no end of stunts that can be done with them.

The thing for you to do is, send for our "Two P's" booklet which will tell you how to get started with frames—a really very interesting booklet, brim full of suggestions and helps. In the back of it we tuck in a couple of extra leaves fully describing and pricing the new Junior and Melon Frames. If you already have the booklet, drop us a postal and we will send these extra leaves. But don't lose half your fun and profit by not getting an early start. Remember that every day from now on counts.

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CLEARING UP THE ASPARAGUS BED

R. M. M., Mass. — After the cropping season, asparagus plants must be allowed to attain full maturity before cutting, which is usually done late in the fall or early in the spring. Cut the stalks off at the ground, dig up the beds to a depth of three inches, whiten the ground with salt and put over the entire surface from four to six inches of fresh, loose stable refuse filled with straw.

KILLING THE STRAWBERRY WORM

A. A. P., Ill. — The little green worm which has been destroying the strawberry plants is the strawberry worm. The only way to get rid of it is to mow over the bed with a scythe, allowing the mowings to dry for a day or two, and then set fire to them. In other words, burn over the entire bed. This will not injure the remaining crowns, but it will surely destroy any insects that are present.

GROWING WATERCRESS

H. J. B., N. Y. — Watercress can be successfully cultivated in a meadow through which a brook runs — in fact it does better when part of the plant is actually under water. In Europe, where it is cultivated to a greater extent than in this country, it is grown in trenches sixteen to twenty feet wide through which water can be turned at will. All that is necessary is to plant the seeds in the water or put in a few pieces of root and the plants will soon spread. It is a hardy perennial, and self sows, as well as increasing by creeping stems.

CAMPOR TREES

D. S., Cal. — Camphor trees thrive in the San Joaquin Valley in California where the summers are hot and dry. So far as is definitely known, the most northern localities where they have been successfully cultivated out of doors are Charlestown and Summerville in South Carolina, Augusta, Ga., and Oakland, Cal. While this tree will grow on almost any soil that is not too wet, it does best on a well-drained sandy or loamy soil. Under favorable conditions, it sometimes grows very rapidly, attaining very often within ten years from seed an average of thirty feet in height, with a trunk from six to eight inches in diameter at the base. Its growth is comparatively slow on sterile soils.

INJURY TO TREES FROM GAS

G. N. W., N. H. — A tree injured by illuminating gas has a peculiar and characteristic appearance which is very evident to the eye. The leaves on the affected branch turn a peculiar livid color; they do not attain full size and as likely as not the injury will be noticed as affecting only one or two branches of the tree. The very fact that such a phenomenally resistant tree as the Carolina poplar is suffering, is sufficient evidence that something of a very serious nature is at fault. As a remedial measure, completely excavate the soil around the tree affected and fill in with new material from another place. The effect of the illuminating gas passing through the soil is cumulative; it seems to leave an infiltration of deleterious matter which can be detected as a rule by its odor. To ascertain positively that the Carolina poplar and elm are being injured by escaping gas, dig into the soil, taking a sample from some two or three feet below the surface and test it by applying heat. The odor of illuminating gas will almost surely be given off from a gas-saturated soil. L. B.

FERTILIZING A 25 x 100 FT. GARDEN

C. W. S., Ohio—The following methods are suggested for fertilizing a 25 x 100 ft. garden. Without plenty of organic matter in the soil, which is so well furnished by stable manure, results from chemical fertilizers are very likely to prove disappointing. One big two-horse load of good stable manure would do the most good. If this is out of the question, a barrel of dry pulverized sheep manure is about the best substitute. If wood ashes are obtainable use 200 pounds broadcasted as soon as ground is broken and well worked in. Apply the sheep manure in like manner a week or so later. At planting time use for general garden vegetables from 100 to 200 pounds of a high grade complete fertilizer analyzing about 4% nitrogen, 8½% phosphoric acid and 6% potash, raked with the bottom of the rows at planting time. You could easily make 100 pounds of such a fertilizer by mixing 25 pounds of nitrate of soda, 63 pounds acid phosphate, 12 pounds sulphate of potash. To improve the soil more permanently without stable manure, sow it to rye this fall after the vegetables are gathered and turn the crop under in the spring for a green manure; or better for such a small plot, save all the leaves, cut grass, and such vegetation, and make a little compost heap.



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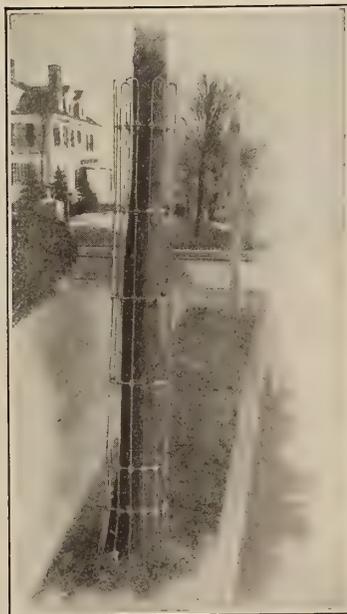
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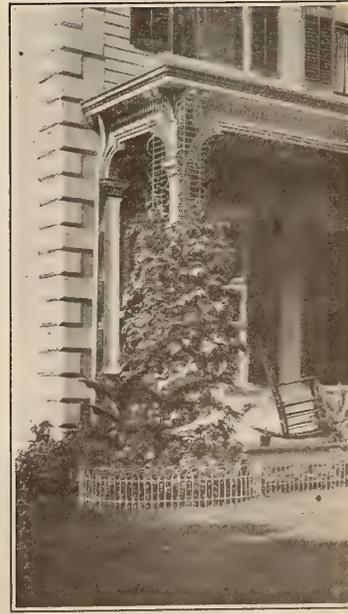
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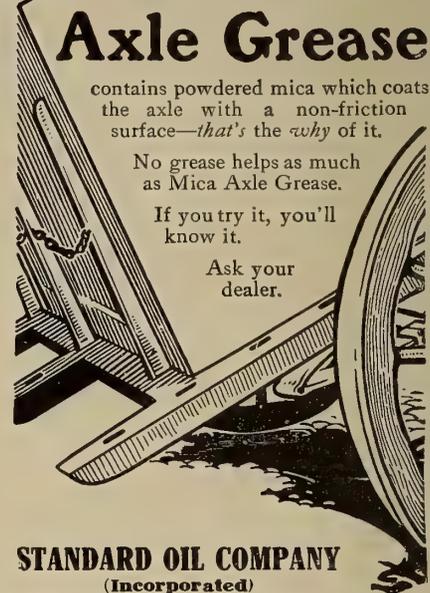
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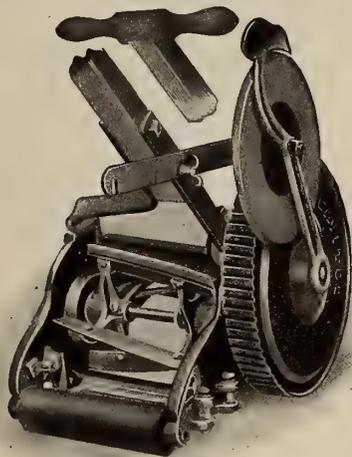
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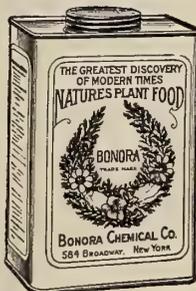
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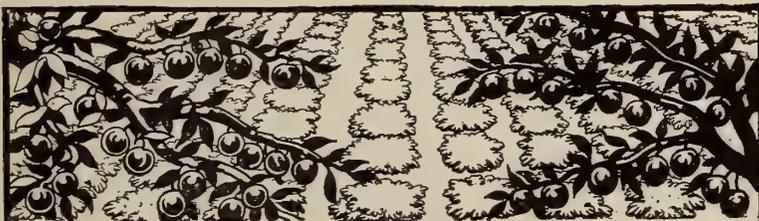
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For many years we have had the largest Mail-Order Seed Trade in the world. This is an acknowledged fact and there must be a reason for it. There are other firms that issue more expensive catalogs and send out "drummers," while we are **exclusively a Mail-Order House**. Therefore, the reason must be in the quality of seeds delivered and character of service rendered.

For 1909 we have decided to give planters generally (even those not accustomed to buy High-Priced Novelties) an opportunity to learn of the *great advancement* recently made in several choicest new Vegetables — at less than half our regular Catalogue Prices for 1909.

Any "Four of the Finest" Novelties — for 25 Cts.!

Separately the seven varieties named below are sold (excepting the last two) each at 15 cts. per pkt. — but you can select **any four varieties for 25 cts.** (a silver "quarter" or five five-cent stamps), while, if desired, we will mail **all Seven Varieties for 40 cts.**, in cash or postage stamps. Separately these seven packets, at prices "per pkt.," would cost **95 cts.**



Burpee's "Dwarf-Giant" Tomato.

The most meaty of all Tomatoes! The flesh is so firm and the tomatoes so heavy that they might be described "solid as a rock!" It is the most *nearly seedless* of all tomatoes. Of handsome, dwarf, erect growth, the bushes produce enormous crops of the most beautiful tomatoes which are truly *gigantic in size* and absolutely unequalled in *delicious flavor*. For full description and Colored Plate, also particulars of **\$437.50 in Special Cash Prizes for 1909**, — see *Burpee's Farm Annual*. Per pkt. 15 cts.

Fordhook Bush Lima. This is *altogether unique*! The only stiffly erect Bush form of the popular "Potato" Lima. Both pods and beans are twice the size of the *Kumert*, while the "fat" beans are of the same delicious flavor as *Burpee's Bush Lima*. Per pkt. 15 cts.; 1/2 pint 25 cts.; pint 45 cts.

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Burpee's Gibraltar Onion. Magnificent mild yellow globe onions, fully as large as the *Prize-Taker* and a better cropper! A great "money-maker" for the market and equally fine for the home garden. For illustration and description — see page 72 of *Burpee's New Farm Annual*. Pkt. 10 cts.; oz. 25 cts.; 1/4 lb. 70 cts.; lb. \$2.25, postpaid.

40 Cts. buys all the above Seven Packets, or you can select one packet each of **any four varieties for only 25 cts.** postpaid.



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Thirty years ago we originated the plan of offering each season a GEM COLLECTION, containing a fine assortment of choice flowers for only twenty-five cents. Still further "to encourage the beautiful," we have endeavored now to surpass all previous efforts.

For 25 Cts. we will mail one packet each of all the following: FORDHOOK FAVORITE ASTERS, choicest varieties in unequalled mixture; WHITE HYACINTH CANDYTUFF, immense heads of splendid flowers; DYANTHUS, FORDHOOK FAVORITES, all the best Chinese and Japanese Pinks; BURBANK'S NEW ESCHSCHOLTZIA, the lovely bright-crimson California Poppy; NEW "FUCHSIA-FLOWERED" IPOMOEA, a most attractive, rapid growing climber, — see illustration; IMPERIAL GERMAN PANSIES, 50 varieties in superb mixture; PETUNIA, "BRILLIANT BEAUTIES," a special blend of *Baby Blue, Adonis, Rosy Morn*, etc., and Burpee's Best Strain of PHLOX DRUMMONDII GRANDIFLORA as grown at our famous Fordhook Farms.



"Petunia — Rosy Morn."

25 Cts. buys all the above eight packets, which purchased separately would cost 80 cts. 5 collections mailed for \$1.00.

Seeds for the Children's Garden.

No better collection than the above could be obtained to give to children. As our contribution we send with each GEM collection ordered this season **two extra packets Free** — containing special mixture of SWEET PEAS and NASTURTIUMS. The sweet Peas include *Burpee's Best Mixed*, together with *Fordhook Fancy Flaked* and New "*Spencer Seedlings*." The Nasturtiums will include all tall varieties — *Burpee's Giant-Flowered, Madame Gunter Hybrids, Red-Spurred Lobbs* and a few of the *Variiegated-Leaved* and *New Ivy-Leaved*.



Six Superb New "Spencer" Sweet Peas 6 Packets for 25 Cts.

For 25 Cts. we will mail one 15-cent packet of BURPEE'S APPLE BLOSSOM SPENCER, as shown, painted from nature, on front cover of *Burpee's Farm Annual for 1909*; one liberal packet each of BURPEE'S WHITE SPENCER and PRIMROSE SPENCER, which sold last year at one cent a seed: one regular packet each of the crimson-orange *Helen Lewis*, and the exquisitely dainty "pink-edged" *FLORENCE MORSE SPENCER*; together with a 15-cent packet of the *NEW SUPERB SPENCER SEEDLINGS* — the first really fine mixture of this magnificent, gigantic, ruffled, Orchid-flowered race.

These six superb Spencers, together with our new Leaflet on culture, mailed for **only 25 cts.**; five collections for \$1.00.

Eight Elegant New "Standard" Sweet Peas

For 25 Cts. we will mail one regular retail packet each of these eight: —

The new flaked *PRINCE OLAF* and the richest dark navy blue, *BURPEE'S BRILLIANT BLUE*; the "apricot and lemon," *SYBIL ECKFORD*; the "peach blossom pink," *QUEEN OF SPAIN*; the *Gloxinia-flowered, mottled HELEN PIERCE*; the fadeless scarlet *QUEEN ALEXANDRA*; the orange-salmon, *BOLTON'S PINK*, and a large 10-cent packet of the unequalled *Special New BURPEE'S BEST MIXED SWEET PEAS for 1909*.

25 Cts. buys either of the above collections, or \$1.00 any five collections, mailed to separate addresses, if so ordered.

For 50 Cts. we will mail **both collections** as above together with your choice of a 15-cent packet of either *BURPEE'S KING EDWARD SPENCER*, the greatest novelty in Sweet Peas for 1909, shown on colored plate in our catalogue, the *NEW PRINCESS VICTORIA SPENCER*, so named by Royal request, or the gorgeous *English St. GEORGE*. Thus you obtain for **50 cts.** fifteen of the finest new Sweet Peas, which purchased separately at regular prices would amount to **\$1.65!**

We have been recognized for many years as *AMERICAN "HEAD-QUARTERS FOR SWEET PEAS"* and are determined to maintain this unique position.

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APRIL

1909

Vol. IX. No. 3

Spring Planting Number

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A complete list of new *Victor Records* for April will be found in the April number of *Munsey's*, *Scribner's McClure's*, *Century*, *Everybody's* and *May Cosmopolitan*.

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Information about the selection or care of dogs, poultry and live stock will be gladly given. Address INFORMATION DEPARTMENT, THE GARDEN MAGAZINE, 133 East 16th Street, New York.

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"WIGWARM" Poultry and Brooder Houses are made in sections 10 x 10 ft.,

and any number can be added. Each pen has hinged windows to open its full size, giving plenty of light and air. Each house has 10 ft. dropping board with two 10 ft. roosts, also set of nests, fountain and hen door. Houses well painted and have neat, pleasing appearance.

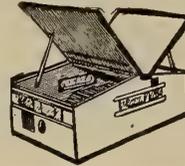
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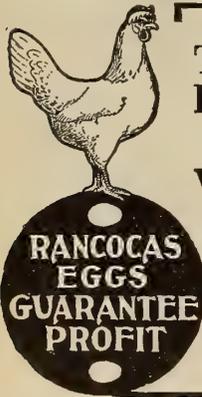
"WIGWARM" Poultry House No. 0. Sanitary. Movable. One man can easily raise several hundred birds with least expense. They are complete in every respect, having a feed trough in front of run, a cage, fountain, and roosts. Easily cleaned and aired. 5 ft. high x 4 ft. x 10 ft. Weight, 225 lbs. Price, \$17. Winter and summer the stock is always comfortable.



"WIGWARM" Brooders are backed by 15 years of Brooder building. Others imitate, but not successfully. Buy a "WIGWARM" and you get the best. Storm proof. No over-heating; even temperature, no matter how cold outside; hot water and hot air system combined, giving perfect, healthy ventilation. Used and endorsed by leading poultry experts at the various State Experiment Stations.



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Large Berkshire Swine

Both imported and American breeding along the most approved lines. Bred sows, service boars and young stock of all ages. We have never bred a cross animal nor had a sow molest her pigs. All animals registered free of charge.

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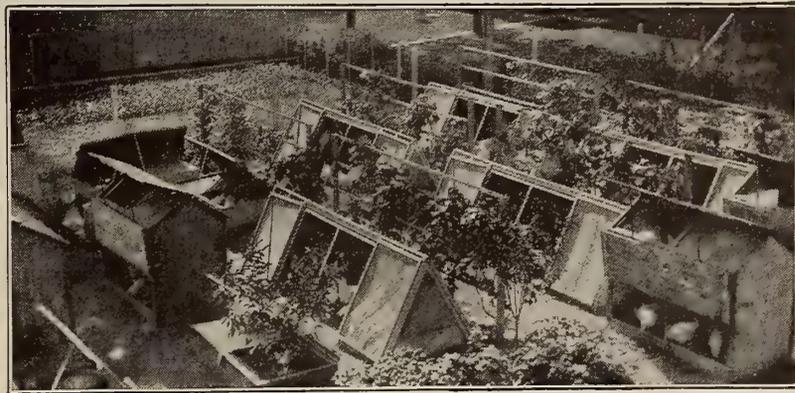
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in Ten Months
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**On This Lot
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Breeding Hens
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Is Especially Valuable to the Farmer as Well as the City or Village Fancier and is Adapted to all Climates, all Breeds and all People

The Philo System is Unlike All Other Ways of Keeping Poultry

and in many respects it is just the reverse, accomplishing things in poultry work that have been always considered impossible and getting unheard of results that are hard to believe without seeing. However, the facts remain the same, and we can prove to you every word of the above statement.

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From selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg, and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make everything necessary to run the business and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work and any man, woman or child that can handle a saw and hammer can do the work.

Two Pound Broilers in Eight Weeks

Are raised in a space of less than a square foot to the broiler without any loss and the broilers are of the very best quality, bringing, here, three cents per pound above the highest market price.

Our Six-Months-Old Pullets Are Laying at the Rate of 24 Eggs Each Per Month

in a space of two square feet for each bird. No green cut bone or meat of any description is fed, and the food is inexpensive as compared with food others are using.

Our new book, *The Philo System of Progressive Poultry Keeping*, gives full particulars regarding these wonderful discoveries, with simple, easy-to-understand directions that are right to the point, and fifteen pages of illustrations showing all branches of the work from start to finish.

It also tells how to make a brooder for twenty-five cents that will automatically keep all lice off the chickens or kill any that may be on them when in the brooders.

Our New Brooder Saves Two Cents on Each Chicken

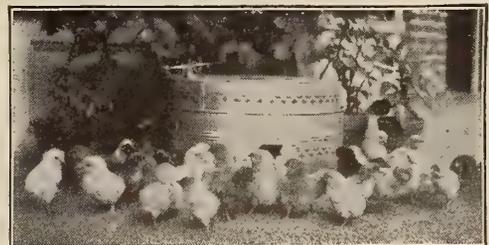
No lamp is required. No danger of chilling, overheating or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all lice off the chickens automatically, or kill any that may be on them when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of from 25 to 50 cents.

A Few Testimonials

It was my privilege to spend a week in Elmira, during August, during which time I saw the practical working of the Philo System of Keeping Poultry and was surprised at the result accomplished in a small corner of a city yard. Seeing is believing they say; and if I had not seen, it would have been hard to believe that such results could have followed so small an outlay of space, time and money.
(Rev.) W. W. Cox.

October 22, 1908.
P. S.—A year's observation, and some experience of my own, confirm me in what I wrote Sept. 5, 1907. The System has been tried so long and by so many, that there can be no doubt as to its worth and adaptability. It is especially valuable to parties having but a small place for chickens; seven feet square is plenty for a flock of seven.
(Rev.) W. W. Cox.

RANSOMVILLE, N. Y., Dec. 5, 1908
DEAR SIR:—Last Spring we purchased your book entitled the "Philo System", and used your heatless brooders last Spring and Summer. The same has been a great help to us in raising the chix in the health and mortality. The chix being stronger and healthier than those raised in the brooders with supplied heat. We believe this brooder is the best thing out yet for raising chix successfully. We put 25,000 chix through your heatless brooders this last season and expect to use it more completely this coming season. We have had some of the most noted poultrymen from all over the U. S. here, also a large amount of visitors who come daily to our plant and without any exception they pronounce our stock the finest and healthiest they have seen anywhere this year.
Respectfully yours,
W. R. CURTISS & COMPANY.



ARE THEY WORTH SAVING?

Don't Let the Chicks Die in the Shell.

One of our secrets of success is to save all the chickens that are fully developed at hatching time, whether they can crack the shell or not. It is a simple trick, and believed to be the secret of the Ancient Egyptians and Chinese which enabled them to sell their chicks at 10 cents a dozen. It takes but a minute to save a chick and no skill required.

Note What Others Say of This "Trick of the Trade."

RINGWOOD, ONT., CAN., May 6, 1908
DEAR SIR:—Some time ago I got the Philo System and must say it is the best book I ever read on Poultry. I have tried the "Trick of the Trade" and saved twenty-two chickens which otherwise would have died.
Yours truly,
ROY MOYER.

BETHEHEM, PA., April 25, 1908.
DEAR SIR:—Your book safely to hand, and have derived great benefit from it, especially "A Trick of the Trade."
Respectfully yours,
G. H. STANFORTH.

POTOMAC, ILL., May, 1908.
DEAR SIR:—I am using your System of Progressive Poultry Keeping and consider it the best work on Poultry Raising I ever read. In my last hatch I saved twenty-three chickens by following the article "A Trick of the Trade."
Yours truly,
FRED JANISON.

Send \$1.00 and a copy of the latest revised edition of the book will be sent you by return mail.

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Comrades

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THE WORLD'S WORK



THE GARDEN MAGAZINE

DOUBLEDAY, PAGE & CO. NEW YORK.



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THE American witch hazel (*Hamamelis Virginiana*) blooms from September to November. Its brown and yellow flowers are such a delightful addition to the garden in the late fall that it should be planted wherever possible.



The witch hazel blooms from September to November and often carries fruits and flowers at the same time

The fruits of the previous crop of flowers still hang to the tree when it blooms a second time, and the accompanying photograph, taken November 18th, shows both blossoms and fruits.

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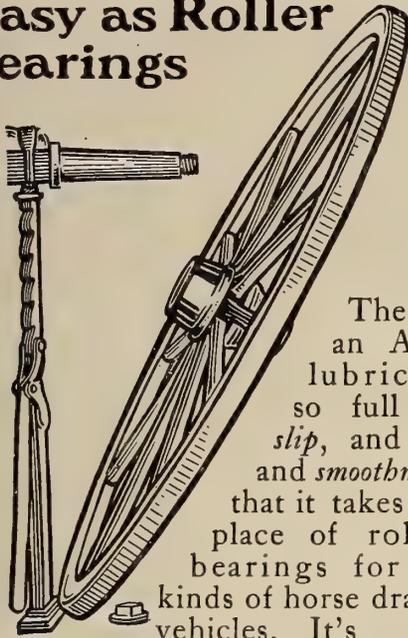
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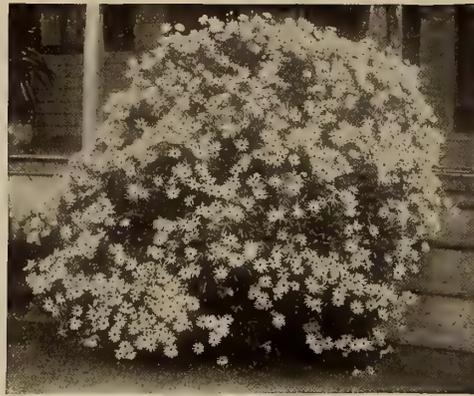
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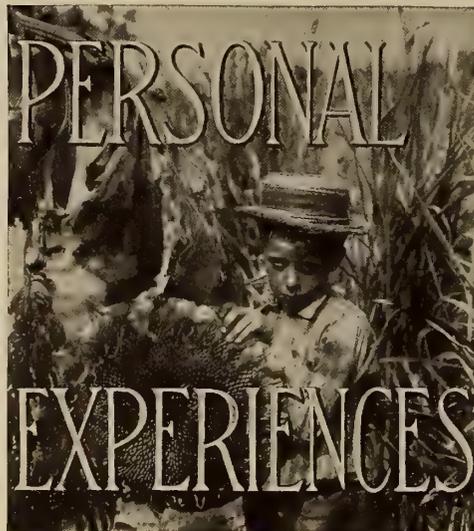
Bellows Falls, Vermont



The marguerite or Paris daisy in full bloom is an effective porch plant

which are always single, are much larger than those grown in the East, and are produced in great numbers.

The accompanying illustration shows a single plant in full bloom. A charming idea is to have a hedge of these daisies. Clip the hedge each time the flowers begin to fade, and prevent the seed from maturing. The hedge soon starts into vigorous growth and becomes again a dazzling mass of white. California. ANN ADAMS.



Quick Results with Corn

A NEW method of watering tomatoes by filling sections of pipe laid between the rows, was described in THE GARDEN MAGAZINE for February, page 30. I have also successfully tried this with sweet corn, the result being large, well-filled ears of corn at a time when it was almost impossible to buy it in this locality at any price.

The soil in the space allotted to the corn was thoroughly spaded and raked, and the seeds planted (with a little sand about each kernel) a foot and a half apart — not in hills. They were covered with an inch and a half of soil, old glass jars being set over the little plants as they appeared. The jars were removed whenever the sun shone brightly, but were always replaced in the cool of the evening.

When the plants were a foot high, well-rotted cow manure was thoroughly worked into the soil about each plant with a small hoe. I did not put the manure into the ground before planting the seed, because I find it occasionally causes the seed to rot during the cold, wet weather which we often have in this locality in early spring. I used the sand directly about the corn seeds, treating them exactly as if they were lily bulbs, manuring afterward. Watering was done in dry weather through the pipe.

After the corn was used, we added more manure to the soil and used the same patch for celery. Ohio. MRS. JOSEPH C. BROWN.



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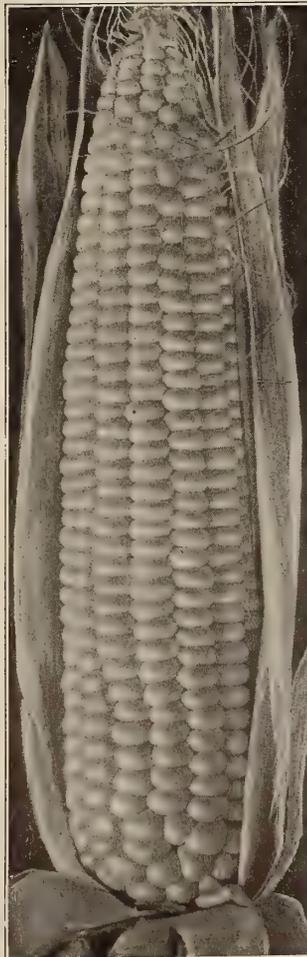


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THE GARDEN MAGAZINE

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Broom Corn for Dry Regions

BROOM corn is a variety of sorghum and is most generally grown for the fine stems which are used in the manufacture of brooms. The Middle West is principally the place where it is cultivated, but it will thrive wherever corn and sorghum are successful, and is a better drought resister than corn. The soil best adapted to it is a well-drained, rich loam.

Seed of broom corn is planted in drills about the same time as corn, with the rows about three and a half feet apart and the seeds six or eight inches apart in the row. The richer the land the more seed can be used. When it is planted in hills six or eight seeds are put in each hill about eighteen inches apart.

As broom corn germinates slowly, frequent shallow cultivation is recommended to keep the weeds down. It is generally harvested when the seed is in the dough state, but there is quite a difference of opinion on this point. A machine is necessary to remove the seeds from the corn, and such a one can be bought for about \$200. In small quantities the seed can be removed with a curry comb. A fair average yield of broom corn would be between four hundred and seven hundred pounds of the threshed brush per acre. The average price will approximate \$75 a ton. Broom corn possesses great commercial importance but little value as a fodder. The Evergreen variety is generally considered the best.

New Jersey.

C. H. M.

Planting Horse Radish for a Succession Crop

HORSERADISH may be grown in any soil except light sandy ones and heavy clays. A deep loam, moderately rich, with plenty of humus and moisture, produces the largest and best quality roots. Dry soils produce small woody roots; wet soils, small, strong-tasting roots. Drainage and a fairly open subsoil are essential, as a hard subsoil makes the roots branch too much. Use little nitrogenous manure. A good formula is potash, 10 per cent., phosphoric acid, 7 per cent., and nitrogen, 4 per cent. Use five hundred to six hundred pounds per acre, broadcasted and plowed under deeply; fertilizer applied above and around the roots induces branching. Thorough preparation of the soil is essential, and a weeder should be used until the plants are an inch or so high.

Any time in spring, plant cuttings from side roots at least one-quarter of an inch thick and four or five inches long. Unless you plant them horizontally cut the top ends off square and the lower ends oblique, so as to be sure to set them top end up. Do not use root crowns except to propagate more cuttings.

On the prepared land lay off shallow furrows from two to five inches deep (depending on the manner of planting) and thirty inches apart. Plant cuttings a foot apart at any angle, having the tops point all in one direction. Cultivate until the leaves shade the ground.

Horseradish may well follow an early planted crop like cabbage, turnips, beets, radish, etc. The sets are put in with a dibble from two to four weeks after the other crop, and placed eighteen inches apart. Horseradish will take possession after the first crop is removed, and as it makes most of its

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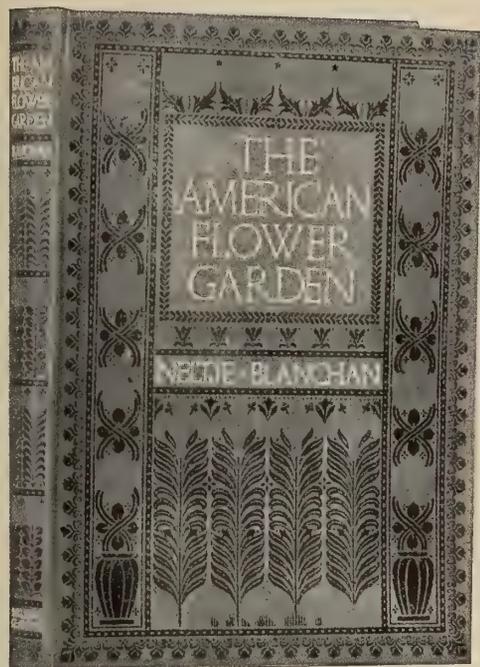
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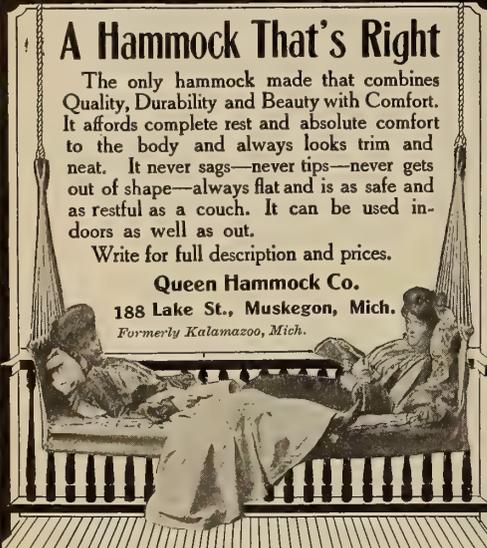
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The cost of growing an acre of horseradish is estimated as follows:

10,000 cuttings at \$2.00	20.00
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Setting out at 30 cents per 1,000	3.00
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The marketable crop ranges from 3,000 to 6,000 pounds of first and second grade roots. The former brings from four to five cents a pound, and the latter from two to two and a half cents. A retail price of seven cents per pound is sometimes secured. Every home garden should have a few roots of horseradish in an odd corner, where it may remain as a permanent crop. They may be dug up, partially scraped for use, and the stock replanted.

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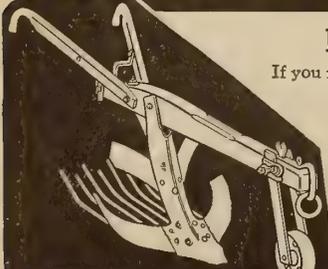
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Should be in your hands before you buy for spring planting. It gives full information as to the habits and characteristics of this class of ornamentals, and shows many of the best kinds as grown in typical gardens, lawns, and yards. In this way it suggests numerous pleasing ideas for planting home grounds, large and small, describing the flowering trees and shrubs best adapted to the purpose.

A Hint of What this New Book Is Like

Herewith we reproduce in miniature the cover and one of the illustrations of this book. Flowering Crab Apple, shown in the lower picture, is thus described by the book: "With perfume-laden—sweet fragrance with every breath wafted here and there by spring's soft air; with harmony of color—blushing pink and rose from opening bud to falling flower so bright and fair; this is the call of the Wild Crab-Apple. The answer, gentle reader, you know too well, for who has not responded? Their dainty flowers, with enticing sweetness, make fast friends everywhere. They are very hardy and thrive in almost any kind of soil, making both ornamental and desirable specimen trees for lawn or garden."



How You May Get a Copy Free

"Flowering Trees and Shrubs" has 64 pages and covers, is printed on fine book paper, has been carefully written from ripe experience of the management of Biltmore Nursery, and is illustrated from specially made photographs used by no other nurseryman. It cost a great deal of money to produce this book—some thirty cents a copy—and each copy takes three cents postage. No promiscuous distribution to persons not interested in home ground decoration is practicable, therefore, but we will gladly send a copy free of all charge to any one who owns a home or expects to own one soon and wishes to plan the planting of its grounds.

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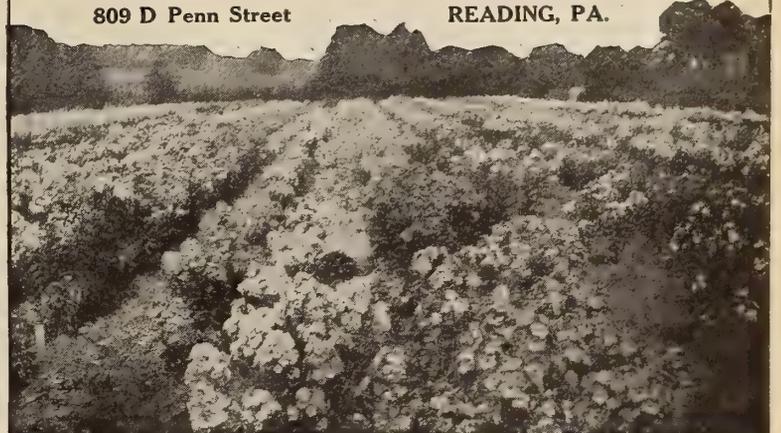
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Regarding Kentucky Blue Grass, so widely advertised as an ideal lawn grass, it has merits and demerits. Where Blue Grass thrives it eventually makes a good lawn, but it is slow to thicken up, requiring not less than two years to form a good sward, and does not hold its color in hot weather; it will not thrive on acid soils, and a large portion of soils in the lower altitudes, especially in the Coast States, are inclined to acidity. Kentucky Blue Grass is quite extensively used for lawns on the Pacific Coast and on the limestone soils of Kentucky, etc., but the results of this or any one grass in no way compare with the beauty and fine velvety texture of lawns made with an intelligently blended mixture of grasses of neat, close, interweaving growth, such as compose the "Henderson" Lawn Grass mixture; and besides, the latter will make a thick close turf in a few weeks' time.

The "Henderson" Lawn Grass Seed produces a perfect and enduring lawn of luxuriant richness, with closely interwoven, firm, deep and elastic turf, and it is often ready for cutting in four weeks from time of sowing. This celebrated Lawn Grass is composed of a thoroughly balanced combination of various native and foreign fine-leaved, deep-rooting grasses of interweaving habit, that flourish under our varied conditions, soils and climates, growing during different seasons of the year, so that a deep green, smooth, and velvety sward, free from clumps, is maintained from snow to snow, year after year, and without burning brown in summer, its constant luxuriance rivaling the famous lawns of Old England.

The Beautiful Lawns at the Pan-American Exposition, Buffalo, also at the World's Fair in Chicago, the Lewis and Clark Exposition in Portland, Oregon, and the Jamestown Exposition, Norfolk, Va., were produced in less than six weeks' time with THE "HENDERSON" LAWN GRASS SEED, which was awarded the highest medal at these Expositions; but what we prize more than gold medals are the hundreds of letters of praise we have on file from the users of THE "HENDERSON" LAWN GRASS SEED in almost every State in the Union.

The "Henderson" Lawn Grass Seed is, relatively speaking, the cheapest seed offered, because, while other lawn grass mixtures on the market will not average over 14 lbs. to the bushel, this, being freed from chaff, weighs 20 lbs. per measured bushel. It is also the PUREST, CLEANEST, and HEAVIEST lawn grass seed ever offered and it is absolutely free from weed seeds.

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in large and small quantities, for either the pretentious lawn or the modest door-yard plot.

15c. per pint, 25c. per quart,
85c. for 4 qts., \$1.50 per peck,
\$5.00 per bushel of 20 lbs.

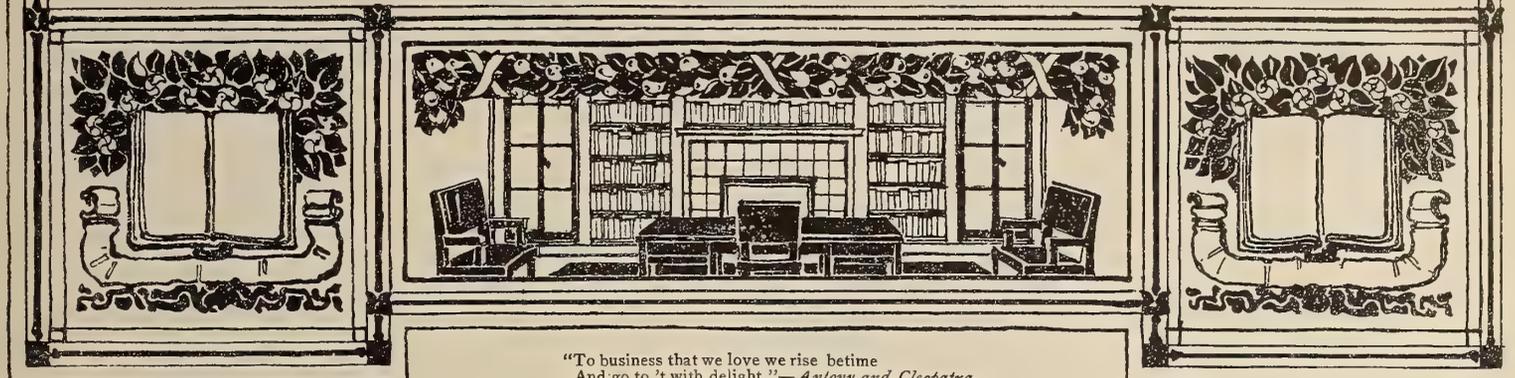
The quantity required for new lawns is 5 bushels per acre.
For a plot 15x20, or 300 square feet, use 1 quart.
For renovating old lawns, use one-fourth to one-half of above quantities.

FULL INSTRUCTIONS IN EVERY BAG.



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THE TALK OF THE OFFICE



"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

THE STORY OF THE SERVICE DEPARTMENT

The Readers' Service of the Doubleday-Page magazines was started to meet a demand for first-hand information about horticulture, office appliances, and other more or less simple matters of pleasure and business.

These functions have continued steadily in play. To them, within the past two years, have been added two big recruits — the financial and the insurance departments. The former has grown to be much the biggest of all the sections. In 1908 it received and answered nearly three thousand letters, involving answers to more than eight thousand specific questions about financial matters.

The range of information is astonishing. A merchant in Berlin, Germany, holding \$30,000 of maturing Government bonds, writes to ask questions about standard American railroad bonds as a long-time investment. A Senator from the West, preparing to take a part in the debate on the Aldrich bill, wants "bullets of fact" about the banking situation in New York during the panic. A woman in Holyoke, Mass., whose dividends have ceased, seeks comfort concerning her holdings of copper stock.

Our mail-bag makes queer companionships. In the same mail came a letter from the representative of a foreign Power at Washington, D. C., asking about an investment of some thousands in bonds, and a letter from a factory-girl in Passaic, N. J., contemplating an investment of twenty-five dollars in a new invention. And the reply to the letter from Passaic takes longer to prepare and more work in investigation than the other.

Roughly, one hundred and fifty letters from bank officers have been answered within the past year. One president was advised to cut down the amount he had invested in standard railroad bonds, as it seemed out of all proportion to the amount of his deposits. Another, in Arkansas, was urged to curtail his credits to a particular group of capitalists engaged in semi-speculative undertakings. Many merely asked specific questions concerning the character of bonds offered to them by salesmen from bond houses in New York, Chicago, Boston, Cincinnati, St. Louis, and Philadelphia. They tried us out, to see if at last they had discovered someone who

would give them a really disinterested opinion concerning securities offered to them by interested parties. Judging solely by the number of times some of them have come back, they found what they wanted.

Of course, not all the of writers mention the amount of money that they intend to invest; and some seek information about the securities they now own, rather than about purchases. Based upon the amount named in the letters that do go into figures, the financial service would seem, directly or indirectly, to reach an investment fund of more than \$5,000,000 a year.

The Insurance Department, established last summer to meet what seemed a pressing demand for information about companies, policies, problems, and troubles, has grown faster than the financial during the same period. Nearly a thousand people have asked direct questions concerning insurance, and they have received replies as promptly and as directly as they could be furnished. This department grows steadily in size and in influence.

The general departments, led by the horticultural division, maintain their volume, and in some instances, have greatly increased during 1908. To them, as to all the sections, letters come from all over the world. If any one thing is apparent above others, as a result of our experience with these departments, it is that the foreign readers of the magazines miss nothing that lies between the covers. They devour the advertising pages just the same as the editorial.

The information retailed through this department covers a range as wide as the world. The building of a house, the establishment of a factory, the preparation of a lawn, the planting of a tree, the pruning of a shrub, the culture of a flower — nothing is too big, apparently, and nothing is too little to make it worth while to ask about. What to wear, what to eat, what to do, whether to go to law and take arms against a sea of troubles, or to abide in peace and suffer it — all these and a thousand other questions pour in from every state and every country where English is read or spoken.

And so the Readers' Service men have come to call themselves "brokers of information," middlemen, as it were, through whom the world at large may obtain the latest-known

facts concerning anything in the world of business, or finance, or insurance, or mere human life. We are not prophets, nor market sharps, either in cabbages or bonds. We do not know whether, if you plant a certain sort of shrub in your garden, it will produce one hundred blossoms next year, or ten; nor do we know what the stock market is going to do next month. We can but give you facts, and let you do your guessing for yourself.

The expense of maintaining this service department we feel is more than justified by the feeling of friendly intimacy it engenders between the subscribers to our magazines and ourselves. May it increase and grow in importance.

A NEW SERVICE DEPARTMENT

For some time we have been considering the best and most satisfactory solution to a growing problem: the disposal of the numerous inquiries continually received about agricultural and horticultural books not on our list. In response to the increasing demand for information about such books, and for the convenience of our friends and customers, we have created a new department enabling us to furnish direct, at regular prices, any and all works pertaining to agriculture and horticulture and their various branches. We have prepared a comprehensive classified catalogue containing the titles of practically all works on these subjects — convenient in size, so as to be filed for ready reference. We invite your correspondence and will be glad to answer any questions as to the scope of this new department. A postal addressed to the Horticultural Department, 133 East Sixteenth Street, New York, will bring you a copy of the new catalogue.

NOTICE

We have for a long time been developing an organization consisting of a reliable representative in every town in the United States. If you want to develop a mail-order business of your own write to Doubleday, Page & Co., 133-137 East 16th Street, New York.

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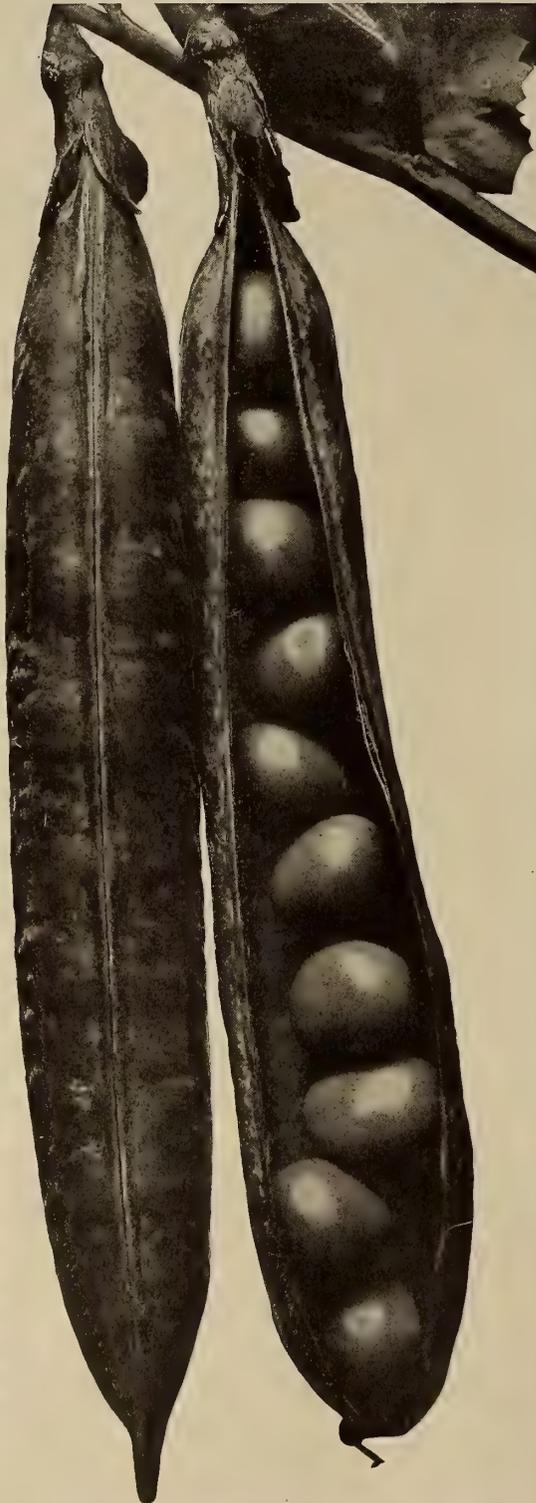
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is a heavy cropper and exceedingly prolific, the pods hanging mostly in pairs; the constitution is wonderfully vigorous and hardy, far excelling, in this respect, many of the marrow varieties; the color of both pods and haulm is a rich, velvety green.

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(NATURAL SIZE)
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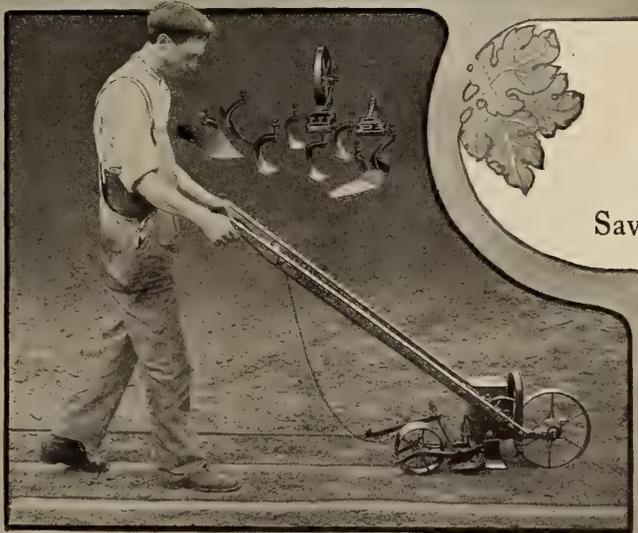
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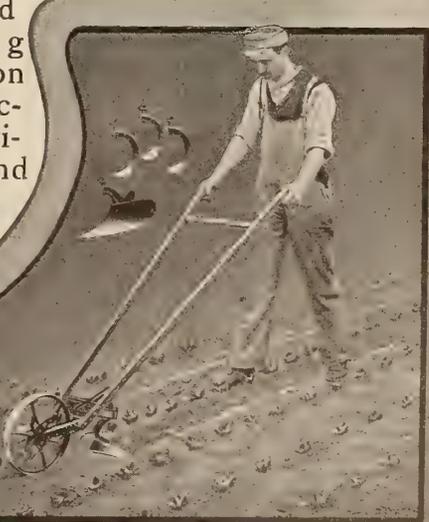
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As now improved, this is decidedly the most complete mixture of *Truly Giant-flowered Pansies* ever offered. Per pkt. 15 cts.

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In superb mixture for 1909. Of tall growth, bearing flowers of many bright colors. The leaves are so beautifully variegated with yellow, white and green that the plants would be worthy of culture even for *foliage* alone! Pkt. 15 cts.; per oz. 50c.

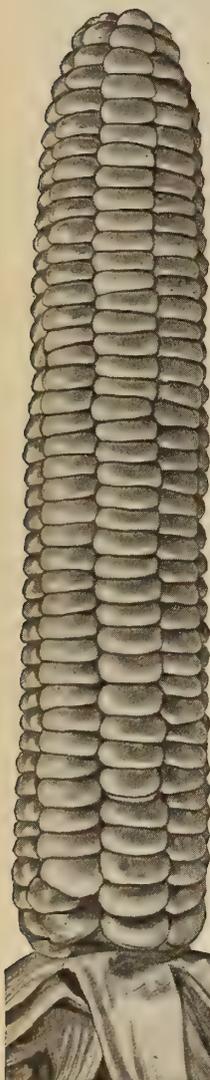
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Whether ready now to order or not, you should write TO-DAY for

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AN ELEGANT BOOK OF 174 PAGES,—it tells the plain truth about the Best Seeds that can be grown,—as proved at our famous FORDHOOK FARMS,—the most complete Trial Grounds in America. It is A SAFE GUIDE and should be consulted by every one who plants seeds, whether for pleasure or profit. Shall we mail YOU a copy? If so, kindly write your address plainly, name *The Garden Magazine-Farming*, and mail postal,—To-day!

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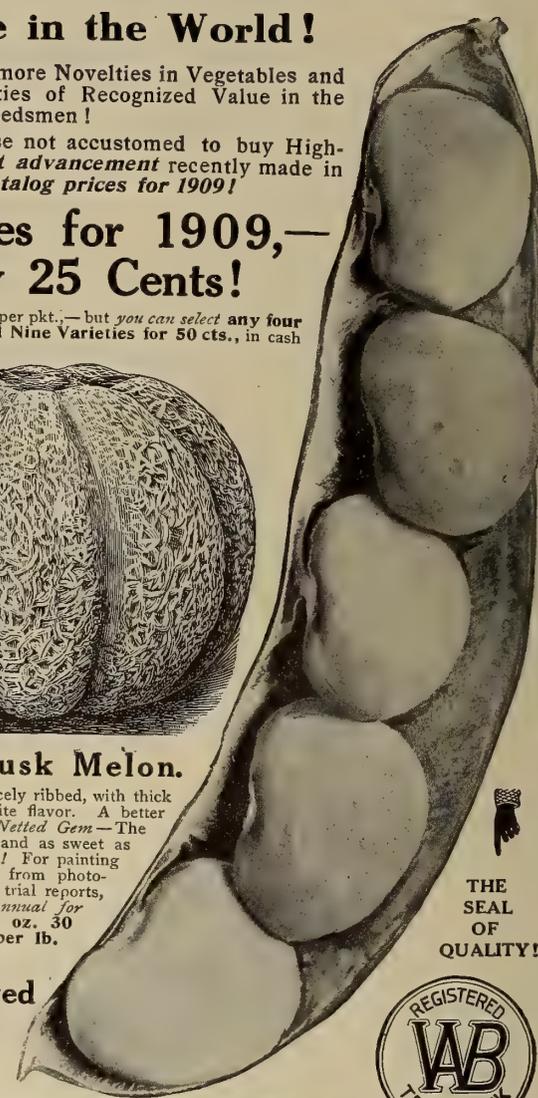


Fordhook Musk Melon.

Heavily netted melons, nicely ribbed, with thick golden-red flesh of exquisite flavor. A better shipper than our original *Netted Gem*—The "Rocky Ford" Melon,—and as sweet as our famous *Emerald Gem!* For painting from nature, illustrations from photographs, full description and trial reports,—see *Burpee's Farm Annual for 1909*. Per pkt. 10 cts.; oz. 30 cts.; ¼ lb. 85 cts.; per lb. \$3.00.

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The earliest, largest and best of all Large Limas. Ten days earlier than any other Large Lima, the pods are truly enormous in size and borne most abundantly on vigorous upright bushes. Per pkt. (two ounces) 15 cts.; ½ pint 35 cts.; pint 60 cts., postpaid.



THE SEAL OF QUALITY!



BURPEE'S "DWARF-GIANT" TOMATO,—Actual Size. Weight, 17 ozs.

The Garden Magazine

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TWENTY-FIVE CENTS A COPY



[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

Fourth Annual "Life Saver"

YOU can have twice as good a garden and five times as much "fun," save half the work and all the worry, by using this page as your spring guide.

You can absolutely cut out the spring rush by doing the headwork indoors before April 1st.

The thing to do now is to cross off all the items on this page that do not concern you. Then check off each item as fast as it is done, date it, and you will have the best garden diary you ever saw.

The best working library any gardener can have is the eight bound volumes of THE GARDEN MAGAZINE. Get an extra set of indexes, keep them in a patent holder, and you can save handling heavy books and much precious time.

This is our fourth improved "check list" or "spring guide." Tell us a better scheme and you will be our everlasting friend.

Indoors Before April First

SEND a dozen postals to the best seedsmen and nurserymen for catalogs.

Get manure or fertilizer.

Plan the vegetable garden. Draw it to scale. Take the ten steps mentioned in E. L. Fullerton's "How to Make a Vegetable Garden."

Get the simplest planting table for vegetables.

Have fresh vegetables two or three months longer by providing a windbreak.

Try two novelties, e. g., seakale, a delicious vegetable which is as permanent as rhubarb, and udo, the new winter salad plant.

Plan the fruit garden. Buy Fletcher's "How to Make a Fruit Garden." Have only dwarf trees in cities or suburbs.

Plan the flower garden.

Secure perfect succession of bloom and harmony of color in your hardy border.

See if you can have a water garden. Buy "Water Lilies and How to Grow Them."

Avoid as you would a pestilence all cheap seeds, free seeds from Uncle Sam, and old seeds from the corner grocery.

Order all seeds, flowering trees, shade trees, shrubs, perennials, hedge plants, vines, and bulbs for spring planting.

Order improved tools that will pay for themselves the first season.

Order a complete spraying outfit and have the best directions.

Write all labels and mark on them the distance apart the plants should stand when thinned or transplanted.

Gain a month by sowing vegetables and flower seeds in hotbeds about March 15th.

Clean and sharpen tools.

Look over roots and bulbs in cellar.

Take slips of geraniums and other bedding plants you have carried over winter.

Have the children plan their gardens and get them to build bird-houses.

Quit fool diaries and adopt Mr. Kayan's vest-pocket system of garden records.

Become an amateur plant breeder.

Make every foot of your daily walk or drive delightful the year round without expense.

Outdoors Before April First

BEFORE farmers begin to plow, or when the peaches bloom, do these things:

Plant while dormant all deciduous trees, shrubs, and permanent vines.

Plant while dormant dwarf fruit trees, berry bushes.

Plant while dormant all nut trees, e. g., chestnuts, hazelnuts, hickory nuts, and walnuts.

Plant while dormant, or about March 25th, new hardy roses, including climbers.

Sow sweet peas.

Sow a few rows of extra early peas, beans and corn only if you are willing to cover young plants on frosty nights.

Sow grass seed. Roll and repair the lawn. Buy "Lawns and How to Make Them."

Prune fruit trees and grapes — not berry bushes.

Prune autumn-blooming shrubs, e. g., hydrangeas. Prune spring bloomers after flowering, except as follows:

Prune hardy roses already planted by March 15th. Prune tender roses after April 15th.

Train berry bushes and grapes.

Spray all fruit trees and berry bushes with soluble, or miscible, oils before the buds open.

Fertilize the lawn and vegetable garden.

Fertilize asparagus and rhubarb. Use manure or nitrate.

Mend old trees.

Get grading done before the rush.

Get draining done before the rush.

Trim paths, borders, walks, drives. Get a trimmer that will save its cost in labor in one year.

Get brush, poultry wire, and poles for peas, beans, and tomatoes.

Buy or make hotbeds and coldframes.

Clean up the home grounds.

Outdoors on April Fifteenth

AS SOON as the land is fit to plow and before all danger of frost is past do these things:

Plow and harrow the vegetable garden or dig and rake it.

Sow seeds outdoors of all hardy vegetables for the main crop.

Sow outdoors all hardy annuals, flowers, and temporary vines.

Plant early potatoes and onion sets.

Plant evergreens as soon as the soil is warm, both narrow-leaved and broad-leaved. Plant gladioli and other half-hardy bulbs, but not tender kinds like cannas and dahlias.

Plant hardy perennials, divide old plants, and rearrange the border.

Don't plant peonies or lilies in spring, unless it is unavoidable, rather make perfect beds for them. Manure heavily now and get better bulbs in the fall. Transplant hardy vegetables from frames to open ground. "Harden off" tender vegetables.

Be "loaded" for Jack Frost.

When in doubt consult our Readers' Service Department.

MAKE MONEY OUT OF YOUR FAILURES!

Invitation to Every Reader of the Magazine: We are very anxious to hear more of our readers' actual experiences in gardening — not necessarily successes, because failures may often teach a very valuable lesson. What we do want is the record of the individual's experience, the little discoveries about peculiarities of different varieties and their adaptations to different purposes and situations. Also, records of actual profits made by or through the garden, which is a very important issue in most communities. We are willing to pay for any acceptable, short personal experience along these lines; and more so, if they are accompanied by illustrative photographs. Short articles will be much preferred to long ones.



Trenching for fertility and depth. These pictures show the whole process: (1) open a trench two spits deep, removing soil to end of plot; (2) spread manure in the trench mixing with the bottom soil or top soil of new trench; (3) turn second spit of soil from new trench on to the first; (4) proceed to new width, etc.

Planting Trees and Shrubs for Ornament—By David McIntosh, ^{New York}

SEIZE THE PRESENT OPPORTUNITY OF SETTING OUT ALL KINDS OF DECIDUOUS AND EVERGREEN STOCK BEFORE WARM WEATHER ARRIVES—WHAT TO LOOK FOR IN BUYING AND HOW TO PLANT FOR THE BEST EFFECTS

THOUGH the nurserymen dig the trees and shrubs carefully, and are equally solicitous in packing to avoid injuring the roots or branches, they are nevertheless certain to suffer some check. Three or four days may elapse before the plants reach their destination, and moreover it is usually impossible or inconvenient to plant them at once, resulting in another few days' delay.

When they arrive, undo the package and set them in temporary trenches closely together, covering all the roots with soil, and if the soil and roots are very dry it will be of benefit to water them. This is "heeling in." It may also be well to throw some light covering over the branches of such shrubs and trees as show any signs of wilting. Another method of keeping the trees and other kinds of plants from exposure until they are permanently planted is to partly remove the packing material and stand them on the floor of a coal shed or cellar.

In planting first observe the length of the roots, and dig holes at least two inches larger all round than the extension of the roots. In newly trenched ground, the trees when planted should be at least an inch deeper than they were in the nursery, to allow for the later settling of the soil; if this is not done some of the roots may become exposed.

Place the tree or shrub in the hole so that the trunk or clump is as near the centre as possible. Look for broken roots, cutting off the broken parts with a sharp knife or shears. Make a clean wound, as otherwise the injured root will decay. With the hands straighten the roots so that they are evenly spread over the bottom; then fill in with fine soil dropped over the roots. At intervals, as this is done, work the tree up and down slightly so that the soil will find its way in among the roots. After covering with two or three inches of soil in this way fill with the remainder, tramping it firmly; or a

wooden pounder may be used if handled carefully.

If the soil and the weather are dry, watering may have to be done; and when it is done give sufficient to be sure that the water reaches down to the roots. For this purpose the soil around the plant should be formed into a slight hollow so that, with one application, it will hold a sufficient quantity of water to be effective. Although in very dry seasons newly planted trees and shrubs may need watering occasionally, they will need it much less if the soil is frequently stirred with a hoe and rake — this stirring of the soil pulverizes it, in which condition it acts as a "mulch" or conservator of moisture.

Tall trees when newly planted are apt to be shaken by high winds which will prevent their speedy establishment in the soil unless stayed by wooden stakes driven into the ground; and in order that the bark may not be injured by contact with these supports a piece of rubber hose, split, should be placed around the tree and then tied securely with twine to the stake.

HOW TO SELECT PLANTS

Climatic conditions must always be considered in the selection of plants to be set out. Many trees and shrubs that will thrive inland will not grow in exposed situations near the seashore. A look around the vicinity of where the planting is to be done, to see what plants are thriving, is a wonderful help. As a guide to the planter some of the most reliable ornamental for special purposes are indicated below.

EVERGREEN TREES

The white spruce (*Picea alba*) is perhaps the most generally reliable evergreen tree. It is well adapted for grouping, for planting in rows, and for single specimens. The Norway spruce (*Picea excelsa*), both on

account of its beauty and hardiness, is desirable and can be used for the same purposes as the preceding. The difference in color effect is great, however. The white spruce is glaucous blue, the other a sombre, dark, almost black green.

The finest of all the spruces is the Colorado blue spruce (*Picea pungens*), and its very highly blue-colored varieties *glauca* and *Kosteriana*. These are beautiful in form and in color and should be planted singly to form specimens, which they do at a very early stage of growth. Nordmann's fir (*Abies Nordmanniana*) makes a handsome specimen effective in grouping. The foliage is bright glossy green and flexible looking. On account of its rapid growth the Austrian pine (*Pinus Austriaca*), hardy in most sections, is one of the best evergreens for quick results. The white pine (*Pinus Strobus*) is particularly well adapted for planting on hillsides, and in large numbers for large or medium forest effects, as also is the Scotch pine (*Pinus sylvestris*). The hemlock (*Tsuga Canadensis*) is most graceful of outline, hardy, and well suited for grouping in somewhat exposed places, making a tall pyramid.

All the above (with the exception of Colorado blue spruce) can be bought at about a dollar when three feet high. The Colorado blue spruce is scarce as compared with the others; trees of that variety, three feet in height, cost from three to four dollars. They are worth every penny of it.

DECIDUOUS TREES

Nearly all the maples are such useful and accommodating trees that there are good reasons for planting numbers of them. The Norway maple (*Acer platanoides*), as a single specimen on a lawn, is without an equal for beauty of form, luxuriance and rapidity of growth, and capacity for producing quick ornamental effects. It makes a round, dense

head, turning bright yellow in the fall. The purple Norway maple (var. *Schwedleri*), sugar maple (*A. saccharum*), and the sycamore maple (*A. pseudo-platanus*), are all suitable for planting as specimens. Weir's cut-leaf maple (*Acer saccharinum*, var. *Wierii*) is a beautiful, quick-growing tree with finely cut foliage and weeping habit of growth, well adapted for planting in front of other maples, but it is liable to damage from storms.

There are a great many varieties of oaks and the general impression is that they grow slowly, whereas in fact they make quite rapid growth. They die slowly. They are all suitable for single, specimen planting on lawns, for grouping, and for shade trees. The pin oak (*Quercus palustris*) prefers moist soil and is perhaps the most beautiful with small shiny leaves; the scarlet oak (*Q. coccinea*) does well on dry soil, turning scarlet in fall; the white oak (*Q. alba*) is the most dignified, with a broad, spreading head becoming violet in the fall. The English oak (*Q. Robur*), with its large leaves, and the chestnut oak (*Q. Prinus*), which does well on medium dry soils, are worth planting in groups or singly.

Because of its rapid growth and tall, erect habit, the Lombardy poplar is particularly valuable for screening buildings and high fences. Groups of these are valuable in producing stately effects adjacent to tall buildings; they may also be planted for avenues when quick results are sought.

The catalpas are handsome trees with large leaves; they produce showy white flowers in thyrses in June and July, and grow rapidly even in poor soils. The buttonwood (*Platanus occidentalis*) is a quick growing tree with large-lobed leaves and very hardy; it is especially well adapted for street planting and for the seashore. It is easily recognized by its scaling bark. The elms, lindens, horse chestnuts, beeches, ashes, and birches — thoroughly familiar trees to all of us — are suitable for either grouping or single-specimen planting.

The fern-leaved beech makes a beautiful lawn specimen, always having a "trim" effect. The purple-leaved beech (*Fagus sylvatica*, var. *purpurea*) should be planted when a little color is desired. The sweet gum (*Liquidambar styraciflua*) is a charming tree with glossy green foliage, becoming golden yellow in fall, and is best used as a specimen.



Before planting cut back long or bruised roots, making a clean surface. This induces new roots to form

Willows, though by no means the handsomest or most desirable of trees, are nevertheless of great value for planting on the banks of ponds and water courses. They fit in better and give quicker results than anything else. If there is a particularly ugly building within view and a possibility of hiding it, just plant white willows (as tall as can be got) closely together and they will do the work in quick time. Willows can be moved easily at any age.

DWARF ORNAMENTAL EVERGREENS

For grouping at entrances, near dwelling-houses, and for massing in formal planting, dwarf evergreens are favorites, because they are always cheerful and in evidence. From among the Japanese cypresses or retinisporas alone plenty of material in variety of coloring, habit, and other peculiarities can be secured to make a very handsome group. The taller kind may be massed in the centre with *Retinispora obtusa*, var. *nana aurea*—the dwarf golden one—in front, as an edging. The central plants need not be put in with a view to regularity, but the group will seem larger if the standard varieties are placed to the back. The Irish juniper (*Juniperus communis*, var. *Hibernica*) and the golden arborvitae (*Thuja Geo. Peabody*) are bright looking and useful either as single specimens or in groups. Both the American arborvitae (*Thuja occidentalis*) and the var. *pyramidalis* are well adapted for screening purposes, and the former for hedges also. The junipers, prostrata and Sabina, are excellent for rough banks, rocks, and as ornamental ground covers.

The common dwarf box (*Buxus sempervirens*, var. *suffruticosa*) is the best dwarf evergreen edging. Set plants fifteen inches or more in height. Mark a line to be followed and make a trench, placing the plants in one by one with one hand, using the other to cover the roots with soil.

Rhododendrons, especially the native hardy (*R. maximum*), are invaluable. Plant in groups or in irregular masses in a continuous border in front of deciduous trees. They delight in partial shade and moist soil. When planting leafmold, well rotted manure, or peat must be liberally mixed with the soil if they are to do well. The hybrid rhododendrons are not quite hardy, but they are so beautiful while in flower that their extra cost and the trouble in protecting them with a covering of branches or boards in winter are amply repaid.

FLOWERING SHRUBS FOR IMMEDIATE EFFECT

A very great deal can be done toward beautifying the surroundings of the home in one season by planting deciduous flowering shrubs. When immediate effect is desired, it is better to plant them in large masses of one kind in a group, or a continuous border may be made by planting large quantities in masses, similarly, but having them all united into one continuous whole.

There is plenty of room for the exercise of individual fancy in the selection of flowering shrubs, and there are so many available that it is impossible to more than barely



Never plant in infertile soil, but remember to mix manure with the soil away from the roots of trees. Put the feeding material below

indicate what might be used. The spireas and deutzias are by far the best, and their profusion of white flowers generally appears before the leaves. The pearl bush (*Exochorda grandiflora*) is later and has large white flowers about the size of those of a pear blossom. Although the colors of some of the weigelas may hurt the eyes of some color-sensitive people, these shrubs will ever remain favorites because they will flower under the shade of trees more profusely than any other shrub.

For large masses of white flowers in full summer we have the snowballs, of which the Japanese (*V. plicatum*) is the more refined. The golden bell is among the earliest to open its blossoms, lightening the garden with flashes of yellow. The flowering dogwood, used in connection with shrubbery, is as valuable as when planted as a single specimen tree.

For later flowering, the sweet pepper bush, the winged euonymus (*Euonymus alatus*), the new mallow hybrids *Hypericum Moserianum*, Kerria (the branches of which remain bright green all winter), and the mock oranges (*Philadelphus*), can be relied upon for all situations. The purple-leaved, flowering plum (*Prunus Pissardi*) is valuable for the contrasting color of its foliage, but its accentuated color is not always welcome in the shrubbery border.

Lilacs, of which there are a host of named varieties nowadays, are better planted individually than worked into the general border.

ARRANGEMENTS FOR EFFECT

Shall trees and shrubs be planted singly, in rows, or in groups? Three or more trees or plants placed in a more or less close relation one to the other make a "group." This method of planting is especially desirable when immediate effect is an important consideration. If planted to stand apart as single specimens, young trees and more especially deciduous trees will not make much

of an appearance during the first year, but if they are concentrated into a group the difference in the effect will be surprising. In course of time trees in groups will have grown to such an extent that some of the individuals can be dispensed with, and can in all likelihood be utilized to good advantage in further extending the area planted. Groups of trees or of shrubs, or both, can in many cases be appropriately formed close to dwellings and at irregular intervals along driveways, as well as near the boundaries. Always bear in mind that a piece of open lawn, to give a feeling of space, is a great factor in the problem of beautifying the grounds.

When planting trees or shrubs in groups the effect produced will be much more pleasing if, instead of placing them in a regular or artificial manner, as one at each corner of a square or around a circle or within the limits of any other figure, they are disposed of in such a way that they will show some of the peculiarities seen in nature. This can best be accomplished by planting irregularly and having regard for graceful, sweeping curves in the outline of the mass rather than for symmetry of form. The distance between the trees of a group must, to a great extent, depend on the size and spread of the trees; but the effect will be more immediate if they are planted rather



Far better to take out and cart away the poor soil, especially such as is thrown out from building operations. Dig over all soils before planting

closer to each other than will be eventually needed.

Planting in rows is often a necessity along highways and streets bordering an estate; and rows or even double rows of trees may be required to effectually hide an ugly building, high fence, or some other equally objectionable eyesore, but there can be no excuse or reason for planting in this way on a lawn.

Single specimen trees, after attaining considerable size, are grand and imposing objects, and every garden should have at least one, planted so far apart from its neighbors that the individuality may be retained and its development proceed unhindered. A specimen tree must be trained up from its youth. Specimens may appropriately be placed behind and in front of groups, and here and there in front of lines of trees bordering lawns and roads.

When planting in groups a distance of at

least two feet between the plants is a good working rule, but their actual disposition must to quite an extent depend on the character of each kind as to robustness and habit of growth.

On small places shrubs are often planted singly in the grass, but they are not so effective as when planted in groups or borders.

The majority of the flowering shrubs can be purchased in sizes from two to four feet for twenty-five cents up to one dollar.

The Japan barberry (*Berberis Thunbergii*), is one of the handsomest little shrubs in cultivation, and perhaps the most generally useful. It will grow and thrive in almost any soil or situation. The leaves are oval, bright green in early summer, turning to the most brilliant shades of orange and red in the fall. I cannot too highly recommend it for planting in masses as well as for forming compact dwarf hedges that will need little or no clipping to keep trim.

Japanese maples are beautiful little trees with finely cut foliage in many colors. They look well when planted singly, in rows, or in groups on small lawns. Good varieties are: atropurpureum (blood red); atropurpureum dissectum (also blood red, but of low drooping habit with delicately cut leaves); polymorphum aureum (golden leafed), especially pretty in early summer.

Planting the Home Vegetable and Fruit Garden—By W. C. McCollom, New York

WHAT TO DO NOW TO INSURE CONSTANT SUPPLIES OF FRESH VEGETABLES AND FRUITS ALL SUMMER WITH PLENTY FOR WINTER STORAGE—HOW TO PLAN FOR GREATEST EFFICIENCY

I. BIG CROPS OF VEGETABLES FROM A MINIMUM OF SPACE AND LABOR

THE only practical way to plant a vegetable garden is to first plan it, and know exactly what the successions are to be; for the perfect vegetable garden produces two crops a year in nearly every part. It is less labor to work thus than to cultivate and keep weeds from double the area. Of equal importance is the feeding. An enthusiastic amateur once consulted me as to how much manure he should use on his garden of about half an acre, and was astounded when I informed him that I used 100 loads in my garden of about one and a half acres.

To make the plan, take a large sheet of paper and lay out the garden area to scale.

Divide it into four plots, calling them by numbers 1, 2, 3, and 4.

This is a natural subdivision in the vegetable garden. One plot (our No. 4) is devoted to the permanent crops; one (No. 3) to the warm or tender plants that are started in heat elsewhere while the other two plots are designed to supplement each other. No garden is even in soil, etc., and therefore the section that is highest, warmest, or best drained and consequently the earliest, is marked off as No. 1, to receive the earliest sowings of the hardy vegetables. The accompanying diagrams show how the average garden should be planted, giving the various vegetables in proper ratio. The

quantities necessary for any given family will vary somewhat. Do not make the mistake of sowing all the seeds at one time, for the greatest benefit that one derives from one's own garden is the constant supply of fresh, young vegetables all the season. This result can only be achieved by succession sowings. In the present plan I make no attempt to tell you how much of each vegetable you should grow—that is a problem for the individual. How to estimate the necessary length of rows for the required yield was given in THE GARDEN MAGAZINE for March, 1908.

Begin the preparation of the first plot as soon as possible (say last of March) by spading under a very liberal quantity of

Melon Patch	May 1	Parsley	April 1
		Parsnip	April 1
		Salsify	April 1
		Celeriac	April 1
		Swiss Chard	April 1
		Leek	April 1
		Onion	April 1
Late Corn	All Summer	Early Potatoes	April 1
		Beets	April 1
		Carrots	April 1
		Turnips	April 1
		Peas (Spinach and Radish Between)	April 1
		Peas	April 1
		Peas	April 10
		Peas	April 10
		Peas	April 20
		Peas	April 20
		Beets	April 20
		Carrots	April 20
		Cabbage	April 20
		Cabbage	April 20
		Cauliflower	April 20
		Cauliflower	April 20
		Seedbed for Lettuce, Endive	All Summer
		Seedbed for Cauliflower, Cabbage Kale, Sprouts	
		Beets	May 7
		Carrots	May 7
		Turnips	May 7
		Green Beans	May 1
		Wax Beans	May 1
		Peas	May 1
		Peas	May 1
		Green Beans	May 14
		Wax Beans	May 14
		Peas	May 10
		Peas	May 10
		Early Celery	May 10
		Early Celery	May 10
		Early Celery	May 10
		Potatoes	May 1
Early Corn	May 1		
Pumpkin and Squash	In between		
Limas	May 1		
Bush Limas	May 1		
Cucumbers	All Summer		
Egg Plant	June 1		
Pepper	June 1		
Tomatoes	May 15		
Sweet Potatoes	June 1		
Beets	May 20		
Carrots	May 20		
Beans, Green	May 30		
Beans, Wax	May 30		
Peas	May 20		
Peas	May 20		
Beans, Green	June 15		
Beans, Wax	June 15		
Peas	June 1		
Peas	June 1		
Beans, Wax	July 1		
Beans, Green	July 1		
Beets	July 15		
Carrots	July 15		
Turnips	July 15		
Beans, Wax	July 15		
Beans, Green	July 15		
Late Celery			

A half-acre vegetable garden, in four plots, after the first planting

Melons		Parsley	
		Parsnip	
		Salsify	
		Celeriac	
		Swiss Chard	
		Leek	
		Onion	
Late Corn		Early Potatoes	
		Brussels Sprouts	July 1
		Brussels Sprouts	July 1
		Brussels Sprouts	July 1
		Kale	July 1
		Kale	July 1
		Kale	July 1
		Cabbage	July 1
		Cauliflower	July 1
		Cauliflower	July 1
		Cauliflower	July 1
		Late Cabbage and Cauliflower	
		In case beets and carrots are not done plant between them.	
		Seedbed for Lettuce and Endive	
		Egg Plant	
		Peppers	
		Carrots for Winter	August 1
		Beets for Winter	August 1
		Rutabaga or Turnip	August 1
		Late Bush Bean and Peas	
		Early Celery	
		Late Potatoes	
		Radishes and spinach are sown between peas always.	
Late Celery			

The corresponding plots in August showing succession crops

manure, and then raking over the surface and letting it lay for several days to dry out.

THE FIRST PLANTING

About April 1st, being governed to a certain extent by the weather, start sowing on plot No. 1. All plants that will last the entire season are grouped together at one end of the plot. A good disposition for the greatest economy of space will be as follows: one row of parsley, two rows of parsnips, two rows salsify, one row celeriac, one row Swiss chard, one row leek, six rows onions, two rows onion sets, two rows early potatoes, one row early carrot, one row beets, two rows spinach, two rows peas, one row radish, one-half row lettuce, one-half row endive, one row cress, one row turnips.

But better than sowing the lettuce, endive, and radishes in rows would be to make a seed bed about three feet across at the end away from that where the all-season vegetables are to stand. Later on it can be used for a succession of peas and spinach, which should be sown about one week after the first crop. Spinach and radishes can be sown between the peas, as they will be out of the way before the peas are ready. The lettuce and endive must be transplanted later on to rows, or they can be worked into small spaces here and there which otherwise would be wasted.

About April 15th to 20th sow on plot No. 2 peas, beets, carrots, turnips, spinach, radish to follow up those on plot No. 1, and the first sowing of bush beans. One week later make the third sowing of peas, spinach, and radishes, and yet a fourth on May 1st. At that time also prepare a seed bed at one end, sowing late cabbage, cauliflower, kale, and brussels sprouts. Early celery and late potatoes will fill the rest of the space in the plot.

Plot No. 3. At one end make the melon patch, and next to it leave space for all sowings of corn for the season, putting in one or two rows at a time for succession. Pumpkins and squash can be grown between the rows of early corn. Sow bush limas, pole limas, and cucumbers as you may require them to fill the plot; or if any space is left, sow more peas, spinach, beets, carrots, and bush beans, about May 10th. This sowing may go into plot No. 4 if there is no room left here.

Plot No. 4 will accommodate all the warm plants from the frames: egg-plant, peppers, tomatoes, and sweet potatoes. These may not be planted until the weather is safe, usually about May 20th. At the same time sow beans and peas. Any extra space in this plot can be used for beets, carrots, etc., and lettuce and endive planted in beds.

THE SECOND CROPPING

By the end of June you will be picking the crops from plot No. 1 and one half the space will be vacant. Fill with plants from the seed beds in plot No. 2, viz., brussels sprouts, kale, late cabbage, late cauliflower; also celery if there is room. The same crops on plot No. 2 will mature next (August), and we fill in with beets, carrots, rutabagas,

turnips, endive, lettuce, and a sowing of peas.

On plot No. 4 as the first plantings mature and are gathered, clear the ground and follow with late peas, beans, spinach, lettuce, and endive, also late celery, which may with advantage be also put wherever there may be a vacant space.

THE EXTRAS

No provision is made, in the foregoing scheme, for artichokes (either French or Jerusalem). The French artichokes will not flower the first season from seeds. Early sown plants can be put alongside the vegetables that are to stand all season; or seed can be sown there in spring and the plants protected over winter. I prefer sowing in August and wintering them in a coldframe. It is better not to plant Jerusalem artichokes in the garden proper, as they are a nuisance; once you plant them, it is almost impossible to get rid of them. Besides being a really delicious vegetable, they furnish grand flowers for fall cutting.

Asparagus is not included in the rotation because the lay of the ground should govern the location of the asparagus bed. Plant in the lowest end of your garden, and not without first trenching the soil unless you can be satisfied with poor, thin, tough shoots.

SOWING SEEDS

Sow in drills: beet, kale, cabbage, carrot, cauliflower, celeriac, lettuce, onion, parsley, parsnip, radish, salsify, spinach, turnip, and rutabaga. The size of the seed should govern the depth of the drill, and a general working rule is to cover the seed once to twice its diameter, excepting peas, beans, and corn, which are planted deeper, say two to three inches. Deeper planting is better for all kinds in light, sandy soils. After sowing and covering go over the row and tap the surface gently with the back of a rake. Celery, tomatoes, egg-plant, peppers, early cauliflower, and cabbage should be sown in the frames in drills in the same manner. Corn may be sown in drills or hills.

Sow in hills: lima beans, corn, melons, squash, and pumpkin. Place the seed on the hill and poke it under the surface with your forefinger; cover and firm.

AMATEUR'S GUIDE TO PRACTICE

Asparagus. Plant in rows, three feet apart and one and one-half feet in the row. Two-year-old roots are better than the three-year-old. Dig wide trenches and spread out the roots carefully, covering about four inches deep. Keep the ground between well cultivated.

Stop cutting when peas get plentiful; several times during the season apply salt at the rate of one pound to ten square feet, and just before or during a rain.

Palmetto is the earliest variety; Argenteuil is the best.

Bean, string or bush. Can be had in the open garden from June 15th to late in November, with a little protection. Start sowing May 1st and every two weeks thereafter until August 15th. Make a trench

about one inch deep, and the width of an ordinary hoe. Sow along each side of the trench, and when the plants are well up, thin out to six inches apart in the row.

Any good garden loam will do, but do not plant them in low, wet ground. Gather pods when about half grown for best quality. Best variety Black Valentine, a wonderful cropper, with round, slender beans; it does not develop any string until too old for the table.

The wax type of the string bean requires the same handling as the green-podded types. The best variety for all around use is Curie's Rust Proof.

Beans, lima. Plant four feet apart each way. Make holes with a crowbar about two and a half feet deep and place poles. Make holes around the poles about three feet across and two feet deep, put in some manure, using a barrow full to every four holes. Place sand on top where seeds are to be sown, and plant when ground is dry, any time after May 1st. If the seeds are in the ground forty-eight hours before a rain, they will be all right; but if it rains on them before germination has started, you may have to sow them again.

Put eight seeds to the hill and thin out later to three. The best variety is Ford's Mammoth. Early Jersey is a week or ten days earlier. The bush limas are very productive and a little earlier than the pole limas; sow in rows about two feet apart.

Beets. Sow as soon as the ground can be worked, and every two weeks until August 1st. At that time sow six or eight rows for winter use. Never use old seed. Sow in rows about one foot apart, and thin out to two inches when large enough. Use when one inch in diameter; if allowed to get large they become hard and woody. Best variety, Eclipse, but Edmond's Blood Turnip and Electric are also good sorts. Beets sown April 1st should be ready for use about June 20th.

Swiss chard beet is grown for its tops, eaten like spinach — and is better than any spinach you can get during the warm weather. Wonderful producer; one row will give a family about three pickings a week all summer. Plant in rows and thin to about six inches. Remove tops with a knife, but don't cut too low; the plant will grow up again from the crown.

Broccoli. Not as good quality as cauliflower. Cultivate the same as recommended for late cauliflower. The best variety is Walcheren.

Brussels sprouts. Sow in a seed bed about May 1st, and transplant later to rows about two feet apart. Give fairly rich soil, as quick growth is essential to develop the best quality. Don't transplant during dry weather, and never let the plants suffer for water. Remove the side leaves when the sprouts show. Flavor is improved by a light frosting. Best variety, Long Island Improved.

Cc loon. Rarely grown but quite easy. Sow in drills during April and thin to two feet. Tie up to bleach; after which, the heart of the plant is ready for use in salads, soups, etc. Best variety, Large Solid.



A VEGETABLE GARDEN THAT IS ALSO A THING OF BEAUTY
A utility garden need not necessarily be an uninviting shadeless expanse. This is an amateur's garden near New York

Cabbage. The common error with this vegetable is that the seed for the early crop is sown so late that the hot weather comes just as it is heading and causes splitting. To prevent, sow in a hotbed in March, and plant out in April; for the late crop for winter use, sow in May in the seed bed and transfer later to permanent rows. Make a big planting in fall and you will have enough cabbage to eat all winter. Don't try to poison the cabbage worm, as it is dangerous; pick off every day. Best early varieties, Jersey Wakefield and Early Spring; best late, Premium Flat Dutch. Red cabbage is valuable for pickling and must be sown with the late cabbage in May. Best variety, Mammoth Rock Red. Savoy cabbage is excellent as a late cabbage, but it will not head well in the warm weather of June. Best varieties, Drumhead and Perfection.

In transplanting from the seed beds to the rows, select a wet day, if possible, and never let the plants suffer for want of water. Destroy any young plants with club roots.

Carrot. An all-year-round vegetable if properly cared for. Handle the same as beet. When you sow a row of beets, sow a row of carrots, and about August 1st put in six or eight rows for winter use. These should last until spring, if wintered in a trench. Best varieties, Guerande, Danver's Half Long, and Early Scarlet Horn.

Cauliflower. No vegetable requires richer soil nor better nourishment; it will surely be a failure in poor, barren soil. Treat like cabbage, sowing the early crop in the hotbed during March and the late crop in the seed-bed during May. Protect heads from the sun to avoid browning, breaking the leaves over. A dose of nitrate of soda is very beneficial just as the plants begin to head, using a teaspoonful to a can of water. Best varieties, Extra Early Erfurt and Early Snowball.

Celery. Must have an abundance of manure, and never suffer for want of water. Hill up in the fall. Sow seed for early celery in hotbeds in March, and later transfer to the rows; should be ready for use by September 1st, and sometimes much earlier. Sow late celery in May, and handle like cabbage. First transplant in beds, before the plants are finally moved into the rows. To make a celery trench, place a line and dig a trench on one side about six inches deep and the

width of a spade. Fill this with well-rotted manure and spade it under. Tramp the soil a trifle to firm it. Use plenty of water in planting. Best early, White Plume and Golden Self-Blanching; best late, Chicago (dwarf), Fin de Siecle, and Schumacher.

Celeriac (or turnip-rooted celery). Valuable for soups and salads. The roots are of a fine celery flavor, and if grown quickly are very sweet and tender. Sow in April in rows, and thin to six inches; about September 1st they will be ready for use. Best variety, Large Erfurt.

Chervil. Used as a salad and for garnishing. Sow every two or three weeks a little at a time in a semi-shady place, and pick when young. The curled variety is the best.

Cress, curled. The first thing from the garden in spring. Sow a little every week until June and then stop until September. Watercress can be grown by anyone having a shaded place. It does not need a running brook — just a little water twice a day will suffice. Prepare a bed by making the soil rich; then cover it with about an inch of sand. Sow the seeds on this and water three or four times a day until the seed starts, and then water morning and night.

Corn. Start sowing May 1st and sow every ten days or two weeks until July 15th. With a favorable fall you may have corn almost until Thanksgiving. Sow in rows about three feet apart for the early sorts, and four for the larger, late varieties. Thin to eight or nine inches in the row. When the plants are about one foot high, hill up around them. Best early, Golden Bantam, which has a flavor that is distinctly its own. Metropolitan and Early Minnesota are second choice; best late is Evergreen, but some prefer Country Gentleman.

Cucumbers. Plant in hills about six feet apart on May 1st, and plant one hill at a time, about a week apart. For pickling, sow a number of hills at one time. Very subject to mildew and blight. To prevent the former, select a dry place for them. For blight spray every two weeks with Bordeaux mixture. Best table varieties, Davis Perfect, Improved White Spine, and Cumberland; best pickling variety, Green Prolific.

Dandelion. Excellent for salads. Sow in spring and thin the plants out in the rows to about one foot apart. The following spring they will be ready for use. Tie the heads up to bleach them or lay boards on top of them.

Egg plant. Sow in the frames in March, and transplant to the garden any time after June 1st. Requires very little care. A few plants will be sufficient for the needs of a fair-sized family. Best variety, New York Improved.

Endive. Of very easy culture; handle the same as lettuce, except that when the head is well grown it is bleached by covering with flower pots or by laying boards right on the heads. The best variety is the French escarole, catalogued as Broad-leaved Batavian.

Herbs. Keep in a border by themselves. Sow seed of all herbs at one time (April 15th), and in September cut and tie them in bunches and hang in some warm place to dry.

Kale. Without an equal as a winter green the kale is, and of easy cultivation. Handle it the same as Brussels sprouts. Protect in the fall with salt hay, but let it freeze a little first, as that makes it tender and gives it a better flavor. Best sorts, Dwarf Green Curled and Dwarf Brown.

Kohlrabi. Requires the same treatment as turnip. The best white is White Vienna, and the best purple is Purple Vienna.

Leeks. Sow in the open ground in drills April 1st, and thin to two inches apart Any deep garden soil. Hill up to bleach as much as possible of the stem. Best variety is American Flag.

Lettuce. Sow seed for the first crop in frames March 1st, and start sowing outside April 1st. Sow every ten days or two weeks until September 1st. Do not sow a lot at one time; and keep planting out as the seedlings get large enough. During summer plant in shady places and keep well watered. If you have no shady place, make one by using a little cheese-cloth. This prevents going to seed. Best early sorts are May King and Big Boston. Maximum takes a little longer to head, but it is a good variety. The best lettuce to stand the summer heat is Improved Salamander, but Deacon and Hanson are good.

Melons are very exacting and must be humored. They must have rich soil. Dig holes eight feet apart each way, about three feet deep and about the same width. Fill up with fresh sod and manure — using about one-fourth manure to sod. Do this about April 1st, and set the melon frames over the hills. Let them stay shut up for several weeks to thoroughly warm the ground. About April 20th to May 1st sow the seed. Place ten or twelve seeds in a hill and thin out to three plants later. Ventilate the frames during the day, giving a little air, but close them up at night. When the plants fill the boxes, gradually harden off by leaving the frames open a little at night. When the plants start to run, spread them evenly so as to properly cover the ground. Spray every two weeks with Bordeaux mixture. Never forcibly pick a muskmelon; it will leave the vine with a slight touch when ripe. One of the best melons is Emerald Gem, a high-flavored, scarlet-fleshed sort. Other good varieties are Delmonico, Netted Gem, and Rocky Ford.

Okra. Sow in drills May 1st, and thin to about one foot apart in the row. Use the seed pods, when about one inch long, for soups. Best variety, White Velvet.

Onion. Sow in rows one foot apart April 1st, and thin out later to about four inches. I usually thin every day, using the thinnings for table. For early use plant sets. Make the soil very rich and pulverize it thoroughly. Best yellow, Danver's Yellow Globe; best red, Red Wethersfield; best white, Southport White Globe. The best small onion for pickling is Adriatic Barletta. Alisa Craig and Prizetaker are big varieties, but they are not as good keepers as the others. Garlic requires the same treatment.

Parsley. Plant a row in April and leave it alone. Don't even thin it out. Best variety, Moss Curled.



Before all else see that the vegetable garden is well manured; even fifty loads to the acre may be used

Parsnip. Sow April 1st in rows one and one-half feet apart, and when large enough thin the plants to six inches apart in the row. Make the soil deep and rich. Parsnips should have one big, long, smooth root, and not three or four prongs. Best variety, American Hollow Crown.

Pepper. Treat same as egg-plant. For salads, grow Sweet Salad or Sweet Spanish; for stuffing, Chinese Giant or Cardinal; and for pickling, Cherry Red or Long Red Cayenne.

Peas. Sow April 1st, and every two weeks thereafter until June 1st. Start sowing again August 1st for fall use, continuing until September 1st. The best variety in peas, in my opinion, is Gradus (second early); my next choice would be McLean's Little Gem and Nott's Excelsior, early sorts; later varieties are Advancer, Champion of England, Juno, and Telephone.

Pumpkins. Sow seed in hills about eight feet apart May 1st; or, to economize with space, sow between early corn. Best variety, Large Cheese.

Potato. Plant a few rows April 1st, and the main crop May 1st. Plant fifteen inches apart in rows three feet apart. Do not use manure except on very dry ground, as it causes scab. Use fertilizers instead. Keep the ground well cultivated, and when the plants flower hill up well. Try a few kidney potatoes. They are very early, of good flavor, and are superior to any other for salads. Bovee and Norton Beauty are early white potatoes and wonderful croppers. Carmen No. 3, Green Mountain, and Uncle Sam, best late or main crop potatoes.

Potato, sweet. Dig a trench one foot wide and six inches deep, fill with manure, mixing some soil with it, and mound it up. Set the young plants in this. Buy the plants;

they are very cheap. Keep the vines from rooting as they run, by pulling them up every week or ten days. If vines are allowed to root the crop, will be big, but the potatoes very small. Best variety, Large Yellow.

Rhubarb. It is cheaper to buy plants than it is to raise them. Plant about three feet apart, and to get a few early stalks in spring cover one of the plants with a barrel. Best varieties, Victoria and Linnæus.

Radish. Sow the seeds rather thin in rows; but a better plan is to make a bed for them two feet wide, using a small portion of it each time. Sow broadcast a few seed at a time and often. Do not thin. Grow an assortment of varieties. Sow winter radishes in spring and thin out in the rows to four inches apart. They are ready for use after the tops have frozen.

Rutabaga. The best winter vegetable. Sow all seed at one time July 15th; gather after frost and store in trenches for winter use.

Salsify or oyster plant. Handle like parsnips, except to thin out about four inches apart. Best variety, Mammoth Sandwich Island. The black oyster plant, or scorzonera, is very similar; grown in the same way.

Spinach. Make the first sowing in rows April 1st, and every week after until June 1st. Start sowing again August 15th, and continue until September 1st. If the last sowing does not get large enough to use, cover it in fall with salt hay. Best varieties Viroflay, Victoria, and Long Standing. For summer use sow a little of the New Zealand spinach May 1st. When large enough cut it and keep cutting, because it is a fast grower; if it gets too large, cut some for the chickens.

Squash. Treat the same as pumpkin. Best of the bush type, White and Yellow Scalloped, and White Vegetable Marrow.



The secret of successful early cabbage is to sow in heat ready to plant out before hot weather comes

Best runners, Delicate, Vegetable Marrow, and Hubbard.

Tomato. Sow in frames March 1st and plant out May 15th. They require very little attention after planting, but the fruits are improved by being grown on a trellis. For early fruit remove some of the laterals from a few plants. Best varieties, Freedom, Acme, Earliana, Liberty, and Ponderosa. Try some small varieties; they are very different in form and flavor, and are valuable for garnishing salads.

Turnip. A good spring and fall vegetable, but very strong in flavor in summer. Sow in rows on April 1st and every two weeks after until September 1st. Thin plants out to six inches apart. Best varieties, Red Top, Strap Leaf, Purple Top Milan, and Yellow Stone.

Watermelon. Handle like muskmelon, but may be grown without frames. Best varieties, Cole Early, Ice Cream, and The Boss. To tell when a watermelon is ripe, place the hands firmly on the top and press down gently; if the melon gives a sharp crack it is ready to be picked.

II. MAKING THE FRUIT GARDEN TO FIT YOUR REAL NEEDS

THE spring planting season for fruits lasts until the end of April. An old timer like myself oftentimes takes a chance by planting much later, but I do not advise an amateur to try. Observe these three "don'ts" before and during the time of planting your fruit garden: Don't put your planting off until the last moment; plant during March and April, and your trees will have a much better chance of starting than if you delayed until May. Don't plant a conglomeration of all kinds of fruits just for variety's sake; better to make up your mind now as to what you really need. Don't fill your garden with small fruits merely because they come into bearing sooner than apples or pears.

Did it ever strike you seriously what returns a half acre of fruit trees would give you, if properly handled? A small orchard of this kind would give a good-sized family all the fruit it could use. On a half acre of land you could have a good assortment of fruits. For instance: ten apples, seven pears, eight peaches, eight apricots, eight plums, six cherries, six quinces, thirty-five currants,

thirty-five gooseberries, thirty-five raspberries, thirty-five blackberries, and thirty-five grapes. Just think of the returns—fresh fruit the year around—from the cherries in June until the last of the winter apples are gone the following May—besides currant jelly, raspberry jelly, or grape jam for winter!

PREPARATION OF THE GROUND

Most aspiring amateurs, I fancy, skip this kind of paragraph to go on to something more interesting, just as one does the descriptive paragraphs in a story book; but although you have been told over and over again until it is probably getting monotonous, it is nevertheless true that *you must prepare the ground, and the better you do it the better will be the results.* Oh, the failures that have been brought about by sticking—not planting—trees in poor, barren, unprepared soil. You will never regret money spent on the preparation before planting.

For small fruits or dwarf trees which are to be planted close together, I strongly advise "trenching" the soil—that is, digging it over

by hand. Turn up the soil thoroughly and deeply, adding plenty of manure. For orchard trees such a course would be expensive, so I advise plowing deep, turning in a liberal dressing of manure and using a sub-soil plow to break up the bottom. If you can possibly afford it, dig holes where the trees are to stand about three feet deep, and put about a half barrow full of manure in each hole, mixing it thoroughly with the soil before planting. And remember, always throw your top soil to the bottom.

The whole problem in planting is to try to put the tree back into the ground as nearly as possible to the way it was before it was disturbed. Perfection is quite impossible. No matter how carefully the tree is handled the roots are torn and bruised. The best we can do is to spread out the rootlets carefully, sprinkling the soil in between them, never letting them lie in a bunch, and firming the soil evenly all round. Never let any fresh manure come in actual contact with the roots; but a handful of any good fertilizer thrown into each hole and mixed with the soil will insure quick root action.

Never plant a tree with any broken or bruised roots, but cut them off a trifle above the bruise, using a sharp knife, and making a clean cut. Rootlets will soon grow out from this cut, whereas if left twisted and bruised, the entire root may die. Plant about one inch deeper than the tree was in the nursery.

There is some difference of opinion as to the amount of pounding that should be done on the soil after planting — some planters use tamping rods and pack the ground very hard; others leave the ground soft and sloppy and prefer staking the tree to pounding the soil. I pack the soil around the roots rather firmly, but no more than is necessary to insure the tree's not blowing over in a heavy wind. I don't use tamping rods, as they pack the soil hard and even, and the moisture is soon lost by evaporation. I pack with my feet, first using a small stick to work the soil around the small rootlets. I then leave the top two or three inches of soil soft and untrampled as a mulch to help check evaporation.

Prune after planting to offset the shock of removal. Entirely remove all thin, weak wood and shorten back the tops of the stronger branches about one-fourth of their length; the exact degree depends to a certain extent on the condition of the tree. If well rooted less pruning is necessary than if poorly rooted.

Rather prune too much than not at all; if the tree is poorly rooted and underpruned it will probably die; if well rooted, it will quickly make up for the lost wood.

After planting, cultivate deeply, using by preference a spring harrow or a good, deep tooth cultivator. Deep cultivation, while better preserving the moisture, also tends to drive the roots deeper into the soil, and they are thereby enabled to better withstand hot, dry summers and cold, heavy winters.

Exposure to wind and sun is exceedingly

harmful to the newly arrived stock, as the young rootlets quickly dry out and perish. Dig a trench about two feet wide and the same depth, and place the roots in this trench. Cover them up and tread the ground around. You can then take out such trees as you need without exposing the roots of the others.

WHAT KIND OF STOCK?

You will ask "Shall I get the largest I can?" In some cases "Yes"; in others "No." Good-sized trees are all right if they have been properly grown by the nurseryman having transplanted them occasionally. In doing that he cuts all the long roots and you get a tree with a growth of fibrous roots in plenty and that is what counts. Remember the long roots woody with no fine rootlets are absolutely of no value. They are only anchors.

Go to the nursery yourself if possible and see what kind of roots the trees have. If



With a small stick make the soil fairly firm



Work the soil into the fine roots with the hand after spreading them out evenly

you cannot do that be sure that you are dealing with a man of repute. Ask him about the sizes and roots of his stock; he will not advise you wrongly.

Don't select your varieties sitting at the fireside with your wife and "I. Growem-quick's" catalogue in your hand, anon running your eye down the page and stopping at a variety with a nice sounding name, and which the book says is a good variety. Did you ever see a nursery catalogue that did not describe a variety as good. No, sir! To the nurseryman all are good because he is not growing fruit; he grows trees.

The best way to select varieties that will surely be suitable to your locality is to find out from your neighbors which pears and apples gave the best results in the last few years. A fruit that does well in Connecticut does not of necessity do well in New Jersey. A few varieties adapt themselves to almost any locality, and are, therefore, the most commonly known.

Don't think for a moment that location does not count. It does! It is, indeed, one of

the most important factors. To illustrate: Some twenty years ago a pear by the name of Marshall was introduced. Ask any of your friends whether they know that pear, and they will probably shake their heads, but I can show you one of the finest trees I have ever seen of any variety, laden every year with beautiful, fine-flavored fruits, and the tree is as free from the San Jose scale as the Keiffer. There is no better pear for the south shore of Long Island, but it is a failure elsewhere and is not even listed among the "selected" varieties.

PLANTING FOR EFFICIENCY

Plan your orchard as you would a garden. Have a little system in it. Put the small fruits in a border surrounding the trees, or plant them all to one side of the larger trees. Keep everything in straight rows and only one kind in a row. Apples are the best fruits for the amateur gardener, as they are robust growers, do not require any coddling, and will thrive on a fairly good soil with only occasional pruning and spraying.

Select old, tried-out varieties, but if a novelty is wanted, experiment with one tree and if that is successful, plant more later. This will take time, but it is better to lose time than to have nothing but failures.

In the following recommendations I name the varieties of widest distribution — those which will adapt themselves to the greatest range of conditions. There may be some better ones for your own region.

The best summer apples, or early varieties, are Sweet Bough, a sweet variety; Yellow Transparent, another sweet early variety; Early Harvest and Red Astrachan, the best cookers of the early apples. The best fall fruits are Oldenburg, Maiden Blush, and Gravenstein, a variety well known for its beautiful odor. The best sorts among the late apples are Northern Spy, the best eating apple to date; Spitzenburg, another good eater; Baldwin and Ben Davis, perhaps the best keepers. Other good varieties are Fallwater, Bismarck, Hubbardston, Rhode Island, Newton Pippin, Seek No Further,



Make the hole wide enough to take the roots easily. Use a board as a guide to depth



Finish by treading around the hole to make all secure

Twenty Ounce, and Stark. The best russets are Golden Russet and Roxbury. Among the crabs the best are the red and yellow Siberian, but Hyslop and General Grant are good.

The apple trees should be sprayed as the buds open in the spring, using the Bordeaux mixture combined with Paris green, and several times during the summer with plain Bordeaux. All that is necessary in pruning is to cut out the thin, weak wood and prevent the fruiting wood from crowding. If any branches require cutting, take off the shoot at the base, never heading in.

The pear probably ranks next to the apple in popularity, and is very easily handled. Pears can be pruned more liberally than apples, as it is easier for the beginner to detect the fruit buds. They should also be sprayed with Bordeaux, as they are subject to a blight disease which if it once gets in the trees will be very hard to eradicate. The favorite and best-known pear is the Bartlett. This is known all over for its good quality and sturdy, vigorous habit, but Clapp Favorite and Rosney are also good early sorts. Sheldon is a good all-round pear, but my two favorites are Howell and Werden Seckel. Keiffer is also valuable because of its free-bearing properties and heavy, robust growth. The best winter pear is Lawrence.

The peach is claimed to be the most eccentric of all fruits. The trees are quick growers and short lived. If you are to get anything worth while out of them, they must be given high living, plenty of food, and abundant cultivation, with a mulch in the fall. Plant peaches in the best-protected part of the garden, as they oftentimes flower before the last cold blasts of winter and get frozen. Peaches need more pruning than most fruit trees, for, being very quick growers, they will soon outgrow themselves if left entirely alone. I favor heading them back, cutting out all thin, weak shoots and shortening in the strong branches. Spray with Bordeaux, and if any tree shows the yellows, cut it down and burn at once.

Favorite early varieties are Alexandra,

Champion, Crawford Early, and Mountain Rose; the best late sorts being Crawford Late, Elberta, Foster, Fox Seedling, Globe, Oldnixon, Stevenson Rareripe, Stump the World, and Wonderful.

The plum has become very popular since the introduction of the Japanese varieties, which seem to adapt themselves readily to our conditions and in some localities they have entirely superseded all others. The plum is a quick grower, requiring very little care — just an occasional pruning and good cultivation with plenty of fertilizing. The best Japanese varieties are Abundance, Climax, Satsuma, Ogon, Burbank, and Red June. The best American varieties are Bradshaw, Greengage, Imperial gage, Lombard, and Yellow Gage.



After planting cut out weak thin shoots, and shorten the stronger ones about one-fourth

Most amateurs neglect the cherry. But why? The tree is of easy cultivation and certainly gives great returns to the grower. If the birds eat the fruit (which is true in a certain measure) and are bothersome, low-headed trees can be covered with an old fish net. The cherry will grow well almost anywhere. It is not particular as to soils and is not subject to diseases. It requires very little care after planting. The best sweet varieties are Black Eagle, Black Tartarian, Downer, Late Red, Governor Wood, Napoleon Bigarreau, Schmidt's Bigarreau, and Yellow Spanish. The best sour cherries are English Morello, Early Richmond, Mary Duke, and Montmorency.

The quince is planted very little because the fruit is not edible in a raw state. The tree is an easy grower, but do not accept the common theory that it thrives on neglect. It needs an occasional pruning, and because of the shallow roots, should be mulched in the fall. All the trouble with the quince arises from winter killing of the roots and a proportionate loss of the top. In spring cut

out all dead wood and shorten the heavy branches. The best sorts are Apple, Bourgeat, and Champion.

Similarly, most folks claim they have a great deal of trouble with blackberries winter killing. This also is caused by the frost killing the roots and not the top. Prune the blackberry after the fruiting period, cutting out all old shoots and tying the young canes up in place, as it is the newcomers that will bear the next crop.

The best variety is Rathburn, but Eric, Wilson, Jr., and Kittatiny are all good. Raspberries are very similar to blackberries and require the same treatment. Cuthbert is the best red raspberry, but Brandywine and Mellin Red are also good. Golden Queen is the best yellow variety, and Cumberland is the best blackcap.

All that the grape really requires is a good, deep, well-enriched soil and lots of pruning. Keep your grapes confined to the spur system. Grow them on wires or sticks, and don't be afraid of giving them enough to eat. The best varieties are Agawam, Campbell Early, Moore Early, Concord, Delaware, Catawba. White Niagara is the best white grape.

TABLE OF DISTANCES TO PLANT FRUIT TREES

Apple, standard	24 ft.	Quinces	10 ft.
Apple, dwarf	10 ft.	Grapes	8 ft.
Pears, standard	20 ft.	Apricots	10 ft.
Pears, dwarf	10 ft.	Nectarines	10 ft.
Peaches	15 ft.	Currants	3 ft.
Plums	15 ft.	Gooseberries	3 ft.
Cherries, natural	20 ft.	Raspberries	3 ft.
Cherries, low-headed	15 ft.	Blackberries	3 ft.

The most practical fruit garden for the amateur is the one that will give him a little fruit continuously rather than a great crop at one time, and nothing all the rest. A selection of varieties designed with this object in view will be found on page 178.



The tree as finished. Note the width of the hole, and its depth to catch water; also how the pruning was done, and the wood cut off



A dahlia fancier's garden, the plants being arranged in beds

Dahlias in a crowded tenement district of a large city, in October

Planting for the Most Gorgeous Flowers of Fall—By M. Fuld, Massachusetts

WHAT CAN BE DONE WITH DAHLIAS IN A CITY BACK YARD AND EVEN ON SOIL THAT IS NOT RICH OR EXPOSED TO SUNSHINE—THE WHOLE ROUTINE OF HANDLING ROOTS AND PLANTS FOR SPECIMEN BLOOMS

[EDITOR'S NOTE: *This article, which deals with the planting and growing of this old favorite garden flower, is to be followed by one dealing with varieties. The author is the Secretary of the New England Dahlia Society.*]

NO FLOWER is the peer of the dahlia for variety of color, brightness, large size of both plant and bloom, and profusion of flowers at a time when the garden is mostly bare of bright color. The only thing that has so far been lacking in the dahlia is fragrance, but the announcement was made last year, even, that a variety was offered for which fragrance was claimed; a pure white single, the odor faintly resembling that of a honeysuckle.

August, September, and October are the months of the dahlia, but the foundations must be laid in the early spring by preparation of the soil during April, ready for the actual planting of the roots in May, or even later. The dahlia needs special provision for its adequate development, although not arduous care. The ideal spot for the dahlia garden can easily be found. You are not restricted to conditions of soil, direction of sunlight or conditions of weather. A wonderful showing can be made in an ordinary back yard. The proprietor of the city garden illustrated above was the recipient of an award from the local Improvement Society of his city, yet nothing but dahlias were used in the decoration of the place.

The first important step is to select a spot for growing them. The poorer the soil, and the lighter, the better the plants will grow, thriving as well in a sunny position as in a shady one, with the one difference that in the bright sunny spot the plants will be dwarfer, also flower earlier and more profusely.

Carefully cultivate and turn the soil of the border as soon as possible after reading these words (as a matter of fact the work should have been done in the fall, but if done in spring remember that no manure of any kind is to be added to the soil). Rich or manured soil has a tendency to produce most luxuriant foliage but hardly any flowers at all; therefore, if the soil is rather rich, I advise dress-

ing with a heavy layer of fine coal ashes thoroughly spaded into the surface soil.

The dahlia is not hardy, but makes a tuberous root that can be lifted and stored indoors over winter. Most amateurs confine their operations to caring for the old roots, buying new ones of newer varieties each year, and thus constantly enlarging the collection. At this time of the year old roots that were taken up last fall must be attended to. About the first of March the real enthusiast carefully gives water to the packing soil to induce the "eyes" to start. By April 15th the separating of the roots can take place, the pieces being treated after that exactly the same as newly received bulbs.

If you have to purchase your bulbs it is very important that they be treated properly upon arrival. Unpack the shipment and if possible plant each tuber in a pot and plunge in a coldframe, and water them so the sprouts will develop and grow on.

If a coldframe is not handy, a cool place in the cellar or anywhere in the house will do, but light is essential. Many bulbs received early in the season and not looked after will be worthless by the time of planting. If the growth of these new bulbs is making rapid progress do not pinch back, but simply retard it by placing the plants in a cooler spot.

When planting place the tubers in the ground by laying them horizontally about three inches below the surface and carefully covering. A stake should be placed near by and the label carrying the name of the variety attached to it.

There is nothing to do now except keep out weeds until the plants make their appearance. From the moment the dahlia shoots show above ground they should be well watered at least twice a week. Also the ground near them should be stirred at least once a day. The stirring up of the soil is worth more to dahlias than tons of fertilizer or manure.

The feeding roots of a dahlia are very near the surface, and the admission of air is one of the greatest benefits to the plants.

If more than one shoot appear above the ground from one root the weaker shoot should be cut down below the surface. As soon as the plant attains the height of one foot its tender stalk should be carefully and loosely tied to the stake.

When the plant attains the height of two feet, it is time to begin feeding. This should be in the form of rotted stable manure, placed in a circle around the plant to the depth of fully four inches. It serves a double purpose, keeping the surface cool and moist, besides feeding the newly formed roots.

SHAPING THE PLANT

From now on the plant makes rapid progress and begins to branch. If a dwarf, bushy growth is desired it is now time to prune. This is done very simply by pinching the crown of the plant back to at least two inches. The result will be that branches will break from every joint or leaf, and soon you will have a very bushy and dwarf growth. This plan is not recommended as a common practice; rather allow the plant to grow its natural way, only cutting out or thinning the branches when they appear in such quantity as to completely cover every available space. Plan to have sunlight strike through the plant at all times. Whenever you prune, prune back to the very joint, leaving no stub. If you intend to grow flowers for exhibition use, this is very important.

When the plant has again attained a height of eighteen inches pinch back the crown as before directed, and when new branches appear watch them carefully and do not allow any subsequent branches to grow larger than to enable you to cut them out with the ordinary budding knife. The branch appearing from the main stem should produce nothing more than one set of leaves at

each joint, and at the very end one or two flowers at the most.

The feeding of the plants should be begun immediately when the crown is pinched, and just as soon as the buds form the manure which has been placed on the ground previously should be removed and an application of nitrate of soda, one ounce to five gallons of water, applied to the plant outside a circle at least a foot away from the stem of the plant. This application may be repeated every three days. The first specimen flower appearing on a plant thus treated will be the largest that it can ever produce.

During the progress of the plants there are few insects which attack them, and, no matter what they are, a weak solution of Paris green in cold water, applied with a fine syringe or whisk-broom to the foliage and buds of the plants after sun-down will prove an efficient remedy and preventive.

It is highly important that the plants are never watered during the sunny hours. Whenever the conditions are such that wind is a great factor to contend with, the tying of the plants should receive a great deal of attention. In order to make them as secure



Cut up the old "field roots" so that each tuber has one eye and one only

as possible I advise having cross-bars connecting a line of stakes (as many as desired) and tying the branches to these cross-bars.

WHEN TO PLANT

The actual planting in the garden, whether it be of old, dormant roots divided to one eye or of started plants from pots, had best be deferred until, at earliest, May 15th, no matter how far south the garden may be; and even by planting as late as the first of July splendid results can be obtained. My own experience last year was that plants set out July 10th produced finer plants and a greater quantity of blooms than those set in the ground May 5th.

For the ordinary garden, where space is limited, two feet of room between the plants is ample, so far as the welfare of the plant is concerned, but a better appearance can be made with three feet of room. "Field roots" are the old ones that have been carried over from last season by storing in a cellar. Nothing is gained by retaining the clump as a

whole; it is far better to divide it into as many parts as there are sprouts, always observing that there is one sprout or bud, or eye, to each tuber or root, and vice versa.

Sometimes it is impossible to separate every sprout, and in such a case it is well to remove with a knife all sprouts but one. The essential point is that never should there be more than one main stem growing.

"Pot roots" are those grown from cuttings during the previous season, and my experience has been that these roots are as good as field roots. They are easier to handle and easier to plant.

If a sprout has formed, the size of root has absolutely nothing to do with the future progress of the plant. The old root which



Pot-roots grown from cuttings last year. Very easy to handle

is planted is of no account. As soon as it is placed into the ground it decays and the new roots form right above it. It does not feed the plant after the start, as a great many growers believe.

If planting be done in a very dry season it will be noticed that until the little fibrous roots can develop the plants stand still, not moving one inch, which shows that the large roots which were placed in the ground could not feed the new growth made before the drought set in.

"Green plants" are often the only sort obtainable, particularly with newer varieties when the quantity is limited. These are rooted cuttings of the current season taken from pot-grown or field roots started early in heat. They must be given careful treatment. Most dahlia growers object to green plants for the reason that they are subject to attack by the cut-worm. If this is once done the plant is lost for good, having not yet made root buds, but the cut-worm is an enemy which can be readily fought and kept off. A paper collar, six inches high, placed around the plant so that it extends fully two inches above the ground, will be an effectual barrier to the pest. The one valuable feature of the green plant is that it produces the finest specimen blooms, and if you wish flowers for the exhibition table, green plants are the only thing to grow.

GETTING RESULTS

Dahlias will not produce the best specimen blooms until August, no matter when they are planted, and if buds should appear before



An old field clump sprouted and ready for separating. Nothing is gained by planting this whole

that time it is advisable not to allow them to open; pick them off when quite young. Many varieties have a tendency to produce imperfect flowers in the beginning, and if this is noticed all buds should be removed for the next week or two so as to enable the plants to gain sufficient strength to perfect their blossoms. Early frost, often appearing in September, will kill enough of the plant to stop further blooming, but the flowering season can be prolonged into November, despite early frosts, by building a tent over the bed or garden. Make a framework of stakes standing two feet above the highest plant and cover with muslin or light canvas coming right down to the ground on all sides.



Place the tubers in the ground horizontally, and three inches below the surface. Set stakes first



For shipping, a root grown in a pot is the most compact

Once the first frost is over we usually have splendid flowering weather until almost Thanksgiving.

WHEN WINTER COMES

Taking up the dahlia roots need not be done until severe frost has killed the foliage right to the ground. Then allow a couple of days for the root to adjust itself, and cut back to within six inches of the ground. You may then carefully proceed to lift, using

a fork rather than a spade. They often take up a space of two feet and even more at times. Loosen the ground before you try to lift the roots. The lifting of the roots should take place only on a bright, sunny day and during the sunny hours when the temperature is highest. Do not shake any soil off the roots. After the roots are taken up, place them upside down on the ground until the soil round them seems to be dry. Then before sundown place them in a cool, dry cellar, spread them out, and let them dry thoroughly. When this has been accomplished, which usually takes from a week to ten days, they can either be placed in boxes or left on the floor, provided it is dry, and covered with newspapers. The temperature must not fall below 40 degrees, nor rise above 50 degrees.

From time to time look at the roots and see that no decay makes progress. If any parts show that they are decaying they should be immediately removed and the freshly cut parts well coated with air-slaked lime. If, on the other hand, the roots begin to dry, it will not do any harm—in fact, it will benefit them considerably—to sprinkle the newspaper above them with water, also to sprinkle the floor upon which they are lying.

RAISING FROM SEED

This is a most fascinating work for the amateur, particularly if you use your own seed. If you have a plant of specially good habits and fine flowers it would be worth your while making a start. Do not cut blooms after perfect flowers have appeared,



A comparison between seedling and cutting plants. Both are ten weeks old. The seedling on the right is much the weaker and smaller

but allow them all to go to seed, which gathered and dried in late summer. Start these seeds in the house about February and transplant to single pots about the end of March. They are then best placed in a cold-frame until the weather is absolutely safe for planting out of doors, which usually takes place about June 1st. Subsequent care will be the same as that given to the other dahlias, and if the result should be only 1 per cent. of the entire product one should feel more than gratified. The pleasure of awaiting each new day with a hope of seeing a new flower open and realize the result of the whole year's work is indescribable—and it is a safe wager that no two plants will be alike!

English Effects With Broad-leaved Evergreens—By W. Miller, New York

WE MAY GET ONLY THREE-FOURTHS OF THE ENGLISH LUXURIANCE, BUT WE CAN BEAT ENGLAND ON VARIETY—SEVEN EFFECTS WE CAN HAVE AND FOUR WE CAN'T—APRIL THE BEST MONTH TO PLANT EVERGREENS

[EDITOR'S NOTE.—This is the fourth of twelve articles that explain how we waste about a million dollars a year in trying to copy English effects literally, and the only way in which we can excel England. "Conifers" appeared in January; "Trees" in February; "Shrubs" in March. This series is devoted to the materials of gardening, while a companion series in Country Life in America deals with the different kinds of gardening, such as Landscape Gardening (January), Formal Gardening (February) and Rose Gardens (March). The author went to England last year to get facts for these articles].

IT IS no wonder that the myriads of Americans who visit England every year become intoxicated with the beauty of the broad-leaved evergreens. The first glimpse of the rhododendrons in Rotten Row is enough to turn any one's head, and the Americans who crowd into the big tent at the inner circle, Regent's Park, to view that matchless color show in June, can hardly wait to get back home and begin planting. For, in England, anyone can see that broad-leaved evergreens are the most sumptuous plants in cultivation. True, pines and other narrow-leaved evergreens are also attractive the year round, and many of them attain far grander dimensions, but they do not have gorgeous flowers or red berries that last all winter. Moreover, conifers as a class are a little inclined to coldness and monotony, while the broad-leaved evergreens, from the greater breadth and lustre of their leaves, are pleasanter to live with the year round. For the imme-

diante environment of a house, broad-leaved evergreens are certainly the most desirable plants in the world, while tall conifers are quite unsuited to that position.

But the most precious quality in broad-leaved evergreens is a certain mystic charm which has nothing at all to do with showy flowers or berries. It resides in the foliage. Everyone feels it, but I have never seen any attempt to express or explain it, or even a name for it. I venture to call it the "classic" effect, because the first glimpse of a Greek temple in England framed by luxuriant masses of rhododendron, box, and holly overwhelms one with feelings that seem to well up from the depths of the soul. They are deeper than the instinct that England is "our old home." One might almost call them memories of a previous existence. There is a sudden consciousness that we, too, once lived in Italy—that Greece also is our old home.

I know I spoil this by talking about it,

because words are such frightful liars, but I feel assured that the secret of all "garden magic" is simply the power which old plants and old gardens have of stimulating the imagination, or, as I like to say, these old memories. Everyone knows a few precious moments in life when a sense of the brotherhood of man floods the consciousness. So everyone who sees in England this combination of classic architecture and broad-leaved evergreens is momentarily transported in spirit to Italy and Greece, or, at least, feels some dim sense of kinship with the mighty past.

Yet the plants I spoke of are not Italian symbols. Rhododendron, box, and holly may flourish in the Mediterranean region, but they are surcharged with British feeling. The master-words to the Italian are laurel, myrtle, and olive. And right here rises our great hope. For if England can transport those who behold her gardens, though she lacks the older symbols, so America may

perform this miracle, though she may use American symbols. And these symbols, if I am any prophet, will be American rhododendrons, holly, and mountain laurel.

HOW ENGLAND CAN BEAT US

How book notions change when one sees the real things! I was brought up to believe that England has the best climate in the world for evergreens, and consequently it is folly to try to rival her. The first part may be true, but the second is not. We can probably never attain more than 90 per cent. of English luxuriance, but we can beat her on variety. For example, we can never expect to speak of rhododendrons in our woods as "weeds," or game coverts of English laurel as "evergreen rubbish," as William Robinson justly does in criticizing certain English excesses. On the other hand, do you know what the English call broad-leaved evergreens? They often call the peat-loving members of the group "*American plants*," for they have in mind chiefly mountain laurel and the two rhododendrons which grow wild in our Northern States.

Of the forty-nine kinds we can grow in the North, twenty-two grow wild in this very region, and ten more are native to an allied climate (that of Japan), while only eight are native to Europe.

HOW WE CAN BEAT ENGLAND

The only place where we can reproduce practically all the English effects with English material is Oregon, for that is about the only place that combines a cool, moist summer with a mild winter. However, nine-tenths of the evergreens that flourish in England will thrive on the Pacific coast if given enough water during the dry season.

The South can equal the English luxuriance, at least near salt water; but with a different set of plants which will show a family resemblance, yet individual distinction.

The Northwest can have no broad-leaved evergreens worth mentioning, and the Middle West cannot rival the East.

The East spends the most on broad-leaved evergreens, and is popularly supposed to have the worst climate for them. So I shall concentrate on that region. Yet even here, I believe, we can reproduce seven of the most important English effects with broad-leaved evergreens, while there are only four that we can never hope to have. This may seem like a formidable list, but all these effects fall roughly into three groups—flowering, fruiting, and foliage, and they may prove interesting if examined in that order.

THE SPRING-GARDEN EFFECT

Undoubtedly the most gorgeous flowering effect in the world is that of rhododen-

drons. True, roses and azaleas have a wider range of colors, while lilacs and hydrangeas have bigger trusses, but they do not have a magnificent background of evergreen foliage. The English spring strikes high C in June when the rhododendrons bloom, while our dramatic moment is in May when the leaves come out and the fruit trees blossom. We already have some spring gardens more gorgeous than any I saw in England, but they are of a very different kind, as explained in an article on shrubs in last month's GARDEN MAGAZINE. The English type of spring garden is a collection of rhododendrons and azaleas, and I believe we can reproduce it with joyous results.

The example we should follow is illustrated by the Rhododendron Dell at Kew, and the gardens of the Royal Horticultural Society, or by the Vale of Cashmere in Pros-

pect Park, Brooklyn, N. Y. The first principle is to get a little ravine or valley, so that we may enjoy the rhododendrons both from above and below. Then let there be a path following the natural contours, so that everyone may see the whole show without retracing steps or being plagued by a maze. By this method there will be a new picture every two or three steps. Next observe that all the shrubs which bloom before the leaves look best against an evergreen background; therefore put your azaleas chiefly in front and rhododendrons chiefly in the back. Finally, arrange the "magenta crowd" by themselves, and nine-tenths of the color discords will be avoided. By "magenta crowd" I mean all the colors derivable from purple, e.g., lavender, crimson-pink, mauve, light and dark purple, and crimson. These colors give exquisite effects in a bed by themselves. The other colors will usually take care of themselves. A collection of 100 varieties arranged on such a plan would be a joy unspeakable.



A "landscape forestry" effect we can have. Everywhere under these deciduous trees are broad-leaved evergreens, such as holly and rhododendrons. We can carpet the ground with evergreen trailers

Instead of such collections, we seem to prefer mass effects. But too often we dump down carloads in a flat place near the entrance to an estate, wipe out all other vegetation, and jam the rhododendrons together in such a way that visitors think only of the cost. We ought rather to aim at great landscape pictures like the one at Deepdene, and anyone may reproduce the spirit of that famous spectacle provided he owns a valley about a quarter of a mile long, with its banks crowned by tall trees.

But most Americans who plant rhododendrons on a great scale simply scatter them in their woods. A better idea is represented by the new art called "landscape forestry," which transforms monotonous woods into enchanting groves at small expense and in only four or five years. Some of the main ideas are saving the best trees and giving them a chance to develop, making trails or paths to all the most interesting features, and breaking here and there the fringe of shrubbery which generally surrounds American woods, barring all visions of the beauties within. Only by some such plan can we have the grandest wild garden effects with rhododendrons, and we ought to produce even more ravishing pictures than those of England, because our Catawbiense and maximum are so much better than the vile-colored Ponticum that becomes a "weed" in English woodlands.

THE PEAT-GARDEN EFFECT

The great limitation of the spring garden, however, is that it omits the mountain laurel, which has the most exquisite flower of all broad-leaved evergreens, and our other great hero, *Rhododendron maximum*. So the next step is to have a bed of ever-



"The most gorgeous flowering effect in the world is that of rhododendrons." They have huge trusses, many colors, and magnificent foliage the year round. A mass effect at Kew

greens that will show flowers or berries the year round. For example, one can have a mass of bloom from mountain laurel in late June, *Rhododendron maximum* in July, heather in August, holly-leaved osmanthus in autumn, and the red berries of American holly all winter.

Moreover, there are a lot of exquisite little plants for edging and carpeting these beds which are well-nigh impossible to grow elsewhere, such as the everblooming *Daphne*, the far-famed *Shortia*, the bronze-leaved *Galax*, trailing *arbutus*, wintergreen, partridge berry and that never-ending

marvel, the mountain andromeda, which holds up all winter sprays of white flower buds somewhat like the lily-of-the-valley.

Such combinations are doubly appropriate because most of these evergreens belong to the heath family, and most of them want the same cultural conditions, viz., a permanent mulch and protection from winter winds and sunshine.

Is it any wonder that hundreds of English estates should lavish space and money on developing such an idea? It is a pity that there is no good name for this type of gardening. The English call such a garden an "American garden," but we can hardly use that name. Their phrase "the bog garden" also overlaps this idea a great deal, but unfortunately suggests to the American mind mosquitoes, snakes, and green scum. I shall be very grateful to anyone who can find a good name for this exquisite thing, because a worthy name might help the idea immensely here.

Meanwhile, I venture to call it the "peat garden," because everybody used to think that these shallow-rooting evergreens were peat-lovers. Now we know that they are merely lime-haters and we can even grow them in a limestone country by digging out three feet of soil. And we need not even use peat, for leafmold will do. There are now special booklets and catalogues devoted to this type of garden, and the idea is well worth your investigation, for we can grow many of these American plants better than England can.

THE CLIMBING EFFECTS

The most precious evergreen climber in the world is the ivy, because it has been loved longest by the human race. Therefore we ought to grow it wherever we can, but only on stone and brick buildings. The English sometimes make the mistake of sending ivy up tall trees. Why hide a characteristic beauty, like the trunk of a



The typical "spring garden" in England—a collection of rhododendrons, which is often combined with azaleas. Many varieties, all colors, a winding walk, different levels—new pictures at every step

beech? Even when a tree is about to die this is a bad practice, for the close-climbing ivy and ampelopsis outline and emphasize death, while the loose Virginia creeper transmutes and glorifies it. Ivy will climb to the top of a tall castle in England, but in the latitude of New York it attains only ten feet or so.

The best evergreen climber for the North is the climbing euonymus, and we ought to plant it by the million. Eventually its leaf may be as dear to us as ivy is to Europe. For the euonymus is hardier than English ivy and has the immense advantage of red berries that glow all winter. It is a Japanese plant which I predict will become thoroughly Americanized.

THE CARPETING EFFECT

There are four ways of carpeting the ground in England with evergreen creepers that thrive under trees and shrubs. The classical effect is that of ivy, which we can reproduce even in New England, where ivy cannot be grown as a climber.

The second best effect is that of trailing myrtle (*Vinca minor*), which has blue, five-lobed, waxy flowers, a specimen of which can be picked almost any day in the year. Do not associate this with cemeteries. It is used by the thousand on great estates in New England, is quicker-growing than ivy, and better adapted to our climate.

Third, the London Pride (*Saxifraga umbrosa*) makes charming rosettes and will grow in cold, wet clay in dark, narrow passages between London houses. It may be unsuited to our climate, but I want a lot of our readers to try it on a small scale in various situations, and I hereby ask some wealthy American to try to carpet a forest floor with it, as the English do.

Fourth, the Aaron's beard or the rose of Sharon often covers banks ten feet high and a hundred yards long. It makes a great sight in summer when thousands of its big yellow flowers are open. The name of this plant is *Hypericum calycinum*. In England it flourishes in full sunlight, but this is too much to expect from any broad-leaved evergreens in America, save yucca and a few things of minor importance.

We can beat England on evergreen creepers with red berries that are attractive all winter, except, of course, when covered with snow. The best for woods are our

native wintergreen (*Gaultheria procumbens*) and partridge berry (*Mitchella repens*). An Englishman will sometimes spend a hundred dollars to carpet a little patch of woods with these lovely plants which grow by the million in America on land worth \$5 or \$10 an acre.

For the seaside the best red-berried evergreen creeper is the bearberry (*Arctostaphylos Uva-ursi*), which thrives in full sun on sand or rock.

The climbing euonymus also has red berries, but as a creeper it is not so valuable, because it humps up every little while, in an abortive effort to climb.

There is an exquisite white-fruited creeper that is buried in catalogues under the name of *Pachysandra terminalis*, as an offset to which I propose "Japanese mountain spurge." It has highly characteristic leaves, dainty little spikes of whitish flowers, and



The "classical effect" of broad-leaved evergreens, showing that the secret of "garden magic" does not reside in mere leaf forms (such as laurel, myrtle, olive) but in luxuriance

quaint clusters of fat, waxy berries, which are attractive in summer.

THE FOLIAGE EFFECT

Of all the broad-leaved evergreens that are cultivated for foliage alone, box is undoubtedly the most important for northern countries. True, holly has a deeper religious significance, and when it is grown by the mile for hedges, little or no fruit is expected. But holly is identified with the pleasure grounds, while box is the most characteristic plant of the garden proper. Indeed, the only plant which lives for a century or more in old gardens is box. That is why the sight and smell of box stir old family memories more than any other plant in cultivation. I do not see how any garden can have charm without it. In formal gardens, at least, we should always use some dwarf box for edging flower beds and in every garden there should be some tree box to symbolize the beauty of a green old

age, and also to serve as a connecting link between the generations.

The losses which Americans suffer from box are often very heavy and peculiarly distressing. I confess that I have occasionally joined in the cry for a hardy equivalent of box, but after visiting England I believe that we shall never get it. The most promising substitute for box is *Ilex crenata*, of which there are three forms of varying merit. One of them is said to be even glossier than box in winter, as well as hardier and possibly of quicker growth. But while this "Japanese box" mimics the box leaf fairly well, I doubt whether it will exhibit in age that "embossed" effect which, as Henry Hicks observes, is a crowning beauty in old boxwood. And I am sure it lacks the pungent odor of box, which is so potent in restoring precious memories. Someone has said that box is "redolent of eternity."

How to prevent losses with box is a long story. Everyone who wishes to dwell with the best that the past has to give us, and to profit by the experience of Americans who have spent thousands of dollars in moving century-old box to new gardens, should read the articles on box that are referred to at the end of this article.

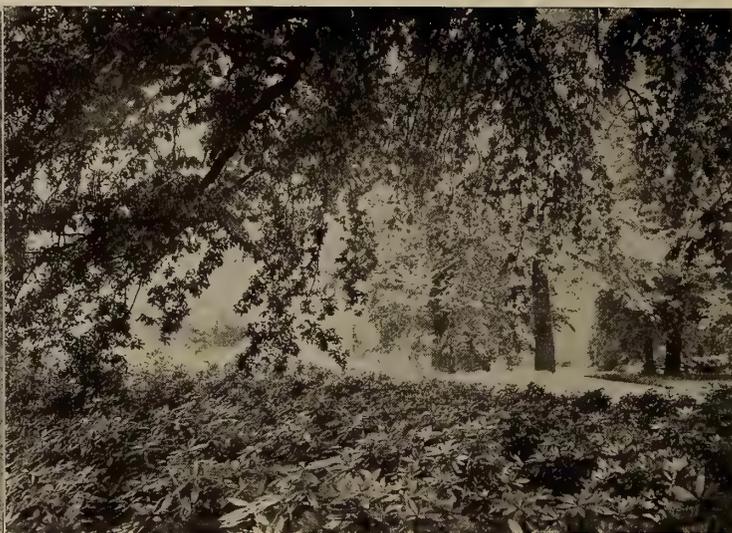
Ivy is, of course, the most precious climber or creeper grown solely for foliage effect. It is common enough to see trained pyramids of it in formal gardens, but I believe we shall never achieve

"garden magic" in that way, or by growing bay trees in tubs. The bay tree is the laurel of the ancient poets, yet the sight of it does not thrill our hearts. Only free, luxuriant growth, I believe, has sufficient power of suggestion.

Unexpected aid may come from the "hardy evergreen bamboo," for we should not think of all bamboos as "tropical." Bamboos are merely tall grasses, and they fit our woods to perfection. Of the seven kinds that are hardy in the North, most belong to the slender type of beauty, but there is one which has as much body as a rhododendron. It may not be evergreen north of Philadelphia, where I once saw a superb specimen that was eight feet high. Nurserymen call it *Bambusa Metake*, but its correct name is *Arundinaria Japonica*. As both names are formidable, I once proposed that we call it the "broad-leaved bamboo," for the leaf attains 2 x 12 inches. "Hardy evergreen bamboo" is, however, quite as designative, and reveals its greatest value.



A hardy evergreen bamboo, taller than a man, at Gravetye, the home of William Robinson, who originated the "wild garden" idea. Our equivalent for this is *Arundinaria Japonica*



The wrong way to arrange rhododendrons, i. e. jamming them in flat, solid masses. The article tells how to get better wild garden effects. The "peat garden" is also a better idea

The effect of this evergreen bamboo is somewhat like that pictured above. To realize the glory of such a mass, you must know that it is considerably taller than a man. Then make the leaves dark and lustrous, like a rhododendron, and you will get some notion of the luxurious abandon with which everything grows at Gravetye, the home of William Robinson, prophet of wild gardening. This particular species Mr. Robinson calls *Bambusa palmata*, and says it is even finer than the other hardy, evergreen bamboo. The reedy effect is noticeable here. The only picture I have of *Arundinaria Japonica* shows it arching gracefully to the ground.

THE CITY EFFECT

New York can never be as beautiful as London because she has no front yards. I saw thousands upon thousands of London yards full of matchless beauty. For they are hedged in by broad-leaved evergreens, especially holly and aucuba. Such gardens contain nothing else save grass, but to my mind they are infinitely more dignified and appropriate than any flower-beds that mind can conceive. May heaven save London from skyscrapers, and may American cities of decent size be saved from tall tenements! I dare say we might grow broad-leaved evergreens in back yards of big cities, but we never will, for there can be no privacy in yards overlooked by tall buildings. In London there are countless brick buildings of two or three stories with lovely gardens front and back. In front yards public opinion compels decency and demands beauty.

I do not wish to see front yards in America hedged in, but there is a noble effect we can get by massing. Everyone who has noticed the rhododendrons in the yard of the late Cornelius Vanderbilt, facing the principal entrance to Central Park, in New York, will know at once what I mean. For rhododendrons, box, holly, and the like make the grandest harmonies with architecture of any

plants in the world. This is because they have just enough formality, are evergreen, long-lived, never grow too high, and are attractive every day of the year. Conifers cannot stand smoke and are a total failure in London, but Henry Hicks declares that broad-leaved evergreens are good smoke-resisters. However, I should never plant them without providing a scheme for washing them every day, if necessary, since evergreens are not beautiful when dusty.

THE WINTER EFFECT

Before I die I hope to see America redeemed from its present bleakness and ugliness in winter. The chief elements in that reform will be the shrubs with vivid berries and branches (such as the Japanese barberry and the red-twigged dogwood), because they give the cheapest and quickest results. But these bushes, being leafless, show brightest against an evergreen background. This is all the more reason for broad-leaved evergreens at the base of every dwelling house where they will grow. For winter in the North is five-twelfths of the year, or rather the trees are leafless as long as that.

We must not run too much to rhododendrons, for in zero weather their leaves hang down, curl in, and look most unhappy. Mountain laurel is one of the cheeriest in winter. We can get superb bronzes from *Azalea amana*, arching wands from *Leucothoe*, amazing lustiness from *Berberis Japonica*, a perfect carpet of running myrtle where grass will not grow, and above all the never-fading glories of American holly.

FOUR EFFECTS WE CAN'T HAVE

We can never hope for any tree effects among broad-leaved evergreens in the North. In England the holm oak, or ilex of Italian gardens (*Quercus Ilex*), will sometimes attain fifty feet. On the other hand, England can never rival *Magnolia grandiflora*

of the South or the Christmas berry of California. We shall never equal English hedge effects. It is possible to have miles of holly hedging in the North, but practically it is only a rich man's plant.

We can never have the variegated effects of gold or silver-edged hollies which are said to be highly cheerful in the English winter.

We shall never have the game-cover effects of England — thousands of acres of English laurel and *Gaultheria Shallon*. We are a long way yet from being a nation of pheasant raisers.

But why repine? Think of the effects we can have! Are they not more numerous and beautiful than you ever suspected?

A MEATY LITTLE BIBLIOGRAPHY

The best available information is contained in back numbers of two magazines. These can be had separately, or one may consult the bound volumes. (G. M.—GARDEN MAGAZINE: C. L.—*Country Life in America*. The numbers refer to volume and page.

"The Broad-leaved Evergreens," (G. M. 2: 18.) The best brief all-round article.

"The Hardy Broad-leaved Evergreens," (C. L. 13: 605,) describes the best sixteen kinds, and gives a key to the forty-nine that are hardy.

"Moving Century-old Box," (C. L. 10: 537,) gives practical details.

"Moving Old Box to New Gardens," (C. L. 7: 56,) gives principles of hardiness and cultivation.

"The Best Hardy Plants of the Heath Family," (G. M. 3: 334,) describes materials of the "peat garden."

"All the Hollies Worth Growing," (G. M. 4: 234.)

"The Gorgeous Family of Rhododendrons," (C. L. 9: 429,) gives a list of all the hardy varieties.

"Rhododendrons Wild and Cultivated," (C. L. 11: 467,) inspiring and practical.

"A Perfect Combination — Rhododendrons and Lilies," (C. L. 12: 531,) describes all the peat-demanding lilies.

"Planting for Winter Comfort and Beauty," (C. L. 9: 155.)

"The Show Garden of the South," (C. L. 13: 299,) describes lovely effects with Indian azaleas and camellias.

"How to Buy Trees and Shrubs Economically," (C. L. 12: 48.) Tells how all beginners get "stung" on evergreens.

Rearranging the Hardy Border—By Peter Zuger, ^{Connec-}ticut

MOST HERBACEOUS PERENNIALS MUST BE LIFTED, DIVIDED AND REPLANTED IN SPRING TO MAKE THEM FLOWER PROFUSELY—A FEW SUGGESTIONS ON GETTING EFFECTS IN COLOR AND HEIGHT

THE proper time to rearrange the hardy border is early in April, when the young growths are just emerging after their winter's rest. The fact that the subjects of the hardy border are "perennial" does not mean that they can remain undisturbed for all time; the life of the average perennial can be generally accepted as from four to five years. With many of the more rampant growing kinds, such as Golden Glow and Boltonia, division is necessary every two years, at least. Treated thus they will not only produce flowers of better size and color, but the growth can be kept confined to its own particular domain and not permitted to spread and overrun less vigorous but equally, or more, valuable neighbors.

Here the question arises: "Which plants should come up and which should remain?"

In those which are classed in the "late, or autumn flowering" section, the original crown (generally speaking) dies out after flowering, and immediately the new growths push up around it. All such plants can be divided each spring—whatever little check they may suffer is really to their advantage.

The "summer flowering" section, as a rule, makes the new growth from the root crown, and should be divided in the early fall; but if given a good mulch every fall—the same being dug under in spring—can remain undivided for several years.

The "spring flowering" section requiring division is less numerous and should be handled in the early fall when the new growth has matured.

In preparing the border, the plants to

be divided should first be carefully dug up and placed to one side, the ground levelled off, and a good coating of well-decomposed stable manure and a sprinkling of wood-ashes, or lime, applied. If stable manure cannot be obtained, sheep manure or bone meal can be substituted in a lesser quantity. This should be dug in to a depth of from 15 to 18 inches, and the soil worked into a good, friable condition. After the border is made ready the plants should be carefully divided by cutting clean through the clump with the

stroke of a strong knife or sharp spade. It is a mistake to think that the larger the divided clump, the better the resulting plant will be. Four to six eyes, on the average, will make a more vigorous and better-balanced plant than a larger clump. Should you desire to increase your stock, the smaller growths, or eyes, which are trimmed off in shaping the clump can be planted out in some out-of-the-way corner of the garden, and in the course of one or two years will make good flowering plants.

To properly arrange the plants in a border,

some knowledge as to the growing habits and flowering period of the plants to be used is essential. The taller growing kinds, such as rudbeckia, boltonia, hollyhock, larkspur, etc., should be used in the background; next in order will come such less-vigorous growing but yet fairly tall plants as false dragon head, bee balm, phlox, campanula, balloon flower, peonies, columbine, etc. The frontal planting will naturally comprise the dwarfers, pets of the border. Notable among these are: the primrose in its many types, moss pink (*Phlox subulata* and *amæna*), *Anemone Pulsatilla*, *Adonis vernalis*, sea pink (*Armeria*), alum root, *Heuchera*, *Veronica incana* and *subsessilis*, gaillardia, geum, in fact, there is an almost endless assortment of dwarf perennials, all well adapted for bordering, and one must select according to individual taste. Without doubt, the most effective way to arrange a perennial planting is to plant each variety in a separate group, large enough to give the varieties distinction; the size of the group being in proportion to that of the border, but large



The relative height of the plants is the chief factor to be regarded in the general scheme of arrangement. Keep the dwarfs well to the front, the tallest to the rear

LATE-FLOWERING PERENNIALS — DIVIDE IN IN SPRING			
Alum root	Catchfly	Loosestrife, rose	Rudbeckia
Aster, hardy	Chrysanthemum	Mallow	Sea lavender
Baby's breath	Day lily	Meadowsweet	Sea pink
Bergamot	Delphinium, Chinese	Mint	Sneezewort
Bishop's weed	False chamomile	Phlox, perennial	Speedwell
Blazing star	False dragonhead	Plantain lily	Sunflower
Bouncing Bet	Loosestrife	Plume poppy	Sunflower, orange
Campion	Loosestrife, fringed	Pyrethrum	Windflower, Pennsylvania
			Yarrow
EARLY-FLOWERING PERENNIALS — DIVIDE IN EARLY FALL			
Alyssum	Foxglove	Moss pink	Poppy, oriental
Bellflower	Iris, German	Pansies, tufted	Primrose
Bleeding heart	Iris, Japanese	Peony	Pyrethrum
Columbine	Lilies	Pinks, garden	Spirea

enough to make the group conspicuous during its flowering season.

The flowering season of each variety must be taken into consideration, the object being to have the groups so arranged that the planting, as a whole will be effective all through the season.

The colors should be carefully blended throughout the border to avoid jarring contrasts, and prevent a preponderance of color in any particular section at any one time.

Among all our choice perennials, probably none lend themselves to this method of

grouping better than the Chinese larkspur (*Delphinium grandiflorum*). The flowers of this gem are produced in spikes about three feet in height, and in a profusion that is truly marvelous. A group of these will be a veritable mass of bloom from July until October; and this, coupled with its graceful, fern-like foliage, makes it indispensable for the hardy border. There is also a dwarfier double form that is almost equally desirable, and as either of these can be grown from seed sown outside — which, if sown early enough, will flower the first season — there is no reason why they should not be seen in every

garden. If it is desired, a pleasing formal effect can be had by edging the planting with the hardy candytuft (*Iberis sempervirens*); the variety Snowflake being very well adapted for the purpose.

Any spaces that might occur in the border, when the early-flowering varieties are past, can be filled in nicely with annuals, such as petunia, balsam, salvia, phlox, gladiolus, tuberose, montbretia. In fact the addition of annuals is really necessary to keep up a display of flowers during the hot summer months until the late-blooming section of the perennials commences.

Planting a Real Old-Fashioned Garden—By H. S. Adams, ^{Connec-}_{ticut}

HOW TO BE TRUE TO BOTH THE LETTER AND SPIRIT OF "GRANDMOTHER'S GARDEN" AND HAVE FLOWERS CONTINUOUSLY FROM APRIL TILL NOVEMBER

AS TO the best old-fashioned flowers, the most desirable are naturally those that will in the aggregate furnish bloom for approximately six months. The trick in making a selection is, therefore, to paraphrase a certain familiar saying of Abraham Lincoln, and remember that, although you can make all flowers bloom some of the time, and some flowers all of the time, you cannot make all flowers bloom all of the time. Nor should the fact that old-fashioned flowers range in height from six inches to as many feet be overlooked. Height, as well as color, figures prominently in the matter of general effect.

First get your garden. That you must do in April, and the nearer you go to all Fools' Day the wiser you will be. As the initial move, decide at once, after taking a walk around the place, whether you will adopt borders or a set, geometrical design, and, in this, preference should yield without hesitancy to the lay of the land, as it were. If the place is small, borders are the only solution of the problem, beds in the lawn being doubly abhorrent in the case of this particular form of flower-gardening. If, on the other hand, there is plenty of room, a formal plan of planting may be followed wherever such a garden best fits in, but preferably in the rear or at the side of the house. For a starter, however, the border is usually advisable. It permits a small beginning, with the opportunity to

enlarge as the season progresses; it provides the necessary experience for working out a more comprehensive plan and, furthermore, this is a good way to accumulate stock for a leisurely thought-out garden.

Having decided what you had better do, lay out your garden on paper. This much accomplished, go over the flower catalogues, which are issued afresh each January, and make out the list of the plants and seeds that you must order. Meanwhile it is just as well to let any friends who have hardy gardens know what you are up to, as the chances are that they will gladly give you of their surplus. This will not only save you money but will let friendship through your garden gate.

The ground should, of course, be prepared as early as it can be worked well. It should be spaded to at least the depth of a foot, and if the soil is very poor the loosened part should be removed bodily and a better grade substituted. With the working in of some well-rotted manure, and the necessary raking, the ground is then ready for the plants. A common mistake with borders is to make them too narrow. If next to the house or shrubbery they should not be less than four feet wide, and where approach from both sides is possible six feet is better yet.

Barring bulbs, which cannot enter into spring planting, the best flowers to start the season with are the sweet keys and polyanthus that were so treasured by our grandmothers. Both bloom in late April and early May. They are of low growth; as is also that indispensable for May, blue-eyed Susan (*Polemonium reptans*). The best fairly tall flower of early May is bleeding heart, and for later in the month widow's tears, flower-de-luce, and columbine are needed. For late May also there are the low-growing hardy forget-me-not, which will bloom the remainder of the season, and the sweet William, which is a foot high and is good for a solid month of color, and, for a touch of yellow, either the tall bachelor's buttons or the creeping kind.

June's finest tall plants are the foxglove, trooper's feather, and Oriental larkspur; those of medium height, custard lily, Canter-

bury bell, peach bell, double "featherfew" London pride, fraxinella, tickseed, rock chamomile, sweet rocket, and blanket flower; and those of low growth, aside from sweet William, the grass pink and the "California primrose."

For July's tallest effect the hollyhock, which is likely to begin flowering late in June, is unsurpassed. Grading down in height are the hardy phlox, Japanese bell-flower, Oswego tea, and bluebell. Even if it can be only trained to a stake, the everlasting pea, which will bloom from midsummer on, should also have a place in the old-fashioned garden. Another desirable July flower is the tiger lily, the bulbs of which may be purchased in the spring.

All the plants thus far mentioned are iron-clad perennials and biennials, the latter being self-perpetuating by self-sowing with the sole exception of the Canterbury bell; but in August the annuals must be counted upon to augment the color of such hardy holdovers as phlox and gaillardia. Nothing is better than the African marigold at this time of year. At least half a dozen other old-fashioned annuals should, however, be planted in the spring, in a seed bed, and transplanted to fill gaps here, there, and



On small areas informal border planting is the only solution. Keep the lawn open



With plenty of room a formal or geometrical design near the house can be very effective

everywhere. China asters, Drummond's phlox, love-in-a-mist, mourning bride, cockscomb, youth and old age, four o'clock, sweet sultan, none-so-pretty, French marigold, snapdragon, larkspur, mignonette, sweet alyssum, balsam, Johnny-jump-up, and opium poppy are all good annuals, some of which bloom earlier than August. The

FLOWERING PLANTS FOR THE OLD-FASHIONED BORDER, BY SEASON

PERENNIALS AND BIENNIALS

GARDEN NAME	STANDARD NAME	HEIGHT	COLOR
LATE APRIL			
Sweet keys	<i>Primula vulgaris</i>	6-9 in.	Pale yellow
Polyanthus	<i>Primula Polyantha</i>	6-10 in.	Various
EARLY MAY			
Bleeding heart	<i>Dicentra spectabilis</i>	1-2 ft.	Red
Blue-eyed Susan	<i>Polemonium reptans</i>	6-8 in.	Light blue
LATE MAY			
Widow's tears	<i>Tradescantia Virginica</i>	1-3 ft.	Purplish
Flower-de-luce	<i>Iris Florentina</i>	½-2 ft.	Pearl
Flower-de-luce	<i>Iris Germanica</i>	½-2 ft.	Purple
Columbine	<i>Aquilegia vulgaris</i>	1½-2 ft.	Various
Forget-me-not, hardy	<i>Myosotis palustris</i> , var. <i>semperflorens</i>	8 in.	Blue
Sweet William	<i>Dianthus barbatus</i>	1-1½ ft.	Various
Bachelor's button	<i>Ranunculus acris</i> , var. <i>flore-pleno</i>	½-3 ft.	Golden yellow
Do. creeping	<i>Ranunculus repens</i> , var. <i>flore-pleno</i>	½-1 ft.	Yellow
JUNE			
Foxglove	<i>Digitalis purpurea</i>	2-3 ft.	Purple white
Trooper's feather	<i>Lythrum roseum</i> , var. <i>superbum</i>	4-6 ft.	Rose
Larkspur, oriental	<i>Delphinium formosum</i>	2-3 ft.	Blue
Custard lily	<i>Hemerocallis flava</i>	3 ft.	Yellow
Canterbury bell	<i>Campanula Medium</i>	1-4 ft.	Various
Peach bell	<i>Campanula persicifolia</i>	2-3 ft.	Blue, white
Featherfew, double	<i>Matricaria inodora</i> , var. <i>plenissima</i>	12-18 in.	White
London pride	<i>Lychnis Chalcedonica</i>	2-3 ft.	Scarlet
Fraxinella	<i>Dictamnus albus</i> , var. <i>rubra</i>	2 ft.	Red
Tickseed	<i>Coreopsis lanceolata</i> , var. <i>grandiflora</i>	1-2 ft.	Yellow
Rock chamomile	<i>Anthemis tinctoria</i>	2-3 ft.	Golden yellow
Sweet rocket	<i>Hesperis matronalis</i>	1-3 ft.	Purple
Blanket flower	<i>Gaillardia aristata</i>	1½-3 ft.	Yellow to red
Grass pink	<i>Dianthus plumarius</i>	1 ft.	Pink, purplish, white
LATE JUNE, JULY			
Hollyhock	<i>Althaea rosea</i>	5-8 ft.	Various
Phlox	<i>Phlox paniculata</i>	2-3½ ft.	Various
Bellflower, Japanese	<i>Platycodon grandiflorum</i>	1-3 ft.	Blue, white
Oswego tea	<i>Monarda didyma</i>	2 ft.	Red
Bluebell	<i>Campanula rapunculoides</i>	2-3 ft.	Violet
JULY			
Everlasting pea	<i>Lathyrus latifolius</i>	4-8 ft.	Rose
Tiger lily	<i>Lilium tigrinum</i>	2-5 ft.	Orange
AUGUST			
False chamomile	<i>Boltonia asteroides</i>	2-8 ft.	White to purple
Giant daisy	<i>Chrysanthemum uliginosum</i>	4-5 ft.	White
SEPTEMBER			
New England aster	<i>Aster Nova-Angliæ</i>	3-7 ft.	Purple
Japanese windflower	<i>Anemone Japonica</i>	2-3 ft.	Rosy purple
LATE SUMMER, EARLY AUTUMN			
Dahlia	<i>Dahlia variabilis</i>	2-5 ft.	Various
OCTOBER			
Artemesia	<i>Chrysanthemum Indicum</i>	3 ft.	Various

ANNUALS

AUGUST			
African marigold	<i>Tagetes erecta</i>	2 ft.	Lemon yellow
China aster	<i>Callistephus hortensis</i>	6-18 in.	Various
Phlox	<i>Phlox Drummondii</i>	6-18 in.	Various
Love-in-a-mist	<i>Nigella Damascena</i>	1-2 ft.	White, blue
Mourning bride	<i>Scabiosa atropurpurea</i>	2 ft.	Various
Cockscomb	<i>Celosia cristata</i>	9 in.	Various
Youth and old age	<i>Zinnia vars.</i>	1 ft.	Various
Four-o'clock	<i>Mirabilis Jalapa</i>	2-3 ft.	Various
Sweet Sultan	<i>Centaurea moschata</i>	2 ft.	White, yellow, purple
None-so-pretty	<i>Silene Armeria</i>	1-1½ ft.	Pink to white
French marigold	<i>Tagetes patula</i>	1 ft.	Yellow to red
Snapdragon	<i>Antirrhinum majus</i>	1-3 ft.	Various
Larkspur	<i>Delphinium hybridum</i>	3-4 ft.	Blue, pink, white
Mignonette	<i>Reseda odorata</i>	1-2 ft.	Yellowish white
Sweet alyssum	<i>Alyssum maritimum</i>	Creeping	White
Balsam	<i>Impatiens Balsamina</i>	2-2½ ft.	Various
Johnny-jump-up	<i>Viola tricolor</i>	6-8 ft.	Various
Poppy	<i>Papaver somniferum</i>	3-4 ft.	White to purple
Sunflower, Soleil d'Or	<i>Helianthus annuus</i> , var. <i>fl.-pl.</i>	3-12 ft.	Yellow



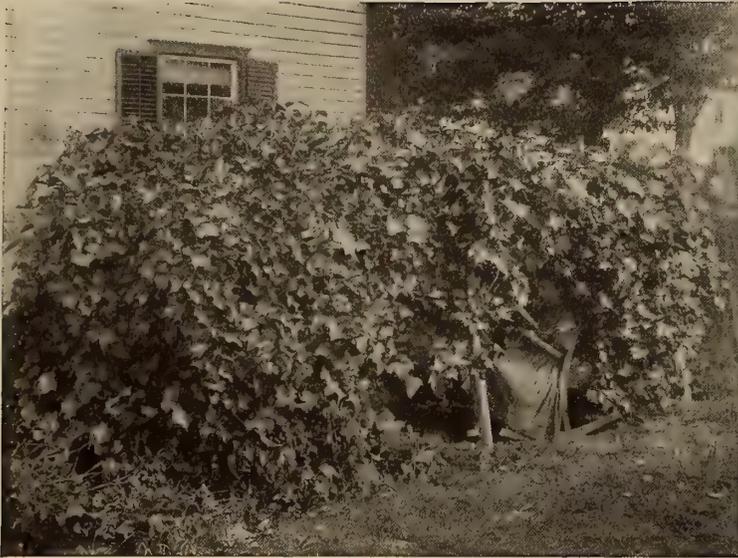
The Sweet William will give a large range of colors for a month or more

opium poppy must be planted where it is to stand and thinned out to one plant for a square foot. So far as I am aware the hardy double sunflower, false chamomile, and giant daisy are not old-fashioned flowers, but I see no reason why they should not help August through into September, and for the latter month I would add the New England aster and the Japanese windflower. For the late summer and early autumn also the dahlia, the tubers of which must, of course, be stored in winter, should have a place in the background. Even one plant will furnish a bold effect. October's old standby is the "artemesia." The artemesias are usually catalogued (and properly) as hardy pompon chrysanthemums, and the real old-fashioned unnamed varieties that are gathered up from old gardens stand the winter best.

In planting the easiest way is not to let the color scheme worry you any more than it did your grandmother. The chief things to consider are to grade the plants according to height and to so scatter each kind that the bed or border will always show color all over, if only in spots. Avoid straight lines studiously, excepting in a formal design, and put nothing nearer the edge than a foot from the centre of the plant. Finally, do not overcrowd.



The base of some old tree makes a good nucleus for the old-fashioned flowers



For a shady arbor the grape is unsurpassed; it will give fruit too



Grapes will yield returns from land that cannot well be cultivated otherwise

Planting Grapes in Waste Places—By W. H. Jenkins, ^{New York}

HERE IS A SUGGESTION FOR THE PROFITABLE USE OF OTHERWISE UNCULTIVABLE LAND—GET A SELECTION OF VINES THIS SPRING, START A VINEYARD, AND HARVEST FRUIT WITH A MINIMUM OF LABOR

A VINEYARD of twenty-five or fifty grape vines will give more returns for less trouble than anything I know. It was almost with the protest of my family and neighbors that I planted with grape vines a bank that was too steep for profitable cultivation. "The climate," they said, "is too cold for grapes and the vines will not grow well if you cannot cultivate them." But I wanted a vineyard, and I did not want to plant it on tillable level land, worth several hundred dollars per acre.

The growing season in my locality is from May to October, and the temperature sometimes 20 degrees below zero. The soil is clay-loam.

In the early spring when the frost was just out of the ground, I dug up places for the vines about six feet in diameter and eighteen inches deep, turning over the sods and pulverizing the soil where I set the vine. I worked in some fine manure, then planted my vines 6 x 8 feet apart. The vines were two years old, and I bought 50 of a nursery and the cost was not over \$5.

I planted 20 Worden, 5 Niagara, 5 Moore's Diamond, 5 Delaware, 5 Concord, and the balance were the Winchel, Moore's Early, and some newer varieties for experiment.

The first year I cultivated the small space around the vines. I had spaded before planting, and mowed the grass and left it on the ground for a mulch. I had read about the grass mulch for trees and wanted to try it for the grapes on land that was too steep and stony to cultivate.

The second year I gave the vines the same treatment, put up three wires, so the rows were eight feet apart, and began to train the vines on them according to the "Kniffin" system, which is to establish a vine in the



You could easily pick a bushel of fruit standing in one place

form of a T with the horizontal part on the top wire.

In the four years following I have top-dressed the ground with stable manure and wood ashes as I could, also emptying wastes from the house around the vines, and I have mown the grass and left it for a mulch.

Now about the results. We have had grapes for family use three years, and last year, six years from planting, the vines were loaded with many bushels. A section of the Wordens (black) is shown by the photo, with

one of the lady pickers, which bore so heavy a crop one could pick a bushel from the same place. This is the most profitable variety I have. An immense bearer, ripening the last of September before the hard frosts; of good size when pruned and thinned, sweet and valuable for every purpose for which we use grapes.

The Niagara (white) is by far the most desirable grape for the family fruit garden, but it is more difficult to grow than the Worden. It needs liberal feeding and some protection in winter, in my locality. I usually cut the vines loose from the trellis, lay them down and cover them with straw or brush early in the winter. All the other varieties are sufficiently hardy for the winters here in Delaware County, N. Y.

Next to the Worden and Niagara, as being most desirable here, I mention Concord, Moore's Diamond, Campbell's Early, Delaware, Winchell or Green Mountain, and Moore's Early, in the order named.

One needs only a few of the last two, for the very early grapes are small, the vines weak growers, and the grapes not so good as later varieties. The medium early kinds will ripen earlier, if rightly pruned, and the bunches thinned.

At the same time I planted my little vineyard, I also planted a few vines in various places elsewhere. One now completely covers an arbor and gives a pleasant shade during hot days, and our children enjoy it as a summer house. The inside of the arbor is covered with grapes in their season, so the arbor is useful and profitable, as well as ornamental. I recommend the Worden or some strong grower for covering arbors.

Another vine I planted near an unsightly apple stump and it now covers the permanent

trellis nature made, and bears a crop of grapes each year, although somewhat smaller than those in the vineyard.

The vines get little attention and cost nothing. The busy amateur who has a few acres can do as I have done without an expert knowledge of grape growing. There is nothing easier to grow than the grape vine, if you know its needs, which are easily learned. These are a dry and deep and rather loose soil, enriched with some stable manure (not too much) because it supplies humus, and supplemented with extra potash and phosphoric acid. Plant varieties adapted to your locality, cultivating well for two or three years until there is a good growth established on the trellis, then pruning in early winter, and spraying if needed. My experience is that you can keep them bearing large crops for family use with the grass mulch. I am not a commercial grower, but think I have learned to grow large crops of good grapes for home use with but little labor.

Think of having all the fresh grapes you can eat for three or four months, and plenty to can; all the fresh grape juice, that is almost as nourishing and often more refreshing than milk, and having a large supply bottled for use all the year; also of having large quantities of grape jelly and marmalade, that can be used in the place of or with butter, as freely as one likes; if one cares to grow the late varieties, and pack them in air-tight bags or boxes, he will have fresh grapes nearly all winter.

Planting a Strawberry Bed

By M. CRAWFORD, Ohio

SKILFUL growers can plant strawberries at any time by using potted plants and by shading and watering. The man who is striving to keep down expenses and avoid risk plants in the spring when conditions are most favorable.

The plant is mature at the close of the growing season and remains dormant during the winter. Its leaves serve to protect the crown and hold the snow, and its roots anchor it in its place. In planting we remove most of the leaves and cut back the roots to two or three inches, almost converting the plant into a bulb. Removing the leaves diminishes the demand for water while new roots are being sent out, and shortening the roots encourages the plant to send out new ones from the crown, which it often fails to do if the old ones are not cut back. Further, a plant with shortened roots is much easier to plant properly.

The strawberry may be grown on any well-drained soil of average fertility unless it contains much lime. If fairly rich it is not necessary to apply much plant food. I would not use any fresh stable manure except as a winter covering. Nor should it be used then if the bed is to be kept over another year. It will not only bring in weeds, but will produce a rank growth that is very liable to rust.

The preparation of the soil is an important matter. It may be plowed to the depth of a foot, but in no case would I bury the good

soil under more than an inch or two of poor subsoil. It should be made fine and firm as deep as it is plowed. The hardest clay with four inches of the surface made fine, and that below unbroken, will produce a better crop than if it is broken to the depth of a foot and only four inches pulverized. Hollow places underneath are to be avoided always, for the strawberry plant will not bloom if its roots get into a hole; A. T. Goldsborough, of Washington, who carried to the Secretary of Agriculture berries that weighed over four ounces each, said that he personally would prefer to grow berries on a pavement with six inches of good soil on it. As a general rule, plants will be productive in proportion as the soil is firm.

MAKING A BED FOR HOME USE

I can thoroughly recommend this method: After the soil is well prepared, take the 15-inch marker and mark it both ways. Then set a plant at each cross, leaving every third row vacant for a path. Now the plants are in their new places, and will commence their season's work at once. Each one will send out a mass of roots in all directions, from twelve to eighteen inches in length. They are willing workers and will never cease day nor night until stopped by freezing weather in November.

The business of the grower is to supply favorable conditions and to direct the energies of the plant in such directions as will best serve his purpose. Very soon the plant will attempt to produce fruit. The grower does not want berries the first year, so he cuts off the blossoms. The plant next attempts to send out runners, but as the grower is not in the plant business he cuts off the runners as he did the blossoms. The plant makes one effort after another to produce runners, and the grower cuts them off. Very often he gets discouraged and concludes that the matted row system is better anyhow, and he lets the runners cover the bed. This furnishes an outlet for the energies of the plant. Instead of being built up to a fruiting capacity of



Pick off all flowers from strawberries set out this spring if you want the plants to do their best

perhaps two quarts of fine fruit it makes a lot of runners that can do no more than produce ordinary berries.

Cutting runners is not the only work of the grower. The plants must be kept in vigorous growth for the best results. They are greatly damaged by any check during the growing season. So they must have well-cultivated ground to grow in. A newly stirred soil admits the air to the roots, conserves moisture and prevents the growth of weeds. Every shower tends to seal up the surface and exclude the air. So we aim to stir the soil after every rain.

Sometimes one is convinced during the growing season that his soil is not rich enough. Some complete fertilizer or a thin coating of any decomposed manure may be scattered between the plants to increase the growth. It is well to see that the roots of any rank-growing crops are not encroaching on the strawberry bed. Even the roots of a tree standing one hundred feet away may be getting the plant food intended for the plants. So we may in many ways assist our plants in doing their best.



For best fruiting quality (2 quarts to a plant), cut off all runners during the first year

SOUTHERN DEPARTMENT

Getting Quality in Lima Beans

LIMA beans are very tender and must not be planted until the weather becomes warm and settled, which is from the first to the middle of April in the South. They succeed best on a rich loam made fine and loose by deep plowing or spading, and well fertilized, cow manure and commercial fertilizer combined being the best for the purpose. Distribute in the drills one hand-cart load of the manure and three quarts of the fertilizer to every hundred feet of row, mixing it with the soil. Rows for bush limas should stand from two to three feet apart, the distance to be judged according to the grade of the soil and the varieties planted. The small limas require the narrowest rows and the plants should stand from one to two feet apart in the row. Plant the seed in twos and cover with one inch of soil; when the plants are well started thin to one in a place.

Cultivation begins as soon as the plants are well up and continues until the first of September. A good cultivation every two weeks is necessary to promote strong healthy growth. Don't cultivate deep as some of the main roots come close to the surface of the soil and must not be broken off.

Make the rows for the running limas four feet apart, setting the poles three feet apart in the row and two feet in the ground; or if cultivation is to be by hand, make the rows three feet apart and set the poles two feet apart. Plant five or six beans at each pole and when the plants are four inches high, thin out to three plants to a pole. For poles, use oak or maple sprouts two inches in diameter at the bottom and eight or ten feet long. Allow some of the short brush to remain. The garden fence makes one of the best supports as it is possible to make a row on both sides of the fence. Allow the plants to stand twelve or eighteen inches apart.

The smallest running variety is the Sieva or butter bean, which Southerners like better than the large lima. The Carolina Sewee is a very productive sort, but the beans and pods are small, having only three beans to a pod. The Willow Leaf lima is the same except that the leaves are long and narrow. For this reason it is the most valuable for planting on damp soil, where the pods of the large, wide-leaved sorts rot in wet weather.

Wood's Improved pole lima is a great improve-



The Willow Leaf lima. Best for damp soil as the narrow leaves allow the sun to shine directly on the pods

ment over the Carolina Sewee, as the pods generally contain four good-sized beans. The pods are borne in clusters of from four to eight. There are other varieties of this type in dark and variegated colors, but they are not as good for table use as the white ones. The small limas are ready for use in from seventy-five to eighty-five days from planting.

Of the thick, clubby type of lima I am aware of only two varieties, Dreer's Improved or Challenger lima, and Shortwell's Improved lima. In the former the pods are produced in clusters of from four to six, with three to four beans to a pod; in the latter the beans are large and thick and number four to five to a pod.

In the bush limas, which stand erect and do not need support, we have three distinct types of which the running limas are the parents. Henderson's bush lima, the smallest and earliest, is the dwarf Sieva; the pods are borne in very prolific clusters,



Pods of the small and large varieties. The small pods are less than half the size of the others

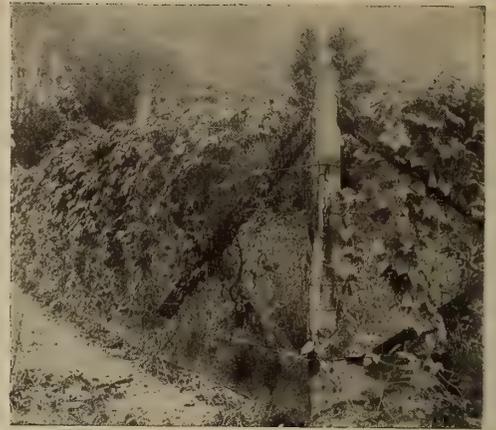


The beans of the large limas are as far ahead of the small sorts in quality as they are in size

with from two to three beans to a pod. Wood's Prolific or Improved Henderson is probably the best of this type; the bushes bear profusely, the leaves and pods are a dark, glossy green, and each pod is filled with from three to four beans. Jackson's Wonder bush lima bears small and variegated beans in great quantities.

Of the thick, clubby dwarf lima I have grown only two varieties, Dreer's or Kumerle bush and the Fordhook. The former is not a true bush form, but trails over a space two or three feet across. It is a great bearer, the pods are short, and average three beans apiece. Fordhook is a new sort which stands boldly erect, and each of its large pods generally contains four beans.

Of the large, flat bush limas, the Burpee Improved is the largest and earliest, the pods holding from four to five very large beans of fine flavor. The Burpee bush lima, Burpee's Quarter Century, and Dreer's Wonder rank about the same in size and earliness, the last two being a day or so earlier. Pods of all three varieties contain generally there, sometimes four, beans. Henderson's Early Giant, is equally as early as the Burpee Improved, but the pods and beans are somewhat smaller. These varieties are ready for use in from sixty-five to seventy-five days after planting.



The garden fence makes one of the best supports for running beans, as a row may be planted on each side of it

Ford's Mammoth and King of the Garden are very large-podded late sorts, from four to five beans being contained in each pod. New Ideal is probably the best of the late main crop pole limas; the pods are very broad, from five to six-and-a-half inches long, and contain five and six beans. The beans of the evergreen pole lima are excellent to dry; they are green instead of white, as the dried beans of other varieties are. The thick and the large, flat limas are ready for use in from eighty-five to one hundred days from planting.

The large, flat type of pole limas is according to my taste, the best of the three types of pole limas, but it cannot be grown as successfully here in the South as the Sievas and the clubby types. There are a good many varieties of this large, flat lima, the earliest of which is the New Leviathan. The pods are generally very straight, with four beans each. Seibert's Early is a very good early sort, with curved pods having two to four beans each.

Spring Jobs You Must not Neglect

AFTER April 1st sow annuals in prepared beds. Annuals will grow fairly well on almost any kind of soil, but of course they succeed best on a rich loam, provided it is not too rich in nitrogenous matters, which will produce plant growth at the expense of flowers. The smallest seeds should be sown in fine soil and covered lightly.

Spread newspapers over the beds to hold the moisture around the seed, removing them as germination takes place, and when heavy rain falls spread oilcloths over the beds to prevent the seed from being beaten too deep into the ground.

Early in the month begin planting out summer-flowering bulbs (such as dahlia, gladiolus, tuberose, canna, and oxalis). If the soil where they are to grow is not very rich, dig in deeply one-half bushel of well-decayed compost to every square yard.

Plant gladiolus, tuberose, and oxalis two or three inches deep, allowing twelve inches distance each way. Dahlia bulbs should be planted three inches deep and two and half feet apart each way; canna bulbs two inches deep and from sixteen to eighteen inches apart each way.

Seed of all semi-tropical plants, such as pepper, egg-plant, tomato, and melons can be safely planted in the open ground after the first of the month.

For lawns sow grass seed now in soil that has first been made loose and fine to a good depth and well fertilized with old compost. A dressing of fifty pounds of nitrate of soda per acre applied when the seed is sown will be sure to start rapid, healthy growth.

Select a still day when there is no wind for sowing the grass seed. Use plenty of seed in order to get a good stand and rapid results.

When setting out plants that the cutworms are likely to attack, wrap a strip of paper around the stem large enough to extend about three-quarters of an inch below and above the surface of the soil. This will prevent the worms from eating the stems.

Georgia.

THOMAS J. STEED.

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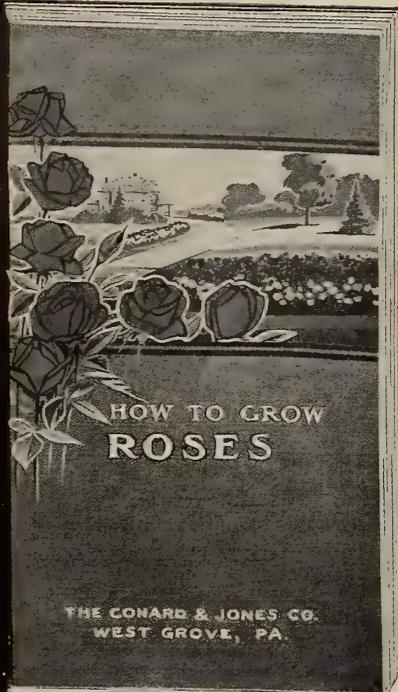
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Four Ways of Catching the Mole

MOLES will devour whole rows of garden and sweet peas, gorge upon the succulent roots of asparagus, lift the tough roots of strawberry plants clear out of the ground, and utterly ruin beds of lilies, peonies, and various bulbous and tuberous plants. They do their work mostly in the early morning or late afternoon; and when, by the upheaving of the soil, one is discovered at work, quickly sink a spade its full depth into the soil back of the moving portion, throw out the soil, and the mole can be easily killed. There are a few excellent mole traps, easily set without danger, which may be placed in hotbeds without disturbing the runways. Instructions for their use accompany these traps. In setting one, be sure to wear leather gloves to prevent your hands from coming in contact with either the trap or the soil in its vicinity, for moles are very keen of scent.

CALCIUM CARBIDE

Calcium carbide is the preparation of lime used in generating acetylene gas and is efficacious in driving away the moles. Make openings at intervals in the runs with a sharp, round stick, and fill with the carbide crystals, covering at once with soil. Keep the hands perfectly dry, as the lime slacks and burns when moistened. It is better to wear leather gloves.

For all points difficult to reach — such as rocky grounds and artificial rock work, tunneled with inaccessible runs, and also for large areas—this method cannot be applied. In such cases the gas, which is highly offensive as well as poisonous, can be generated in the runs. Open them carefully at frequent intervals, as far as possible from the roots of plants, dropping into each opening a handful of calcium carbide crystals, and work them carefully in the run so as to avoid stopping up the tunnel with dirt. Press a stone over each opening and cover with a handful of soil, patting it down to prevent the gas from escaping. Insert a hose into the run and turn on the water until the run is flooded, being ready with a handful of soil to prevent the gas from breaking through at any point and thus escaping. The two things to especially guard against are stopping up the run with soil while working the crystals down, and allowing the gas to escape.

This method was entirely satisfactory in a large, irregular planting of peonies in a rocky border completely tunneled with mole runs. The border was also thickly planted with gladioli and poppies, German irises and lilies. Excepting at a few places where the gas broke through to the surface of the soil and scorched the nearby leaves, there was not the slightest trace of damage to the plants. The moles, however, were entirely destroyed.

EFFECTIVE MEANS FOR SMALL AREAS

In short runs in moderate-sized beds and other limited areas, use bisulphide of carbon. It is highly volatile and must not be opened near a light nor carried with matches. Make a hole in the ground with a round stick and pour into the hole one or two tablespoonsful of the carbon, quickly cover with a piece of board and heap soil over it. Repeat this at intervals along the run. This kills by suffocation. In long tunnels this would not be practicable, as it would take an immense quantity

of the fluid and the moles would detect the presence of the carbon before it became dangerous to them.

As a preventive measure, edge the bulb beds with strips of zinc sheeting, twelve inches in width, kept in place by means of double pegs, allowing it to extend an inch above the surface. A board of the same width will serve the purpose. Avoid openings at the joinings and the corners wide enough to allow a mole to enter.

Moles are supposed to tunnel at about six inches depth, and bricks sunk lengthwise around beds have usually proved a successful barrier, but in times of drouth they will sometimes go deeper in search of moist ground for easier digging. An ordinary wooden box of proper height, with the bottom removed, serves to protect isolated clumps of tuberous or bulbous plants.

This protective work may be done at any time of the year when the ground is not frozen, and any runs within beds to be so enclosed, should be thoroughly treated before this work is begun. Moles may be temporarily driven from beds by pushing balls of cotton saturated with kerosene down into the run, and I have kept closely planted beds cleared for the season by this means.

Iowa.

WARD MACLEOD.

Spray Now for the Codling Moth

UNDoubtedly the greatest amount of fruit destruction is done by the codling moth (*Carpocapsa pomonella*). The eggs of this insect are laid in the spring and the larva, as it hatches, finds and enters the calyx of the blossom, which eventually closes about it. There the larva feeds until full grown, when it passes out through the apple and drops to the ground.

The most general method of attack is to spray



When the calyx is closed, it is too late to spray for the codling moth. It should have been done just after the blossoms fell

with Paris green (one-quarter pound to fifty gallons of water) or Bordeaux mixture (one-half pound to fifty gallons of water). The first application should be made just before the blossoms open, and the second after the petals have fallen. Spraying will not accomplish anything after the calyx has closed.

Connecticut.

SAMUEL JACKSON.

How to Prevent Spruce Galls

THE spruce gall (often called "pineapple" gall) is a brownish formation about an inch long, somewhat resembling a fir cone. The aphid (*Chermes abietis*) which causes this appears in April, or as soon as the warm spring days come. It attaches itself to the base of a young leaf, usually at the junction of two branches, where the eggs are laid in great masses.

The gall is formed by the larvæ fastening themselves to the surrounding parts of the leaves and shoots as they hatch, causing them to swell. The gall sometimes completely surrounds the shoot where the eggs have been laid; at other times it develops only on one side. It cripples the shoot, and if allowed to spread will, in time, completely



The spruce gall or pineapple gall much resembles a little cone. Spray with kerosene emulsion

strip a tree of its foliage. Trees in this condition are very susceptible to bark insects, particularly the bark borer; if a spruce or pine is thus afflicted, no further foliage will be produced that year and it is sometimes three or four years before the tree really recovers.

The only method of attack is to spray the trees early in April with kerosene emulsion, or some other oily mixture — the same that is used for any other species of plant lice.

New York.

G. S. J.

What Makes Plants Wilt?

THE striped cucumber beetle is a common pest in gardens, being particularly injurious to cucurbits and displaying special fondness for cucumbers in particular. The principal injury to these plants is caused by the beetles devouring the young plants as they appear above ground, or by even entering the soil and feeding upon them before they have fairly got into the sunlight. The larvæ also feed upon the roots and in some instances probably cause considerable injury. The beetles are known to feed upon a large number of other plants such as coreopsis, dahlias, sunflowers, rudbeckia, though so far as known, larval injury to the roots is not so general.

The injuries caused by this insect may often be confused with those caused by the stalk borer, a species which attacks various thick-stalked plants, and in the case of smaller ones would undoubtedly continue its boring to the ground and result in the shriveling of the entire plant attacked. Paris green or other applications would be totally ineffective if it was this latter insect, because the larva bores in the stem out of reach of any applications. Slitting infested stems will reveal at once whether some insect has been boring therein, and if it is a brownish, white-striped caterpillar there would be no doubt as to its being the stalk borer.

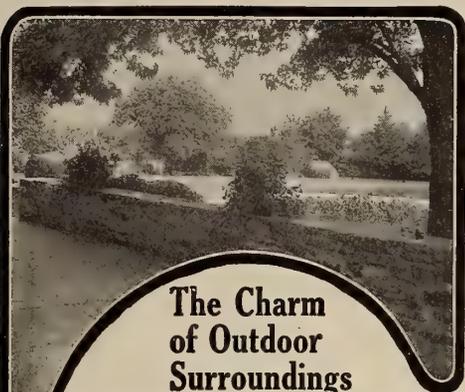
An examination of the roots, if the trouble is there, might result in finding minute, white larvæ of some kind or other feeding upon the same. In that case I should be inclined to attribute wilting to the young of the cucumber beetle. There are also root feeders, prominent among which may be mentioned white grubs which might cause the trouble.

The cucumber beetles upon the plants can be driven away or killed by dusting the same thoroughly with land plaster, ashes, or any such dry material or, better still, spraying with a poisoned Bordeaux mixture, making the application rather thick, so that the insects may be warded off to a considerable extent. Those that persist in attempting to feed will undoubtedly succumb to the poison.

Still another insect, the tarnished plant bug, may produce wilting of the stems and is about the size of the striped cucumber beetle, but its work is confined almost entirely to the tips of the young growth.

New York.

E. P. FELT.



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Roses All Summer in Canada

IN OTTAWA, there are five months of ice and snow and a mercury that plays for weeks at twenty below zero and occasionally dips to thirty-five. Here also the summers are full of scorching days and chilly nights—and bugs galore. Still I manage to grow roses and people have been kind enough to tell me that they are wonderful. Nor am I the only one in this far latitude who cultivates the rose. There are hundreds of charming rose bushes in Ottawa outside of my garden fence.

And what kind of roses do I grow? General Jacqueminot, Magna Charta, Paul Neyron, Baroness Rothschild? Yes, of course. What rosarian would be without these? Anyone, anywhere can grow the roses mentioned; they are beautiful and I would not be without them, but I retain them in my garden for the glory they bring in June and in the autumn. With me the craze is for roses every day the summer long. A garden of flowerless rose bushes is an unlovely sight.

So in my garden all summer is perpetual bloom—the bloom of hybrid teas. I have not many varieties, but I have the best that are suitable to this climate. It gives me regret to say that, save the Persian, I have not succeeded with any yellow rose. However, as I cannot grow oranges or bananas I don't see why I should waste time in trying to grow yellow roses; oranges, bananas, and yellow roses belong only to the sunny South.

Among my roses I scarcely have a favorite. In each one I see some special loveliness. Killarney sometimes seems perfection, and yet when I turn to Caroline Testout alongside, I see a lovely



The Killarney rose, of exquisite pink color, rivals La France in fragrance

rose in truer pink. Then again Belle Siebrecht shows me the truest pink of all. In the honors for fragrance Killarney and La France are the great rivals, still sometimes I am not sure but that the magnolia scent of the virgin Kaiserin does not please me most. Beside a Kaiserin I have placed a Souvenir du President Carnot, and often have I stood over their blooms trying to decide which was superior. The Carnot with its fleshy-white tints and its long perfect buds seems the acme of perfection, but the soft chaste beauty of the Kaiserin is unmatched. In every rose there is some special trait or some different charm. But if, perchance, some cruel fate should ordain



A fence of wire netting can be beautified by roses trained over it

that of all my roses one only should be retained in my garden, I think then I would turn to Killarney, but the tears would be in my eyes.

Besides the roses mentioned, I have in my garden Viscountess Folkestone, Madame Abel Chatenay, Gruss an Teplitz, Grace Darling, Etoile de France, Florence Pemberton, Frau Karl Druschki, Madame Gabriel Luizet, the Cochet roses, the Philadelphia and Crimson Ramblers, the climbers—Cumberland Belle, Ruby Queen, Prairie Queen, Dorothy Perkins—and the best of the hybrid perpetuals. In the latter class my greatest success has been with Captain Hayward, Mrs. John Laing, Charles Lefebvre, Ulrich Brunner and Baroness Rothschild.

I have had no unusual trouble with my roses. Of course, every rosarian knows that you can't have roses without trouble. I have yet to see the rose without its bugs and caterpillars or its black-spot or mildew. These things are the hoodoo of the rose garden, the things that make the rosarian's life miserable—if he lets them. Nor is there any short, effective way to overcome these pests. The only way is the hard and sure way—the watch-and-work way. Here in Ottawa the notorious rose bug is a rare visitation, but we have other bugs as big and hungry as he, though perhaps not quite as fond of arsenic or hellebore. By spraying my bushes every other night with a stiff spray of water from a hose I manage to keep down the insect pests. Sometimes I have to use bodily force to eject some particularly big and tenacious offender.

The disease called the black-spot is not serious in this locality and is ignored. Perhaps mildew is the worst trouble afflicting the rose hereabouts. Last year was distressfully bad in this respect and I was reluctantly obliged to keep some of my rose bushes almost continually covered with flowers of sulphur. Sulphur applied in this way acts as an effective check in the spread of the annoying fungus. A rose-bush covered with sulphur is not a pretty sight, but it's better than a dead one.

The great test for roses in this latitude is the winter; protection for the teas and hybrid teas is an absolute necessity. If a rosarian in this climate can bring his hybrid teas safely through the winter—and it can be done—he will have less trouble with this class of roses during the growing season, for their tough, leathery foliage renders them peculiarly immune to attacks of insects and disease.

After the first hard frost in November I cover the rose beds with about six inches of stable manure. Later on, when the leaves have fallen from the stems, I bend down the branches, where practicable, and peg them close to the ground. Between the first and tenth of December I wrap each bush in

straw. I remember how I shivered for hours last December as I first shoveled the snow away from around each rose, wrapped each bush warmly in straw, and then tenderly laid them down for their long night's sleep.

Growing roses in this part of Canada is a rather perilous undertaking—perilous of success. Yet I and many others have succeeded. But we have to work for our roses. Up here the forces of nature work against the success of the rose-grower, but the man with roses in his heart goes about his business with tight-set lips, and by and by he gets a garden of wondrous roses laughing at those same nature forces.

Ottawa.

E. R.

Pansies the Year Round

PANSY plants blooming at midsummer, and being either in bud or full flower every month of the year with the exception of January and February, are almost unheard-of possibilities, but we succeeded in obtaining such results and without a coldframe, too.

The plants were from ordinary seed sown in the spring (March 1st) in the open ground. The soil was rich and the plants had partial shade. They



Pansy "faces" by the thousand will appear in a bed containing about a dozen plants

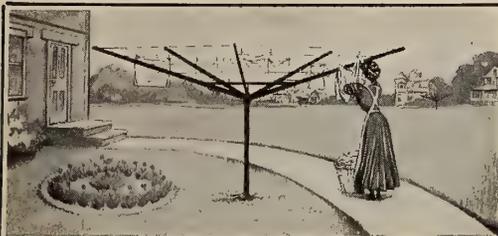
received frequent doses of water and liquid manure to increase the size and brilliancy of the flowers. No seed pods were allowed to ripen on the plants, as this would have shortened the blooming season. During part of the remarkably long flowering period, we had only scattering bloom because the plants were kept pruned in order to give the best results during the cool seasons. We gave the plants a protection of manure and straw from December to March.

At the end of the following May, after the plants had flowered for two months and the blossoms had begun to run small, we removed all branches as long as eight inches, and by June 26th the plants were again in full flower. The next day they were picked clean and slightly pruned, but in less than a week they were once more covered with flowers. On July 8th, during severely hot weather, we pruned again, taking off branches six inches or more in length, and covering the plants with loose hay to protect them from the sun. They sent up buds promptly and continuously, but these were nipped off in order to keep the strength of the plants for fall bloom. On August 9th one plant had two dozen buds. The following week the plants came into full bloom, and in order to still hold them in check until cool weather it was necessary to prune back once again.

The size and number of the flowers were as surprising as their persistency. One, picked after several hot, dry days, was seven inches in circumference. We had only about a dozen plants, but they yielded thousands of flowers. At the height of the season in May, we picked 250 from three plants; on June 20th, about three weeks after pruning, we picked 106, and on August 22nd, 120 flowers and buds. Many hundreds of blossoms, of which no actual count was taken, were picked during the nine or ten months these little plants insisted on blooming.

New York.

I. M. ANGELL.



The New, Neat, Hill Dryer Way.

How to Improve Your Home Surroundings

Banish the unsightly, inconvenient net-work of clothes lines and poles which now disfigure your yard or lawns. No matter how orderly you arrange the lines or hang your wash the result is still very objectionable to any self-respecting home.

Every woman desires to avoid the unsightly appearance of a miscellaneous wash—yet the clothes must be aired and dried. What is she to do? Why simply get a

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For Lawn, Balcony or Roof

The Hill Dryer is a rotary clothes line. Instead of being spread all over the lawn and supported by numerous poles, the lines are strung on ribs on a revolving reel—so compact that line to 150 feet of line covers a diameter of less than 14 feet.

Neat, Compact, Convenient

Your whole wash is hung while you stand in one place—every line within easy reach. No need to dig paths in the snow or walk on wet grass carrying heavy basketful of clothes up and down the yard. The Hill Dryer is set up in an inconspicuous place near the house—leaving the yard clear of all lines and poles.

Sheets hung on outside lines hide the garments which invite comment by the public—a feature every modest woman is quick to appreciate.

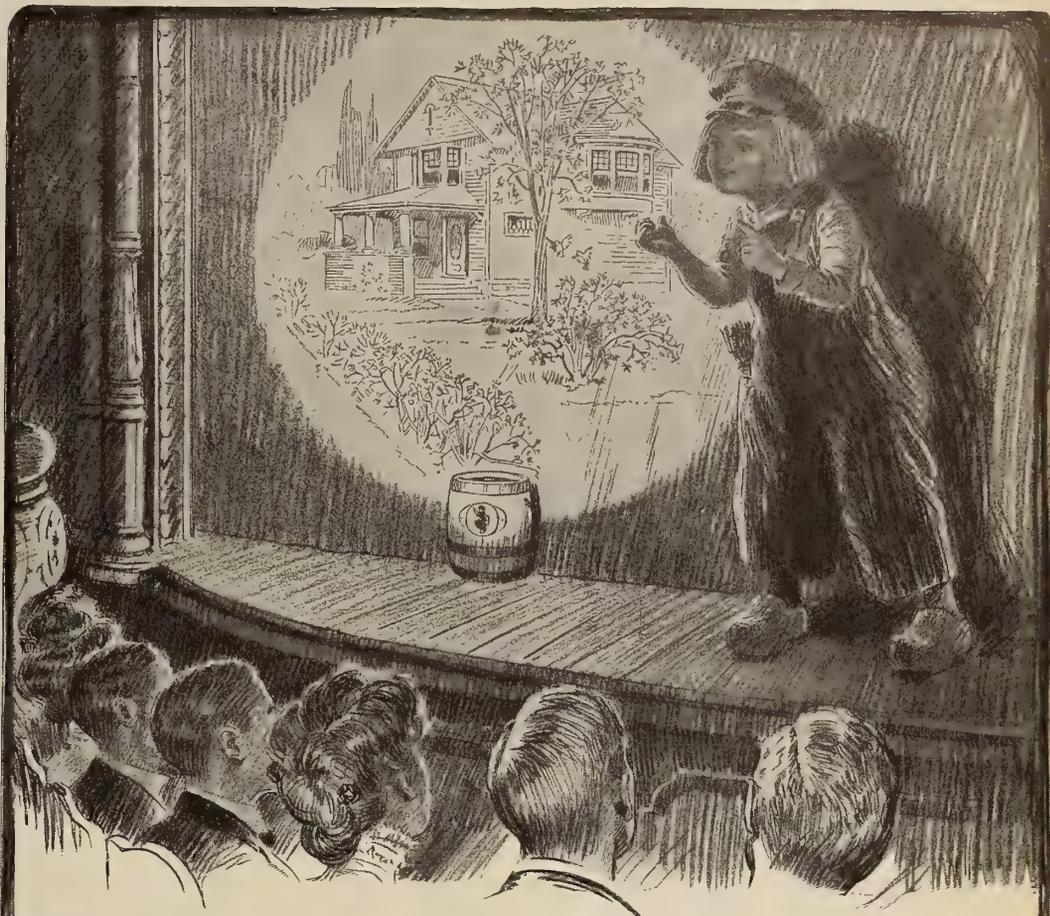
Think of the bother and work a Hill Dryer saves—the radical improvement it makes. Top part folds up like an umbrella so Dryer can be taken apart and taken in, leaving lawn entirely clear of obstructions. What a contrast with old-style always-in-the-way clothes lines.

Get Our Big Free Folder and Special Trial Offer

which completely describes and illustrates this greatest of modern household conveniences. Just write a postal and say "Send me folder 39." You'll find it very easy to get a Hill Dryer. Write today.

HILL DRYER COMPANY
359 Park Ave. Worcester, Mass.

The Old, Unsightly, Clothes Line Way.



Paint Talks No. 3 — "Spring Painting"

Spring is the time when most of the painting is done. Nature is brightening all around and the impulse is to make houses and barns and fences bright and in harmony with the new leaves and blossoms. This is good economy. You not only make things spick and span, but you save your property and make it more valuable.

Only—you must use *good paint*—pure White Lead and linseed oil. See that it is put on your building *pure*. Otherwise, you fail to more than temporarily beautify and fail utterly in preserving the painted things.

The Dutch Boy Painter trade-mark is the thing to look for when you buy paint materials—it is on the side of pure White Lead kegs. Ask for it, insist on having it.

A few more points on your painting: Refuse absolutely to let the work be done in wet weather, or when moisture is on or under the surface. Give your painter plenty of time between coats—*make* him take several days between. Don't insist on using a tint which a good painter tells you is perishable. White Lead is very durable material, but if the tinting material fades out, the job is spoiled. A chain is no stronger than its weakest link.

Ask your painter about our White Lead (Dutch Boy Painter Trade Mark). Also, your dealer has it.

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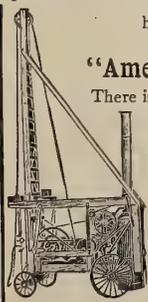
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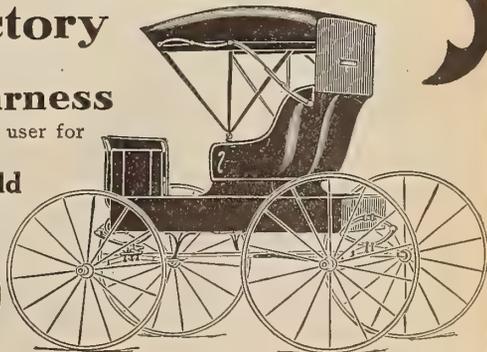
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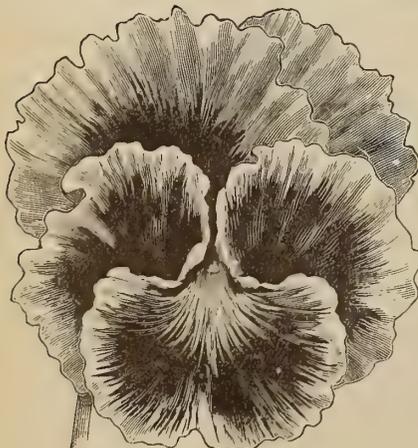
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If you mention Garden Magazine I will enclose a packet of pansy illustrated herewith free of charge



Roses For Flowers This Year

YOU can pick roses from June until late fall if you now plant the right kinds in the proper way in the right soil.

The Hybrid Perpetual roses are the hardiest, giving large blooms beginning in the open ground, in June, and continuing until well into July; and in some few cases, a few flowers appear off and on throughout the rest of the season. Hybrid Teas and Teas are more tender, but continue blooming from about the end of June until the weather conditions in late fall stop them. These three groups embrace all the large-flowered roses grown for cutting.

All roses require much the same kind of soil and location. Plant where they will get sunlight, in rich, deep, well-drained soil, and if the soil is not already rich, make it so by digging in a layer, two or three inches in depth, of manure from the cow barn. This is the best kind of manure, because of its superiority in furnishing nutriment, and also for its retention of moisture and cooling properties. If the place is much exposed provide some protection—a hedge of privet or Japanese barberry planted far enough from the roses to prevent the roots of the hedge plants encroaching on the feeding ground of the roses, will answer very well.

If, when the roses are received, the soil is too wet or through any other cause they cannot be planted immediately, they should be unpacked, on arrival, and if the roots are bare of soil, laid in a trench, covering the roots with soil, and watered, sprinkling the wood also. Pot plants should be unpacked and set in some cool, sheltered place indoors or out, and watered.

Hybrid Perpetual roses produce larger flowers if last year's wood is well cut back. Wood that is weakly should be cut back to within two or three inches of the older wood; strong growths can be left a foot long. Hybrid Teas need only have decayed wood cut away. Most roses are either budded or grafted on stocks of common or wild roses, and unless care is taken shoots will develop from the stock to the ultimate destruction of the good rose. To prevent this plant so that the union is about two inches below the surface.

Set the plants eighteen inches apart in holes dug with a spade or garden trowel, first cutting off all broken roots just behind the point of injury, evenly spreading out the remaining roots, and covering firmly with soil. It is not necessary to break up the ball of earth around roots of pot-grown plants, but it is most important to firm the soil around it. After growth starts water freely, especially the Hybrid Perpetuals just before coming into bloom—you can hardly give too much water.

The easiest to apply and most satisfactory preventive of insect attacks is hellebore powder dusted on the foliage at frequent intervals throughout the summer. Do it in the early morning, or when the foliage is damp.

Roses from the following lists can be planted early in April with the assurance of obtaining beautiful flowers this year.

HYBRID PERPETUALS

Alfred Colomb, red; Captain Christy, tinted white; Captain Haywood, carmine; Duke of Edinburgh, vermillion; Victor Verdier, rose; Mrs. John Laing, pink; Prince Camille de Rohan, velvety crimson; Frau Karl Druschki, pure white; Gen. Jacqueminot, scarlet; Paul Neyron, dark rose; Baroness Rothschild, pale rose; Anna de Diesbach, carmine pink; Ulrich Brunner, cherry red; Mabel Morrison, white; Magna Charta, bright pink; Mme. Gabriel Luizet, pink; Margaret Dickson, white; Gloire de Margottin, red; Clio, flesh color; Hugh Dickson, brilliant crimson; Mrs. Sharman Crawford, rosy pink; Marie Bauman, crimson.

HYBRID TEAS

Bessie Brown, cherry crimson; Caroline Testout, bright rose; Kaiserin Augusta Victoria, white; Killarney, brilliant pink; Mildred Grant, blush white; Irish Elegance, orange red; Antoine Rivoire, rose on yellow ground; Betty, ruddy gold; Gruss an Teplitz, brilliant red; Souvenir du President Carnot, rose and white; Belle Siebrecht, satiny rose; Etöile de France, crimson; Dean Hole, silvery carmine; Lady Mary Fitzwilliam, flesh color; Maman Cochet, pink; Maman Cochet, white.

New York.

D. McINTOSH.



PEARLINE SUDS
— WHERE THERE'S
SUDS, THERE'S SOAP.

Many washing powders contain no Soap—they ought to.

Most Women use a Powder of some sort. Some women use Soap with Soap Powders or Washing Powders; how can they tell the value of the Powder? Use PEARLINE alone, it needs no Soap; all the Soap that's necessary is there. The Suds will be Richer, Better, Safer, more Effective than any mixed product. It's a Waste to use Soap with PEARLINE, for PEARLINE will have done the work before the Soap begins to take hold.

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The Bacteria in Farmogerm, which adhere to the seeds when you moisten them, increase by the millions in the plant roots. They at once begin to draw nitrogen from the air, making it available to the growing plants, and in addition storing immense quantities of nitrates in the soil for future crops of other kinds.

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Such as Peas, Beans, Sweet Peas, Alfalfa, Clover, Vetch, etc., these bacteria are very essential to make strong, healthy plants, and for permanently enriching the soil by adding nitrogen, the most vital element necessary to the growth of all crops. Farmogerm is—

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In a specially sealed bottle with simple instructions for using. It requires very little extra work to inoculate the seeds, for Farmogerm will come to you all—

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Simply by adding a little water and sprinkling on the soil or—

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Start a Thick Hardy Lawn. By sowing some white clover seed inoculated with Farmogerm you can establish a thick, rich lawn that will resist drought.

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Write for Free Book No. 14 which explains why \$2.00 worth of Farmogerm establishes in the soil as much nitrates as would cost \$25.00 through the use of Nitrate of Soda. Also see reports from many of those who used Farmogerm with such success last year.

Order from this Advertisement if you want to plant very soon or if you want to spray the crop you have planted. In either case be sure to mention the crop for which you want Farmogerm.

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I read your Garden Book last evening, and find it the most complete of any similar work ever published. Were a novice—imbued with a love for gardening, imprisoned on a desolate island...

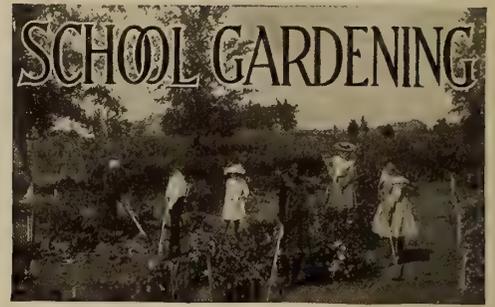
I have the copy of your Garden Book which you so kindly sent me, and find within its pages much that is instructive in the amount of information so simply set forth as to be intelligible to every one.

I am in receipt of your 1909 Garden Book, and want to say it is one of the finest Catalogues that reaches our office. It sets forth in a very educational way a great number of flowering plants, both exotic and perennial.

I beg to acknowledge, with thanks, receipt of your 1909 Catalogue, which, as usual, is full of interest. I note with approval, your introduction of cultural notes, which is a step in the right direction.

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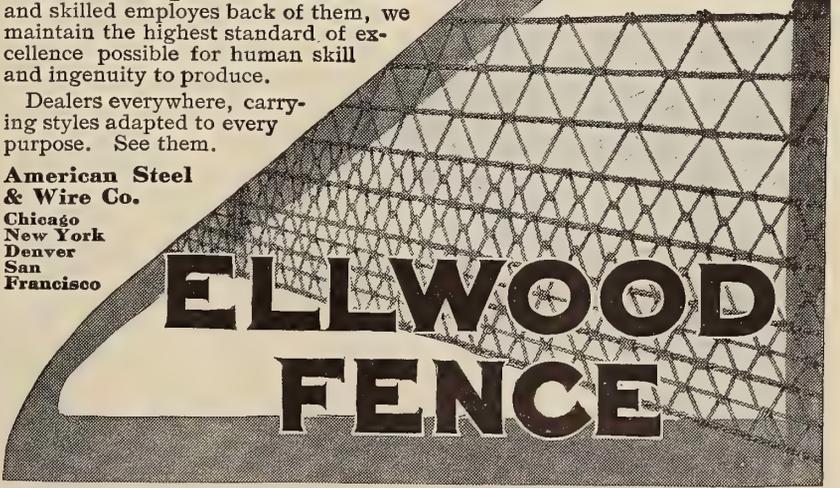
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It is supreme in fineness—thus spreads farther—just as a cup of flour will spread farther than a cup of wheat.

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Look for CARTER
on the Keg"**

"We will pay \$100 and cost of analysis for the detection of any adulteration in this or any other package bearing this brand."

Planting List for a Half Acre Fruit Garden

QUANTITY and variety, with a continuous supply of fresh fruits the entire season through, are the requisites for the home garden. In the subjoined list the amateur will find a suggested variety to satisfy all the requirements, for immediate use in the house as well as for providing a sufficient surplus that may be put up in various forms for winter use.

The varieties now given are based upon experience in the neighborhood of New York, chiefly on Long Island, and although it may be necessary to make certain modifications in other localities, still the aim has been to recommend such varieties as are adaptable to a wide area, at the same time keeping in view quality and the other considerations already mentioned.

Sweet cherries, of course, cannot be grown in the northern sections—nor peaches, perhaps—in which case it would be better to increase the amount of space given to apples, increasing the number of trees of certain varieties rather than multiplying the varieties themselves. Instructions for the preparation of the fruit garden and the general principles of its management are given on page 153 of this number.

APPLES

- | | |
|------------------------|-------------------------------------|
| 1 Sweet Bough, early | 2 Baldwin, late |
| 1 Early Harvest, early | 1 Roxbury, late |
| 1 Oldenburg, summer | 1 Red Siberian crab, for preserving |
| 1 Maiden Blush, summer | |
| 2 Rhode Island, late | |

PEARS

- | | |
|-------------------|---------------------------|
| 2 Bartlett, early | 1 Howell, fall |
| 1 Sheldon, fall | 1 Worden Seckel, fall |
| 1 Angoulême, fall | 1 Keiffer, for preserving |

PEACHES

- | | |
|----------------------------|-------------------------------|
| 1 Crawford Early, early | 1 Stump the World, mid-season |
| 1 Champion, early | 1 Crawford Late, late |
| 1 Mountain Rose, midseason | 2 Elberta, late |
| 1 Globe, late | |

PLUMS

- | | |
|----------------------------|----------------------------|
| 1 Abundance, Japanese var. | 1 Burbank, Japanese var. |
| 1 Climax, Japanese var. | 1 Greengage, American var. |
| 1 Satsuma, Japanese var. | 1 Yellow Gage, Am. var. |
| 1 Ogon, Japanese var. | 1 Bradshaw, American var. |

APRICOTS

- | | |
|-------------|---------|
| 2 Alexandra | 2 Budd |
| 2 Moorpark | 2 Breda |

CHERRY

- | | |
|-------------------|----------------------|
| 1 Black Eagle | 1 Downer Late Red |
| 1 Black Tartarian | 1 Governor Wood |
| 1 Early Richmond | 1 Napoleon Bigarreau |

QUINCES

Use 6 of one variety, and they will ripen at one time and can all be preserved in one lot

BLACKBERRIES

- | | |
|------------|----------------|
| 12 Rathbun | 12 Eric |
| | 12 Wilson, Jr. |

RASPBERRIES

- | | |
|----------------|-----------------|
| 24 Cuthbert | 12 Golden Queen |
| | OR |
| 6 Golden Queen | 6 Cumberland |

GOOSEBERRIES

- | | |
|------------------------|--------------|
| 12 Downing for canning | 6 Red Jacket |
| 12 Industry | 6 Crown Bob |

CURRENTS

- | | |
|---|-----------------|
| 12 Fay Prolific, or some white varieties for table use. | 12 Black Naples |
| | 12 Perfection |

GRAPES

- | | |
|-------------------------|-----------------------|
| 6 Moore, early | 6 Delaware, late |
| 6 Campbell Early, early | 6 Catawba, late |
| 6 Concord, late | 6 White Niagara, late |
| New York | W. McC. |

ROSES

THE STORY
OF A SUCCESSFUL ENTHUSIAST IS
TOLD IN MY

"A Little Book About Roses"

It's Unique : Honest : Beautiful

It's written for intelligent, thinking people, who can sift the gold from the catalogue dross.

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Vigorous, elegant decorative plants for the home, office, or conservatory, as well as tropical fruit and economic subjects in enormous variety, **safely** sent by mail, express or freight to any point in the world. The greatest collection in the South. Very low prices. Established 1883. Ask for our illustrated catalog of 17 Depts.



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COUNTRY LIFE IN AMERICA THE WORLD'S WORK THE GARDEN MAGAZINE

DOUBLEDAY PAGE & CO. NEW YORK.

You've often seen the Gladiolus in the windows of flower shops, on hotel dining tables and in restaurants, and have noticed their beauty and lasting qualities in church and hall decorations. You've admired the rare colors of these glorious flowers—no doubt have often wished that you might grow them in your yard. Very easy to grow—there's every reason why you should have

The Gladiolus in Your Garden

Begin this season to grow the Gladiolus and you'll never again be without it among your flowers. **Cushman's Catalogue** tells about Gladiolus, how and when to plant, best kinds for least money. Dahlias, Shasta Dahlias, Peonies and Philippine Lilies also. *Send for this book, it's free.*

GUSHMAN GLADIOLUS COMPANY
Box 6, Sylvania, Ohio

GILLETT'S Hardy Ferns and Flowers for Dark Shady Places

NO corner is so shady but that certain hardy ferns and flowers will thrive there. There is no soil so light and sandy but that some of these plants will beautify it. For 25 years we have been growing these hardy ferns and flowers and know something of the conditions necessary to their growth. Have you a shady nook, a bit of woodland path, a brook or swampy spot, or a rocky hillside you wish to reestablish and grace with ferns and flowers and rhododendrons and so bring out the natural charms? Do you wish the little wooded path bordered with bright hepaticas, bloodroots, trilliums, wood-violets, and dainty yet hardy ferns; or the low marshy place brightened with brilliant lobelias, yellow marsh-marigolds and bright blue gentians? We are in a position to help you, and shall be glad to send our descriptive catalogue which may aid you in selecting. Pictures of some of these wild wood plants have been taken by us here and are shown by half-tones in the catalogue, including the clump shown in this ad. of *Aspidium Goldianum* and *Asplenium Angustifolium*.

EDWARD GILLETT
Box C, Southwick, Mass.



A shady corner at Gillett's showing a clump of Hardy Ferns and Rhododendrons

1000 DOLLARS AN ACRE FROM TOMATOES

is the record made last year in growing tomatoes by the Potter Method. The cut herewith shows the appearance of such a money-making tomato patch. The Potter Method is a simple, practical way of growing tomatoes right and is just as valuable to the home gardener as it is to the grower of large quantities.

Growing Tomatoes for Quality, Quantity and Earliness

is the name of the best booklet ever issued on the subject of tomato culture. It contains 30 pages and illustrations fully describing the Potter method of raising tomatoes. By this method you can have bigger and better fruit and weeks earlier than otherwise. It teaches the secret and science of tomato culture; forcing the fruit by systematic cultivation and pruning. This book is invaluable to every gardener, whether he grows one dozen or one thousand vines. The subjects covered are: History of the Tomato; Its Nature and Habit; Tomato Culture in General; The Potter Method; Plants and Planting; Home-Grown Plants; Preparing the Ground; Setting the Plants; Cultivation; Pruning and Staking the Vines; Picking the Fruit; Ripe Tomatoes at Christmas; 40 Tomato Recipes; Best Tomato Seeds. The information is condensed and to the point—just what every grower wants.

The cut herewith shows one of a large number of vines in my garden this season. Notice that each stalk is loaded with large, perfect fruit from top to bottom. This is the result of my method. It is easy to raise this kind of fruit when you know how. Just send for my book—price 50c., postage or money order. Your money back if not satisfactory.

FREE SEED.—To everyone ordering my booklet within the next 30 days I will send FREE with each book one package each of the best varieties of early and late tomatoes. I make this offer so that you will get ready now for your spring gardening. Don't wait until the last minute when the rush is on. Send for my booklet to-day and I know you will be thankful that you made such a wise investment.

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This is why The Monroe is installed in the best flats and apartments, and why The Monroe is found today in a large majority of the very best homes in the United States.

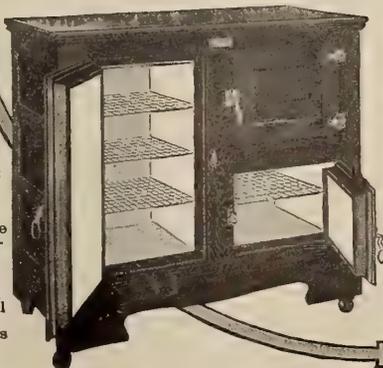
And it's why *you* should have The Monroe in *your* home—for the sake of knowing your food is clean, and to protect the family's health at the same time. Read our liberal offer.

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Lowest Factory Prices. We Pay the Freight.

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COUNTRY LIFE IN AMERICA THE WORLD'S WORK THE GARDEN MAGAZINE

DOUBLEDAY, PAGE & CO. NEW YORK.



REX FLINTKOTE ROOFING

STANDS ALL CLIMATES

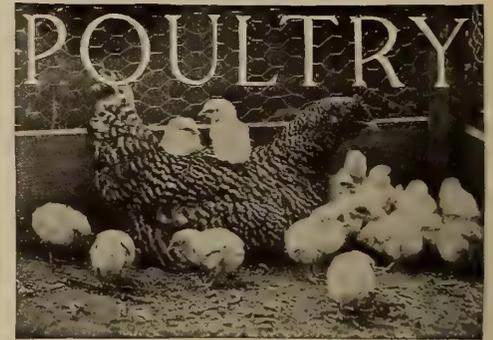
This back-ground is the roof of an immense warehouse—the great value of goods underneath demanded absolute protection—that's why Rex Flintkote was selected by the engineers in charge.

The foreign looking building in upper corner is on Antigua Island, West Indies. Rex Flintkote has covered this building for six years and the terrific, tropic heat hasn't hurt it a bit.

Canada is being rapidly roofed with Rex Flintkote—proof that cold can't crack it.

In two States, \$8,000,000 of railroad buildings are covered with Rex Flintkote—it's safe from sparks. Cost is low. Catalog, samples, sent free.

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THE first feed I give is common white bread (whole wheat bread would be as good, possibly better) moistened with sweet milk so as to be softened, but not pasty. Less meat is needed when milk is fed regularly.

As the chicks grow I give at least one feed a day consisting of a mixture of bread soaked in milk, ground oats (with the hulls sifted out) and corn meal, with a little bran or middlings to make it crumbly. The milk must be sweet, or else at the thick stage, but I use nothing but sweet milk for small chicks, unless it is scalded and made into curds, when it is excellent for both hens and chicks. The greatest care must be taken to have all the feed for the young chicks sweet; under no circumstances should anything moldy, musty or sour be given them.

For the other feeds, some of the best of the prepared chick feeds now sold by all poultry-supply houses are excellent. Do not buy cheap ones—they are worth little and are often positively harmful—but those made by reputable firms are of good materials and give the variety needed in the right proportions.

If the chicks are confined, green stuff must be supplied in the form of chopped cabbage, lettuce, or similar vegetables. This must be fed daily. Fine grit is also necessary. A dish of bran and charcoal is helpful, placed so that the chicks can help themselves at will. Pinhead oatmeal, oat flakes, etc., are good for variety.

Later on, cracked corn and wheat are good. Beef scrap can be fed with success after ten days, unless the chick feed contains meat in some form. Pure clean water is a necessity.

New Jersey.

F. H. VALENTINE.

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made in the world—that fact is Guaranteed. We have made rolling mere child's play by inventing the only **Roller Bearing** Lawn Roller on the market. The New "GOLD MEDAL" Lawn Rollers are an improvement over all our own and every other make. The **Axle Revolves in Roller Bearings**—that's why they are least in friction and easiest running. Dunham's Handle Balance keeps the rigid reinforced handle off the ground and prevents axle strain. No squeaky loose weights. Rollers are sectional with outer edges rounded which avoids rooting or cutting up the grass. Send postal today for FREE Catalog A, which illustrates complete line—125 to 12,000 pounds in weight.

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No vegetable in the garden is so satisfactory as sweet corn. The selection of the variety to be planted is very important. **Ordway's Golden** is unequalled for delicious flavor and productiveness, as thousands have testified.

It is a light golden variety, and produces an abundance of large, well-formed ears. Matures in ten weeks. Plant at intervals to secure succession of crop. No matter how many other varieties you have, make room for a few hills of this variety, and next year you will plant no other.

Tested and selected seed from the original stock sent post paid.

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Find in the Iron Age Book devices of which they never dreamed for the easy, economical, exact cultivation of the pleasure-profit garden. Think of one pair of easy-going handles performing every operation from the opening of the soil to the gathering of Nature's reward and you have a slight idea of Iron Age methods.

Whether you plant a hill, a row or an acre, whether you do it yourself or employ others, you must know about these Iron Age labor saving, yield-increasing implements if you want to get the full return for your labor or investment. The Iron Age Book will be forwarded upon request to readers of Garden Magazine-Farming. Read it and be a better gardener.

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Planting a Peach Orchard in Spring

WHEN a peach tree is lifted from the nursery row, the tap root is cut back to at least five inches and left with a smooth surface. All small and fibrous roots are left, and the trees are shipped in this way to prevent the large roots from being brushed or split off. The branch roots are cut back until they are one inch in length, and nothing but healthy roots are left. The top is cut back fourteen or eighteen inches, according to the size of the tree.

Trees so pruned and planted on ordinarily good land and properly fertilized will put out a thick mass of fibrous shoots more quickly than would a



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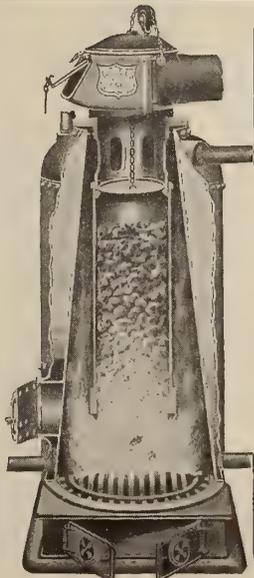
They are the hardiest of hardy plants, and will live through the most severe winter weather.

My new catalogue describing over 1,000 varieties of

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will be sent to any address upon request. Lovers of flowers will save themselves many disappointments if they will send for a copy of this catalogue. It contains information and suggestions that are invaluable. Remember it's free.

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Heat & Hot Water Any Time Without a Night Fireman

made possible by a WILKS WATER HEATER in your greenhouse, barns, garage, brooders or anywhere that hot water and heat are desired. The WILKS IMPROVED COAL MAGAZINE is the only one that feeds itself and regulates itself, keeping the fire 10 consecutive hours, thus doing away with need of night firing and making

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as easily cared for as a kitchen range. Any desired degree of heat or temperature can be maintained. We guarantee these heaters to work right and give satisfaction if installed according to our plain directions. Anyone can install. WILKS HEATERS are strongly made of high grade steel and will not crack, as they have no sections—no bolts to loosen. Tested to 100 lbs. pressure. Successfully used for 50 years.

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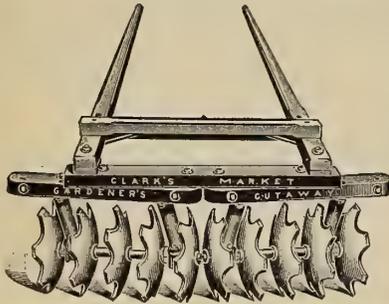
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40 VESEY STREET NEW YORK

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Seed Bulb and Tool Catalogue

It describes and tells you the best varieties to plant for the home garden or farm, and contains correct cultures to secure the best results. Get acquainted with our seeds and you will grow no other. A postal will bring the catalogue.

M. H. BRUNJES & SON
1581 Myrtle Ave. Brooklyn, N. Y.

tree planted with the whole root system. I never bother the trees after they are set except to keep the suckers cut away from the base of the trees near the ground, or below where the trees were budded.

WHEN AND HOW TO PRUNE

The pruning of one-year-old trees takes place in the spring after they begin to grow — not earlier — for trees prematurely cut back sometimes sprout out below the bud, and no shoots will appear above it. Cut above the last bud (or wherever necessary if the first bud is too low) to about fifteen inches, and leave about four or five branches three inches in length to each tree. If there happen to be only two limbs, cut off one close to the trunk and the other at the height at which you want the tree headed, so as to prevent the formation of a fork that will later prove ruinous.

During the second year (the most important in pruning peach trees) the tree must have enough interior wood removed to give it a bundle shape, and the limbs cut back as evenly as possible, but always above a bud that will force the new growth outward and not inward toward the axis of the tree.

Saw or cut off the branches close to the limbs or trunk of the tree in order to prevent a snag which will not heal over until the tree grows around its base, during which time the snag is decaying. A defect in the limb is thereby produced which may cause it to break when subsequently loaded with fruit or sleet.

The same pruning system is kept up during the third and fourth years; but of course the dead or injured limbs are removed at any time.

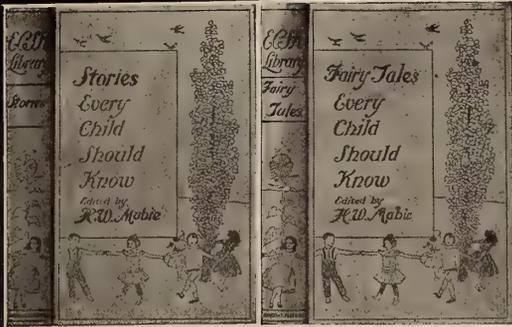
CUTTING BACK THE TOP

Peach trees become "grown" after a certain length of time, depending on soil conditions, cultivation, etc. The fruit buds form on one-year-old wood so that new wood must be produced each year in order to secure fruit the following season. When trees are "grown" it is out of the question to cultivate or fertilize to force new wood, so the top must be cut back in order to give the roots sufficient strength to again force fruiting wood. Such pruning will also tend toward keeping down brown rot by exposing the fruit to the sun, and thereby hindering the development of the rot spores.

Professor L. C. Corbett, of the United States Department of Agriculture, gives the following



When pruning the second year remove enough of the interior wood to give the tree a bundle shape



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"Parents will find this series good for all ages"—Philadelphia Inquirer.

"There is no question as to its literary distinction and value."—New York Tribune.

"An admirable juvenile library."—Journal, Providence.

"Provides a foundation for a good reference library."—Chicago Post.

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"A wise mother and good books enabled me to succeed in life. She was very poor, but never too poor to buy the proper books for her children."—HENRY CLAY.

The Every Child Should Know Library (A Dollar Bill The World's Work for Brings Both a full year . . .)

All parents, and those interested in the education of children, know how difficult it is to secure just the right kind of reading for them. Childhood is the decisive period of life, for it is then that habits and tastes are formed that have most to do with the development of character. In this library the work that you would do yourself, if you had the time, money and literary judgment, has been done for you by the best critics who have spent their lives in the study of literature and in whose opinion you may have perfect confidence.

Hamilton Wright Mabie has edited "FAMOUS STORIES," "FAIRY TALES," "HEROES," and "HEROINES."

- "BIRDS" is by Neltje Blanchan
"WATER WONDERS" is by Jean M. Thompson
"POEMS" is edited by Mary E. Burt
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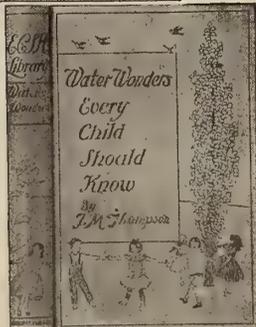
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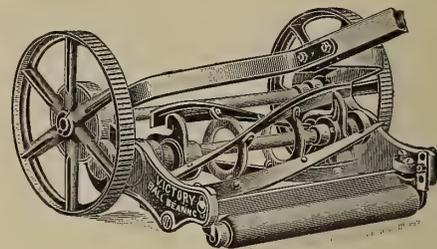
Bacteria in Relation to Country Life. By Jacob G. Lipman. Macmillan Company, New York, 1908; pp. 486, 71 small figures. Price, \$1.50 net.

An excellent book which has long been needed. There is scarcely any important practical occupation of man in which beneficial or destructive bacteria do not help or hinder. This book explains the relation of germs, not only to public and private health, but also to the dairy industry, canning, bread-making, soil inoculation, fertility of the soil, and many other subjects.

Roses and Rose Growing. By Rose G. Kingsley. Macmillan Company, New York, 1909; pp. 164, profusely illustrated. Price, \$2.00 net.

A book by a rose-growing amateur from the English standpoint, dealing entirely with roses in the garden and of garden effects. The practical details of planting the rose garden, pruning, and propagation are told minutely, with "how to" illustrations. The color plates of typical roses are remarkably life-like and true in color. Inasmuch as the exhibition standpoint is disregarded by the author, we find abundant reference to the old-fashioned and garden roses, including the singles, briars and Wichuraiana hybrids. American rose fanciers will find this book a really useful addition to their library.

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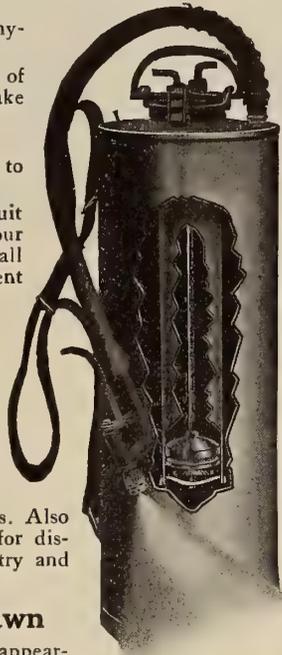
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FERTILIZERS



Crops for Green Fertilizers

WINTER vetch, as well as all legumes which remain growing over one winter, form a much larger root system than annual legumes, and, as the bacteria which obtain the nitrogen from the air live only in the nodule colonies on the roots, biennial and perennial legumes are therefore much more efficient in nitrogen gathering than are annuals. The grain ripens in the latitude of New Haven the last of June or the first of July, depending upon the season. Where a thick stand is obtained, winter vetch makes a very good cover crop for the orchard, but on many soils in Connecticut a perfect stand and luxuriant growth are difficult to obtain.

The better practice both in the field and in the orchard is to leave the plant on the ground until summer, and then plow under the entire crop for green manure. Chickens can be turned in in the spring and will thrive on the plant, but pigs and sheep do not appear to care a great deal for it. The most popular practice, where the crop is to serve both the purposes of a winter cover and pasturage for pigs, sheep and chickens, is to plant rye or oats. Rye grows thicker, is more resistant to cold, and will, therefore, benefit the orchard by keeping available nitrogen in the soil, although, of course, it does not add nitrogen to the soil. Stock, however, seem to find oats more palatable than rye. However, plant winter vetch if it will thrive; but if it does not produce luxuriant growth, plant rye in its place.

As to the red clover being superior to alfalfa, the latter is, in my opinion, as easy a crop to grow as mammoth red clover in most places in Connecticut. Clover will thrive on land where the table water is nearer the surface than will alfalfa. For alfalfa the water should not come within ten feet of the surface, for the roots when they reach the table water stop growing entirely. Practically all New England lands, where not overlying beds of limestone, are acid, and from 1,000 to 1,500 pounds of fine ground limestone rock must be applied to correct the acidity. All bacteria need slightly alkaline soils, and while this is more essential for alfalfa than other legumes, nevertheless luxuriant crops of even the annual legumes cannot be secured on acid soils.

Perhaps the best way to obtain a good stand of alfalfa is to sow about a pound to the acre with a previous crop, such as clover, soy beans, or crops of this nature, and thereby inoculate the land with alfalfa bacteria before the alfalfa is seeded. It is not economical to be stingy with alfalfa seed, for thin places cannot be patched up, and if a full stand is not obtained it is better to plow under and reseed. It is difficult to get red clover to grow by seeding it into thin grass, but it is almost impossible with alfalfa.

The annual legumes, as soy beans and Canada peas planted with oats, can be planted any time in the spring after all danger of frost has passed, and will mature in August or a little later, depending upon the luxuriance of the plant growth. If peas and oats are planted too late the oats do not grow well on account of the hot weather, and hence do not make a good shade and support for the climbing peas. As these annual legumes remain on the land such a short time it is quite likely that they use up more nitrogen from the soil in comparison with what they put back than do the perennial legumes. For this reason, all other things being equal, the perennials should be given preference as a fertilizer crop.

Connecticut.

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Fertilizer Table for the Home Garden

WHEN the man whose gardening is confined to the back yard reads that 1,600 pounds per acre is the correct proportion in which to use a certain fertilizer, he gets but a vague idea of the quantity to apply to his 5-ft. square bed of lettuce. Yet it is even more important for him than for the large grower to exercise care in the application of fertilizers, for in using them on such a small scale the chances for error are very great. Four ounces too much (about three tablespoonfuls of the average commercial fertilizer) applied to a bed three feet square, a mistake easily made, would, on an acre plot in the same proportion, be an excess of more than half a ton. Too much fertilizer is as bad as, or even worse than, none at all.

By the use of the accompanying table any given quantity from one hundred pounds to one ton per acre may be at once reduced to the corresponding amount per square foot or yard. It is then but the work of a moment to determine the correct amount for any sized bed or garden. Also have handy a saucer or dipper marked to indicate a quarter-pound, half-pound, etc., in order that the desired quantity may be at once measured out, instead of having to weigh it.

In case the table should not be at hand it may be convenient to know the following rule: Multiply the length in yards of the plot to be fertilized by the width in yards. Multiply this by the number of pounds to be used per acre, point off four places and multiply by 2. The result will be the number of pounds of fertilizer required for the plot in question.

Example: Garden bed 2 yards by 5 yards to be fertilized at the rate of 1,500 pounds per acre. The result of 2 multiplied by 5 is 10, which, multiplied by the number of pounds to be used per acre, gives 15,000. Point off four places — 1.5 — and multiply by 2, giving as a final result 3, or the number of pounds required.

This is not quite as accurate as the table, but it is a great deal more so than guessing.

Amount for 1 acre	Approximate equivalent for 1 sq. yard	Approximate equivalent for 10 sq. ft.	Exact equivalent for 1 sq. ft.
LBS.	OZ.	OZ.	OZ.
100	$\frac{3}{4}$	$\frac{3}{4}$	.037—
200	$\frac{3}{2}$	$\frac{3}{2}$	.073+
300	1	$1\frac{1}{4}$	.110+
400	$1\frac{1}{2}$	$1\frac{1}{2}$	.147—
500	$1\frac{3}{4}$	$1\frac{3}{4}$	.183+
600	2	2	.220+
700	$2\frac{1}{4}$	$2\frac{1}{4}$	.257+
800	$2\frac{1}{2}$	3	.294—
900	3	$3\frac{1}{4}$	.330+
1000	$3\frac{1}{4}$	$3\frac{1}{2}$	.367+
1100	$3\frac{1}{2}$	4	.404+
1200	4	$4\frac{1}{4}$	.441—
1300	$4\frac{1}{4}$	$4\frac{1}{2}$	.478—
1400	$4\frac{1}{2}$	$5\frac{1}{4}$	.514+
1500	5	$5\frac{1}{2}$	.551—
1600	$5\frac{1}{4}$	$5\frac{1}{2}$	.588—
1700	$5\frac{1}{2}$	$6\frac{1}{4}$	.625—
1800	6	$6\frac{1}{2}$	.661+
1900	$6\frac{1}{4}$	7	.698—
2000	$6\frac{1}{2}$	$7\frac{1}{4}$	.735—
2100	7	$7\frac{1}{2}$	.771+
2200	$7\frac{1}{4}$	8	.808+
2300	$7\frac{1}{2}$	$8\frac{1}{4}$	.845+
2400	8	$8\frac{1}{2}$	.882—

Pennsylvania.

C. E. HARTMANN.

Radishes in the Cucumber Patch

SOW radish seeds in cucumber and squash beds, and you will not be troubled with the vines being eaten by the striped bugs. As the radishes grow, they may be pulled for the table, for by that time the danger to the cucumbers and squashes from the bugs will be past. The radish seems to possess a pungency which is effectual in driving away the bugs.

Vermont.

L. W. RICE.

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FEW people have any knowledge of the magnitude of the Seed Industry in California where thousands of acres are tilled annually to supply the markets of the world.

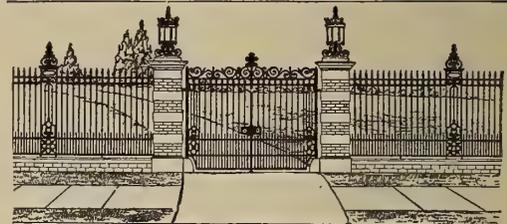
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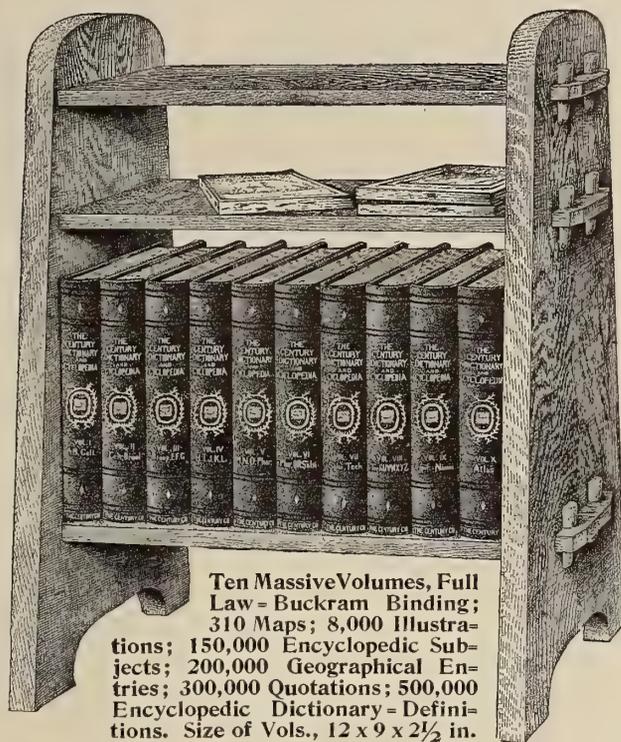
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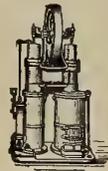
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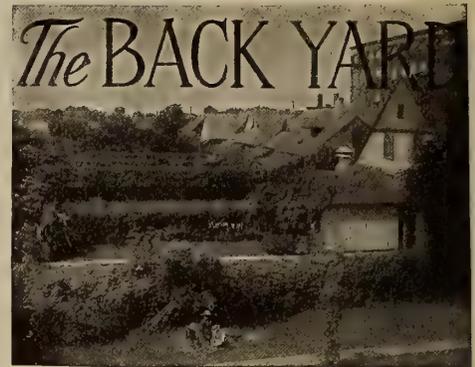
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THE sweet pea is one of the easiest flowers to grow. It adapts itself readily to varying soils, bears blossoms of exquisite colors and delicious fragrance, and in such profusion that the season of bloom often extends over a period of three months.

To grow sweet peas to any degree of perfection, the selection of the seed is of the most vital importance. Many have made either partial or complete failure because they have been content to buy seed of the cheap, unnamed sorts. Avoid the "mixed" seed, buying instead a full range of colors of the best standard named varieties. It is wiser to plant fewer varieties of a range of harmonious colors, and a greater quantity of each, than to multiply the kinds and get but a few blossoms of each variety. Under no circumstances should sweet peas be planted twice in the same place in successive seasons; the vines take something from the soil that no amount of tillage or fertilization can replace for the second season's crop of flowers—or else they give a poison, as it were.

Select a space in the sunniest part of the garden entirely removed from the shade of trees and buildings. The nearness to trees often lessens both the quality and quantity of the blooms, because the roots of the trees will extend for many rods under the trench and absorb all the available moisture and food substances in the soil.

Prepare the soil thus: By preference select a rich, mellow garden soil, spaded and fined thoroughly to the depth of eighteen inches. Mix with it well-rotted barnyard compost at the rate of a wheelbarrow load to each six feet of trench. Hardwood ashes and finely ground bone meal—the former rich in potash, the latter in phosphoric acid—are valuable aids to the other fertilizer. But they should be very sparingly used—one half bushel of the ashes and two quarts of the bone meal to each rod of trench—so as to avoid harmful results to the tender roots in the early stages of growth. Too much of any fertilizer is worse than none at all.

When all is ready place the necessary trellis or other support before sowing the seed. The vines need ample support to keep them erect, especially during the blooming period. Drooping vines inevitably result in crooked stems which greatly mar the effect and utility of the blossoms. Brush cut from a thicket of beech or birch, which has grown in the open and has an abundance of small twigs, makes an ideal support. Whatever material is used, make it very rigid so that strong winds will sway the vines but little. And build the trellis sufficiently high that the vines may have support during the entire season. Eight feet is none too high if vigorous growth is made in a suitable climate.

HOW TO PLANT

When ready to plant make a V-shaped trench six inches deep about a foot from each side of the trellis, and in it sow the seed very thinly, carefully covering with two inches of fine soil. The plants should not be closer than three inches. The remainder of the trench will be easily filled by cultivation of the vines when they have grown a few inches. If growing in several rows, allow two feet space between the rows so that the roots will not interfere. As soon as the tendrils appear, train them so that when they are tall enough they will

THE LAWNS OF OLD ENGLAND

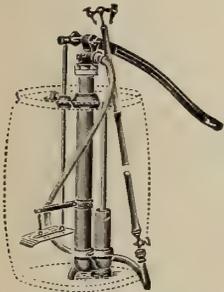
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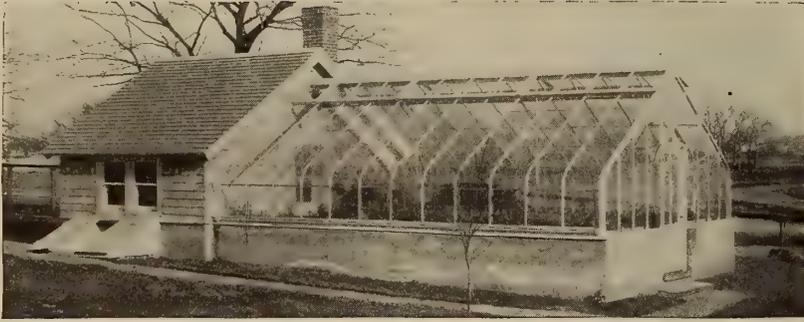
and will wish you had one in your garden! The glistening rainbow colors of the flowers, their beautifully curious formations, delicate tints, shadings and tropical appearance should not deceive you—they are hardy as oaks and as easily grown as potatoes. Iris will flourish in any good garden soil, if fully exposed to the sun, but you must learn one thing—the charming beds in bloom this spring all were

Planted at Least a Year Ago!

You can't have Iris blooming in all their gorgeous glory early in the spring unless you plant the season before. Plant this spring, if you want to be sure of blossoms next year. We grow Iris here in the southern mountains where they are native. In our fine soil and suitable climate, the improved and delicate beautiful sorts have all the vigor of the common varieties. Let us send you prices on some Iris Specialties, also Roses, Hedge Plants, etc. Write today.

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More About This Greenhouse

Last month we told you it was large enough for your needs; small enough not to be a care, but that isn't all—there is also its pleasurable side. A U-Bar house you should know is the "makings" of a charming little garden spot. It is so airy, light and cheery that it certainly answers to its nickname of "Sunshine Shop." Then it is built so well, repairs won't bother you. The fact is, aside from being the only successful curved eave greenhouse, it is the most up-to-date of any greenhouse. Which shall we do, call around, or will you write us about the building of one? Or we can send you our catalog?

U-BAR GREENHOUSES

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be able to attach themselves to the main trellis. Plant early. The diversity of both soils and climate in various localities renders it difficult to fix any definite time for the planting of the seed. Generally it is well to do this in any latitude or any soil as soon as the frost is out of the ground and the soil can be thoroughly spaded without being left in a muddy or sticky condition. The seed germinates at a very low temperature, and when it is planted early, myriads of vigorous fibrous roots will have been growing for a long time before the sprout reaches the surface of the ground.

During periods of drought, give water in sufficient quantity to soak into the soil below the small, fibrous roots. Spray frequently with cold water to subdue the red spider and other insect enemies. Tie up promptly any vines which may have been broken from the trellis by the wind. Cut all blossoms; if any seed-pods are allowed to develop they will rapidly reduce the vitality of the plants.

VARIETIES TO GROW

After careful study and repeated trials, I can recommend the following varieties in the various colors as eminently satisfactory: Dorothy Eckford, pure white; King Edward VII., red; Lady Grisel Hamilton, lavender; Mrs. Walter Wright, helio-



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THE HOME GROUNDS

trope; Prima Donna and Lovely, light pink; Janet Scott, deep or rose pink; Hon. Mrs. E. Kenyon, primrose; Helen Lewis, salmon pink; Othello, maroon; Dainty, white with pink edge; Phenomenal, white with blue edge; Aurora, white with pink stripe; Helen Pierce, white with blue stripe; Navy Blue, dark blue; Stella Morse, pink-tinted cream.

An entirely new and distinct race of sweet peas, known as the Spencer or orchid-flowered type, has appeared during recent years. The first of the type was the Countess Spencer, a shaded rose pink, and this has been followed with pure white, primrose, lavender, and most of the other colors of the grandiflora varieties. The bloom is very large and the petals are waved and fluted, giving the flower a strikingly graceful effect. The type is a very shy seeder, which renders the seed several times as expensive as the older favorites.

Avoca, N. Y.

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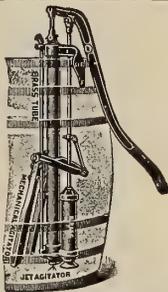
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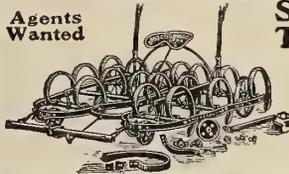
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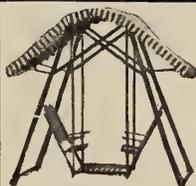
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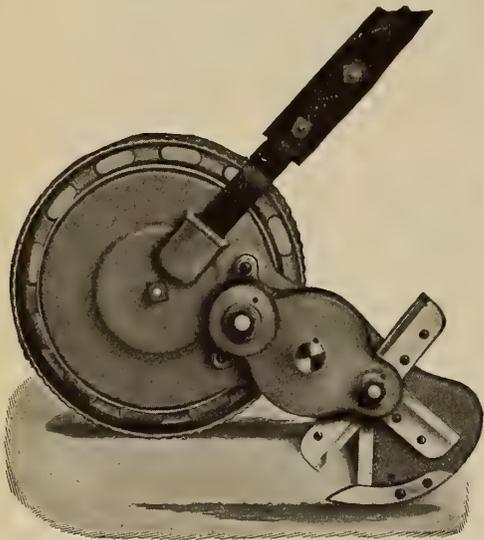
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The closed or bottled gentian (*Gentiana Andrewsii*) has great interest of never, or very rarely, opening. In this respect it is almost unique among gentians, and, indeed, among flowers in general. Many people have watched these "buds" daily for a fortnight or more expecting to see them open. The normal flowers are purple, but I have seen blue and white forms. This species is often kept by nurserymen. It is to other gentians what the ostrich fern is among ferns — a beautiful species that anyone can grow.

The handsomest of all American gentians, in my estimation, is the downy gentian (*G. puberula*), because its dark, bluish-purple flowers seem to me more richly colored than any other species. I would not except even the fringed gentian. Unlike most of our perennial species, the flowers of the downy gentian open widely, and like other perennial species the flowers last a long while. It is one of the rarest plants in Southeastern Michigan and is ever the companion of that exceedingly rare and very handsome, but smallest of lilies, the true *Lilium umbellatum*. I have usually found it on



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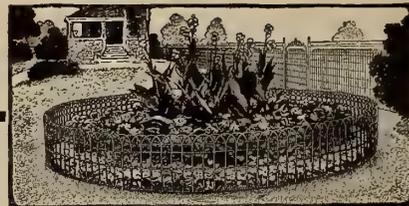
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about this most comfortable and durable piece of outdoor furniture, and prices of different styles and sizes.

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New Dahlia, President Taft

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THE FINEST DAHLIA IN CULTIVATION

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Orris Root Plants

An exceeding fine hardy garden plant; a rapid multiplier; blooms early in the spring; flowers large and as gorgeous as an orchid, very lasting as a cut flower; the root has a commercial value. Plants 50c. each by mail, \$5.00 per doz., express.

C. B. De WEESE, Sidney, Ohio

top of the highest hills, usually 1,000 feet or more above sea-level, and always in very dry, sandy soil. It is, however, quite abundant on the south-eastern shores of Lake Huron, in the province of Ontario, but in soil of precisely the same character. It is usually found in very thin woods, but likes also the full sunshine.

The giant among our native gentians is the soapwort gentian (*G. Saponaria*) which often grows three feet high and is rather coarse and rank. The flowers, however, are sometimes two inches long and are borne in dense clusters often five or six inches across and open quite widely. The color is of a light reddish or purplish blue, rarely white. It grows in wet or dry, usually sandy soil. On account of its large size, it should be grown in the centre or background of a group of gentians, or else in isolated clumps.

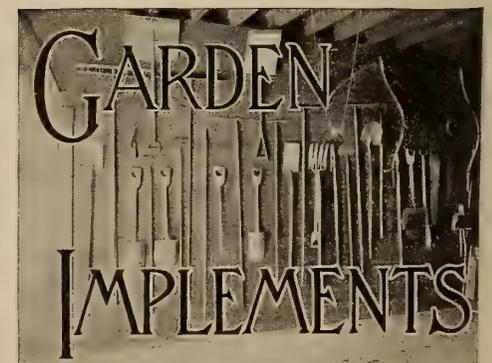
Blue is the dominant color among our American gentians, and we can hardly expect to get a very wide range of color among them. White forms of most native species, however, occur; the pure white forms of the larger fringed gentian and the closed blue gentian are both beautiful flowers.

Perhaps the nearest approach to yellow we can expect to find is the yellowish gentian (*G. flavida*), which excels even the closed gentian in beauty, the flowers being much larger, about two inches long, and wide open. The color ranges from greenish-white to yellowish-white. The clusters of flowers also average larger than those of the closed gentian, while the light shining green of the foliage is very pleasing, contrasting finely with the darker foliage of other perennial species. This species also likes dry, sandy soil.

The perennial gentians I have hitherto noticed are as a rule rather coarse plants, yet showy and useful as ornamentals. There are, however, two species of perennial gentians that are very slender and graceful plants—the narrow-leaved gentian (*G. linearis*), which ranges from six inches to two feet high according to soil, with many narrow leaves and clusters of rather slender open blue flowers from one inch to nearly two inches long; and the red-stemmed gentian (*G. rubricaulis*), one to two feet high, with much broader leaves and larger greenish-blue to bright blue flowers. Both prefer wet soil, but like other gentians it is probable that they could be made to grow on almost any soil. In cultivation they should be planted in the foreground of coarser species. The flowers of either species are fully as long, if not longer, than those of the closed gentian, but more slender, and besides are open.

Michigan.

W. A. BROTHERTON.



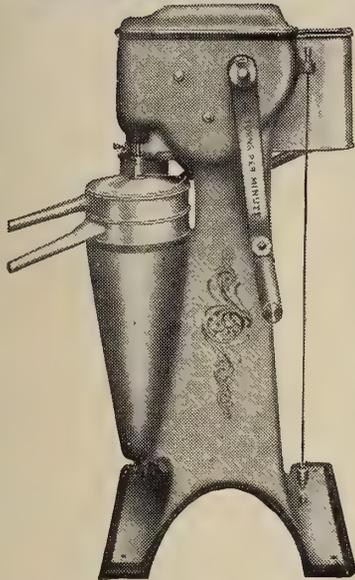
Getting Money's Worth in Tools

IT IS no use expecting to do first-class work in a garden without adequate tools. So much irritation can be saved by using the one tool that easily fits, that I wonder constantly that so few people, comparatively, seem to have a proper outfit. I have tried practically every tool that seemed to be in any way adapted to garden use, and I know that I would not undertake to keep up a garden to anything like a decent standard of efficiency without the tools named below.

The following list is composed of only such tools as are absolutely necessary to really cover every phase of planting and cultivation in a garden fifty feet square or larger. There are, of



Here I Am



1909 Tubular "A"

Common "disc" or "bucket bowl" separators require more careful leveling than Tubulars. Yet, to level these common separators, you must place a spirit level on their frames. If their frames are a little out of true, as they usually are, the leveling of the common "disc" or "bucket bowl" separator is largely guesswork.

The plumb bob is one of the handy improvements on the 1909 Sharples Tubular "A" cream separator. It adds miles to the great lead Tubulars have always had over all other separators.

This "plumb bob" enables you to set the 1909 Tubular "A" perfectly level in a minute—quicker than you could find the spirit level needed to set any other separator. You can always tell, by a glance at the plumb bob, whether Tubular "A" separators are level, thus always keeping the Tubular up to its very best work. Just another example of the "up to the minute" and "away ahead of the rest" character of Tubulars.



Tubulars Are Different From All Other Separators

Tubulars are built on absolutely correct principles—that is, Tubulars have a bottom fed bowl hanging below a simple, frictionless ball bearing. The one piece frame and the permanent, compact, strong construction of Tubulars enables us to add to Tubulars some very handy devices which it is impossible for other manufacturers to use on their constantly changing common "bucket bowl" machines.

The incorrect principles of common "bucket bowl" machines—that is, a top fed bowl set up on top of a spindle—make all such machines unsatisfactory and necessitate constant changes that are merely makeshifts and not improvements.

Tubulars are built in the world's greatest, best equipped cream separator works. We have additional Tubular factories in Canada and Germany. Tubular sales for 1908 were way ahead of 1907—way out of sight of any competitor, if not all competitors combined.

Our 1909 Tubular "A" is better than any previous Tubular and is guaranteed forever in every part. Write for Catalog No. 215.

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We shall be pleased to quote special quantity prices and enclose descriptive matter upon request.

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Sold by all first class seed and supply houses.

Insist on having  Don't accept a substitute.



Plant Gladioli Now!

Armsful of bloom—long, hardy sprays of wondrous beauty—will reward you in blooming season. No flower can surpass the Gladiolus in rich profusion of rainbow tints. No flower is easier to cultivate. No flower can give you so much pleasure in proportion to the modicum of money, time and care required to raise it. Plant it where you will,—in the tiniest garden nook or in large beds—it will lend a charm, form a fit setting to every surrounding object. If you want a perfect garden, you simply cannot get along without the marvelous Gladiolus.

Cowee's New Book "A Summer with the Gladiolus"

Should be in the hands of every flower-lover. Nothing like it has yet been published; a splendid example of the printer's art. Many of the illustrations are from Autochromes, the wonderful new French color photographs—almost a breathing semblance of the blossoms themselves. Helpful, yes indispensable, to any person who wants to grow the Gladiolus successfully. Leading varieties minutely described. You need this book. It's free. Send in your name today!



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Send for this book today. Shipments made promptly.

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The New England Nurseries, Inc.
Bedford, Massachusetts

course, many other tools on the market but they can hardly be considered as essential.

To be fully equipped for quick and thorough work the gardener should have at least two weeding hoes, one 8-inch blade and one 6-inch blade (one with a 4 or 5 inch blade will also be found very useful in the flower beds), a Warren hoe with a 6 or 7 inch blade, one 8 inch Hilton-hoe (a new form of scuffle-hoe), a full bow garden rake—the 16-inch size for garden raking and leveling, but if he can afford two, one 10-inch and one 16-inch—a four-tine spading fork, and a planting bar. A planting spade will also be found very useful.

To this I would add a double wheel-hoe, which will cultivate between rows in one-tenth the time necessary for hand hoeing, but it will not be useful for thinning, weeding, and hoeing between closely set plants in the row.

It is no more trouble to select two or three tools from a collection of twenty-five, use them, clean them, and put them away, than it would be if you had only three tools which you used constantly. My tools are all stored in a closet two feet eight inches by three feet ten inches, which is lighted by a small window. The small tools and wheel-hoe attachments are kept in two small baskets; the hoes, rakes, etc., hang flat against the wall, being suspended from hooks screwed into the ceiling and walls; the wheel-hoe rests on the floor.

For general cultivation I first take the wheel-hoe and do all the work possible with it; it is then cleaned and put away. If I then have sufficient time to complete the whole job, I take out a 6 and 8 inch weeding-hoe and a Hilton-hoe. With these three tools I complete the work of stirring the soil in every part of the garden, including the grape and berry border and flower beds.

The prices quoted are those which the tools are selling for at the present time:

Pointing trowel	\$2.25
Planting trowel, 7-inch	.55
Dibber (brass 6oc.), iron	.35
Lang weeder	.25
Hand weeder	.25
Onion weeder	.25
Hoe for making weeding hoe	.60
Warren hoe	.65
Lightning scuffle, or a Hilton, hoe	.65
Full bow garden rake (16-inch)	.75
Spading fork	.85
Planting spade	.85
Planting bar, pipe and cap	.35
Blacksmith fee for pointing bar	.50
Double wheel hoe with one pair leaf lifters, one set four cultivator teeth, one pair 6-inch hoes, one pair teeth	6.50
One pair of extra weeder attachments for weeders	1.00
Path cleaner, 8-inch 75c, 12-inch	1.00
Hill and drill seeders	\$8.50 to \$12.00
Hill and drill seeders combined with single or double wheel hoes	\$11.00 to 13.50
Kitchen-garden drill	1.00
Corn planter	2.00

For complete discussions of the best forms of the above tools see THE GARDEN MAGAZINE for April, May, June and July, 1908.
Pennsylvania. J. LUKENS KAYAN.

Success in Transplanting Tomatoes

PLENTY of ripe tomatoes can be had without any trouble if hardwood ashes are used as a fertilizer and are also sifted on the leaves to keep off the little black flies.

Do not set out the plants in the open ground until all danger of frost is past. Dig large holes a foot deep, place a pint of ashes in each hole, and cover them with at least two inches of dirt, on which set the plants. The best time to do this is at twilight or on a cloudy day.

Protect each newly set plant with a paper bag (the bottom having been cut out) of sufficient size to slip around the plant easily. Three or four stakes driven into the ground hold these in place.

Last year I did not lose a plant, while a neighbor lost over half. He did not use the "paper houses," and a south wind switched the plants to death.

Vermont. LENA W. RICE.



is not confined to the homes of any particular class, but may be enjoyed by everyone who will use

Vick Quality Seed

The Garden Profitable is also yours if you use Vegetable Seeds from Vick of Rochester.

Vick's Garden and Floral Guide

the reliable seed Catalogue, gives accurate information and will be sent to you if you ask for it.

JAMES VICK'S SONS,

362 Main Street Rochester, N. Y.



RATS KILLED BY SCIENCE

By the use of the wonderful bacteriological preparation, discovered by Dr. Danysz of Pasteur Institute, Paris, science has at last found the only successful method for exterminating rats and mice. Used with striking success for the past few years in England, Scotland, France, and Russia.

DANYSZ VIRUS

contains the germs of a disease peculiar to rats and mice and is absolutely harmless to human beings and other animals. The rodents always die in the open, because of feverish condition. The disease is also contagious to them. Easily prepared and applied.

How Much to Use—A small house, one tube. Ordinary dwelling, three tubes (if rats are numerous, not less than 6 tubes). One or two dozen for large stable with hay loft and yard. Factories and warehouses, one dozen for each 5,000 square feet floor space. Delivered at following price: One tube, 75c; 3 tubes, \$1.75; one dozen, \$6.00.

INDEPENDENT CHEMICAL COMPANY
25 Old Slip New York, N. Y.

ASTERS 75 Varieties, the World's Finest Productions. No two alike.

Collection No. 1—One Dozen plants of each variety	\$5.00
" " " " " " " " " " " "	3.00
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Mixture No. 1—All varieties grown 10 cents per Doz.	
35 cents per Doz.; \$1.00 per hundred; \$2.50 per thousand.	
Dahlias—100 Varieties selected from the world's finest sorts as the best.	
Collection A—One bulb each of 100 varieties	\$5.00
B " " " " " " " " " " " "	3.00
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No. 2—Two Doz. mixed standard varieties	1.00
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Gladioli—Groffs and Childsli, Hybrids mixed first size bulbs	
35 cents per Doz.; \$1.00 per hundred; \$5.00 per thousand.	

Ask for prices of Plants & Bulbs of above in large quantities. If you would like to engage in the flower business, yet lack the capital to start on, we have a good paying proposition for you. This is for just one person of good reputation in each community. When sending your order, ask about the proposition. We must have good references.

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Trained and Dwarf Fruit Trees—We have a complete assortment of these popular and profitable trees.

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Roses—We have many thousands of two year old plants ready for shipment, consisting of all the most suitable for the American climate.

Old Fashioned Flowers—For old fashioned gardens, beds and borders. Many acres of our Nursery are planted with the most complete collection in this country. Thousands of people visit our Nursery annually to see them when in bloom.

Fruits—We can supply Fruit Trees to make a complete fruit garden. In addition, we have a fine selection of all kinds of small Fruits, Strawberries, etc.

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Boxwood—Our stock is probably unsurpassed, as we have thousands in all sizes, suitable for Boxwood gardens.

Trees and Flowering Shrubs—Our Trees and Shrubs are hardy, vigorous and free from disease.

Bay Trees—The largest collection in this country in all sizes can now be seen in our storehouses.

Vines and Climbers—We have large quantities for every style of covering.

Hedge Plants—We grow thousands for any kind of hedge desired.

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Our Nursery products will give permanent satisfaction to purchasers, because they possess the standard of quality created by the highest grade of cultivation. Our Illustrated General Catalog No. 25 will be mailed to prospective purchasers. VISIT OUR NURSERIES.

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Delightful Occupation — Delicious Delicacy for the Home Table and a Good Income if you Wish.

I have been growing mushrooms for over twelve years. I probably know more about the subject of mushroom culture than anyone else in America. From a start with a few dollars' capital I built up the largest mushroom farm in America, with acres of bed space in cultivation. By actual experience I have learned just how mushrooms can be grown and what's even more important, how they *can not* be grown.

Growing mushrooms is really no more difficult than growing radishes.

It's just a matter of knowing how.

Every failure in the mushroom business can be traced to poor spawn and unreliable information.

I have shown thousands of men and women how to grow mushrooms successfully. Most all of them are now in the business growing for profit and making a good income without interfering with their regular occupation with this wonderful, easy, pleasant pastime. I hope soon that a mushroom bed will be as common as vegetable gardens.

I have written a little book which gives truthful, reliable, experienced information about mushroom culture, where mushrooms can be grown, how to have a mushroom bed in your cellar, etc. It also tells about spawn and how to secure really reliable spawn. I shall gladly send you this book FREE.

If you have never tried mushroom growing, or if you have tried and failed because of the causes of which I have spoken, write for my free book in which I will show you beyond the shadow of a doubt that you can have a fine mushroom bed. Address

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who loves his rifle and the "out-of-doors"—the clean, wholesome, manly sport they offer him. Nothing like a good, reliable, straight-shooting Stevens Rifle to keep your boy out of doors this vacation and in touch with nature. He will be a better boy for it, and on the road to becoming a keen-eyed, quick-thinking, self-reliant man. With the gun, give him a copy of

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J. STEVENS ARMS & TOOL CO. 420 Front Street, Chicopee Falls, Mass.

The Care of the Cow

DURING the recent anti-tuberculosis show at the American Museum of Natural History, in New York, one of the exhibits was a model cow-stable with a cow as a necessary adjunct. To those of us who were raised in the country it was amusing to note the intense interest with which many of the visitors viewed this cow. It seemed to be the first opportunity that many of the people on the East Side of New York had ever had to view a cow at close range.

The object of this exhibit was to show what a sanitary cow-barn really should be. The building was of frame construction with a concrete floor and iron stanchions. It was extremely light, the cow was fed from the floor, and the concrete construction enabled the thorough washing of the building by a hose. The woodwork was white-washed with a mixture containing carbolic acid and other disinfectants. There were no places for dust and disease germs to find a lurking place.

This kind of a building would be quite a revelation to farmers who are used to the old-fashioned way and assume that a sanitary cow-barn must be something elaborate. It was the very simplest form of construction, and in its very simplicity was its virtue. By means of shades the windows could be darkened to keep out the flies.

Everyone who has had experience with dairy cattle appreciates the value of keeping them contented as well as clean. This is especially true of stall-fed cattle, which are merely machines for converting the products of the farm into milk and butter.

A high-bred dairy cow is an extremely complicated organism. You may regard her as a machine which is being worked to its highest efficiency. For this reason the importance of ministering to her needs is not so much a humanitarian problem as a question of dollars and cents. The better care we take of our cows the more profit we get from them. Repeated tests have shown that there is an appreciable difference in the yield of milk from cows that are worried or annoyed by children, dogs, flies, and so on, and from those that are kept quiet and undisturbed.

The matter of feeding dairy cattle has been worked out with extreme accuracy by the various experiment stations. For the purpose of calculation the quantity of grass eaten by the average cow under the average pasture conditions is considered ten units. In the early summer when grass is plentiful this quantity will amount to perhaps fourteen units and to less than four food units in the late fall. At the latter season the deficiency must be supplied by other foods.

One pound of any of the concentrated feeds, such as cereals, mill refuse, oily meals, etc., is considered one food unit, and may be calculated as equivalent to three pounds of good meadow hay, four pounds of poor hay, ten pounds of rutabagas, twelve pounds of turnips, four pounds of potatoes, ten pounds of green fodder, six pounds of butter-milk, six pounds of skim-milk and twelve pounds of whey. Any of these ingredients will be equivalent to one pound of new milk.

The following table is often used by dairymen as a basis for estimating the ration value of different stock foods. It is estimated that one hundred pounds of good hay will possess the same feeding value as:

Wheat	44½	pounds
Corn	62½	"
Clover, red, green	373	"
Beets	660	"
Beans	28	"
Barley	58	"
Carrots	371	"
Oil cake, linseed	43	"
Buckwheat	78½	"
Oats	59	"
Rye	53½	"
Potatoes	360	"
Peas, dry	37½	"
Oat straw	347	"
Clover, red, dry	88	"
Turnips	469	"
Carrot leaves (tops)	135	"
Rye straw	420	"

New Jersey. JOHN HARRISON.

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TEXAS FIGS ARE WORLD'S FAIR WINNERS

The famous fig preserves made at Aldine, near Houston, are the finest and best known in the world. One important thing which must not be overlooked is that fig orchards never fail to produce large, profitable crops here.

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By MRS. NELLIE L. McCLUNG, readers will agree is fully deserved. There has been nothing in years to equal this delicious comedy of Danny and his irrepressible Band of "Hopefuls." \$1.00.

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Do you know that dwarf fruit trees bear bigger, better fruit, bear several years earlier, and produce more return for a given space than standard trees? This is all true and there are even more important points.

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Baldwin	Walbridge
Spy	Alexander
Wealthy	Ben Davis
Wolf	Fameuse
Duchess	Gano
King	Red Astrachan
Stark	Rambo
Rome Beauty	Talman
Fall Jannetting	Greening

The low broad heads are within reach, so that apples or pears can be easily picked. The pests that are expected to destroy the majority of home fruit gardens within a few years (asserted by leading writers) are easily controlled on dwarf trees. You can plant your garden full of dwarf trees and still grow strawberries and most vegetables. The dense shade of standard trees prevents the use of the ground for other purposes.

Standard trees require ten years to come into full bearing; with dwarfs some varieties will bear the first year, all will produce a considerable crop the second year, and bear fully the fourth.

You can have forty trees, with a variety, in a space 20 feet square, save several years, get better fruit, and each tree should bear a bushel a year

We offer the best stock ever produced in this country. Our apples are grafted on Paradise stock, and the pears on quince stock. They will succeed in many places where standard trees would fail. In a word, they are the kind of dwarf trees that will put their strength into fruit instead of wood.

To secure best selection and full season's growth order at once.

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Duchess	Sheldon	Clapps
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8 "	5.50
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Price includes packing. Any varieties of pears or apples in list may be selected

A New Outdoor Book

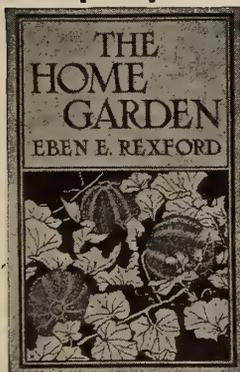
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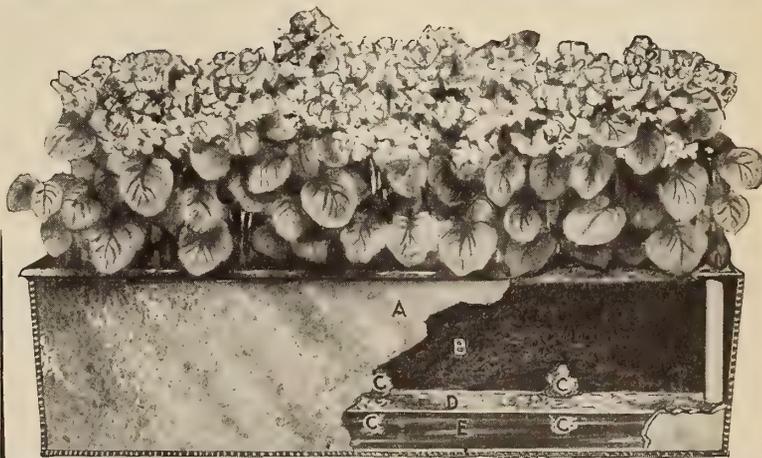
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The New Improved De Laval Centrifugal Cream Separator

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Time and Labor If You Own One or More Cows.**

Those who keep one or more cows either for profit or for supplying the home table with milk, cream and butter, can ill afford to be without a De Laval Cream Separator. Its benefits and advantages are many.

First of all, the separator secures every last bit of cream in the milk, whereas one-third to one-half is lost by any other method of skimming.

Secondly, the separating can be done as soon as the cow is milked, which means that the cream is always perfectly sweet, of fine texture and any desired thickness, without taint or odor, and may be churned into a butter readily worth from two to ten cents more per pound. Likewise is the skim-milk delivered pure, fresh and warm and worth a dozen times more for stock-feeding purposes or human consumption than the skim-milk from any gravity-setting or dilution system of skimming.

The separator also does away with the setting and handling of the milk in crocks and pans, with skimming, ice and water, and all the work and room which the old way involves for everyone.

In short, the separator reduces your dairy work to almost nothing. All this means time, money, better product and more of it with less work and less trouble.

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Will Last Anywhere from Ten to Twenty-Five Years**

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PLANTS FOR AN UNFAVORABLE SITUATION

Q.—Between our house and the next is a dark passageway about three feet wide. All the light there is comes from an east and west exposure, and a little filters down between the houses. No sunshine ever gets to the ground. Is there anything that could be made to grow in such a place?

Pennsylvania.

K. McM.

A.—In a passageway such as you describe there would possibly be serious problems of air drainage — it may be that plants would not grow there because of the air becoming stagnant. If the ground is moist, however, and the space is ventilated, rhododendrons and royal ferns should thrive. For flowering plants, use begonias and fuchsias.

STARTING GLOXINIAS

Q.—For gloxinia culture do you advise placing the tuber at once into a 6-inch flowering pot, after starting, or working up to that size?

New York.

R. C. S.

A.—Start the gloxinias first in a flat, in sphagnum moss or leaf soil and sand. Pot up in small pots as soon as they commence to make roots, using a light compost of leafy soil and sand. When the first pots (3 or 3½ inch) are full of roots, repot into larger flowering size, using a soil considerably stronger, with a small quantity of good fertilizer, such as bone meal. They want a light, free soil at all times, but will require lots of liquid feeding as soon as the flowering pots are filled with roots. Grow on in a temperature of 60 or 65 degrees. J. T. S.

PLANTING SWEET POTATOES

Q.—Please tell me how much sweet potato seed is required to plant an acre of ground

New York.

P. K. S.

A.—Sweet potatoes are not cut into sections and dropped like Irish potatoes, but are started as young plants. They are prepared for field planting by bedding in sand or soil in either a specially prepared frame where artificial heat can be supplied, or in a greenhouse; or sometimes even on a sunny slope where the young plants would not be affected by frost. The farm price of sweet potatoes for seed purposes is usually about \$1.00 a bushel, always varying with the market and local conditions. Two bushels of sweet potatoes are required to start sufficient plants for an acre of ground, but it would be necessary to plant eight or ten bushels of Irish potatoes for the same space. J. A. B.

HOW TO HAVE A GOOD LAWN

Q.—Last July I had the ground about my house spaded and raked. Grass seed was sown and the ground rolled. By September the lawn was in good condition. In November it was covered with horse manure which will be removed during April. How can I keep the lawn in good condition with the minimum of care?

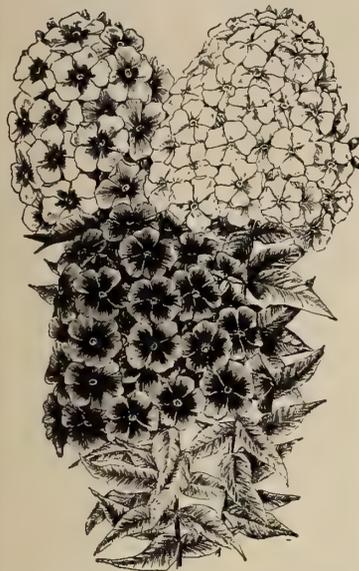
New Jersey.

A. L.

A.—Rake off the manure from the lawn immediately. After growth has started for the season the mulch, remaining on any longer, will do more harm than good. After raking it off, roll the lawn well, having previously scattered a light top dressing of a good lawn-seed mixture. Encourage, always, the young growth. For helpful information, read Barron's "Lawns and How to Make Them," price \$1.20 by mail.

SUMMER'S DELIGHT

WOULD BE AN APPROPRIATE TERM FOR THEM



THE better varieties of hardy Phlox of today are marvels of beauty and wonderful in profuse and constant bloom. My collection of over fifty varieties embraces the choicest to date and every color from vivid scarlet and crimson to the most delicate tints and pure white, with varied shades of purple. Some are perfect selfs, others gay with centers and markings of two or more colors exquisitely blended; the colors of all being delightfully pure. All bloom with lavish profusion throughout the entire summer and early autumn and all are fragrant. Of sturdy habit, need no care, succeed everywhere, upon all soils and of iron clad hardihood—becoming finer and more beautiful as the years pass by. My Phlox were awarded a special prize by the American Institute of New York.

I will supply these choice named Phlox as follows:

For \$1.00 I will send 12 plants from pots or ten strong clumps, by mail, all different if preferred.

For \$2.50 I will send 50 plants from pots, in ten varieties, by mail.

For \$4.00 I will send 50 strong clumps in ten varieties, by express. All will bloom freely the first season. The different varieties are described in my catalog of Hardy Perennial Plants, Shrubs and Vines, together with a thousand varieties of Peonies, Iris, Hollyhocks, Larkspurs, Columbines, Day Lilies, Anemones, Foxgloves, Poppies, Hardy Pinks, Chrysanthemums, Sweet Williams and other Hardy Perennial or "old fashioned flowers." It is a beautiful, copiously illustrated book of 70 pages, gives full cultural instructions with low prices and is the finest and most helpful catalog of the kind ever published in America.

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LIFE TO TREES DEATH TO BUGS

Insure Your Trees

The "Lifendeth" belt is a simple and practical tree preserver—cheaper than tin petticoats and far better than sticky tar paper. A single twist of a wire holds it permanently in place. Insures complete protection from the ravages of climbing insect pests. It does the work. It is a relentless barrier. The creeping bugs can't get past it. It traps them. They are caught red-handed and held fast.

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Sweeps Lawns Clean as a Carpet

Lawns now need a "Spring Cleaning Up." The APOLLO is the machine which you need for this work. It will save you time, labor and money. Cleans large lawns easily, rapidly and thoroughly. Picks up dead grass, leaves, sticks, stones and all litter. Nothing escapes.

Sweepings thrown into receptacle like carpet sweeper. Pushes easier than lawn mower. A boy does work of three men with rakes. Does it better. *Guaranteed Satisfactory on 30 Days' Free Trial or Money refunded.*

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Ask Your Dealer or Write Today For Illustrated Booklet Showing Apollo at Work

Let us show you in this booklet how the Apollo pays for itself easily in a season. When you read all about what the Apollo will do, you will surely want one for your lawns. Write today.

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America—Large flower, flesh pink, beautiful. The peer of all Gladioli, - - - - 10c each

Attraction—Deep, dark, rich crimson with a very conspicuous large pure white center and throat. At once a most beautiful and attractive sort, - - - - - 10c each

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Scribe—A beautiful, large, well-open flower and an enormous spike. Color like the fine old Eugene Scribe, tinted white, freely striped carmine. A very attractive sort, - 15c each

Wild Rose—Very bright rose or blush tint, exceedingly delicate and pretty. This variety needs only to be seen to be appreciated and we predict a great future for it. In its particular color it stands alone. - - - - - 20c each

Special Offer—1 bulb of each postpaid for 50c

If you would like a larger or better collection see offer of "Our Famous Ten" in March number.

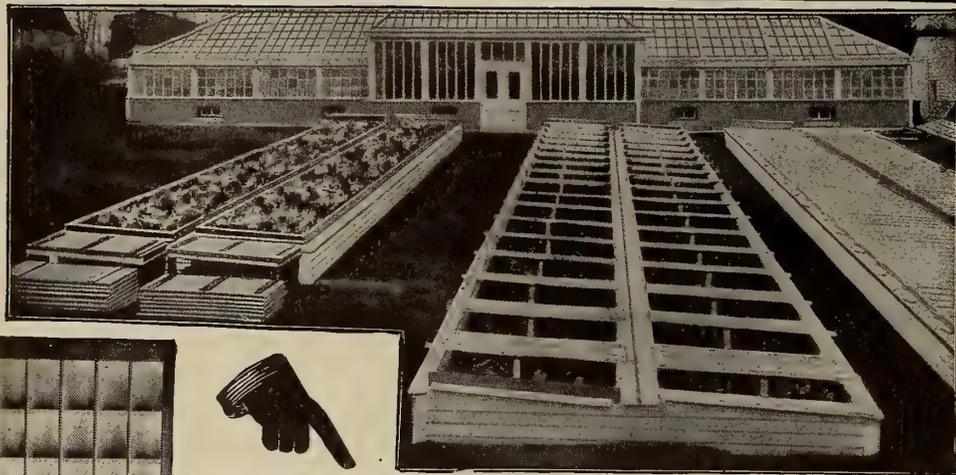
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Good Money and Great Satisfaction in Growing Garden Truck Under Glass, in HOT-BEDS and COLD-FRAMES



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 Secrets of Success Growing Early Vegetables Under Glass for Profit and Pleasure

This book gives money-making suggestions on raising Vegetables, Flowers, etc. How to Prepare and Care for Hot-Beds. Where to Locate them. How to Make Cold-Frames. Brimful of helps and hints. Free for the asking. Write at once. Start Hot-Beds now and have fresh vegetables weeks ahead of your neighbors.

Make Your Garden Yield All the Year Round

We manufacture Hot-Bed Sash and equipment in our great Millwork Plant in such enormous quantities that our prices are the lowest in America. Today, Gordon-Van Tine Hot-Bed Sash are admittedly the best on the market. Under the stimulus of our low prices, the use of Hot-Beds has increased tremendously. The large user saves a very considerable sum by buying direct from us—and the man with a little garden patch on a city lot saves in the same proportion when he buys a couple of our Sash.

The use of Hot-Beds extends the growing season throughout the entire year. The owner of a Hot-Bed gets early vegetables long before the non-user, and no investment pays bigger returns in both profit and pleasure.

Solid Sash that Last

All our Hot-Bed Sash are made of clear, selected Red-Cypress. Joints are blind mortised, double-shoaled, fitted snugly and moisture-proof. No open joints! No chance for moisture to enter and play havoc with the Sash! A sash that won't twist, spring in the middle, pull loose, crack the glass or loosen the putty!

We use plenty of points and the finest quality of Greenhouse Putty. And every Gordon-Van Tine Hot-bed Sash is primed in pure raw Linseed Oil. They are as solid and substantial as careful workmanship and best material can make them. They are the Sash that Last! We sell these high-grade, scientifically constructed Hot-Bed Sash, glazed complete, for less money than retail dealers ask for common open sash.

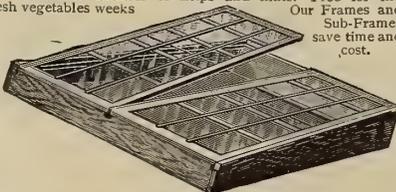
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We want to send a free copy of our valuable new book on "HOT-BEDS; THEIR USES, COST AND CONSTRUCTION," to every fruit grower, farmer, market gardener, florist—everybody who has a garden, whether large or small. It is the most interesting and practical book ever written on this subject. Write for your Free copy today.

HOT-BED SASH
 Size 3x6—1 3/4
 With 6 in. Glass **\$1.69**
 Dealers' Price, \$3.50

HOT-BED SASH
 Size 3x6—1 3/4
 With 10 in. Glass **\$1.75**
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Complete Outfit No. 1, \$11.90
 Including Sash, Frames and Sub-Frames

Consists of our regular Hot-Bed Sash and complete frames (for above ground) and Sub-Frames (for the pit). Frames are of Cypress. Each part cut to exact size. Angle iron with holes punched for screws. Here are the items:
 2 Glazed Hot-Bed Sash, 2x6 feet 1 3/4, 6-inch glass;
 1 Cypress Frame for 2 Sash; 1 Sub-Frame, **\$11.90**
 all carefully crated for shipment
 For Double-Strength Glass, add 40c. net to price of each outfit. Hot-Bed Frames, \$5.70 each. Sub-Frames, \$4.25 each.

Cut Prices on Hot-Bed Sash

Size 3x6 ft., 1 3/4, Glazed 6x10 Glass	\$1.69
Size 3x6 ft., 1 3/4, Glazed 6x10 Glass	2.08
Size 3x6 ft., 1 3/4, Glazed 10x14 Glass	1.75
Size 3x6 ft., 1 3/4, Glazed 10x14 Glass	2.14
Size 3x6 1 3/4, with Bar, Glazed 10x14 Glass	1.87
Size 3x6, 1 3/4, with Bar, Glazed 10x14 Glass	2.46

Glazed with Double-Strength Glass, add 20c. net to above prices.

MUSKMELONS AND SQUASHES

Q.—Should melons be planted in the cucumber and squash patch, or will they mix and injure the flavor of the melons?

Washington, D. C. J. S. B.

A.—According to the best authorities, and contrary to the usual belief, muskmelons and squashes can be planted in the same part of the garden without any difficulty. Melons do not cross with squashes, cucumbers, etc., the first year, and the quality of the fruits is not injured if these crops are planted together. The melons grown from seeds of melons planted in this way will probably lose their flavor through cross fertilization, but there will be no danger the first year.

VEGETABLES IN THE ORCHARD

Q.—Why should the space between rows of orchard trees be left vacant after three years? Would it not be better to plant the trees farther apart in the first place, and to use the land between them for vegetables in rotation?

New York. M. A.

A.—If the trees in the orchard are planted close together they will be so large in about three years' time that vegetables or other crops planted between the rows would not do well because of shading. Vegetables would, moreover, prevent the thorough intertillage of the orchard trees. By removal of moisture and in other ways, the growth of vegetables in the orchard for a period of more than two or three years would be liable to cause more harm than could possibly be offset by the value of the vegetables. With a thinner planting of the trees the vegetable crop could be raised for a longer time.

ZINNIAS INSTEAD OF MARIGOLDS

Q.—Can you recommend any plant that will take the place of African marigolds in bulb and spring flower beds adjoining the house, which will be of the same height as the marigold, as indifferent to sun or shade and to south, north, and east exposures, and with the same period of bloom? The marigolds are satisfactory except for the disagreeable odor of the leaves and blossoms.

Illinois. W. F. O.

A.—Try zinnias, which resemble the marigolds in having the same height and spread, and which bloom continuously all summer until cut down by late frosts. They even endure the first light touches of frost which would kill the marigold. Zinnias can be had in selected colors or in mixtures. The most satisfactory way would be to buy a good selection of the colors that are desired, and select still further toward your own ideal. The objection to zinnias is a tendency to a certain crudity in color, but this has been separated from the best strains. They will grow wherever the marigold will, doing equally well in both sun and shade. As a foreground to a zinnia bed grow the annual phlox, which will give bloom while the zinnias are attaining size. L. B.

APPLYING NITRATE OF SODA

Q.—How much nitrate of soda can be applied without danger to each bush and shrub in a border as a foliage stimulant? I put one-quarter teaspoonful to each of my tomato plants (in 2-inch pots) and killed them all.

Pennsylvania. W. W. K.

A.—Nitrate of soda must be applied to potted plants in solution, not dry. If one ounce is dissolved in a gallon of water and used once a week in giving an ordinary watering—nothing excessive—the plants will receive as much stimulant as they can reasonably stand. It is not entirely a question of quantity, either, that causes injury when dry salt is applied. The salt must be dissolved, and if the soil is appreciably dry the solution will be brought about by the extraction of water from the roots of the plants, thus causing a shock from which the tops never recover. The best measure for the application of dry salt to field crops and shrubbery would be two ounces to the square yard, which could be scattered on the surface and raked in. It is a safe principle not to fertilize very young plants, but to wait until they have attained some reasonable degree of growth. Tomatoes, in any case, do not require heavy fertilizing in the early stages of growth. The equivalent quantity for each 2-inch pot would be not more than 1 1/4 grains; you gave the plants about 100 times too much.

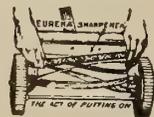


"Captain Kidd"

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Sharpen Your Lawn Mower 20 times for 25c. Eureka Sharpener



A new device to attach to the stationary Bar of any mower.

Sharpens all blades to a keen, even, accurate edge in a few minutes. Anyone can attach it to cutting blade. (See illustration.) No filing, no work. Simply push the mower on sidewalk with Eureka Sharpener attached and blades sharpen automatically. Sold by all dealers, 25c., or sent prepaid on receipt of 30c., stamps or coin. Specify width of mower whether 12 in., 14 in., 16 in., 18 in. or 20 in.

EUREKA SHARPENER CO., 1383 24th St., Detroit, Mich.

Success in Growing Roses

depends upon two things, the quality of the plants themselves and the knowledge of how to care for them. The name "DINGEE" is the sterling mark—the guarantee of the high-bred quality that has made our Roses famous the world over. Dingee Roses are the healthiest, hardiest and best grown.

Growing Roses on their own roots is our specialty. We grow and sell each year over a million Rose plants. With seventy greenhouses and this vast collection to choose from, we may fairly claim to be the *Leading Rose Growers of America*. In order to give the experience gleaned in threescore years in growing Roses we have published at an expense of over \$10,000

"Sixty Years Among the Roses" The Dingee Guide to Rose Culture

It describes and prices more than 600 leading kinds, *all on their own roots*. It tells you the best Roses for your locality, and, most important of all, *how to make them grow and bloom abundantly*.

There are 116 large pages beautifully illustrated from photographs, including four full page pictures in natural colors; the color pages are not cheap daubs of paint, but real, rich, charming photographic reproductions in all the soft and delicate tints of nature. There is no other book of Roses that compares with it. If in the past you have failed in growing Roses secure this book—you *will succeed*. Our Firm was established in 1850, so we have appropriately called this book "Sixty Years Among the Roses," which summarizes the life work of its founder member, Charles Dingee, now eighty-four and still vitally interested while not active in the management of this business.

This Greatest of Rose Books Free!

We have been asking a nominal charge for this valuable work to prevent indiscriminate distribution, but to the readers of the GARDEN MAGAZINE, while the edition lasts, it will be sent FREE for the asking. It describes and prices miscellaneous plants of all kinds, bulbs, Flower and Vegetable seeds. Write for it to-day.

Great Special Offering 10,000 Dingee Iron-Clad, Own-Root Roses Large, Heavy, Three-Year-Old Field-Grown Plants for Quick Results

We now offer for the first time by any firm a collection of practically all the leading varieties of hardy and semi-hardy Roses *all on own roots*, also a few varieties which do best when budded, each one a gem and famous the world over. As they are (with the few exceptions noted) *all on their own roots*, once planted they are practically permanent and require little or no care, which is not the case with imported budded and grafted plants. They are fully described in "SIXTY YEARS AMONG THE ROSES"—copy FREE for the asking.

They are the sturdiest, strongest and best rooted plants ever offered in this or any other country, and so far superior to budded and grafted stock that it is not necessary for anyone to import Roses from England, Ireland or elsewhere, thus having to contend with the "sucker nuisance," for this is obviated in this great collection here offered. These plants are sold at an extremely low price, and we guarantee safe arrival to any point in the U. S. and absolute satisfaction, or refund the money.

The stock is limited. Orders may be sent immediately and booked, if requested, for delivery when wanted; they will be filled in the rotation in which they are received until the stock is exhausted, when money will be refunded.

PRICE of these extra heavy three-year-old plants, from 6, 7 and 8 inch pots, is 50c each, except where noted; \$5.00 per dozen; \$37.50 per 100, carefully packed, by express, purchaser paying transportation charges.

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*Varieties marked with a star can be furnished until April 15th, in large, heavy, three-year-old, dormant field plants.

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- *ANNA DE DIESBACH. Brilliant carmine.
- *ARCHDUCHESS ELIZABETH OF AUSTRIA. Rosy carmine.
- *BARON DE BONSTETTIN. Superb dark red.
- BLACK PRINCE. Deep crimson, almost black.
- *BOULE DE NEIGE. Full, double, pure white.
- CAPTAIN CHRISTY. Rosy crimson.
- *CHESHUNT HYBRID. Beautiful vivid crimson; one of the best.
- COQUETTE DES BLANCHES. White, tinged rose.
- *COUNTESS OF ROSEBERY. Bright pink
- DINSMORE. Rich crimson-scarlet.
- *EUGENE FURST. Crimson shaded maroon.
- *EMPRESS OF INDIA. Dark brownish crimson.
- *FRANCOIS LEVET. Superb, full, double, cherry-pink shaded carmine.
- GENERAL JACQUEMINOT. Rich velvety crimson.
- GIANT OF BATTLES. Large double crimson.
- GLOIRE LYONNAISE. Rich creamy white. Superb.
- *GLORY OF THE EXPOSITION OF BRUSSELS. Deep amar-anth shaded fiery red.
- *LOUIS VAN HOUTTE. Brilliant crimson.
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- *MAD. PLANTIER. Pure white; large and double.
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- *MAGNA CHARTA. Rosy red, flushed crimson.
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- ENGLISH SWEETBRIAR. The old favorite pink variety.
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- HARRISON'S YELLOW. Finest deep yellow.
- HER MAJESTY. Wonderful and immense; rosy pink \$1.00 each.
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- MARGARET DICKSON. Beautiful white. Superb flowers. 75c each.
- MERVEILLE DE LYON. Ivory white, flushed carmine. 75c each.
- SOLEIL D'OR. Orange yellow, blended reddish gold.
- YORK AND LANCASTER. Red and white, sometimes blotched and striped. \$1.25 each.

Dingee Miscellaneous Own-Root Roses.

A Collection of the best and hardiest Ever-blooming Hybrid Teas, and Polyanthas. Splendid large specimen plants, all on own roots.

- CLARA WATSON. Salmon Pink.
- CLOTILDE SOUPERT. Ivory white, shading towards center to silvery rose.
- *CRIMSON BABY RAMBLER. Always in bloom. Grows but 20 inches high. Magnificent clusters of ruby-red flowers Hardy everywhere.
- ETOILE DE LYON. Golden yellow.
- FREIHERR VON MARSCHALL. Superb red.
- HELEN GOULD. Warm, rosy crimson.
- LA FRANCE. Beautiful silvery pink.
- MAD. EUGENE MARLITT. Splendid carmine-red.
- MAD. FRANCISCA KRUGER. Coppery yellow.
- MARIE GUILLOT. Pure white.
- MARIE PAVIE. Excellent creamy white.
- METEOR. Velvety crimson
- MRS. B. R. CANT. Silvery rose.
- PAPA GONTIER. Splendid crimson.

- PINK BABY RAMBLER. Brilliant shining pink.
- PINK MAMAN COCHET. Clear, rich pink. A superb garden rose. None better.
- PINK SOUPERT. Large, handsome pink.
- PRINCESS BONNIE. Solid, deep crimson.
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- WHITE BABY RAMBLER. Snow-white trusses.
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- CHAMPION OF THE WORLD. Splendid pink.

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Best and Freest Blooming Hardy Varieties Suitable for Porches, Pergolas, Trellises, Arbors, Hedges and Similar Purposes where Quick Results are Wanted. (All on own roots).

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- CLIMBING HELEN GOULD. Rosy crimson, beautifully striped carmine.
- CLIMBING METEOR. Dark velvety crimson. Magnificent.
- *CLIMBING WOOTTON. Superb magenta red, passing to violet-crimson; richly shaded.
- *DOROTHY PERKINS. Clear shell pink flowers. None better.
- FARQUHAR. Beautiful pink; double flowers.
- KEYSTONE. The only yellow, everblooming, hardy climbing rose. Superb.
- LADY GAY. Clusters of cherry pink flowers.
- LEUCHTSTERN. Bright rose, white eye. Strong growing.
- PHILADELPHIA CRIMSON RAMBLER. An improved crimson Rambler.
- PINK RAMBLER. Brilliant pink. Immense trusses.
- REINE MARIE HENRIETTE. Beautiful crimson.
- *TAUSENDSCHON. The great new climber with many colored flowers. A superb introduction.
- TRIER. Immense white trusses.
- WHITE RAMBLER. Large white clusters.
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- JAMES SPRUNT. Splendid red climber.

This is an opportunity of a life time. Place your order for these magnificent three-year-old specimen plants to-day while the stock is complete. We will make the selection for you if desired and send you what we, ourselves, would want were we buying instead of selling. Orders booked for delivery when wanted. Catalogue free. Now is a good time to order.

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70 Greenhouses.

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Northern grown, well rooted and of vigorous habit.

HARDY EVERGREENS FROM THE COAST OF MAINE
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Of tried and selected kinds and exceptional vitality
For garden and for landscape planting.

Packing done with greatest care

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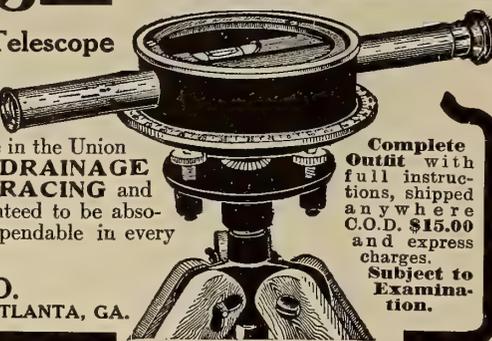
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PROPAGATING HONEYSUCKLE AND ARBORVITÆ

M. J. R., Penna. — Upright species of honeysuckle are propagated from layers and also from cuttings of dormant wood. The creeping varieties are propagated from cuttings of dormant wood. Arborvitæ will not grow in shaded situations. The best time to plant the latter is in May or August; the honeysuckle in the fall or spring, as convenient. Arborvitæ makes the best hedge, but balsam fir is quicker-growing.

PEONIES FOR CUT FLOWERS

C. A. G., Mich. — Some of the best pink and white varieties of peony for cut flowers are: White — Festiva Maxima, Madame de Verneville, Avalanche, Grandiflora nivea plena, Monsieur Dupere and Duchesse de Nemours; light pink and pink and white — Achille, Dorchester, Sarah Bernhardt, Mme. Calot, and Venus; deep pink — Madame Ducl, M. Jules Elie, Comte de Paris, Delicatissima and Lady Leonora Bramwell. These are all early or second early varieties. A. H. F.

STARTING IN BUSINESS

F. A. W., N. Y. — If you are an amateur starting in the florists' business, confine your efforts at first to subjects that are easily handled, such as carnations, violets, sweet peas, and bulbs, i. e., narcissus of various sorts and Roman hyacinths. Grow smilax, asparagus and small ferns for greens. Raise for sale, and for your own use, bedding plants and early vegetables, e. g., cabbage, lettuce, tomatoes, egg plants, celery, peppers, etc. Lettuce and tomatoes could be raised in the greenhouse in winter, but flowers will undoubtedly pay better.

VARIEGATED SHRUBS WORTH GROWING

G. S. J., New York. — Some of the best variegated shrubs for general planting which can be obtained anywhere are as follows: Golden and silver leaved weigela (*Diervilla floribunda*, var. *versicolor* and *D. florida*, var. *nana variegata*), the variegated rose of Sharon (*Hibiscus Syriacus*, var. *variegatus*), Cornelian cherry (*Cornus Mas*), Siberian dogwood (*Cornus alba*, var. *argenteo-marginata*), silver margined kerria (*Kerria Japonica*, var. *argenteo-variegata*), yellow margined California privet (*Ligustrum ovalifolium*, var. *aureo-marginatum*), and the golden-leaved mock orange. For more rank growth there is the golden-leaved elder. J. T. S.

EVERGREENS FOR THE NORTH

J. D. F., New York. — Some hardy coniferous evergreens which you will undoubtedly find satisfactory about your grounds in the Adirondack region are: Nootka Sound cypress (*Chamaecyparis Nutkensis*, known in the trade as *Cupressus Nutkensis*); Reeve's Chinese juniper (*Juniperus Chinensis*, var. *mascula*, known in the trade as var. *Reevesi*); Swedish juniper (*Juniperus communis*, var. *Suecica*); prostrate juniper (*Juniperus Sabina*, var. *prostrata*, known in the trade as *J. prostrata*); dwarf Mugho pine (*Pinus Montana*, var. *Mughus*, known in the trade as *P. Mughus*); Swiss stone pine (*Pinus Cembra*); Japanese yew (*Taxus cuspidata*); and Siberian arborvitæ (*Thuja occidentalis*, var. *Wareana*, known in the trade as var. *Sibirica*). Among the broad-leaved evergreens there is the great laurel (*Rhododendron maximum*), and the mountain laurel (*Kalmia latifolia*).

PLANTING NEW STRAWBERRY BEDS

C. R. W., New York. — The general practice in strawberry culture is to set plants in the spring and prevent fruiting the first year by picking out the buds as they appear. Cut off all runners in the early fall in order to throw the utmost vigor into the plants for the next season's crop. At the same time allow one or two runners to root from each plant, if you wish to work on the renewal system for the bed; that is, allow just sufficient runners to root to fill up a row between the rows that are now planted and which will fruit next year. After fruiting, the old plants are then plowed or dug under and the new ones kept for fruiting the following season. Generally speaking, however, it is better to make a new bed in a new place, for that purpose allowing as many runners as may be necessary from the old bed which is then fruited for two years instead of one. The careful gardener can plant in the fall, even as late as October, if the ground is thoroughly enriched and properly mellowed. The best garden practice, however, is to set out pot-grown plants in August for fruiting next year. Such plants are to be bought from the dealers.

2 HP Stationary Engine \$29.50
ENGINE ONLY

2½ to 8 H. P. Proportionate Prices.
For use on the farm and in the shop.

Runs cream separators, churns, pumps, grist mills, corn shellers, washing machines, lathes, printing presses, etc. Burns kerosene, (coal oil) alcohol, gasoline, naphtha, distillate, without change of equipment, starts without cranking, throttling governor, drop forged crank shaft, best grade ball-bearing, free catalog tells how to save half cost of hired help. Testimonials, 10,000 in use. All sizes in stock ready to ship.

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Kewanee Pumping Outfits

Have you a pumping problem to solve? Do you want to pump water from a well? From a cistern? From a spring? From a lake or river? From any source?

Let us show you the most economical and satisfactory solution of your pumping problem.

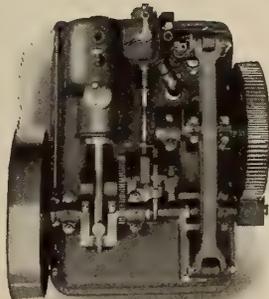
For more than ten years we have been solving water supply problems. Over nine thousand of those problems have been solved successfully by Kewanee Systems. We have furnished complete water supply plants for over nine thousand people, with absolutely satisfactory results to our customers.

As we developed our complete water supply plants, we also developed and perfected Kewanee Pumping Machinery. The technical knowledge of our engineers, combined with our broad practical experience, is placed at your service, whether you require a complete water supply plant or an outfit for pumping only.

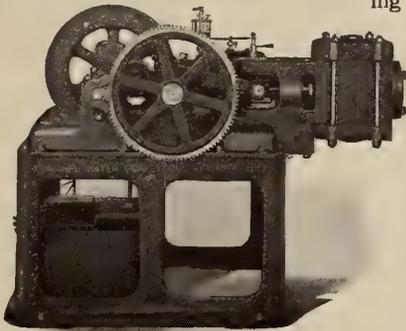
Our pumping outfits are adapted for any special pumping service, as well as for use with



Kewanee Engine combined with deep-well pump.



Top view of combined engine and deep-well pump.



Kewanee Engine combined with suction pump.

The Kewanee System of Water Supply

Kewanee Pumping Engines represent a great stride in the construction of gasoline-power pumping engines. The engine in itself and combined with our specially designed pumps, is revolutionary in this field, just as Kewanee Pneumatic Tanks revolutionized the methods of storing and delivering water under pressure.

The Kewanee Pumping Engine is furnished in two types. In one form, the engine is directly connected with a deep-well pump. The other type includes the engine combined with a suction pump. The latter is for short lifts from shallow wells, cisterns, streams, etc.

The engine can be quickly disconnected from the pump and used alone for other power purposes. The convenience of this arrangement will be appreciated where power is desired for operating laundry machines, churns, feed cutters, etc.

A Few Details

The engine is built throughout in accordance with the best practice in the

construction of automobile engines. The engine in a high priced touring car, does not represent a greater degree of perfect mechanism than we have combined in this 2½ H. P. gasoline engine.

The entire mechanism of the Kewanee Engine is "open and above board." Every part is immediately accessible.

The ignition system on the Kewanee Engine is equal to that of a \$5000 automobile—jump spark—"Breech-Block" spark plug, instantly removable.

Every part of a Kewanee Pumping Engine where wear may occur, is adjustable for wear. Bronze bushings are used at those wearing points. In years to come, instead of buying a new pumping engine, it will only be necessary to replace a few bronze bushings.

The engine cylinder is cast in one piece like the cylinder on an automobile engine. All troubles due to loss of compression, are entirely avoided.

Limited space makes it impossible to say more here. Our gasoline pumping engine catalog contains a complete description and many illustrations. Write for that catalog and tell us about your water supply requirements. If you want the pumping outfit only, mention the source of supply, and if it is a well, give us its three dimensions—depth, diameter, and distance from the ground level to the water level. Give flow of well in gallons per minute.

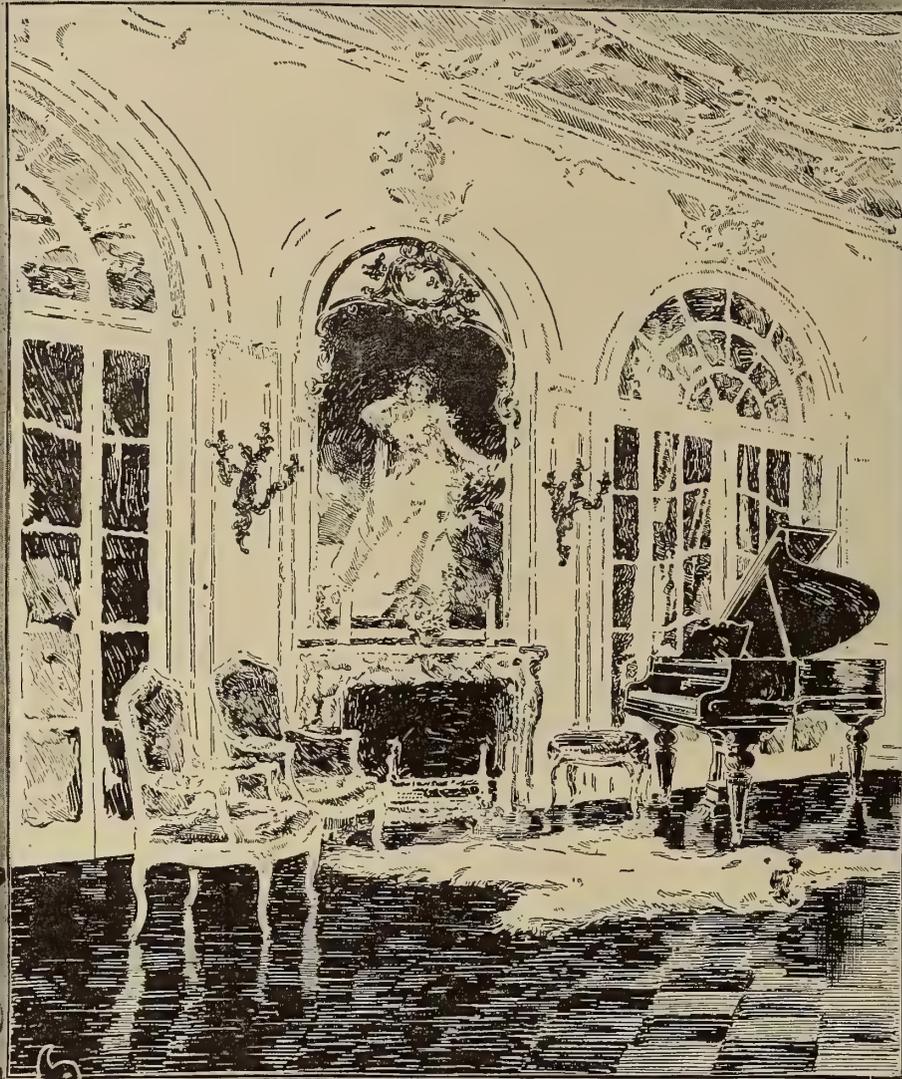
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Early and Late Tall Varieties	\$1 50	\$10 00	\$95 00
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All of the above strong field-grown plants.

We have the largest, finest and most comprehensive stock of Hardy Plants in America, including three hundred varieties of the choicest Peonies, one hundred varieties of Japanese and European Tree Peonies, and also the largest collection of Japanese Iris in the world and an unsurpassed collection of named Phloxes. Our illustrated catalogue describing these and hundreds of other Hardy Plants, Trees, Rhododendrons, Azaleas and Shrubs, will be sent on request.

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Every reader of The Garden Magazine should have this book. It is sent free. It tells you how you can make many small improvements about your place—watering troughs, hitching posts, horse blocks, sidewalks and door steps—without skilled help. Some of these things are surprising, all are practical, and all are economical. It tells you why **the success of concrete construction depends upon the quality of the cement**

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“Portland Cement” is nothing but the name of a kind of cement. It doesn't stand for quality, but the name “Atlas” does. See that your architect or builder specifies the Portland Cement by the name “Atlas,” or see that you get Atlas when you buy it yourself.

Atlas is absolutely pure, is made in but one grade, the same for

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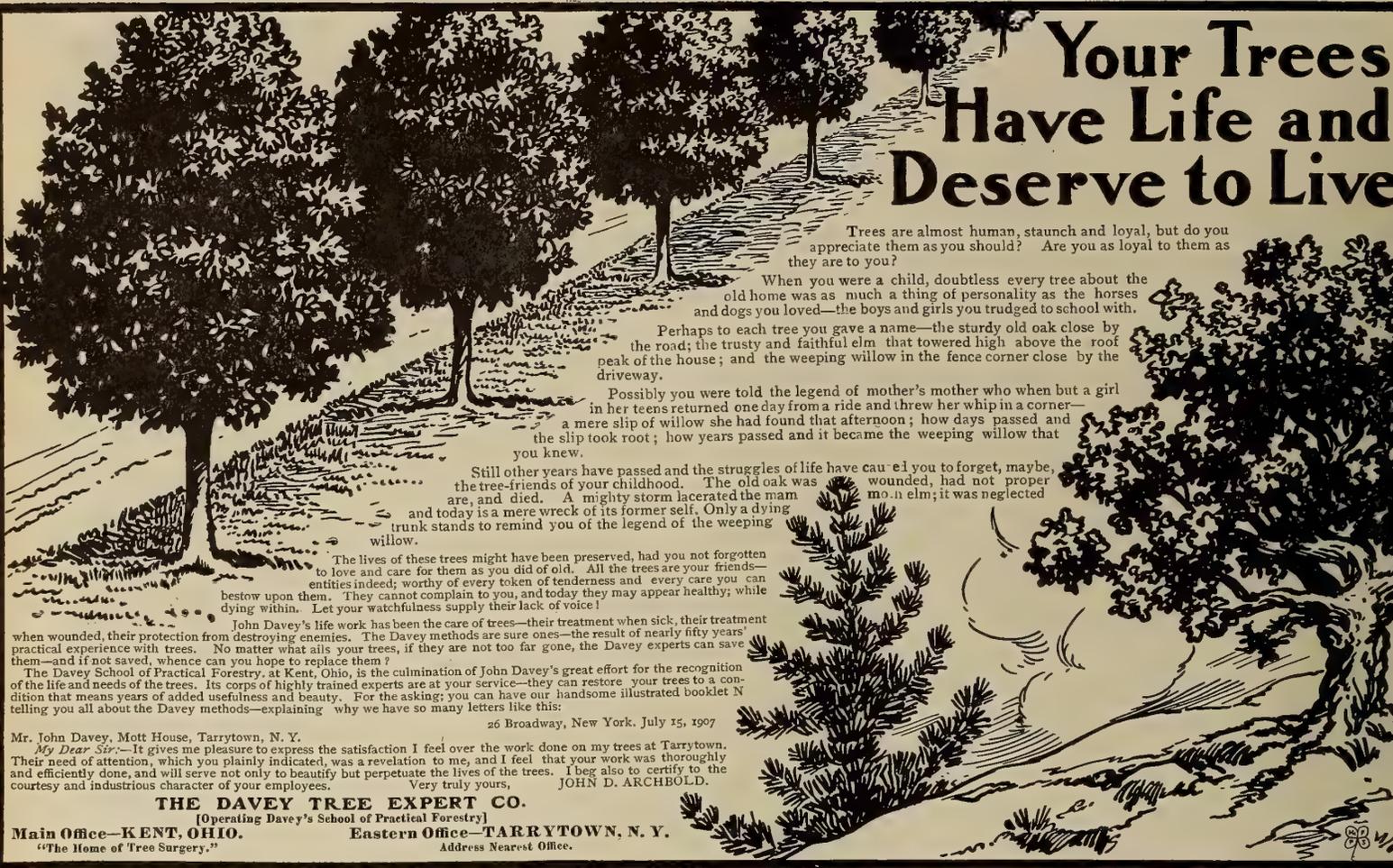


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THE WORLD'S
WORK

Your Trees Have Life and Deserve to Live



Trees are almost human, staunch and loyal, but do you appreciate them as you should? Are you as loyal to them as they are to you?

When you were a child, doubtless every tree about the old home was as much a thing of personality as the horses and dogs you loved—the boys and girls you trudged to school with.

Perhaps to each tree you gave a name—the sturdy old oak close by the road; the trusty and faithful elm that towered high above the roof peak of the house; and the weeping willow in the fence corner close by the driveway.

Possibly you were told the legend of mother's mother who when but a girl in her teens returned one day from a ride and threw her whip in a corner—a mere slip of willow she had found that afternoon; how days passed and the slip took root; how years passed and it became the weeping willow that you knew.

Still other years have passed and the struggles of life have caused you to forget, maybe, the tree-friends of your childhood. The old oak was wounded, had not proper care, and died. A mighty storm lacerated the main trunk of the elm; it was neglected and today is a mere wreck of its former self. Only a dying trunk stands to remind you of the legend of the weeping willow.

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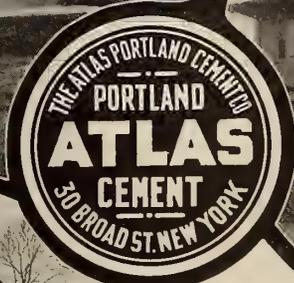
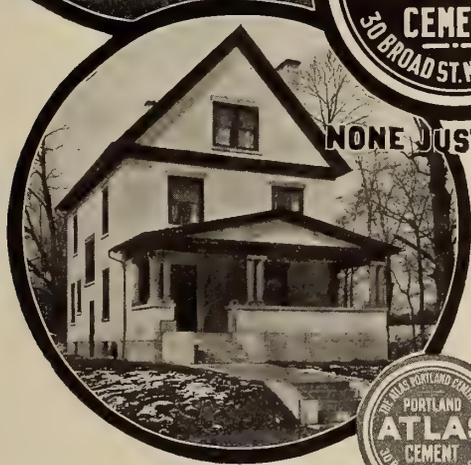
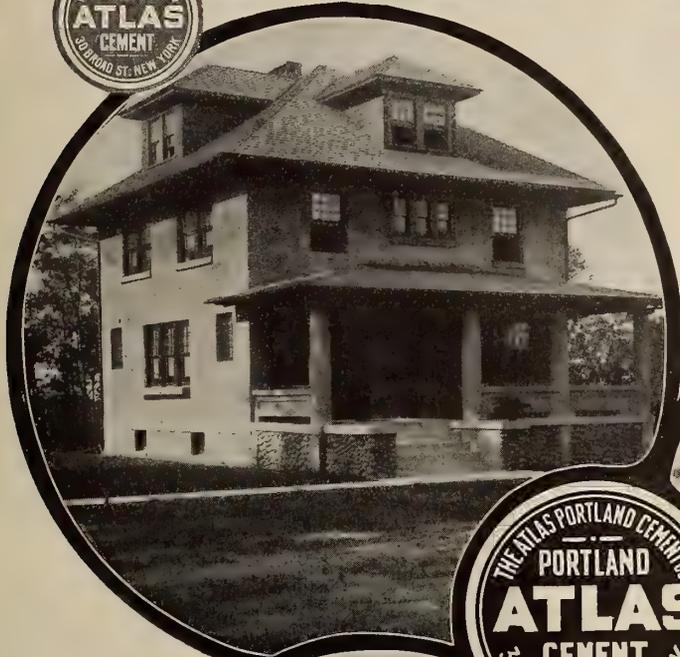
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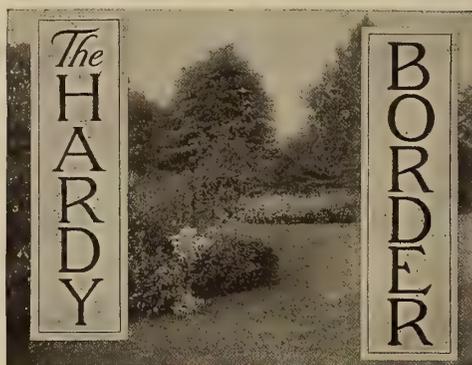
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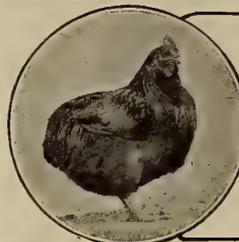
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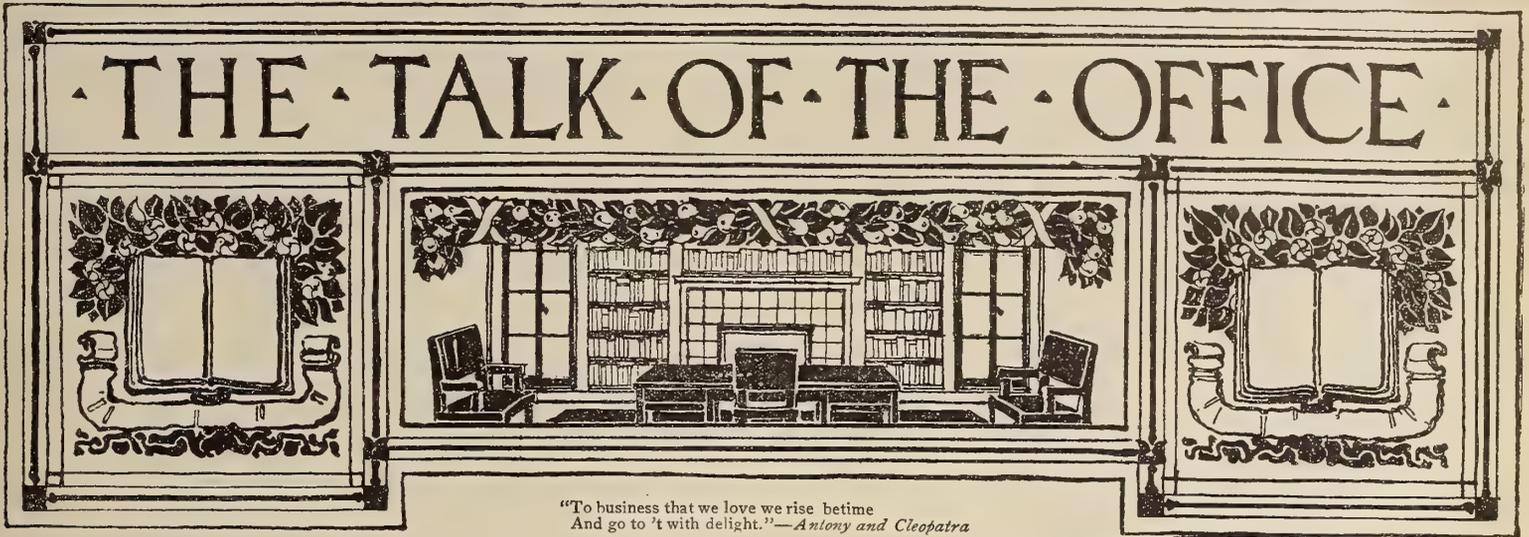
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PRIZES FOR THINKING

First of all we want to thank the hundreds of people who wrote to us and sent suggestions, in answer to our prize offer, for ideas to help sell books and magazines. The number of letters was vastly in excess of what we expected, and they showed marked originality and merit. A very large number of the writers ruled themselves out of the competition by suggesting schemes which would prove to be quite illegal under the lottery law, others could not be considered because of the stringent rulings which govern what is called "second class matter," under which classification our magazines are entered at the Post Office. We greatly regret the loss of time and effort by our contributors who suggested plans which fell under these difficulties, but we thank them and applaud their ingenuity. Then comes a great class of letters beginning: "Get a good reliable representative in every town, divide the country into sections, etc." If we could "get" all the good representatives we wanted, our fortunes would be made. A very few suggested how we were to secure representatives, and these have had our most respectful consideration.

A considerable number of readers suggested schemes which we had tried to work out during the past ten years without success. We were obliged to discard these, not because, perhaps, the schemes were not good, but because we were not clever enough to make them work.

Finally, we have selected from the letters, the plans from these persons which we propose to try, and we have sent checks to these good people, with our gratitude for their work in our behalf.

THE WORLD'S WORK

- I. { Charles H. Albert, State Normal } \$100.
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 { School, Tacoma, Wash. } each.
- II. M. V. O'Shea, Dept. of Education, University of Wisconsin, Madison, Wis., \$25.
- III. U. F. Reise, 1027 Green Street, San Francisco, Cal., \$15.
- III. Miss J. Reed, McMinnville, Ore., \$15.
 Both suggestions so good we awarded two third prizes.
- IV. William Harris Guyer, Alverton, Pa., \$10.
- IV. Dr. Charles O'Connor, Fitchburg Board of Trade, Fitchburg, Mass., \$10.
 Two fourth prizes awarded.

COUNTRY LIFE IN AMERICA

No suggestion good enough for prize award.

THE GARDEN MAGAZINE

- No first or second prizes.
- III. John F. Ballard, Box 503, Lexington, Mass., \$15.
- IV. Mac H. Wayne, School of Agriculture, St. Paul, Minn., \$10.

BOOKS

- I. No first prize awarded.
- II. Mrs. John Doughty, 57 Prospect Street, Winsted, Conn., \$25.
- III. Miss Amy Whitney, Thompsonville, Conn., \$15.
- IV. Benjamin F. Havens, Box 113, Trenton, N. J., \$10.

We still hold ourselves in readiness to read and consider any plan suggested. This competition need never close. We stand ready to pay for ideas always — and we shall be glad to get them.

IN THE MATTER OF BOOK REVIEWS — CAN YOU WRITE A GOOD ONE?

Time was, so old-fashioned people say, when book reviewing held its place as a sort of learned profession; reviews were read and respected. Now, these old-fashioned people assert that books are reviewed by the baseball editor or the man on the telegraph desk. Also, they say, that these hard-worked Knights of the Pen are called upon to dash off perhaps twenty book reviews in an afternoon. As to these statements, we dare not express an opinion. Sometimes we have ventured to think that the baseball enthusiasts would hardly stand for the lack of real knowledge displayed in a report of the national game, that the authors and publishers must submit to in the way of a book review; but that is another story, and, besides, there are more baseball votaries than book worms.

All this tiresome preliminary leads up to this:

We are convinced that the people who express the best analytical opinion are the readers who enjoy books, and tell of their impressions to their friends, people who buy books and read them for the pleasure they get out of them, not the people who get books free, and are paid for telling about them. It is this personal recommendation from one intelligent reader to another that gives good books their sale.

We ask such unprofessional critics who read because they enjoy reading, and not as a part of the daily grind, to write a review of Mr. E. F. Benson's "The Climber." We think that this book offers a particularly good opportunity to try out the wholesome critical faculty as compared with the piece-work job of book reviewing.

We offer modest prizes of \$50, \$30, \$20, and so on for the best reviews of not more than 1,000 words — see announcement elsewhere in this magazine. We hope our readers will try their hands at book reviewing, and we shall tell of the results in the August issues.

READABLE BOOK TYPE

We think that there will very soon be a strong manifestation of public opinion about the use of readable type. As competition grows keener, type seems to grow smaller and poorer, until our oculists say that children will soon need to be born with glasses. In our own books, we are planning to use larger type, and the faces known as Caslon and Scotch, both full strong letters, restful to the long-suffering eye. We made a bad mistake in setting up Mr. Benson's novel "The Climber," referred to in the last paragraph, the type was too small. We have thrown these plates into the melting pot, and have set the 500 pages over again in type two sizes larger, and all the editions hereafter printed will be in this larger type, which we hope will be found comfortable to read.

MRS. HUMPHRY WARD'S NEW BOOK

On May 20th, or thereabouts, we expect to publish Mrs. Ward's new novel, "Marriage à la Mode," which has been running as a serial in *McClure's Magazine*. It is the first book in which Mrs. Ward has laid even part of the scene in the United States, and to this degree reflects the influence of her visit last spring. The book will be sold at the fixed price of \$1.20, or \$1.30 when sent by mail. It is abundantly illustrated, and the story has been largely re-written.

THE LIBRARY SALES ROOM

has been moved down to the second floor of our building 133-137 East 16th Street, for the convenience of our friends. Here all our books, pictures, and magazines are shown, and a comfortable place provided to read them.

THE GARDEN AND FARM ALMANAC

It may seem late to talk about almanacs, which usually find their only sale at the beginning of the year — not so "The Garden and Farm Almanac." This is the time when the book sells well and is most used. The price is 25 cents postpaid, and the volume will not be reprinted.

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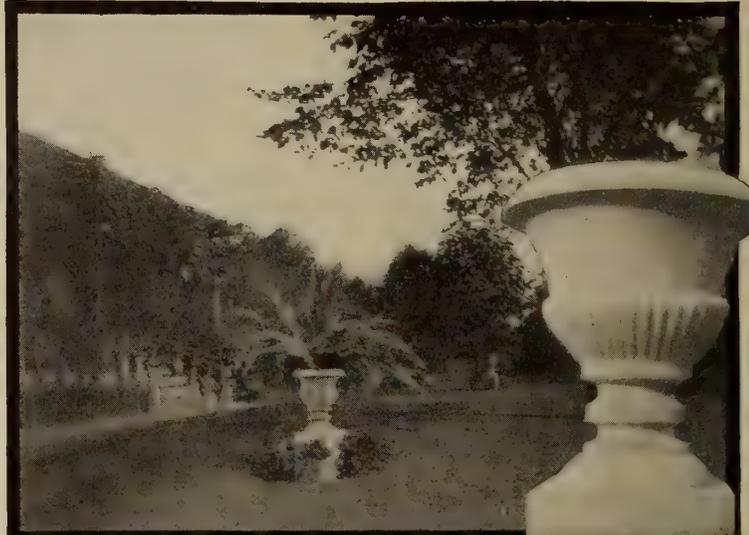
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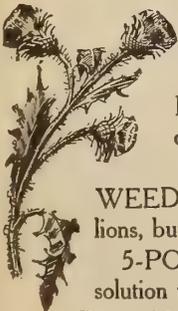
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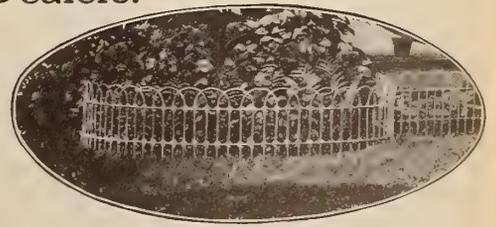
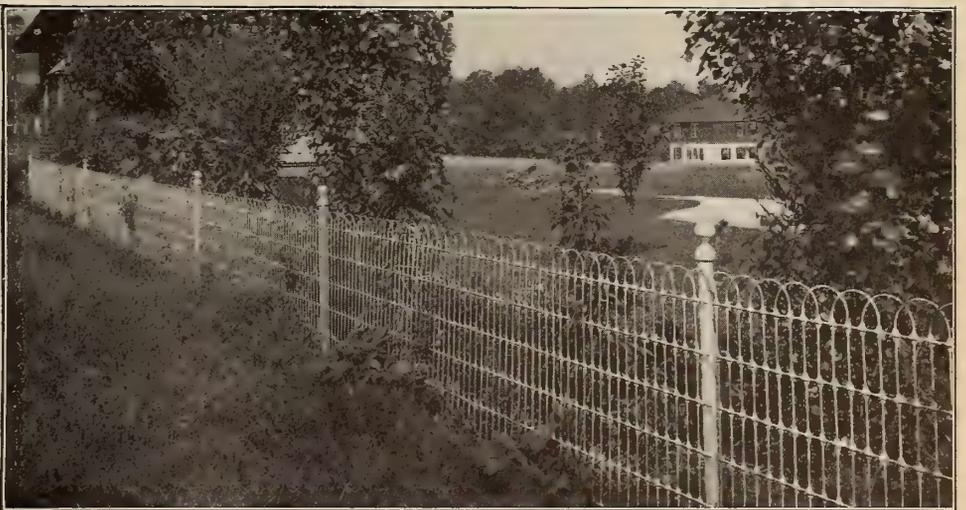
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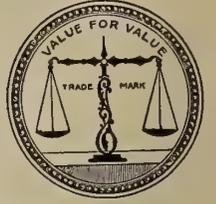
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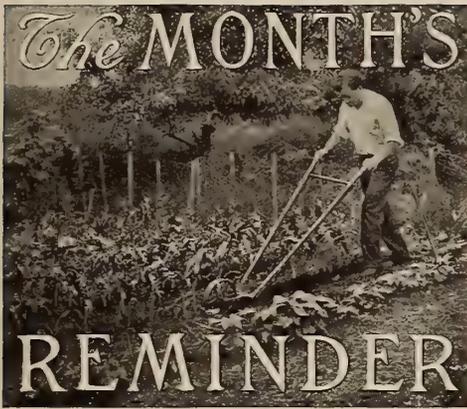


The Garden Magazine

VOL. IX—No. 4
PUBLISHED MONTHLY

MAY, 1909

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[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

Act Before May 1st

THE best time to plant hardy *deciduous* trees, shrubs, vines, perennials, fruit trees, and berry bushes is while the plants are dormant. If they have already started to grow in your locality, you can still plant safely by ordering from nurserymen in the northern tier of states, or by getting pot-grown plants.

The best time to plant *evergreens* is during the short period when the frost gets out of the ground and before buds begin to open.

If nursery stock arrives before you can plant it, put it in the coolest place you have. The later you plant, the more you should prune.

Plant half-hardy bulbs. The most important are gladioli, torch lily, cinnamon vine, Madeira vine, and summer hyacinths. Less common, but altogether lovely, are the Mexican star flower (*Milla biflora*), coral drops (*Bessera elegans*), rain lily, and evening star (*Cooperia pedunculata* and *Drummondii*), the zephyr flowers (*Zephyranthes*, especially *Z. Atamasco*), and the Peruvian lilies or alstromerias. Montbretias are also interesting.

Don't let your flower beds look like mud pies until May 15th. It is not safe to put out tender plants before that, but you can buy pansies, English daisies, and forget-me-nots on April 15th from your local florist, and have a month of bloom before most people plant cannas.

Beginners who have to start a garden after the fifteenth of April will find the double, spring-planting April number of THE GARDEN MAGAZINE a good guide.

Divide the perennials in your hardy border, and share the increase with neighbors and friends.

If plants of any kind are backward use

nitrate of soda. It shows results in three to five days after a rain. But don't use it on a lawn after the grass has started to grow well, except in solution.

May 1st to May 15th

BEFORE all danger of frost in your locality is past it will be safe to do these things:

Sow outdoors seeds of tender vegetables, but do not set out any plants. The tender vegetables are beans, corn, tomatoes, eggplants, peppers, cucumbers, pumpkin, squash, okra, sweet potato, and martynia.

Be prepared for the frost that is almost sure to come the second week in May, after the thousands of too-eager persons have set out tomato plants. Get boxes and newspapers all ready to cover plants.

If plants are frosted, shade them from the sun, and if possible spray them with the coldest water so that they will thaw out very slowly.

"Harden off" tender vegetables and flowers by moving them from hotbeds to coldframes.

Finish the first thinning and transplanting of all the hardy vegetables and flowers in your garden.

Cultivate strawberries for the last time, and just before they bloom mulch them so as to keep sand and grit out of the fruit.

You ought to have home-grown asparagus practically every day in May until peas are ready to eat. Have you surplus asparagus to can? Don't plant two-year-old roots. One-year-old will do better and cost less.

Need any bean poles, tomato stakes, vine or peony supporters? Chicken wire? Bamboo stakes? Iron rods?

Sow outdoors seeds of half hardy flowers, but not tender ones. For example, sow flowering tobacco, salpiglossis, schizanthus, Swan River daisy, crimson flax, sweet woodruff, datura, and night-scented stock; but *not* nasturtiums or rose moss.

Sow some of the best half-hardy vines. For the porch choose canary-bird vine or convolvulus. Let the children plant near the back fence balloon vine, squirting cucumber, balsam apple, balsam pear, and the following gourds — dishcloth, hedgehog, gooseberry, and snake cucumber.

Buy bedding plants from the local florist so as to be sure to get just the right color of geranium, petunia, verbena, or phlox. Bring them home or let him hold them until it is safe to set them out. Otherwise you may get only riffraff.

Plant tea roses from pots.

Dig dandelions out of the lawn and use

them for greens, or else use a weed killer that will kill all the large-leaved weeds without hurting the grass.

May 15th to 31st

AFTER all danger of frost in your locality is past, set out tender plants.

Transplant to the open ground all tender vegetables and flowers in coldframes or flats.

Buy vegetable plants from seedsmen of national reputation one or two days distant by mail. Don't buy nameless tomato plants from the corner grocery.

Finish second thinning of vegetables and annuals. The more room you give plants, the larger and better will be the product.

Plant tender bulbs and roots. The most important are cannas, dahlias, the caladium, and the tuberose. The peacock flower, or tigridia, has a great range of color. Crinum are gorgeous lily-like plants. Spider lilies and the sea daffodil are charming, and so is the exquisite white flower which gardeners call *Ismene*. Two summer-blooming species of oxalis are said to make very dainty edgings.

Sow tender annuals, give them extra food, water, and care, and you may beat neighbors who started them early indoors. Among the tenderest are sensitive plant, celosia, cotton, touch-me-not, everlastings, ice plant, and other mesembryanthemums, wishbone flower, or torenia, and the musk plant.

Sow seeds of tender vines, especially nasturtiums, Japanese hop, moonvine, and all gourds. Let the children grow the egg, apple, pear, bottle, dipper, mock orange, and sugar trough gourds, also the wax cucumber.

Prune only shrubs that have finished blooming, e.g., golden bells, or forsythia. Don't trim to balls, but cut out the oldest branches right down to the ground, so as to have new wood always coming on. Shrubs produce most of their flowers on young wood.

Give roses liquid manure once a week from the time the flower buds can be seen until the color shows — then stop.

The only way to keep ahead of weeds in the critical month of May is to have the best tools. Send for an illustrated tool catalogue.

Window boxes cost more and do less than vines. If your house or office lacks vines, provide for them first. Every important kind of vine can now be planted from pots any month right through the summer. If you cannot get them locally, ask the Readers' Service Department.



A bed of *Philadelphus Lemoinei*, showing the arching grace and stems covered nearly their whole length with flowers. We now have a dozen low shrubs with the same faultless habit



The "continuous-blooming effect" — hardy hydrangeas. Others that will bloom two or three months are Baby Rambler rose, gaillardias, the Napoleon III. pink, Miss Lingard phlox, etc.

England's New Kind of Flower Bed—By Wilhelm Miller, ^{New York}

IT HARMONIZES WITH OUR CLIMATE BETTER THAN OUR PRESENT PLAN, COSTS LESS, IS ATTRACTIVE TWO MONTHS LONGER EVERY YEAR AND ABOLISHES ANNUAL DIGGING AND REPLANTING

[EDITOR'S NOTE.—This is the fifth of a series of articles showing how we can get nearly all the important English garden effects, not with European materials, but with American plants, as a rule, and a few Japanese for "spice." "English Effects with Hardy Conifers" appeared in January; "Trees," in February; "Shrubs," in March; "Broad-leaved Evergreens," in April. Other articles will describe the most important English effects with vines, bulbs, perennials, etc. A companion series in "Country Life in America" is devoted to the different types of gardening, e. g., Landscape Gardening (in January); Formal Gardens (February); Rose Gardens (March); Water Gardens (May), etc.]

IF THERE is any one thing on which we Americans pride ourselves it is on being "up-to-date," or at least progressive, yet the style of flower bedding we commonly affect belongs to the same period as "hoop skirts, hair-cloth sofas, corkscrew curls, infant damnation, and b'iled dinners." I refer to that "aberration of the human mind," carpet bedding, of which William Morris said he "could not think, even when quite alone, without a blush of shame."

For it is a shame to shear plants unnecessarily, thus sacrificing all their natural beauty of form. It is a shame to banish or minimize flowers. It is a shame to consider the most complicated designs the most elegant. And it is a shame to get color in such a crude and gaudy way when we can have material that will harmonize with our climate and environment. Or, in practical language, tender plants cost more than hardy ones, and carpet beds are empty and unsightly for at least seven-twelfths of the year, from the first frost of autumn to the last one of spring.

William Robinson has changed the face of England by inducing people to sweep away most of this false art and restore hardy plants on a new and better basis. We have never had in America any such revolution in gardening because we have only begun to have gardens. But every foot of England was, broadly speaking, cultivated to the utmost then, as now, so that the land was filled with old and precious gardens. This beauty was suddenly defaced when the bedding mania swept practically all hardy flowers out of gardens and



The elegant foliage of *Funkia ovata*. Still more refined is the white day lily. Funkias need no edging or supplementary plants, but cannot stand full sunshine

transformed England into one gigantic crazy quilt. It is only faint echoes of all this that come to us in books. I used to think such talk merely "literary." But everywhere in England last summer I heard about "the real thing" from old men, who were refused admission to flower shows for their larkspurs, peonies, irises, and other hardy flowers. And on many fine estates I heard of great sums wasted in trying and discarding the bedding system.

Yet there was really some sense in the bedding system in the early forties. China and Japan had not been opened to the world and, therefore, about one-half of the best hardy plants now cultivated were then unknown. Moreover, hardy plants, as a rule, bloom only two weeks, whereas geraniums, verbenas, and annual phlox will bloom for three months. It is no wonder that the gardeners tired of the hardy flowers then known, because many of them were unsightly, or at least commonplace in foliage.

For instance, the foliage becomes shabby in forget-me-nots, columbines, and sweet Williams after these have bloomed; it is rather coarse and weedy in foxgloves and hollyhocks; subject to disease in phlox and larkspurs; commonplace in asters and gaillardias; and often disappears after blooming in the case of Oriental poppies.

Another reason why the old gardeners sickened of hardy plants is that the ordinary mixed border was not then, and is not now, artistic. They used to "dot" and "repeat," *i. e.*, use the same kind of plant singly in all parts of the border, the effect of which is generally weak and spotty. Nowadays we understand better that the only way to get strong, pure effects is to plan first for a few large masses.

So we cannot blame the old gardeners for preferring *three months* of bloom to *two weeks*. But the next step they took is hard to forgive, because tender foliage plants that have no beauty, save color, are the most ignoble type of vegetation. I do not deny that coleus will give more color for the money than any plant that grows, and it submits with lamb-like grace to the shears. But so will billboards give color — and twelve months, too, instead of five. A plant without growth, flower, or fruit is like a man without character. Carpet bedding becomes insufferably monotonous. It may be justified in small public parks, where people would steal flowers, but to make it the dominant feature of a private estate is really "a case for the blue wagon."

There are many disciples of William Robinson who go farther than the master.

They cry, "Away with tender plants and carpet bedding!" and talk as if there were something high and holy about hardy plants *per se*. I do not believe in going to extremes in anything, and I defy any shouter for "old fashioned flowers" to name any hardy plant that will do as much for the money as the geranium. Here we have good color, three months of bloom, beauty of form in leaf and flower, fragrance, and extraordinary ease of culture. It is not necessary to use the varieties with piercing colors and leaves marked like Joseph's coat, for even the geranium is capable of quiet and cool effects.

In other words, tender bedding plants are not wrong in themselves, as many writers say; it is only the abuse of the bedding system that is wrong. Even in a private garden, a few beds of tender plants are usually desirable, because every garden needs at least one spot of color every day throughout the growing season, and I gladly acknowledge that tender plants will usually solve this problem better than hardy ones.

But now that the treasures of the Far East are lavished upon us we have hardy plants suitable for practically every purpose the most exacting gardener can conceive. And whenever we have any special object to accomplish we ought to try nine times to find a hardy plant that will do the work before falling back on a tender one. And this for two reasons: First, hardy plants harmonize better with our climate and environment than tropical plants. Second, as a rule, they are cheaper to maintain. And in the long run, those effects which grow naturally out of the soil and out of true economy will be recognized as the most artistic.

An artistic border, with bold, irregular outlines and strong mass effects, is better than any formal arrangement nine times out of ten, because a border has more variety throughout the season than a bed. But granting that you really need beds of formal shape, do you not prefer the effects here pictured to any that can be had with tender plants? Do they not harmonize better? Are they not cheaper in the end? Are they not a relief from the flatness of carpet beds? It would be unfair and childish for me



Tamarisk (not tamarack), showing the exquisite harmony between feathery foliage and plummy flowers, which are a tender pink. Tall tamarisk is weak and thin; this is kept low and dense

to rhapsodize about the flowers of hardy perennials, as opposed to mere foliage plants, because the real question is: "Are there any hardy plants with beautiful foliage that are suitable for bedding?" The answer is, dozens of them — dozens that will not grow tiresome when seen daily for five months. There is no need of getting five months of raw color from plants with commonplace foliage, like coleus and alternanthera and acalypha, of which we use millions in America. A better idea is to make sure of beautiful foliage for at least five months, and in addition have exquisite flowers, even if they only last a fortnight.

THE LONG-BLOOMING EFFECT

We now have at least twenty-five perennials and low shrubs that will bloom as long as tender bedding plants — say two months or more, *e. g.*, gaillardias, Miss Lingard phlox, Stokes's blue aster, the Napoleon III. pink, the Baby Rambler rose, two kinds of hydrangea, *Eupatorium caelestinum*, and certain varieties of Veronica and ragged robin with names a foot long.

But I place no emphasis on "everbloom-

ing" plants, because they are somewhat like a thirty-cent dinner with wine — they give rather too much for the money. It is an excellent idea to use a bed or two of them, so as to be sure of color always, but to make them dominant is to destroy one of the keenest pleasures, *viz.*, a sense of the procession of the seasons. I hope the great majority of hardy plants will always definitely mark certain months, for the best thing to live with is not a "continuous performance" by flowers. Much better is a broken series of dramatic floral events. Therefore, let us turn from these "harpers on a single string," and see how we can have a variety of flowers at different times.

FOUR CROPS IN EVERY BED

Anybody can have four crops of hardy flowers in every flower bed, and I think most of us ought to be satisfied with that, provided the foliage does not become shabby. For instance, let the main feature be peonies. Between these plant bulbs of *Lilium speciosum*. Edge the bed with trailing myrtle. Then under this plant daffodils. Thus you will get a small show of daffodils in April, a good display of peonies in June, scattering flowers from the myrtle all spring and summer, and a fair show of lilies in September. This bed may last ten or even twenty years without radical change. You avoid all the expense and ugliness of annual digging. You have perfect foliage in peonies and myrtle, and the deficiencies of any lilies you may plant will be hidden. For most lilies are thin or stiff in foliage effect, and are hard to arrange effectively, but here they have a good background.

Dozens of good combinations like the one given above can be made from the plants mentioned in this article, with the help of these four rules:

1. Try for an early and a late spring, a summer, and an autumn flower. Simultaneous effects are appropriate in the border, but for a bed, successive effects are better.
2. Select first the centre-piece, preferably a low shrub or a perennial that grows two or three feet high.
3. Next choose the filler for the centre-piece, preferably a bulb.



A forsythia bed carpeted with glory of the snow, which blooms in March. Forsythias have golden bells in March. *F. viridissima* has green branches.



A bed of *Magnolia stellata*, showing the white flowers in March, two months before tender bedding plants are set out. Edged with grape hyacinths

4. Then select a carpeting plant for the edging, making sure that it has perfect foliage. If the centre-piece is bare or shabby at the base, choose an edger high enough to screen this fault. You can have a different kind of bulb under the edging.

THE BEST CENTRE-PIECES

The late or Chinese peonies are the best for centre-pieces because they are the longest lived perennials that can be obtained in many colors. They generally bloom in early June in the North. I would reject columbines, European peonies, sweet Williams, foxgloves, larkspurs, poppies, Japan iris, bee balm, and most varieties of phlox.

The best perennials for the purpose, in my opinion, are:

Bleeding heart . . .	Early May
Peach-leaved bellflower . . .	Mid-June
Gas plant . . .	June-July
Japanese balloon flower . . .	July-Aug.
Miss Lingard phlox . . .	July-Oct.
Swamp rose mallow . . .	August
Japanese anemone . . .	September
Subsessile veronica . . .	Aug-Sept.
Hardy chrysanthemums . . .	Sept.-Nov.

I think we ought to use low shrubs for bedding, as the English often do. For



Senecio Clivorum, which has bold foliage and yellow flowers. These leaves are often two feet across. Others of this class are the ornamental rhubarbs, *Crambe*, *Senecio Biebersteinii*, etc.

(1) they are more permanent than perennials; (2) they are a pleasant change from the flatness of ordinary bedding; (3) some of them have brilliant autumn foliage in addition to their flowers. The best shrubs for this purpose, in my opinion, are those with arching stems that meet the grass. The following are all of this type, and the dates from September to March mostly refer to flowers or berries:

<i>Magnolia stellata</i> . . .	March
<i>Forsythia suspensa</i> . . .	April
<i>Spiraea Thunbergii</i> . . .	May
<i>Spiraea Van Houttei</i> . . .	May
<i>Deutzia gracilis</i> . . .	May
<i>Philadelphus Lemoinei</i> . . .	June
<i>Stephanandra flexuosa</i> . . .	June
Regel's privet . . .	June-July
<i>Rhus copallina</i> . . .	July
Blue spirea . . .	Sept.
Yellowroot . . .	Sept.-Oct.
<i>Symphoricarpos racemosus</i> . . .	Sept.-Nov.
<i>Berberis Thunbergii</i> . . .	Sept.-Mar.

THE BEST FILLERS

For filling in between the most important plants we must have something that grows higher than the centre-piece without taking

much room. Therefore, bulbs are best, as a rule. I would reject hyacinths and early tulips because they are not permanent enough; also English and Spanish iris.

The best, in my opinion, are:

Crown imperial . . .	Early April
Daffodils . . .	Late April
Poet's narcissus . . .	May
Darwin tulips . . .	May
Madonna lily . . .	June
<i>Lilium elegans</i> . . .	July
<i>Lilium Henryi</i> . . .	Aug.
<i>Lilium speciosum</i> . . .	Sept.

THE BEST CARPETING PLANTS

Carpeting plants should do three things: (1) hide every inch of soil; (2) furnish attractive foliage for seven months; (3) bear some interesting flowers. It is possible to carpet the whole of a bed, but there is no point in doing it if the shrubs or perennials in the centre would hide them. Consequently, the edge of the bed is all that needs carpeting. However, it is often a good plan to fill every inch of a bed with small bulbs like crocuses, glory of the snow, or scillas, which bloom in March and April before the bushes put forth their leaves.

I suspect that tufted pansies or violas

Indeed, bulbs never look their best when growing out of bare earth. They are far prettier when seen against a background of foliage that hides the soil entirely. These carpeting plants are so shallow-rooted that they do not exhaust the soil. If you have lilies in the centre of the bed, you can have an edging of daffodils or tulips. If you have tulips or daffodils in the centre you can have spring or autumn crocuses for an edging.

In this way it is easy to get flowers at four different seasons. If each one lasts a fortnight you will have eight weeks of bloom from hardy flowers. Indeed, I believe it possible to have three months of bloom in a hardy bed and attractive foliage for seven months without the expense of annual digging and replanting.

GAINING TWO OR THREE MONTHS

Anyone can make a hardy bed look attractive two or three months longer than the best bed of tender plants in the world. There are two whole months in spring, or from March 15th to May 15th, when hardy plants will bloom while tender ones would be killed by frost. This one fact is reason enough why we should try nine times to get a hardy combination before falling back on tender plants, because this is time when there is the greatest heart-hunger for flowers.

Among March and April bloomers there are Russian violets, the Japanese Adonis, the dwarf-crested iris, golden tuft, and moss pink. Under these we can grow snowdrops, glory-of-the-snow, and scillas, getting two crops of flowers before the ordinary flower beds are even planted, and this, too, without such extravagant methods as we see in the Boston Public Gardens, where everything is potted, forced under glass, and then set out.

Among the best October-blooming or frost-resisting flowers are pompon chrysanthemums, the Napoleon III. pink, gailardias, and nine kinds of hardy asters. Under the edging plants you can put three kinds of autumn-blooming crocuses and maintain a succession from September almost to Thanksgiving.

POINTS TO REMEMBER

In conclusion, it seems to me that there are only two positions of the first importance where formal beds are really needed, viz., near the house and in the garden. For the first position the noblest plants are the broad-leaved evergreens, especially American holly, mountain laurel, and rhododendrons, because these are attractive the year round.

In the garden, however, we want more color, and for that we have hitherto relied chiefly upon tender plants. The great lesson that England has to teach us is that we can now rely chiefly upon hardy plants which are more harmonious, dignified, and permanent, cost less to maintain, remain attractive two months longer, and save us the ugliness and expense of annual digging.

THE FOURTH CROP

Underneath the carpeting plant it is perfectly practical to have a crop of bulbs.

What Ails Your Plants?—By E. Porter Felt State Entomologist New York

A NEW KIND OF TABLE, DESIGNED TO HELP THE AMATEUR TO RECOGNIZE THE CAUSE OF THE TROUBLE AFFECTING HIS PLANTS, SO THAT HE MAY APPLY THE PROPER REMEDY PROMPTLY

[EDITOR'S NOTE.—Most tables, or spray calendars, assume an acquaintance with the insect or fungus causing the trouble or disease. In the present case the remedy is arrived at by working from the known to the unknown. First of all the plant is given, then the gross apparent character of the trouble, the time of observation, and the general description of the cause; and from these the name of the insect or disease, as the case may be, is arrived at. The remaining columns tell of the immediate remedies and general preventive measures. A synopsis of up-to-date remedies and their modes of preparation follow the tables.]

ORNAMENTAL SHRUBS AND VINES

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Alder	Woolly lice on stems	Summer	Plant lice	Woolly alder aphid	Kerosene emulsion	Force spray through the protective covering.
Burning bush, Euonymus	Stems thickly scaled	Growing season	Dark bark louse	Euonymus scale	Kerosene emulsion, 1 to 4 parts water	Only partially successful, occurs on lilac and bittersweet.
Lilac	Shoots wilting	Summer	White boring caterpillar	Lilac borer	Cut out and destroy	Common, though not very destructive.
Rose	Buds eaten	Spring and summer	Caterpillars	Cutworms and caterpillars	Poison	Hand picking is very effective.
Rose	Leaves eaten	Spring	Yellowish beetle	Rose beetles	Hand picking, netting	Poisons are of comparatively little service.
Rose	Skeletonized leaves	Summer	Slimy caterpillars	Rose slug	Poison or plaster	Use either when slugs are abundant.
Rose	White specked or lousy leaves	Summer	Leaf hopper or aphid	Rose-leaf hopper or aphid	Soap solution	Give repeated sprayings, especially early.
Rose	White scale on canes	Growing season	White bark louse	Rose scale	Cut out worst infested shoots	Occurs on blackberry and raspberry.
Rose	Leaves mildewed	Summer	Fungus	Rose mildew	Bordeaux	Spray on appearance of disease and 10 days later if necessary.
Viburnum or Snowball	Curled, lousy leaves	Spring	Plant louse	Viburnum aphid	Kerosene emulsion	Spray before foliage curls.
Virginia creeper	Leaves eaten	Spring	Banded caterpillar	8-spotted forester	Poison or hand picking	Occasionally a pest in cities.

Arborvitæ is frequently badly injured by bag worm (see shade tree pests); Japanese quince is very subject to injury by scurfy bark louse and San José scale (see fruit trees).

WHAT BOTHERS THE SMALL FRUITS

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Currant (1)	Leaves discolored	Spring and fall	Plant louse	Currant aphid	Kerosene emulsion	Apply early before leaves curl.
Currant	Leaves irregularly brown spotted	Spring	Reddish or yellow and black bug	4-lined plant bug	Kerosene emulsion for young	Burn egg-bearing currant tips.
Currant	Leaves stripped	Spring and summer	Spotted caterpillars	Currant worm	Poison or hellebore	Use hellebore after fruit is half grown.
Currant	Wilting tips	June	White borers	Currant stem borers	Burn infested tips	Cut well below affected part of cane.
Currant	Leaves brown spotted	Spring and summer	Fungus	Leaf blight	Ammoniacal copper carbonate	Bordeaux after fruit is picked.
Grape	Tips of shoots webbed	Summer	Whitish caterpillar	Grape plume moth	Crush caterpillars	Apply poison if pest is abundant.
Grape	Buds destroyed	Early spring	Green beetle	Steely flea beetle	Paint buds with poison	Spray with poison 10 to 14 days later.
Grape	Clusters wormy	Summer and fall	Small caterpillars	Grape berry moth	Spray with poison in June	Keep surroundings clear of brush and weeds.
Grape	Vines sickly, roots badly scored	Summer	Brown beetle and white grubs	Grape root worm	Poison foliage in June	Destroy pupæ by cultivation.
Grape	Light specked leaves	Summer	Whitish hoppers	Leaf hopper	Spray with whale-oil soap	Collect with sticky shields or other device.
Grape	Dark spotted shoots	Summer	Fungus	Anthracnose	Copper sulph. sol'n and Bordeaux	1st before buds open, 2nd 3 to 4 days later; burn diseased wood.
Grape	Whitish growth on leaves	Summer	Fungus	Downy mildew	Bordeaux	Spray when leaves are fully expanded.
Grape	Dark spotted fruit	Summer	Fungus	Black rot	Bordeaux. Ammoniacal cop. carb'te	1st to fully expanded leaves; after fruit sets in 2 to 3 wk. intervals till $\frac{3}{4}$ grown. Then 2d every 7 to 14 days.
Raspberry and Blackberry	Wilting tips	Spring	White maggot	Raspberry cane maggot	Poison ineffective	Cut and burn infested shoots.
Raspberry and Blackberry	Leaves riddled	Spring	Greenish larvæ	Blackberry sawfly	Poison or hellebore	Apply to expanded leaves and again 2 to 3 weeks later.
Raspberry and Blackberry	Stems gray, cracked	Summer	Plant disease	Anthracnose	Copper sulph. sol'n and Bordeaux	Cut and burn badly infested canes.
Raspberry and Blackberry	Orange-colored spots on leaves	Summer	Fungus	Red rust	Burn infested plants	Affection not amenable to treatment.
Strawberry	Newly set plants dying	Spring	Grub at roots	White grub	Dig out and destroy	Avoid setting plants on infested land.
Strawberry	Dead patches in bed	Spring and summer	Grub in crown	Crown borer	Destroy infested plants	Put new fields in another location.
Strawberry	Leaves blighted	Spring and summer	Fungus	Leaf blight	Bordeaux	Apply when growth begins, when fruit sets, and after fruiting.

(1) Currant is badly injured by San José scale (see fruit trees).

THE WORST PESTS OF OUR ORCHARD TREES

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
*Apple (1)...	Wormy fruit.....	Late summer and fall.....	Whitish caterpillar.	Codling moth.....	Poison, preferably arsenate of lead..	Put in blossom end of apples within a week after bloom falls.
Apple	Irregular, hard or rotting trails in fruit.....	Summer and early fall.....	Small maggot.....	Railroad worm.....	Destroy infested fruits.....	Use early sweet varieties as traps and destroy promptly.
Apple	Young leaves and blossoms destroyed.....	Early spring...	Caterpillars in cases	Casebearers	Poison young leaves	Spray tips of young leaves in badly infested orchards.
Apple	Young leaves and blossoms destroyed.....	Early spring...	Brown caterpillar..	Bud moth.....	Poison.....	Treatment as above.
Apple	Stripped branches with large tents.....	Early spring...	Bluish caterpillar..	Tent caterpillar ..	Poison.....	Remove and crush caterpillars when in nest.
Apple	Young leaves eaten or browned.....	Early spring...	Looping caterpillars	Canker worms	Poison.....	Poison is preferable to the use of sticky bands.
Apple	Terminal leaves eaten, twigs with small, firm webs	Spring and fall.	Hairy caterpillars..	Brown-tail moth ..	Poison.....	Collect and burn winter nests.
Apple	Leaves brown and loosely webbed.....	Summer and early fall.....	Hairy, yellowish caterpillars.	Fall web-worm.....	Poison.....	Remove nests and crush caterpillars.
Apple	Leaves stripped from branches.....	Summer and fall.....	Yellow or red marked caterpillars	Yellow-necked and red-humped worms	Poison.....	Crush clustered caterpillars.
Apple	Curled, sticky leaves.....	Early spring and summer.....	Plant-lice	Apple plant lice...	Kerosene emulsion.	Spray early before leaves curl.
Apple	Dead limbs, red-spotted fruit.....	Spring to fall..	Gray and black bark louse	San José scale	Lime-sulphur wash, miscible oil.....	Spray before buds open in spring.
Apple	Poor growth, limbs scaly.	Spring and fall.	Brown scale insect.	Apple bark louse..	Kerosene emulsion.	Apply in early June when young are crawling.
Apple	Poor growth, limbs scurfy	Spring to fall ..	Whitish scale insect	Scurfy bark louse..	Kerosene emulsion.	Apply as above.
Apple	Poor growth, sickly foliage	Spring to fall...	A white, woolly plant louse	Woolly aphid.....	Kerosene emulsion or whale-oil soap.	Force insecticide through woolly covering.
Apple	Boring at base of tree....	Spring and fall.	White legless grub.	Round-headed apple borer.....	Tar paper bands..	Band from May to July, cut out borers.
Apple	Leaves with thickened brown spots	Summer	Minute mite	Blister mite.....	Lime-sulphur wash or miscible oil....	Spray before buds open.
Apple	Brown spots on leaf.....	Summer	Fungus	Leaf spot and scab	Bordeaux mixture.	Spray swelling buds; 2 weeks before blossoms open; after they drop, and a week later.
Apple	Dead spots on bark.....	Growing season	Plant disease	Canker or blight...	Burn infested parts	Cut well below infection to avoid carrying disease.
Cherry.....	Curled, sticky leaves.....	Early summer..	Black plant louse..	Cherry aphid.....	Kerosene emulsion.	Spray at 2 or 3 day intervals if necessary.
Citrus fruits, (orange, lemon, etc.)	Scaly fruit and limbs	Growing season	Circular scale.....	Red scale	Hydrocyanic acid gas	Fumigate at night, more effective than resin wash.
Citrus fruits..	Scaly fruit and limbs	Growing season	Long scale insect..	Purple or long scale	Fumigation.....	Treat as above.
Citrus fruits..	Scale on leaves and twigs.	Growing season	Black scale insect ..	Black scale.....	Fumigation.....	Treat as above.
Citrus fruits..	Blackened, sticky foliage.	Growing season	Small sucking insect	White fly.....	Fumigation.....	Treat as above.
Citrus fruits..	Yellow streaks on leaves.	Growing season	Minute mite.....	Red spider	Kerosene emulsion.	More injurious in dry seasons.
*Peach (2) ...	Bored trunks	Fall and spring	White caterpillars..	Peach borer	Dig out borers	Mound or band base of trees from June to September.
Peach	Buds destroyed	Early spring...	Small caterpillar...	Peach twig borer..	Lime-sulph. wash or kerosene emulsion	Spray before the buds open.
Peach	Shot holes in bark.....	Spring and summer	Small, black beetles	Fruit tree bark beetle.....	Burn the infested branches	Do this in winter or early spring.
Peach	Curled leaves.....	Summer	Plant disease.....	Peach leaf curl...	Lime-sulphur wash or Bordeaux.....	Apply before buds burst.
Peach	Sickly, yellowish trees....	Summer	Plant disease.....	Peach yellows.....	Cut and burn.....	Keep infected trees from contact with healthy trees.
Peach	Rotting fruit.....	Summer	Plant disease.....	Brown rot.....	Lime-sulph. wash or cop. sulph. solution	Apply before buds open.
*Pear (3) ...	Young fruit gnarly, maggoty	Spring	Yellowish maggot ..	Pear midge	Destroy infested fruit	Use Lawrence pears as trap.
Pear	Skeletonized leaves.....	Summer	Slimy caterpillar ..	Pear slug.....	Poison or dust	Apply when slugs are abundant.
Pear	Leaves sticky, black	Spring and summer	Jumping louse.....	Pear psylla	Lime-sulphur wash	Apply as for San José scale.
Pear	Brown foliage on dying branches.....	Summer	Bacterial disease ..	Pear blight	Cut and burn.....	Cut 6 to 10 inches below affected part.
*Plum	Crescent-shaped cuts in fruit	Spring	Small weevil.....	Plum curculio.....	Poison or collect ..	Jar daily or every few days for 2 to 3 weeks after fruit sets.
Plum	Brown scales on limbs	Fall and spring	Brown, oval scale..	Plum scale.....	Kerosene emulsion.	Spray after leaves fall and repeat before buds open.
Plum	Rotting fruit.....	Summer	Plant disease	Brown rot	Cop. sulph. solution and Bordeaux ..	Apply 1st before buds swell; 2nd weak and repeatedly; ammoniacal cop. carb. after fruit sets.
Plum	Gnarly growths on limb ..	Summer and winter	Fungus	Black knot	Cut and burn.....	Apply Bordeaux in early spring.

(1) Apple: This tree is very badly injured by gypsy moth (see shade tree insects).

(2) Peach and plum are both badly injured by San José scale (see under apple).

(3) The pear suffers from codling moth, canker worm, brown tail moth, San José scale, and blister mite (see under apple).

*General treatment for orchard fruits: Apply lime-sulphur wash just before buds swell (for fungus, scale insects and blister mite); poisoned Bordeaux when young leaves appear (for bad infestations of casebearers, bud moth and early leaf feeders); repeat the latter within a week or ten days after the bloom falls (for codling moth, leaf feeders and fungus); give another application a week or 10 days later to insure thorough work. The same general directions apply to peach, pear, plum, and quince, the curculio affecting the latter being controlled in the same way as the plum curculio. The last two are very sensitive to arsenic.

HOW THE SHADE TREES SUFFER

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Elm	Skeletonized leaves	Spring and summer	Dark, yellowish grub	Elm leaf beetle	Arsenate of lead	Put poison on under side of leaves.
Elm	Branches stripped	Spring and summer	Black, spiny caterpillar	Spiny elm caterpillar	Cut off and crush clusters	Spray with poison; feeds on willow and poplar.
Elm	Honey dew and sooty leaves	Early summer	Whitish bark louse	Elm bark louse	Kerosene emulsion	Use stiff spray from hydrant if available.
Elm and other trees	Tips of branches white-webbed	Summer	Hairy caterpillars	Fall webworm	Cut and burn nests	Spray infested limbs with poison.
Elm and other trees	Leaves eaten	Spring and summer	Caterpillars in cases	Bagworm	Poison	Collect and burn bags in winter.
Elm and other trees	Trees defoliated	Late spring	Hairy caterpillars	Gipsy moth	Arsenate of lead	Apply poison early; creosote eggs.
Horsechestnut	Leaves eaten	Early summer	Tufted caterpillars	White marked tussock moth	Spray with poisons	Collect and burn white egg masses.
Elm, Maple, Horsechestnut	Leaves mostly brown, dry	Summer	Plant disease	Leaf blight	Bordeaux	Repeated applications after leaves are half grown.
Hickory	Inner bark badly tunneled	All seasons	Small beetles	Hickory bark borer	Poison foliage in May	Cut and burn badly infested wood before May 1st.
Maple	Oval galleries in trunk near surface	Spring and fall	Large, white grub	Sugar maple borer	Cut out borers	Protect wounds with paint or tar.
Maple	Leaves eaten	Spring and summer	Caterpillars	Forest tent caterpillar and others	Poison	Spray at inception of attack.
Maple	Leaves sticky, black	Summer	Aphids	Plant-lice, several species	Kerosene emulsion or soap	Spray before leaves are badly curled.
Maple	Brown scale on limbs	Summer	Bark louse	Black-banded scale	Kerosene emulsion or soap	Apply to crawling young in mid-summer.
Maple	Cottony masses on limbs or leaves	Summer	Bark louse	Cottony maple scale, etc.	Kerosene emulsion or soap	Spray crawling young with 10 to 12% kerosene.
Maple and Oak	Cut limbs dropping	September	White grub	Oak twig pruner	Collect and burn limbs	Occasionally quite injurious.
Maple and other trees	Limbs bored, broken	All seasons	White caterpillars	Leopard moth	Cut out borers	This pest attacks a large variety of trees.
Poplar	Young trees and branches bored	Spring and fall	White grubs	Mottled poplar borer	Cut out and destroy borers	Apply Paris green, kerosene, and lime wash to trunks.
Sycamore	Leaves brown and drop	Spring	Fungus	Leaf blight	Bordeaux	Repeated applications; practical only for small trees.

FOR THE VEGETABLE GARDEN

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Asparagus	Shoots eaten	Spring and summer	Beetle and grub	Asparagus beetle	Poison grubs	Cut beds close, apply arsenate of lead to young plants.
Asparagus	Shoots rusted	Summer	Rust	Asparagus rust	Bordeaux in July and August	Set clean plants on uninfested land.
Bean	Leaves eaten	Summer	Grub	Bean beetle	Poison or kerosene emulsion	Use arsenate of lead; or the emulsion 1 to 8.
Bean	Stored beans wormy	All seasons	Black weevil	Bean weevil	Carbon bisulphide	Fumigate 24 hours in a tight vessel.
Bean	Leaves and pods spotted	Summer	Plant disease	Anthracnose	Bordeaux	Keep foliage covered with first appearance of disease.
Beet	Leaves spotted	Summer	Plant disease	Leaf spot	Bordeaux	When 4 or 5 leaves have opened, then 3 times at 10 day intervals.
Cabbage	Leaves lousy	Summer	Plant-lice	Cabbage aphid	Kerosene emulsion or whale oil soap	Spray when pests are numerous, repeating if necessary.
Cabbage	Holes eaten in leaves	Summer	Green caterpillars	Cabbage worm	Poison or hellebore	Hellebore is preferable after plants have headed.
Cabbage	Stems eaten off	Spring	Naked caterpillars	Cutworms	Band stems with paper	Use poisoned bait.
Cabbage	Wilting leaves	Summer	Red and black bug	Harlequin cabbage bug	Hand picking	Sow mustard early and kill bugs thereon with kerosene.
Cabbage	Roots destroyed	Early summer	White maggot	Cabbage maggot	Paper collars or dilute carbolic acid	Expose base of roots to drying sun for some hours.
Cabbage	Irregular, black spots on leaves	Summer	Bacterial disease	Black rot	Grow in clean soil	Avoid infected soil if possible.
Celery	Yellowish spotted leaves	Summer	Fungus	Celery blight	Bordeaux	Grow in moist soil or in shady, dry situations.
Cucumber	Gnawed leaves	Summer	Black and yellow beetle	Striped cucumber beetle	Poisoned Bordeaux	Dust foliage with land plaster or ashes.
Cucumber	Mildewed leaves	Summer	Fungus	Downy mildew	Bordeaux	Apply every 10 days.
Onion	Wilting tops	Summer	White maggot	Onion maggot	Carbolic soap wash	Expose base of roots to drying sun for several hours.
Potato	Leaves eaten	Spring and summer	Beetles and grubs	Potato beetle	Poison or hand picking	Arsenate of lead is most effective.
Potato	Wilting stalks	Summer	Brown caterpillar	Stalk borer	Destroy infested stems	Rarely very injurious.
Potato	Black leaves	Summer	Plant disease	Potato blight	Bordeaux	Spray early and at 3-week intervals.
Potato	Scabby potatoes	Fall	Plant disease	Potato scab	Corrosive sublimate solution	Use 1 1/2 oz. to 8 gals. water; plant in uninfested soil.

FOR THE VEGETABLE GARDEN — *Continued*

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Squash	Wilting runners	Summer	Boring caterpillar	Squash borer	Slit stem and kill borer	Plant early trap vines.
Squash	Wilting leaves	Summer	Black bug	Squash bug	Hand picking	Trap under shingles.
Sweet potato	Leaves eaten	Summer	Small beetle	Flea and tortoise beetles	Arsenate of lead	Dip young plants in poison before setting.
Tomato	Yellow-specked leaves	Summer	Small beetle	Cucumber flea beetle	Poisoned Bordeaux	Feeds on a variety of plants.
Tomato	Leaves devoured	Summer	Large, green caterpillar	Tomato worm	Hand picking or poison	The latter is rarely necessary in the North.

INSECTS AND DISEASES OF THE FLOWER GARDEN

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Aster	Flower petals eaten	Late summer	Black beetle	Black blister beetle	Collect in water and kerosene	Do this twice a day for two or three days if necessary.
Aster	Spotted leaves	Summer	Fungus	Leaf rust	Apply a clear fungicide	Spray under side of leaves.
Carnation	Brown spotted leaves	Summer	Plant disease	Anthraxnose	Bordeaux	Keep blooming plants covered with ammoniacal copper carb.
Carnation	Rusty leaves	Summer	Plant disease	Carnation rust	Destroy infected plants	Spray with copper sulphate, 2 lbs. to 45 gals., or potassium sulphide.
Chrysanthemum	Spotted leaves	Summer	Fungus	Leaf spot	Ammoniacal copper carbonate	Apply at 10 to 14 day intervals.
House plants, various	Oval, brown spots on leaves	Summer	Brown scale insect	House lecanium	Ivory soap	Repeated washings, use 5c cake to 8 gals. water.
House plants, various	Green lice on leaves	Summer	Plant-lice	Aphids	Ivory soap	Use as directed above.
Violet	Leaves curled, sickly	Fall	Yellowish maggots	Violet gall midge	Hydrocyanic acid gas	Keep house cool, fumigate on dark nights only.
Violet	Grayish spots on leaves	Summer	Fungus	Violet rust or spot	Bordeaux	Keep house cool, water carefully.

HOW TO KNOW WHAT REMEDY TO USE

INSECTICIDES and fungicides are primarily to *prevent* injury. This is especially true of fungicides.

Thoroughness is more than half the battle, and in applying poisons aim to cover all parts of the plant liable to attack, and when using contact insecticides hit as many insects as possible. It is necessary to know whether a pest devours or chews its food; for if it does not, contact insecticides or other means must be employed.

Biting or chewing insects devour or eat away portions of a plant, and the poison, in order to be effective, should be applied where it *must* be eaten, or the insect go hungry. This, if thoroughly done on the appearance of a pest, should give most excellent results, since young caterpillars usually succumb to poisons much more quickly than older ones.

Sucking insects, as a rule, produce a wilting or discoloration of small areas and sometimes considerable curling of the leaves; for example, certain plant lice. Such attacks should be checked at their inception by the use of contact insecticides. Some plant lice are so well protected by a woolly secretion that it is exceedingly difficult to hit them with a spray.

Certain scale insects are very resistant to treatment and, as a rule, sprays for the destruction of these latter must either be used very strong (in winter) while plants are leafless and therefore not subject to harm; or the application may be more dilute

and applied at the time the young scale insects are crawling actively and before the woolly secretion appears, mats down, and forms a protective covering or scale.

Leaf miners and borers in fruit, stems and roots, feed within the plant tissues and ordinarily cannot be controlled by poisonous or other applications. There is usually some time in the life history of these pests when they are more easily attacked, and knowledge of this often renders it possible to keep them within bounds. *Underground feeding* kinds, though hidden from view, may sometimes be reached with a contact insecticide.

I. INSECTICIDES

Paris green and *London purple* are two of the oldest and most widely used insecticides. They and other poisons must be put where they must be eaten if the plant is attacked by insects, and on nothing soon to be used for human food. Paris green may be employed at the rate of one pound, with an equal amount of recently slaked lime, to 100 gallons of water. London purple may be used in the same way. Repeated applications of either of these poisons will injure most foliage unless lime is employed. Both Paris green and London purple can be added to Bordeaux mixture and used with safety. This preparation is a combined insecticide and fungicide.

Arsenate of lead is more expensive than the better-known Paris green, and while it operates more slowly, it is exceedingly

valuable because it can be applied in large amounts without injuring delicate foliage, and also on account of its adhering to the leaves for a long time. This poison has been placed on the market in convenient packages under various trade names. It may be prepared for use by dissolving 11 ounces of acetate of lead (sugar of lead) in four quarts of water in a wooden pail, and 4 ounces of arsenite of soda (50 per cent. purity) in two quarts of water in another wooden pail. As sugar of lead dissolves rather slowly in cold water, the process can be hastened by using warm water. Pour the solutions into 25 to 150 gallons of water, and the insecticide is ready for use.

Poisoned bait can frequently be employed to good advantage in destroying such pests as cutworms, army worms, and grasshoppers. It is prepared by dipping fresh clover or other attractive leaves in poisoned water and distributing in infested localities. Some have used 20 pounds of dry middlings and 1 pound of Paris green well mixed, with excellent success. A mash composed of 1 pound of Paris green, 50 pounds of bran, and sweetened with cheap sugar or molasses, has been found very attractive to grasshoppers. These poisoned baits should not be placed where domestic animals, such as rabbits and chickens, can gain access thereto.

CONTACT INSECTICIDES

Contact insecticides are employed almost exclusively against sucking insects; that is,

those forms which draw their nourishment from the underlying plant tissues and are, therefore, not injured by inert poisons lying on the leaf surface.

Kerosene emulsion is one of the most widely employed of these. It may be prepared by dissolving one-half pound of hard soap in a gallon of boiling water and adding thereto 2 gallons of kerosene. Mix vigorously by passing it through a spray pump for five to ten minutes. This preparation may be diluted four to twenty-five times before applying. Better results can probably be obtained in sections where lime or hard water occurs, by using 1 gallon of sour milk in place of the soap. A very satisfactory emulsion is made by taking 1 part of this stock mixture to 9 of water. The strong emulsion is employed mostly for scale insects, while the weaker dilutions may be used against such insects as plant lice, cabbage worms, currant worms, and other forms having soft bodies. Some very good oil emulsions, in a form ready for use, have been placed on the market under various trade names.

Whale oil soap solution can be employed in much the same manner as kerosene emulsion. The maximum strength for summer use on foliage is one pound to 4 gallons of water. An extremely satisfactory dilution for many of the more common pests is 1 pound to 6 or 7 gallons of water.

Ivory soap used at the rate of a five-cent cake to 8 gallons of water is a very convenient solution and has been employed with great success in controlling scale insects, plant lice, etc., on house plants.

White hellebore (fresh) used at the rate of 1 ounce to 3 gallons of water is a valuable internal poison as well as an efficient contact insecticide. It may, therefore, be employed against both classes of insects, and is frequently used where the application of an arsenical poison is inadvisable.

Pyrethrum or insect powder (fresh) may be used at the rate of 1 ounce to 3 gallons of water. It may be applied dry, diluted with flour, and should then be mixed several hours before it is used. It is a contact insecticide only.

Tobacco dust and tobacco water are other valuable insecticides. The dry dust has been used most successfully in destroying the woolly aphid infesting the roots of apple trees. Tobacco water may be prepared by steeping tobacco stems in hot water for several hours and diluting the liquid from three to five times. One pound of the stems should produce 2 gallons of excellent tobacco water.

Lime-sulphur wash is one of the cheapest and most effective insecticides as well as an exceedingly valuable fungicide. It may be prepared by putting a few pails of water in an iron kettle over a fire, bringing the same nearly to a boil and adding 20 pounds of lime, followed at once by 15 pounds of fine sulphur flour or ground brimstone. The lime will cause a violent boiling. The mixture should be stirred thoroughly and kept stirred to prevent the material from caking on the bottom of the kettle. This

active boiling should be continued at least thirty minutes or until we have a deep brick-red color in the clear liquid. Strain this mixture through a fine wire sieve, dilute to 50 gallons, and apply at once, but only to dormant trees.

An improved lime-sulphur wash has been recently brought to attention by Professor Cordley. It is prepared by slaking 60 pounds of lime in a cooking vessel and stirring in 125 pounds of sulphur previously made into a paste. Then add enough water to make about 45 gallons and boil rapidly for one or two hours. The mixture is allowed to stand, and only the clear brownish liquid drawn off. This latter is diluted to 50 gallons. It may be kept an indefinite period and when used should be diluted at the rate of 1 gallon to 9 of water, and adding thereto 1 to 1½ pounds of lime.

There are now on the market some excellent commercial lime-sulphur washes which only require dilution to be ready for application. This material is particularly serviceable in controlling certain scale insects, pear psylla, and some fungous diseases. It is a specific for peach-leaf curl.

Hydrocyanic acid gas fumigation is extensively employed in the South and West for the control of scale insects and white fly on citrus trees. This work can be safely done only by experienced men possessing a somewhat expensive outfit. The amateur is advised to be extremely careful in undertaking any such operations.

Soft soap wash is an excellent protective against borers. It is made by thinning 1 gallon of soft soap with an equal amount of hot water, then stirring in 1 pint of crude carbolic acid or ½ pint of the refined article; allow it to set over night, then add 8 gallons of water. This is applied to portions of trees liable to attack by borers, for the purpose of preventing the parent insects from depositing eggs.

II. FUNGICIDES

These are employed in all cases for the purpose of keeping out disease spores. Do not spray fruit trees and berry plants while in bloom. The concentrated lime-sulphur wash mentioned above is a valuable fungicide, and there are indications that we may soon have a dilute lime-sulphur wash which can be employed with safety on more hardy foliage at least.

The standard fungicide at the present time is the *Bordeaux mixture*, which may be prepared by putting 6 pounds of copper sulphate in a bag of coarse cloth and hanging this in an earthen or wooden vessel containing 4 to 6 gallons of water. Then slake 4 pounds of quicklime and add thereto 25 gallons of water. After the copper sulphate is dissolved, dilute with 25 gallons of water and mix the two by pouring the solutions together in a third vessel; stir and keep stirred while spraying. For peaches and Japanese plums the amount of copper sulphate should be reduced to 4 pounds, and some growers have used but 2 pounds each of blue vitriol and lime to

50 gallons of water with excellent results. The weaker solutions should be employed wherever the normal proves too strong. A plain solution of copper sulphate, 1 pound in 15 to 25 gallons of water, may be employed before the buds break, the weaker solution being used on peach and nectarine. Ready-to-use Bordeaux can be had in cans.

Ammoniacal copper carbonate may be prepared by making a paste of 5 ounces of copper carbonate with a little water and dilute 3 pints of ammonia (26 degrees Beaumé) with 7 or 8 volumes of water. Add the paste to the diluted ammonia and stir till dissolved. Then add enough water to make 45 gallons. Allow the mixture to settle and use only the clear blue liquid. This preparation loses strength on standing. It may be used instead of Bordeaux mixture in late spraying and thus avoid the risk of injuring the appearance of the fruit.

Potassium sulphide (liver of sulphur) is used at the rate of ½ to 1 ounce to a gallon of water. This preparation loses its strength on standing and should, therefore, be used immediately. It is particularly valuable for surface mildews.

Iron sulphate, a saturated solution, with one part of commercial sulphuric acid to every 100 parts of water, is valuable for grape anthracnose, the dormant vines being treated by means of sponges or brushes. This solution should be prepared just before using.

Formalin. One pound (1 pint) to 30 gallons of water is frequently used for the prevention of potato scab. Soak the seed in this solution for about two hours before planting.

Hints for this Month

SPRAY fruit trees and berry bushes before the buds swell with a combination of Bordeaux mixture and an arsenate. Be prepared to spray every day in the year. Spray roses with whale oil soap before the leaves start.

Visit currant bushes every day and use hellebore at the first sign of currant worms.

Spray roses with potassium sulphide.

About May 20th give roses a second dose of whale oil soap.

Before the new hollyhock leaves unfold spray them with ammoniacal carbonate of copper (not unsightly, like Bordeaux), and keep them covered the whole season.

Get a small boy to bring you a string of toads' eggs in a pail of water, and then watch them develop. One toad will kill insects which it would cost you \$20 to destroy by ordinary methods. Toads do not cause warts.

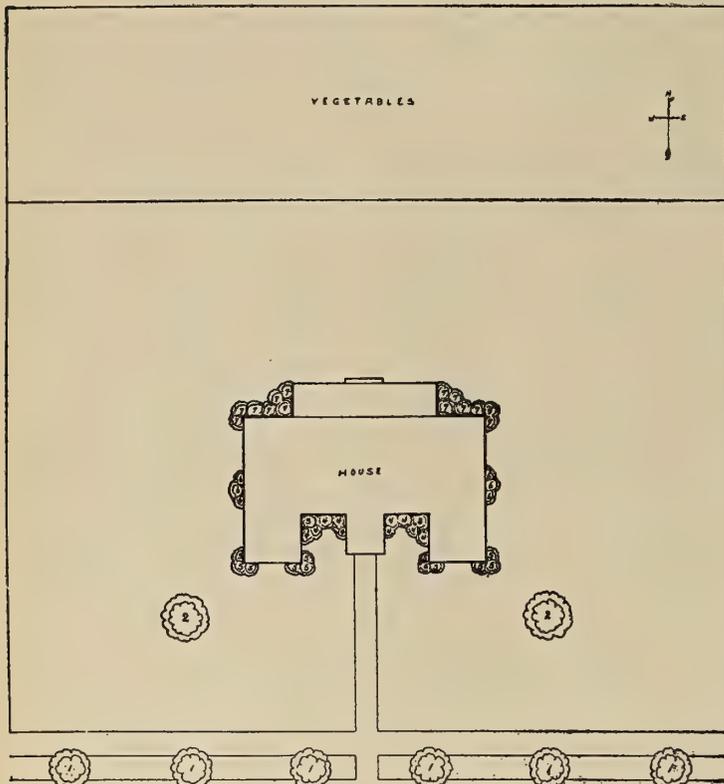
Cutworms begin to work. Plants will collapse suddenly from being cut off at the surface of the ground. Dig up the grubs, or buy "cabbage collars" to protect the plants against cutworms.

Just as the petals fall from fruit trees and berry bushes, spray again. Never spray fruit trees while they are in bloom or you will kill the bees and have less fruit.

Four Plans for a 150x150 Ft. Lot—By F. C. Leible, ^{New York}

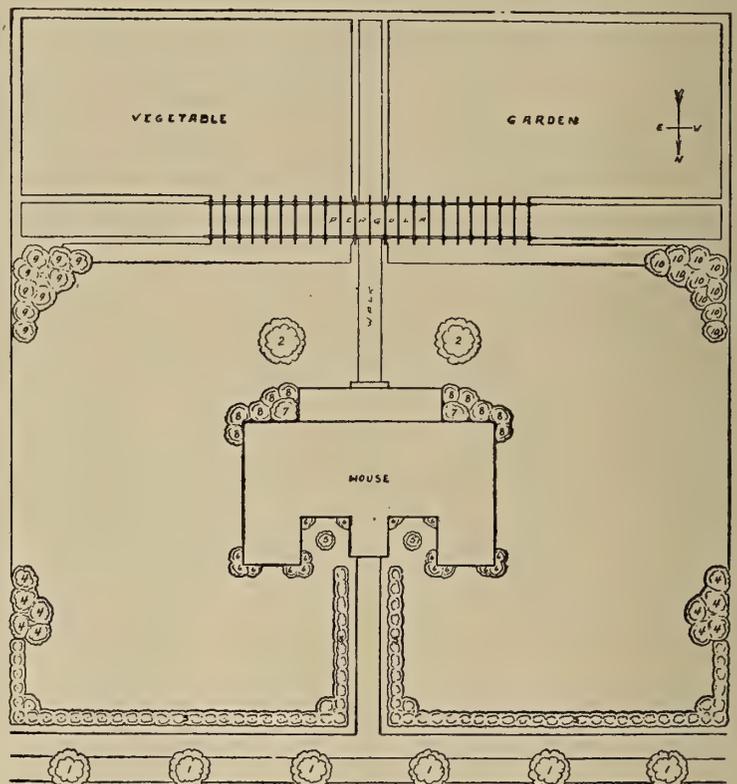
ELEVENTH AND LAST ARTICLE IN THE SERIES ON THE "CHEAPEST GARDENS FOR THE SMALLEST LOTS," EACH OF WHICH GIVES FOUR SOLUTIONS COSTING \$25, \$50, \$75, AND \$100, RESPECTIVELY

[EDITOR'S NOTE.—The first article in this series, which gave ten complete planting plans for city lots 25 x 100 ft. and 50 x 100 ft., appeared in THE GARDEN MAGAZINE for February, 1907. Plans for a lot 25 x 30 ft. appeared in May, 1907; 50 x 100 ft. in July, 1907; 75 x 100 ft. in September, 1907; 100 x 100 ft. in November, 1907; 50 x 125 ft. in February, 1908; 75 x 125 ft. in May, 1908; 50 x 150 ft. in July, 1908; 75 x 150 ft. in November, 1908; 100 x 150 ft. in February, 1909. These plans are designed with a view to helping the suburbanite who wishes to get the best and quickest results definite in plants for the money expended. They are not to be regarded as construction plans for the development of a piece of property.



1, Six European linden (*Tilia Europæa*); 2, two American elm (*Ulmus Americana*); 3, two deutzia (*Deutzia Lemoinei*); 4, ten blue spirea (*Caryopteris mastacanthus*); 5, twelve Japanese barberry (*Berberis Thunbergii*); 6, six Water's spirea (*Spiræa Brumalda*, var. *A. Waterer*); 7, fourteen coral berry (*Symphoricarpos racemosus*).

The matter of \$25 is a totally inadequate expenditure for a plot of this size



1, Six American ash (*Fraxinus Americana*); 2, two American elm (*Ulmus Americana*); 3, eighty Japanese barberry (*Berberis Thunbergii*); 4, ten hardy hydrangea (*Hydrangea paniculata*, var. *grandiflora*); 5, two Japanese holly (*Ilex crenata*); 6, sixteen leucothoe (*Leucothoe Catesbaei*); 7, two bridal wreath (*Spiræa prunifolia*); 8, ten Regel's privet (*Ligustrum Iwota*, var. *Regelianum*); 9, ten golden bell (*Forsythia suspensa*); 10, ten weigela (*Dierilla florida*).

Privacy can be secured for as little as \$50

THE ideal lot for a suburban home in which not more than six to ten thousand dollars can be invested is about 150 feet square. This gives room enough for a vegetable garden that will supply the family's wants the year round. It is also large enough for a stable or garage, in which case a part of the garden would have to be sacrificed. This is the largest-sized lot for which I have made plans in this series of articles, but it could be taken care of by the family, provided two members are willing to devote an average of one hour a day to the care of it. Otherwise, it would be necessary to spend from twenty-five to one hundred dollars a year for outside help in spring, or through the year.

I. THE CHEAPEST SOLUTION, \$25

The first plan can hardly be called a solution, because it provides only for the street trees, the trees that stand nearest the house, and the shrubbery surrounding the house, leaving the rest of the lot bare. But people never realize that gardening is an expensive business, and the right way to make the

house attractive and still keep within one's income is to reserve 5 per cent. of the total amount to be spent on house and lot for the grading and decoration of the grounds.

II. A "PRIVACY" SOLUTION FOR \$50

It is impossible to have an attractive front yard with flowers in it if dogs and children are allowed to run across it, and the only way to keep them out is to have a fence, or hedge, with a gate in it. This idea prevails everywhere in England and on the Continent, and it is possible that we may come to it in America.

The only merit of plan No. 2 is that it shows the best method of getting privacy, which is hedging the front of the yard with Japanese barberry. While this costs more than privet, it is cheaper to maintain because there is no expense for trimming, while privet has to be trimmed three times a year. Moreover the Japanese barberry always has a perfect base, while privet, as commonly planted, usually allows animals to get under or through the hedge.

We are living in the midst of a pergola

craze. A pergola or arbor is a good thing because it furnishes a pleasant, shaded walk, but it ought to lead from somewhere to somewhere, and it would be better in this case to have it lead from the house to the garden, with a summer-house at the end of the walk.

Thousands of places in this country costing ten thousand dollars or more are about as poorly furnished as this. If ten thousand dollars is to be spent on a property, five hundred dollars should be spent on outdoor features. Plan No. 2 shows how little fifty dollars will accomplish, as it does not include the cost of the pergola.

III. A BOX-EDGED GARDEN FOR \$75

Plan No. 3 shows the manner in which a place of this size ought to be furnished—namely, with an irregular border of shrubbery extending along both sides of the lot, across the back, so as to form a screen for the kitchen garden, and everywhere massed at corners.

But it is impossible for seventy-five dollars to plant as perfect a shrubbery as

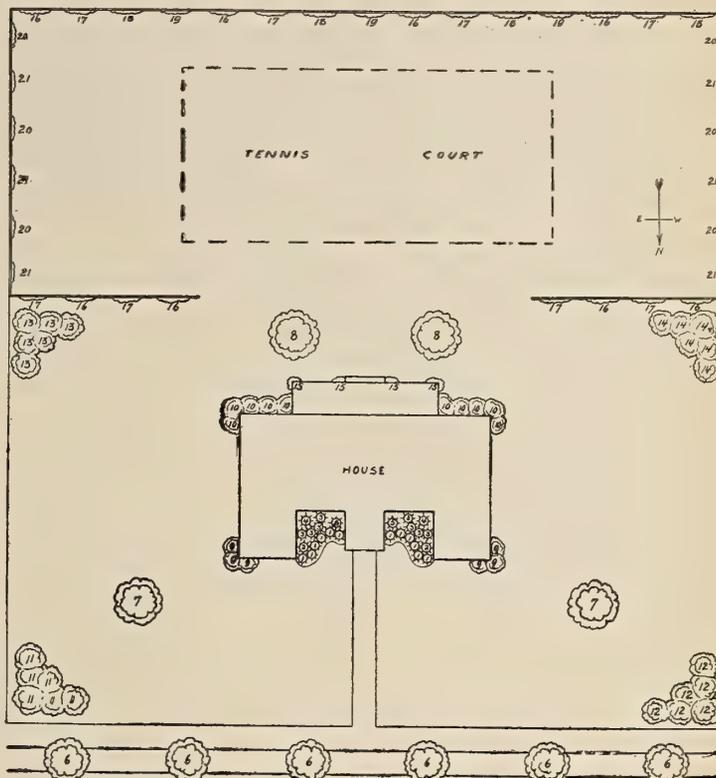
is here indicated. The figures indicate what can be done during the first year, and the cost of the box for edging the garden is also included. An arbor is indicated as the natural terminus of the walk leading from the house to the garden, but the cost of the arbor and perennials is not included. I think this is about the cheapest kind of formal garden that anyone can have. It has the merit of simplicity in design, and would not be costly or laborious to maintain.

High shrubs could be massed near it in such a way as to conceal it from view of the street, so that one could have the privacy and charm of the old-fashioned Colonial garden. It would only cost about twenty-five to fifty dollars more to furnish the rest of the shrubbery needed. If this cannot be afforded the first year, it would be better to concentrate on the portion which is indicated by figures.

IV. A TENNIS LOVER'S SOLUTION FOR \$100

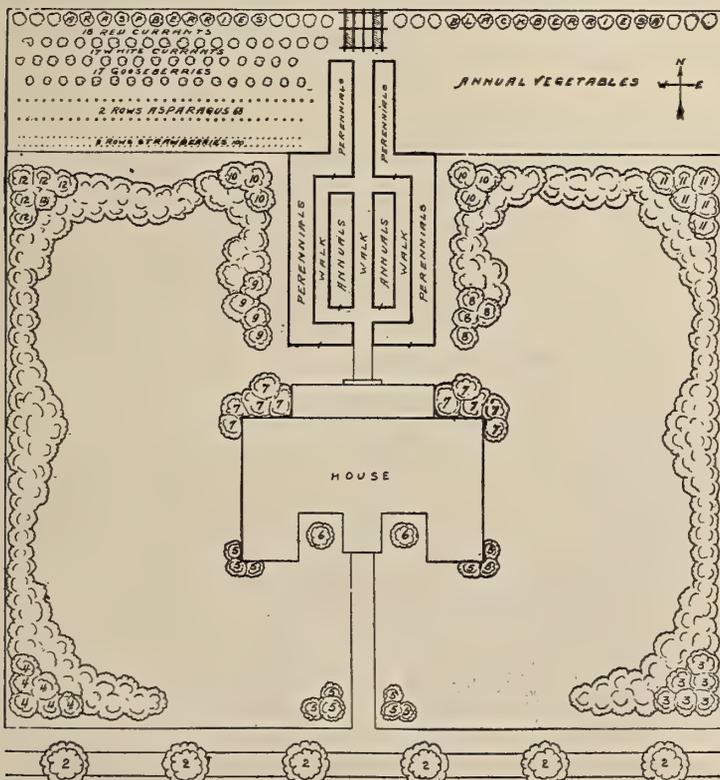
Many people are more interested in athletics or sport than gardening, and wish to have the gardening features of the most permanent character, so that they will require the least expense for maintenance. Plan No. 4 is particularly designed for such a family. The 150 x 150 ft. lot is about the smallest that is practical for a tennis court. The back-stop of a tennis court is usually a thing of ugliness, but it can be easily made a thing of beauty by planting it with vines. The vines for this back-stop have been carefully selected so as to give a succession of flowers from June until frost. Once a year it will be necessary to prune these vines so as to get them to spread evenly over the back-stop and distribute their flowers prettily everywhere instead of having a top-heavy mass of foliage high in the air and no flowers or foliage at the base.

The ideal material for planting near the house is broad-leaved evergreens, such as box, rhododendrons, and mountain laurel; but as these plants are costly I have substituted two beds of conifers or narrow-leaved evergreens for the beds in front of the house so that there will be a pleasant prospect from the front windows the year round. From the point of view of the passer-by an evergreen bed is much more attractive than vacant flower beds.



- 1, Fourteen dwarf juniper (*Juniperus Chinensis*, var. *procumbens*); 2, two Irish yew (*Taxus baccata*, var. *fastigiata*); 3, eight tamarisk-leaved juniper (*Juniperus Sabina*, var. *tamariscifolia*); 4, two Japanese cypress (*Retinispora obtusa*, var. *compacta*); 5, two heath-like Japanese cypress (*Retinispora ericoides*); 6, six sugar maple (*Acer saccharum*); 7, two American linden (*Tilia Americana*); 8, two American elm (*Ulmus Americana*); 9, six Japanese barberry (*Berberis Thunbergii*); 10, ten weigela (*Diervilla hybrida*, var. *Eva Rathke*); 11, six red oster dogwood (*Cornus sanguinea*); 12, six golden bell (*Forsythia suspensa*); 13, six white fringe (*Chionanthus Virginica*); 14, six Persian lilac (*Syringa Persica*); 15, four Chinese wistaria (*Wistaria Chinensis*); 16, eight Crimson Rambler (*Rosa multiflora*, var. *Crimson Rambler*); 17, eight Farquhar roses (*Rosa multiflora*, var. *Farquhar*); 18, four Baltimore Belle (*Rosa setigera*, var.); 19, three Philadelphia Rambler (*Rosa multiflora*, var. *Philadelphia Rambler*); 20, six Japanese virgin's bower (*Clematis paniculata*); 21, six virgin's bower (*Clematis Virginiana*).

A permanent, effective garden for use and one easily maintained



- 1, Eight hundred dwarf boxwood (*Buxus sempervirens*, var. *suffruticosa*); 2, six American linden (*Tilia Americana*); 3, six Siberian dogwood (*Cornus alba*); 4, six mock orange (*Philadelphus grandiflorus*); 5, twelve Japanese barberry (*Berberis Thunbergii*); 6, two white fringe (*Chionanthus Virginica*); 7, ten Regel's privet (*Ligustrum Iboia*, var. *Regelianum*); 8, four oleaster (*Elaeagnus argentea*); 9, four hardy hydrangea (*Hydrangea paniculata*, var. *grandiflora*); 10, six golden bell (*Forsythia suspensa*, var. *Fortunei*); 11, six storax (*Stryax Japonica*); 12, six privet (*Ligustrum Iboia*).

Expend \$75 and begin the making of a really good garden

In concluding this series of ready-made plans for home grounds of small dimensions, I wish to say that ready-made plans can never be satisfactory. People, however, are always demanding them, and I have yielded to this demand in order to show the principles of landscape gardening and how they can be applied to the smallest space even in our largest cities. The larger the city, and the smaller the space, the harder the problem, and the more a person should be willing to pay for a satisfactory solution.

There are two comparatively new ideas for making back yards attractive in extremely large cities — one is to use broad-leaved evergreens, especially rhododendrons, mountain laurel, box, and American holly. While such material is very costly, it is the most valuable of all, for it is not only attractive the year round, but often has the charm of flower and fruit in addition.

Conifers, such as pine, hemlock, spruce, etc., seem to be far more sensitive to smoke than broad-leaved evergreens, but the latter must be frequently sprinkled somehow as the dust will choke the breathing pores of the plants and hide their beauty. In a small lot it is possible to accomplish this in a few minutes every day by the use of a hose.

Another solution for big cities is to use vines, of which the most important are ivy and the climbing euonymus, since these are the only two evergreen vines that are hardy. The climbing euonymus is considerably hardier and eventually becomes covered with red berries which last all winter. Vines require less space than flowers and less care.

Bear this point in mind: Everybody who plants a place for the first time is tempted to send his planting list to half a dozen nurserymen and give his order to the lowest bidder. This is false economy, because the bushes that you get in such a way will have fewer stems (even if they are of the same height) and your place may look bare a year or two longer than is necessary.

Evergreens For Present Planting—By John W. Duncan, Massachusetts

ENSURE SUCCESS BY OBSERVING A FEW SIMPLE PRECAUTIONS BEFORE THE PLANTS ARE PUT INTO THE GROUND —THE CAUSES OF FAILURE, AND HOW THEY MAY BE AVOIDED—WHAT TO PLANT FOR SPECIAL EFFECTS

PLANT evergreens before the end of May, following upon the season of planting the deciduous trees. The secret of successful moving of evergreens is to do the work just as they are beginning a period of active growth. This occurs twice in the year—once now, before the summer opens, and again at the close of summer, before the fall. The latter season offers advantages for the moving of evergreens that cannot be attended to at the present season; but the greatest number of people have the greatest success when the work is done during May.

There are plenty of good reasons why we should all plant at least some evergreens. First of all, because they give light and color to the garden during winter; secondly, they act as windbreaks and shelters from storm and wind, and in this way may be made to add materially to the comfort of the home in otherwise exposed situations.

Then in the summer time their quiet, deep tones, seem to give an impression of coolness that makes them welcome among the more brightly colored deciduous and flowering trees.

No need to urge the planting of evergreens on large grounds—one does it almost by nature; but if the grounds are small, there may be some hesitancy. What a pity! For even the ordinary yard of the suburban house lot will accommodate some, and the number of suitable species is quite extensive. There is considerable variety in color, and a fair variety of form, although all are of a generally conical habit. The planter may suit his or her own preferences, paying only little heed to the surrounding materials—they will harmonize, surely.

The tall-growing species include spruces, pines, and firs, and plants of these must not be set very close together, unless they

are to be thinned out later. The best size to plant is from two to three feet high. Larger specimens will do well if properly cared for, but the smaller size is the most suitable for the amateur; and a larger size of pine should not be planted under any circumstances if a quick and vigorous growth is wanted.

PLANTING PRECAUTIONS

Conifers are not really fastidious as to soil. They prefer a light, sandy soil, but they will do well in any well-drained soil that is not too clayey. The preparation of the hole should receive more attention than it generally does—in fact, this is the keynote to success. There is little danger of having the hole too large. Make it at least twice as wide as the spread of the roots. Dig to a depth of two or two and a half feet, and if the soil there is not good, replace it with good loam, and you will be glad in after years.

When ready to plant, place the loose loam in the bottom of the hole, treading it firmly, and raising it so that it will be higher in the centre, and just the proper height to have the roots of the tree not too deep. This will depend on the quantity of roots the tree has, and as a safe guide in planting, observe the mark where the soil before touched the stem, and arrange things so that the mark will be just under the surface of the ground when the tree is replanted.

Never let the ground slope away from the tree when the planting is finished, but quite the contrary; make the slope toward the tree, thus forming a basin near the base to catch the rain and conduct moisture to the roots.

Before planting see that all the roots which may have been broken or mutilated are carefully pruned off; simply a clean cut with a sharp knife is sufficient.

In placing the tree in the hole, put the roots on the high place in the centre or little mound of earth already spoken of, and while holding the tree with one hand, carefully spread out all the roots with the other so that they will not overlap, but each be as free as possible to take hold and make a growth in the new location.

When filling in the hole, see that only fine loam is nearest the roots, and as it is being thrown in, tamp it firmly over and in between the roots with a round piece of wood about the size of a pickax handle. When the hole is about half filled with earth it may be filled up with water, then allowed to stand for some time, till the water soaks thoroughly away, when the completion of filling with earth may be accomplished.

The tree, having been set, must be given direct care during its first season. Here is where so many failures rest! Give regular and copious waterings, and during the hot, dry weather of the coming summer see that a mulch of litter or coarse manure is kept around the tree—it will prove of the greatest benefit.

Never allow the roots to be exposed to the air to cause death from drying up. It is easy to kill the fine fibrous roots by drying, and it is these roots that the life of the tree depends upon. It is wisdom to make all ready for planting before the roots of the tree are uncovered, or even before the tree is received.

And remember these little facts: Do not select a tree of too large a size; a small tree will take hold better and grow more quickly than a large one. In making the soil firm among the roots, do not be afraid to tamp thoroughly. Water thoroughly when planting, and never plant an evergreen tree when the soil is damp and sticky. Plant the tree at the best time for the work, just when the buds are about to start into



Such highly colored kinds as the blue spruce are best used as accents



Small evergreens massed into beds are effective all the year round



The white pine gains character as it ages. One of our very best conifers

new growth. The best season is between the middle of April and the end of May, according to the location and conditions of the season. Always secure evergreen trees from some reliable nurseryman who will dig carefully and immediately wrap the roots in burlap to prevent drying, and if it is at all possible, make a personal selection of the stock by visiting the nursery.

Do not neglect the tree after it has been planted, but give it plenteous waterings, though not enough to make the ground soggy, and put a mulch over the roots in dry weather.

Some of the best coniferous evergreens for the home grounds are briefly described below, and from the facts given the reader can select the ones that seem to suit his special requirements. Always buy plants with a definite idea of their qualities, and do not mix up all kinds in a haphazard way.

SPRUCES

Alcock's spruce (*Picea Alcockiana*) makes a beautiful pyramidal tree with dark green foliage which is glaucous beneath.

Engelmann's (*P. Engelmanni*) is similar to the Colorado blue spruce in color, but less brilliant, and softer in appearance, the needles being shorter and more flexible.

Oriental (*P. orientalis*) forms a pyramidal tree of a much finer appearance than the Norway or

common spruce, and has foliage of a richer, darker appearance. Makes a beautiful lawn specimen when old enough to bear cones. Slow-growing.

Blue spruce (*P. pungens*, var. *glauca*), of a beautiful steel blue, is perhaps the best known of any of the finer spruces, and is undoubtedly the best high-colored coniferous evergreen. Plants are, however, expensive and comparatively short-lived, and are generally too stiff for refined taste. They should not be planted, as they generally are, as the only evergreen on the lawn.

Hemlock (*Tsuga Canadensis*) is one of the most graceful and ornamental of all evergreen trees, and although a little tender when bleak winds take effect, resembles in general character the Norway spruce, but has lighter color. The southern variety (*Tsuga Carolina*) is a very distinct and pleasing variety, forming a beautiful pyramidal tree.

PINES

White pine (*Pinus Strobus*). This is the most noble of all the evergreens, and is the most satisfactory for general planting. It is the tallest evergreen of Eastern America, attaining a height of 150 feet. The needles are longer and of a brighter green than most conifers.

Bhotan pine (*Pinus excelsa*) is in general appearance much like the white pine, but the leaves are longer, more silvery, and pendulous. This makes a splendid specimen tree.

Red pine (*Pinus resinosa*) somewhat resembles the Austrian pine, which is also a good variety to plant. It is well suited for garden use, as it stands cutting and trimming, and is one of the best plants for screens, hedges, and windbreaks.



The secret of successful planting of evergreens is to do it just as growth starts. Never let the roots dry out; unball only at the moment of planting



Nordmann's fir is especially valuable for lawn specimens; dense growing and bright colored

Swiss stone pine (*Pinus cembra*) is an interesting erect form which is good.

THE FIRS

White fir (*Abies concolor*). The choicest of all the firs. Rapid growing, very hardy, of conical habit, making a compact tree with little pruning. I do not know of any evergreen which makes a better lawn specimen.

Nordmann's fir (*Abies Nordmanniana*); very ornamental tree, with glossy, dark foliage. Of thicker growth and wider spread than most conifers.

Balsam (*Abies Fraseri*) is a beautiful tree, much better than the common balsam, and the Cephalonian fir is also a beautiful variety.

Douglas (*Pseudotsuga Douglasii*) is a tall, rapid-growing tree, with graceful branches and rich, dark-green foliage, having a faint blue sheen beneath.

Of the smaller growing evergreens there is a large list of varieties and they make the most beautiful effects if planted in beds or masses. Best of all are Japan cypress (*Retinispora*), arborvitæ (*Thuja*), and junipers and yews. Trees from eighteen inches to three feet will be found most satisfactory as specimens. The retinisporas are very feathery and graceful.

Tender Bulbs for Summer Flowers---By Richard Barton, ^{Connec-}_{ticut}

ROOTS THAT CAN BE PLANTED DURING THIS MONTH FOR FLOWERS AFTER THE HARDY ANNUALS HAVE DONE BLOOMING—HOW TO GET A SUCCESSION OF BLOOMS TILL FROST



Tuberous are the best started at once in pots

THERE are half a dozen tuberous plants upon which we have to depend for the greatest quantity of brilliant flowers in the summer and early fall, and which can be planted during the early days of summer. These roots are taken up in the winter and stored away from frost, and but for that little extra detail give more return for the labor and care of cultivation than any other flowering plants. They are really of the simplest cultivation;

if the soil is reasonably warm and not over-wet they will flower to a certainty. How to take up these roots in the fall and care for them through the winter is explained in detail in THE GARDEN MAGAZINE for November, 1908, page 175.

One of the most beautiful of the summer bedding plants is the tuberous begonia. It has so many excellences that it is no wonder that it has also a few drawbacks. Among its excellences are its gorgeous coloring and continuous blooming, but its chief drawback is that it does not thrive with the ease of a geranium, which can stand long spells of dry weather and exposure to a blazing sun, perhaps flowering all the better for it. This is precisely what the tuberous rooted begonia will not do; its foliage will be burnt, its flowers shrivel and drop off, and the general effect will be that, instead of a delight, the begonia bed will be a failure.

If one has a greenhouse, begonias can be started into growth as early as March, by placing the tubers in shallow boxes upon a layer of moist sphagnum moss. They can be placed moderately close together, but so that they do not touch each other, and enough moss can be added to just cover the tops of the tubers. Coconut fibre refuse is a good substitute for the moss, but leaf mould, or even sand, will do instead; only more care is needed with the watering. The boxes, when filled, should be placed in a temperature of about 55 degrees, and the moss or other material kept always moist, but not wet, as too much water will be likely to rot the tubers.

In from two to three weeks the tubers will be ready for potting. A rich compost, consisting of two parts sandy loam and one part thoroughly decayed manure

is best. Overpotting is not desirable; for two years' old tubers pots four inches in diameter will be large enough, and care should also be taken not to pot the tubers too hard. A very moderate firming is necessary, but only sufficient to prevent the soil from washing out of the pots when the plants are watered. No higher temperature will be needed, and the plants must be protected from the full glare of the sun.

Where there is no greenhouse the tubers should be started on a hotbed a little later—that is, about the beginning of April—or there may be danger that the heat of the hotbed will not last until all fear of the plants becoming frozen is past. Without a greenhouse or a hotbed, it would be scarcely worth while to attempt to bed out begonias, because of the number required, and of the necessity for giving the tubers an early start in order to enjoy a long flowering season. But begonias make beautiful window plants when grown in pots, and kept indoors all the summer.

Tuberous begonias should never be planted out until all danger from frost is past. In the neighborhood of New York that would be the end of May or the beginning of June. Because of the necessity of partial shade the beds should be on the north side of the dwelling house. This will be found to be much better than planting under a large tree because its roots usually impoverish the soil in such a situation, and there is often a lot of overhead drip on to the plants. Have the soil rich and friable, cultivated to a good depth, and some old, decayed manure well worked into it. The plants can

then be set out, eight to ten inches apart, gently firming the soil round each plant, but taking care not to plant too deeply. The tubers should not be buried more than two inches, even including a light mulching of old mushroom manure, or rotted leaves, which is advisable immediately after planting.

When the bed is finished give a good watering. It is better not to wet the plants overhead, but to water around them and under the leaves. If at intervals during dry weather the bed is watered in this way there is no doubt but that it will be a beautiful and gorgeous feature of the flower garden until the frost.

In the tuberous section of the begonia family there are hundreds of varieties, but only two classes, single and double flowering. Named varieties can only be propagated rather slowly and laboriously by stem or leaf cuttings, or the not quite so satisfactory method of dividing the tubers, but as the general characteristics can be preserved and very easily propagated by means of seeds, though with slight variations, this has led to the production of various "prize strains" of both single and double types. These come a good deal cheaper than named varieties, and the amateur is perfectly sure of satisfaction with the purchase of two years' old tubers of these "strains" from any reputable dealer.

DAHLIAS

These are the best of the tender flowers for late effects in the garden, and are among the most easily grown of all plants. Full directions for growing them were given in last month's GARDEN MAGAZINE.



Tuberous begonias are the most satisfactory flowering bedding plants for shaded places



Cannas give the richest combination of foliage and flowers. Buy modern varieties for largest flowers

Although dahlias will grow almost anywhere, they are apt to make soft and vigorous growth in a wet situation, especially if the season happens to be rainy, and consequently less flowers will be produced because the flowering season will be delayed until the frost is about ready to close it. Therefore, a sheltered and well-drained situation should be chosen with a good deep, rich loam.

CANNAS

These are seen at their best when massed in large beds or clumps. There is no other bedding plant so valuable for both foliage and flowers. It is almost necessary to start the cannas, like the begonias, into growth in a greenhouse. In our short, frost-free season, usually less than four months, it would be otherwise necessary to have the roots lie dormant for eight months of the year, and even where this could be successfully accomplished, the full beauty of the plants could only be enjoyed for a few weeks at most, so much time being necessary to bring them to maturity.

The roots should be brought in from the storage cellar at least by the end of March, and divided into convenient sizes to be readily potted. Almost any soil will do, but that from an old carnation bench is excellent. When potted the plants should be watered once before being taken to a moderately warm temperature to start. No more water will be needed until the plants show signs of growing, but the pots may be sprayed over lightly every day. When once started, the plants should be kept growing along, spraying daily with clear water, especially under the leaves where the red spider and thrips are otherwise likely to be troublesome.

By the first week in June the plants should be ready for planting out, but if the weather happens to be cold it is better to wait a few days than to have the leaves

shrivel in a cold wind. When planting, be sure to make good-sized holes and work in the soil around the roots as recommended for the dahlias. Care should also be taken to have the tallest growing kinds in the centre of the bed, or in the background if they are planted in a border, finishing with the dwarfest at the outside.

Cannas are gross feeders, and like a rich soil and plenty of moisture. In dry weather the bed should be given frequent, copious waterings.

Every year new varieties of cannas are offered by the leading nurserymen and seedsmen, showing constant improvements over the old forms. The great number of excellent varieties makes one hesitate to enumerate a few, as so many others quite as good will be left out. Still, of the older French kinds, Black Prince, Charles Henderson, and Florence Vaughan, and of the so-called orchid-flowering section, Allemania, La France, and Pillar of Fire are very good.

GLADIOLI

Unlike most other spring-planted bulbous and tuberous plants, these do not pay for early starting in pots or boxes, and they will thrive to perfection in a wider range of soils. Being little or no trouble to cultivate, they are within the reach of everybody, even with the tiniest plot of garden.

The time to plant the first lot of gladioli is as soon as the ground can be worked in the spring after the frost is out, and successive plantings may be made every two weeks up to June. All authorities agree that strong "green" manure should not be used. It is much better that the ground should have been manured heavily the previous year, but if this has not been done, then only decayed manure should be worked into the soil. An ordinary vegetable garden soil will require nothing further than deep cultivation, but a liberal application of wood ashes will improve a heavy soil.

Just in what way to plant must be left to each individual condition. If set out in rows the drills should not be more than four inches deep, and the corms set out by hand in the rows four inches apart, being careful to place them so that the crown of each is pointing straight upward or a crooked growth will most likely result. To keep the corms for late planting they should be spread very thinly on shelves in a cool cellar; if left in bulk they will grow and spoil, becoming a mass of tangled roots.

A clump of gladioli is very desirable in the naturalistic garden here and there, or in the shrub border, or a row well toward the back of a ribbon border. When put in a clump the corms should be planted at from six to eight inches apart each way. The ground in the border must be well prepared, that is, manured and dug deeply, or only puny growth will result. One takes just so much more pleasure in any plant as one sees it vigorous and healthy. This can only

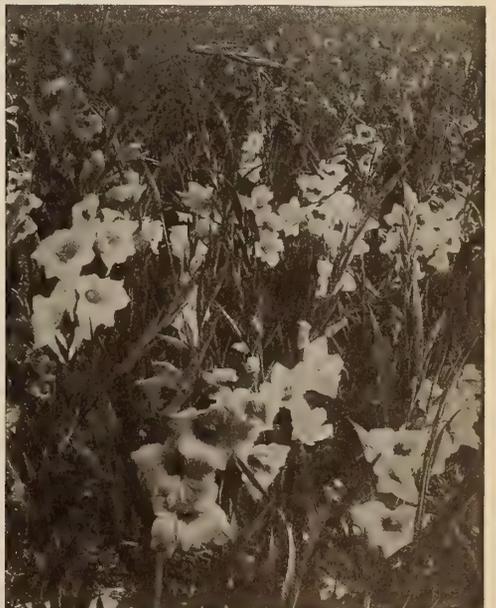
result from a well-cultivated and rich soil, with copious watering in very dry weather.

The sorts now in common cultivation are all hybrids which have been produced from crossings of the original species. There is scarcely another garden plant which has been so much improved by the process of hybridization and selection over a number of years. The principal types of gladioli for garden culture are the Childsi, Gandavensis, and Lemoine's and Groff's Hybrids. Of these only the Groff's Hybrids are unnamed, their originator not believing in dignifying the slight variations among his hybrids by separate names. They are sold only in mixture. Of the others, Gandavensis is the largest class, and where only a few are grown, selections from this type would be likely to give the most satisfaction.

MONTBRETIAS

These are something like the gladioli in appearance, except that the sword-shaped leaves, and the flower stems, usually much branched, are much more slender, the flowers far smaller and more loosely arranged, not crowding each other, and consequently the plants are more graceful and therefore better for cutting and for decoration. There are a number of varieties, the colors of which range from red through the orange shades to clear yellow.

They will succeed with the same treatment as for gladioli, except that the corms, being smaller, should not be planted quite so deeply. They are also hardier than gladioli, and will live if not taken up in the fall, but they come weaker the second year, owing to the severe freezing, so that it is advisable to take them up in the fall and store them in sand or earth in a cool cellar, or else to mulch heavily over winter. In this respect they differ a little from the gladioli corms, since these latter are better kept absolutely dry; on the other hand,



Anyone can grow the gladiolus. Make successional plantings up to June for late bloom

montbretias are apt to shrivel when exposed for a long time in a dry air.

TIGRIDIAS

These have large, three-lobed flowers, with beautiful spotted centres, and grow from eighteen inches to two feet high. The principal drawback to them is that the flowers do not last long, but the plants flower continuously through July and August. They die down rather early in the fall, and should then be taken up and stored in the same way as the gladioli corms.

Bulbs of *Tigridia Pavonia* should be planted in April, about four inches apart and two inches deep in a light, rich soil in a sunny position. There are several varie-

ties, the prevailing colors of which are red, carmine, rose, lilac, yellow, and white. The white (var. *grandiflora alba*) is the prettiest and most largely grown.

TUBEROSES

The tuberose (*Polianthes tuberosa*) is grown very largely as a "florists' flower," because it can be easily forced. But it is not a question of forcing, but of planting out in the garden that concerns us here.

It is desirable to start these bulbs in pots, owing to the length of time necessary to mature the flowers. They should not be planted out until the first of June, and unless they have been started into growth in pots it will be nearly October before the flowers are produced. The bulbs can be

potted from February to the end of April, according to the time when they are wanted to bloom. They should be planted in a light, sandy, well-drained and rich soil, and should have a sheltered yet sunny position.

The best variety for garden culture is Double Dwarf Pearl. This scarcely attains a height of two feet, and will not need staking. The beautiful white, waxy-looking, and heavily scented flowers crowd together on the upper half of the stem, and make a very effective display when massed in the flower garden. Their perfume, however, though delicious, is a little too overpowering for them to be recommended for cutting or for house decoration.

Dahlias For Everybody's Garden—By Maurice Fuld, Massachusetts

KEEP IN VIEW THE DISTINCTION BETWEEN VARIETIES THAT FULFILL THE EXHIBITION STANDARDS OF THE CONNOISSEUR AND THOSE THAT WILL GIVE THE GREATEST SHOW OF BLOOM IN THE GARDEN

IN last month's GARDEN MAGAZINE the modern methods of dahlia cultivation were explained. The most important point that will bear reiteration is that dahlias may be planted as late as the fourth of July, and probably with better results than from earlier planting. For this reason dahlias are obviously the most important of the large flowers for late planting.

But there are dahlias and dahlias, and although I am an enthusiastic admirer of dahlias of all classes and all types, still I realize, perhaps, all the more strongly, how desirable it is that the amateur should make himself acquainted with the niceties of the points of appreciation in order that he may grow such types as will most nearly fill his requirements.

From this standpoint the most important consideration is the division into two great classes—exhibition dahlias and garden dahlias. While the first named have the most highly refined and most perfectly formed flowers, they are not freely produced; in the "garden" dahlias, length of stem and profusion of bloom are counted of greater importance than perfection of model or even coloring.

If you would grow dahlias for cut flowers for decorative purposes only, select varieties from the garden group, leaving to the connoisseur the others in which the convolutions of the petals and the twisting of their tips are matters of greatest moment. Dahlias are grouped into types or classes according to the form of the flower, as follows:

The old-time dahlia, a perfectly quilled, formal flower of severely geometric type, known as the "show" dahlia, is still to-day regarded as the highest type of perfection. Until quite recently these same formal flowers were called "fancy" if the flowers were either variegated, speckled or spotted, or with the base darker than the tip of the petal. This very arbitrary color division is regarded by progressive American fanciers as entirely too artificial, and all these varieties are now included in the "show" class. In the garden group of the show type the blooms are fairly large sized, and in other respects identical with the larger sized but fewer-flowered exhibition kinds.

Of similar form, but much smaller—so much different, indeed, as to be almost



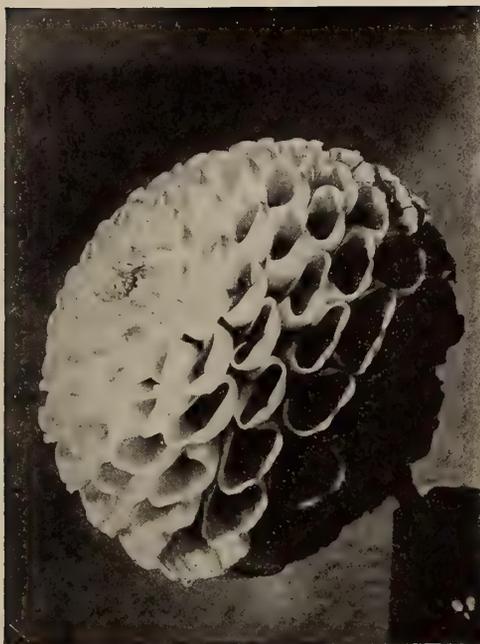
Cactus type; the most popular for exhibition purposes, but generally with short stems



Anemone type; very useful for garden decoration, but not a fancier's flower



Singles. Cactus type shown in the lowest flower; Twentieth Century at the top



Show type; very formal. The old-fashioned flower. Also includes the fancy type



Decorative show type; not so formal as the true show. Very large



Decorative type; the most useful, all-round garden type, flowering profusely

miniatures — and flowering throughout the season, are the "pompons."

The "cactus" varieties show the greatest divergence from the extreme formality of the show type, the petals being long, loose, usually much pointed, and maybe variously twisted. In the most modern development of this type the ends of the petals or rays turn abruptly upward, standing almost at right angles, and the entire petal is curved backward longitudinally on itself. Because of their extreme lightness these flowers are wonderfully attractive, and valuable both for exhibition and for decoration. The extremes of perfection in this type are not produced profusely, and consequently can only be regarded as exhibition blooms. The cactus dahlias have but a limited list of varieties of the garden type, but are overwhelmingly dominant in all exhibitions. Generally the blooms are produced with short stems and are found nestling or hidden among the foliage.

We are fortunate, however, in having one variety of this group, Countess of Lonsdale, a delicate salmon, which is generally acknowledged to be the one best variety of this type for garden purposes. It flowers profusely on long stems, and is good for cutting. If I were restricted to only one dahlia, this is the variety that would have the preference as being the most useful, all-round variety.

An intermediate type, with the petals more flattened than in the cactus, and not so distinctly quilled as in the show, is the "decorative" type — by long odds the most valuable for garden purposes, and the one which has been largely instrumental in reviving interest in dahlias in America. Flowering profusely, and on long stems, varieties of this type are invaluable for fall flowers in the garden and for interior decorations.

The "single" type is sufficiently obvious, the flower, which does not measure more

than three inches across, consisting merely of the central disk surrounded by a single series of expanded ray florets in various colors. Of recent years there have been distinct modifications of this type, so that we now have the "single cactus" with the ray florets rolled back into narrow, thread-like filaments, and the "anemone-flowered," in which the tendency to doubling is becoming manifest, the inner florets being shorter than those of the outer series.

The most important group of the singles, though, is the "Twentieth Century" type, carrying enormous blooms four inches or more across on stout, long stems, in every way valuable for cut flowers. It should form part of the collection of the amateur who wants bold, striking flowers for cutting.

A great number of the more or less marked modifications also occur, such as the "collerette," in which the ray florets have a petaloid development of the stamen tube, usually white or yellow, and showing up strikingly against the ground color of the ray florets.

With these well-marked divisions in mind, it should be an easy matter to select varieties that will suit your special requirements, and the following selections of varieties of the different types is made with a view to giving the greatest range of color and habit, combined with the best types of flower and special adaptation for some particular purpose. It will, of course, be understood that among the more exclusive novelties of the specialist there may be even more meritorious varieties; but they are not easy to secure in the ordinary way. I know one wealthy amateur who imports each year from Europe all the next year's novelties for trial before they are offered to the public.

SHOW VARIETIES

A. D. Livoni, a rather small flower, but extremely desirable for its delicate pink

shade and its great floriferousness. The flowers are borne on erect stems, twelve inches long, and appear quite early in the season and remain until the very end.

Storm King, the most free-blooming white. Fairly good size, in greatest profusion from August until frost.

In the yellow shades we have Charles Lanier, a deep, dull gold, and Vashti, a bright, clear yellow. Both are remarkable for their large-sized blooms, borne on stems three feet and longer. Fifty or more blooms open at one time on the plant is not unusual.

Meteor, scarlet, is a very large, full flower, which grows on very stout, erect stems. The plants grow quite tall. Dr. Kirtland, deep maroon, is a grand old sort, which produces monster blossoms in the greatest abundance on a single plant.

Acquisition often is the first to bloom, producing colossal flowers of a most effective deep mauve. The stems measure two feet and longer. The size of bloom decreases with the season, but it always is perfect, and can be kept in water from four to five days.

Other solid colors of decided merit are La Colosse, a most beautiful loose-petalled variety of dull crimson, very large; La Republique, soft blush; Mr. Glasscock, deep purple; Rosamund, rose crimson; Edward Lefavour, deep rose.

Pompons selected for distinctness of color are these: Bacchus, crimson scarlet; Purity, white; Emily Hopper, yellow; Ernest Harper, coral red; Guiding Star, pure white; Mars, bright scarlet; Mephisto, maroon.

SINGLE AND MISCELLANEOUS

Among the old-fashioned single dahlias I am particularly fond of Darkness, deep maroon; Formosa, bright crimson; Miss Roberts, clear yellow; Princess of Wales, delicate pink; Snowdrop, pure white.

The Twentieth Century type is available

in several shades, as pure white, soft pink, lavender, scarlet, and crimson.

Here also may be included some of the newer creations of the foreign growers, such as Merry Widow, deep scarlet flowers, borne on graceful stems, which often measure fifteen inches and longer. The plants grow only three feet high, but are so completely covered with blooms during the season that a single plant makes quite a showing from a distance.

Most interesting, and perhaps the most remarkable dahlia in existence, is the variety Chameleon. The big flowers, produced in profusion, differ so greatly from each other on one plant that it is hard to find duplicates. From one specimen the following distinct colors were gathered at one time last year: pink, scarlet, white, yellow, and, in addition, a number of remarkable variegations, as one petal red, one petal white, half the flower red, and so on.

Coronata is a larger-flowered single, recently introduced from Europe. The plant forms a compact little bush eighteen inches in height, and throws up stems often exceeding two feet, which are crowned with a cup-shaped bloom of dull red. Report further says that the fragrance is that of honey. I had the pleasure of admiring just one bloom on one plant, and therefore cannot speak for its free-blooming qualities.

In colletterte dahlias I find Maurice Rivoire, deep maroon with white collar, to be the best; the flower lasting longer than any of the other varieties. The petals are very thick, and the stem quite stiff. The first of this type was President Viger, deep scarlet, with a white collar. There are fully fifty varieties of this type,



Countess of Lonsdale; pink. The most useful, all-round decorative variety

and among them are some beautiful color combinations. I grew about twenty-five varieties last season, and of the number the one that appealed to me most, on account of its coloring, was Corbeille de Feu, entirely scarlet. Another remarkable variety is Signorina Rosa Esengrini, garnet-red, tipped yellow, the smaller petals canary-yellow.

THE BEST DECORATIVES

Among the decoratives we have a garden dahlia of which I can hardly say too much — Kaiserin Augusta Victoria. The plant grows only thirty inches high, and branches immediately above the ground; consequently it does not require any staking. The snow white flowers, which usually measure from four to five inches across, are borne on straight stiff stems fully fifteen inches long, in masses from the opening of the season until frost. This is one of the most free-blooming dahlias in existence, and in England has been used for landscape effect by massing in the foreground of shrubbery. It can easily be had in bloom by the end of July, and without pruning it will remain in bloom until the very last of the season. Similar to the above, but producing only small flowers of a most peculiar deep orange salmon, is Camellia, also very effective for bedding.

Among the newer introductions, Mrs. Roosevelt, delicate pink, on long, wavy stems, and very abundant, is particularly resistant to disease, and during the last season was one of the most satisfactory varieties with me. A delicately colored variety, and free-blooming, is W. W. Rawson, white, softly overlaid with amethyst — the nearest approach to lavender in the dahlia. The flowers often keep for a week after being cut. In bright pink there is Delice; in deep pink, Jeanne Charmet. The best yellow and most free-blooming is Mme. Victor Vassier.

In a bright scarlet, Papa Treyve; and in a crimson, Wm. Agnew, quite an old variety, but it has held its own right up to now. Jumbo is a little deeper in shade, and enormous flowers are borne in the greatest profusion on stems often exceeding two feet.

The latest introduction in this class this year is an American one called Jack Rose, which seems to outrival anything in that shade so far known. Its further distinctive qualities are that the flowers are borne on straight stems measuring two feet and over, in the greatest profusion, quite early, and remain quite late. In a deep maroon, there is Papa Charmet, a very prettily formed flower of good lasting qualities. Flora is an additional free-flowering white, and so is Perle du Parc de la Tête d'Or, usually called Perle de la Tête d'Or.

La France, pink, is distinct in shape. When the flower is open it resembles a full-blown double peony, and is of the exact shade as the La France rose.

A very good scarlet is Catherine Duer, one of the most popular for indoor decorations in Newport, where it originated. The flowers are borne on very erect stems, and last very long after being cut.



Gabriel, true cactus variety. Note the up-turned tip of each ray. In the more modern development, this up-turning is even more marked

For delicate pink, with a white shading, Mme. Van den Dael is my favorite.

THE CACTUS TYPE

Besides Countess of Lonsdale, already mentioned, in a clear shade of soft pink, we have Pink Pearl, which flowers very early; Kriemhilde, very late, and therefore very seldom seen in New England.

In a white, Schwan; in yellow, Prince of Yellows and Mrs. De Luca, both excellent; in scarlet, Amos Perry, which carries its flowers perfectly erect on stout stems, quite unusual in the cactus type; in maroon, James Robertson and Floradora. For white, I would take Schwan, as a free flowering kind, and Lawine for size.

There are some wonderful and indefinable colors in the group, such as Wunderkund, a delicate salmon yellow, with shadings of amethyst blue; Britannia, soft salmon pink shade, and very free-blooming.

For simply garden decoration and not for cutting I highly recommend the Lilliputian cactus, growing about twenty-four inches high, and literally covered with flowers, measuring from three to four inches. As these plants do not require stakes they can be used for either solid flower beds or as color effects between shrubbery or perennial borders. They appear now in all the shades, and as a good selection I would recommend Edelweis, pure white; Citronenvogel, clear yellow; Puck, orange scarlet; Harzerkind, soft pink.

FOR GENERAL GARDEN EFFECT

The peony-flowered type is the best of all for general garden effect. Some of the best varieties are: Queen Wilhelmina, pure white; H. Hornsveld, deep salmon; Dr. W. van Gorkom, soft pink; Duke Henry, deep red; La Riante, rose; P. W. Janssen, orange yellow; Jan Kubelik, violet.

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Save Your Easter Lily Bulbs

ALMOST everybody throws away the bulbs of Easter lilies that have been forced as soon as the flowers have lost their beauty. For the commercial grower no other course is worth while, but for the person who has only a few bulbs — perhaps only one — a relief from the general run of August flowers can be had by allowing the bulbs to dry off in the pot until May, and by planting in the garden or border the chances are that they will bloom in about three months. The blossoms, of course, will not be so numerous or quite so large as at Easter, as forcing always weakens the stock.

The two bulbs that I began the experiment with in 1907 produced five blossoms between them the first summer and four the second. The third summer there was no bloom, but the half dozen shoots indicated as many new bulbs, and I am wondering if any of them will wax strong enough to flower this year.

My two 1907 bulbs gave about the same result the first summer, but met with an accident the second. Of the 1908 bulbs only one came up, and that one, although most vigorous, developed no buds. The net result of the six bulbs has, however, been sufficiently satisfactory to pay many times over for the few minutes that the experiment cost.

Connecticut.

H. S. ADAMS.

Lilies That May Be Planted in Spring

AFTER many years of experience we are convinced that wrong planting is responsible for most of the failures in growing lilies. Never make the mistake of planting swamp lilies in sand and alpine lilies in a swampy place.

Before considering the preparation of the soil it would be well to consider the preparation of the bulbs. Spring planting should be avoided if possible, but as most of our lily bulbs are imported and cannot be had before spring it follows that they are much weakened by being out of the ground so long and by being planted in the cold, wet soil of spring.

However, we have found it an excellent practice to get the imported bulbs as early in winter as they can be had. We pack them in sphagnum moss that is just damp — not wet — and place them in a cool cellar free from frost, leaving them there until we are ready to plant. When sphagnum cannot be had soil will do, but care must be taken that it does not get too much water. This nursing process is very important as it seems to restore to the bulbs a large portion of lost vitality. Nine out of ten will come on and grow well. If the bulbs were originally sound, they come out plump and hard and ready to begin growth at once.

The soil must be made mellow and rich. With close, hard soil below, a lily may linger a year or two and then starve out. It does not feed from above or from the side, but from below; therefore, the sustaining elements and conditions must be placed below the bulb. It is therefore important to excavate to a depth of three feet — four is better — and if the bottom will not let water pass through it readily, drainage must be provided. The excavation may be filled with equal parts of leafmold, or rotted sod, and coarse gritty sand. If stable manure is used it should be well rotted and worked in at the bottom. Under no circum-

stances should the bulbs come in contact with it, as it is apt to cause canker. A heavy coat of wood ashes may be worked into the soil at the top of the bed with much benefit; it will not only discourage grubs but will supply all the potash required. We plant without regard to sun or shade.

After the bed is prepared it may be left for a few days to compact itself, after which it is ready for planting, which should never be done when the ground is wet enough to be pasty. In planting we use a trowel for the large bulbs, making openings fifteen inches apart and deep enough so that large bulbs will have about nine inches of soil over them when covered. *Lilium tenuifolium* and other small bulbs may be covered with six inches of soil. The bed when finished should be ten inches above the path; in a year's time it will settle to the garden level.

It is a very bad practice to cut away the tops as soon as they have done flowering, as it will surely weaken the bulbs. We give newly planted



The swamp lily, *Lilium pardalinum*, blooms about the middle of June

lilies a little winter mulch the first year and a summer mulch of short grass cuttings.

The swamp lilies, *L. Canadense*, *superbum*, *pardalinum* and *Parryi* do not require so deep a preparation, and do well in a moist, well-drained soil to which a liberal quantity of leafmold has been added.

New York.

E. HUFTELEN.

Growing Easter Lilies in the United States

FROM one-half to three-quarters of the Easter lily bulbs brought into this country are more or less diseased and do not produce vigorous plants. This is believed to be largely due to the fact that in Bermuda, where almost all of these bulbs come from, careful selection is not practised, and that the land where these bulbs are grown has been given over to their cultivation year after year with no change of crop. So many American gardeners have been unsuccessful in raising plants from these bulbs that they are anxious to produce their own supply; but the question is, where to do it? Should American growers be able to produce Easter lily bulbs, giving them the same treatment that they get in Bermuda, the bulbs would be placed on the market a little later than if imported,

but the majority of gardeners would not mind this delay provided the bulbs were free from disease and would produce strong, vigorous plants.

Are Your Tulips Diseased?

THE following letter has been received from Mr. Polman-Mooy, a very large bulb-grower of Haarlem, Holland:

"The many complaints that have been received during the last few years through the seedsmen and the trade generally, both in this country (Holland) and in Germany, as to the tulips in the beds of parks and private gardens failing to bloom, and in many places failing to grow altogether, now justify me in giving the results of our trials and investigations in this direction. We have for more than three years been making extensive trials, based upon the discoveries of Dr. H. Klebahn at Hamburg, who not only succeeded in finding the cause of the tulip disease but also the fact that it makes its appearance in two distinct forms caused by two fungi, viz., *Botrytis parasitica* and *Sclerotium tuliparum*.

"Usually the disease caused by the botrytis shows itself in the early spring by the non-appearance (or by their very backward and sickly appearance) above ground of the first tulip sprouts, and upon lifting such diseased bulbs the cause of it (in the shape of numerous small black fungi, about the size of a pinhead, or, in the case of *Sclerotium tuliparum*, by larger dark brown fungi) can easily be detected adhering to the old bulb or what is left of it. Under favorable circumstances (viz., in a damp atmosphere) these fungi "seed" very freely in the spring and thus cause a very rapid infection of the soil or the surrounding tulip plants. As these fungi will retain their vitality for at least two years in the ground, it is not surprising that some soils are so badly infected that tulips will not grow in them.

"These fungi could be easily killed by an application of some disinfectant, such as the timber preservatives containing creosote. But experience has proven that the cure is as bad as or worse than the disease, because for several years it will make the ground so treated unfit for any vegetation.

"The only practical plan, therefore, is to lift out any of the bulbs that show signs of the disease, together with the surrounding soil, at the earliest possible moment in the spring, taking great care that none of it is spilled and that all is completely destroyed by burning. If this is not done with very great care it had better not be done at all, as the slightest spilling of the infected ground will only cause more spreading of the germs."



Lilium Canadense likes a moist, well-drained soil, enriched by a liberal quantity of leafmold

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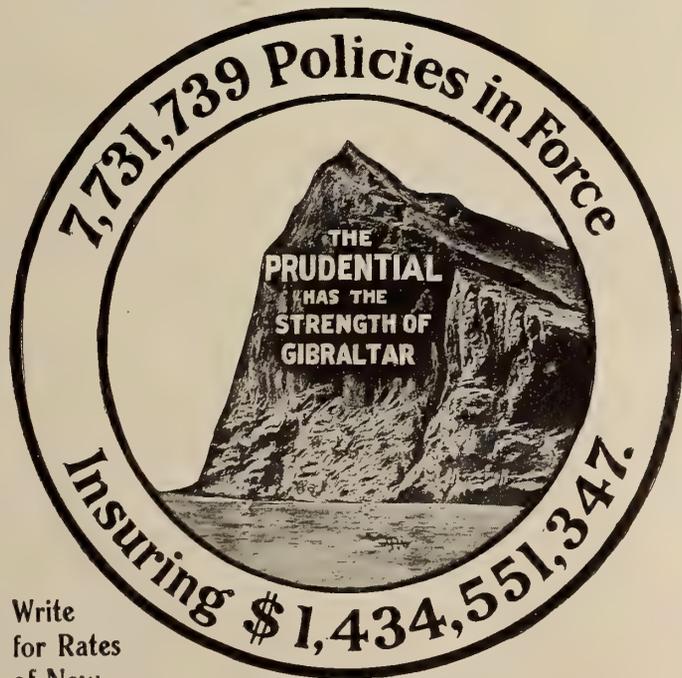
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A Curtain of Cobœa

THERE is one vine which, in my opinion, has not had its merits sufficiently mentioned in THE GARDEN MAGAZINE. It is *Cobœa scandens*, an annual climber which I have grown for a number of years as a screen on the end of the piazza nearest the street. The support for the vine I made of galvanized iron wire strung from screw eyes twelve inches apart in the floor of the piazza and in the ceiling, each strand of wire being perpendicular. The wire has needed no renewal for many years.

I set the flake-like seeds on edge in a box of soil some time during March, transplant later to another box, setting the little seedlings two inches apart, or else put them into small pots. About the 15th or 20th of May is as early in this climate as the plants can be safely set out of doors. I treat them then as I do all seedlings, putting about a teaspoonful of bone-dust into the hole, mixing it thoroughly with the soil, filling the hole with water, and setting in the seedling with as much of the original soil as possible. I never water them from above at the time of planting.

Each seedling is placed under its own wire, care being taken to help them climb, for which purpose I stretch light wire or soft twine from the ground to the piazza floor. My vines usually reach the piazza rail by the 4th of July, and from that time on their busy tendrils seize the wires, now on this side, now on that, as fast as possible, until the ceiling is reached. Even then they do not stop growing, but finding no suitable support, form a sort of valance for what from the street looks like a green curtain with a floral design in pale green and purple—a color combination which is exceedingly cool and restful to the eye on bright summer days.



The bell-shaped flowers of *Cobœa scandens* open pale green and change with age to deep purple. The seed pods resemble little green melons

The leaf is of a rich green and remains so all summer. The bell-shaped flowers open a pale green and change from that to a deep purple. The seed pods, which resemble little green "melons" with the next generation of seed beautifully packed within them, are brought into the house in October in order to have the seeds ripen for next year's vines.

Rhode Island.

JAMES BENNETT.

Sweet Peas of Many Varieties Grown in a Barrel

LAST spring I had an ounce of mixed sweet pea seed given me. I did not have room to plant them in my flower garden, but in the centre of my vegetable garden there was a half barrel stuck in the ground in which nothing was growing. The year before it had been nearly filled with stable manure and water, and cucumbers were planted around the outside.

I added two shovelful of manure to the old that was already there, and covered it with six



From seed sown March 26, sweet peas were had in profusion until frost

inches of good garden soil, in which I planted the sweet peas on March 26.

The sides of the barrel shielded the earth and the plants from the too hot sun, and as I kept them well watered, they came up abundantly and blossomed luxuriantly. The blossoms were large, the colorings brilliant, and the perfume delicious. The stems were strong, and even when the hot, dry weather came the plants continued to bloom. I put stakes in the barrel, to which wire netting was tacked, and the vines clung to and ran all over it.

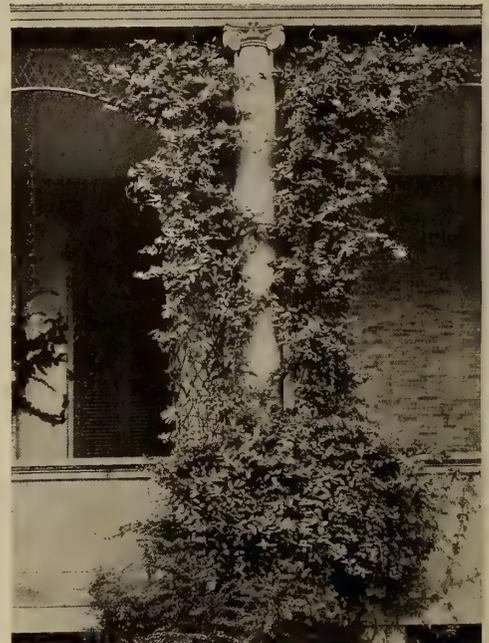
When the hot, dry weather came in July and August I kept the plants well watered, soaking the ground night and morning. In the early part of September my sweet peas took a fresh start and bloomed until frost.

My success I attributed wholly to the thorough watering and the heavy manuring the plants received throughout the growing season.

Where a long row is planted I should think it would be a good idea to sow the sweet peas in a trench, the earth being banked up on either side, and six-inch boards set up on edge on the top of the banks of earth.

Connecticut.

JULIE ADAMS POWELL.



Cover the pillars on your porch with honeysuckle (*Lonicera Japonica*, var. *Halliana*), which has deliciously fragrant blossoms

Vines for Porch Effects

WHEN vines are to be planted on a dwelling the effect from the exterior must be considered and anticipated, as well as the matter of shade. For piazzas and porches, *Clematis paniculata*, which grows rapidly and produces sweet-scented white flowers in profusion in August and September and is perfectly hardy, should be planted without fail. Cut back to the ground each winter.

Climbing roses come into flower much earlier than *Clematis paniculata* and are also beautiful while developing leaves and buds, as well as gorgeous when in full flower. Among the best for this purpose are Lady Gay, single pink; Dorothy Perkins, single pink; Farquhar, single bright cherry; Crimson Rambler, double red; Yellow Rambler, double very pale yellow; White Rambler, double white. Good plants of these can be bought from almost all nurserymen for from thirty to forty cents each.

Honeysuckles can be used to advantage, besides the common woodbine with variegated flowers. There are Hall's variety, white, and Heckrothii, red. For rapid growth of large leaves, there is the Dutchman's pipe (*Aristolochia Siphon*). It grows rapidly and develops enormous leaves making it especially valuable for shade. And there is the wistaria, than which nothing is more beautiful nor more gratefully fragrant. Although a luxuriant wildness may appeal to some people even in the vines growing on a house, it will be much better if all these vines are so planted and trained that each can show itself off, and be properly cared for all the time.

Before planting the vines stretch single wires from the bottom of walls, of whatever kind, and fasten by means of screw eyes at a point to which the vines are ultimately intended to reach. Plant a vine at the base of each wire, and tie the plant to it at once, and go on tying during the season. Some vines, such as the clematis and wistaria, will not need any tying, it being only necessary to keep them within bounds. The best vine for covering walls, bare trees and buildings, either of stone, brick or wood, is the Boston ivy (*Ampelopsis Veitchii*), but it should not be planted on buildings having a decorative finished exterior, such as fine cut stone, marble, pressed brick, or painted wood, because the tendrils roots eat into the surface. For loose drapery display the Virginia creeper is better. As an evergreen the climbing spindle (*Euonymus radicans*) is unique, climbing to great heights, and it is immune to the effects of coal smoke. All of these vines can be bought at a price varying from ten cents up to twenty-five cents.

New York.

M. I. D.

How the Farmers Voted



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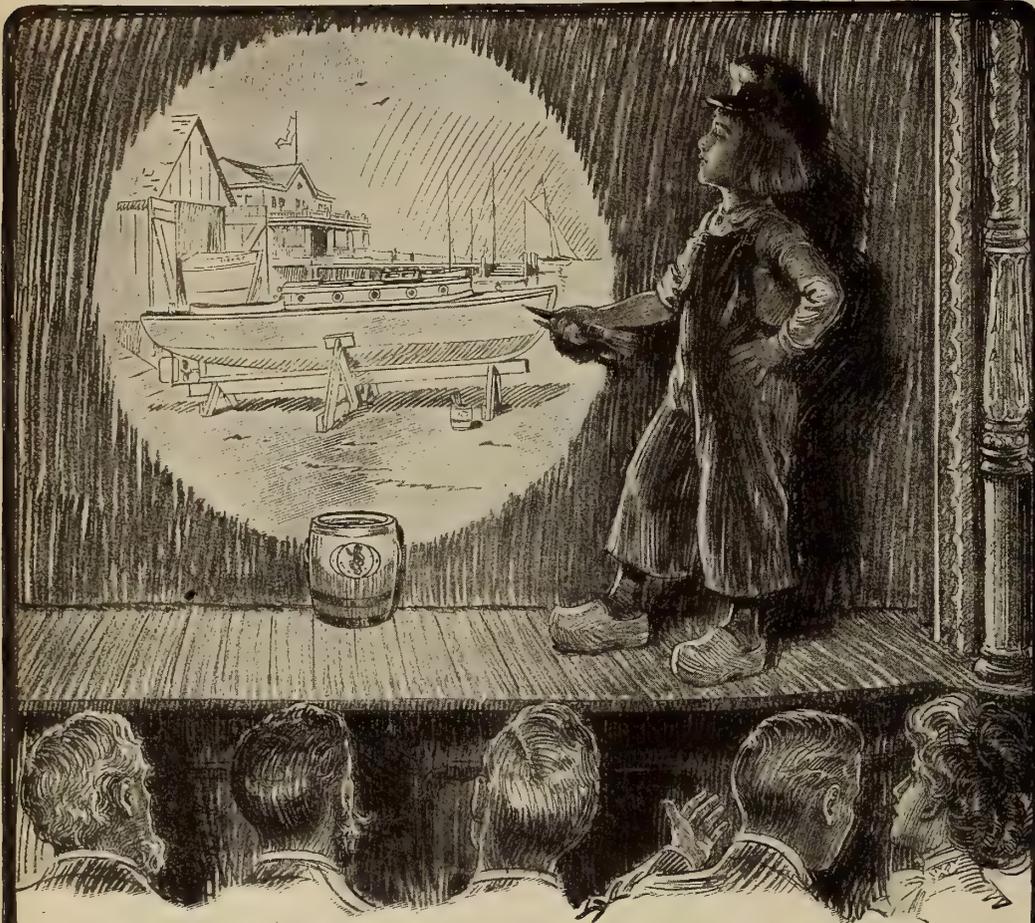
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Paint Talks, No. 4—Paint In and Near the Water

People who know that white lead and linseed oil make the best paint for all general purposes sometimes get the idea that something else must be added at the sea shore or where fogs are prevalent. Paint for boats also is sometimes thought to require other materials.

Thus often a little zinc is recommended by the same people who would shun it under ordinary circumstances, knowing that its hard unyielding nature is liable to make the paint crack or scale. If zinc will crack in one place it will in another.

The difficulty met with in painting at the sea shore or in other foggy localities is simply explained and simply remedied. The trouble is to get dry atmosphere to paint in, and a dry surface to paint on. The remedy is: Paint only on the brightest, driest days and then only in the middle of the day. Secure a solid priming coat and do not adulterate the white lead.

Try this remedy just once. You will have no further trouble with paint at the waterside any more than elsewhere.

DIRECTIONS FOR PAINTING

Full directions for house painting, together with color schemes will be sent you if you ask for "House Painting Outfit V." State whether you wish color schemes for painting the outside of the house or for the decoration of the interior. Also, if you are interested in boat painting, mention that fact.

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Quality in Watermelons

HAVING had considerable experience in farming, I several years ago undertook the growing of watermelons as a commercial crop. Corn had formerly been grown in the fields, the soil was a stiff loam, and was well pulverized during March. The field was marked off nine feet each way by a marking plough, making 3,200 intersections. Two forkfuls of manure were placed in 3,000 of these, and afterward covered with about three inches of soil. The manure was taken from a barn basement where it had been accumulating for nearly four years. In the remaining 200 intersections one-half pound of a high-grade commercial fertilizer was placed. The results showed that these hills did not produce as many melons as those in which the manure was placed, but this was partly on account of a difference in soil and location.

We began planting seed on April 22nd, the spring being rainy, cold, and late, from five to ten seeds being placed over the manure and about two inches deep. A few days later more seed was planted in 150 hills, owing to an early visit of crows.

I planted most of the field with Black Boulder, which is, without doubt, one of the best shipping and most prolific melons. I also made tests with the Fordhook Early and the New Triumph. The former ripened at least ten days earlier than any other variety grown here, and was pronounced superior in every respect to the Florida Favorite and Kleckly's Sweet. After testing the keeping and shipping qualities of Black Boulder, however, I feel that I can conscientiously say it has no superior, but that as a table melon it does not compare with Fordhook Early.

The third leaf on the plants and the striped beetle made their appearance at the same time, and tobacco dust was applied—first a handful around the ground against the stems of the plants, and later a heaping handful on each hill—but, although 300 pounds of the tobacco dust were used on the 3,200 hills, it was considered a failure. I then applied seventy-five pounds of Slug Shot, with most satisfactory results.

When the plants had four to five leaves and commenced to assume the vine condition, we thinned them out, leaving only the largest and stockiest plants in each hill. Every weed was pulled to give all possible nourishment to the vines. When they were about one foot long a turning plough was used to throw a furrow away from the hill, the plough running as near as possible to the plants without disturbing the roots. A man followed the plough and dashed a handful, or about a quarter of a pound, of commercial fertilizer into the furrow against the hill, and following him a plough threw back the furrow, covering the fertilizer and not permitting the soil to dry out. The cultivators were kept busy weeding, and after the cut-away harrow was used once for deeply rooted grass and weeds, clover seed was scattered between the hills. When the vines were about two feet long, we hill weeded until the vines overlapped or covered the field.

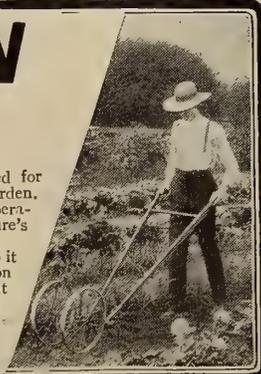
There are many oystermen in this neighborhood who are anxious to make a little money during the summer, and they will carry the melons to Baltimore or Washington for two cents apiece, and to Norfolk for one cent. Labor is worth here about \$15 per month, without board; if the laborer is hired for any time less than a month

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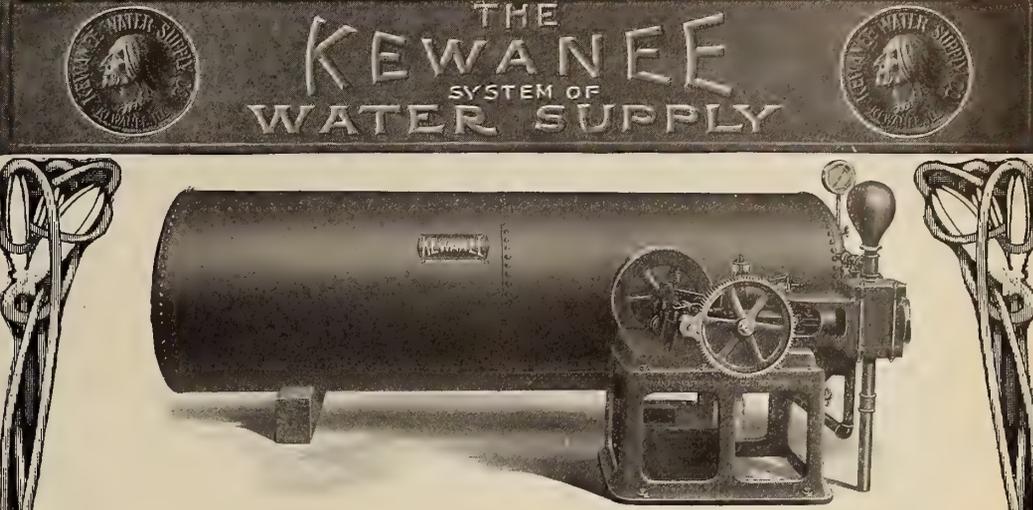
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Freight on 3,200 melons to Norfolk at one cent	32.00
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Total	\$186.41

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863 melons at an average of eleven cents	\$94.93
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Total	\$339.93
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Shipping Poultry to Market

IN ORDER to make the selling of poultry a success it is of extreme importance that the requirements of the market with which you are dealing be carefully noted. For instance, New York requires most of its poultry dry picked, undrawn, with heads and feet on. This does not mean that scalded poultry cannot be sold, but that it will not bring as high a price as that which has been dry picked.

The Boston market is much the same as New York. Sometimes the heads are removed and the skin drawn down over the end of the neck and tied.

Philadelphia prefers to have its poultry picked dry, undrawn, with heads and feet on. Fat birds neatly dressed will aid in securing higher prices.

Baltimore differs from most other Eastern cities in its preference for scalded poultry, undrawn, but with heads and feet off.

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The Garden Magazine

(Aug. 1908 to Jan. 1909)

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between turkeys and chickens, preferring the former dry picked and the latter scalded. For shipping, the chickens should be dry picked. All are required drawn, with heads and feet on.

St. Louis is a good market for all kinds of fat, well-dressed poultry, preferring it scalded. Turkeys for cold storage, however, are an exception; they must be dry picked.

San Francisco has a method of its own in selling. Only turkeys are sold by the pound, geese being sold by the pair and ducks and chickens by the dozen. All must be dry picked, undrawn, with heads and feet left on, and it is reported that buyers will not purchase scalded poultry. Ducks, geese, and chickens are picked clean, a few feathers being left on the wing tips of the turkeys. The demand for good fat poultry is always large. The prices quoted are about the same as those in New York.

Directions from all markets are not to use straw in packing, a practice which many formerly followed.

New Jersey.

F. H. VALENTINE.



When to Plant

EVERY vegetable should be sown outdoors as early as its resistance to spring frosts will permit. The tender vegetables cannot stand any frost at all. But if you sow all your vegetables outdoors you will lose about two months. To have fresh vegetables in April and May in the North you should have a hotbed and a coldframe. Start the tender vegetables in February, the hardy ones in March, and you can gain from one to two months on the most important vegetables.

HARDY VEGETABLES

Sow these as soon as the soil is in proper working condition, before all danger from frost is past, when the peach is in bloom, or when buds of trees are bursting. This is usually about the middle of April at Philadelphia:

- | | | |
|------------------|----------------------|---------------|
| Beet | Kohlrabi | Potato, early |
| Brussels sprouts | Lettuce | Radish |
| Carrot | Onion | Spinach |
| Cauliflower | Parsley | Swiss chard |
| Celery | Parsnip | Turnip |
| Kale | Peas (smooth seeded) | |

SEMI-HARDY VEGETABLES

Sow these when the apple is in bloom and the nights yet cool, when there is no danger except from belated frost, or when the trees are half in leaf. This is about April 25th at Philadelphia:

- Beans, green-podded bush varieties
- Corn, hardy early varieties
- Peas, with wrinkled seeds

TENDER VEGETABLES

When all danger from frost is past, when trees are in full leaf, and the nights are warm (early May at Philadelphia), sow seed outdoors or set plants of:

- | | |
|-------------------------|---------|
| Beans, bush, wax-podded | Okra |
| Beans, lima | Pepper |
| Corn | Pumpkin |
| Cucumber | Squash |
| Egg plant | Tomato |

Penna.

J. L. KAYAN.

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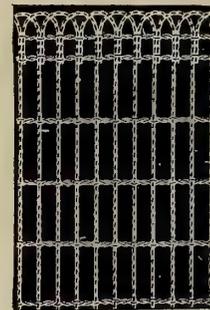
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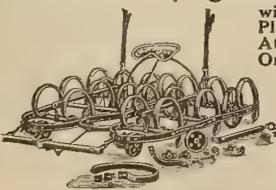
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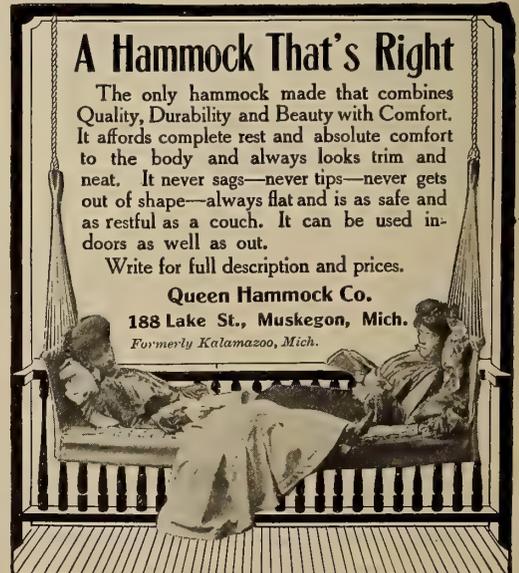
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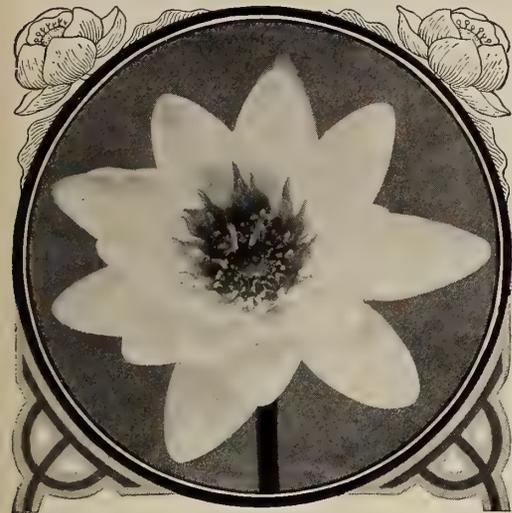
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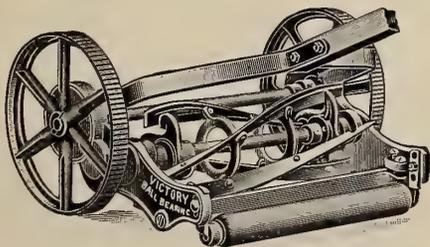
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There is a large element of risk in the purchase of some articles; this applies to new inventions, as well as to imitations of many which are well-known. The risk, of course, increases with the price, and too much care cannot be given to the selection of such articles as are intended for permanent use. This risk is eliminated when it is possible to purchase of firms whose reputation and goods have stood the test of time; for then the buyer merely looks for the firm name or trade-mark, which protects him. It so happens that he is thus protected in the purchase of a

Hot-Air Pump

The cuts upon this page show two different styles of the Hot-Air Pump; the upper is called the "Ericsson," and the lower the "Rider." The motive power in each is identical; the "Rider" merely being of larger capacity. The world-wide popularity of these pumps and their adoption into every clime have naturally resulted in the appear-

ance on the market of imitation pumps, not only inferior in construction and lacking in durability, but so named as to deceive the innocent purchaser. Complaints received from many, who have been thus imposed upon, impel us to advise intending buyers to look carefully at the two cuts here shown.

They are facsimiles of the genuine. Be sure, also, that the **REECO-RIDER** or **REECO-ERICSSON** name-plate appears upon the pump you purchase. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

Write for Catalogue U, and ask for reduced price-list.

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| 22 Pitt Street | - - - - | Sydney, N. S. W. |



Why It Pays to Thin Fruit

THERE are more people who advocate thinning fruit than there are those who practice it, chiefly because most people have not the courage to pull fruit from their trees. Yet thinning is one of the most paying operations in the fruit garden if done judiciously.

Except to cut off some of the fruit spurs, it seldom pays to thin cherries. In the Pacific Northwest apples and pears are quite frequently thinned; in other sections rarely. Repeated experiments have shown that it pays to thin these fruits if the trees are heavily laden even though it may cost fifty cents or over to thin a large tree. Much, however, depends upon the fruit-bearing habit of the variety. Some sorts, as Rhode Island Greening, usually set but one fruit from a cluster of blossoms, and may need little or no thinning; other varieties that set fruits very thickly, as Wagener and Oldenburg, are much benefited by thinning.

Grapes and all the brambles are commonly thinned by reducing the amount of bearing wood when pruning, but thinning the bunches or clusters of fruit has not proved beneficial. The berries of bunches of grapes grown under glass are usually thinned, to prevent crowding and to increase size. If the ends of bunches of currant blossoms are clipped off with shears, the size and quality of the berries are increased. Bunches of strawberries under glass are severely thinned, but in the field the only practicable method is to limit the number of plants, or it may sometimes pay, when exceptionally choice fruit is desired, to reduce the number of fruit stalks.

HOW TO THIN TREE FRUITS

Fruit is thinned in two ways: by reducing the bearing wood in pruning, and by picking off part of the fruit when it has set. The fruits most commonly thinned by pruning are those that bear on one-year-old wood, as the peach, apricot, raspberry, blackberry, dewberry, grape, and the brambles; and, to a considerable extent, Japanese varieties of the plum. The new wood, which is the bearing wood, is shortened, and it is best not to do this until all danger of winter injury has passed. Thus the laterals of the brambles are not shortened until after the buds have started and the extent of winter injury is easily discerned. After a severe winter it may be best not to shorten the bearing wood of peaches and apricots until the blossoms have appeared; then one can judge best how much fruit to thin off by pruning.

Fruit plants that bear mainly on spurs, as the apple, pear, plum, and cherry, are thinned with the pruning shears by cutting out weak or crowding spurs. The thinning of fruit spurs has received little attention in American fruit gardens; in Europe it is just as much a part of the annual pruning as the removal of crowding branches. When an amateur fruit grower wishes the choicest fruit, and can afford to devote some time to the attainment of his ambition, his pruning will become more minute and specialized; its unit will be the spur, not the tree.

The second method of thinning fruit, that of removing superfluous fruit, is usually necessary in addition to the thinning by pruning, except with the small fruits. The time when it should be done varies with different fruits, but in every case it should be after all danger from losing fruit by frost and the June drop has passed. A tree

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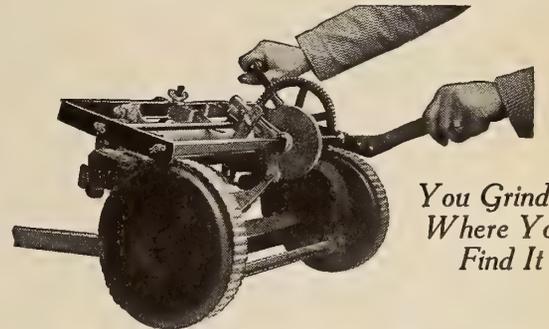
I have written a little book which gives truthful, reliable, experienced information about mushroom culture, where mushrooms can be grown, how to have a mushroom bed in your cellar, etc. It also tells about spawn and how to secure really reliable spawn. I shall gladly send you this book FREE.

If you have never tried mushroom growing, or if you have tried and failed because of the causes of which I have spoken, write for my free book in which I will show you beyond the shadow of a doubt that you can have a fine mushroom bed. Address

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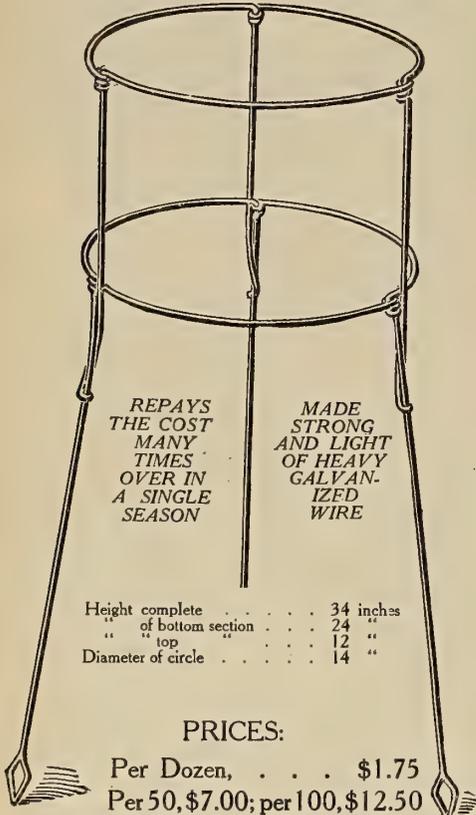
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that is very heavily laden in May may carry but a thin crop in June after the drop. Some varieties drop more than others; the Italian prune is a noted example of a "self-thinning" variety. Much will be gained if it can be done safely before the pit or seeds begin to harden, when a considerable drain is made upon the vital forces of the tree.

Peaches, apricots, nectarines and plums are commonly thinned when the fruits are one-half to three-quarters of an inch in diameter, or about the size of a hickory nut. Thin so that the distance between the fruits, when ripe, will be from two to three times their diameter. This means that peaches are usually thinned to five or six inches apart, and plums to four or five inches apart at the time of thinning.

PREVENTING "OFF YEARS"

When thinning fruits that bear on spurs, remove all the fruits from some spurs, and if necessary, thin the fruits on the other spurs to one. The object of this is to give half of the spurs a chance to make fruit buds for next year's crop, which they may not be able to do if supporting one or more fruits. The only way to prevent "off years" is to limit in this way the number of spurs that bear, coupled with good culture otherwise. There is no reason why all fruit trees should not bear annually if given good care and not allowed to weaken themselves by over-bearing. But certain varieties of some fruits, especially the apple, have gotten into the habit of bearing alternate years, and it is difficult to overcome the tendency.

Remove weak, diseased, and wormy fruits regardless of their position on the trees, and burn or bury them. All thinning should be done by hand. Some people thin fruit by knocking it off with poles, but by the time the thinning is done two-thirds of the crop may be on the ground. Several hours may be needed to properly thin a large peach or apple tree; at the rate of fifteen cents an hour it may cost from twenty-five cents to seventy-five cents per tree. If this adds one dollar to five dollars or over to the value of the fruit, as it may, the expenditure is certainly justified.

When the trees carry a light crop, no thinning may be needed. If certain branches on an apple tree are loaded, and others not, thin the fruit very little, as it is better to have the branches bear alternate years than to have the whole tree barren every other year. Much can be done to conserve the strength of the trees of some varieties by successive pickings. Early varieties of early apples and pears, for example, should have part of the fruit gathered when nearly mature, leaving the remainder on the trees. The early gathered fruits will ripen well in a cool place. Some varieties of pears, especially those used for canning, may be picked when little over two-thirds grown, and will ripen into good canning fruit. The Keiffer is occasionally handled in this way.

Virginia. S. W. FLETCHER.

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It has been repeatedly stated that a Holstein will make a quart of milk cheaper than any other breed. This is doubtless true, but the dairy farmer is not always so interested in the volume of milk he obtains as in its content of butter fat. The milk of the Holstein has less fat content than any of the four leading dairy breeds. The Guernseys and Jerseys give milk with the highest percentage of butter fat and total solids, amounting to 5 or 6 per cent. There is no need of guess work in determining the quality of milk. By means of the Babcock test, it is perfectly simple to determine the richness of milk, and of course methods for determining its quantity and weight are too obvious to require comment.

If a cow does not produce 3,500 pounds of milk and 150 pounds of butter in a year, she does not pay for her keep. If this test were applied to all the dairy cattle in the United States, half of them would have to be sent to the butcher's block - a rather heroic means of improving the standard of our dairy cattle, but one which would in the next generation of cows convert many an unprofitable dairy farm into one that would show a balance on the right side of the ledger.

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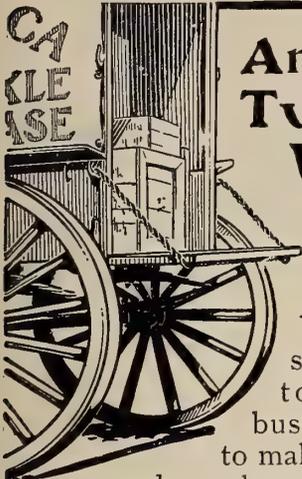
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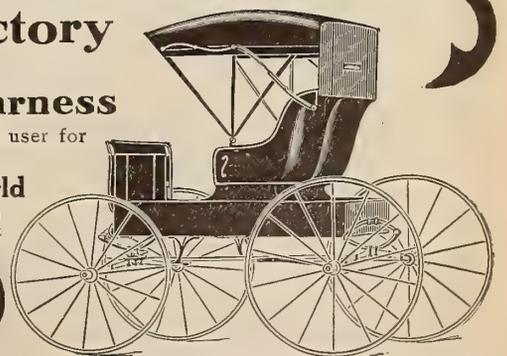
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The First Prize winners and their scores at every convention of the National Butter-makers Association since its organization in 1892 have been as follows:

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1893	Dubuque, Iowa, C. W. Smith, Calvin's Park, Ill.	Score 97,
1895	Rockford, Ill., F. C. Oltrogge, Tripoli, Iowa	Score 98,
1896	Cedar Rapids, Iowa, Thomas Milton, St. Paul, Minn.	Score 97.82
1897	Owatonna, Minn., H. N. Miller, Randall, Iowa	Score 98.5
1898	Topeka, Kan., Samuel Haugdahl, New Sweden, Minn.	Score 98,
1899	Sioux Falls, South Dakota, A. W. McCall, Creston, Iowa,	Score 97,
1900	Lincoln, Neb., H. T. Sondergaard, Litchfield, Minn.	Score 98,
1901	St. Paul, Minn., E. O. Quenvold, Owatonna, Minn.	Score 97,
1902	E. L. Duxbury, Green Bay, Wis.	Score 98.5
1904	St. Louis, Mo., L. S. Taylor, Glenville, Minn.	Score 98.5
1906	Chicago, Ill., A. Carlson, Rush City, Minn.	Score 97,
1907	Chicago, Ill., A. Lindblad, North Branch, Minn.	Score 97.5
1908	J. C. Post, Hector, Minn.	Score 98,

(There were no conventions in 1894, 1903 and 1905)

In the great 1908 contest 504 of the best buttermakers in the United States competed, with first, second and third, and all important awards, being made to users of DE LAVAL machines.

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In all the hundreds of important state and country contests the world over for twenty years the superiority of the DE LAVAL separator in the making of fine butter has been conclusively proven.

THE EXPLANATION IS TO BE FOUND IN THE IDEAL DESIGN AND CONSTRUCTION OF THE DE LAVAL SEPARATING BOWLS AND THE THOROUGHLY PRACTICAL CONDITIONS UNDER WHICH DE LAVAL MACHINES MAY BE OPERATED AND USED.

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Planting is best done by two people. Let one man place the plants one by one in the trench, holding them in position as the other person fills



About the end of June or early in July trim hedges of California privet

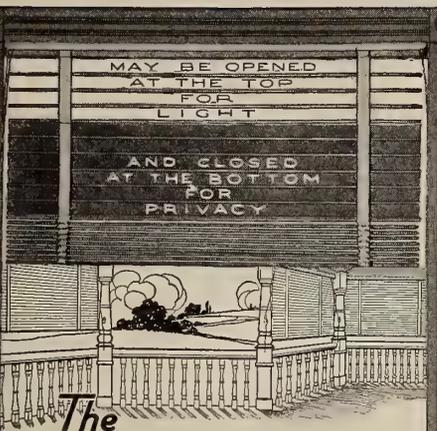
in the soil. If the roots are all on one side the stems of the plants may be placed hard against one side of the trench and the soil shoveled in and firmed with the hands and feet; if the roots proceed from both sides of the plants set them in the middle of the trench.

The most popular and in all probability the most useful hedge plant is California privet. Plants three feet high, which can be bought for about fifteen cents each, will give quick results. Set them about one foot apart, if a single hedge is wanted, and a little further apart in zigzag for a double hedge. Smaller and cheaper plants will grow so rapidly that unless there is a special desire for quick results it is better to plant them instead of larger ones. Be sure to plant deeply and cut back severely to induce a proper bottom development. Shear three times a year as necessary.

Norway spruce and American arborvitae make handsome evergreen hedges. *Berberis Thunbergii* makes a neat, compact, and showy hedge with the additional feature of retaining its bright, red berries nearly all through the winter. *Rosa rugosa* is not only handsome but is an effectual protection against trespassing on account of the dense growth strongly armed with spines. A showy dwarf hedge can also be formed from *Deutzia gracilis*.

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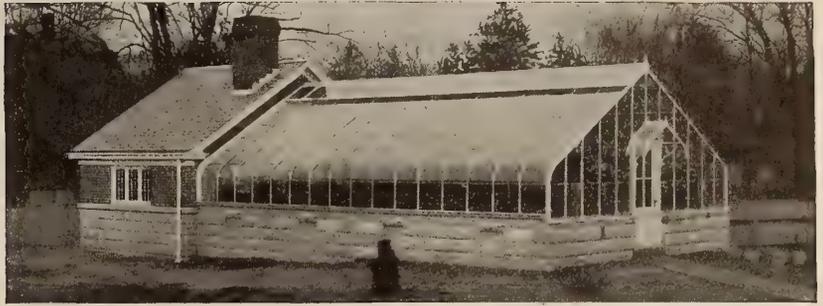
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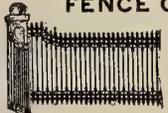
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Made of Carolina Red Cedar—74 inches long, 30 inches wide—covered in Velour or Chase Leather. Deep Box. Send for furniture catalog.

Crane Furniture Company
HIGH POINT, N. C.



The Busy Time Commences

AFTER the early spring-flowering bulbs have finished blooming gather them up and plant them out thickly in an unused part of the garden where they can remain until planting time next October. Their old beds can be used for other flowers, but the soil must first be spaded over and fertilized. No flower bed should be allowed to remain idle — just as soon as one flower is through blossoming clear up the bed and plant something else.

If you do not have very much time to devote to flowers, try planting nasturtiums. They require little care, the seed is cheap, and the blooms are undoubtedly among the most beautiful that grow.

Plant out violets in soil that is not very dry nor very wet. Of course, they will not flower this year, but they will get a good start and produce a large quantity of fine flowers next season. Put the plants twelve inches apart each way, unless the soil is very rich, when they should be set sixteen inches apart each way.

At this time of the year moles usually begin to destroy vegetables and flowers by running under them and gnawing off their main roots. If you have noticed their runs about the garden during the last few months, and do not try to at once get rid of the moles, you will very likely find some morning your choicest plants turned out of the soil with the roots gnawed off.

In many cases the roots are gnawed off below the surface of the soil, and the plant left standing erect. Many such plants can be saved if noticed before they are too much wilted. Give them shade by placing brush over them but not on them, and plenty of water, firming the soil thoroughly about each plant.

I consider the following the most satisfactory method for destroying the moles: Mix together equal parts of corn meal and rat poison and place it in the runs. Keep chickens and cats away from where the poison is.

Early in the month plant peanuts in soil which has been well prepared and fertilized. The best fertilizer is one that contains a high percentage of potash and phosphoric acid with but very little nitrogen. The Spanish peanut has been the most popular sort here in the South for many years on account of its being so free from pops. The one great drawback to it, however, is that the seeds and pods are very small. This is now being overcome in the improved varieties which are as early, as free from pops, and of the same upright growth as the Spanish, but the pods contain from one to two more seeds of larger size.

Nitrate of soda may be applied to peppers and egg-plants now, just before they begin to flower freely; it will promote a rapid growth of both fruit and foliage. Allow from a teaspoonful to a tablespoonful to a plant, and spread it thinly two or three inches from the plants. Nitrate of soda must not be applied in too large a quantity, nor when the dew is on the plants; and if spread too close to them it will kill them.

Place house plants out of doors where they can get only part of the morning sun. It gets too warm during this month for such plants to get the sun all day.

If fruit is too thickly set on the peach trees thin it out so as to get larger and finer peaches, and to prevent the branches being broken by the weight of the fruit.

Georgia.

THOMAS J. STEED.

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Rolls 44% Easier than

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LAWN ROLLER

made in the world—that fact is Guaranteed. We have made rolling mere child's play by inventing the only **Roller Bearing** Lawn Roller on the market. The New "GOLD MEDAL" Lawn Rollers are an improvement over all our own and every other make. The **Axle Revolves in Roller Bearings**—that's why they are least in friction and easiest running. Dunham's Handle Balance keeps the rigid reinforced handle off the ground and prevents axle strain. No squeaky loose weights. Rollers are sectional with outer edges rounded which avoids rooting or cutting up the grass. Send postal today for FREE Catalog A, which illustrates complete line—125 to 12,000 pounds in weight.

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With the idea of testing the whole subject, we offer the following prizes for the best reviews of Mr. E. F. Benson's new novel "The Climber." We have selected this book because we think it offers unusual opportunities for a reviewer's skill, being set in a large canvas, and written by a man of experience and reputation, and having a strong moral purpose. These rules must be followed:

1. Copy to be written only on one side of the sheet, typewritten preferable.
2. The Review to be not more than 1,000 words. 750 would be better.
3. The manuscript to be submitted not later than June 15th.
4. The prizes to be awarded and announced in the August numbers of Doubleday, Page & Company's magazines, "Country Life in America," "The World's Work," and "The Garden Magazine," the successful reviews to be printed at that time.

The First Prize is \$50. The Second Prize is \$30. The Third Prize is \$20. The Fourth Prize, books from our book catalogue to the amount of \$7.50. The Fifth Prize, books to the amount of \$5.00. The Sixth Prize, a subscription to "Country Life in America." The Seventh Prize, a subscription to "The World's Work."

Doubleday, Page & Company, New York

Books by ELLENGLASGOW

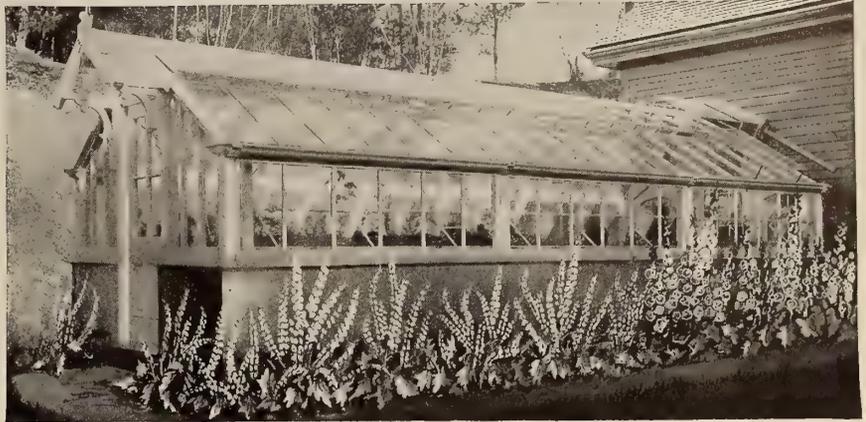
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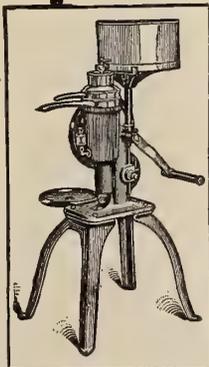
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Only *one* oil is suited to the close-running bearings of a hand separator. A common oil, though it may *look* clear and run free, will not do.

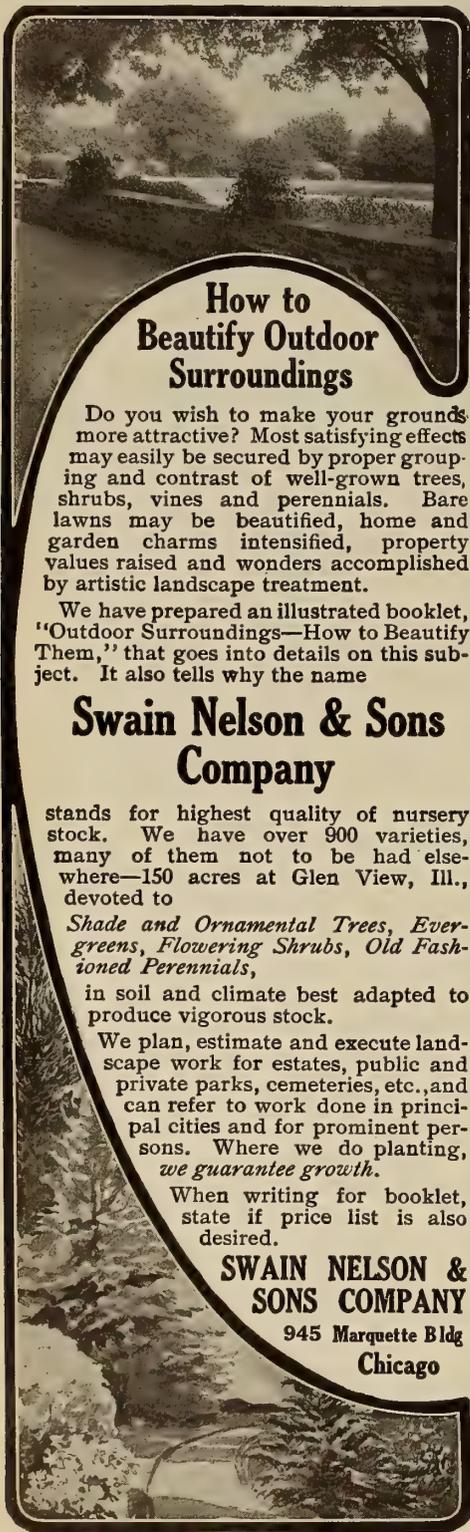
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Do you wish to make your grounds more attractive? Most satisfying effects may easily be secured by proper grouping and contrast of well-grown trees, shrubs, vines and perennials. Bare lawns may be beautified, home and garden charms intensified, property values raised and wonders accomplished by artistic landscape treatment.

We have prepared an illustrated booklet, "Outdoor Surroundings—How to Beautify Them," that goes into details on this subject. It also tells why the name

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stands for highest quality of nursery stock. We have over 900 varieties, many of them not to be had elsewhere—150 acres at Glen View, Ill., devoted to

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When writing for booklet, state if price list is also desired.

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A New Classification of Dahlias

THE New England Dahlia Society has adopted the following new classification of dahlias in order to accommodate the recent developments of newer types of the decoratives, etc. The most important change that the old-time dahlia fancier will notice is the amalgamation of the show and fancy, which seems perfectly reasonable, the present classification being based entirely on the form of the flower. The official ruling on the disputed classification of the few varieties listed at the end should also prove valuable to exhibitors.

SINGLES

1. COMMON SINGLES. One row of flat ray florets, eight in number, of any color, flowers stellate in form or nearly so and not less than two inches in diameter.

TYPES: Polly Eccles, Rosebank, Cardinal.

2. GIANT SINGLE. Ray florets, eight in number, the whole forming a solid flower circular in outline; in size not less than four inches in diameter.

TYPES: Twentieth Century, and kindred varieties.

3. SINGLE CACTUS. Ray florets eight in number, at least twice as long as they are broad, with edges rolled backward for not less than one half their length, tips incurving or twisted; flowers not less than three inches in diameter.

TYPES: Ivanhoe and Queen Mary.

4. COLLERETTE. Single or semi-double with a row of petaloids inside the ray florets.

TYPES: President Viger and M. Joseph Goujon.

SEMI-DOUBLE

5. SEMI-DOUBLE or PEONY-FLOWERED. Two or more rows of broad loosely arranged florets, often pointed and sometimes twisted, flowers not less than five inches and showing disc. Stems not less than twelve inches.

TYPES: Queen Emma, Queen Wilhelmina.

DOUBLES

6. SHOW. Florets cupped and quilled, globular in form, and not less than three inches in diameter.

TYPES: Frank Smith, A. D. Livoni, Dr. Keynes and Gracchus.

7. CACTUS. Florets at least twice as long as broad, with edges rolled backward for not less than one-half their length, tips incurving or twisted, flowers not less than three inches in diameter.

TYPES: (a) Long narrow florets: Fairy and Aurora; (b) Straight regular florets: Countess of Lonsdale, Marguerite Bouchon; (c) Floret tips split, forked or fringed: Lady Fair, Mr. Seagrave and Progenitor; (d) Large flowers and heavy florets: Mrs. Chas. Turner, Goliath and Duc d'Orleans.

8. DECORATIVE. Florets broad and flat and intermediate between the Show and Cactus types with margins either slightly incurved or reflexed. Flower not less than three inches across.

TYPES: Jeanne Charmet, Souvenir de Gustave Doazon, Nymphæa, Catherine Duer, Kaiserin Augusta Victoria.

9. ANEMONE-FLOWERED. At least two rows of flat guard florets surrounding the crown of tubular florets of which the flower is composed.

TYPE: Gloria.

POMPON

10. SHOW TYPE. Florets or petals cupped or quilled, any color, flower globular in form and not exceeding two inches in diameter.

TYPES: Belle of Springfield, Darkest of All.

11. CACTUS TYPE. Florets or petals at least twice as long as they are broad with edges rolled backward for not less than one-half their length with tips incurving or twisted.

TYPES: Hobbies' Pet, Edelweiss.

(Signed) WM. F. TURNER, Chairman.

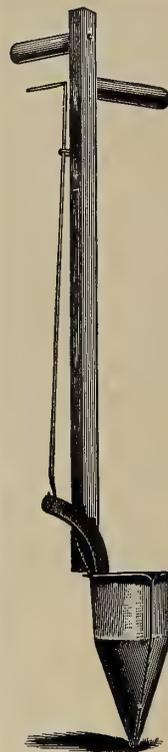
JAMES ROBERTSON,

ALEXANDER McLELLAN,

Committee.

NOTE.—The varieties named below have been definitely placed in the following classes:

Mrs. Chas. Turner, Cactus; Mrs. Roosevelt Show; W. W. Rawson, Show; Grand Duke Alexis, Show; La Colosse, Show; Le Siam, Show; Le Geant, Show; Gigantea, Decorative; Les Allies, Decorative.



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The use of the
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does away with tedious, back-breaking work in setting or transplanting vegetable or flowering plants. Sets them at any desired depth. Plants potatoes, onions and other tubers and bulbs as fast as you can walk. Weighs only four pounds—easy to operate. Sent by Express prepaid for \$2.00. Money refunded if not as represented. Descriptive matter and more information on request.

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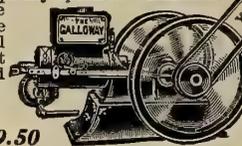
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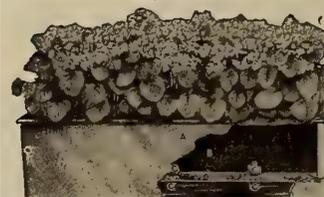
\$1.00 Dahlias

To any one sending me \$1.00 I will send 20 Dahlia Bulbs—no two alike—all named varieties and good ones. I have 400 kinds.

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bottom of metal box, which is filled about once in two weeks. Boxes neatly made of metal; rust and leak-proof. Inexpensive—Sold on 30 days' FREE trial. Illustrated descriptive book with prices FREE. Write today.

Special.—96-page book "Miniature and Window Gardening." Instructive and interesting. Tells all about growing flowers. Regular price 75 cents; our Special Price for limited edition, 50 cents, prepaid.

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THOUSANDS OF GALLONS SOLD ANNUALLY

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- 5 Pkts. Tall Mixed colors Nasturtiums
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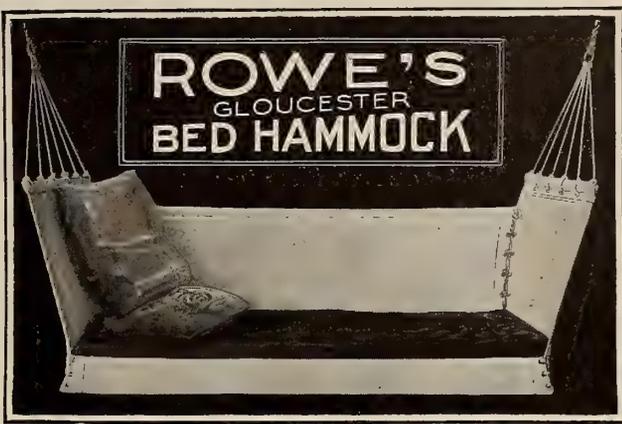
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Give up your farm and garden drudgery—let the Planet Jr. do your work.

"I wouldn't be without a Planet Jr. for five times the price," writes P. P. Hamilton, Carlisle, S. C. "I never had finer vegetables with such light work."

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even under the Blow-pipe.

If the blow-pipe cannot affect it, what can?
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Apterite destroys Cutworms, Wireworms and other insects living in ground. Invaluable to Truck and Fruit Growers, Florists and Gardeners.

Write for descriptive booklet containing American, British and Canadian testimony to

CYRIL FRANCKLYN

62 BEAVER STREET

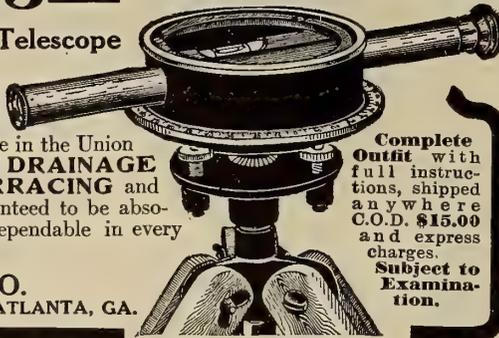
NEW YORK, N. Y.

Sole Props., WM. COOPER & NEPHEWS
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Codling Moths, Potato-Bugs and All Leaf-Eating Insects

are surely and quickly killed by spraying with

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This is an immense improvement on other insecticides. It is certain in effect and easy to use. It never burns or injures foliage, and always improves yield. It sticks to foliage for a long period. It mixes readily with water, stays mixed and does not clog the spray pump. Write for reports from farmers and fruit growers of the wonderful effectiveness of Swift's Arsenate and our free book about leaf-eating insects and how to treat them.

In writing for book, give us name of your dealer if possible

MERRIMAC CHEMICAL CO., 59 Broad St., BOSTON, MASS.

The BACK YARD



Shirley Poppies with Candytuft

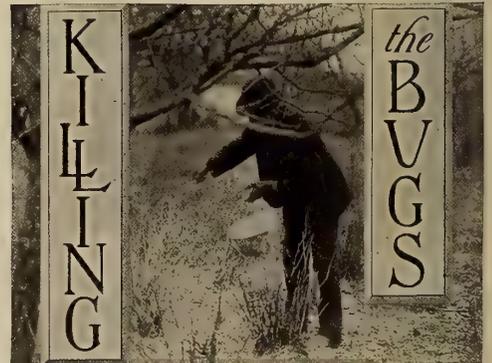
AN EFFECT of Shirley poppies and giant white candytuft mixed was what caught the eye oftenest in our garden last summer. The bed ran along the south and east sides of the living room, beginning at the front hall entrance on the south and extending around the corner of the house toward the dining-room porch on the rear east—a stretch of about thirty-five feet in length and from two to three feet in width.

While the early tulips were still in blossom, poppy seed was sown among them in rows and small groups, the object being to make a solid-looking bed as the poppies came up and the old tulip tops decayed and were taken out. A mixture of candytuft seed with a little of the yellow California poppy was then sown for a wide border along the outer edge. The plants soon appeared and were subsequently thinned out wherever necessary.

The poppies were kept in flower until frost by cutting away the seed-pods as soon as they formed. At noonday, in very warm weather, the blossoms looked rather warm against the gray-pebbled background, but at all other times the color scheme was very good. The white of the candytuft strengthened the poppy colors, and its dainty flower proved to be of the right character to offset the graceful, nodding flowers of the poppy.

Illinois.

M. M. G.



More About Toads

IN THE GARDEN MAGAZINE for March, 1909, L. C. Porter, of Wisconsin, suggests that Mr. Howard Earl should introduce toads into his garden in order that he may rid himself of the insects which ruin his nasturtium vines.

May I say that we, too, have had our vines ruined by these small black insects, and that within a foot of the vines is a large colony of toads?

There are big toads, little toads, and middle-sized toads, and every other size that one can imagine. They come out in the day-time from under the edge of a large flat stone, and sit blinking in the sun. Toward evening they hop around the garden seeking food. We protect them and treat them with great consideration, and, although the large number of toads is quite out of proportion to the small row of vines, they do not rid us of these pests. Are there toads and toads, and does L. C. Porter know of any particular kind of toad that we should have?

New Jersey.

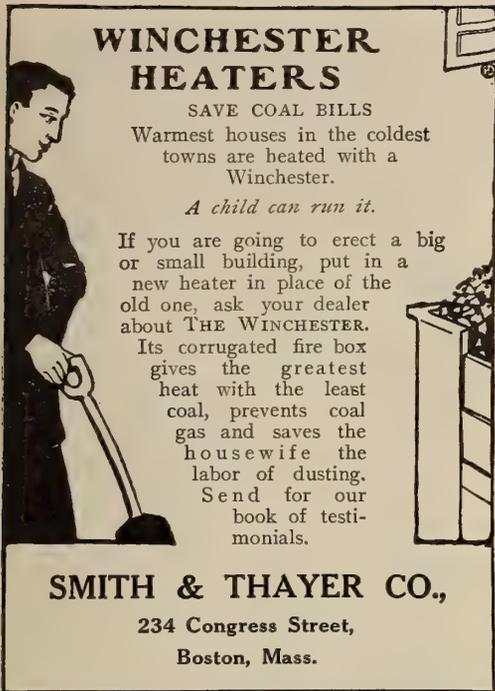
H. C. ANDERSON.

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SAVE COAL BILLS
Warmest houses in the coldest towns are heated with a Winchester.

A child can run it.

If you are going to erect a big or small building, put in a new heater in place of the old one, ask your dealer about THE WINCHESTER. Its corrugated fire box gives the greatest heat with the least coal, prevents coal gas and saves the housewife the labor of dusting. Send for our book of testimonials.



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Made of Fragrant Southern Red Cedar, Our **COLONIAL CEDAR CHESTS** are ideal wedding or birthday gifts, and priceless family heirlooms. Absolutely moth, dust and damp proof, a perfect home storage for delicate furs and fabrics, costing less than one season's cold storage. Heavily bound with riveted copper bands, with rooney lock drawer; dull natural finish. Sold at low factory prices with privilege of free inspection.

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Catalogues on application

NEW ASTER Beautify your home and pay for it with a garden plot of the remarkable new aster, Lady Roosevelt. Exquisite old rose; blossom 4 1/2-inch; stem 36-inch; erect; pest-free. Instruction in marketing and special new culture with order. 400 seeds \$1. Also smaller lots. Allan Neilson (formerly associate editor American Florist) Chestertown, Maryland.

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By the use of the wonderful bacteriological preparation, discovered by Dr. Danysz of Pasteur Institute, Paris, science has at last found the only successful method for exterminating rats and mice. Used with striking success for the past few years in England, Scotland, France, and Russia.

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contains the germs of a disease peculiar to rats and mice and is absolutely **harmless to human beings and other animals.** The rodents always die in the open, because of feverish condition. The disease is also contagious to them. Easily prepared and applied.

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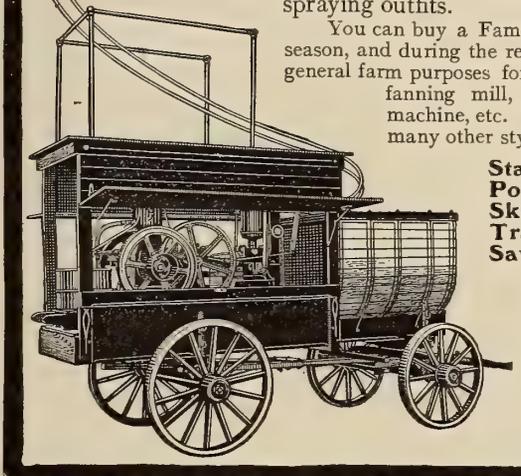
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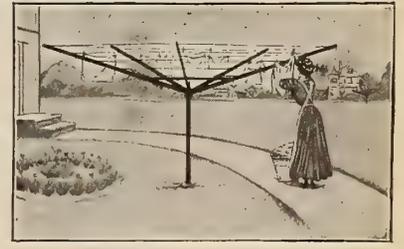
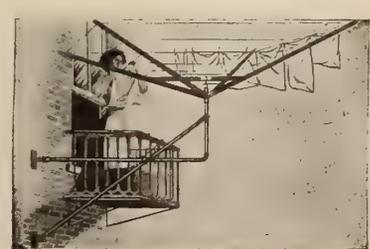
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FERTILIZERS



Fertilizer Advice for Amateurs

NO ONE can write a fertilizer article of any pretensions without using a lot of big words that most people will be forced to skip. This is no reflection on the intelligence of the readers either. Investigation of the properties of fertilizers requires a definite scientific knowledge, and even then it proves extremely baffling. How much, then, of this mass of facts and theories do you and I, with our small garden, need to know, and how much can we "forget."

It is pretty hard to say very much that is definite anyway without indulging in lots of guess work. Fertilization is not an exact science. We know, broadly speaking, what happens, but we don't know "why" and the man who tries to tell us "why" usually covers up his shortcomings with words we can't understand.

Having this in mind, and judging from the hundreds of questions that are asked every year by subscribers, as to what are the most troublesome points, this article will try to show, in a very brief way, the most vital things concerning fertilizers, and how to use them intelligently, simply considering the man with a small place—a lawn, vegetable garden, flowers and shrubbery, perhaps.

The books tell us that there are three elements necessary to plant growth—nitrogen, potassium, phosphorus, and perhaps a fourth, lime. This is misleading, to begin with. The point is not that these four alone form a large part of the structure of a plant, but that they are the only ones liable to exhaustion from constant cropping of a soil. All the other things exist or are supplied in practically unlimited quantities by soil, air, and water.

The man with a small garden can simply consider that as far as he is concerned there are only three kinds of fertilizers—manures, commercial fertilizers, and lime—and that soil texture and weeds and insect pests and diseases, sunshine and rain, are far more important than supplying just the right amount of this, that, or the other chemical to his soil for certain results. Adding to the fertility of land is not a natural practice, anyway. A fertile soil requires no doctoring; in the great farms of the West the practice of fertilizing is practically unknown.

VALUE OF FERTILIZER

When we add manure or fertilizer to ground we are supplying something in which it is deficient. In other words, we are doctoring a sick soil with drugs, and we must try to give the dose in the right amount or the remedy may be worse than the disease. A little fertilizer may do a lot of good; a lot of it (say, ten times as much) would absolutely destroy the plant growth or, as the farmers say, "burn it up," but this does not apply as a rule to stable manure. And here we come to the most important stumbling block of many gardeners who have read "not wisely" but too much about fertilizers. It refers to the use of barnyard manure. Some people are afraid to use it because it may not have just the right proportion of nitrogen, potash, and phosphorus. Remember just one thing, even if you lose sight of all the rest of this article: Plenty of good barnyard manure will grow almost any crop, and if you are lucky enough to have plenty of it, use it. If it is well rotted, so much the better. Don't be afraid to use it because some book says that the best fertilizer for this or that crop is so many per cent. of nitrogen, potash, and phosphoric acid. Don't use any fertilizer at all while the manure pile lasts.



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if you would be economical. As stable manure is a complete fertilizer, *i. e.*, one containing the three elements, any crop will be benefited.

Manures are better than fertilizers, too, because they improve the texture of the soil. They furnish humus (vegetable fibre). Heavy clay soils are made more open and porous, admitting better circulation of air and preventing baking, and sandy soils are made more compact, preventing them from wasting. Besides all this, the effects of manure are lasting.

Someone writes, "How much manure shall I need?" The answer is, "All you have." From ten to twenty tons per acre is considered sufficient for most farm crops—that is, from five to ten pounds for each ten square feet of garden, but double and treble may be used. Of course, it is n't necessary to weigh it—guess-work is good enough. A ton of fresh stable manure ordinarily contains eight pounds of available nitrogen, ten pounds of available phosphorus, and ten pounds of potash. Based on what we must pay for these elements in commercial fertilizers—nitrogen at sixteen cents, potash at five cents, and phosphorus at six cents—manure is worth at least \$2 a ton.

A question that is constantly asked is whether it is better to haul manure directly from the stable or to leave it in the yard or heap. The general answer is, if you have a good place to keep it, a covered shed or a clay or concrete pit that will prevent the leaching effect of rains and the loss of the liquid part which is very high in fertilizing qualities, keep it in a heap and spread it when you can handle it most conveniently. But if it is wasting away on some side hill or barnyard, and because it is not systematically forked over, if it is burning up and turning white, then get it on the garden whenever you can. Do not locate it in small piles, but spread it and spade or plow it in. The loss in value of manure is enormous when kept under wasteful conditions. In an experiment conducted at Ithaca, N. Y., 4,000 pounds of stable manure, containing an estimated value of plant food of \$2.30, was left in a compact pile and exposed to the elements. In less than five months it had reduced in weight to 1,730 pounds and the plant food value remaining was only a little over a dollar. The annual value of the manure in New York State alone is about a hundred million dollars and at least a third of it is wasted. Therefore, if you can't care for manure properly, get it out in the fields.

We are repeatedly asked about manures other than from the stable. The answer is that cow and pig manure are less constant in composition and generally less valuable than horse manure. The two most valuable of all are poultry and sheep manure. A ton of poultry manure will contain eighty-two pounds of nitrogen, sixteen pounds of potassium, and thirty pounds of potash, and, therefore, pound for pound, is worth about four times that of horse manure. You can therefore pay profitably at the rate of six to eight dollars a ton for poultry droppings in good condition. The manure question can be disposed of with the following brief instructions: If you have manure use it and read books about it afterward.

The real problem is that most small gardeners do not have sufficient manure, and therefore have to help out the supply with some kind of concentrated fertilizer. Here is where the trouble begins, for each crop, according to the books, will require a different formula. For instance, you read that corn will require a 2-7-6 mixture; grapes 2-8-11, radishes 3-7-9, lettuce 5-6-9 and so on. In order to apply all this, the home garden would have to be laid out like a checker board and each square or row given a special mixture that would require the services of a druggist's prescription clerk to apply.

In my own practice, I am unable to get very much manure, and therefore buy a so-called complete fertilizer at \$30 a ton and use it for everything. I will admit that I may be wasting some fertilizing ingredient that the soil does not need, and may not be getting maximum crops. But what of it? I would be wasting still more valuable time and money fooling with all these special mixtures and treatments. Even the scientist will admit that chemical analysis of a soil does not show anything, because it does not, as a rule, determine availability or soil texture. Under



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Vick's Selection of Named Varieties, \$1.50 per dozen; six for 60 cents; three for 35 cents.
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Gladioli in Varieties and Mixtures are shown on page 84.

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If the Belle Meade farm people had chosen a "smooth surfaced" roofing it would have cost them more in the beginning and the difference would have become greater every year. Those roofs were laid in 1905. in 1907 they would have required a thorough painting, which would have to be repeated in 1909, and every two years thereafter.

The Amatite however, *has had no painting*, and needs none. The mineral surface takes care of that. When the roof finally wears out and the owners of the Belle Meade Farm compute the cost of their Amatite Roofing they will put down "for the Amatite, so many dollars;" "for care of same, nothing." If they had used a painted roofing there would probably be several coats of paint to figure on, besides the original cost of the roofing, and the total would be several times as much as Amatite.

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Why not follow the example of practically all the Government and State Experiment Stations and 300,000 Gardeners, Farmers and Fruit Growers, and use one of Brown's sprayers.

Auto-Spray No. 1, Hand Power, capacity 4 gallons, is just the thing for all round work for small orchards or field crops up to 5 acres. Fitted with the Auto-Pop Nozzle, this sprayer does more work and does it better than three men can do with ordinary sprayers. It is the best machine obtainable for whitewashing and disinfecting poultry houses and stables.

We make 40 Styles and Sizes of the Auto-Spray

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DANDELIONS

and all noxious weeds, in lawn, garden or by road side, may be destroyed quickly and effectively by spraying. It is easily and quickly done with the Auto-Spray No. 1, and a solution of Iron Sulphate. Full instructions and directions in our book.

analysis an old shoe would show very high fertilizing qualities.

Recently it has become quite the thing for farmers to mix their fertilizers at home. This, of course, involves a more definite knowledge. It will not pay the small gardener to go to the trouble and the study that home mixing of fertilizers involves, although it is unquestionably cheaper, the saving being perhaps \$8 a ton. Half a ton of good (*i. e.*, expensive fertilizer) should be ample for an acre of garden. This is at the rate of one pound to each four square feet.

In my garden I broadcast about half the fertilizer, and use the rest in local treatment around hills and so on. I have found both of these mixtures to be good:

- 7 lbs. nitrate of soda
- 8 lbs. dissolved phosphate rock
- 55 lbs. wood ashes
- 19 lbs. ammonium phosphate
- 30 lbs. bone ash
- 21 lbs. nitrate of pot-ash

But don't bother to learn this. Just go to a reliable dealer and buy a good "complete" fertilizer. You may be sure you are getting your money's worth. The state laws protect you, therefore the dearest kinds are the cheapest in the end. A very satisfactory fertilizer for a small garden is called the 1-2-3 mixture.

Such a fertilizer will cost about \$2.50 for a bag of one hundred pounds, and will be plenty for a 40 x 100 feet garden. No definite rule can be laid down for this, however, as it will depend on texture of soil, amount of manure present, and so on. About all that can be said generally is that a bag of fertilizer will be enough for the small garden.

The first application for the home garden in any case should be some manure, even if you have to buy it, and this should be worked into the ground by means of plowing and harrowing. Then, if necessary, some complete fertilizer may be added.

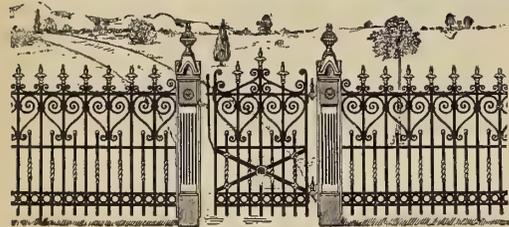
In addition to fertilizers almost every plant in the garden will be benefited by applications of nitrate of soda. This is especially necessary when the pale green color and dwarf size of the plants indicate need for it. The lack of potash and phosphorus are indicated by scanty fruit and flowers; the conditions of plant, stalk, leaves and other green things show whether they need nitrogen; and the fruit and flower, potash and phosphorus.

I have found that, for quick results, a little nitrate of soda works marvels. I should, therefore, advise gardeners to form the habit of using it as a sort of auxiliary to fertilizers and manures.

In conclusion, let me say that this is not all there is to know about fertilizers. There are volumes on the subject, and still more volumes to come. It is simply the experience of a man who could not understand the books and had to find out for himself.

New Jersey.

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At this writing we believe that the advance orders for "The American Flower Garden," by Neltje Blanchan, have exhausted the limited edition of 1,050 numbered copies. Our readers are advised to consult their bookseller. Price before publication was \$10.00 a copy.

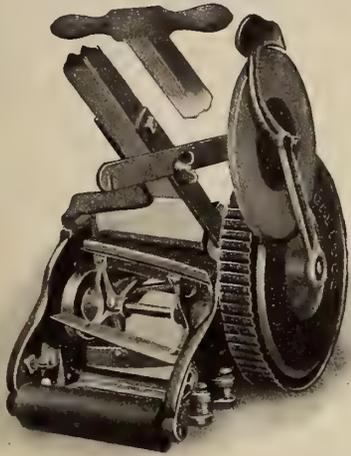
Doubleday, Page & Company
New York



An Uncommon Variety of Squash

TO THE EDITOR: I should be glad to ascertain if any of the readers of THE GARDEN MAGAZINE grow the squash known as China Red? It was introduced some fifteen years ago, but seedsmen do not seem to catalogue it now. I would be glad to have the name and address of anyone who is growing this variety at the present time.
Ohio. W. R. L. DWYER.

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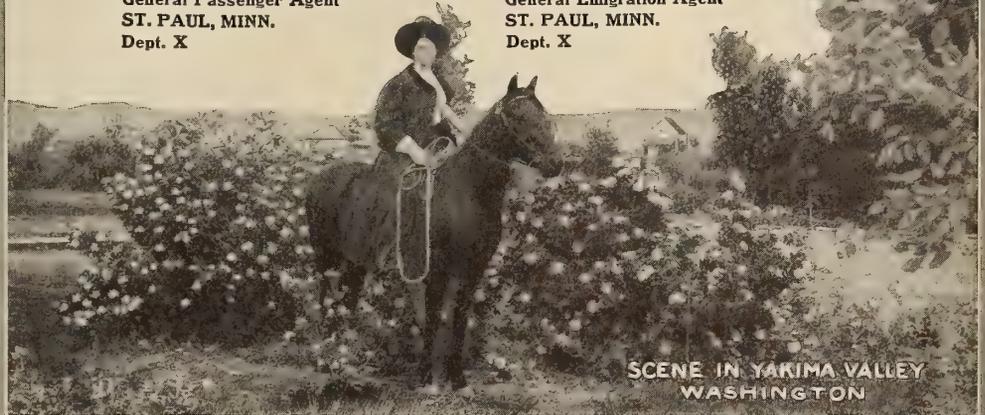
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The cut herewith shows one of a large number of vines in my garden this season. Notice that each stalk is loaded with large, perfect fruit from top to bottom. This is the result of my method. It is easy to raise this kind of fruit when you know how. Just send for my book—price 50c., postage or money order. Your money back if not satisfactory.

FREE SEED.—To everyone ordering my booklet within the next 30 days I will send FREE with each book one package each of the best varieties of early and late tomatoes. I make this offer so that you will get ready now for your spring gardening. Don't wait until the last minute when the rush is on. Send for my booklet to-day and I know you will be thankful that you made such a wise investment.

"CELESTIAL LOVE APPLES." We have just received a very limited quantity of the seed of a wonderful new variety of tomato by the above name. It is a very perfect and delicious fruit but it is a non-acid tomato and is most desirable for invalids and dyspeptics who ordinarily cannot eat the tomato. We will send twelve (12) seeds to each one ordering our booklet on tomato growing. If you don't receive them you will know the supply is out.

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Conifers in America and England

NOTE in Mr. Wilhelm Miller's remarks on coniferous trees in THE GARDEN MAGAZINE for January, 1909, his statement with regard to the white pine, the Weymouth pine of the English, (*Pinus Strobus*). It is, indeed, a more elegant pine than many, but its peculiar beauty as a landscape tree is best observed when the tree is old—say, from fifty to seventy years—when the lateral branches have long since fallen; more especially if it be planted in groups, the better method—or associated in close order with other trees. The beauty of the reddish bole then comes into view, and the upper branches have assumed a table-like mass—a complete contrast to the erect, straight boles.

That is the appearance of the tree when of mature age, but its contour before this stage is reached does not differ much from that of many other pines.

It is a capital species for planting in groups, the individual trees standing fifteen to twenty feet apart. The tree does well planted near water, if not stagnant in the soil; and it shows up with peculiar effect on projections on the shores of a lake or winding stream.

Mr. William Robinson, in his foot-note to the article mentioned, is quite right in regard to *Pinus Strobus* succeeding in England on shady or gritty soil. In Moravia I have observed the tree in capital condition at seventy years of age on reclaimed, swampy soil, in positions adjacent to a large lake.

England. F. MOORE.



\$240,000 in Sweet Peas

IN CALIFORNIA, where almost every flower grows in great profusion, one of the most beautiful sights is a field devoted wholly to sweet peas. Where the colors are grown separately they give the appearance of a great floor laid in mosaics.

In Los Angeles County there is a field of sweet peas a half mile square. The rows, which run east and west, are a quarter of a mile long; the varieties are in beds ten to one hundred feet wide, according to the quantity desired, and are separated by rows of lettuce.

About July 1st the sweet-pea harvest begins, the threshing being done in the field. The tall varieties are cut with the mower, piled up to dry, and threshed as soon as possible to prevent the pods from opening and the seed from being lost.

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California. W. G.

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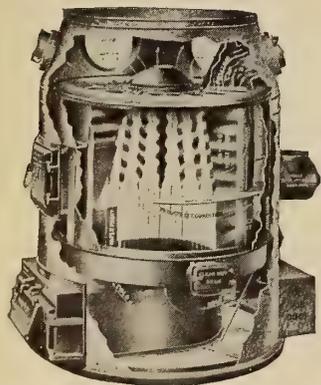
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CAN I keep geranium and begonia plants over winter, storing them in a dark, cool, dry cellar? How shall I care for them in the cellar?

Wisconsin. F. F. F.

—It is possible to store geraniums over winter in the cellar, and it is very often done. Bring in the plants just at the approach of frost, and hang them up by the roots on a nail in the roof-timbers of the cellar. Begonias (with the exception of tuberous-rooted varieties) cannot be kept in a cellar. The bulbs of the tuberous kinds may be put in dry sand and stored in a dry frost-proof place, but the fibrous kinds must be stored in the house in a light place, where they can grow more or less and be watered if necessary all winter long. Geraniums will not need any water when they are hung up in the cellar.

LAWNS IN SHADED PLACES

How can I make grass grow in a shaded place in my garden?

New York. A. D.

—A lawn in a shaded place has to be built up gradually—it may take four or five years to establish satisfactorily. A first-class lawn can be obtained only by continuous feeding by means of top dressings, reseeding every spring or fall, and seeding in all bare patches that occur at any time of the growing period. A shaded place grass mixture is composed of 40 per cent. Kentucky blue grass, 40 per cent. wood meadow grass, 10 per cent. various leaved fescue, and 10 per cent. crested dog's tail. These percentages refer to weight, not bulk, and cleaned seed is assumed in each case. Rake the surface of the lawn in springtime, using a sharp-toothed steel rake, and do not be afraid to scratch hard. Then scatter the seed and roll with as heavy a roller as can be manipulated. Naturally, the more shaded a place is the more necessary it is to provide proper under-drainage.

L. B.

GROWING PEACHES AND NECTARINES IN POTS

WHAT are the names of root stocks used in grafting peaches and nectarines for pot culture?

Kentucky. F. Y.

—Practically all the peaches and nectarines propagated in European nurseries for growing on walls and in other dwarf forms, such as in pyramids and under glass, are worked on plum stock, either Myrobalan, Black Damas or St. Julian. In this country the Americana stock seems to give better result with peaches than either Myrobalan or St. Julian. When Americana stock is used, budding should take place in July—earlier in the season than is usually practiced, which in most localities is along in August. Sand-cherry stock has also been used for working peaches and nectarines on in this country in order to dwarf them. It makes smaller plants than when worked on plum stock, but it is a relatively shorter-lived tree in consequence, as the cion overgrows the stock. Americana stock may be purchased, or, if the seeds are sown early in the season and the plants well cultivated to induce rapid growth, budding may be done the same year. It can take place as late as two weeks after the usual budding season, because these young plants are making a more rapid growth and grow longer in the season than do one-year-old or older plants.

P. T. B.

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An old darky woman was brought before the Magistrate for the third or fourth time charged with inhuman treatment of one of her children. The Judge had decided to punish her severely, but asked her if she had anything to say before he passed sentence. The old darky rose and said: "Say, Jedge, was yo evah the parunt uf ah pufekly wofles culud chile?"

Some eminent authorities would have you suppose that "SCALECIDE" is "a pufekly wofles culud chile," but it is either prejudice or a lack of information, for no spray for San Jose Scale on fruit trees has ever stood a higher test.

The Storrs, Connecticut Bulletin, No. 54, December, 1908 gives "SCALECIDE" (1 gallon to 15 gallons of water) 100% scale killed and peach leaf curl absolutely controlled.

The Missouri Bulletin No. 18, October, 1908, gives:

Lime-Sulfur (boiled)	15-15-50	97.8% scale killed
Rex Lime-Sulfur,	1 to 11	98.9% " "
"SCALECIDE,"	1 to 16	100. % " "

Two gallons of "SCALECIDE" spray per tree did absolutely perfect work, while three gallons of Lime-Sulfur and three and a fifth gallons of Rex Lime-Sulfur per tree failed to kill all the scale.

The Idaho Bulletin No. 61, February, 1908, gives:

Niagara Lime-Sulfur,	1 to 10	98 % scale killed
Rex Lime-Sulfur,	1 to 10	98.9% " "
"SCALECIDE,"	1 to 15	99 % " "

Both the Niagara and Rex Lime-Sulfurs failed to control the leaf curl.

Are these exceptional reports? Did you ever see a report anywhere that credited Lime-Sulfur, either home-made or commercial, with 100% scale killed? 50 Church St., New York B. G. PRATT.

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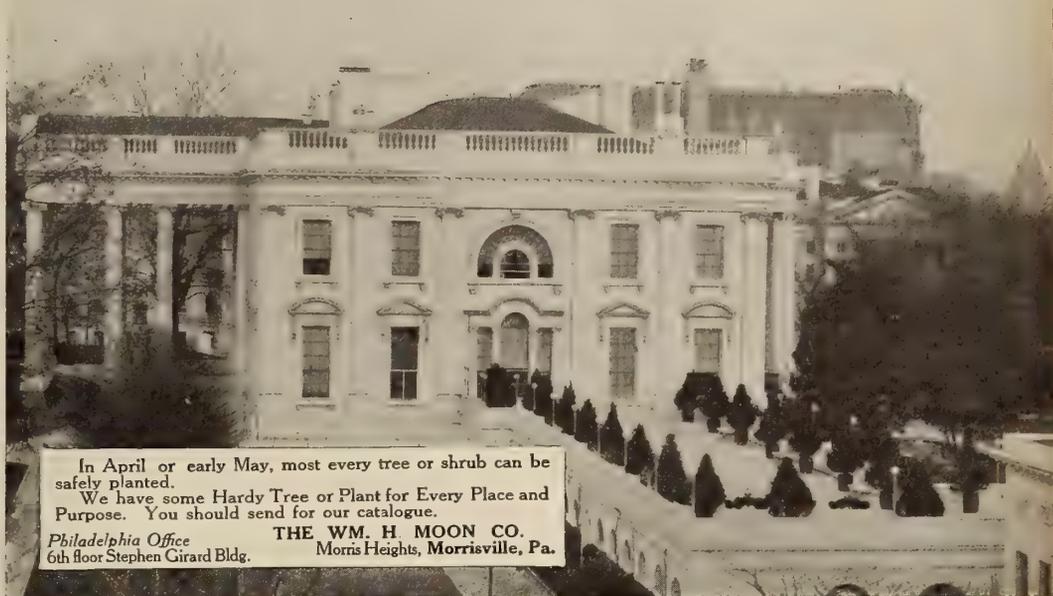
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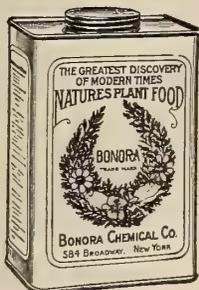
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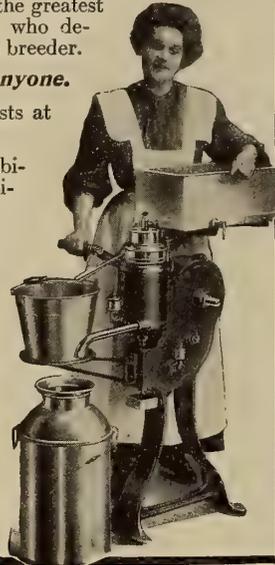
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How can I grow grass in a plot 10 x 12 feet in which the soil is light brown, as hard as a rock, and mixed with asphalt and stone? The bottom is rock, and is within a foot of the surface in some places.

Connecticut. I. J. R.
—For the establishment of a lawn in the soil mentioned, it must first be made deep, rich, and mellow. Cart out all the present soil and bring in new. Sodding would be the quickest way to obtain results, and it would probably cost about ten cents a square foot, delivered.

PLANTING DAHLIA ROOTS

Can you tell me whether it is best to plant dahlia roots in large clumps like peonies, or in single toes?

New York. H. S. V. I.
—It is largely a matter of convenience as to the best sized dahlia roots to plant. A moderate-sized clump of what is known as field roots will, of course, give a larger mass of growths than single or divided roots. By dividing a clump into several roots and allowing one stem only from each root, a much greater amount of vigor is obtained. But if, on the other hand, a large mass of growth is desired so as to get the greatest bunchiness of effect, use the field roots undivided. Perhaps the ideal solution for the amateur gardener is half-way between these two extremes, dividing the clump so as to have three or four tubers and eyes to a piece. You should read the article in the April GARDEN MAGAZINE.

HOW TO DESTROY ANTS

WHAT should be done when ants attack an apple tree? Some years ago a willow tree was completely destroyed and a cherry tree almost killed, but the ravages of the ants in the latter case were checked by filling in with fresh earth. The apple tree seems to have the ants inside the trunk.

New Jersey. F. B. M.
—It cannot be possible that the ants are the prime cause of the injuries to the trees—they can only follow after the damage has been done by some other insect or disease. The portion of the apple tree infested by the ants is probably already dead, and they are simply making use of a convenient place for burrowing. However, if the ants are in the ground around the trees, use bisulphide of carbon at the rate of one or two ounces of the liquid to each tree. Pour it into the runs, and the fumes will undoubtedly be destructive to the insects.

PRINCIPLES OF GOOD LAWN MAKING

WHAT is the best remedy for moss in a lawn where there is plenty of sunshine? Can hardpan be less than a foot below the surface? Can sheep manure be spread on a lawn after it is reseeded? What is a good lawn mixture?

New York. O. G.
—The presence of moss in a lawn fully exposed to the sun is probably due to the absence or insufficiency of soil drainage. By that we mean that the ground water-line is too high, and that tile drainage, such as is done in an agricultural field, would improve the condition. Acidity of the soil may also have a little to do with it. An insufficient depth of good soil is undoubtedly responsible for the failure of 50 per cent. of lawns. Grass will not grow well unless it has good depth for its roots, and with hardpan only one foot below the surface, the soil is a shallow one on a cold, wet bottom. It is not wise to put any fertilizer such as sheep manure on any sort of ground before the growth is up. Strong fertilizer will merely kill the seed. Three bushels of Kentucky blue grass, one bushel fancy red top, one bushel Rhode Island bent and ten pounds white clover is a perfectly satisfactory mixture, assuming, of course, that only thoroughly re-cleaned seed is used. The only modification that might be worth considering would be the addition of various-leaf fescue, and if the soil is inclined to be acid it might be well to reduce the Kentucky blue slightly, increasing the bent in proportion, as it is a good soil binder.

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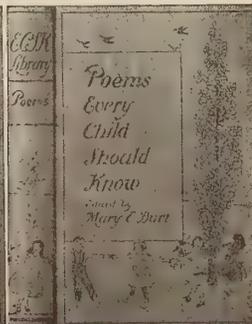
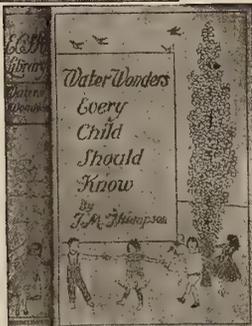
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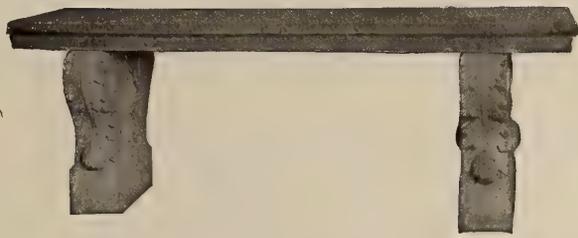
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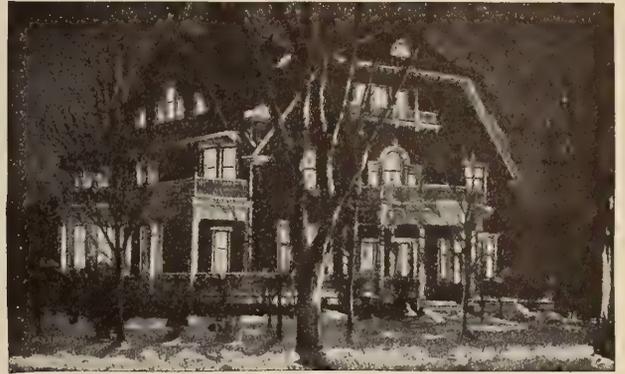
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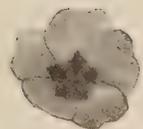
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Will you help us reach them?

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G. M., 6-09

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(We are glad to answer specific questions for the readers of *The Garden Magazine*, and we are also glad to express an opinion on any suggested planting plan if it is submitted in full detail. It should be understood, however, that we cannot undertake the actual preparation of a plan or elaboration of a planting scheme.—Editors).

EAT DANDELIONS IN THE SPRING

Can I grow dandelions for spring greens?
Iowa. L. E. L.
—For spring greens dandelion seeds should be sown in the spring either in the open ground or in a coldframe, the latter for early crops. Thin or transplant them to about twelve inches apart in the rows and have the rows far enough apart to cultivate easily—in the coldframe, one foot; in the field, eighteen inches or two feet for cultivating with a wheel hoe, and three feet for horse cultivator. By sowing the seed in the spring, strong roots will be had for either forcing or main crop the following spring. For best results grow improved varieties, such as French Garden or Thick-leaved.

DEFINITION OF PINCHING

What is meant by "pinching" a plant?
New Jersey. L. E. B.
—By "pinching" plants is meant the actual pinching out the top of the growing shoot, using the thumb and fore or second finger. In this way the terminal bud is removed and lateral branching is produced. The actual length to be pinched off would depend on the circumstances. Sometimes, in treating geraniums, for instance, one-quarter of an inch is often pinched out; at other times, maybe an inch or even two inches. In this way the development of the plants is controlled and perfect symmetry produced. If the pinched off tops are fairly long they may be used to make cuttings.

MAKING PASTURE LAND

I have five acres of heavy upland with an eastern slope, on which nothing grows but weeds. How can I convert it into clean meadow or pasture land in the shortest time?
Pennsylvania. M. J. R.

—Plow the land as soon as possible and keep it thoroughly harrowed or cultivated at frequent intervals until about the first week in September; then seed it with choice, clean seed of timothy and herd grass or red top, using about a bushel of each variety to an acre. The weed seed on the surface of the ground will be turned under with the plow and should be left there undisturbed, for if nothing has grown on the land for several seasons, the soil brought to the top by plowing should be comparatively free from weed seeds. Frequent and repeated harrowings during the summer months serve to keep down and destroy the weeds, and at the same time put the surface soil in the finest condition for the seed-bed in September. Some of the very finest grass fields I have ever seen have been treated in this way at the time of seeding the grass, liberal dressings of a good commercial fertilizer being applied.
E. D. D.

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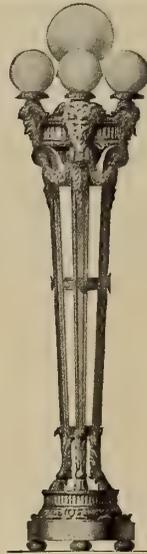


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WHY does the double Van Sion daffodil generally throw green blooms instead of yellow after the first season's blooming? Am I correct in attributing it to soil conditions?

Georgia. T. P. H.

—This problem is a very elusive one. It is doubtful whether double daffodils will hold their color in warm climates under any conditions. Large growers grow the Italian bulbs for a year or two in Holland and the British Isles so as to turn the flowers yellow, but as soon as the stock is again grown in southern climes, the tendency to green reasserts itself, and is seemingly incurable.

L. B.

FLOWERS PACKED FOR SHIPPING

Could sweet peas, narcissus, and daffodils be shipped to large markets to advantage, and would it be necessary to use ice in packing?

Tennessee. L. E. R.

—When shipping to market, the flowers of bulbous stock (i. e., narcissus, daffodils, etc.) are placed in wooden cases, fifty to one hundred bunches to a case, twenty-five flowers to a bunch. If the shipment is to any great distance, a little ice is used, and in the case of sweet peas the stalks only should be moistened. It would hardly be necessary to do this for a one-night's journey if the packing is carefully done. In many cases shipments arrive in the market in a ruined condition owing to water having been sprinkled over the flowers.

HOW TO PROPAGATE PRIVET

How can I slip and start a privet hedge? Also, how shall I cut slips, how deeply plant, how far apart, and can they be set at once in the place where they are to grow?

New York. F. N. H.

—Privet can be propagated either by green-wood cuttings taken at any time during the summer and inserted in the ground or in an ordinary cutting bed, or by dormant wood taken in the winter, heeled in sand, and planted out in nursery rows in the spring. Nothing is easier to propagate. The plants to be used for hedges must be cut down to within three or four inches of the ground after they are two or three years old, and induced in every way to throw up suckers. The trimmings that are cut off with the shears during the summer can be stuck into the ground and are almost sure to grow. Merely removing the lower leaves is the usual way of trimming. Do not set the plants in the place where they are to grow, but in nursery rows, nearly two inches apart, so that they can be more easily cultivated until well rooted. Having the plants once rooted, of course you can set them out where the hedge should be. The plants should be finally set in the row, or double row, about nine inches apart, and decidedly deeper than they were growing in the nursery row.

CRIMSON CLOVER AS A FERTILIZER

How can I use crimson clover as a fertilizer in a vegetable garden? Can it be planted at any time during the summer, and should it be turned under while young, or allowed to blossom and ripen seed?

Connecticut. J. C. D.

—Crimson clover improves the fertility of the soil in two ways: First, by being turned under as a green crop, it adds humic matter the same as any other green fertilizer; second — and this is its chief value as compared to other plants — it adds nitrogen to the soil by gathering it directly from the air through colonies of bacteria which inhabit nodules or galls on the roots. Most leguminous plants do this, but the crimson clover has such an extraordinarily large root system and commands such a large number of bacteria colonies that it adds more nitrogen in proportion than any other plant. Nitrogen is the most evanescent and most important fertilizer, the one that is most easily washed out of the soil when applied in mineral form, and is the basis of all systems of fertilization. It is because crimson clover catches this from the air and adds it to the soil at practically no cost that it is so highly valued as a fertilizer crop. Sow the seed either in drills or broadcast, and plow under just before the flowers open. Or another way is to sow the seed late in the fall, so that the stand may be had all winter, and plow it under as early as possible in the spring.

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I can take care of the whole lot in a short time without having barrels of water to pull around, which makes hard work and a troubled mind. I came near forgetting to say that I use it in chicken houses and for setting hens and amongst young chicks, and we all seem to be thriving and growing fat. I use it for fleas on the dog, and they leave for other parts without delay. With best wishes, I remain very respectfully,
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WILLIAM WINCOTT.

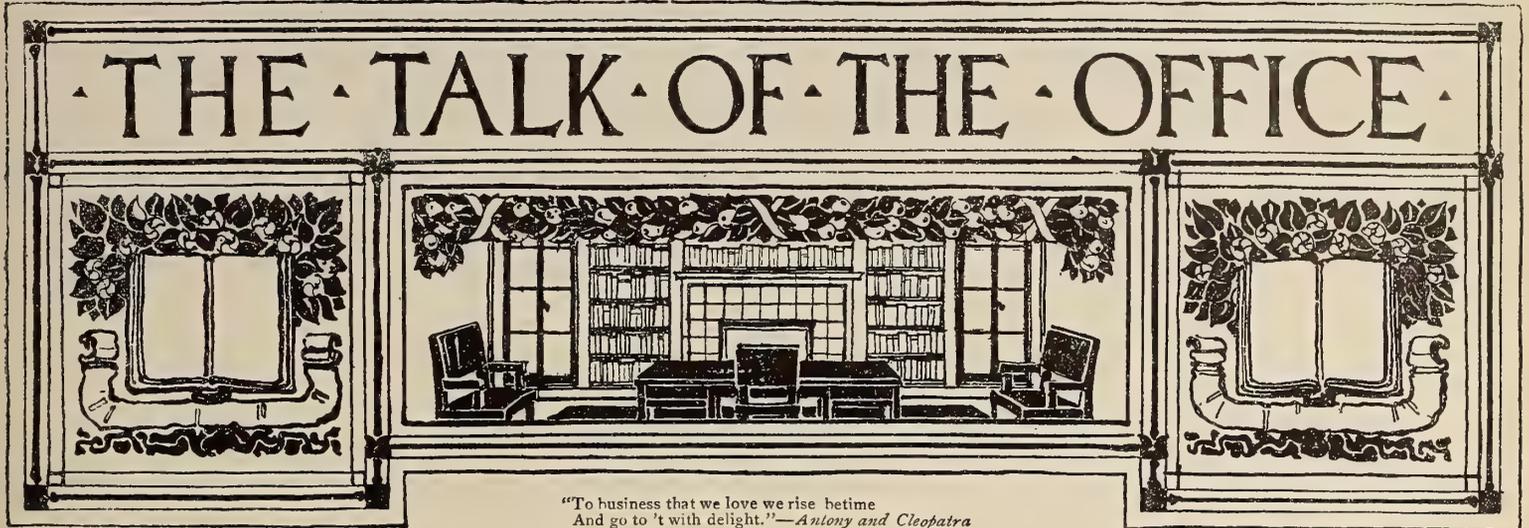


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MANY THANKS

The spring of 1909 has been a season of great advance along the various lines of publishing followed by Doubleday, Page & Company. For all of which we thank our customers.

Each of the magazines has made splendid progress, and we hope they are continually becoming more worthy of the appreciation which has been shown for them.

In the advertising sections, the magazines have published 376,323 agate lines of really high-class, paid advertising during the first five months of this year, as against 263,596 lines in the same period of 1908.

The book department, by acquiring the list of important volumes formerly issued by the McClure Company, has almost doubled its output, and greatly increased the number of authors whose works we issue.

We look toward the latter half of the year with hope and confidence, and we wish our customers and friends all good luck.

"THE AMERICAN FLOWER GARDEN"

Our readers may be interested to know that we published on April 21st "The American Flower Garden," by Neltje Blanchan, in a limited edition of 1,050 copies, and that every copy of the whole printing was subscribed for before the day of publication.

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SOME TIMELY BOOKS

This list of timely books may be more than familiar to you, but we print it again, as you may find some new titles:

All books can be sent on approval.

THE GARDEN LIBRARY

- "The Vegetable Garden," by Ida D. Bennett.
 - "The Flower Garden," by Ida D. Bennett.
 - "Orchard and Fruit Garden," by E. P. Powell.
 - "Roses and How to Grow Them," by Many Experts.
 - "Ferns and How to Grow Them," by G. A. Woolson.
 - "Lawns, and How to Make Them," by Leonard Barron.
 - "Water-Lilies, and How to Grow Them," by H. S. Conard and Henri Hus.
 - "Daffodils, Narcissus, and How to Grow Them," by A. M. Kirby.
- Fixed price, \$1.10 per volume (postage 10 cents).

THE FARM LIBRARY

- "Soils; How to Handle and Improve Them," by S. W. Fletcher.
 - "Farm Animals," by E. V. Wilcox.
 - "Farm Management," by F. W. Card.
 - "Cotton," by C. W. Burkett and Clarence H. Poe.
- Fixed price \$2 per volume (postage 20 cents).

OTHER OUTDOOR BOOKS

- "How to Make a Fruit Garden," by S. W. Fletcher. Fixed price \$2 (postage 20 cents).
- "How to Make a Vegetable Garden," by Edith L. Fullerton. Fixed price \$2 (postage 20 cents).
- "Our Native Orchids," by W. H. Gibson and Helen F. Jelliffe. Fixed price \$1.35 (postage 10 cents).
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- "How to Plan the Home Grounds," by S. Parsons. Fixed price \$1 (postage 10 cents).
- "A Plea for Hardy Plants," by J. Wilkinson Elliott. Fixed price \$1.60 (postage 15 cents).

THE E. C. S. K. LIBRARY

In this successful library, we have just added two volumes:

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"Wild Flowers Every Child Should Know," by F. W. Staek, \$1.20 net.

ACTUAL COLOR PHOTOGRAPHY

We hope that all the readers of this magazine read also *Country Life in America*. If they don't, they are missing an opportunity. That magazine is the only one in the world, so far as we know, which is regularly illustrated by the wonderful new process of color photography plates, discovered by the French scientist, Lumière. No one who is interested in out-of-door photography should fail to watch the development of this great achievement month by month. Sent thirty-five cents for the June issue, or order from your newsdealer; or send \$4 for a year's subscription. All back numbers since these color photographs began have been exhausted. The June issue is the first available to new readers.

WANTED — NAMES

More and more are we impressed with the fact that the circulation of a magazine extends from the readers themselves. The subscribers to *The Garden Magazine* know better than anyone else what sort of people would enjoy and be benefited by such a periodical.

We appeal to every interested reader of *The Garden Magazine* to send us the names of a dozen people who love a garden, to whom we can mail a description of the magazine, with a special offer to get a new subscriber started. If you are willing to help with the names and addresses, please write them on a piece of paper, and send them to us with this coupon, and we will at once mail to you, with our compliments, an artist proof of a garden picture suitable for framing, which you will, we feel sure, be glad to have.

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Enclosed find list of garden lovers. You may (may not) (erase as you decide) use my name as recommending the magazine.

NAME _____

ADDRESS _____

To Happy Mothers

Let your little ones have **gardens of their own**. Let them watch the tiny sprouts appearing, unfolding to fragrant blossom. This happy interest will influence their **future** for the **best**. We have selected a lot of **Hardy Seeds** which if sown in open ground before June 15th will grow with ease and little care. All sprout in 12 to 15 days in ordinary garden soil and bloom through July and August until late fall.

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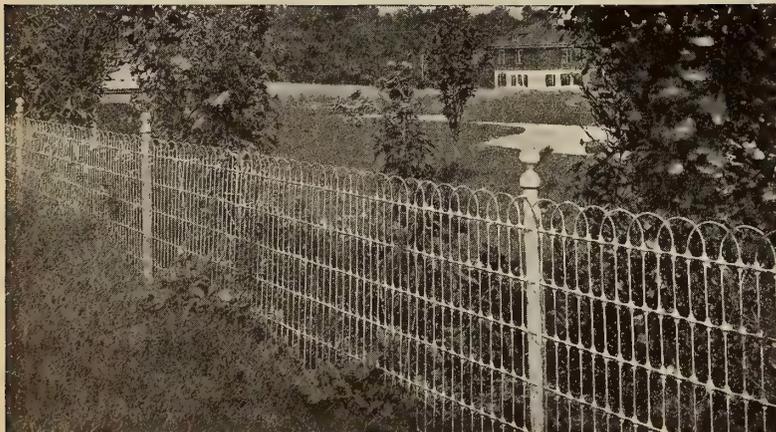
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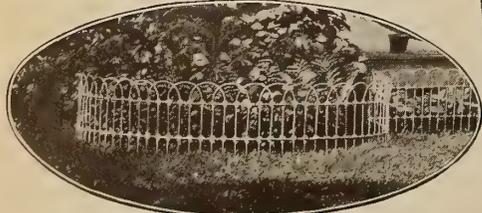
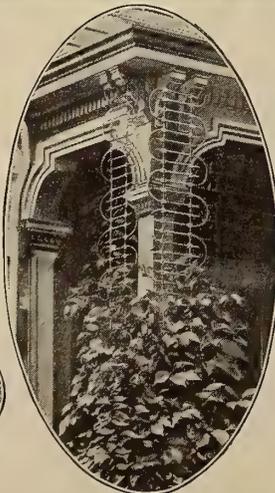
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JUNE, 1909

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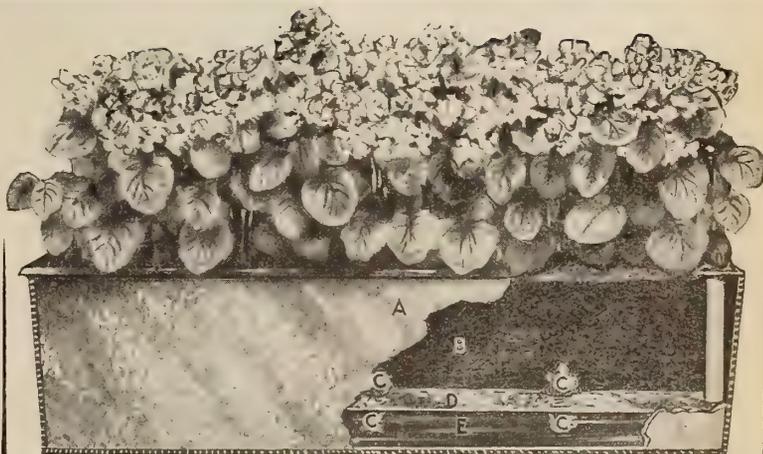
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The Garden Magazine

VOL. IX—No. 5
PUBLISHED MONTHLY

JUNE, 1909

ONE DOLLAR A YEAR
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[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

Act Before June 1st

SET out tender bedding plants, if you really want them and danger of frost is past.

Order water lily plants.

Sow tender annuals outdoors; *e. g.*, nasturtiums, *Lavatera trimestris*, rose moss, and scarlet sage.

Get a collection of dahlias — say, twelve cactus dahlias, or twelve show; twelve pompon, etc.

Have better window boxes than your neighbors. Don't depend on the small local florist. Get one of the big seedsmen to send you something different, *e. g.*, white or blue moonflower, lemon verbena, *Thunbergia alata*.

Make or buy some window boxes. Have you tried the self-watering or sub-irrigating kind?

Decide now what you need in the way of tomato vine supports, bamboo stakes, galvanized iron rods, etc., for lilies, gladioli, peonies, dahlias, etc.

Stimulate all backward vegetables with nitrate of soda or liquid manure.

Spray roses three times with potassium sulphide to prevent mildew and black spot. About May 17th, 24th, and 31st.

Water strawberries, and stimulate them with nitrate of soda until crop is ready.

Don't Miss these Chances

THE sensational flower feature of this season will be Darwin tulips. Ask the Readers' Service Department where you can see the best collections, and whether there will be any exhibitions.

See all the May-blooming tulips you can, because they do not need to be dug up every year. Inquire where you can see cottage tulips.

Ask where you can see the wild and run-wild tulips of Europe. There was a big sale of *T. sylvestris* and *Gesneriana* last year because we told how to make them look like wild flowers here.

Try some alpine flowers. Now is a fine time to sow the seeds. American catalogues offer some of the common kinds. New and rare kinds can be imported from England without duty. Ask the Readers' Service Department for addresses of specialists in alpine flowers.

Don't use tender plants for bedding if hardy ones will do. See if you can't get pot-grown plants of kinds that will bloom two or three months; *e. g.*, Miss Lingard phlox, Napoleon III. pink, subsessile veronica, Stokes' blue aster, gaillardias, *Eupatorium caelestinum*, everblooming ragged robin, and *Nepeta Mussini*.

You can buy almost any kind of vine and hardy flower now, because the big nurserymen grow them in pots for summer delivery. The vacation habit and automobile are largely responsible for this.

Between June 1st and 15th

BUY celery plants now.

Buy plants now of cabbage, cauliflower, celeriac, Brussels sprouts, kale, and kohlrabi.

Save a year on strawberries by planting pot-grown plants now.

Send for a midsummer catalogue of vegetable plants and seeds. It will tell you what to sow in summer in order to have fresh vegetables all the autumn and winter.

Make an outdoor seedbed for the cabbage tribe, if you are raising them for winter use.

Set out tender water lilies.

Spray roses twice, when in the height of bloom, with arsenate of lead, or, one of the special preparations sold under trade names.

What lawn tools do you need? A sweeper, sprinkler, trimmer, mower? An automobile lawn mower for your golf club?

Get tree guards for your street trees. Do you need any other permanent iron work that will not rust; *e. g.*, flower bed protectors, garden arches, trellises for roses and other vines?

Opportunities for Early June

MAKE sure that your garden will be attractive in September and October by making a second sowing of your favorite annuals; *e. g.*, marigold, phlox, pansy, nasturtium.

Make your garden more interesting at night by sowing fragrant white flowers; *e. g.*,

sweet alyssum or stocks, or by started seedlings of white tobacco or verbenas. Or buy pot grown plants of the white day lily.

Study comfort in the garden. See what your friends have in the way of summer houses, pergolas, seats, benches, tables, wall fountains, platforms built into trees, telescopes for enjoying distant views, sub-irrigation for gardens, hydraulic rams to bring plenty of water, etc.

Order daffodils by the thousand for wild gardening in June, so as to get the best varieties and best bulbs. Also all rare and costly bulbs. Also the wild and run-wild tulips for naturalizing. Also bulbs in great demand, *e. g.*, Darwin tulips.

See the evergreens that are grown in willow baskets for summer planting. Don't you need some to make your summer home look better?

Visit the best rose gardens in your neighborhood and note the varieties you want. Read "Roses and How to Grow Them," and you will understand better what you see.

Prune your own shrubs after blooming by cutting out the old wood instead of letting butchers trim everything into balls in March.

Take a color photograph of your garden and let us see it.

After June 15th

BURN every smutty corn stalk before the black powder is exposed.

Watch for the second visitation of currant worms.

Pick cherries carefully. Don't injure bark or fruit buds.

Secure a second crop of roses, by cutting back one-third of the new growth of hybrid perpetuals. Then apply liquid manure or nitrate of soda.

Save labor in watering house plants that are put outdoors for the summer, by plunging the pots in the ground or in boxes of sand or moss.

Cut down the hot, routine work of June by getting better tools. Look in the back of your seed catalogue, or send for the special catalogues of tools. Do you need a wheel hoe, garden plow, a scuffle hoe. They will help you do *all* the work in *half* the time.

Trim privet hedges now, and twice more this season. Cut back one-half of the new wood each time.

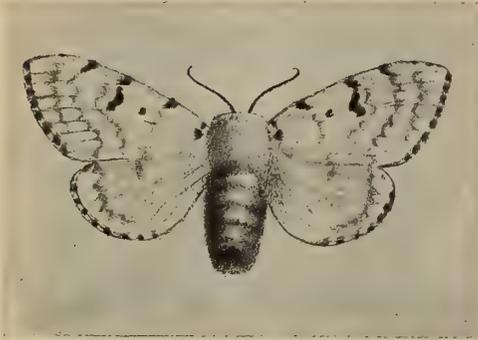
Opportunities of Late June

SOW Chinese primrose seed now and raise plants to give friends at Christmas.

Order freesias for July delivery if you want Christmas bloom.

The Creeping Gypsy Moth, a Serious Shade Tree Menace

By LUKE J. DOOGUE, MASSACHUSETTS



The female gypsy moth does not fly. The eggs laid in immense numbers, hatch out during the first part of April, the caterpillar state lasting for about ten weeks. The gypsy moth feeds only during this time. The caterpillars remain on the under sides of the leaves, and as they attain size develop the night feeding habit, concealing themselves during the day in any place affording protection



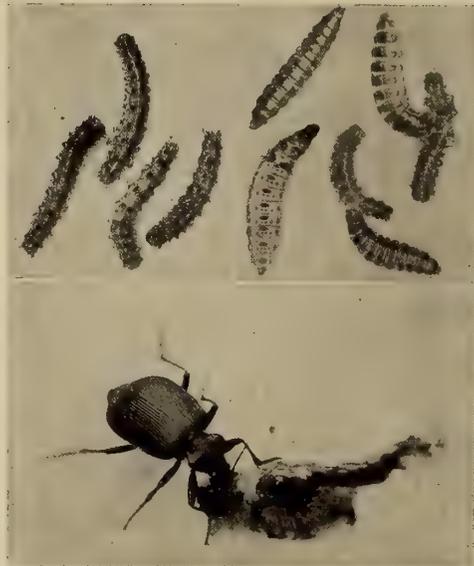
Gypsy moth nest on a leaf. A nest like this will contain about 400 eggs



A few cents distributed among children will bring to light many gypsy moth nests. The children will eagerly do the work of searching



Gypsy moth pupae. The moth emerges from this



The natural enemy of the gypsy moth in both larva and beetle form devouring gypsy caterpillars. This beetle was brought to this country and cultivated by the Massachusetts Gypsy Moth Commission, and many thousands have been distributed to begin their work of extermination



Burlap placed about the trunks of trees is a good trap to catch gypsies. When large the worms do their eating during the night and hide from the light during the day. The burlap is doubled over and the gypsies will hide under it. Hundreds can be easily destroyed during the daytime



In looking for gypsy moths a mirror is very handy, as it makes possible the inspection of places difficult to get at



On the stones of this bulk-head hundreds of nests were laid; and even on loose stones nests were found



The gypsy moth female, unlike the brown tail, does not fly, but the caterpillar is carried from place to place



Destroy gypsy moth nests with creosote, applying it to each nest with a brush. It penetrates and kills the eggs



The gypsy moth is not particular where she lays her eggs. A nest may be found on old clothing, etc.

The Brown Tail Moth, the Worst Flying Pest of Our Trees

By LUKE J. DOOGUE, MASSACHUSETTS



Poisoned by the brown tail. The long hairs shed by the caterpillar pierce the skin and cause serious irritation which is not easily relieved. During many successive summers the effect of this poisoning is apt to be felt by anyone who has been thus afflicted. The children are the greatest sufferers



In this basket there are about 1,500 nests and each nest contains on an average 400 brown tail caterpillars. Good sized nests will hold as many as 1,000 bugs



The female brown tail lays her eggs in the late summer. The caterpillars, after hatching out, feed for a short time and then spin their winter webs by wrapping a number of leaves together with a fine web. These webs are generally found at the tips of branches. The brown tail appears with the first warm days of spring



Pear and apple trees are much liked and great nests are made on them. Pick off every nest. Poles are handy for this



Light has a great attraction for the moths, and they may often be seen in thousands crawling up the electric light posts



The furnace is the proper place to put all nests. If burned outside there is always great liability of dropping some



Burning brown tail nests is not easy, as the web is something like asbestos in composition. Keep up a very hot fire until the last nest is destroyed



Expert climbers are necessary on tall trees. When the nest is cut off some one must be watching it to pick it up.



One hundred and sixty-nine fruit trees were stripped bare by brown tails in one orchard in Georgetown, Mass., last summer

English Primroses for American City Gardens—By H. C. Anderson, New Jersey

CONTRARY TO POPULAR BELIEF THIS DAINY FLOWER OF SPRING IS MOST EASILY GROWN ALMOST ANYWHERE, AND MAY BE INCREASED RAPIDLY FOR BORDERS AND TO GIVE A PROFUSION OF FLOWERS

LOVERS of flowers, to-day, with a wonderful variety of plants within easy reach, and brought to their attention by attractive flower catalogues, can know very little of one of the joys dear to the hearts of our grandmothers, the exchange of favorite plants, arranged for, no doubt, over the tea cups, by the gentle ladies of long ago. Almost all old gardens, fragrant with the memories which hover round the sweet, old-fashioned flowers, can boast of at least one little clump of English primroses obtained, possibly, in the old-time flower exchange. Our garden was no exception to the rule and, for thirty years or more, a little primrose plant, brought originally from an older garden, stood in a retired corner, apparently making no growth whatever. Its charmingly dainty flowers, with creamy white petals and golden eyes, bloomed very early each spring, and continued to bloom for at least six weeks. A desire to have more led us to experiment with the original plant, and, at the end of a few years, as a result of our experiments, we now have five hundred plants, and, if space would allow, could have, this year, five thousand; and all at the cost of but a little time and trouble.

Our experience with the English primrose is that the plant is exceedingly hardy and flourishes in almost any exposure.

The garden in which it grows is fairly well sheltered, with houses near, and a high fence to the north; but the plants have been sent to many other localities, even as far west as California, where they have been grown successfully, and as far north as Ipswich, Mass.

The multiplication of plants was begun by separating the original cluster and placing the single plants in a border, and anyone else can do likewise. The cluster should be dug up, the earth shaken off, and the clump "divided." If it is grasped firmly with both hands and pulled apart to the centre, it will be quite easy to disentangle the small plants and pull them off one by one.



Showing development of a single plant after ten months' growth. Planted November 4th; photographed September 20th

When a single plant has been allowed to grow for a year, it may be separated into five; if left undisturbed for two years it will furnish twenty or twenty-five plants. This fourfold increase cannot be relied upon if the plants become crowded and matted, as they will if left for four or five

years, although they may then be depended upon to furnish forty, fifty, or more plants, each with its cluster of rootlets and its crown of leaves.

Experience has proven that the transplanting may be done at almost any season, but it has been most successful when done after the warmest weather is over. Any time during October will serve, and, if the season is mild, it may be done even later. If one wishes a slightly border the first season, the plants should be put about five inches apart. The following spring they will make a continuous border and will bear a moderate number of flowers.

In the autumn, if another border is desired, every alternate plant may be taken up, separated, and replanted in the new border.

If there are thirty plants in the first border there will be fifteen to be taken up. These would furnish seventy or seventy-five plants, and, in another year, they could be separated into three hundred and fifty or three hundred and seventy-five plants; and it may be easily seen that there is nothing but the lack of space and time to limit the increase.

The foliage is very pretty in the early summer, and, if planted in rich soil with good drainage, the plants will increase greatly in size during June and July. In August the leaves may become slightly yellowish, especially if other plants are allowed to overshadow or fall over them. To fellow amateur gardeners, who can only occasionally snatch time to work among the flowers, it may not be amiss to suggest that when the time draws near for separating and transplanting the flowers it is well to watch the weather and seize upon a time when a "rainy spell" seems imminent. The canny gardener soon learns to know the signs of coming rain, and can save himself the daily watering of the newly set-out plants. After a few days of rain the plants will need no further attention until the garden is given its winter covering.



A single plant of the English primrose (*Primula vulgaris*). The flowers are pale creamy yellow with darker eyes



Primroses flower with the tulips and make a dainty edging to the border

Although the primrose may be grown with almost no care, it will quickly respond to a little attention. If the ground is made quite rich the growth will be rank and

rapid, the flowers will develop longer stems, and in addition to forming attractive borders will furnish dainty clusters for house decoration or for a table centre piece.

In England the primrose is sought for in the fields and along the hedges at Easter time, and it blooms here quite as early. Some English neighbors come to us (following their custom in the old country) to gather primroses on Easter Sunday and rarely fail to find them.

The flowers open the last week in March, and continue to bloom during the season of the blood root, hepatica, anemone, violet, and twin-leaf in the wild-flower bed, and of the jonquil, hyacinth, and tulip in the more formal borders.

Our experiments have been carried on to furnish borders for a limited number of flower beds, and not to see how many plants could be grown; but it is safe to say that a plant which could be separated into thirty small plants could, in five years, be made to produce ninety three thousand plants, allowing seven hundred and fifty for failures, which is quite too large a number; as, with ordinary care, very few plants are lost.

The professional may know to a nicety just what rate of increase to expect, but these notes are offered by an amateur to others of the same cult. The amateur



As an edging to shrubbery on a wild flower bed containing hepaticas, violets, anemones, bloodroot, twin-leaf, the primrose is quite happy

gardener will be well repaid for the slight expenditure of time and trouble necessary for the culture of the English primrose by the wonderful profusion of lovely flowers which come with the opening of spring.

Lawn Tools You Really Need—By J. Lukens Kayan, Philadelphia

LESSEN THE LABOR OF WEEDING, CUTTING, AND TRIMMING BY USING THE ONE MOST EFFICIENT TOOL FOR THE SPECIAL CONDITIONS—THE BUSY MAN'S ECONOMY

THE space generally surrounding the house, carpeted with grass and more or less embellished with annual and perennial flowering plants, vines, shrubs, and trees, requires constant attention, not only to keep it in proper order but also to make the house and grounds in combination present an attractive and "occupied" appearance. The grass must be kept free from weeds,

and evenly cut, the edges neatly trimmed, paths clean, vines, shrubs and trees trimmed, dead branches cut out, etc.

To do this in the best, most effective, and quickest manner necessitates the use of tools suited to each purpose; the number and assortment varying with the size of the place and the nature of the plantings. When the plot is small the grass can be kept cut with a sickle, but a lawn mower will do the work much more quickly and better, with a saving of muscular effort. And the same holds true of all kinds of horticultural work; tools that will complete the work quickly are as essential on the lawn as they are in the kitchen garden.

THE CHOICE OR SELECTION OF TOOLS

All tools that are intended to replace the hand tools commonly used for any purpose are subject to limitations and while most of them will, with less labor, do a given amount of work in much less time, there are times and positions in which the hand tools must still be used. The lawn mower has replaced the sickle and scythe for grass cutting, but the lawn mower's work must still be supplemented by the sickle or grass shear. These three and the edger are the tools that must first be purchased. Other quick-acting trimmers and edgers will prove themselves labor savers and can be profitably

added to the outfit. The sickle, grass shear, and edger will always be needed however, but there will be much less work for them to do.

What was said in the article on the possession of first-class tools and their care



Lawn mower with grass catcher attached—A 19-inch knife is the best all-round



The high-wheel and ball-bearings make operating easy. The grass catcher is rarely needed

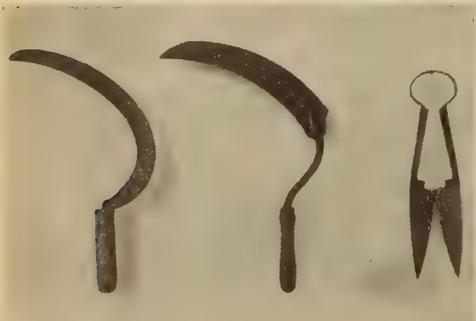


The long handled lawn shears will help greatly in keeping a tidy appearance

in the July, 1908, number of THE GARDEN MAGAZINE applies with equal force to the tools that are here described. The better wearing qualities, the greater ease with which most of them work, and the added satisfaction attending their use, will more than repay the difference in price between a poor tool and a good one. And the purchase of a special tool will often prove to be a piece of practical wisdom and economy on the part of the amateur busy in other spheres, even when the apparent need of such an addition to the equipment hardly seems to warrant the outlay.

GRASS CUTTERS AND TRIMMERS

There is but one tool that will keep the surface of a lawn in perfect condition, and that is the modern lawn mower. The use of this tool is universal and it gives an evenness of surface that can be obtained in no other way. When the plot is small, the grass can be kept cut with a sickle, but a lawn mower will do the work much quicker and better. Lawn mowers can be bought in all sizes from the large steam or horse mower used on large estates to the small mower with blades ten inches long. While it is possible to get a machine that is too large for one man, the most common mistake is to buy one too small. Where the lawn is fairly large, 17-inch blades are small enough, but the 19-inch knife has proved to be the best size for all around use. The five inches difference between the width of the cut of a 19-inch blade and that of a 14-inch (the size



Only on very small grass plots is it wise to rely on the sickle. But it is needed for trimming

commonly bought) means that with the larger the work can be completed in about three-quarters of the time required by the smaller size. Get a five-bladed machine, if you want the best, but if the difference in price is an object, buy the one with four blades.

All except the cheapest makes are so constructed that grass catchers can be attached to them, although the better way is to mow the lawn often enough so that the clippings can be allowed to lie where they fall. They soon shrivel, dry out and settle down between the grass blades, in no wise detracting from the neat appearance of the lawn and acting as a mulch in the very hot weather; and there is the fact that nothing is being taken away from the soil. If absence or continued rain should prevent cutting and the grass should make too much growth to allow the cuttings to remain on the lawn, the grass catcher will save the labor and time necessary for raking up the cuttings.

The lawn mower will not cut grass growing close against copings, posts, flower beds, etc., and other tools must be used for that purpose, although where the edges of flower beds are but slightly lower than the abutting sod, the grass may be cut by running one wheel of the mower in the bed close to the edge of the sod. This often cuts the grass so short, however, that it dies, making an edge of dead grass or bare soil.

The oldest implement used for cutting grass and grain is the reaping hook, known as the sickle or grass hook. While yet used to a small extent for cutting grass, its principal use now is for trimming edges and cutting the grass in odd corners. Of the two patterns the one most extensively used is commonly called the English, the curve of the blade varying slightly according to the notion of the maker. The American or scythe pattern may be had with a fixed or adjustable blade. When set straight with the handle it may be used as a slashing knife. A thumb-nut clamps the blade in position and corrugations prevent it from slipping.

There are two distinct forms of construction of the English pattern. In one the blade is made of a thin piece of steel, stiffened by welding or riveting a narrow strip of steel down the back and top of the blade. The welded reinforcement is naturally the better. The blade can be kept sharp with the ordinary scythe stone and will be found sufficiently strong for ordinary work. The second form is made of steel heavy enough to stand use without reinforcement, and must be ground occasionally to keep sharp.

The small grass shears (costing about twenty-five cents) commonly used for trimming the grass, work stiff and are hard to use because the blade is too short. Better get a first-class tool with a blade six to eight inches long. These shears are designed for trimming the edges and for clearing out corners where the regular cutting tool will not reach. Yet some people try to mow the lawn with the shears! Border and lawn shears of improved forms are not so well-known, but are used for practically the



Trimming and edging tools work where the lawn mower cannot enter

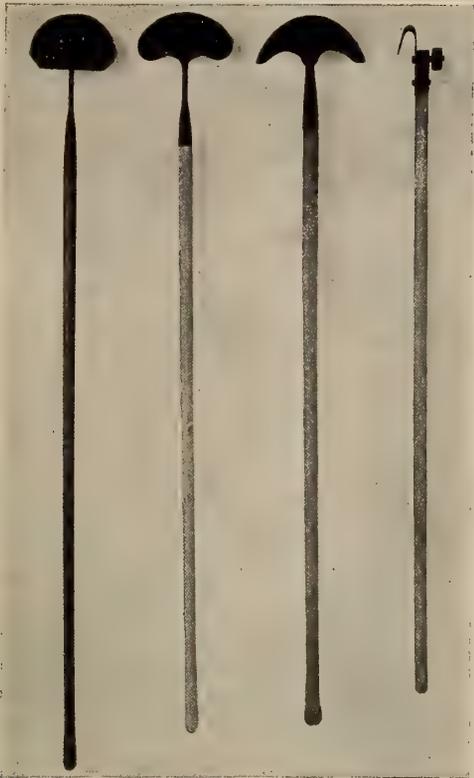
same purposes and are vastly superior, the long handles allowing the operator to stand erect. The border shears with one wheel (also furnished without a wheel) quickly shears off the grass overhanging paths or flower beds and can also be used to trim around posts, etc. This is a labor-saving tool and is much used in parks.

The two-wheeled or lawn shear (to the right of the illustration) is for flat work under bushes, fences, around posts, etc. It is also furnished without wheels, but the wheels are of some service as the blades operate parallel with the ground and the wheels raise them slightly. Both shears are supplied with eight 8 or 10 inch blades, the larger being the more rapid-working.

The grass trimmer and edger shown in the illustration in the upper right hand corner of this page are handy tools. The one works on the same principle as the lawn mower. The blades are six inches long and the wheel, being on one side only, permits their use very close to posts and curbing, along the edges of flower beds and borders and along walks and drives. There is also a disk and scraper attachment (which is bolted to the trimmer and can be easily removed) which converts it into an edger. It is only necessary to turn the machine upside down to bring the edger into use. For ease of operation, quickness and thoroughness of work this tool excels all others heretofore used for the purpose, and its cost is not so great as the combined cost of the two shears just described.



The edging attachment for the wheel hoe is one more advantage of that tool



Turf edgers are really needed, and the home-made concrete path edger, on the right, is a boon

The right hand tool shown in the same figure is constructed somewhat like an agricultural mowing machine, having similar cutting blades. It is operated by a crank and gears and moves about on two small wheels. The operator grasps the pistol-like handle with the left hand and turns the crank with the right. Thus the knives cut whether the machine is in motion or not, and it can be used close up against copings, under fences, bushes, etc. It makes a cut seven inches wide. The manner of operation will be found tiresome, however, if continued for any length of time.

The first named tool excels in ease of operation, while the second can be used for purposes and in situations which could not be reached otherwise.

EDGING TOOLS

Where the sod of the lawn abuts flower beds, borders, walks or drives it must be evenly cut or edged. If the border or path be straight, this edge must be a true straight line; if curved, the sweep must be graceful and regular and not a series of irregular ragged edges. To maintain this with the least possible attention and labor, the abutting edges of the sod must be higher than the flower bed or walk. The rapid spread of grass depends to a large extent upon a level surface; the roots first grow horizontally just beneath the surface and if they meet with an abrupt break or depression their growth is checked. Advantage can therefore be taken of this natural tendency to so arrange the surfaces of flower beds and paths that they will be about one or two inches below the level of the adjoining sod. The least difference between levels is possible where the sod abuts hard gravel or cinder

paths which are crowned or raised in the centre to the lawn level to prevent flooding during heavy rains. Where the sod adjoins flower beds or borders, particularly where the soil is loose and mellow, grass will more quickly pass the obstruction than where it has to take root in a hard, packed surface. In some formal gardens as much as three inches or more between levels is maintained, but for all practical purposes two inches will be sufficient. The action of rain and wind naturally tends to level the two surfaces by gradually filling in the depression.

A tool must therefore be used that will trim the edge of the sod (thereby counteracting its tendency to slowly pass the obstruction) and at the same time push back any soil that may have collected.

All edgers are used by pressing or forcing them into the sod and thus trimming or slicing off a small amount and making a clean sharp edge. In hard soils they are often used with a chopping motion, which soon wears the blade out of shape. These tools merely cut down the sod — a hoe and rake are generally necessary to complete the work.

The crescent-like shape of the first one shown in the illustration makes it much less useful than either of the other two tools; if the blade of the second one is sharpened all the way around it may, under some conditions, be used by drawing or pulling. The long, sweeping curve of the latter makes it very easy working. I consider this the best of the three, as it gives a greater range of angle in using it; the shaping and finish of the blade is better, being thin along the cutting edge and tapering to the heavier connection at the shank; it is furnished with socket handle connection only and with 8 or 10 inch blade. The blades of the first two are from seven to eight inches wide, of nearly the same thickness all over and are furnished with either socket or shank connection. There are several modifications of these shapes, most of which are made of sheet steel and are of poorer quality.

Where sod adjoins concrete or asphalt walks, the tendency of the grass to grow out over them is often checked by maintaining a narrow V or U shaped channel or gutter between the sod and the walk. This may be done with the edgers just described, or the disk may be used. In either case the strip of sod cut away is afterward removed. The right hand tool in the illustration will both make it and keep it open. Draw it along the edge of the path, walking backward, and by cutting a few inches at a time, the machine can be used to lift out the sod that is cut away, as it will cling together. Run it along the walk occasionally and then sweep out the channel with a broom. This tool is home made and while constructed slightly different from the one on sale by dealers, does the work about as well. The U-shaped cutter is made of 14-gauge steel and sets at an angle of about 45 degrees to the handle, to which both the blade and an old castor wheel are bolted. This handle is four and one-half feet long and 1 x 1½ in. in cross section.

The disk edger attachment for the machine trimmer is a very useful addition for the

users of that tool. Anyone owning a wheel hoe may increase its utility for a very small outlay. The disk-edger is strongly constructed to withstand hard usage. When an edging tool is to cut tough hard soil, it requires considerable weight or pressure to hold it down, and here the wheel hoe frame is valuable because a weight may be clamped to it by a bolt. When using this edger operate it the same as the wheel hoe, taking steady strokes. When edging gravel or cinder paths that are hard and dry, if it fails to go deep enough the first time draw it back and repeat the stroke.

The disk is six inches in diameter and the scraper five and one-half inches long. They may be used together and adjusted to suit the work, or either disk or scraper can be used separately.

Do not forget the use of the wheel hoe itself for edging, as illustrated and described in THE GARDEN MAGAZINE for May, 1908. The peat land hoe (which has extra high fenders) is the best edging tool for flower borders, although it will not produce as perpendicular a face on the sod edge as can be obtained by the use of the edging tool or disk edger.

LAWN WEEDERS

The stretches of soil between the rows in the vegetable garden allow free use of cutting and tearing tools which loosen and pulverize



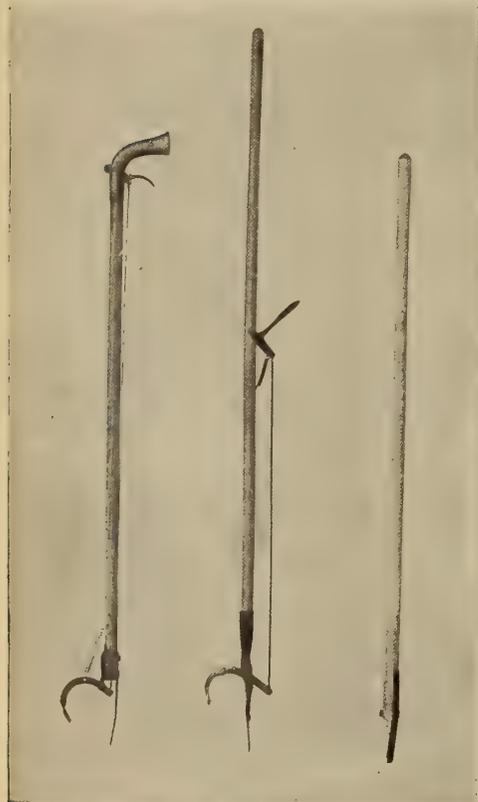
For light weeding on lawns



Side views of the weeder shown above

the soil, and leave the exposed roots of the displaced weeds to be killed by the sun. But on a lawn covered with a thick growth of grass tools must be used that will take out the weeds individually. These weeds are generally strong growing and may have long tap roots which must be cut far below the surface to prevent them from sprouting again. Small weeds may often be pulled by hand after a soaking rain, but if this is attempted with well established roots, except when the soil is thoroughly saturated with moisture, the weeder is apt to break them off at the crown. They then sprout readily and in a short time are larger than before.

Such tools are necessarily simple in construction and the styles are few. There are practically but two forms of lawn weeders — the straight bladed, used for



These machine weeders lessen the labor and prevent backache

cutting off the plants so that they may be either pulled by hand or forced out with the weeder itself, and the forked blade that has a claw shaped end to clutch the roots, the handle being used as a lever to force or pull them out. Both are made in a number of sizes adapted to various kinds of weeds.

WEEDERS FOR LIGHT WORK

Cutting weeders are shown on page 287, and the first three are used for both cutting off and forcing or prying out the weeds. The simplest form is the small bladed weeder with the V-shaped cutting end, but any stiff, narrow-bladed tool, such as the narrow-bladed, triangular or half-round trowels, will do this work very satisfactorily.

The asparagus knife of which there are two forms will be found to be a very good weeding tool. The one in the illustration

has a straight ended cutting blade, is of strong construction and is the better of the two for lawn weeding, as a small amount of prying can be done with it. The weeds can be either cut off and pulled, or cut and then forced out with the weeder. Beside it is another, thin bladed and light, the V-shaped end preventing the possibility of glancing when cutting a thick root, but it cannot be used for prying. The thin, keen-ended blade enters the soil easily and the root once cut, the weed in most cases is then easily pulled out. This knife is the best for asparagus cutting.

The last two weeders represent the forked or claw-bladed pulling class and are not so well known as those with the cutting blade. Under favorable conditions this form will prove a quick working tool for removing dandelions from the lawn. The claw is used to clutch the weed below the crown, the heel or extension just back of the claw acts as a fulcrum and is generally sufficiently broad on the face to push back any sod or soil that may be forced up when the weed is pulled, the handle acting as a lever for this purpose. The tool can be used only when the soil is moist. Even under the most favorable conditions, not all weeds will pull clean, but all will be broken off low enough down to prevent subsequent sprouting if gripped below the crown when being pulled.

The smaller weeder (known as a dandelion puller) is a casting, but has proved strong enough to pull any weed the claw will grip. It is twelve inches long. The long one is made of wrought steel. There are different sizes of this weeder, varying slightly in construction. One that should have admirable lasting qualities is made with steel claw and heel, with socket connection to a wood handle.

The long-handled weeders, while differing somewhat in construction are similar in operation to the foregoing. The fittings of the one shown to the left in the figure are cast iron and are liable to break; the other one is guaranteed cast malleable and therefore will bend before it breaks. The sharp blade is thrust into the soil a short distance from the weed, at such an angle that it will be cut at the proper distance below the surface. The trigger or lever is then pressed and the power applied is transmitted through the wire connection to the curved arm at the lower end. This is toothed and notched when it grips the weed to prevent slipping. The weeder is then lifted, drawing the weed with it.

The third one pictured is a long-handled dandelion spud, which is effectual for clipping small weeds out of the lawn. If this tool is used for large weeds they must be cut too close to the surface to kill them, for if they are cut deep enough to kill them and then pried out, the lawn will be disfigured by pieces of sod that are forced out at the same time. The blade is slightly curved, half round in section, double ended, and bolted to a three and a half foot handle. Except for small weeds the first two are the better of this class.

DOCK CUTTERS AND EXTRACTORS

For cutting off and lifting or tearing out of the soil strong-rooted weeds, one of the

worst of which is dock, specially strong tools are necessary. I have pulled roots of this weed one-half inch in diameter that were eighteen inches long, and have dug out roots over two inches in diameter, which at the depth of eighteen inches were but slightly less in diameter than at the surface. The average lawn is not infested with weeds having such roots as this, but to the purchaser of property that has been inhabited by a careless tenant or owner, the tools shown would be very useful.

The sharp ended blade of the first tool is forced into the root so as to cut it off far enough below the surface to prevent sprouting. The cross bar at the top of the blade allows the foot to force it down, and the handle is then used as a lever to force out the portion of the root cut off. The blade



You probably do not need such strong tools, but they are really necessary on new ground

(which is also made with an M-shaped cutting end) is from eight to nine inches long and from two to two and a half inches wide. All have steel blades and while some makes have a cast malleable cross bar, in others the cross bar is steel welded to the blade. This tool is also made with both strap and plain ferrule connection to the handle. The latter is a very poor method, as a tool of this kind should be constructed as strong as possible.

The claw-bladed dock extractor is the better of the two. The cross bar which acts as a fulcrum extends four inches back of the blade, the handle gives sufficient leverage to pull very large roots when conditions are favorable. This is a very strong tool, being all steel with the exception of the cross bar and the handle, which are of white ash.

English Effects With Alpine Flowers--By Wilhelm Miller, ^{New York}

ROCK GARDENING A UNIVERSAL PASSION IN ENGLAND AND WILL BECOME SO HERE—MOST OF THE SHOWIEST FLOWERS EASY TO GROW EVEN WITHOUT ROCKS—JUNE A GOOD TIME TO START

[EDITOR'S NOTE—This is the sixth of twelve articles that explain how we waste about \$1,000,000 a year in trying to copy English effects literally and how we can get the spirit of them with long-lived material. Previous articles have dealt with conifers, trees, shrubs, broad-leaved evergreens, and bedding plants, etc. Future articles will deal with perennials, bulbs, vines, edging plants, etc.]

ROCK gardening is a universal passion in England, and no wonder, for the alpine flowers are the real "gems" of the floral world. They are as small as jewels and have the same purity of color, and in spite of their diminutive size they are showy, because they have a genius for spreading so as to form great sheets of bloom.

For thirteen years I had been dreaming of English rock gardens and reading articles about them in English papers, yet I was totally unprepared for the immense number of them and the radiant visions of beauty which they present. I had seen nearly all the important rock gardens in America, and knew there were only two notable ones outside of botanical gardens. So I supposed that rock gardening was merely a hobby for a few skilled amateurs and collectors. On the contrary, it seemed as if everyone had a rock garden, and the mass effects, while they last, are brilliant beyond anything we know or can imagine.

At first I touched the stars, as everyone does who sees a collection of alpiners for the first time. The ground is carpeted with jewels, such as Ali Baba never saw. Speech seems a poor thing. You are far above mere names of plants and botany. You wander about, half seeing new forms and drinking great drafts of ambrosial color until the mind can hold no more, and you put your hands over your eyes to shut out the splendor of this new wonder-world.

Soon comes a sorrowful reaction. Everyone says: "You Americans can never reproduce these effects on a large scale. Your summers are too hot and dry. It is the

cool, moist summer of England that suits these mountain flowers to perfection."

I felt, as thousands of Americans before me have felt, that it was an impossible proposition, and I tried to renounce all this beauty, for I was on a practical mission. But each new rock garden caused a fresh pang and fresh dejection until I was ready to quit England in despair.

But one day at Kew I noticed how many of the most beautiful flowers in that famous rocky dell were native to America and the thought came, "if England can grow and love our mountain flowers, why cannot we?" Then I began to ask every gardener, "which flowers can stand the hottest sunshine on the barest rocks," and found a goodly number of them. These two classes of plants alone seemed to me enough to justify an American style of rock gardening.

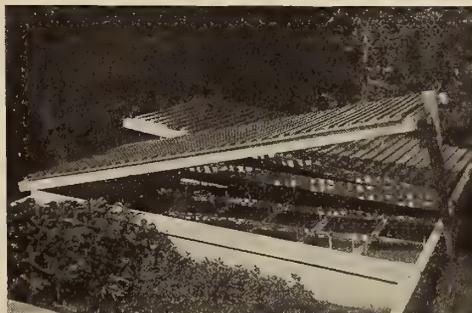
But the biggest fact of all never came to me until I got back home and had a chance to study our own books and catalogues. *Most of the showiest rock-loving flowers are so easy to cultivate that anyone*

can grow them in an ordinary border without any rocks at all! And practically all the difficult kinds which English enthusiasts grow any American can enjoy if he will go to the expense of a really first-class rockery.

So I say boldly the old pessimistic attitude is dead wrong! Rock gardening will become a great institution here. Our hot, dry summer will not prevent rock gardening, but will give it a beautiful new American character. I am sure of it for two reasons. We have the spirit and we have the plants. We all want the best there is, and certainly there are no flowers more beautiful than alpiners.

England herself used to be equally pessimistic about her own ability to grow alpiners, and her wonderful enthusiasm of to-day has come within the memory of the present generation. English authorities used to say that alpine flowers cannot be grown in the lowlands. Certainly the climate of England is quite unlike that of the Alps. In Switzerland the flowers are protected from alternate freezing and thawing by the snow; in England they are not. Yet there are few alpine flowers worth having that are not now grown in England.

We, too, are handicapped by changeable winters and hot summers, but we can find plenty of charming alpiners that will stand both. For instance, here are some flowers that grow wild on the Alps but are so common in gardens that we never think of them as alpine plants—the snowdrop, daffodil, poet's narcissus, trailing myrtle, Christmas rose, lily-of-the-valley, Scotch pink, common columbine, and English daisy. You may think that these are too



In a small range of coldframes like this you can grow many thousand alpine plants from seed



The wrong way is to use many large rocks, and expose freshly broken surfaces instead of weathered and mossy ones



The right way to make an alpine garden is to design a picture, use few rocks and make them inconspicuous



The plantain-leaved thrift (*Armeria plantaginea*) has balls of pink flowers and long, picturesque stems. The sedum is a new species from Japan, with large yellow flowers, red stems and gray leaves borne in rosettes

gardenesque for alpine effects, and I heartily agree that improved pinks, columbines and daisies would not be appropriate. It would be impure design to use big masses of them on rocks. But the wild forms of these plants are as dainty as any other alpine flowers, and it is easy to get the seed of any wild forms from Geneva, Switzerland.

This reminds me that the cheapest and easiest way to start a collection of alpine flowers is to import the seed from Europe, because flower seeds can now be mailed without duty, and without vexatious delays. There are no American catalogues of alpine plants, but there are many in England. There is a Swiss catalogue that offers 2,500 different kinds of seeds; and a German that lists about 3,400. This illustrates the immense range there is for individual taste and experiment.

However, beginners are appalled by such big lists, and most Americans want to know where they can buy plants, because they are generally in a hurry and do not mind the extra expense if they can get results the first year. Unfortunately, there is no way of buying alpine seeds or plants in America, except by picking out the alpine species from general catalogues. As beginners do not know which plants are alpines, I shall be forced, at the risk of seeming unduly technical, to give lists of alpine plants and indicate how they can be secured. But you would find it much pleasanter to buy a good book, like Hulme's "Familiar Swiss Flowers," decide from the colored plates what you want, and then send your list to one of the specialists in hardy perennials for an estimate; because they often have many species which they do not catalogue.

THE TALLER ALPINE FLOWERS

I will begin with the flowers that actually grow in the Alps, not because they are

any better than those of our own White Mountains, but because they are more famous and easier to get. Doubtless you know most of these already, and think of them only as border plants, for they will grow in lowlands without rocks, and you can buy the plants from any one of a dozen American nurserymen. In rich soil they may grow two to four feet high, but in the rockery they will be smaller and correspondingly prettier. For even coarse weeds become refined and look like wild flowers when grown in thin, poor soil, and on rocks. However, I believe you will agree that there is nothing coarse in the following list:

Columbine (<i>Aquilegia vulgaris</i>), violet	Apr.-June
St. Bernard's lily (<i>Anthericum Liliastrium</i>), white	Apr.-July
Feathered columbine (<i>Thalictrum aquilegifolium</i>), rosy	June
Bush clematis (<i>Clematis recta</i>), white	June
Pale yellow wolfsbane (<i>Aconitum Lycoctonum</i>), yellow	June-Sept.
Yellow foxglove (<i>Digitalis ambigua</i>), yellow	June-July
Jacob's ladder (<i>Polemonium caruleum</i>), blue	June-July
Spiked speedwell (<i>Veronica spicata</i>), blue	July-Aug.
Swallow-wort gentian (<i>Gentiana asclepiadea</i>), blue	July-Aug.
Bee larkspur (<i>Delphinium elatum</i>), blue	June-July
Meadow sage (<i>Salvia pratensis</i>), blue	June-Aug.
Clustered bellflower (<i>Campanula glomerata</i>), blue	July-Aug.

DWARF ALPINES ANYONE CAN GROW

But the peculiar charm of a rock garden is not in plants that are two feet high or more. It is in the plants that grow only a few inches high, for it is a never-ending delight to see them spread out until they carpet a space three to ten feet square. Do not forget that all the plants in the next list really grow on the Alps, and have the true alpine charm; yet you can order the plants right now from any American nurseryman for September delivery, so as to have a good show next spring. As a

rule, it is not safe to set out newly bought alpine plants in autumn, but you need not be afraid of these.

Hepatica (<i>Hepatica triloba</i>), white, purple, pink, blue	March
Spring Adonis (<i>Adonis vernalis</i>), yellow	April
Wood anemone (<i>Anemone nemorosa</i>), white	April
Yellow fumitory (<i>Corydalis lutea</i>), yellow	Apr.-Oct.
Lungwort (<i>Pulmonaria officinalis</i>), blue	April
Pyramidal saxifrage (<i>Saxifraga Cotyledon</i>), white	Apr.-May
Geneva bugle (<i>Ajuga Genevensis</i>), blue	May
Common bugle (<i>Ajuga reptans</i>), purple	May
Snowdrop windflower (<i>Anemone sylvestris</i>), white	May-July
Fringed pink (<i>Dianthus superbus</i>), lilac	May-June
Marsh gentian (<i>Gentiana Pneumonanthe</i>), blue	May-July
Cushion pink (<i>Silene acaulis</i>), pink	May-Aug.
Mountain speedwell (<i>Veronica montana</i>), blue	May-June
Woolly yarrow (<i>Achillea tomentosa</i>), yellow	June
Alpine aster (<i>Aster alpinus</i>), purple	June
Cheddar pink (<i>Dianthus caesius</i>), rose	June
Harebell (<i>Campanula rotundifolia</i>), blue	June-Aug.
Maiden pink (<i>Dianthus deltoides</i>), pink, white	June
Yellow gentian (<i>Gentiana lutea</i>), yellow	June-July
Bird's foot trefoil (<i>Lotus corniculatus</i>), yellow	June-Aug.
Wall pepper (<i>Sedum acre</i>), yellow	June-Aug.
Coat flower (<i>Tunica Saxifraga</i>), pink	June-Aug.
Alpine soapwort (<i>Saponaria ocymoides</i>), crimson	July-Aug.
White stonecrop (<i>Sedum album</i>), white	July
Cobweb houseleek (<i>Sempervivum arachnoideum</i>), red	July

ALPINES THAT ARE HARD TO GROW

The way to grow all the difficult alpines is to have a first class rockery, but I estimate that only 5 or 10 per cent. of the really desirable rock-loving flowers require such treatment. Among these are the edelweiss, the alpine poppy, the pasque flower, the gentians, the saxifrages, the cyclamen, the evergreen daphne with its divine odor and the wonderful soldanella which is said to force its way right up through a solid block of ice. These world-famous flowers are so celebrated for their exquisite beauty that it is only natural that we should bewail our inability to grow them in an ordinary garden, whereas the big, cheerful fact is that anyone can grow 90 per cent. of the showiest rock plants without the expense of a rockery. Even in England they do not expect to grow the plants just named without rocks and therefore we should rejoice that we too can grow these treasures in a good rockery.

GARDEN EFFECTS WE CAN'T HAVE

As nearly as I can judge the English get their great and glorious mass effects from only six or seven groups of rock plants: I think they depend chiefly on the saxifrages for white and for lace-like effects; on the rock roses, or helianthemums, for a wide

range of color; on the sun roses or cistuses for large individual blooms; on gentians for blues; on primroses for yellows and crimsons; on the purple rock cress, or aubrietia, for big carpets of bloom cheaply raised from seed; and on the pinks for fragrance.

All of these we can grow on a good rockery, but I believe it is folly for us to try to get great landscape or garden effects with any of these plants, save pinks. I am confident that we shall get equally gorgeous effects, but with a different set of plants. And I know we have done wrong in making a big fuss about the few plants which we cannot grow as well as England, instead of trying to see how we can get just as big effects that shall be distinctly American.

BIG EFFECTS WE CAN HAVE

One way in which we can get immense carpets of flowers in ordinary gardens without rocks, as well as on great estates that have plenty of rocky land, is to concentrate on rock plants that are very easily raised from seed. Here is a list that we can get from our own seedsmen, and these kinds are so easy to grow that most of them will bloom the first year, if started in a frame in March. Practically all can be had cheaply by the ounce and I hope that some of our readers will give them a thorough trial now for next season's bloom.

Those marked * are the only ones that actually grow upon the Alps, so far as I know, but in the rest of this article I shall pay no attention to such distinctions, because the Alps do not have a monopoly of floral beauty by any means. Indeed, the whole spirit of Alpine gardening is cosmopolitan. The rockery is a beautiful device that enables us to grow plants from Arctic and Antarctic lowlands, from the highest mountains of the tropics and from our own



The edging is of white thrift (*Armeria*). Above is a hardy geranium. The evergreen plant is a dwarf spruce

Appalachian and Rocky Mountains. And the word "alpine" is now so thoroughly generalized that people no longer begin it with a capital, and if you wish to refer specifically to European conditions you must say "the Alps."

Goldentuft (<i>Alyssum saxatile</i>), yellow	April-May
White rock cress (<i>Arabis albida</i>), white	April-June
Sweet woodruff (<i>Asperula odorata</i>), white	May-July
Snow in summer (<i>Cerastium tomentosum</i>), white	May-July
Garden pinks (<i>Dianthus plumarius</i>), pink, purple, white	May-July
*Alpine forget-me-not (<i>Myosotis alpestris</i>), blue	Summer
*Kenilworth ivy (<i>Linaria Cymbalaria</i>), violet	All season
*Alpine soapwort (<i>Saponaria ocy-moides</i>), red-pink	All season
<i>Sedum Maximowiczii</i> , yellow	July-Aug.
Veronicas, mixed, blue	Spring to fall

In fact, the only useful distinction that can be made among alpine plants is between those that are easy to grow and those that are hard to grow. By "hard" I mean those that have to be grown in a rockery, and are, therefore, only for the few who have money and enthusiasm. By "easy" I mean those that anyone can grow in ordinary garden soil without rocks, or with such modest rock work as anyone can afford.

I have already given the names of forty-six European rock plants which will give us glorious mass effects in any garden, and which are commonly kept in stock by American nurserymen. I could easily extend the list to a hundred real English effects that we can transport bodily. But that is of little importance. The great fact is that many of the rock plants most treasured in England are really native to America, and therefore are adapted to our climate beyond the shadow of a doubt.

No one, so far as I know, has pointed out to what extent English rock gardens are indebted to America and I shall therefore devote the rest of this article to American wild flowers; for no matter how many foreign alpinists may feel at home here, it is obvious that we can never develop an American style unless we use some of our own wild flowers on a great scale.

FAMOUS AMERICAN ROCK PLANTS

Strictly speaking, the moss pink (*Phlox subulata*) is about the only American rock plant I know which is commonly cultivated the world over, even in its own country, which is the supreme test. But, here again, it is folly to draw any sharp line between plants that grow wild only on rocks and those which also grow in other situations. For instance, bloodroot will grow anywhere, yet it attains its highest beauty, I think, on rocks. The English think so, too, and spend no end of money to establish it in their rock gardens; but it is a hard plant to export, and we can always surpass England on mass effects with bloodroot.

As near as I can tell the most famous rock-loving perennials that are native to



The large-flowered catnip (*Nepeta Mussini*) has purple flowers in racemes six or eight inches long. It blooms steadily for three months

America, and reasonably common even in our gardens, are the following:

Bloodroot (<i>Sanguinaria Canadensis</i>), white	April
Crested dwarf iris (<i>Iris cristata</i>), blue	April
Wild pink (<i>Silene Pennsylvanica</i>), rose	Apr.-May
Purple poppy mallow (<i>Callirhoe involucrata</i>)	Apr.-Aug.
Moss pink (<i>Phlox subulata</i>), crimson pink	May
*Yellow columbine (<i>Aquilegia chrysantha</i>), yellow	May-Aug.
Wild bleeding heart (<i>Dicentra eximia</i>), deep rose	May-Sept.
*Fire pink (<i>Silene Virginica</i>), crimson	May-Sept.
Coral bells (<i>Heuchera sanguinea</i>), red	June-Sept.
*Mist flower (<i>Conoclinium celestinum</i>), bluish	Sept.-Oct.

Those marked * are the only ones that grow more than a foot high. I must confess that is it not a very strong list, from which to pick the big American winners, for the rose, pink, and crimson kinds are not of the most popular shades, especially in the case of the two greatest geniuses in the list. Moss pink, in its wild state, has a crude and violent color, and our rich estate owners have already made the mistake of painting whole hillsides with it, when they could just as well have used white, lavender, and other refined varieties of it. So, too, the wild bleeding heart is a never-ending marvel, because of its exquisite foliage and profuse bloom from May to September; but every time you look at its color you sigh and turn away.

However, we need not be discouraged about the American element in rock gardening for many reasons.

AMERICAN EFFECTS IN THE ROCKERY

In the first place, we have at least a hundred wild flowers that we may have to grow

on rockeries which are among the world's great treasures. Here again, the flowers are not always native to rocks, yet in every case there is some reason why we cannot expect large, permanent results from them in ordinary garden conditions. Most of them you can grow in woods, if you are fortunate enough to own any; but how many of us do? A thousand can afford a rockery for one who can have a bit of woods.

Pyxie (<i>Pyxidantha barbulata</i>), pinkish white	Mar.-May
Shooting star (<i>Dodecatheon Meadia</i>), pink	Apr.-May
Wild red columbine (<i>Aquilegia Canadensis</i>), red	Apr.-May
Virginia bluebells (<i>Mertensia Virginica</i>), blue	May
Shortia (<i>Shortia galacifolia</i>), white	May
Indian pink (<i>Spigelia Marilandica</i>), scarlet	May-July
Lance-leaved sabbatia (<i>Sabbatia lanceolata</i>), white	May-Sep.
Bunchberry (<i>Cornus Canadensis</i>), white	June
Twin flower (<i>Linnaea borealis</i>), pink	June-Aug.
Cardinal flower (<i>Lobelia cardinalis</i>), scarlet	Aug.
Butterfly weed (<i>Asclepias tuberosa</i>), orange	Aug.
Fringed gentian (<i>Gentiana crinita</i>), blue	Sep.

This is certainly a superb list — enough to inspire anyone to build a rockery where these treasures may flourish for years. And please remember that there is no longer any excuse for robbing nature of these lovely plants. Everyone of them can now be secured from nurseries or in the form of seed.

SUMMER EFFECTS ANY ONE CAN HAVE

But to come back to big displays with rock plants that anyone can have, I believe that we shall make a great and peculiarly American success by emphasizing summer effects. In England, the rock garden is a spring garden. True, there are lovely bits

of color in it all summer and autumn, but the whole thing is a blaze of color only in spring. In America, summer is the national play time. Our great annual exodus to the country does not come until hot weather, or say June; and our great vacation month is August. What we seek then is coolness, comfort, rest.

Now the coolest colors are white, green, gray, and blue. The hottest are red, orange, and purples. So I think we should avoid big masses of scarlet sage, red cannas, cerise geraniums, and other things that make us feel the heat, and plan to have broad sheets of dainty little white flowers like snow in summer, white tufted pansies, fragrant pinks, sweet woodruff, white rock cress, and the common alyssum, which, though annual, sows its own seed.

The question of greenery on the rocks in summer is highly important and peculiar. The great fault of rockeries everywhere is that they show more rocks than vegetation, and that is why they look hard and hot in summer. But if there is too much vegetation the rockery will look coarse and weedy. Everything in the rock garden must be daintier than in any other kind of gardening. We want no tall bushes or perennials, because we do not wish luxuriance of height, but of spread. So I believe we shall get an important American element in our rock gardens by using American ferns that have a talent for spreading among rocks and give a feeling of coolness in hot weather.

DELICATE FERN EFFECTS

Of course, ferns thrive best in shade and genuine alpine flowers do not. But we must do the best we can. Some of us cannot afford elaborate watering devices and, therefore, the only way to keep rocks cool is to shade them. So we must make a special

study of flowers that demand partial shade, and have the alpine charm. We must select ferns that have interesting leaf forms and spreading growth, instead of the tall, coarse ferns of commonplace form.

There are fifty-two kinds of native ferns that can be bought from nurserymen, but the following seem to me most appropriate because they answer the above requirements, and are a foot or less in height:

Common polypody (<i>Polypodium vulgare</i>)
Hairy lip fern (<i>Cheilanthes lanosa</i>)
Maidenhair spleenwort (<i>Asplenium Trichomanes</i>)
Walking fern (<i>Campnosorus rhizophyllus</i>)
Purple-stemmed cliff brake (<i>Pellaea atropurpurea</i>)
Moonwort (<i>Botrychium lunaria</i>)
Hart's tongue fern (<i>Scolopendrium vulgare</i>)
Broad buck fern (<i>Phegopteris hexagonoptera</i>)
Adder's tongue (<i>Ophioglossum vulgatum</i>)
Bulblet fern (<i>Cystopteris bulbifera</i>)
Brittle fern (<i>Cystopteris fragilis</i>)
Long beech fern (<i>Phegopteris polypodioides</i>)
Oak fern (<i>Phegopteris Dryopteris</i>)
Rusty woodsia (<i>Woodsia Ilvensis</i>)

The club mosses and selaginellas are also interesting and refreshing and nearly a dozen kinds can be had now through specialists in native plants.

I would not make a fetish of having rock plants that are less than a foot high. I would have the maiden hair for its open, airy grace, the gossamer fern for its hay-scented foliage and the Christmas fern because it is attractive as late as Christmas.

FLOWERS FOR SHADY ROCKS

I said that we must make a special study of wild flowers that not merely endure shade but actually need shade and which nevertheless have the alpine charm. Our woods furnish many such, but they are mostly April and May bloomers. I will mention only a few of them, but every one is of exceptional interest in leaf or habit, particularly the Solomon's seal, of which the English are very fond.

Hepatica (<i>Hepatica triloba</i>), purple, blue, pink, white	March
Dutchman's breeches (<i>Dicentra Cucularia</i>), white, yellow	April
Dwarf early flag (<i>Iris verna</i>), blue	April
Solomon's seal (<i>Polygonatum biflorum</i>), greenish	April-May
Alum root (<i>Heuchera Americana</i>), white	May-June
Violet wood sorrel (<i>Oxalis violacea</i>), rose purple	May-June
Wild blue phlox (<i>Phlox divaricata</i>), blue	May
False lily-of-the-valley (<i>Maianthemum Canadense</i>), white	May
Wild spikenard (<i>Smilacina racemosa</i>), white	May-June
Wood sorrel (<i>Oxalis Acetosella</i>), white	June

It may seem that I have wandered from my theme of "English effects" by speaking so much of American rock plants, but I beg to remind my readers that every wild flower mentioned in this article is actually grown in English rock gardens and that every one is procurable from English seedsmen or nurserymen — in many cases easier than from our own. In conclusion I think we ought to right about face and show England that we can make rock gardens quite as lovely as hers, and with an American character too, instead of blindly copying everything she does.



A bit of Sir Frank Crisp's famous alpine garden at Henley, modelled after the Matterhorn. It covers about three acres, 7,000 tons of rocks were used, and about 1,000 species are grown



Spring-time. A welcome touch of brightness around the vegetable garden Summer-time. The foliage makes a perfect screen, and the fruit is easily observed

Think Now About Dwarf Fruit Trees—By W. C. McCollom, Long Island

IF YOU WANT TO SET OUT DWARF FRUITS IN THE FALL, BEGIN NOW TO PREPARE THE PLACE FOR THEM—HOW THE AMATEUR MAY RAISE HIS OWN TREES; THERE'S NO MYSTERY ABOUT IT

NOW, when the orchard trees are in flower, is the time when striking comparisons can be made between the regular standard, with its spread of forty feet, and the compact growing dwarf, hardly occupying any ground space at all. THE GARDEN MAGAZINE has, on several occasions, told something of the advantages that are claimed for the dwarf trees, which are ideal for the small lot owner or for the occupier of a rented property.

One hardly realizes that by beginning immediately in thoroughly preparing the ground so that stock may be planted early in the coming fall, and thus giving the trees every cultural advantage, it is possible to gather fruit next year. But it can be done if you buy good sized, established trees; and in three years, if you start with small self-grown trees.

The wonderful satisfaction that comes from the possession of a few dwarf trees is something that can only be felt and cannot be told to others. The delight of gathering your own apples and pears from trees that have never been affected by disease or insect pests, and which have been grown from start to finish without blemish, is worth a great deal of effort. But the beauty of it is that all this is accomplished without any undue effort in any way.

The dwarf fruit tree appeals most strongly to the amateur because it occupies practically no space and any spraying for prevention of disease can be accomplished by ordinary appliances, there being no necessity for the addition of elaborate machinery and long extension poles to carry the hose; or the handling of scaling ladders, in order to do the necessary pruning.

Where a fence or hedge is desirable, a wire trellis can be erected and the trees trained upon it. And at this season of the year their flowers in large clusters give a brilliancy to the utilitarian garden that is usually most noticeable by its absence.

Beyond all this practical advantage, these trees appeal to the lover of nature for their intrinsic beauty; and later on, when these little trees carry their profusion of full sized fruits, they have an attractiveness that is almost uncanny.

The dwarf fruit tree is not a fad for the man who plays at gardening but a sternly practical solution of the problem that is presented to every suburban gardener who wants good fruit and wants it quickly—the best results with a minimum of labor.

The quality of the fruit of the dwarf tree is superior to that of the tall standard, primarily because the owner of the dwarf tree is *prima facie* an enthusiast and, just because of this, the trees are actually given more direct care. And then again, their convenient size enables the grower to at all times keep in close touch with their actual condition. The thinning of the fruit is



Horizontally trained fruit trees make an efficient hedge for lining a walk or drive

properly done on account of its ease, and somehow or other it always seems so much more easy to give proper cultivation and extra feeding to these dwarfs—a detail of good cultivation that is unfortunately generally denied to the commoner trees.

MAKING YOUR OWN DWARFS

Very few people offer dwarf fruit trees for sale, and those that are offered are generally stock imported from Europe; and as the supply is not any greater than the demand, it is necessary for you to make your plans now if you are going to plant in the fall. But perhaps you would like to make your own trees. It is perfectly easy and you can be sure of having good sized specimens fruiting abundantly in five years from now.

Begin by selecting a suitable piece of ground. If it is quite open and the trees are not to be grown upon a trellis, buy young stock that has been headed in and plant it, allowing ten feet each way; for a trellis you need the same kind of tree and by preference, allow a space of twenty linear feet of trellis to each tree. It is better to plant wide at the beginning than to have to cut away a great deal of the best fruiting wood after a few years. The ground must be rich. Trench it, if possible, and turn in a heavy dressing of manure. The ground will be ready for planting in the fall if the trenching and feeding are done any time from now on, provided it is allowed to settle for at least a month before planting.

Trees for trellises should be started from young stock that has not yet branched in any way, using of course grafted stock in all cases—apples, on the Paradise or Doucin,

pears on the quince, peaches and nectarines on the plum.

KIND OF TRELLIS

Iron posts and galvanized iron wires make the best trellis because it will last longer than one made of wood. It is somewhat more expensive but will probably be the cheaper in the long run. If iron posts cannot be used, get locust, stringing the wire by means of a swivel attachment at one end of each strand, so that the slack may be taken up and the trellis kept taut. String the wires one foot apart and make the entire trellis from four to six feet high, putting apples on the higher trellis.

Set the tree close to the trellis so that it actually touches the wires. It is a mistake to set the tree six inches away (to allow for future growth). Such a tree always has to be pulled over to the trellis and a sacrifice made of all trimness in the appearance.

The method of pruning is somewhat different according to whether the tree is to be a standard or trained on the trellis. Standards are pruned much the same as other young fruit trees by removing all the inside branches and heading in the leaders. A tree on the trellis must be cut off entirely three eyes above the lowest wires on the trellis. Of the three shoots that develop from the three eyes above the wires, the lower two are trained horizontally in opposite directions along the lowest wire, and the other one is taken up and treated similarly next season to form the branches for the second line of wire. This is perfectly simple and can be done by anyone.

The secret of the later development of



One of the greatest advantages of dwarf trees is the ease of gathering, spraying and pruning, without ladders, etc.

the tree is in carefully looking it over when growth begins in the spring and rubbing off every bud that is not positively wanted. The tying down of the young shoots should be done about the first week in August of each year, and at the same time any superfluous shoots that may have escaped the rubbing-off process are cut out.

MAKING FRUITING SPURS

Dwarf trees seem to fruit more abundantly than others but only because they are encouraged to develop a greater number of fruiting spurs. After shoots have been growing horizontally for a few seasons, the formation of spurs will start normally, and every care must be taken not to break any of these in removing the fruit. From these spurs shoots will of course start growing, and each season we rub off two out of every three, and those

that are allowed to develop are subsequently pruned back in the following spring to about four inches. In due course spurs will develop on these shoots.

THE FRUITING TREE

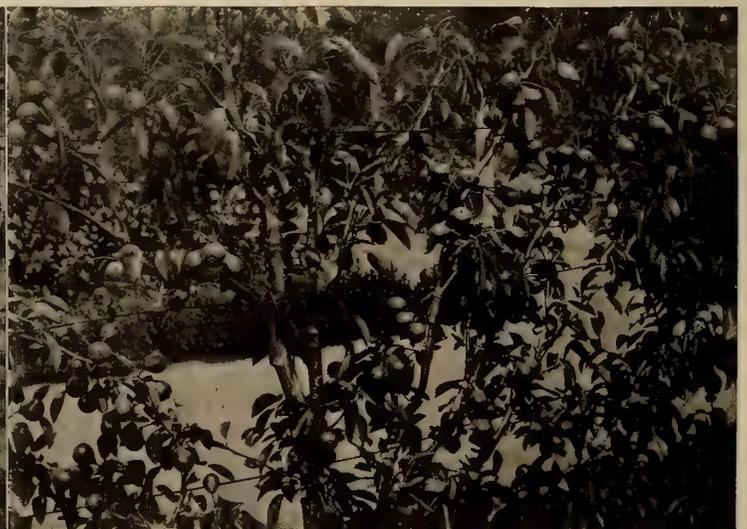
It is an easy thing to over-crop these dwarf trees—a tendency that must be sternly repressed. A reasonable crop for a young apple tree is one fruit to every square foot of trellis. Peaches or pears may carry two fruits to the same space, and after the set each year the thinning must positively be attended to. When trees are well developed—eight or ten years old and thoroughly healthy and vigorous—the load can be increased considerably, the exact proportion being determined in each case by the condition and vigor of the tree.

Winter mulching of well decayed manure is really a necessary detail in the management of dwarf trees, not because of any tenderness, because they are as hardy as a tall tree of the same kind—naturally so—but because the roots of the stocks used for dwarf trees, being shallow-rooting, are more liable to injury in severe winters.

As to varieties, any one can be grown, but there are some slight differences in behavior. My experience is that among apples the best are Bismarck, Beauty of Kent and Emperor; of pears, Howell, Worden Seckel and Fertility; of peaches, Early Rivers, Lord Palmerston and Barnard Early. The Bartlett pear, which for quality is unsurpassed, can be successfully grown as a dwarf on a trellis, but it requires more attention than the others named.



If you want to make your own dwarfs prepare the ground now



There is some satisfaction in having pears like these to pick as you need them

EVERY CHILD SHOULD HAVE A GARDEN

THE child and the garden belong together; to separate them is to deprive the former of one of his choicest heritages. Take your five-year-old boy outdoors and let him dig up a corner of the garden and put in some flower or vegetable seeds: you'll be surprised at the pleasure for both of you. If you can do no more, have a window box or some indoor pots for the youngster to grow flowers in. You owe it to him. There is hardly anything more important in a child's training, for body and mind and temperament, than this chance to assist Nature in her daily miracles. While the hands are busy in the use of the trowel, hoe and rake, the eyes are being trained to see what is happening about him, the green things growing, the insects and birds, all as busy and happy as he is. His ears unconsciously learn to associate the robin with his call notes. Every nerve is stimulated and trained to sensitive appreciation of the world full of things that the average person never sees, nor hears. While the elders are guiding the children, their own interest is more deeply roused in the very things they are trying to teach. A wider grasp of the scheme of things in Nature, a broader horizon, opens to child and man, for each is teacher to the other, without fully realizing it.

The main crop in gardening is not vegetables and flowers. If those crops fail the first year, the great crop is health, gained in the open air, and the fellowship and partnership of children with their parents.

We've been trying, ever since this magazine started, to get this great subject properly before our readers. Now for the first time we feel we have an adequate plan, which we start in this issue, and which will in future be a regular feature.

Miss Ellen E. Shaw, who has been working out these problems as a teacher in classrooms and school gardens, has prepared a simple and most comprehensive scheme which every parent and teacher should read and act on.

The first article is on the following page, and the series will cover these general lines of work:

1. GARDEN WORK GENERALLY.—In which will be given, from time to time, simple directions for planting and for planning school grounds and home gardens; it will also deal with tools and how to use them; with the qualities and characters of various soils and their improvement, with occasional references to the most common garden pests.

2. CHILDREN'S COMPETITIONS.—This feature will aim to excite a spirit of emulation among the children of THE GARDEN MAGAZINE family readers by encouraging the planting of some of the most easily grown bulbs, flowers, and vegetables, with a view to training the children to judge by results and to select high-quality types. A system of score cards will be introduced and suitable prizes may be awarded by the publishers. By this means, through window gardening indoors, the interest of the children may be maintained after the outdoor season closes.

3. GENERAL IMPROVEMENT.—Working through the individual child, much can be accomplished in making

more beautiful surroundings to homes everywhere. More planting of flowers in yards, better kept lawns, and general brightening up of neglected spots where plants can be made to grow. This work will be largely accomplished through direct advice rendered to individual applicants.

4. CONSTRUCTION AND LABOR-SAVING DEVICES.—By fostering the desire of the child to busy himself with tools and appliances, he may be encouraged to construct window boxes, plant stands, frames, to make envelopes for seeds, plant labels, etc., awards being rendered for the most skilful work.

5. HISTORIC AND ESTHETIC.—Herein lies the ultimate goal—the development of more gardens and the brightening and beautifying of the lawn spaces that already exist around so many suburban homes. By a training and development of the esthetic sense more perfect color schemes, better compositions, and greater pictures will be produced through the medium of the interchange of thought offered in the columns of this department.





There is just time (but none to waste) to start a school garden, and the more workers the better



Sow seeds carefully and not too thickly. Plants want room



Make the seed bed of fine soil, and rake off all lumps, stones, etc., making it quite level too

Children's Gardens Everywhere

Conducted by ELLEN EDDY SHAW

SCHOOL GARDENS—HOME GARDENS—COMPETITIVE PLANTING



THIS little lad holds the garden line. So do we. He has been helping his brother stake out the garden. Children's gardens are the line this page holds out. We hold one end of it and offer the other to you.

Our end is to offer help, showing children how to make the best

use of whatever spaces they have for planting, arranging the most pleasing color schemes for flower gardens, suggesting simple tools and pieces of apparatus they may make, proposing tests and experiments with soils, and showing how to make unsightly spots beautiful.

Your end is to tell us of your work, to send us pictures of the garden work you have done and to let us help you if you need help, to tell us of good pieces of manual training work easy to construct.

School Gardens

IF YOU have started your garden suppose you take some pictures showing just what you have done. Then take some in the fall showing what was the result of your garden work. You may like to send your pictures in to us so that other schools and other children may get some help from you. The November number of this magazine will publish pictures of school gardens. Yours may be there.

How have you planned to care for your school garden this summer? That is a problem. If you have a good plan thought out write us about it. If you wish help write to this department and a way will be suggested.

Home Gardens

WHY not plant in your own back yard this year? It is the best place of all to plant in. A number of boys and girls have started already. It is not too late now. If you don't know the best things to plant we will help you.

Keep a record of your work like this:

RECORD FOR GARDEN WORK

Name of plant	Nasturtium
Date of planting	June 15th.
Condition of soil	Garden soil, clayey
Fertilizer used	Barnyard dressing
First appearance of plant	June 25th.
Growth in inches per week	$\frac{1}{2}$ inch, 1 inch, etc.
Date of blooming	August 25th.
Date of fruiting	September 4th.

(Signed), John Adams

Print this record (which is filled out to show you how to use it), on a good stiff card. Fill it in week by week. It will help you in your planting next year. Then, too, you might send it in to us with pictures or with specimens of your flowers or vegetables. The results may be published, or win prizes; or, better yet, help someone else in planting.

Try to make your backyard as beautiful as possible this summer. There was a certain boy in a city who made a wretched back-yard blossom all the fall with asters. That was worth while.

If you have an ugly fence or an old, unsightly building, cover it with vines. Running nasturtiums, morning glories, and cucumber vines grow easily and quickly. Old-fashioned, big

sunflowers and hollyhocks stretch themselves tall enough to cover much.

Shall we tell one another this year the garden work we do, and what success we have?

Competitive Planting

TO ALL boys and girls THE GARDEN MAGAZINE proposes to offer prizes for best flowers and vegetables grown either in school or home gardens. Products or pictures of the same may be sent to the Children's Gardens Editor, at the office of the magazine, any time during the fall. Awards will be made and the list of competitors and prize-winners printed in the November issue, if possible.

A Challenge

THE following letter has been received from one schoolboy gardener, who in some way had heard of the plans of the magazine. We hope other children will answer.

I challenge any boy or girl in any school to raise pumpkins with me.

I am going to send a picture of the largest pumpkin I raise to the GARDEN MAGAZINE next fall. Will you do the same?

I am not going to tell the name of my seed, but the pumpkin this seed came from weighed from seventy-five to one hundred pounds.

Can you do as well as that?

ELLIOTT THOMAS,
Grade VI, Training Department of the State Normal School, New Paltz N. Y.



Plant a few seeds in the yard and have beautiful flowers when summer comes

Gladioli for June Planting

FORTUNATELY the gladiolus can be safely planted until the middle of June or even the first of July, and since the bulbs are so cheap it is an excellent plan to make two plantings of gladioli in May and two in June in order to secure an unbroken succession through August and September.

Another excellent idea is to use June-planted gladioli in beds of spring-blooming flowers which would otherwise be unattractive all summer. For example, after your larkspurs have bloomed you should cut them back in order to get the autumn bloom, and plant gladioli between the larkspurs for August flowers. Thus your larkspur bed will have gladiolus flowers in it during the month of August and the thinness of the gladiolus foliage will be hidden by the dense, basal leaves of the larkspurs.

A few enthusiasts will not admit into the hardy border any plant that is not entirely hardy, but there can be no objection to using gladioli in this way in formal gardens and in flower beds.

To avoid staking, plant bulbs six inches deep in well-prepared soil. This will produce stems so stout that no staking will be required.

New Jersey. THOMAS McADAM.



Plant gladiolus any time in June for late flowers during August and September



Carnations and Roses for Cut Flowers

CARNATIONS are by far the best flowers for the beginner in commercial horticulture, because they can usually be sold at a remunerative figure even if not strictly first class, whereas roses and chrysanthemums must be really well grown to find anything like a reasonable sale. But when these last are first-class, they will be worth much more than carnations.

Then again, the beginner will master the elements of carnation culture much more quickly than he will rose growing, and the plants are practically sure to give a crop of flowers. A night temperature of from 45 to 55 degrees will be satisfactory for carnations, but roses will need a range of from 55 to 60 degrees. It is better to devote the entire house to one variety, but the grower should not restrict himself to one variety as the demand is always for several colors.

Color has a great deal to do with the selling value of a flower — more than the uninitiated will imagine — and in the New York market the demand is chiefly for pink and white, then crimson, and at the holiday season, scarlet. Variegated kinds are not in great demand at any time, although there is always a slight consumption.

As to varieties, the following are good: In dark pink, Mrs. Thomas W. Lawson is the best and does well in a temperature of from 52 to 55 degrees. Enchantress, which succeeds in a temperature of 48 to 52 degrees, is by far the best light pink and is always a ready seller. Of the newer pinks, Winsor seems to be a favorite, the color being unique and readily harmonizing with any scheme of decoration. It is a very productive, vigorous, and healthy variety.

White Lawson is an excellent variety, as is also Boston Market, the latter being very free and healthy, requiring 48 to 50 degrees temperature; but while it will be profitable to use the flowers for home decoration, for general display, or for florists' made-up work, they do not command the wholesale price that usually prevails because they are under-sized. White Enchantress resembles its colored parent in every respect except color, and will probably be the standard white carnation for some time to come. Harlowarden is still the best crimson for all purposes and can be successfully grown at 50 degrees. Victory is a most popular scarlet for commercial work, being free, vigorous and an excellent keeper. A temperature of 50 to 52 degrees

suits it admirably. In the variegated class, Mrs. M. A. Patten is still the favorite.

Do not attempt to grow carnations and roses in the same house unless it is divided by a partition, so that the warmer end can be used for roses; but as already stated, roses require more skilful handling than carnations. The most profitable varieties to grow are: In white, Bride and Golden Gate; in pink, Bridesmaid and Killarney; in yellow, Perle des Jardins; and in scarlet, Richmond. These varieties require a night temperature of from 55 to 58 degrees, excepting Perle des Jardins, which should have two or three degrees higher. Plant it in the warmest bench in the house. There are many other varieties, such as American Beauty (red), President Carnot (pink), and Kaiserin Augusta Victoria (white), that are grown successfully and profitably by experienced growers, but they ought not to be attempted by any mere beginner.

Outdoor roses are usually not at all profitable as cut flowers, but if there is any local demand for such, confine your attention to the tea and hybrid tea sections, showing such varieties as Maman Cochet, pink and white; George Nabonnand, pinkish white; Gruss an Teplitz, crimson; Hermosa, Killarney, President Carnot, Belle Siebrecht, pink; and Kaiserin Augusta Victoria, white. These varieties bloom more or less during the entire season.

New York. J. T. SCOTT.

Eating the Fire Bean

THE scarlet runner bean, on account of its gay blossoms and decorative value, has many enthusiastic admirers. I had grown it solely on this account for a long time before I realized that it could be used as a vegetable, and a most delicious one at that. It is one of the easiest vines to grow; I have tried it in Washington, Colorado, New Jersey, and other states, in widely varying conditions and soils, and have always been successful in its cultivation. If planted against a fence it does not require support.

The beans are produced in clusters and can be gathered without stooping. The pods are rough to the touch, but cooking eliminates this quality and brings out a sweetness quite different from, and superior to, that of the well-known butter bean. The pods must be gathered when young and tender, for they will become stringy when allowed to remain on the vines for too long a time. The beans mature about the same time the first crop of string beans finishes, but the vine keeps on blooming and bearing till frost kills it.

The preparation of this vegetable for the table is very simple. Remove the ends and strings, if there are any, and cut up the pod in small slices. Some cooks split them lengthwise. Cook in salted boiling water an hour or two, and before serving dress with butter, pepper and salt or a cream sauce. They are equally as good as other beans in a vegetable salad, and if I can get them I use them in preference to any other in mixed mustard pickle.

New Jersey. LAURA B. CARPENTER.

Fumigating with Hydrocyanic Gas

I MAY be mistaken, but I fear that through generations of fumigating, the ordinary greenhouse pests have become habitual smokers! It is amusing to read some of the directions given at times for killing the pests of the greenhouse — such as spraying with ivory soap, kerosene emulsion, etc. for the destruction of the white fly.

There is one surely effectual remedy, hydrocyanic acid gas, but it is a dangerous poison, and must be handled with all caution. Give an appli-



Always pour the sulphuric acid into the water—never the reverse

cation to a house infested with white fly and in the morning the soil will look as though snow has fallen.

I use it and nothing else on everything — tomatoes, lettuce, beans, carnations, roses, chrysanthemums. This method of treatment is very economical and convenient and all the houses can be fumigated at the same time. It is excellent for use in chicken houses and other buildings.

It is claimed that hydrocyanic gas will kill any breathing insect or animal in a fraction of a second, as it paralyzes a nerve at the back of the neck which is in direct connection with the brain. The proper way to use it is to figure up the cubic capacity in feet of the house to be fumigated, and to every 3,000 cubic feet use 4 ounces water, 2 ounces sulphuric acid, and 1 ounce of cyanide of potassium. Ascertain the capacity by multiplying the length by the width and the result by the average height. For instance, a house 50 feet long, 10 feet wide and 10 feet peak would give about 5,000 cubic feet.

When all calculations are made and everything is ready at hand for the work, see that no one is left in the house, which must be shut up tight. Close all ventilators, etc., and as a precaution lock all doors from the inside, if possible, leaving one open for your exit. Take the vessel containing the water to the centre of the house and pour in the acid — never the reverse. Then, putting the vessel on the ground, take the cyanide in your hand, and keeping your face turned away, preferably, drop the cyanide into the mixture and *at once* walk briskly from the house, closing the door tight. It is most important that you get out of the house promptly. Do not tarry to look at doors, ventilators, and don't wait for



Do not drop the cyanide into the water as shown here, but keep the face turned away. Then leave the house immediately

any visible fumes, as there will be none. Having locked the door, put the key in your own pocket, and allow no one to go into the house for at least ten hours.

The following morning the house can be entered and the ventilators opened, but an excellent plan is to arrange one ventilator sash so that it can be raised from the outside, or else throw open the doors for about half an hour before entering the house. Used as directed there will be no injury to the plants but no living insect will remain.

Long Island.

W. C. McCOLLOM.

Ten Bushels of Potatoes From One of Seed

FROM a plot of land 48 x 60 feet our returns last year were ten bushels of potatoes, the seed for which cost us \$1.25. Potatoes had not been grown in the patch since 1895; the soil was friable and loamy and had been heavily manured every season until about four years ago, when it was allowed to become overgrown with sod.

On May 5th, when the patch was plowed and harrowed (at a cost of \$1), the soil was found to be a rich brown in color, nearly two feet in depth, with a gravelly subsoil. Furrows were made two and a half feet apart and the seed was planted the following day, May 6th. They were set not over six inches apart.

Instead of hoeing, we used the spading fork between the rows shortly after the plants had appeared above the ground, and once again only,



This fern garden in the vicinity of Hartford, Conn., is composed entirely of native ferns, which thrive under the partial shade

to make the plot look even. I found that the sun did not bake and cake the soil as it did when the hills were made with a hand or wheel hoe.

Last season seemed to be a bad one for potatoes in this section, the drought being severe, and many farmers complained of dry rot and of the tops of the plants dying. However, we were troubled only once with potato beetles; a large dose of Paris green dissolved in water utterly destroyed them.

We began to dig tubers for table use about August 1st. They were of good size. The middle of September the final digging and sorting were done and in the whole crop of ten bushels, there were not over two bushels of small tubers. I sorted them myself, and there was not one rotted or scabby potato.

I am going to try growing potatoes again this season in an unused chicken yard. I will, however, plant the seed farther apart.

Connecticut.

JULIE ADAMS POWELL.

The Pleasures of Having a Fern Garden

ONE often reads of formal gardens, water gardens, herbaceous gardens, rose gardens, etc., though rarely of fern gardens; but for a garden which will return the maximum of pleasure for the minimum of expense and labor, a fern garden certainly heads the list, provided, of course, there is a piece of unused woodland that can conveniently be used.

Early spring is the very best time to plant ferns, just before the fronds begin to appear, but they may be transplanted in midsummer almost as easily by simply removing all the large fronds. This relieves the plants of the strain of keeping up transpiration until the roots have become established in the soil again. When once planted they require but little care afterward.

The soil should be an ordinary loam to which some well decomposed stable manure and leaf-mold has been added. The paths and pockets are formed with boulders and stones picked up in the woods and adjoining fields. The cost of a fern garden is very small, being practically all in the making, digging up the soil, and adding the manure.

One would naturally begin by transplanting to his garden the choicest ferns which grow in the woods in his immediate neighborhood. On every trip to a new locality there may be a new fern to bring home, or the collection may be added to through correspondence with friends or ex-

changes with collectors in different parts of the country.

The picture shows a fern garden in the vicinity of Hartford, Conn., in which the ferns are all native. The common, or large growing kinds, such as the ostrich fern, lady fern, cinnamon fern, Christmas fern, etc., are planted in masses by themselves; while the rarer kinds — those of slender or diminutive growth, or those of which there are but a single specimen — are planted in pockets by themselves and labeled.

It is surprising how the pleasure of collecting grows upon anyone who attempts it, and what an authority on ferns it is possible to become. There are some 170 species native to North America. The new edition of Gray's Manual (which covers only the Central and Northwestern United States and adjacent Canada) enumerates twenty-four genera, seventy-three species, and thirty-four varieties and named forms, which do not include the water ferns.

Massachusetts.

EDWARD J. CANNING.

"Daffodils, that come before the Swallow dares"

FROM NOW UNTIL
July 1st
Not Later

There is no more useful garden material than what are known as Dutch Bulbs, Hyacinths, Tulips, Narcissi, Crocus, etc. They give for a small outlay of time and money an abundance of flowers in the house from December until April, and in the garden almost before the snow is off the ground in the spring until the middle of May. These Bulbs are grown almost exclusively in Holland, and in enormous quantities, where they are sold at very low prices. Usually they pass through the hands of two dealers, and more than double in price before reaching the retail buyer in America.

By ordering from us **now** instead of waiting until fall, you save from 20 to 40 per cent. in cost, get a superior quality of Bulbs not to be obtained at any price in this country, and have a much larger list of varieties to select from. Our orders are selected and packed in Holland, and are shipped to our customers in the original packages immediately upon their arrival from Holland, perfectly fresh and in the best possible condition.

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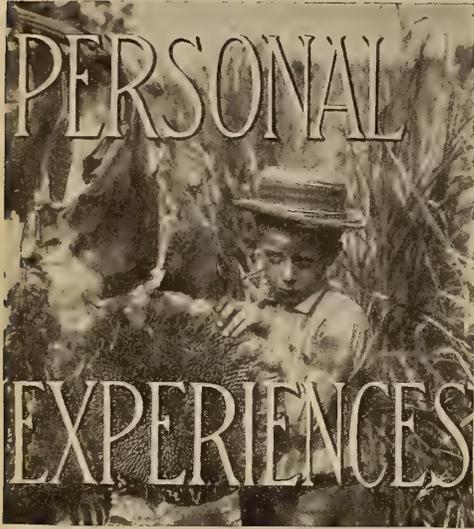
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Fine Mixed Hyacinths	3.00	\$14.50
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Narcissus Poeticus65	2.50
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Spanish Iris, splendid mixture30	1.25

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PITTSBURGH



J. Horace McFarland Co.



An Experiment in Taming Trollius

IF, AS is stated in a well known catalogue, "the globe flower (Trollius) succeeds admirably in the border in a half shady position in well drained preferably light soil," I should like to know what inducements to offer to make them do so. Judging from an experience of three seasons, in which I failed most miserably in two, I should say offhand that the trollius would flourish more luxuriantly as a next-door neighbor to its cousin, the marsh marigold, than as an inhabitant of a light, well-drained soil.

Having such a soil in my garden, which is devoted entirely to perennials and bulbs, and being an admirer of yellow posies, the trollius, from its description, appeared to be just what I wanted. A reproduction of a photograph of a bed of globe flowers, printed in an English magazine, settled the question, and three years ago I ordered the plants — five varieties.

Having no exact cultural directions, I planted them in full sunlight as the photograph I had admired showed a mass of bloom on an open lawn — in England, however. They were strong, thrifty plants and grew splendidly through May, showing a lot of plump buds. A hot spell set in, and before I had noticed, the trollius patch was a wreck. The buds had blasted, the leaves had turned yellow and only one plant looked as if it had the courage to prolong the struggle.

This was moved to a shady corner and watered freely, but it refused to grow holding up two pitiful looking leaves for nearly a month, and then they disappeared. I marked the place where it was planted and the following year one lone trollius appeared early in the spring, formed a healthy clump, but gave no blossoms.

Last spring it threw up four flower stalks and made a fine display of over fifty blossoms, from which I gathered a goodly supply of seed and sowed it at once. A severe drought began in July and lasted all summer, our water supply was cut off, and the trollius plant died. The seed did not germinate; I have since learned that, like many of its relatives, it seldom germinates until the following spring. Therefore, as the seed bed was undisturbed, I look forward to the appearance of a fine assortment of seedlings.

We had a wet summer year before last and a cold, wet spring until well into May last year, so that the inference seems plain that globe flowers need a copious supply of water at all times and a soil which will retain moisture. If the soil is light and well drained the plants must be watered constantly to grow at all.

Three years ago I also arranged a perennial border in the light of the inspiration obtained from Mr. William Robinson, J. Wilkinson Elliott, and other highly esteemed writers on gardening subjects, who have given us plans for such borders containing irregular spots marked "*Helianthus rigidus*," "*Helianthus Miss Mellish*," "*Wolley Dod*," or any other traveling member of the sunflower tribe. In my border harmonious color schemes, continuous performances during the season, gradations of height and other essentials were

duly considered, but those pesky sunflowers upset all my plans.

A single plant of *Helianthus rigidus* took entire possession in two years of over ten square feet, and overwhelmed and killed a Japanese barberry. "Miss Mellish" buried some beautiful hollyhocks, and I am still pursuing sunflowers!

However, there are two single varieties which are well worth growing — Miss Mellish and Wolley Dod, whose blossoms have a distinct beauty and are excellent for cutting. Get two plants of each, and then muzzle them and nail them down! Sink a box three feet square around each variety so that the runners can occupy only a limited space. Each spring allow ten or twelve sprouts to grow, but don't let them roam at large or they will steal the border.

Maximillian's sunflower is worth growing in the garden for its foliage alone. It blossoms in October and November with pompon chrysanthemums, and does not spread like the other two varieties. *Helianthus rigidus* is nothing more than a pest — it is a dazzling display when in bloom, but will use up the soil and overwhelm the entire plantation.

From this experience my advice is to muzzle, hopple, and bind sunflowers if they are planted in a border where the space is at all limited.

Illinois.

SHERMAN R. DUFFY.



Killing the Weeds

ONE of the most effective weed killers is sulphuric acid, or oil of vitriol, as it is sometimes called. It is a corrosive poison, and extreme care must always be exercised in its application. Dilute the commercial acid with four or five times its bulk of water, and be sure to pour the acid into the water. Considerable heat is generated by the mixture of the acid and water, and if the water were poured into the acid it might spatter and cause serious burns. If any of the liquid should come in contact with the flesh or clothing, use immediately strong ammonia to neutralize it.

Mix in glass vessels or a stone jug, as the acid corrodes metals. Give the weeds a good wetting with the solution, and even the roots will be killed.

The same solution, applied with a swab or old mop to poultry houses, will disinfect the building and destroy vermin.

Maryland.

G. G. S.

Cultivating

CULTIVATION is looked upon by beginners simply as a means of destroying weeds but this is only an incidental benefit. Of two rows of plants in the same soil, the uncultivated row will not make as good a growth as the cultivated one. Cultivation aerates the soil, thus assisting the chemical action necessary to liberate plant food. It also provides a dust mulch that prevents the evaporation of the water necessary for dissolving this food which acts as a medium for supplying it. The benefits of good cultivation are especially noticeable during a drought. The water pot and garden hose, as commonly used, merely dampen the surface, so that a crust forms and the next day's sunshine takes up more water than half a dozen sprinklings supply.

Dig or plow deeply in the early spring, pulverize the soil well and thoroughly mix the fertilizer with it. Continue the thorough pulverizing of



Keeping the surface of the soil always loose does more than destroy weeds; it aerates the soil and conserves moisture

the surface throughout the season. A mere scratching of the surface is not cultivation. After every rainfall, as soon as the soil has dried sufficiently to work without sticking to polished tools and when it crumbles readily under their use, go through the whole garden, loosen and pulverize it to the depth of at least two inches — three if possible. Then the water held by the soil will not be evaporated by the sun, and the weeds which start afresh after each rain will be disturbed, displaced and killed. A wheel hoe is the most rapid working tool that can be used, and will quickly repay its cost in time saved and work better done. The next best is a first-class scuffle hoe.

Do not go through the garden with a hand hoe and draw earth up to the plants. "Hilling" as it is called, is a waste of labor. If you must do it, try a landside plow attached to a wheel hoe, but frequent, thorough, level cultivation gives best results with less labor.

Penna.

J. L. K.

Using Up the Rose Petals

THE best method of making a rose jar is to put the petals, which have been taken as soon as possible after the flowers are fully open, in a basket or very thin and open cloth sack. Hang it in the shade in the fresh air so that the petals will thoroughly dry.

Directions for making a rose jar almost always advise sprinkling the leaves with salt, but this reduces them to a moist, mussy, and often moldy mess.

After the leaves have dried beyond the possibility of molding, to every two quarts of petals add the following combination: A few sprigs of lavender, or four drops oil of lavender, one or two drops of Bergamot, and five drops of attar of rose. Sachet powder may also be added, heliotrope being found to give the most satisfactory results. But be sure to keep whatever combination of perfumes is added subordinate to the rose odor. In order to do this the attar of rose must be the most pronounced perfume.

New York.

A. G.

Aloes as a Spray

FOR the protection of squash, pumpkin, cucumber, and egg-plant against insect pests, try spraying with a solution of one-half pound of aloes to ten quarts of water. It was recommended to me for use when the plants were very small, but I also used the preparation later in the season when the striped beetle was threatening the large plants. One application was enough to destroy all traces of the bugs.

Connecticut.

S. B. S.



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A Greenhouse With A Story

IT was like this: Flowers and golf were the owner's hobbies; golf he was willing to take homeopathically, but flowers he wanted when he wanted them, all the year 'round. There is only one thing for a man to do in such a case, and that is have his own greenhouse.

So he had a lot of fun planning, and then we were called in to see if such a house could be practically built. About six weeks later his house was up, as you see it; 33 feet long, 18 feet wide, with an attractive little work room at the end, and a seven sash hot bed on the south side.

And now how about you, don't you want a greenhouse? Can't we get together and talk it over, or send you some one of our catalogs? Which shall it be?

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Wild Flowers Worth Improving

IV. YELLOW AND WHITE ADDER'S TONGUES

THE yellow adder's tongue or dog's tooth violet (*Erythronium Americanum*) should be used to carpet any piece of woods from which cows and sheep can be excluded. It has the double beauty of mottled leaves and of yellow flowers in April. Bulbs of flowering size can be had for only \$15 a thousand, which is probably cheaper than you can collect them yourself; for the bulbs are remarkably deep and much intermixed with tree roots.

People make a great mistake in trying to dig the bulbs in spring, because they do not ripen until summer. However, it is best to order them in spring for August delivery. And if you wish to dig any from nearby woods, now is the time to mark the place where they are most plentiful, so that when the leaves have disappeared you will know where to dig.

In the course of many years' experience with the "fawn lily," as John Burroughs wishes us to call it, I have noticed a very remarkable peculiarity in its manner of growth. The seeds fall upon the ground and soon germinate, forming small, imperfect bulbs just below the surface of the ground. These become dormant in June, but late in August each bulb sends out one to three or more long stolons, which grow deep down into the earth, each forming a new and more nearly perfect bulb. These throw up large and beautifully spotted leaves, but no flowers.

The leaves die in early summer, and then each bulb in turn sends still more deeply into the earth

a long, thickish stolon, which forms the perfect and permanent bulb, which annually increases in size, until it becomes nearly or quite one-inch in diameter.

These large bulbs are as a rule very deep in the ground — often seven to ten or more inches. As these grow mingled with roots of other plants, including trees and shrubs, the digging of the large flowering bulbs from their native wilds is a very difficult and expensive process. So if one wishes to establish a colony of this or the next species it is far better and cheaper to buy the smaller bulbs which will bloom in from one to three years after planting, and which will produce far larger and more handsomely variegated leaves. For \$60, one can get 10,000 one and two year old bulbs.

The flowers of the yellow erythronium are not only very handsome, but very interesting. They are remarkably sensitive to the light, opening widely only in the full sunshine, and closing tightly at nightfall. A dark cloud or the slightest shadow passing over the sun will cause them to begin to fold together. In case it begins to rain they close tightly at once. In the full sunshine the brilliant yellow flowers, with their segments rolled widely back displaying the reddish-brown stamens, are then strikingly handsome.

The white erythronium (*Erythronium albidum*) is either an exceedingly variable species, or else several species are confused. Bailey's "Cyclopedia of American Horticulture" says its leaves are narrow, not mottled, and the flowers white, with a yellow base. Britton says that the "leaves are similar to those of the yellow, but sometimes narrower, while the flowers are white, blue or purple."

Now our type, found commonly in southeastern Michigan, agrees with neither of these descriptions. The leaves are scarcely, if any, smaller than those of the yellow-flowered species, while the flowers are rose-color outside and pure white within. Our Michigan type flowers nicely for me, and is a pretty sight in my garden.

Michigan.

W. A. BROTHERTON.



Roses in Colorado

THE dry atmosphere and the sudden changes of temperature present great difficulties for the rose grower here, but for the past two summers I have had beautiful roses in bloom continuously from the first of July through September — fresh and vigorous looking without the drooping air so common to flowers in this region.

We built our house in the middle of an alfalfa field, and had the tenacious alfalfa roots to contend with. The soil was a rich, heavy clay, fully exposed to the full blaze of the fierce Colorado sunshine, but we had plenty of water for irrigating. We moved in during April and in June I set out a dollar's worth of hardy perpetual roses, Liberty and American Beauties. I purchased them from a florist who sent them fresh from pots with quantities of rich soil adhering to the roots.

I made the bed on the eastern side of the house, in an angle between a porch and a corner of the house. Here the plants got the full morning sun, but were sheltered from the almost unbearable afternoon heat. As our nights are cold even in summer, the plants become chilled if watered too late in the day, so as soon as the sun is off the bed I put the hose, with spray attached, in the middle of it and turn the water on for two hours each day.

In the early fall I put on a heavy mulch of manure and about the first of November bent down

the branches, covering them with earth. The following spring the manure was stirred in around each plant and a small amount of bonemeal added.

With us plants start to life with the first warm days of March and April, only to be killed by a cold snap the end of April or even, sometimes, the first of May. Our greatest difficulty at that time of the year is to hold the plants back, but by protecting the rose bushes at night and watching the weather closely, this difficulty may be met and usually successfully overcome.

The second spring I added more roses — two dollars' worth — making a total expenditure of three dollars, with an additional fifty cents for bone meal.

Colorado.

R. J.

A Rose Stunt for June

SOME years ago, after having only indifferent success with rooting rose slips in sand and then transplanting, I heard of a very simple way — that of embedding glass jars firmly in the earth over the slips, heaping the soil about the mouths of the jars so that they could not be displaced. Never, under any circumstances, were the jars to be removed until the really warm days of spring had set in.

Early in June I set out two slips, one of which had been properly prepared for the ground, the other being merely the stem of a rose which had fallen apart. The end was clipped, some of the leaves removed, and the stalk was then stuck into the ground. The soil was moist from a recent rain, and within a few weeks new leaves were being thrown out. It seemed as if the hot sun of August would burn the foliage through the glass, but the little plants continued to thrive.

I was also curious to ascertain if any success could be had with slips set in the fall, so in early September I put under glass jars two slips of a beautiful pink climbing rose of which I had always been an enthusiastic admirer. These were not selected with any particular care, but started well, seemed in good condition the following spring, and flourished throughout the summer in spite of two months of drought.

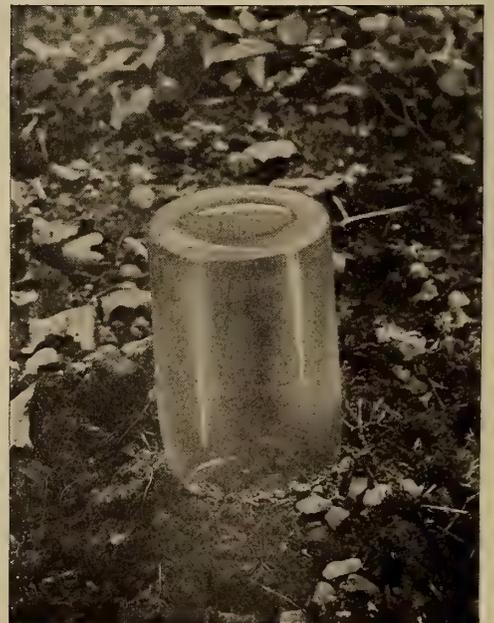
In covering for the winter, I protected the jars quite to the tops with manure and laid straw over all. When uncovering in the spring I took off the jars in the middle of the day at first, replacing them at night, thus gradually hardening off the plants. With the exception of the climbing rose these slips were all planted in the place where they were to grow, so that there would be no necessity of transplanting.

New Jersey.

LAURA BALCH CARPENTER.



The yellow adder's tongue concerning which a remarkable story is here told. It takes one to three years for the bulbs to attain flowering size



Rooting rose slips can be easily done by embedding in the soil a glass jar over each cutting. Do not remove the jars until warm weather sets in



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for \$1.00, postage paid, containing one root each of the following:

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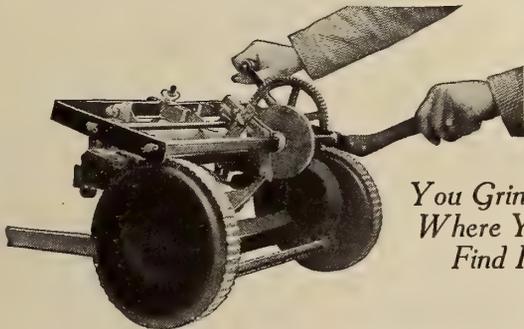
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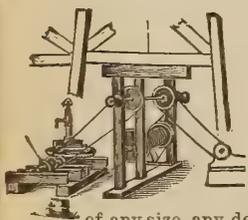
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The Garden in June

SOW seed of annuals in June for a second crop
of flowers which will continue to bloom until
frost. Use plenty of seed, as it is much easier to
thin the plants than it is to replant; and it is also
desirable to have the plants all the same size.

Both vegetable and flower gardens should be given
shallow cultivation once a week, to keep down the
weeds and loosen the soil, thereby preserving the
moisture.

Place a stout stake five feet long at each chrysan-
themum plant to hold it up from the soil. Put the
stakes twelve inches deep in the ground and tie the
plants to them.

Every gardener should stake the tomato vines so
as to keep the fruit up from the sand and to prevent
rotting; or else make frames by placing a strong
stake, about seven feet in length, eighteen inches
deep in the soil, by the side of each plant. On
these tack barrel hoops ten or twelve inches apart.
Where one does not have the time nor the material
to make the frames, buy wire ones which will last
a long time.

Do not allow plants intended for house decoration
next winter to flower during the summer. Keep
all flower buds trimmed off.

It is not yet too late to plant out water lilies.
After they are once started, they will require but
very little care.

To keep crows out of the watermelon patch, tie
thick white twine across and around the patch early
in the month, on stakes four or five feet in height.

Cut the runners from the strawberry plants and
keep them well cultivated in order to develop large
healthy plants. The bed should also be given a
light dressing of well decayed compost now.

Plants are often injured by having flowers broken
off; cut them off with a sharp knife or pair of shears.
In order to induce continual bloom, keep all the
blossoms cut off the annuals; don't let seed form.

Don't neglect the rhubarb. Keep the beds well
cultivated; a top dressing of manure will help very
much at this time of the year.

**Depth to Plant—a Question of
Latitude?**

IN THE April issue of THE GARDEN MAGAZINE,
in my usual "reminder" to amateurs in the
South, I made the statement that gladiolus bulbs
should be planted two or three inches deep.

The accuracy of this statement has been questioned
by a grower living in Massachusetts who states:
"The gladiolus bulb reproduces itself by forming
a new bulb on top of the old one. As bulbs are
seldom less than an inch in thickness, it can readily
be seen that the new bulb must come too near the
surface, if planting is two or three inches deep;
and as a result the subsequent growth would be
weak and spindling. Gladiolus bulbs, therefore,
must be planted five or six inches deep."

It may possibly do to plant gladiolus bulbs at such
a depth in Massachusetts, but it would not be suc-
cessful in the South. We usually have very heavy
rains in the spring which pack the soil, and if the
bulbs were planted so very deep they would rot
before they could push their way through the six
inches of heavy, hard soil. The one great trouble
with all gardeners and farmers in the South is that
they plant all bulbs and seeds too deep.

From experience I have found that three inches
is a sufficient depth for gladiolus bulbs. The late
Mr. E. D. Darlington advised planting from three

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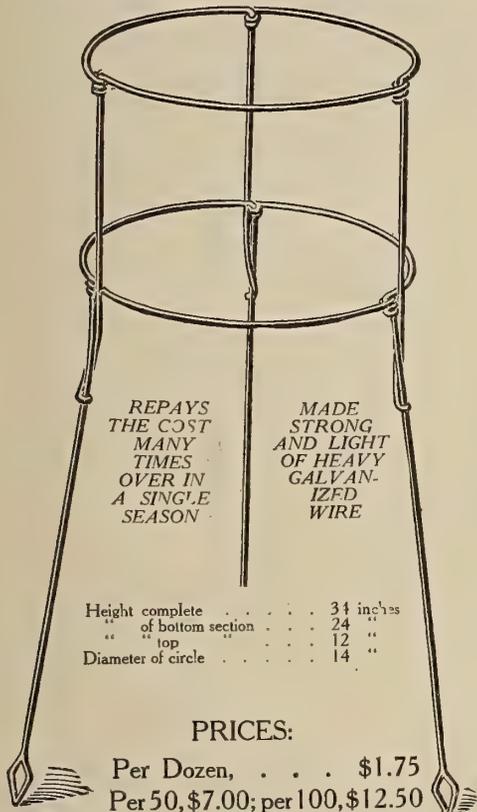
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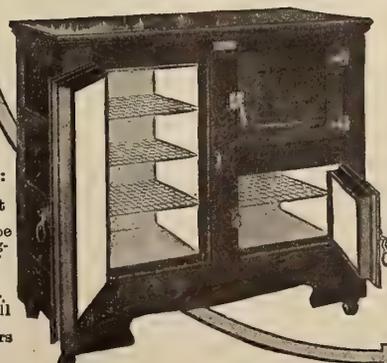
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More than 15,000 users who had made such a mistake replaced their “mistaken” machines with **DE LAVAL** separators during the year 1908.

They had probably wasted Five Million Dollars worth of investment, labor and butter meanwhile.

If you feel inclined to buy some other make of separator by all means do so, if you can find any apparently good reason for it.

BUT why not **TRY** a **DE LAVAL** machine beside the other machine for **ONE WEEK** before you actually contract to buy it? Simply **SEE** the comparative operation and comparative results and examine the comparative construction.

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to four inches deep, and leaflets sent out by some of the largest seedsmen give similar advice. I sincerely hope that none of my statements will bring disappointing results to your readers.
Georgia.
THOMAS J. STEED.



The Wild Grape as a Porch Vine

IN THE April, 1909, issue of **THE GARDEN MAGAZINE** I note some excellent suggestions about the use of wild grape for decorative purposes around old stumps and dead trees. I have found it to be the most practical, inexpensive and effective way of decorating a frame house. The color of the leaf is brighter than most porch vines.

The vine can be led anywhere over the house by means of small staples. It does not lift the boards, and as the leaves fold over each other in such a way as to exclude moisture, the house remains dry instead of becoming damp. A year ago I took down my vine in order to paint the house, and found the paint under the vine in better condition than elsewhere. The only care a wild grape requires is being cut back and trained whenever the growth becomes too dense.

On the north side of the house we have a vine planted near the central window, and another on the south side, which have been trained forward until they pass each other at the front of the porch. Another line runs up and encircles the windows. The porch is 10 x 30 ft. and this heavy hanging of green makes it ideally cool during the hot summer months.

Illinois.

GALEN B. ROYER.



More About the Groundsel Tree

THE article on the groundsel tree which appeared in the February, 1909, number of **THE GARDEN MAGAZINE**, was very interesting to me. I have seen it cultivated in only one place, and that was at the Jamestown Exposition, in 1907, when it was used quite extensively on the grounds. One of the men in charge of the landscape gardening there told me that, so far as he could see, the shrub was identical with one that grew wild on Long Island. It was also abundant on the sandy land lying between Norfolk and the exhibition site.

Since then I have seen it growing at Oyster Bay and also on the south shore of Long Island opposite Bellport, on the sand strip that separates the Great South Bay from the ocean. From the latter place I pulled up a small shrub by hand the middle of last October, and planted it in Connecticut in ordinary garden soil. Although it was out of the ground for over a week, it has every appearance of being alive.

Connecticut.

H. S. A.

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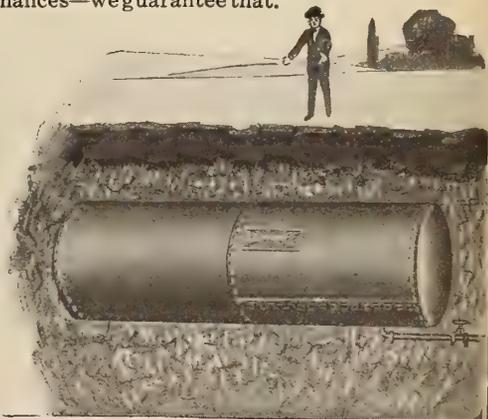
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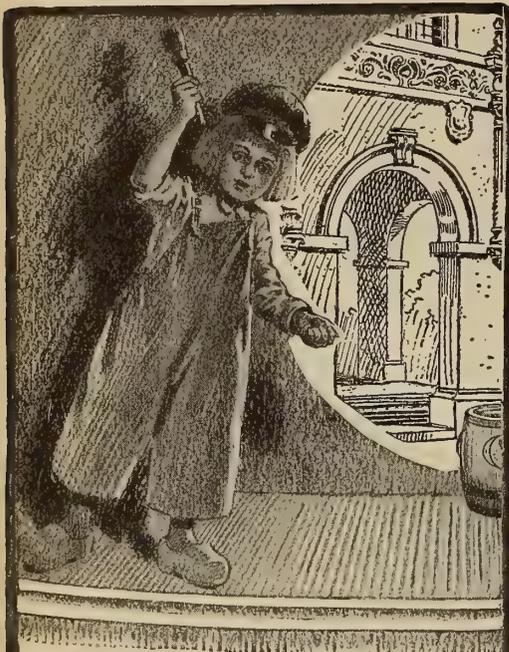
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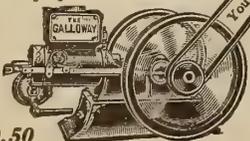
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Garden Notes and News

Think of a whole grove of flowering dogwood! Mr. James Wood at Mt. Kisco, N. Y. has one. Dogwood happened to be dominant, so he cut out everything else. The effect is glorious.

What is the noblest combination of forest trees in America? Some say oak and pine. People often remark that "oak and pine love to touch elbows." It is said that the bluejays help to perpetuate this partnership by hiding acorns in pine stumps.

When Mr. William C. Whitney bought a thousand acres of farm and wood land for a country home Charles Eliot erected a temporary tower to show his client where to locate the house and roads, where vistas should be cut, etc.

There is an enormous "Italian garden" on Long Island built to imitate a ruined villa. It has artificial ruins, endless terraces, diagonal vistas, brick water courses without water, statuary galore, figs grown against a brick wall and many other wonders.

The most beautiful woods in England are beech woods, because of poetic atmosphere, the smooth bark of the beech, etc. We can get this effect by thinning beech woods. Beech will branch out quicker and better than oak under such treatment.

Mr. E. D. Morgan has planted a hillside with little pines at his summer home, near Westbury, L. I. The Austrians make the best show now and will for twenty years. At thirty they will begin to fail, while the white pines will catch up and last one hundred and fifty years.

Have you ever seen a whole city that was planned by one architect and planted by one landscape gardener? Woodmere, Long Island, is such a place and the older part of it is mature enough to show some very beautiful effects.

It does not pay to go to the woods for big trees. They are too slow to branch out and are liable to be killed by the sudden increase of light. It is better to move big trees from the fields, but you must root-prune them and then wait several months. Root pruning can be done at any time but is most economical when labor is plentiful.

Have you heard about the new disease of the white pine? The needles get shorter and all turn yellow. The tree may die without affecting the next one. There is a good deal of this trouble on a famous estate at Englewood, N. J. A Government pathologist is working on it. It is a serious matter. No remedy known.

Twenty thousand dead chestnut trees have been cut down on a single estate near Roslyn, L. I. They made a ghastly landscape. It they had been cut and sold before the disease came, the proceeds would have paid all the cost of transforming these dull, featureless woods into an enchanting grove, filled with noble rhododendrons, banks of laurel, great colonies of wood lily, carpets of partridge berry, etc.

The art or craft of caring for old trees has made enormous advances the last two or three years. People are realizing more and more what is the worth of a tree that has taken a generation or two to develop and are willing to spend money on keeping it alive and well. And some of the leading practitioners recently organized an association for the better cooperation of the "landscape foresters" and the "commercial entomologists."

Can we ever attain charm in a formal garden by using baytrees in tubs? Why not have something of the same shape and size that will grow in the open the year round? It would add winter beauty and save watering. Are you aware that red cedars are now trained like bays? A twenty-foot cedar can be cut down and made into a bay-formed tree twelve feet high. But why should not American holly be the finest plant for the purpose? It has red berries all winter.

Everybody who covets English yew will be glad to hear about *Taxus Canadensis*, var. *macrophylla*, said to be the finest variety of our native "ground hemlock" or trailing yew. It grows erect and is said to attain ten feet in fifteen years. Some one ought to propagate enough for a hedge and compare it with the Japanese yew and our own hemlock. Which of the three will prove to be the ideal conifer for hedging gardens? Better order them now for August delivery.

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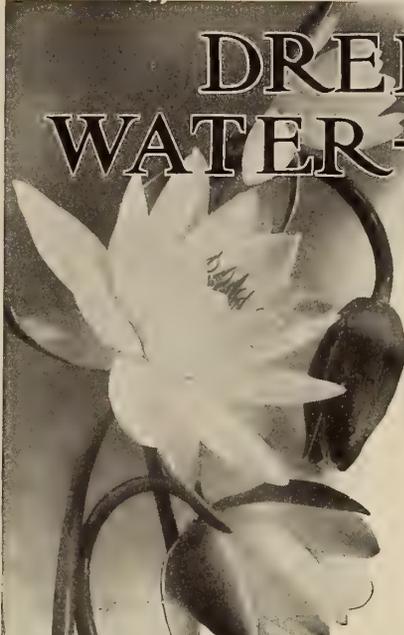
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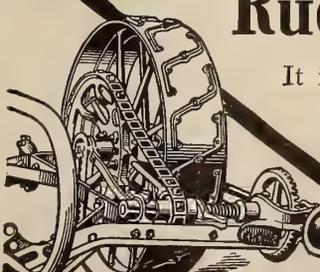
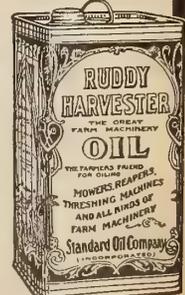
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SCHOOL GARDENING



The Vacation Problem in School Gardening

MANY teachers have been deterred from starting school gardens by not being able to devise a plan that would insure the success of a garden in vacation time.

At the Whittier Practice School of Hampton Institute, which contains two hundred beds, each cared for by two children, the volunteer system by which the children get the product of their own labor has been found to work well. The most important factor in the success of this system is the production during the summer of sufficient crops of vegetables and flowers to make the volunteer workers feel that it is worth while to spend some of their play time in the garden.

In order to make this possible, it is necessary to plan very carefully what crops shall succeed each other in order to mature at the proper times. This was done for the Whittier garden and the 150 volunteers who came on Mondays to weed and cultivate and harvest were able to supply their families during the entire season with produce from the school garden, while many of them had vegetables to sell.

The number of workers decreased from week to week, not from any lack of interest but because many of the children were obliged to find remunerative work. Seventy-five continued to the end and worked with pleasure and even enthusiasm.

A school garden in vacation is sure to fail if the teacher, when school closes, simply asks for volunteers for vacation gardening and then dismisses the matter by saying that he hopes these volunteers will persevere to the end, and that he will see the garden in good shape when school opens in the fall. It is necessary for an older person who lives in the vicinity and has some knowledge of gardening, to meet the children regularly once a week, assign them work, and remain with them until it is done. This supervision can easily be done by any teacher or by one of the older boys or girls, or even by an interested mother or father of some of the pupils. It is desirable to have a little work done in the garden every day because, since it does not always rain on Sunday, mulches can not always be made on Monday.

There was a lawn at one end of the Whittier garden and this had to be kept trimmed. Again, the weeds grew so fast that a weekly weeding did not suffice. Two Hampton Institute boys, students



Illustrating the necessity of supervision. A paid worker was in attendance every day, because the children worked this garden only on Monday mornings

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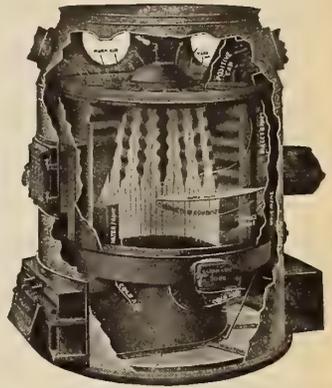
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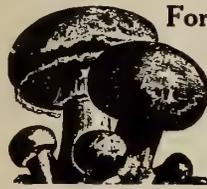


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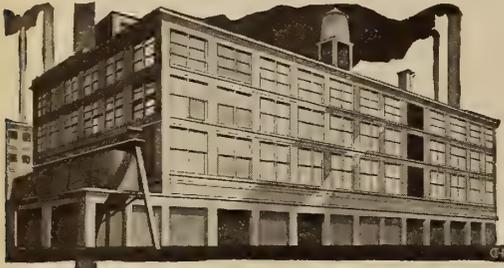


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of agriculture, were detailed for this daily work. In a smaller garden it could easily be done by one of the older schoolboys, who would consider himself well paid if he were given an extra share of the flowers and vegetables raised.

It is necessary that a school garden be fenced to keep out destructive chickens and other animals. Will not the vegetables and flowers be stolen? The answer to this depends upon the success with which public sentiment in the community is educated by means of the garden. The Whittier garden is near a high road and contains a strawberry bed in addition to regular ones. It is easily accessible and yet has never been molested.

J. E. DAVIS.



Random Notes in Season

DO YOU know any better yellow flower for edging a border than the woolly yarrow (*Achillea tomentosa*)? It blooms at least six weeks, beginning in June. By the middle of July only half the flowers are gone. It grows four to six inches high.

German iris and chrysanthemums are alternated along a garden walk in Roslyn, L. I., so as to have two crops of flowers, and good foliage throughout the season.

We always think of asters as autumn flowers, but the blue mountain daisy (*Aster alpinus*) blooms in June and we have even seen it in April. The wild form is purple, but var. *superbus* is said to have bright blue flowers. They are astonishingly large for an aster.

Spurless columbines are occasionally boomed as novelties, but they are an old trick of nature's. You can see pictures of them in a book published in 1613—purple, violet and white varieties, every flower being a perfect rosette one and a half inches across, and composed of four rows of flat petal-like bodies. Presumably they are a case of atavism, i. e., they go back to the ancient condition when the spurs had not yet been developed by insect agency. It seems to us that spurless columbines lack a characteristic beauty. One might as well have Hamlet without the Prince, corned beef without mustard or roses without fragrance. But then seedsmen must have something to blow about!

An English gardener who expected to set America afire, planned to do it with the purple rock cress and its rose, carmine, violet and white varieties. So he planted aubrietias on an enormous scale but they were a sad failure. Our sun is too hot for most alpine plants. We must develop the flowers of the Rocky Mountains and the rock-loving plants of the East such as moss pink, the Virginian saxifrage, etc.

We should be glad to hear from anyone who is collecting bellflowers. Sixty-six kinds of campanula are offered in some English catalogues.

Everyone who has a rockery should grow Charlemagne's thistle (*Carlina acaulis*) for its own sake, as well as the legend that it cured Charlemagne's army of the plague. It grows only three to six inches high and the white flower is enormous for so small a plant. It is like a daisy, but six inches across. However, it is not very showy, as the flower barely rises above the foliage. It blooms in June or July and again in late fall.

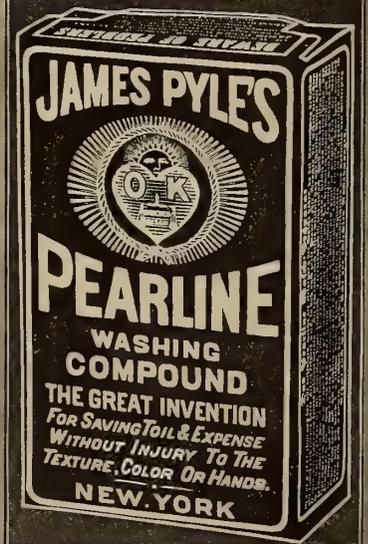
“Balm of Gilead” is a name applied to many plants including Cedronella, which means “little cedar,” referring to the fragrant leaves. The oldest favorite of this group is *C. triphylla*, a four-foot shrub



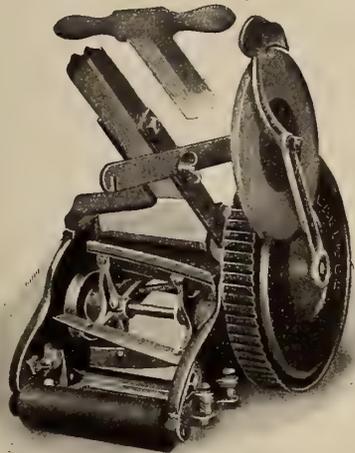
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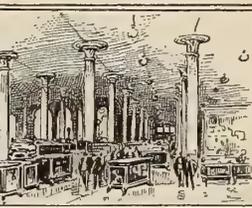
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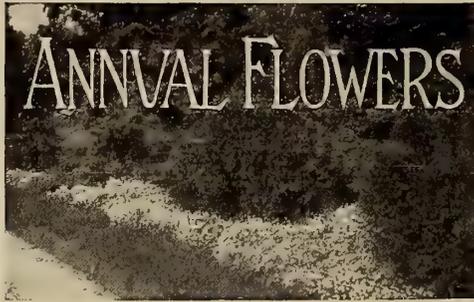
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of the mint family, having purple flowers in long spikes. It is a native of the Canaries and needs winter protection. *C. cana*, from Mexico, is hardy at Elizabeth, N. J. It has purple flowers about an inch long, which are not very showy or refined, but anything that blooms from June to October is worth trying, especially if it has fragrant foliage; the color is a little dull, but of a distinct shade.

"Snow-in-summer" is a good name for a hardy plant with silvery leaves and white flowers (*Cerastium tomentosum*). And so is "mouse-ear chickweed" a good name for its running mate (*C. Biebersteinii*), which has larger leaves and flowers and blooms earlier. If you want cool effects in your garden, use these for edging walks, carpeting bulb beds and all dry, sunny places. They won't cost much if you raise them from seed. Snow-in-summer will bloom the first year, if started indoors in March. They are fine from May to July.

One of the most distinct types of beauty is that of the scabious. Most people know the annual kind, especially the Mourning Bride variety. *Cephalaria alpina* is practically a perennial scabious with a lemon flower, but it is a striking plant because it will grow five feet high and bear flowers three inches across. After the main crop in June the side shoots continue to flower through July, bearing flowers about half as large. It is one of the best hardy flowers introduced since the "Cyclopedia of American Horticulture" was written.

Do you want something to carpet the ground in dense shade where grass will not grow? The bugle (*Ajuga reptans*) will do it. A New Jersey nurseryman claims that it will be bright green the year round. It has purplish flowers in spring. You can have the green, purplish or variegated-leaved variety.



The Wallflower Fallacy

AN OLD-FASHIONED perennial, much neglected in this country, is the Cheiranthus, or wallflower. It is a great favorite in England, but there seems to be an impression here that it does well only in cool climates, and that the seeds must be sown and the young plants wintered with at least the protection of a coldframe.

This is quite contrary to my experience in growing the plant in Missouri. I sow the seed in the open ground in May, and as soon as the plants are large enough transplant to permanent positions in the garden. No further attention is given them except to keep the beds free from weeds.

The seedlings grow where they receive the sun all day long, with the exception of about three hours in the afternoon, and are strong and healthy all summer. They have no protection whatever during the winter, and early in April begin blooming most profusely. The colors range from pale yellow through shades of orange and brown to the deepest velvety reddish maroons. We prefer the single varieties to the doubles. One reason, perhaps, that the wallflower grows so well with us is that in all our beds special attention is given to drainage.

The greatest charm of the wallflower, outside of earliness of bloom, lies in its exquisite fragrance, which is very heavy in the evening. The yellows and maroons are particularly clear and good in color, and the plants are vigorous and bushy, and exceedingly neat and compact in appearance, growing about eighteen inches to two feet high.

It is said that the wallflower will strike readily from cuttings, but this we have never tried, as the old plants bear quantities of seed and new plants are thus easily raised.

Missouri.

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Is quiet—practically no vibration. By attaching a piece of pipe for extra air chamber, will throw a continuous stream of water 40 feet up in the air or 80 feet on the level. Fine for washing wagons and windows and for FIRE PROTECTION. Has pulley for running any machine which can be run by hand, and is so light it can be detached and taken anywhere in no time. It's built like an automobile—same care, same materials—so strong it should need no repairs for years. Ask for our big catalog today and learn all about this wonderful invention.

Fuller & Johnson Mfg. Co.
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This Wonderful Power Pumping Plant costs less than a Windmill and is ALWAYS READY for Work



Garden Hose That's Built To Wear

Ordinary garden hose wears out from the inside. The least water pressure tends to unwrap it. (You know how it's made—wrapped with canvas—like a rag around a sore finger.) Kinks crack it and then come the leaks.

ELECTRIC GARDEN HOSE

Wears twice as long as ordinary hose. It will stand a higher water pressure than any other rubber hose. We guarantee it for 200 lbs. to the square inch. 400 lbs. won't burst it. It can't kink. In brief this is Electric building,—a series of woven jackets (in one piece) of high-test cotton fabric alternating with layers of fine grade rubber. The whole vulcanized into a solid seamless piece. You can buy any length up to 500 feet. Although Electric is the finest hose ever made, it costs only a cent or two more than common. If you are in the market for hose, no matter how little, Electric is worth looking for. Electric trade-mark is on the hose. First-class seedsmen and dealers sell it. If yours doesn't keep it, write to

ELECTRIC HOSE AND RUBBER COMPANY
WILMINGTON, DELAWARE

The Guide for Seed Growers

THE THORBURN CATALOGUE

mailed free on application

J. M. THORBURN & CO.

88 BARCLAY STREET

NEW YORK



1000 DOLLARS AN ACRE FROM TOMATOES

is the record made last year in growing tomatoes by the Potter Method. The cut herewith shows the appearance of such a money-making tomato patch. The Potter Method is a simple, practical way of growing tomatoes right and is just as valuable to the home gardener as it is to the grower of large quantities.

Growing Tomatoes for Quality, Quantity and Earliness

is the name of the best booklet ever issued on the subject of tomato culture. It contains 30 pages and illustrations fully describing the Potter method of raising tomatoes. By this method you can have bigger and better fruit and weeks earlier than otherwise. It teaches the secret and science of tomato culture; forcing the fruit by systematic cultivation and pruning. This book is invaluable to every gardener, whether he grows one dozen or one thousand vines. The subjects covered are: History of the Tomato; its Nature and Habit; Tomato Culture in General; The Potter Method; Plants and Planting; Home-Grown Plants; Preparing the Ground; Setting the Plants; Cultivation; Pruning and Staking the Vines; Picking the Fruit; Ripe Tomatoes at Christmas; 40 Tomato Recipes; Best Tomato Seeds. The information is condensed and to the point—just what every grower wants.

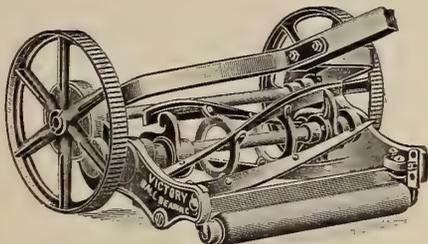
The cut herewith shows one of a large number of vines in my garden this season. Notice that each stalk is loaded with large, perfect fruit from top to bottom. This is the result of my method. It is easy to raise this kind of fruit when you know how. Just send for my book—price 50c., postage or money order. Your money back if not satisfactory.

FREE SEED.—To everyone ordering my booklet within the next 30 days I will send FREE with each book one package each of the best varieties of early and late tomatoes. I make this offer so that you will get ready now for your spring gardening. Don't wait until the last minute when the rush is on. Send for my booklet to-day and I know you will be thankful that you made such a wise investment.

"CELESTIAL LOVE APPLES." We have just received a very limited quantity of the seed of a wonderful new variety of tomato by the above name. It is a very perfect and delicious fruit but it is a non-acid tomato and is most desirable for invalids and dyspeptics who ordinarily cannot eat the tomato. We will send twelve (12) seeds to each one ordering our booklet on tomato growing. If you don't receive them you will know the supply is out.

T. F. POTTER, Tomato Specialist, Box C, DOWNERS GROVE, ILL.

TOWNSEND MOWERS



TOWNSEND GAVE TO THE WORLD

The Ball-Bearing Lawn Mower

Our mowers are more imitated than any others. We make more high-grade mowers than any other firm and they are all ball-bearing.

They run easier than those of any other maker.

We make the best Lawn Mower, the best Horse Mower and the best Hand Roller Mower in the world.
S. P. TOWNSEND & CO. Orange, N. J.

Rose and Peony Exhibition

Mr. Peterson begs to announce, for early June, an outdoor exhibition of the above two flowers, which for quality and interest will exceed anything of its kind in this country, and to which the reader is cordially invited.

Realizing how little is generally known of the surpassing beauty and merit of the modern Peony, a special effort has been made to show this flower at its best, including the rarest and choicest gems. Should you contemplate an important planting of this flower next fall, this exhibition will afford a rare opportunity to select varieties which most appeal to you. Kindly send word if you intend to be present, and you will then be notified when flowers are reaching their best. In a normal season this occurs during the second week of June.

Directions for reaching nurseries will be found in current Rose catalog.

GEORGE H. PETERSON

Rose and Peony Specialist

FAIR LAWN, N. J.



NONE JUSTAS GOOD

Keeping Up the Place

Every owner of a home or farm has the expense of "upkeep" to contend with.

There are sidewalks, curbs, steps, clothes posts, horse-blocks, watering troughs, chicken coops, and the like to be built, repaired and built again later.

Why not make these improvements of concrete and settle this annual expense for all time?

Concrete is the great, modern building material, easy to handle, economical and durable as stone.

We have published a text-book devoted exclusively to this sort of work. It tells just how to make these improvements—how to mix the concrete and how to make the molds.

You can do much of the work yourself; all of it can be done under your supervision. The book is called

"Concrete Construction about the Home and on the Farm" and will be sent to anyone on request.

Concrete is a mixture of sand, gravel or broken stone and some kind of Portland Cement. The kind is important—so important that you should know about

ATLAS PORTLAND CEMENT

which, because of its purity and uniform quality, has become the standard in cements. Atlas is made in but one grade—the best—and everybody gets the same. Atlas is the brand the government has purchased to the extent of 4,500,000 barrels for use in building the Panama Canal.

Get Atlas for your own use and specify it for all work you have done.

Other books:

"Concrete Country Residences" (delivery charges 25c.)

"Concrete Cottages" (sent free.)

"Reinforced Concrete in Factory Construction" (delivery charges 10c.)

If your dealer cannot supply you with Atlas, write to

THE ATLAS PORTLAND CEMENT CO.
INQUIRY DEPT., 30 BROAD STREET, NEW YORK
LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD—OVER 40,000 BARRELS A DAY



Japanese Irises on a Hill Top

I HAVE been for many years interested in the culture of the Japanese iris, and for a long time had the common idea that it needed bog conditions. To meet this fancied need I made a sunken area with appropriate soil and a hydrant to keep it wet. The flowers I had were but little to boast of.

Later I placed the plants in ideal soil—moist, but well drained—and had flowers that I was really proud of, and my pride was further increased by having an English gardener of wide experience say that my irises were the best that he had seen.

At about that time I visited an estate in charge of a Japanese gardener. His bed of irises was situated on the top of a hill with the natural soil a thin sticky clay. The plants stood nearly breast high, with flower-stalks like small bamboos and flowers such as I had never dreamed of.

I found that the secret of such success was to have a clay soil, the heavier the better, working into it about two inches of well-rotted manure and giving a liberal dressing of bonemeal or nitrate of soda. The plants should be placed about two and a half feet apart in rows and in the rows at least a foot; and for the very best results, planting should be done on slight ridges about three inches above the trough of the row.

When the plants have started to grow put at least six inches of half rotted stable manure between the rows but not against the plants. Water liberally with the hose, washing the manure into the roots. The flowers will be best the second year; the third year the plants should be reset. My own experience is that much finer plants are to be had by dividing to single eyes; when crowded many of the shoots are weak and do not flower.

The above method is doubtless the best to follow if one desires flowers for show purposes, but when planted wild about the banks of ponds or streams and flowering among wild plants, there is a charm about Japanese irises that cannot be obtained in any other way.

California.

CARL PURDY.

Important Jobs to Do Now

THIS is the last month in which dahlias and gladiolus should be planted. During this month the main work in the flower garden is that of general care, watching closely to see that no plant suffers for lack of water. Plant out the last lot of chrysanthemums.

The following vegetable plants and seeds may be planted during June: Beans, late cabbage (seeds or plants), cauliflower (plants), lettuce, melons (musk and water), peas, sweet potatoes (plants), pumpkin, radishes, tomato (plants).

Los Angeles, Cal.

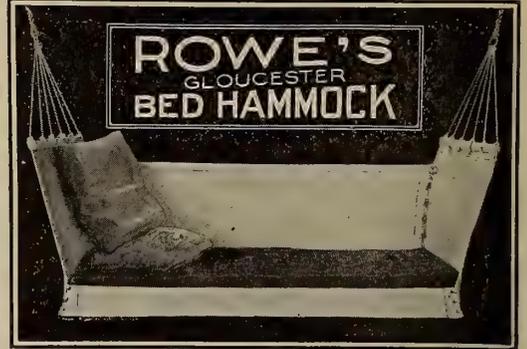
ERNEST BRAUNTON.

Chickens in Our Garden

IN ORDER to keep the garden from being scratched up do not allow the chickens to run at large during the day for more than an hour or two before roosting time. When releasing them, keep the cocks back, for hens will hardly ever do any damage unless they have chicks, but will really do good work by quietly picking up grubs. The minute the cock gets his liberty, he feels it is his duty to provide for his family by showing them a good feeding ground. That spot is sure to be the garden. He will take only a few glances around before starting for it on a run, calling for all to follow him. In a few minutes every leg is flying in the midst of the choicest planting.

Massachusetts.

ROSE THORN.



For Porches, Verandas, Lawns, Tents and Indoor Use

Combines Hammock, Couch and Swing Settee

A third of a century's experience shows that Rowe's Hammocks can be depended on to give 10 years of continuous out-of-door service. From the model and of same weight canvas (white or khaki) as made by us for years for U. S. Navy. Strong wood frame, thick mattress. Holds six persons. Ideal for outdoor sleeping. Complete, with lines and hooks ready for hanging, delivery charges prepaid in United States, carefully packed.

Write for Descriptive Booklet

about this most comfortable and durable piece of outdoor furniture, and prices of different styles and sizes

E. L. Rowe & Son, Inc., Sail Makers and Ship Chandlers
466 Wharf St., Gloucester, Mass.

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Sold by the growers direct to the planter

We are the only dealers in the United States owning and working nurseries in the Sassenheim district of Holland.

We are quoting a large assortment of novelties and species of Darwin and May flowering Tulips.

Orders taken during June will be filled direct from our nurseries.

SEND FOR OUR DESCRIPTIVE CATALOG.

FRANKEN BROS.

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Send for illustrated price list H 29

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New York Office, 1123 Broadway



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No more danger or damage from flying sparks. No more poorly fitted, flimsy fire-place screens. Send for free booklet "Sparks from the Fire-Side." It tells about the best kind of a spark guard for your individual fireplace. Write to-day for free booklet.

The Syracuse Wire Works
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Send 25 cents for sample copy of **PALETTE and BENCH**

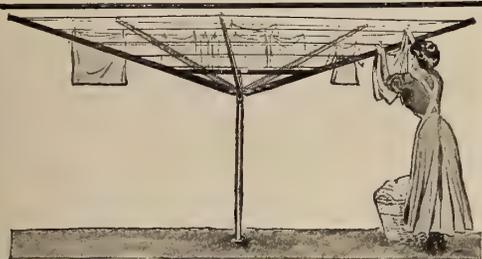
a new magazine for Teachers and Students of Oil and Water Colors and the Crafts. Endorsed by the leading art educators of the country. Prospectus free. Free sample copy of "Ceramic Studio" to those interested in China painting.

Keramic Studio Pub. Co.,
114 Pearl St., Syracuse, N. Y.

It may seem strange that real life can be more absorbing than the amazing evolutions of the fashion plates in a certain class of modern romantic fiction. Don't take our word for it: read

"THE GOOD COMRADE"

by Una L. Silberad. All bookstores. \$1.50
DOUBLEDAY, PAGE & CO. NEW YORK



Your Back-Yard on Monday

You can't be proud of it if it is disfigured with a network of clothes lines, clothes poles and miscellaneous family washing. It certainly isn't a sight for any self-respecting home to be proud of. Besides the

HILL CLOTHES DRYER

for Lawn, Balcony or Roof has made it unnecessary. The Hill Dryer is a compact rotary clothesline that holds 100 to 150 feet of line and does away with all clothes posts and clothes poles. You can hang the sheets on the outside, hiding the articles of intimate personal appearance from public view.

No tramping up and down the yard through snow or mud or damp grass—No ruined lawn.

When not in use the Dryer folds up like an umbrella and leaves but a socket beneath the level of the grass.

Hill's Balcony or Roof Dryer is one of the modern conveniences that distinguish an apartment from a tenement. Insist on your landlord getting one.

You Should Get Our Folder 39.

We want to send you Free our handsome Folder printed in colors showing the Hill Dryers in use. Gives full information. Sent free for postal request. *Get it to-day.*

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BEAUTIFY YOUR GARDEN

for the season with Campanulas in variety, Dahlias and hardy Pompon Chrysanthemums.

Send for our new Catalogue.

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Of All Varieties

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Peter's Plants Our free booklets, etc. tell why. **Please** Be sure to see them before you buy. **Peter's Nursery Co.** **Patrons** Box 325, Knoxville, Tenn.

MAY and JUNE PLANTING

Do not postpone any planting you wish to do this spring just because plants are leafing out.

All through May and June we send out thousands of our big, healthy, hardy potted plants to all parts of the United States.

You would be amazed at the quick and satisfactory results they give with less risk than usual.

Send today for our "Potted Bulletin." It will be mailed to you free. In this special booklet are listed

Japanese Maples Hardy Perennials Roses for all purposes Vines, well advanced in growth and many other attractive items that will interest you.

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ALLOW us to send you without charge this little portfolio showing composition stone ornaments such as sun dials, benches, fountains, vases, etc., suitable for the large estate or small garden.

It will tell you how to make your garden a delightful outdoor living room and also offer you in the convenience of your home a wide selection of garden accessories. You can select garden accessories from this portfolio as confidently and satisfactorily as if you were at the Garden Studio, 647 Boylston Street, Boston, Mass.

We have long made a specialty of the most classic and beautiful accessories for making the country place more attractive or the small garden an outdoor living room.

This firm also makes a specialty of interior decoration of churches, libraries, residences and public buildings. Address Garden Department,

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FORTUNES IN FIG ORCHARDS

TEXAS FIGS ARE WORLD'S FAIR WINNERS

The famous fig preserves made at Aldine, near Houston, are the finest and best known in the world. One important thing which must not be overlooked is that fig orchards never fail to produce large, profitable crops here.

One Acre Set in Figs and One Town Lot, both for \$230, Payable \$10 down and \$10 per month, without interest, no payments when sick; clear warranty deed in case of death.

E. C. ROBERTSON

General Sales Manager

501G Kiam Bldg., Houston, Texas

Local cash market for fruit. Single crop pays for land and lot. Money back in four years with annual income thereafter for life. Better than banks, bonds, or life insurance. If you want to enjoy life in South Texas under your own "vine and fig tree," or make a small, safe, profitable investment, write for full particulars. Agents wanted. Will plant oranges if preferred.

THE CARE OF TREES

DON'T EXPERIMENT. Your mature trees need scientific attention. Call us in for an inspection or for necessary work. Dead limbs should be removed, cavities cleaned and repaired; broken and split limbs bolted; insect pests stamped out and unhealthy trees invigorated by methods which are recognized as standard—our methods. Write for our FREE BOOKLET. It is extremely valuable to owners of estates, orchards and forest lands.

FORESTRY. Owners do not realize the possibilities in their woods. By careful handling certain amounts can be removed at intervals leaving the forest in position to produce superior timber. These cuttings are usually not an expense but give the owner a profit. If you and possibly your neighbors have forest tracts have us inspect them and report what can be done for their betterment. We make timber estimates and working plans besides carrying out such plans. Our directors are graduates of the Massachusetts Agricultural College and the Yale Forest School.

PUBLICATIONS. "Shade Trees," by G. H. Allen; "Apple Growing," by George T. Powell. \$1.00 each postpaid.

LECTURES. Village Improvement Societies, Boards of Trade, etc., should secure our stereopticon lecture on the Care of Trees.

MUNSON-WHITAKER CO.

842 Tremont Bldg., Boston. 1102 Flatiron Bldg., New York. 1202 Monadnock Bldg., Chicago.



THE CARE OF FORESTS

Red Flowers From May to November

A RED border is an interesting study, and it usually takes a lot of transplanting to reconcile the different flower shades of red. I have a border which has been for three years in process of construction, and it could easily have three more years spent upon its improvement before it reaches perfection. Every season all purplish and magenta reds have been removed and bright reds substituted, until now this bed is a bright and glowing flame from end to end. Orange reds merge into deep reds and these into crimsons and maroons.

In my estimation it is a brighter scarlet, or rather a brighter red, than the very excellent handling of the same sort of border described in the February, 1907, GARDEN MAGAZINE. I claim for my streak of red a longer period of bloom—from May until November—and the inclusion of three of the most beautiful reds obtainable—the new annual sweet Williams, ranging from blood red to deep maroon, *Gladiolus princeps*, and Oswego tea or mint. I use red gladioli and nasturtiums as fillers in any bare spots that may occur during the summer.

The border runs north and south. At the back a hedge of perennial peas breaks the force of the scorching afternoon sun, and a small peach tree and an althea give shade. The one-foot wide border in front planted with *Dianthus plumarius* is a garden by itself in June. After the blooming period is past, the solid mass of gray-green foliage makes an excellent contrast with the bright reds behind it.

Starting at the south ends I have three colonies of lilies—superbum, Wallacei, Canadensis—which bloom at different periods. As soon as they are well out of the ground nasturtium seeds are tucked among them. They make few roots and furnish a good ground cover for the lilies. Nasturtiums are likewise planted in the strip occupied by Gesneriana and Darwin tulips and Sir Watkin, Emperor, and Golden Spur daffodils.

At the back of the border is a patch of twenty-five pompon chrysanthemums in shades of brick red and orange. Annual sweet Williams are planted on one side of the chrysanthemums and are scattered among the sweet Williams on the other. By placing an occasional clump of the annuals among the perennial sweet Williams their long stretch of blossomless weeks is tided over.

Following the chrysanthemums at the back of the border are some twenty-five or thirty *Tritoma Pfitzeri*. They make a gay display of flaming torches in September and October.

A big patch of Oriental poppies occupies the whole width of the beds. I have used salvias, portulaca, petunias, verbenas, and marigolds as substitutes for the poppies after they have died down, but my efforts have never been wholly successful. Last year a small corner was planted with gladioli, which had been overlooked at the regular planting season, and they came along so splendidly that this year when the poppies have bloomed gorgeous *Gladiolus princeps* will take their place.

A patch of *Heuchera sanguinea*, with its dainty coral-red bells furnishes a fringe of red in front of the poppies while the next crop is coming on.

Lychnis Chalcedonica is at the back of the border with a goodly sized colony of the larger flowered but dwarfier *Lychnis Haageana* in front of it. By keeping the seed pods picked off the latter a succession of bloom may be had nearly all summer.

At the front of the border a bed of fifteen plants of the Cambridge scarlet mint lights up the August days. The foliage is fragrant and the color beautiful.

The butterfly flower, *Asclepias tuberosa*, makes a grand mass effect, but it is better to collect it than to buy it from nurseries, as native plants are usually brighter colored.

A big bed of gaillardias ends the red border. These useful flowers are used as a transition from the reds to the yellows, combining both colors most effectively. They lead the way to clumps of *Rudbeckia speciosa* (often called *Newman*), coreopsis, and other yellows down the scale.

Illinois,

ANON.



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All Portland Cement is not ATLAS

What do you care? Just this: Concrete is made with Portland Cement. Concrete is a fire-resisting, durable, adaptable, economical building material. It is a material that all who know and understand it are using for all building purposes. It is the material you will come to use, and its success as a building material depends upon the quality of cement that goes into it.

That is why you should know that all Portland Cements are not Atlas and why you should also know that among Portland Cements Atlas is the standard, because it is made by a process that insures purity and absolutely uniform quality.

ATLAS PORTLAND CEMENT

is made in but one grade—the best—and the same for everybody. It costs no more than other cements, yet it is the brand by which the others are measured, the brand the Government has purchased to the extent of 4,500,000 barrels for use in building the Panama Canal.

You should study this subject of concrete and cement. We have some books that will interest you. They are:

"Concrete Country Residences" (delivery charges 25 cents).

"Reinforced Concrete in Factory Construction" (delivery charges 10 cents).

"Concrete Cottages" (sent free).

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\$2.50 or \$4 Worth of Guaranteed Roses for \$1.00

Beginning June 1st we shall send out our "Surprise Collections." Orders filled in rotation—first come, first served.

Of course choice is left to us, but it may consist of all roses, or all cannas or entirely of flowering plants and bulbs; or if you prefer of any two or three of these classes combined.

If sent by mail, the Surprise Collection will be worth at least \$2.50 at regular prices.

If sent by express, customer to pay expressage, the regular value will be at least \$4.00.

Below are two out of many testimonials received from flower lovers who bought the Surprise Collections last year:

"I received by express yesterday the 'Pleasant Surprise Collection,' and must say that I am truly delighted with the same. I cannot see how you can give so much and such a choice selection of flowers and bulbs for so little money.

"I have dealt with quite a number of plant and flower growers but unhesitatingly say to you that I have always gotten more and better results for my money from your house than any other.

"Yours very truly

"Sidney J. Dudley, Hampton, Virginia."

"Surprise collection received by mail was a dandy. I am sorry I did not order two or three."
12-26-1908
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The earlier you order the choicer varieties you will get.



Remember the Star. Box 24-F.

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For 25 or more Size 5 1/2 x 8 (6 to 8 times size of this "Boats at Low Tide.")

Send 25 cts. for 25 Art subjects, or 25 Madonnas. Catalogue of 1000 miniature illustrations, two pictures and a Colored Bird picture for 3 two-cent stamps. THE PERRY PICTURES CO., Box 1460, MALDEN, MASS.

2HP Stationary Engine \$29.50

2 1/2 to 8 H. P. Proportionate Prices. For use on the farm and in the shop.

Runs cream separators, churns, pumps, grist mills, corn shellers, washing machines, lathes, printing presses, etc. Burns kerosene (coal oil) alcohol, gasoline, naphtha, distillate, without change of equipment, starts without cranking, throttling governor, drop forged crank shaft, best grade babbit bearings, free catalog tells how to save half cost of hired help. Testimonials 10,000 in use. All sizes in stock ready to ship.

DETROIT ENGINE WORKS 229 Bellevue Avenue, Detroit, Michigan



RATS KILLED BY SCIENCE

By the use of the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz of Pasteur Institute, Paris, science has at last found the only successful method for exterminating rats and mice. Used with striking success for the past few years in England, Scotland, France, Holland and Russia.

DANYSZ VIRUS

contains the germs of a disease peculiar to rats and mice only and is absolutely harmless to birds, human beings and other animals. The rodents always die in the open, because of feverish condition. The disease is also contagious to them. The Virus is easily prepared and applied.

How Much to Use—A small house, one tube. Ordinary dwelling, three tubes (if rats are numerous, not less than 6 tubes). One or two dozen for large stable with hay loft and yard. Three to six tubes per acre in case of open fields, game preserves, etc. Price: One tube, 75c.; 3 tubes, \$1.75; one dozen, \$6.00; delivered.

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It Used to Be Said

That a small leak would in time sink the largest ship—that was in the days of the old wooden sailing vessels—before the air-tight compartments were installed. It used to be said

There Was No Money In Dairying

That was in the days of cream separating by the slow old gravity method. Times and methods are ever changing on both land and sea. The leaks that would once sink great ships, and the ancient methods that once made dairying at a profit impossible, are now over.

For the past 17 years or since the reliable

UNITED STATES CREAM SEPARATOR

Has been on the market you hear less of this complaint

But why? Because the U. S. saves the last particle of cream, whereas with any other skimming method a large amount of cream is lost.

These immense savings alone would convince any dairyman that a U. S. Separator was absolutely necessary, but there are many other great advantages.



The bowl is very simple, small, compact and completely easily washed and thoroughly sanitary. The World's Record winner for closest skimming.

Other advantages as waist low supply can, ease of operation, thorough lubrication, reversible crank, enclosed gearing, all tend to make the U. S. Separator the greatest dividend payer a dairyman can invest in.

More particulars are found in Catalog No. 71. Write for it. We will send it anywhere.

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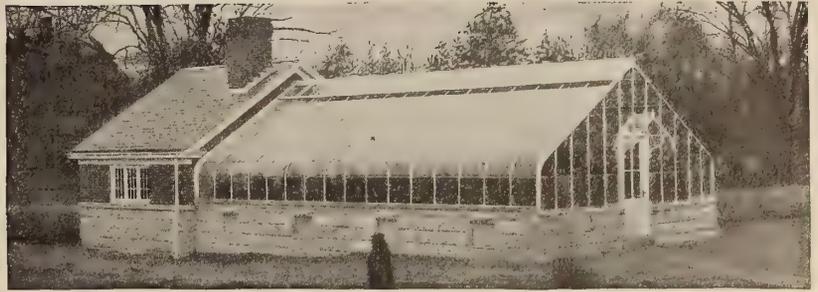
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No Evergreen has ever attained the popularity of these beautiful little trees. They can be shipped at any season of the year and planted in the open ground (except in the extreme North) or in boxes.

Bushy Trees, 18 in. high, \$2.00 per pair
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Any of the above planted in Mission Plant Boxes \$3.50 per pair extra. Write for prices in larger quantities.

Wagner Park Conservatories
Sidney, O.



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THE quickest way is to drop us word, saying you are interested in the greenhouse shown in the June Issue of Garden Magazine—or something to that effect. Then the very day your letter comes, we will send in reply some forty-eight or more advance sheets from a very beautiful catalog which is not yet entirely printed.

In these advance sheets are shown several splendid houses, starting with the very simplest, and least expensive, and so on up to the most pretentious ones. This particular house is thoroughly described in a very complete and interesting way; there is another view of it too, and a plan as well.

We shall have a number of these advance sheets all ready for immediate mailing, anticipating Garden Magazine readers' requests.

U-BAR GREENHOUSES

PIERSON



U-BAR CO.

DESIGNERS AND BUILDERS

1 MADISON AVE., NEW YORK

Our New Curved Eave Greenhouse



You will like it—first, because it is so very attractive; second, being light, it will grow more and better plants and flowers; third, it is reasonable in price. Combining these three things, we have just the house for you. Send us size of house and we will send you estimates.

Hitchings & Company
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The action of this pump being noiseless, Health and Rest have come back again along with natural quiet and repose. In this way the Hot-Air Pump has proved itself a wonderful therapeutic agent, besides being the most reliable domestic water supply known.

Remember that these pumps are not steam-engines, but machines of low power which cannot explode, operated solely by hot air, automatic in their action, requiring no skilled attention, so simple that any servant or farmer's boy can start and stop the little flame that gives them life. The cost of operation is almost nil, while the delivery of water is absolutely certain at all times and seasons.

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Last year I tried an original method of staking which proved to be a great success. For twelve plants I used the front border of my garden, a strip measuring three feet wide by twenty-eight feet long. I bought three cedar posts ten feet in length and divided my distance equally, setting the posts so that they were eight feet out of the ground to the bottom of the holes I had previously bored to receive a 3/4-inch gas pipe, which ran the full length of the posts horizontally. Strips of pine one by three inches pointed at the bottom end and slotted at the top were procured and driven into the ground, the slotted end being placed against the gas pipe. Holes were bored in these strips fourteen inches apart into which were inserted quarter inch iron rods twenty-eight inches long.

The plants were from twelve to fourteen inches in height when planted, and were placed to a depth within half an inch of where the first laterals would form. They were set diagonally two feet apart in width and four feet apart in the row. In the centre of the border I dug a trench quite twelve inches wide and deep, which I filled with four barrels of horse manure.

As the vines grew I tied them to the rods, pinching off all the laterals as they appeared, save the two that were formed just above the ground. These two I let grow until they had attained a length of two feet; then I buried them about four inches deep and trained the remainder to grow toward the rack. The buried portion rooted very quickly and the roots from the parent plant soon found the mulch which was always moist (and required no watering) and proceeded to grow across, so that by the middle of July the roots from each row extended through the mulch to the plant opposite. This gave about fourfold roots to each plant.

The fruits formed in clusters of from two to twelve which were tied to the iron rods to hold them up. No matter how hard the wind blew I had no fear as to the safety of plants or fruits.

During the third week in August the plants were a foot above the iron pipe. No commercial fertilizer was needed; any ordinary, thrifty-growing plants will attain the same height

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Tomato plants trained on this trellis attained by August a height of nine feet

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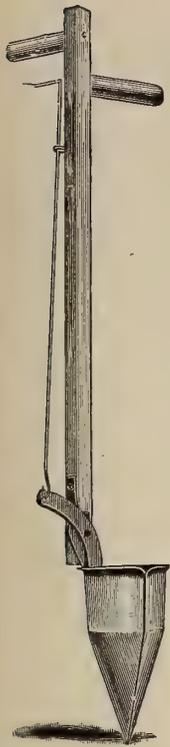
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JULY

1909

Vol. IX. No. 6

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THE GARDEN MAGAZINE



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40 cts. in postage stamps together with the name of your dealer will bring you, postpaid, direct from the manufacturer, a fresh sample brick of

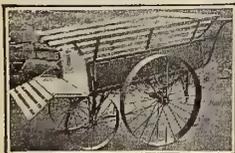
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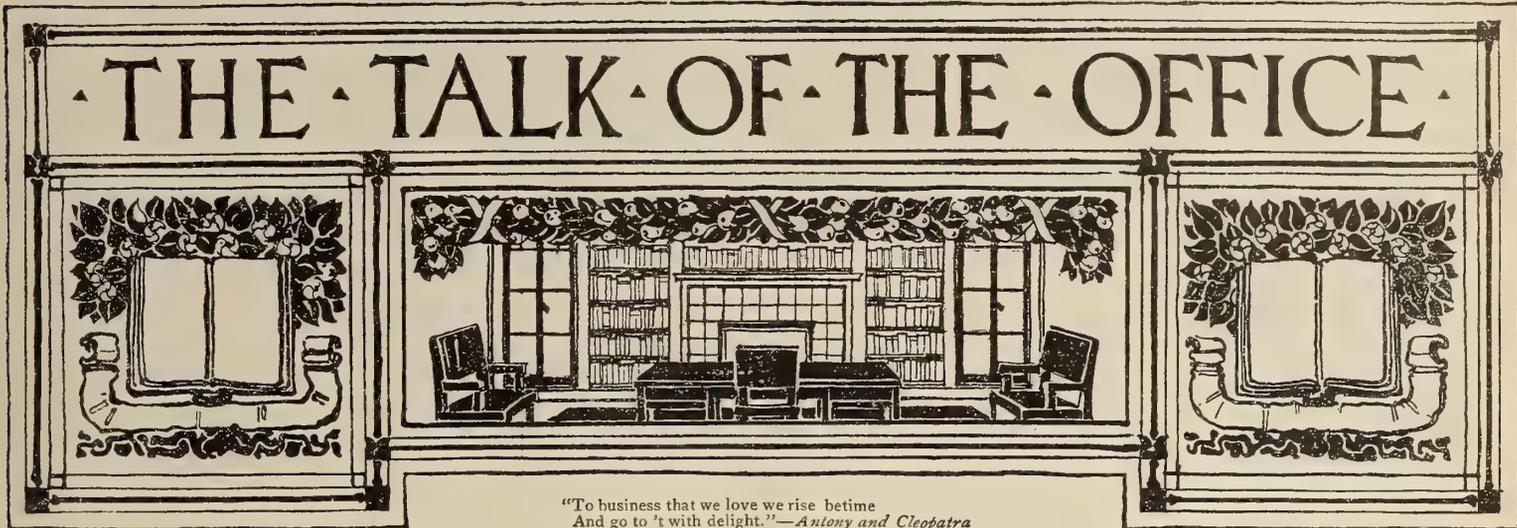
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"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

A MESSAGE FROM AFRICA

Readers of our magazines will be interested we think, to hear of our friend, Mr. A. Radcliffe Dugmore, who, since the first, has been on our staff, and has made so many marvelous photographs for our magazines and books. He went to Africa in December to photograph big animals, and how well he has succeeded will be judged by this letter from the jungle:

On Safari, near Mt. Kenia,
March 26th, 1909.

MY DEAR COUNTRY LIVERS, GARDENERS AND WORLD'S WORKERS, TO SAY NOTHING OF OTHER DOUBLEDAY PAGES:

Just to keep you from forgetting that I am still in the land of the living, I must scribble a few lines to you fellows, not forgetting those who are not fellows. I had just written the date on this letter yesterday when I was very rudely interrupted. I must explain that I was sitting all alone in a blind of fragrant boughs (they were not really fragrant; I put that in to make it sound well) waiting for unsuspecting animals (if such a breed exists) to pass and had had the good luck to get two nice pictures of antelope. As the morning had nearly passed and things were going very slowly, I thought I would write a letter or two to kill time.

I had just finished one and was starting this when I took a casual glance around at the beautiful scenery, just to see if anything that needed to have his picture took was coming my way. Can you imagine my feelings when I saw two big, ugly tawny faces staring at me not seventy yards away? Two lions, one a very large one, were deliberately stalking me. They stopped when they saw me looking at them. My first instinct—the result of long service with C. L. in A.—was to grab the camera. My second instinct was to save my hide. I had with me a .275 rifle which contained six cartridges. This was all the ammunition I had, and I only carried the rifle out of respect for the life insurance companies. In the excitement I had to put down this letter, unfinished, and I really hate to leave things unfinished. I let go at the bigger lion, and was disgusted to see the shot strike too high. The second shot did the same. That left me with four cartridges and two lions. Then I looked at my sights and found that the fool of a gun bearer, in cleaning the rifle, changed the sights to the 200-yard range. The lions seemed to have no dislike to being used as sighting targets, and even took a couple of long, stealthy steps nearer. My next shot knocked the big one over. I did not notice particularly how much he was damaged, but did see with satisfaction that he was going slowly the other way after giving a big growl. One more shot; the second lion was down with a fatal wound. The noises he made were horrifying. It seemed a great pity to let the big lion get away, but I really did n't dare follow him, as I had but two more cartridges and did not know how many more lions might be around. In

looking at the tracks afterward, we found he was soon joined by a mate, so it was just as well I did n't follow. Thus ended a most exciting experience. Had I delayed looking around for two minutes more, I would have had absolutely no chance of escape, and the lions would have wished they had struck a fatter piece of meat!

Three days ago I was waiting for lions in a thorn boma with the hopes of getting photos. Two lions came, and the—flash light would n't go off. So to keep those lions from making a too thorough investigation of our boma, I shot one—a fine male. The night before I had made two rather nice photos of a very large male, ten days ago I shot two young lions, so you see things are happening. Besides photos of several antelope I have now got lions, rhino, buffalo, and zebra, and soon hope to get hippo and some other things. I find the climate is fine.

A. RADCLYFFE DUGMORE.

There will be a fine book of these adventures some day. Meanwhile photographs are appearing in *Collier's Weekly*, in America, and in the *Graphic*, in London.

THE AMERICAN FLOWER GARDEN

It is not often that the publishers have an opportunity to say that a book has satisfied all expectations and receive volunteer expressions of pleasure from the readers. As a rule, bookmaking suffers from the misfortune characteristic of all things human. The volume, so the critics say, is too large or too small, too thick or too thin, poorly illustrated, etc., etc., but "The American Flower Garden," by Neltje Blanchan, seems to have made almost a perfect score.

For one thing, the 1,050 copies were all sold before publication, and no copies were left to send to reviewers—we may have saved criticism here, but the number of letters praising the book has been surprising. We give ourselves the pleasure of copying a few paragraphs:

"It is not only the most beautiful garden book I have ever seen, I can learn from every page something worth knowing. If I could not get another copy, you could not buy this one for twice what I paid. Could I retain but one book from my library, this is the book I would keep."

"To say that I am delighted with it does not express my appreciation of the beautiful book, and I desire if possible, to procure an additional copy to present to a friend."

"I am highly pleased with 'The American Flower Garden.' It was just exactly what I wanted."

"I am delighted to be the owner of such a sumptuous work. It is the finest thing of the kind I ever saw."

"I am perfectly charmed with the beauty and contents of this book."

There are dozens of such kindly comments. We have just suffered the shock of declining an order for 100 copies from London.

TO THE MOTOR ENTHUSIAST

We issued a few weeks ago a novel by Mr. and Mrs. C. N. Williamson, (whose book "The Lightning Conductor" gave pleasure to so many thousands) called "Set in Silver," which, we think is the most interesting and charming of all the Williamson books.

It is a love story which moves through those delightful places in England familiar to all Americans who visit the old country each year. The story is "compelling" to the last page, and, as one reader said: "The only criticism is that it is not long enough"—a thorough-going compliment when it is remembered that the novel contains perhaps 120,000 words.

NAMES AND ADDRESSES

We want to thank our readers for their kind response to our request for names of people who they think will be interested to know about this magazine. These lists constitute a helpful coöperation of great importance to us. Our offer was to send to anyone who would send us a list of garden lovers, a garden picture proof suitable for framing. If you have not sent such a list, we shall be happy indeed to get it.

DOUBLEDAY, PAGE & COMPANY,

Enclosed find list of garden lovers. You may (may not) [erase as you decide] use my name as recommending the magazine.

SIGNED _____

ADDRESS _____

HOME STUDY COURSES



JOHN CRAIG
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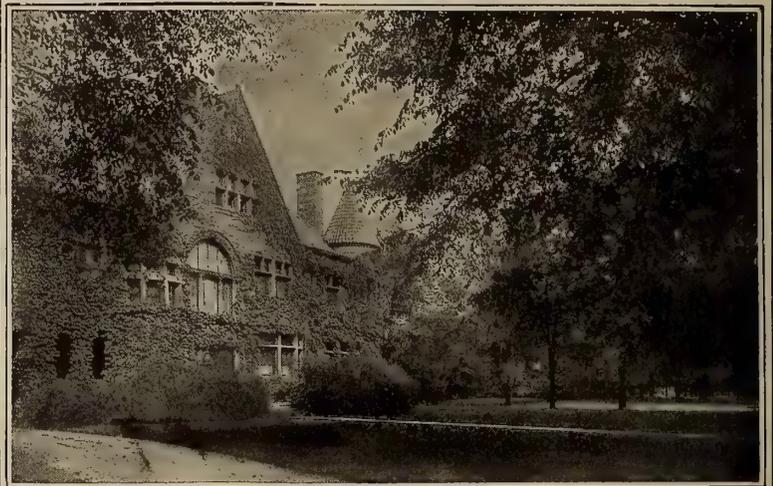
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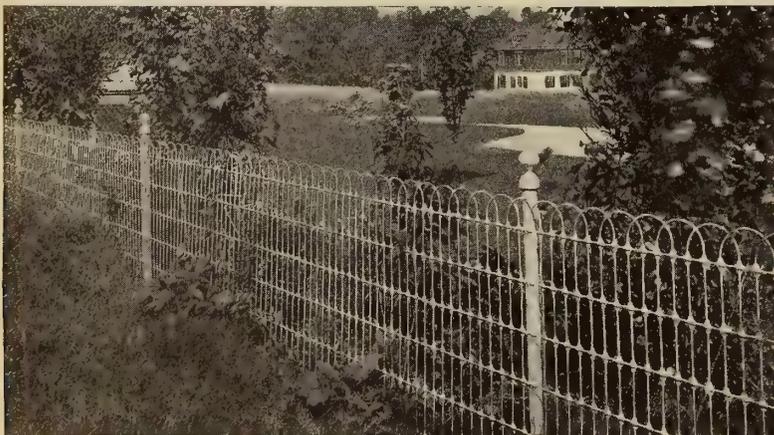
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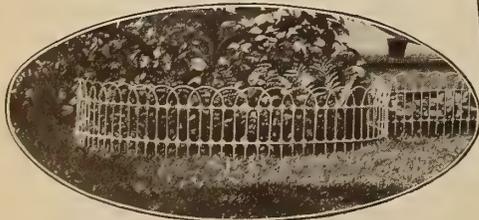
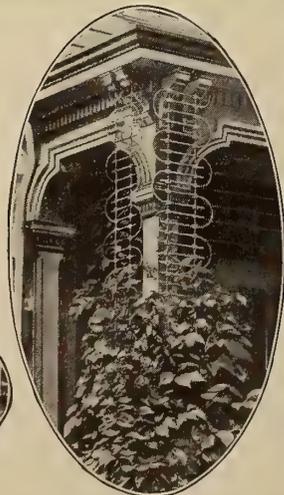
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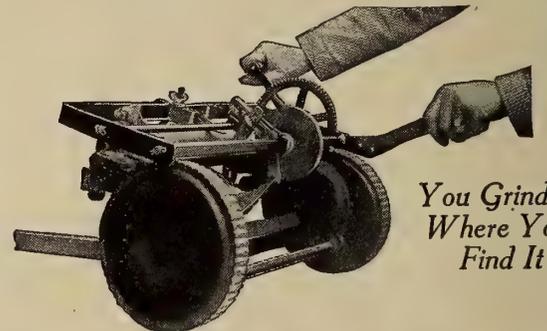
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Blade
Perfectly
In Less
Than 10
Minutes



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Where You
Find It

Don't Waste Your Strength and Your Time Doing a Poor Job With a Dull Mower.

Turn your machine upside down and attach the Unique Grinder to the wooden roller with the hook and thumb nut. Then it is in position to grind every revolving blade to a keen edge in a jiffy, whether it be a right or left hand blade mower. To grind the stationary blade, the steel gauge is placed on the top of the blade, thereby holding the stone at the proper height.

The "Unique" Lawn Mower Grinder

is so simple that anyone can use it with ease and do a perfect job in 10 minutes or less. Not a single adjustment of the mower is disturbed in using the grinder. It saves the expense of frequent custom grinding, saves the time of waiting for the work to be done, makes the grass cutting easy work that's quickly done and properly done.

For mowers of any size up to 22 inches wide.

For Home, Club, Park, Cemetery

Write for descriptive booklet and price

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The Garden Magazine

VOL. IX—No. 6
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FIFTEEN CENTS A COPY



[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

In the Vegetable Garden

YOU should be enjoying the harvest of succulent, fresh vegetables this month. Do not let them get too old before using them. If you have never yet realized the delicacy of extremely young garden vegetables, do not let this season pass without making the trial. Carrots, no longer than ordinary radishes, potatoes the size of marbles, and everything just a little bit smaller than you usually see it, make up in extreme delicacy of flavor inversely for what they lack in size.

Do not let the weeds get ahead of you this month. Keeping the weeds under means a great deal more than mere neatness—they are, after all, but blessings in disguise, for they force cultivation. In cutting down weeds you stir the soil and the crop is benefited just that much. The chances are that but for the growth of weeds half the gardens would not be nearly as good as they are, for hard manual labor in the broiling sun is not the most inviting of occupations.

There is still work to be done in starting new crops. If you want muskmelons in December, plant seed now in frames. Keep sweet potatoes from rooting at the joints.

Hot weather is the greatest enemy of the cauliflower, and exposure to sun will ruin both quality and appearance of the head. Be very careful to protect from sunshine all heads as soon as they begin to show. Break the leaves over the heads by bending inward and fasten off with a rubber band or string, or pin them together with a toothpick.

The herb garden is usually a neglected corner. Watch it so as to gather young leaves and sprigs before the plants come into flower. The essential oils are dissipated somewhat with the maturing of the flower.

Sow for succession bush beans, making two sowings during this month. Also make two sowings of sweet corn, using one of the earlier varieties for the second sowing, as well as a main crop kind; sow also peas, okra, and, of course, lettuce.

Also sow beets, remembering to thin out; and use the thinnings for boiled greens as the crop develops.

If you want kale for winter, sow the seeds in a prepared seed-bed during the early part of the month, and transplant to permanent quarters later as room becomes available. It is a welcome green in winter.

Make the last sowing of carrots for roots for winter storage.

Make the first sowing of collards.

Other vegetables for open air sowing are endive and kohlrabi.

In the Flower Garden

AS THE early sowings of flowers come into bloom, provide for their succession by sowings, during this month, of all kinds of annuals—hardy, half hardy or tender. They will give flowers right up to frost, and this is the only way in which you can really make your garden look fresh and cared for when others in your neighborhood are "going to pieces."

Hardy annuals include wallflower, coreopsis, marigold, mignonette; among the half hardies are balloon vine, canary bird flower, gaillardia, pansy, etc. Pansy seed sown now gives earliest bloom next year. Read "Pansies the Year Round," by Miss I. M. Angell, in the April number of THE GARDEN MAGAZINE, and follow the directions given.

Among the tender annuals are love-lies-bleeding, castor beans, gourds, Japanese hop, ornamental maize, ice plant, etc.

Make first sowings of hardy perennials in frames, for transplanting for flower next season.

House plants that have been plunged outdoors in their pots should be repotted during this month.

As the taller growing plants in the border gain height, they are liable to suffer injury from the effects of wind; therefore, stake gladioli, dahlias, and herbaceous plants.

For the Greenhouse

CARNATIONS that are growing outdoors in the field should be kept well cultivated and pinched back.

Ventilate the house where violets are growing, giving all the air possible and watch for any diseased leaves, picking off immediately.

If you have chrysanthemums, do not

allow them to suffer any check; keep them growing at all costs.

In the Orchard

IF YOU want to set out a new strawberry bed this fall, layer runners into pots at any time possible during July.

Thin rigorously all the standard orchard fruits—apples, pears, peaches, grapes. Read Professor Fletcher's article, "Why It Pays to Thin Fruit," in the May number of THE GARDEN MAGAZINE. It takes some nerve to thin thoroughly, but it pays well.

Look out for scab and blight in the orchard, and spray whenever noticed.

If you set out any young trees this spring, mulch them with hay, excelsior, even sawdust, or anything in order to make sure that they take hold during the current season. Remove all suckers and sprouts that start anywhere but on the head.

Don't Neglect the Lawn

REPAIR any holes in the lawn as they are noticed. Dig out mossy spots and fill in with good soil, sprinkling seed immediately.

Keep everlastingly at the lawn during hot weather, repairing, patching, and re-seeding wherever bare spots occur.

Coarse weeds are best attacked by cutting them down to the ground and dropping a crystal of sulphate of iron on the cut surface. Maintaining a good lawn means a good deal of work, but the labor can be immensely lightened by using adequate tools. Read Mr. Kayan's article in THE GARDEN MAGAZINE for last month.

Advance Fall Orders

DO NOT wait until fall arrives to place your bulb orders. The French grown stock is due to arrive in August, and remember it is "first come first served." Place your order now for selected Roman hyacinths, giant Paper White narcissus, trumpet major daffodils, jonquils and Madonna lily. Remember that the Madonna lily must be planted in August.

Send your order for Dutch bulbs at the same time. The seedsman will hold it and ship as received, if you so specify.

Place your orders with the seedsman for cineraria, cyclamen, Chinese primrose seed. Freesias and Harrisoni lilies will be arriving during the month, and toward the end California callas reach the East.

Read the article on naturalizing bulbs on page 343, and try to produce something similar in your own garden.

Fragrant Foliage and Flowers—By John Williams, ^{New Jersey}

MAKE AN INVENTORY NOW OF ALL THE FRAGRANT PLANTS IN YOUR GARDEN AND DECIDE WHAT TO ADD NOW, THIS FALL AND NEXT SPRING

I USED to think that the subtlest charm any garden could have was the sound of running water, but now I know it is fragrance. Moreover, the sense of smell is more potent than touch, taste, sight or hearing, to bring back precious memories. Does your garden stir the heart? Does it set every one to dreaming? If it does not, it probably lacks fragrance.

Ordinarily I write for men, because they pay the bills for gardens and are the worst garden sinners. They don't want to pay enough, and my "mission," if I have one, is to make them ashamed of unworthy gardens and wish for the best there is. For a garden is essential to the finest home life, and heaven knows that the men in America ought to do more to make home life all it should be. I don't mean to say that men are indifferent to the natural odors of the garden. Indeed they are often moved to tenderness by the memories thus aroused, and I even think

that rough boys might become gentle if brought up in a fragrant and beautiful garden. But, however appreciative men may be, you can't imagine them deliberately planning for fragrance and then carrying out the details. It needs a woman's taste and intuition to select the plants and a woman's loving care to arrange them.

So I thought the best service I could do for the ladies who read THE GARDEN MAGAZINE would be to collect for them a list of all the best fragrant plants and flowers and arrange them in the most helpful way, instead of putting them in a mere alphabetical list, which gives no hint as to their value or culture. I found several ways of grouping them, a chemical classification, a psychological one, the order of their commercial importance, their drug names, their nursery names and their common names, but none that seemed to me really helpful to the gardener. So I have done the best I could

with the limited space and here is my suggestion. Make an inventory of the fragrant plants in your garden and check off on this list what you wish to add now, this fall and next spring. It is well to make a list of the months too and the fragrant plants you have for each period, so that your garden will be ever fragrant. If I can be of any further help write me, enclosing a stamped, self-addressed envelope.

EVER-FRAGRANT FOLIAGE

Flowers are fragrant only when they bloom, but foliage is fragrant whenever it is bruised or brushed against. The following are all evergreen, except the last four, which have fragrant bark, buds or branches:

Arborvitae	<i>Thuja occidentalis</i>
Balsam fir	<i>Abies balsamea</i>
Box	<i>Buxus sempervirens</i>
Cedar of Lebanon	<i>Cedrus Libani</i>
Frazer's balsam	<i>Abies Fraseri</i>
Red cedar	<i>Juniperus Virginiana</i>
White cedar	<i>Chamaecyparis thuyoides</i>
Wintergreen	<i>Gaultheria procumbens</i>
Sassafras	<i>Sassafras officinale</i>
Sweet birch	<i>Betula lenta</i>
Bayberry	<i>Myrica cerifera</i>
Sweet brier	<i>Rosa rubiginosa</i>

The following bushes and vines are fragrant throughout the growing season, or from April to October:

Ground ivy	<i>Nepeta Glechoma</i>
Sweet fern	<i>Comptonia asplenifolia</i>
Fragrant sumach	<i>Rhus aromatica</i>

The best herbs for edging paths and for practical use, as well as fragrance, are the following — all perennial:

Balm of Gilead	<i>Cedronella triphylla</i>
Lavender	<i>Lavendula vera</i>
Lavender cotton	<i>Santolina Chamaecyparissus</i>
Lemon balm	<i>Melissa officinalis</i>
Lemon thyme	<i>Thymus citriodorus</i>
Lavage	<i>Levisticum officinale</i>
Mother of thyme	<i>Thymus Serpyllum</i>
Rosemary	<i>Rosmarina officinalis</i>
Sage	<i>Salvia officinalis</i>
Spearmint	<i>Mentha piperita</i>
Thyme	<i>Thymus vulgaris</i>
Woodruff	<i>Asperula odorata</i>

For the wild garden, sweet cicely (*Myrrhis odorata*) is good, either in meadows or woods.

For the waterside the following are appropriate:

Bee balm	<i>Monarda didyma</i>
Musk	<i>Mimulus moschatus</i>
Sweet flag	<i>Acorus Calamus</i>

TREES WITH FRAGRANT FLOWERS

Those marked * should be planted only in spring; the others either spring or fall.

Empress tree (<i>Pawlonia imperialis</i>)	. . . April
*Chinese magnolia (<i>Magnolia Yulan</i>)	. . . April
*Flowering almond (<i>Prunus Japonica</i>)	. . . April
English hawthorn (<i>Crataegus Oxyacantha</i>)	. . . May
Siberian crab (<i>Pyrus baccata</i>)	. . . . . May
Yellowwood (<i>Cladrastis tinctoria</i>)	. . . . . June
Honey locust (<i>Gleditschia triacanthos</i>)	. . . . . June
Linden (<i>Tilia</i>)	. . . . . July



Nicotiana sylvestris, with pendent white flowers which do not close in the morning or on cloudy days, as do those of *N. alata* (or *affinis*).



Stocks are available in more colors than any other fragrant annuals

SHRUBS WITH FRAGRANT FLOWERS

Those marked * must be sheltered from winter winds and tea roses must be covered a foot or more in the north in winter. Plant tea roses and magnolias in spring only.

- *Winter sweet (*Calycanthus præcox*) Feb.
- *March honeysuckle (*Lonicera fragrantissima*) March
- *Winter jasmine (*Jasminum nudiflorum*) March
- Starry magnolia (*Magnolia stellata*) March
- Mezereon (*Daphne Mezereum*) March
- King's garland (*Daphne Blagayana*) April
- Mountain azalea (*Azalea canadensis*) April
- Flowering currant (*Ribes aureum*) April
- Lilac (*Syringa*) May
- Carolina allspice (*Calycanthus floridus*) May
- Roses of many kinds and odors June
- Mock orange (*Philadelphus coronarius*) June
- White azalea (*Azalea viscosa*) June
- Goat honeysuckle (*Lonicera Caprifolium*) June
- Etruscan honeysuckle (*L. Etrusca*) June
- Italian honeysuckle (*L. Italica*) June
- Dwarf horse-chestnut (*Aesculus parviflora*) July
- Sweet pepper bush (*Clethra alnifolia*) Aug.
- *Tea roses July and Sept.

VINES WITH FRAGRANT FLOWERS

The following can be planted either spring or fall and many even in midsummer because nurserymen now grow large ones in pots:

- Wistaria (*Wistaria Sinensis*) May
- Mountain clematis (*Clematis montana*) May
- Trumpet honeysuckle (*Lonicera sempervirens*) May to Sept.
- Climbing roses (*Rosa multiflora*, etc.) June
- Hall's honeysuckle (*Lonicera Japonica*, var. *Halliana*) June-July
- Trumpet creeper (*Tecoma radicans*) July
- Memorial rose (*Rosa Wichuraiana*) July
- American virgin's bower (*Clematis Virginiana*) July-Aug.
- Chinese trumpet creeper (*Tecoma grandiflora*) Aug.
- Fragrant virgin's bower (*Clematis Flammula*) Aug.-Sept.
- Japanese virgin's bower (*Clematis paniculata*) Aug.-Sept.

PERENNIALS WITH FRAGRANT FLOWERS

Many of these can be bought from nurserymen even in midsummer in the form of

potted plants. If you want any kind in quantity get seed now or sow as soon as ripe. Plant peonies in September; the others in spring or early September. Those marked * are also sold by bulb dealers.

- Winter heliotrope (*Petasites fragrans*) Dec.-Feb.
- California and Russian violets (*V. odorata*) March
- White rock cress (*Arabis albidia*) April
- Woodruff (*Asperula odorata*) May
- *Lily-of-the-valley (*Convallaria majalis*) May
- *Peonies (Festiva maxima and a few others) June
- Fraxinella (*Dictamnus albus*) June
- Cat's valerian (*Valeriana officinalis*) June
- *Lemon lily (*Hemerocallis flava*) June
- *Dwarf orange day lily (*H. Dumortieri*) June
- Garden pinks (*Dianthus plumarius*) June
- Fringed pink (*Dianthus superbus*) July
- Sweet rocket (*Hesperis matronalis*) July
- Bee balm (*Monarda didyma*) July-Aug.
- Entire-leaved bush clematis (*Clematis integrifolia*) July
- *August lemon lily (*Hemerocallis Thunbergii*) Aug.
- *White day lily (*Funkia subcordata*) Aug.-Sept.

BULBS WITH FRAGRANT FLOWERS

All the following are hardy and are planted in the fall except the tuberose. See also those in the preceding list marked *.

- Hyacinth (*Hyacinthus orientalis*) April
- Spring snowflake (*Leucojum vernalis*) April
- Trumpet daffodils (*Narcissus Pseudonarcissus*) April
- Jonquils (*Narcissus Jonquilla*) April
- Some tulips (*Tulipa Gesneriana*) April
- Poet's narcissus (*Narcissus poeticus*) May
- Madonna lily (*Lilium candidum*) June
- Golden banded lily (*Lilium auratum*) Aug.
- Lilium speciosum* Sept.
- Tuberose (*Polianthes tuberosa*) Sept.

ANNUALS WITH FRAGRANT FLOWERS

These must all be raised from seed every year. They begin to bloom in July unless started indoors in March.

- Chinese and Japanese pinks *Dianthus Sinensis* and *Hedewigii*
- Sweet pea *Lathyrus odoratus*
- Sweet alyssum *Alyssum maritimum*
- White tobacco *Nicotiana alata* or *N. affinis*
- Mignonette *Reseda odorata*
- Sweet Sultan *Centaurea moschata* or *suaveolens*
- Verbena *Verbena hybrids*
- Heliotrope *Heliotropium Peruvianum*
- Wallflower *Cheiranthus Cheiri*
- Stocks *Matthiola incana*
- Virginian stock *Malcomia maritima*
- Night-scented stock *Matthiola bicornis*

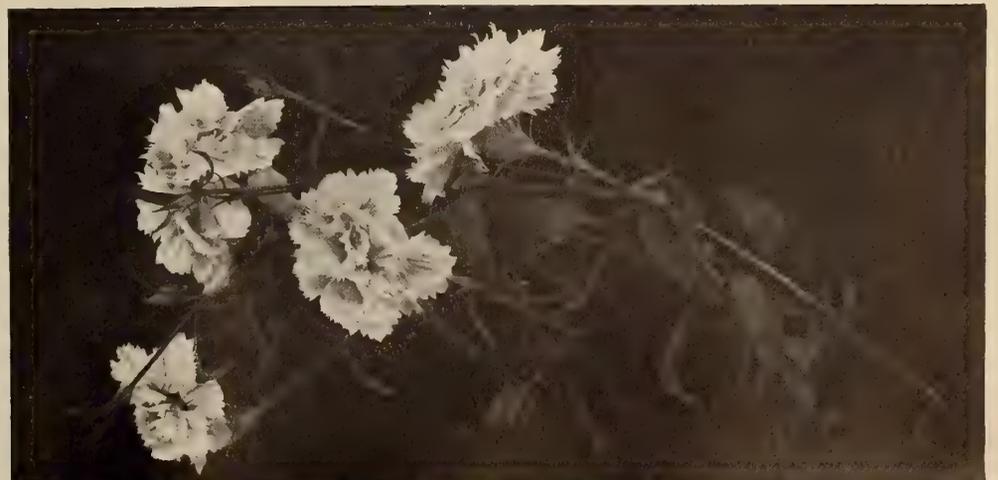


Mignonette is about the only plant grown for fragrance which has little beauty

TENDER PLANTS

Some of these are grown outdoors in the South or California. Some are famous house plants. Some are grown in large tubs for porch decoration. Some are favorite greenhouse plants. Those marked * have fragrant foliage.

- *Poet's laurel, sweet bay *Laurus nobilis*
- *Myrtle *Myrtus communis*
- *Orange *Citrus Aurantium*
- *Lemon *Citrus Medica*, var. *Limon*
- *Camphor *Camphora officinalis*
- *Japanese anise *Illicium anisatum*
- Climbing tuberose *Stephanotis floribunda*
- *Geranium (apple, fish, rose, etc.)
- Persian jessamine *Jasminum officinale*
- Cape jasmine *Gardenia jasminoides*
- Freesia *Freesia refracta*
- Papinac *Acacia Farnesiana*
- *Lemon verbena *Aloysia citriodora*
- Lemon scented gum *Eucalyptus citriodora*



Margaret carnations, an annual race of fragrant flowers

TWELVE SUGGESTIVE GARDENS

INDIVIDUALITY SHOULD CHARACTERIZE YOUR GARDEN, LET IT STAND FOR SOMETHING DEFINITE AND BE IN PERFECT HARMONY WITH THE SURROUNDINGS—THE STYLE OF THE HOUSE MAY GIVE THE KEYNOTE TO THE GARDEN SCHEME



Native shrubbery used in a Pittsburg garden to secure seclusion from the street, and a rural atmosphere is procured



Japanese effect at Lansdowne, Pa. Water is a necessity in a scheme of this sort. Do not overdo it



An open lawn bordered by a pergola with climbing plants giving shade in the heat of summer. A pergola should lead from somewhere to something



Exposed seaside sites must usually be protected from winds. This garden on Long Island is hedged in completely



An informally formal garden with box edging, at Brookline, Mass. It unites well with the natural woodland beyond



Complete harmony is here seen with the lines of the building, the garden, and their accessories; also abundance of flowers for cutting. Sewickley, Pa.



A comfortable and informal border effect, giving repose and seclusion. Perennial flowering plants massed in a foreground of shrubbery



A similar treatment to the one on the left, but on a broader scale. The border is therefore wider. The effect is less cozy



The simple dignity of a specimen tree can hardly be surpassed. It completely furnishes this front approach



A stretch of open lawn with simple border planting makes a dignified setting to the old Colonial house, which is itself the chief attraction



Flowering shrubs are made the feature here, bordering a gracefully winding walk. The seasonal changes are always attractive and give plenty of color



Evergreens massed on each side of a carriageway give a welcome in winter and are particularly appropriate at entrances where the house is hidden



A picture often makes a better background than a big figured wall paper, the soft greens and grays and old bronze frame show off all the delicacy of flower and stem of the apple blossoms



The outward spreading boughs of the dogwood suggest a broad arrangement rather than a tall, narrow one. The receptacle is attractive, but being whiter than the flowers, catches the eye first; it should be darker in tone

Art in Arrangement of Cut Flowers—By L. B. Carpenter, New Jersey

BIG EFFECTS WITH LITTLE MATERIAL—THE FORM OF THE FLOWER ITSELF AND THE HABIT OF GROWTH ARE THE KEYNOTES TO THE SUCCESSFUL USE OF CUT FLOWERS, LEAVING PLAY FOR THE FANCY OF EACH INDIVIDUAL



The red maple. Note proportion of vase to subject

THE longer flower arrangement is studied the more convinced one becomes that the result should be a complete picture. Now, an artist painting a complete picture has to conform to certain conditions; that is, have a subject, make it interesting, compose it so as to fill his canvas agreeably, and have a background to harmonize.

These same conditions obtain with the flower arranger. He has a subject for his picture in his blossoms and he clothes it with interest, according as he chooses special ones of a kind for their perfection,

their form, or beauty of line. He fills his space agreeably according as he composes these chosen flowers, both as to color and size, against a background which may be the corner of a room, a table or a piece of furniture; and even a picture on the wall may be brought into the composition.

In accomplishing the harmony with the background, the flower arranger proceeds a little differently from the painter, inasmuch as while the latter may choose his background to fit the picture, the former generally must fit his flowers to his back-

ground, since wall coverings, partitions, and furniture in the modern house are fixed quantities and cannot be changed at will to suit temporary compositions of flowers. If, therefore, we put large flowers or branches into big spaces keeping little delicate ones in smaller spaces below the level of the eye when sitting (and working always with the receptacle in its final position), we will fill a given space much more successfully. Two things, however, should be kept in mind: First, the background whether perpendicular or horizontal like a table should be kept as simple as possible to avoid a confused mass of ornament. Second, the relationship of flowers and vase or receptacle is very close. The style of vase to be used depends on the kind of flower chosen, the conformation of the background and the prevailing colors of the room. It is more pleasing if the shape of the receptacle is suggested by the form of the flower or by the habit of growth of the plant.

In color the vase should be subordinate to the blossoms since they are to be shown off themselves, instead of being a means of displaying the vase. Green and brown receptacles, by their color, convey to the mind the foliage or bark of plants, and so are more generally adaptable than any other colors. The use of the decorated vase is charming, provided the colors in the decoration repeat, in a subdued way, those of the flowers and background, and provided also that the design itself is not too bold. A vase in all-over design in two colors is always attractive if one color is the prevailing color of the room, and a vase in solid tone of the predominant color of a room will look well in that room even if of a gay color, though in any other the effect would be garish and out of place.

Neutral colored vases do not conflict, but

there is often a distinct loss in the general picture effect by their use. Glass has the advantage of showing stems and good forms in it can be purchased reasonably. In the modern pottery there are many vases modeled after flower forms, some of which are specially suitable for large flowers of massive form, and they are not necessarily expensive. For many small flowers nothing is prettier oftentimes than little baskets either of straw or made from gourds. Tin or glass receptacles can easily be fitted into them.

There are two clearly distinct methods of arrangement of flowers in the receptacle, namely, in mass and in line. In the former color is made the principal attraction, and is very suitable for small flowers—pansies and the like. The second style of arrange-



The lines of the iris with its own foliage are always beautiful in isolation



The low dish was chosen for daffodils because it was broad enough to admit of repeating the idea of the growth of the plants.

ment is carried out on a basis of beautiful lines suggested by structural growth of each type of plant. Flowering trees and shrubs furnish all kinds of suggestions for beautiful curves and lines which may be used as a guide in this type. The two main boughs of the maple tree suggested the arrangement of maple branches shown in the figure; the bow-shaped line in a pear tree brought a thought for another.

Other types of flowers furnish their own ideas. In hollyhocks and foxgloves, the line of tall straightness attracts us, some curve or lean a little way adding grace and variety, but, after all, the tall slenderness is the dominant feature of growth. The growth lines govern not only the placement of the stalks but the contour of the spaces



The balancing was done from the tallest branch held by a glass "holder" in the bottom. The small branch on the right of the primary is a little weak



Large flowers usually arrange better in threes or fives and in unequally sided triangles. Straight, erect lines are not desirable

among the blooms, for there must be spaces to see fully the perfection of form.

The shops display several inventions to aid in keeping flowers in desired positions. A glass contrivance was used in the grouping shown on the lower corner of this page. Perhaps a better one is made of bendable metal in which the size of the holes and their positions can be altered. This idea comes from Germany. The advantage of sand is well known. A big receptacle can sometimes have placed within several weighted smaller ones, which will give the necessary support to the stems, not too large pickle bottles being often a great help. I like nothing better than seaside pebbles of varying sizes which can be shifted at will and which admit of using more water than sand does.

As a rule, the more massive the flowers, the fewer needed in an arrangement. It is the same with branches of shrubs and trees. Many produce too much interplay and so confusion results. Art assumes that the plant springs from the surface of the water



Arrangement of pansies in a gourd basket. Small flowers may usually be massed together for the glory of their color without regard to composition



A little too much inter-play and how readily confusion results! The value of the receptacle with the background and flowers is nice

or within the receptacle. Hence it is essential to keep a look of vitality there. An arrangement of flowers demanding height in a receptacle will look best when the flowers extend from once and a half to twice the height of the container.

The Japanese, so successful in flower compositions, follow this rule. They also say that water flowers, small flowers, and vines are governed in arrangement by the width of the receptacle rather than the altitude. But we have many plants whose growth, to my mind, conveys a suggestion of a broad, rather than high, arrangement, and the choice of vase to be made accordingly. Some flowers seem to grow so that a few look well arranged according to height, while more need an arrangement according to width, making them eminently suitable for dinner table decoration. The daffodil is a case in point.



Branches of apple blossoms as picked from tree. Compare with them arrangements shown on opposite corner and top of preceding page

Naturalizing the Star of Bethlehem — By Henry Maxwell, ^{Con-}n^{necticut}

A STARRY WHITE FLOWER OF JUNE WHICH ESCAPES FROM OLD GARDENS AND MAKES BEAUTIFUL PICTURES IN WOODS, MEADOWS AND ORCHARDS—NOW IS THE TIME TO DIG THE BULBS

WHEN I moved to my present home in May, 1907, I was surprised and delighted to find hundreds of plants in my back yard which looked like clumps of crocuses after flowering. I could hardly believe my eyes, for it was evident that the previous tenant had not cared about gardening, yet these clumps of foliage would seem to indicate that crocuses had been multiplying here for many years.

We had many a lively discussion in the home circle as to whether the plants were really crocuses or not. I soon took the negative, but could give no reason for my faith. As I worked beside them day after day I found them most companionable, until one day I exclaimed: "Well, whatever this weed may be, it's a perfect plant, even if it never produces a flower."

But it did produce flowers and charming ones too. For in late May my little girl came running in with a starry white flower she had found in the grass. Then I knew it for my own—the dainty little star of Bethlehem (*Ornithogalum umbellatum*).

In early June we had a bowlful of these modest but lovely flowers on the table every day, and wherever we walked in the garden during that period we saw these bits of star-

dust strewn in the grass. The whole plant grows only four to six inches high and the leaves, being narrow, harmonize beautifully with rather long grass.

The flowers are only an inch or so across, but there may be half a dozen in a cluster. They have six petals, or perianth segments, like all members of the lily family, and one of the prettiest features is the green stripe on the back of each petal, reminding one of the exquisite green and white of the snowdrop and snowflake. The green color adds greatly to the delicate beauty of the cut flowers, but is not visible as you look down upon the blossoms in the grass.

Ever since this discovery I have been seeing the star of Bethlehem everywhere. It is a European flower which has escaped from gardens and occasionally one sees splendid colonies by the roadside near abandoned homes. On the Pratt estate at Glen Cove, Long Island, it makes a fine effect in woods, carpeting the ground with a continuous sheet of flowers.

Like many another good plant the star of Bethlehem has the "defects of its virtues." It multiplies too fast, and though the bulbils help to make fine clumps of foliage, they are provokingly slow in reaching

blooming size, unless detached and grown separately, which means a good deal of work. Thus it is a little too free for the garden, but this very exuberance of propagation is what we want in wild gardening. "The star of Bethlehem might run out the grass from a lawn," says Neltje Blanchan in "The American Flower Garden," "and should never be planted in one. It spreads prodigiously." But in long grass that is mowed only once a year it is a joy, producing sheets of bloom.

The best time to dig the bulbs is in July, when the foliage begins to die. I have moved dozens of clumps in spring and should not be afraid to transplant them at any time, but this is the logical season. They can be bought of bulb dealers in the fall and cost about \$15 a thousand bulbs. Whether or not these are only the large bulbs sure to bloom next spring, I do not know. But I think the cheapest way to get them would be to go scouting about the country now, until you find a colony that is running wild in some farmer's woodlot or meadow. Offer the farmer a dollar or two for the privilege of digging a wagon load and for \$5 you can get what might cost you otherwise from \$30 to \$50.



Would n't you like sheets of starry white flowers in your meadow, woods or tall grass in June? The star of Bethlehem has pretty crocus-like foliage. The bulbs can be had almost for the cost of digging and hauling. (*Ornithogalum umbellatum*)

Daffodils Worth \$75 to \$250 a Bulb—By Thomas McAdam, ^{New Jersey}

WHY THESE SUMS ARE SO LARGE FROM ONE POINT OF VIEW AND SMALL FROM ANOTHER—BREEDING DAFFODILS A FASCINATING PURSUIT FOR AMATEURS—WHAT MAKES QUALITY IN DAFFODILS

LAST fall I noticed in the leading daffodil catalogue of the world thirteen varieties that were offered at \$75 a bulb or more. A beginner is puzzled to know why anyone should be willing to pay as much as \$250 for a single bulb of a new variety. The explanation is simple. These are new varieties which are believed to be better than any other varieties in at least one important respect. Sometimes only one bulb is in existence.

Who buys such varieties?

First, the very keenest nurserymen who plan to get the whole stock, multiply the bulbs and sell them when they can get enough to offer to the public at a comparatively low price.

Second, plant breeders, especially amateurs, who see a chance of producing still better daffodils by using these in crossing.

Sometimes it is easy to tell simply from a catalogue that a new variety is worth \$250, especially if the whole stock consists of one bulb.

A WHITE DAFFODIL WORTH \$250

For instance let us take the all-white trumpet daffodils and try to see why Peter Barr should be worth \$250 a bulb in 1907, whereas *moschatus* is worth only \$4 a hundred.

There are about fifty of these all-white, large trumpet varieties, and they are all supposed to be derived from *Narcissus moschatus* and *N. pallidus-præcox*, which are still the best for naturalizing in the grass, largely because they are the cheapest.

But all these white varieties possess in varying degrees three limitations.

First, they are of weak constitution and therefore must be grown in well drained soil. (The best soil is a gritty loam containing a good deal of leafmold).

Second, the substance, or texture, of the flowers is poor and therefore the flowers last only a few days unless grown in partial shade.

Third, not one of them is pure white when it opens, but all of them have more or less of a yellow tinge which fades as the flower unfolds.

The English papers say that Peter Barr is

the nearest approach to a pure white yet secured and this variety is popularly supposed to represent the greatest advance in *constitution*. In other words, the best chance of getting a race of all-white daffodils that will produce as many flowers and as large ones as

worth more than \$250. For every new variety takes seven years from seed to flower and after that the public must wait about eight years for the bulbs to be common enough to be sold at a reasonable price. Would you be willing to devote fifteen years to anything for so small a sum as \$250?

The actual time spent in caring for the bulbs in any one year may seem a small item, but the odds against your getting any real improvement are enormous. You are lucky if you get from 1,000 seedlings one new variety worth naming. It takes a long time to make enough crosses to produce 1,000 fertile seeds. It takes a deal of time to record those crosses. And there's many a slip between the seed and the flower.

I do not doubt that the new varieties here pictured are worth \$75 a bulb or more to some one, but as a rule it is difficult to tell from catalogue descriptions, or even from pictures, wherein the improvement consists or what governs the prices.

A WHITE DAFFODIL FOR FIFTY DOLLARS

For example, compare the two all-white daffodils Peter Barr and Henri de Vilmorin. Why should the latter cost only \$52.50 a bulb this year when its flower is four and a half inches across, or half an inch wider than that of Peter Barr? Moreover, its flower has a better carriage, for the trumpet is horizontal and the petals spreading, whereas Peter Barr nods so perceptibly that the petals sag downward and inward. Of course, the flower does not actually droop, like the dog-eared daffodils, but the tendency is easily seen in the accompanying photograph. And the florists prefer the showier type. Indeed, they

would like to get a daffodil that looks right up at you!

ANOTHER ONLY SEVENTY-FIVE CENTS

The only high-grade white daffodil that has been offered in America is Mme. de Graaff, which was catalogued in 1907 at seventy-five cents a bulb. This is a big drop from the



Bedouin, a daffodil worth \$150 a bulb when first offered in 1898. A spectacular white flower with an orange-scarlet cup. Belongs to the giant incomparabilis section. The flower, measuring four inches across is shown in actual size

the all-yellow varieties, would seem to be through Peter Barr and its progeny. This is reason enough why a single bulb of Peter Barr should cost \$250 in 1907 or \$63 in 1909.

FIFTEEN YEARS' WORK NECESSARY

Indeed, it is a question if every new variety that contributes a real improvement is not



Henri de Vilmorin, an all-white daffodil with flowers four and a quarter inches across, which has now come down to \$52.50 a bulb.

price of Peter Barr, yet I have searched pictures, magazines, and catalogues in vain for any suggestion of intrinsic inferiority in Mme. de Graaff, save that the trumpet contains more of the sulphur color when young. It is also about a week later than Peter Barr.

Yet Mr. Kirby in his book on daffodils tells us that Mme. de Graaff has an unusually large flower, splendid substance, is unsurpassed in grace of carriage, a strong grower, free bloomer, and pure white when it opens.

Of course, Mme. de Graaff is older and therefore should be more plentiful and cheaper. And it is quite possible that Peter Barr may be intrinsically better in several important respects. My only point is that life is more wonderful than any account of it and our horticultural records are very imperfect.

THE COSTLIEST DAFFODIL OF 1909

The costliest daffodil I know of to-day is Bedouin, which is offered at \$150 a bulb, although it does not belong to the large trumpet section at all. But it must be a spectacular flower, with its orange-scarlet cup set off by white petals. It is certainly a very refined and distinguished flower; witness the flaring and fluted cup in the illustration. The flower is not the largest of the medium-crowned section, as Sir Watkin sometimes measures five inches and only four inches is claimed for Bedouin. But then, Sir Watkin does not have a red cup and these red cups are very interesting, because they suggest the possibility of an all-red daffodil!

CAN WE HAVE A RED DAFFODIL?

The possibility is so remote that nobody likes to talk about it, but every advance toward it makes a new stir at the shows. We now have plenty of low-priced daffodils with orange cups and some with a decided tinge of scarlet in them, but these high colors fade quickly in the sun. So sensitive is the daffodil, that the bare branches of a nearby

tree will furnish shade enough to make the blossoms appear a week later.

In fact, nearly all daffodils last longer and have a better color if shaded from the midday sun.

THE FLORISTS' IDEAL

In every group of flowers the professional florist works toward an ideal which is illustrated by the C. H. Curtis daffodil here shown. The showiest flower is one that has broad, overlapping petals, as opposed to a starry one, which shows daylight between the petals. Also the florist likes a daffodil with a very large trumpet and a flared and fluted rim.

This tendency may be carried to such an extreme that we shall have heavy, formal daffodils. Personally, I do not enjoy the



C. H. Curtis, worth \$78.75 a bulb. The florist's ideal. Very showy because of extra-wide, overlapping petals. Note flared and fluted rim

technical perfection of such varieties as C. H. Curtis as much as the easy grace of Emperor and Empress, which anyone can afford to buy.

Undoubtedly Emperor and Empress are less showy, but they have more spirit. This is due to the fact that the petals are not absolutely flat as in C. H. Curtis but wavy enough to make them a beautiful spectacle when stirred by the breeze.

Besides, a flower three and three-quarters inches across is big enough for me. All I want from daffodils is armfuls to give away to everyone who calls. I spent \$22 a few years ago for 500 bulbs of Emperor and 500 of Empress and they will last for many, many years.

HYBRIDIZING AND RAISING SEEDLINGS

The art of hybridizing is very simple. It consists simply in transferring the pollen of one species to the stigma of another. But in

practice many refinements are necessary. Kirby in his book on daffodils devotes six pages to this subject. He indicates some of the most important improvements still to be made, describes the process of emasculation and hybridization in detail, and tells when to sow the seed and how to care for seedlings.

The greatest profits from daffodil breeding are to be derived, I fancy, not by aiming at great, spectacular changes, like an all-red flower, but by getting varieties which are a great improvement in ease of culture. For the cheaper the bulbs the more folks there are to buy. The features that make for cheap bulbs are all summed up in constitution, which includes robust growth, ability to propagate rapidly, freedom from disease, and hardness to all sorts of adverse conditions. In this work the professional has the advantage in his great scale of operations.

On the other hand, the amateur has more time and often more imagination. Only an amateur would think of trying to get a red daffodil by attempting to introduce the blood of an amaryllis. Yet the genus *Hippeastrum* is botanically not so very far removed from *Narcissus*. This cross has been attempted many times and it is barely possible that it may succeed somehow.

JUNE THE BEST TIME TO BUY

June is getting to be a great month for bulb buying. Everyone who wants bulbs in quantity for naturalizing should order in June so as to get the best varieties and largest bulbs. It is not safe to wait until October.

Anyone who wishes rare varieties should order them as early as June or they may be gone. It is important that new varieties should be planted much earlier than old ones.



Peter Barr, a daffodil worth \$250 a bulb in 1907 and \$63 in 1909. The grandest all-white, large-trumpet daffodil. Flower four inches across.

Children's Gardens Everywhere

Conducted by ELLEN EDDY SHAW, New York

THE WORK DONE BY CHILDREN IN THE GARDEN SHOULD BE AS REAL, AS PRACTICAL, AND AS EFFECTIVE AS THAT DONE BY OLDER GARDENERS—THE PROBLEM OF SUMMER CARE—RULES FOR YOUNG GARDENERS

Lettuce Cultivation

REMEMBER this, it does not pay to plant any but heading lettuce. Heading lettuce is the kind which has a nice, hard, white ball of leaves in the centre.

If you have planted your lettuce and it is not beginning to form a head, do this: Gently tie the large outer leaves up over the inner ones. This will happen. The inner leaves will whiten just as leaves of plants do when set away in the dark. If you try this experiment let me know what success you have with it.

Then, too, I would buy a package of seed of some good heading variety. Tennis Ball or Boston Head is good. Plant just as you did before in furrows a half inch deep. When the little plants are up thin out until your plants are three inches apart. Now when these plants are about two inches high, or when the second pair of leaves comes, transplant. Did you know that transplanting helps lettuce to head?

HOW TO TRANSPLANT

Choose a cloudy day or do your work after sunset. You see you wish to avoid the sun. You are going now to pull up gently, every other lettuce plant. So you leave your lettuce plants just six inches apart. This space gives the lettuce quite an opportunity to grow and spread.

Now in the row you have been saving to transplant into, with your finger, make holes about two inches deep and six inches apart. Pour a little water into each hole. Put your lettuce, one in each hole, pat the earth down hard about the roots and stems, and sprinkle a little water on with your hand.

Next day you must look out, for if the sun comes out hot it may kill your plants or make them very sick and limp. So to prevent this cover them through the hot part of the day with strawberry baskets.

Now keep in mind two things: Keep



Rows left unplanted in the lettuce bed may be used for later sowings

your plants moist. Keep them covered for several days while the sun is up. These two things will give them a good start.

HOW TO HAVE CRISP LETTUCE IN MID-SUMMER

You know you can go on planting lettuce every two weeks all summer. Lettuce in mid-summer is usually tough.

Here is a little trick. If you use it, you may have nice, fresh, crisp lettuce, just like your early lettuce, all summer. Make a frame like lattice work and place it as a screen before your lettuce bed. Tilt it somewhat so that you do not cut off too much sun. Suppose you make it of laths; nail them a lath's width apart on a frame. The frame of an old window screen is good to use. You see, it's the sun that does the mischief. Perhaps a screen made of cheesecloth instead of laths would do. Try it and let me know the result.

CAN LETTUCE TAKE A PRIZE?

A boy asked me this question. He said, "Suppose I have good lettuce in July, may I send it in?" Surely, send it on; only send more than one head. One sample is not fair to judge from. Pack three or four heads in a paste-board box, line your box first with oiled paper, sprinkle well before sending. Be sure the wrapping paper is heavy. Direct all samples to the "Children's Editor" at Doubleday, Page & Co.'s office.

Garden Care

IF you have your garden well started, everything now depends upon how well you care for it. There are just two things to do. One is to keep weeds out. The other is to work the soil.

About the weeds first: some weeds are so small you can easily pick them out with your hands. Others are much larger and their roots go down sometimes farther than your plant roots. So these latter are bad enemies. Don't pull off the tops carelessly close down to the ground and think you have settled the case. That chap will start up again from the root you left behind. You must get out the entire root. Perhaps you had better use a trowel. Dig carefully down until you have it all.

Always make nice piles of the weeds to gather up later. Don't throw them just one side. Your garden must always look well.

And now about working the soil. You often hear gardeners and farmers say that. This is what they mean. Keep the ground all the time stirred up. If yours is a vegetable garden, planted in rows a foot or more apart, then hoe between the rows. Of course you will be careful not to hoe too near the plants and injure them. If your garden is a flower garden or planted to small

vegetables use a trowel and each day or two turn over the soil between the plants.

Did you know that stirring the soil is better than watering? Don't begin to water your garden. Did you know that if you start to water it you will have to keep it up. If it is very dry this summer, of course, then you will have to water it. Always do this at night, that is after sun-down, or very early in the morning before the sun is up. But it is much better to do it at night. It's a good after-supper piece of work.

Here are our garden-care rules all together. You might print them for yourself and post them up where you keep your garden tools.

Garden Rules

- I. Keep garden cleaned of rubbish.
- II. Keep all weeds out.
- III. Never water garden while sun is up.
- IV. Water only in very dry weather.
- V. Stir soil constantly.
- VI. Clean tools after using and return to place.

Garden Helps

WHENEVER you plant, label the rows. Then you will know exactly where your plants should appear. If you have made no labels this year, split a clothes pin right in two. This makes a fair emergency label. For you see, there is a thin round end to stick into the ground and a larger head end to which you can attach a cord. Carry this cord to the other end of your row and attach to the other half of the clothes pin. This string makes a guide for marking off a furrow and for planting.

The handle of a rake placed so that the teeth stand up from the ground, pressed hard down makes a good furrow. I believe it is well to leave strings and labels in the garden until the plants get a good, vigorous start.



The rake handle is an excellent furrow maker. Have the teeth stand up from the ground

More Helps to Planting

THERE is still time enough to plant a garden. If you start a bit late, as now, there are some seeds better than others to plant. Suppose you have decided to try vegetables. Then choose something like beets or turnips which is a fall crop or at best late summer, and lettuce or radishes which may be a summer crop.

If you choose to plant lettuce and beets and then in July decide you do not wish to continue planting every two weeks or so more lettuce, do this. Dig the soil of the lettuce patch up again. Turn it over thoroughly, then plant turnip seed. In this way you have had lettuce and in the fall will have beets and turnips.

Then, too, if you go on your vacation in July and August the fall crop started, cares pretty well for itself.

Look over the flower section of the table below. You will be able to choose what you can best raise on your own piece of land.

If you have only a little strip by the house I'd choose nasturtiums. They bloom long and constantly. Notice too, that bachelor's buttons can be planted in any soil anywhere.

Suppose you choose from all the kinds of flowers in the world two of very bright blossoms, like marigold and poppy, say. How can we break up this color so that it does not blind our eyes? Of course, the best colors to use are white and green. Candytuft, if you wish a low plant in white, is good; and if you wish a taller one then aster is satisfactory. If you choose green, use mignonette.

If you wish to border your garden all around you will then choose candytuft or sweet alyssum.

There is another thing to keep in mind for school and home planting. It is the long vacation. If you are going off then select flowers blossoming late and which require little attention. Zinnia, marigold, and bachelor's buttons are all good. Candytuft blooms cheerfully until the frost takes it. If you wish any advice about planting write to us.

Summer Care of One Garden

WE asked in our last magazine for good plans for the summer care of gardens. We felt that was a matter of real importance and significance in the

VEGETABLES AND FLOWERS EASY TO GROW

Name	Soil	Planting	Time in Days to Result	Remarks
Beet	Light and rich	Drills 1-2 in. deep 12 in. apart	Early 50-70 d. Late 140-150 d.	Requires little care
Lettuce	Heavy, rich, moist	Drills 1/2 in. deep 6-8 in. apart	21-65 d.	Most satisfactory
Radish	Light, sandy, rich	Drills 1/2 in. deep 6 in. apart	18-45 d.	Easy to cultivate
Bachelor's Buttons	Even poor soil	Rows or broadcast	40-50 d.	Always succeeds
Nasturtium	Any good soil	6 in. apart	45-60 d.	Blooms profusely
Zinnia	Any fair soil	8 in. apart	50-60 d.	Good colors, blossoms late

garden line of work. Here is the plan used by one boy:

The Daughters of the American Revolution tried to make beautiful a small piece of unsightly land in a certain city. They asked the boys and girls of the nearest school to help them.

Flowers were planted and did well up to the time school closed. Now arose the question of summer care. It was finally left in charge of a committee of the boys and girls from that school.

The committee chose its chairman. His plan was to divide his helpers into small sections and assign to them a given portion of the summer time. During the appointed time they were to care for the garden.

The chairman used this follow up system. He sent out post cards to each member as



When transplanting use a line stretched tightly between two stakes as a guide to make the row straight

his date of service approached. Thus he avoided the danger of forgetfulness.

Tools and watering pots were kept at one of the committee's houses close by the garden. A nearby florist offered them water privileges.

I asked the chairman, "Did your committee each one do his duty?" He replied, "Although we only had nine on our committee they all did well and were enthusiastic."

The term of duty was two weeks so that made just two persons on duty at one time.

This is one of the best and most practical plans which has come to my notice. If the garden were large, to make this scheme work well the committee would have to be larger.

Are there any other plans? If so, submit them at once so we may all have the benefit of them.

The Children's Corner

To the Editor:

I am going to plant watermelons and muskmelons. Our ground was a cornfield long ago. I will plant and take care of them myself. I hope that I will win a prize.

JOHN RALEIGH, Grade VII.

To the Editor:

I heard of your flower and vegetable contest and I thought I would like to contribute something. I have decided to grow some phlox. The ground has no fertilizer on it

and was planted last year. Although I am going to plant in my father's garden I will take care of it myself.

KATHERINE DU BOIS, Grade VI.

To the Editor:

I am going to enter the contest this fall. What I am going to plant is corn. It is Western corn with large ears. I am going to plant it in the garden in front of the house. I shall take care of it myself.

WILFORD DUPUY, Grade VI.

To the Editor:

I have been thinking over what seed to plant for the contest and have decided to plant nasturtiums. I shall plant them in a little corner by my house and expect to beat the other girls.

HAZEL SCHOONMAKER, Grade VI.

To the Editor:

As I have planted watermelons before and did not have such very good luck with them I thought I would try them again. I live on a farm and can have as much land as I want. I expect to take care of them myself.

BLANCHE BERRIAN, Grade VII.

To the Editor:

I am a little girl who has no place out-of-doors or in a garden to plant, so I am going to plant my seed in a box. My yard is all seeded for grass. I am going to plant parsley, take care of and pick it all myself.

JOSEPHINE RUST, Grade VI.

To the Editor:

I have a good sized garden. I put some fertilizer on the soil and then spaded it up. I raked it all off so there were no stones on the ground. That is the way I fixed my garden. I have decided to plant beet seed and I am going to beat the other fellows.

LESTON DU BOIS, Grade VI.

To the Editor:

I am going to plant some cucumbers and tomatoes for the prize contest and I am going to win the prize. My garden has some fertilizer on it, and it has very little stones in it. My father has pretty good luck with it, and I expect to, too.

JAY ZIMMERMAN, Grade VI.

To the Editor:

Our teacher told us that prizes were going to be awarded for flowers and vegetables. I want to win a prize. I am going to plant tomatoes and I hope that I will have good luck. I am going to have a corner of the garden that is not used and work it myself. Tomatoes need a good deal of care and I will be kept busy.

LEOTA TERPENING, Grade VII.

To the Editor:

I am going to plant something for the prize contest. I have decided to grow muskmelon. The land I shall plant my muskmelon seed in belongs to my father. He will plow the land for me and I will plant the seed and take care of it.

THURLOW WEED, Grade VI.



Snowdrops are the first flowers of spring. "Fair Maids of February," the French call them. English parks have millions of them. *Colchicum autumnale*, a pink flower four inches across, which blooms every September without care

English Effects with Long-lived Bulbs—By Wilhelm Miller, ^{New York}

IF YOU WISH GARDEN PICTURES LIKE THESE, DO NOT WAIT UNTIL OCTOBER OR YOU MAY LOSE A YEAR—THE BEST TIME TO BUY RARE BULBS, AND BULBS IN QUANTITY, IS NOW

[EDITOR'S NOTE.— This is the seventh of twelve articles that explain how we waste about \$1,000,000 a year in trying to copy English effects actually, and how we can get the spirit of them with long-lived material. Previous articles have dealt with conifers, trees, shrubs, broad-leaved evergreens, bedding plants and alpine flowers. Future articles will deal with perennials, vines, edging plants, etc.]

BY FAR the most important lesson England has to teach us about bulbs is that they furnish the cheapest way of growing flowers by the million in wood, meadow, and orchard, where they will look and act like wild flowers, multiplying without care and finally creating visions of supreme beauty.

For example, take the two daffodil pictures here shown. Everybody must appreciate their beauty, but how much lovelier it is to see these yellow and white flowers tossing "their heads in sprightly dance," where they come up on your own grassy land, without any sign of the spade or handiwork of man! It is hard to realize that daffodils live as long as apple trees and are surer to bear a crop every year. Yet there is a field near Trenton, N. J., where they have been blooming every April for one hundred years without care!

From the economic point of view wild gardening is absolutely justified, because it is the cheapest form of gardening. These daffodils, for instance, cost one or two cents a bulb. They do not interfere with a hay crop in meadow or orchard. By the middle of June, when you are ready to cut hay, the leaves of the daffodils will have ripened, turned yellow and fallen flat upon the ground. The same is true of all other spring-blooming bulbs that have strength enough to force their way through the turf year after year. They do not seriously reduce the hay crop, and cutting the hay does not harm them at all.

But can foreign flowers ever look like wild flowers in America? Certainly. The poet's narcissus is not native to England, but who knows or cares, save the botanist? The great thing for England is that it multiplies of its own accord, producing myriads of fragrant, starry white blossoms

in May and bending before the breeze with as much wild grace as any native flower you could name.

So, too, there are dozens of beautiful foreign plants that have run wild in America with little or no help from man, *e. g.*, the buttercup, sweet rocket, Johnny-jump-up, spiked loosestrife, wall pepper, barberry and marsh mallow. It comes as a surprise to us to learn that these are natives not of America but of Europe.

The underlying principle is this: Any flower will look wild if it can hold its own or multiply without care in the long grass or in the woods. The costliest flowers in the world will not look wild if they last only a season or two, or if there is any evidence of the spade or watering pot.

England is the home of wild gardening, and we must go there to see how to make

the most ravishing pictures with bulbs. I cannot see that the English have any great climatic advantage over us in respect to bulbs. They can grow a few kinds with which we usually fail, *e. g.*, the florist's anemone and ranunculus, the winter aconite, European cyclamen, Grecian wind-flower and Apennine anemone. On the other hand, we can grow gladioli better than they. Their early spring gives them twice as long a season for daffodils as New England has, for they have many varieties that will bloom in March. They have a commercial advantage in being able to buy bulbs very cheaply, while we have a big duty to pay.

On the other hand, America ought to excel England in wild gardening because we have more land and wealth and a greater variety of climate, soil, and plants. Eventually we must grow our own bulbs so that they will blossom in every dooryard in the land.

The best English effects with bulbs are easy to reproduce in America, because all we have to do, in most cases, is to plant the bulbs in good soil this fall and they will bloom next spring. In other departments of gardening it is necessary for us to use many substitutes or equivalents. In the case of bulbs we can generally use the identical varieties grown in England.

WOODLAND EFFECTS WITH BULBS

I must confess that I reached England too late for the daffodils, and my conceptions of their April effects are therefore drawn from their books and magazines which I have tried to follow for the last fourteen years.

In February they have snowdrops and sometimes the winter aconite which makes sheets of yellow there but not here.

In March they have a great variety of little



The American trillium grown in England. The English are very fond of it, but they have to pay five cents a bulb

blue flowers, especially scillas, glory of the snow, and the dainty little grape hyacinths.

The first flowers of good size and many colors are crocuses, which are said to look thoroughly wild in some places. I can well believe it, for crocuses seed freely here, though most people do not know it, because the seed pods are formed near the ground. In the lawn crocuses cannot sow their own seed, but in the woods they have a chance to multiply in this way, as well as by the corm. If I am not mistaken crocuses are running wild at Professor Sargent's home in Brookline, Mass.

The grand effects in English woods come in April with the daffodils, ending with the poet's narcissus in May. The most artistic result is secured, not by merely scattering the bulbs as we commonly do, but by arranging a dense mass, with small outlying colonies in the direction of the prevailing wind, so that the latter seem to owe their origin to seeds borne on the breeze from the large group. (See picture on page 345.) We often make the mistake of planting bulbs in solid blocks, like a nursery, or in immense areas of equal density. Also, and it pains me to write these words, we often set them out in straight lines or patterns.

Another reason why English woodlands are so exquisite in daffodil time is that owners are content with the cheapest varieties. Our rich men are often carried away by their enthusiasm and plant costly varieties simply because they can afford them. Also, they have a way of dumping into woods large flowered varieties after forcing. But no one can make daffodils with red cups or five-inch flowers look wild in the woods, or big florists' varieties with very broad petals and perfectly fluted trumpets. These spectacular flowers show the handiwork of man and therefore belong in the garden, not the woods. There are twenty-six varieties costing one and two cents a bulb that are more appropriate than those costing four or five.

The next great flower show in English woods is that of bluebells in May. I saw acres of bluebells carpeting the ground so thickly that it was impossible to avoid stepping on them. When we Americans speak of "bluebells" we mean the harebell (*Campanula rotundifolia*), a fibrous-rooted plant that blooms more or less all summer. That is the bluebell of Scotland, but the bluebell of England is *Scilla festalis*, and known to bulb dealers as *Scilla nutans*. It ought to be called "wood hyacinth," for that exactly expresses its appearance. It has none of the gross stiffness of the Dutch hyacinth. This charming flower stands about two feet high in deep shade and bears about ten flowers on a stem. There are pink and white varieties which are as tender and pure as the most refined Roman hyacinths. I have seen all three of them naturalized with exquisite effect in Massachusetts along a woodland walk. The bulbs cost about \$15 a thousand.

But we must not merely copy English

effects, and our best way of developing an American style of woodland gardening is to concentrate on bloodroot, fawn lily (or adder's tongue) and *Trillium grandiflorum*, which ought to be planted by the thousand on every country estate where these precious flowers do not already carpet the forest floor in great and glorious masses.

MEADOW EFFECTS WITH BULBS

English meadows in May are as thickly sown with stars as the heavens at night, for every country gentleman plants many thousand bulbs of the poet's narcissus, a fragrant, six-pointed flower which the English call "pheasant's eye," from the red-rimmed saucer in the centre of the flower. This is the cheapest of all bulbs for naturalizing, costing only \$5 a thousand, or half a cent a bulb.

In a meadow we find very different conditions from the shade and loose undergrowth of woods. Here we have full sunshine and a turf that is generally too deep and close for crocuses and other small bulbs. Therefore, with the exception of narcissi, we find a different set of bulbs from those that thrive in woods.

A quaint and charming meadow flower is the snake's head or guinea hen flower, a pendant white lily bell, marvelously tessellated with purple. In old-fashioned gardens you may sometimes see the guinea hen flowers idly swinging their bells, but it is a sensation of a lifetime to watch thousands of them responding to a gentle breeze that ruffles the lush meadow grass in May. The bulbs cost only a cent and a half each by the thousand. This flower is known to bulb merchants as *Fritillaria Meleagris*. The popular names are objectionable. Checkered lily is distinctive and descriptive.

In June the lemon lily is very lovely in English meadows, its narrow leaves blending perfectly with the tall grass. *Hemerocallis flava* is much more refined than *H. fulva*, the orange day lily. It is best to confine them to areas that can be easily protected from the mower.

The grandest American lily that grows naturally in meadows is the American Turk's cap (*Lilium superbum*), a nodding orange flower, thickly spotted, and with petals rolled far back. It reaches its grandest proportions — eight feet high and forty-five flowers on a stem — only in moist, peaty soil and partial shade. However, if it does even a third as well in meadows it is a glorious sight. It blooms in August. The English cannot grow this species as well as its Pacific coast equivalent — the leopard lily (*L. pardalinum*).

Another American bulb that grows naturally in meadows is the purple camass or quamash (*Camassia esculenta*), which grows about two feet high and bears in July ten to forty starchy flowers of dark blue or purple. The English sometimes grow the camass, and it costs them only a cent a bulb by the thousand.

But the most important meadow flowers of England are the narcissi. I judge

that the English are generally careful to choose the sun-loving varieties for this purpose as they do the shade-lovers for the woods. It is true that the richest colors are preserved only in the shade of deciduous trees, and in selecting varieties for the meadow we must be careful to find out which ones will not bleach in the sun. There is an English catalogue that lists all the varieties which are strong enough to battle with grass and tells which of them will stand the sun and which must have partial shade. There is no longer any excuse for us to plead ignorance because Kirby's book on daffodils tells the limitations of the varieties in America so far as they are known.

Hundreds of Americans bought last year a mixture of narcissi for the wild garden which was said to contain four varieties that would extend the period of bloom to six weeks. The varieties were guaranteed not to overlap seriously. This is a great improvement over indiscriminate mixtures, as the poetic quality vanishes when more than one variety is in bloom at once. But there is an even more artistic idea. Buy the same four varieties separately and plant them separately in the same field, leaving an irregular strip of grass of considerable size between any two colonies. Then there is no bewildering scatterment, but a series of bold irregular colonies. Trumpets and starchy narcissi will not harmonize in the same group, and when several kinds bloom at once, some will look "washed out" by contrast.

I am well aware that double daffodils are naturalized by the acre in England, but the most refined taste objects to double flowers of any kind in wild gardening. With that exception Americans should tie to Mr. Kirby's list on page 88 of his book, favoring the cheapest varieties in every case.

WATERSIDE EFFECTS WITH BULBS

The most enchanting of all floral pictures are those which are mirrored in the water. The English understand well the value of narcissi on the banks and the necessity of planting the margins everywhere except as clearings are needed for boat landings, bridges, and other practical needs.

The finest bulbs for waterside planting are the irises. Strictly speaking, the only bulbous irises are the English and Spanish, which are too gardenesque for naturalizing, as also are the German. But the rhizomatous irises are regularly sold in the fall by bulb dealers, and culturally the distinction is of small importance. Dwarf irises are likely to be overrun at the waterside, but tall ones are very lovely there.

Fortunately, the tall yellow flag that grows well in Europe does very well with us and so do Japanese irises which have the largest flowers of all, often eight inches across and sometimes ten or twelve. I wish someone who owns half a mile of brook would show us thousands of Japan iris in bloom as I saw them at the gardens of the Royal Horticultural Society. A faint idea of this glory is given by the picture on page 346. But I would counsel him to



Daffodils naturalized in an English park. They are as long lived as trees and have been known to bloom every spring for 100 years without care. You can have 1,000 of them in your meadow or shrubbery for \$5 to \$15



The artistic way to plant daffodils is to have some large groups, with small colonies in the direction of the prevailing wind, as if the seed had been borne thither by the breeze. This makes them look like wild flowers

PLANTING BULBS BY THE HUNDRED TO GET "NATURAL" EFFECTS



Japanese irises naturalized along a brook that dries in summer at the gardens of the Royal Horticultural Society. (They are not strictly bulbous, but rhizomatous.) Plant them after blooming

omit the double and variegated sorts, contenting himself with a few varieties of simple colors. And if, perchance, anything of the sort exists, please inform me so that we may send an artist in color photography.

So far I have spoken only of wild gardening, which implies a large scale of operations and considerable wealth. But all the other ideas here advanced can be applied in almost any yard by people of moderate means.

SHRUBBERY EFFECTS WITH BULBS

It is even possible to adapt the wild gardening idea to any yard that is large enough for a border of shrubbery. For instance, grow among your bushes narcissi and all the March blooming bulbs named above. Have only one kind of daffodil between any two shrubs. Plant large clumps.

Then you will enjoy a flower show in your shrubbery border before the bushes put forth their leaves. That is a time of year when the heart craves flowers, and this is one of Nature's combinations—shrubs and bulbs. Neither interferes with the other. Both are permanent.

RHODODENDRON AND LILY EFFECTS

Another English idea about bulbs that can be applied in any yard large enough for a bed of rhododendrons is to grow lilies in the same bed. This combination enables city dwellers to have gorgeous color about their houses for three months after the rhododendrons have ceased to bloom. The first cost is heavy, but maintenance costs little. The beds need to be dug only once. Every year thereafter a mulch should be added, but there is practically no other care.

FORMAL BEDS OF BULBS

I must confess that formal bedding is one of many subjects beyond my ken.

I take little interest in methods which involve forcing and throwing away bulbs or digging them every spring, curing them in summer and replanting in the fall. So I will merely mention what is done by Lord Northcliffe at Sutton Place to make flower beds interesting all summer without the annual digging of bulbs in May and planting of geraniums or cannas.

He has several large beds of Darwin tulips in which seeds of annual flowers are sown. Among many that I saw in bloom were clarkias, godetias, lupines, candytuft, the annual anchusa, love-in-a-mist, catchfly, Shirley poppies, larkspurs, Nemophila, calliopsis, *Statice sinuata* and *Phacelia campanularia*.

To my depraved taste these flowers seemed very pretty, but I dare say that park gardeners will pooh-pooh the idea. Nevertheless, anyone who will grow any four of these combinations and take eight good photographs showing the spring and summer effect will have an article that the THE GARDEN MAGAZINE will be glad to print.

BORDER EFFECTS WITH BULBS

Formal beds appeal strongly to the beginner, but he soon finds that an irregular border of hardy perennials gives him a greater variety, a larger season and more flowers for cutting.

The only drawback to a border is that most perennials bloom for only two weeks. Nobody likes to have large portions of his border devoid of bloom for a long time, and so many good gardeners have gotten into the habit of alternating perennials, e. g., a clump of peonies, a clump of chrysanthemums, then peonies again and so on. This gives two crops of bloom from the same area.

I saw a still better idea in England, viz., bulbs and carpeting plants. The

objection to alternating peonies and chrysanthemums, or any other plants that make a lusty growth at the same time, is that they compete with each other. On the other hand, bulbs and carpeting plants supplement each other. The carpeting plants protect the bulbs from alternate freezing and thawing quite as well as unsightly manure, and the bulbs look their prettiest when they have a background of foliage instead of dirt.

Every hardy border ought to have permanent bulbs in it, especially Darwin tulips and daffodils, and when these die down there should be something to cover the ground. So this year I am trying all the pinks I can get hold of and all the stone crops or sedums, which the English use so much for this purpose. And I hope some of my readers will get seeds now of rock cress and other perennials, or plant this fall on permanent bulb beds any thrifts or mossy little plants that are available and send me pictures next spring.

BULB COLLECTORS' GARDENS

I hope we shall see the collecting spirit develop wonderfully in America during the next ten years, for there is a heap of fun in it and it will do a lot of good. A man who grows fifty varieties of daffodils in a separate garden has something his friends and neighbors are bound to talk about.

A separate garden containing fifty varieties of irises is very pretty and a life-long delight, but fifty kinds of lilies would not make a beautiful garden.

If peonies are bulbs, then fifty varieties of peonies make a lovely bulb garden.

But the oldest and most famous garden of this kind is the tulip fancier's collection, which is still a beautiful institution in England. We have nothing like it. The beds usually have iron railings around them which support canvas, for tulips are easily spattered by a rain. The fancier's tulips are the rectified or variegated tulips, of which we know comparatively little. Anyone who wishes to learn about this delightful hobby should send for a little pamphlet called "The English Tulip and Its History," by Rev. F. Horner and others. It costs about fifty cents to import.

It is unlikely that the English tulip fancier's point of view will ever become popular here, but American collections of Darwin tulips are now becoming rather common. These and the cottage tulips seem best adapted to American social and labor conditions, because Americans demand long-stemmed flowers for cutting, and do not like the bother and expense of digging and replanting bulbs every year. There are over two hundred varieties of Darwins to choose from.

TALL CLUMPS ON THE LAWN

Our common plan of scattering specimen plants all over a lawn is hopelessly bad, and the right thing is to make irregular borders along the sides and at the back of a lot. However, two or three beds of

specimens plants may be used on a small place, and strikingly beautiful pictures can be made by planting the tallest growing bulbs. A dozen or two bulbs of the old-fashioned tiger lily, planted in a separate bed, near a projection of the hardy border, may grow as high as a man and present a very stately and showy picture. *Lilium Henryi* is the only other lily I can recommend for this purpose.

The other bulbs used for bold clumps on the lawn are not so spectacular, because they grow only three to four feet high. Still they are very satisfactory. They are here named in the order of their bloom: Bleeding heart, peonies, lemon lily, madonna lily, summer hyacinth, Japan iris and *Lilium speciosum*. These are more permanent than the golden banded lily, hardier than montbretias and the torch lily, and more fitting than the crown imperial.

Berry Baskets as Flower Bowls

THERE are few lovers of flowers who have not occasionally been at their wits' end in striving to arrange blossoms artistically. Short-stemmed roses, for instance, are particularly apt to tumble out of a bowl as fast as they are put in, and in this respect other cut flowers are equally exasperating. There are many satisfactory ways of holding refractory flowers in place, but a simple and very effective method is as follows:

Take a common berry basket and wind over the top ordinary cotton twine so as to form a network of small squares. Eleven times each way is sufficient. Place the basket in a dish of suitable size and pour in sufficient water to reach almost to the edge of the dish. If the basket is inclined to float, weight it down with one or two stones or pieces of coal, but as soon as it is thoroughly soaked it will probably remain in position.

Small pieces of charcoal will aid in keeping the water sweet. Arrange the flowers in the squares made by the string, letting the blossoms and greenery droop over the sides so as to hide the basket. Whenever fresh water is needed, the basket can be carefully lifted without disturbing its contents. If the foliage of the flower used is abundant, nothing additional will be needed to hide the basket. Should no dish of suitable size be available, the basket can be filled with wet moss and set upon a glass or china plate.

An ordinary dripping-pan containing four berry baskets was the basis of the centerpiece here pictured. The baskets were set close together in the form of a square and generously filled with leaves from a wistaria vine, some of these being put directly into the pan in order to cover the edge. Then the slender stems of the coreopsis were set here and there, over one hundred and fifty blooms being used. This made an attractive floral decoration and was suitable either for a luncheon or for a tea.

Conn.

EMMA C. DOWD.



Tomatoes for Use During Winter

A FEW hints about canning tomatoes may not come amiss for those who have had trouble in keeping them. Choose good flavored varieties that keep well in the raw state. If grown in the home garden, be particularly careful to pick the fruit when in perfect condition and while there is still some green showing at the stem end. Never use a broken or cracked tomato, nor an imperfect one. Can them the day they are gathered.

Scald the tomatoes only long enough to make the peeling easy, and after the skins have been removed, cut into thick slices and cook until they become boiling hot all through. Lift the slices into the can carefully so as not to break them any more than is absolutely necessary and seal the can as soon as it is full.

When tomatoes are canned in this way they may be used for any dish that calls for raw tomatoes. Always use either a porcelain or graniteware kettle and never cook the tomatoes until they are mushy. If cooked too long they are apt to have a bitter taste. It is better to handle only a small quantity at a time.

New York.

I. M. ANGELL.

Economical Grape Juice

GRAPE juice is one of the most delightfully refreshing drinks, and it is not particularly expensive or difficult to make. Although we buy our grapes the beverage does not cost us more than ten cents a quart, which is about one-fifth of what it costs in the stores, and we have the satisfaction of knowing exactly how it was prepared. One year we made twelve quarts from four varieties of grapes that cost us about \$1.27, and another year three twenty-five cent baskets of Concords made eight quarts of liquid.

Concords are generally used, but the juice is dark in color and the flavor is very strong. The juice of Niagaras alone is colorless, while the Delaware juice has a muddy look. Out of fifteen variations, the following combinations were most to our liking: Catawba and Niagara; Catawba and Delaware; Catawba, Niagara and Concord; Catawba, Niagara, Concord, and Delaware; Delaware and Niagara; Delaware and Concord; Delaware, Concord and Niagara. Catawba alone was also good.

Pick the grapes from the stems, and to three quarts of fruit add one quart of water. Cook until the grapes are broken, then strain through cheesecloth and again through flannel. Add sugar (about one to two teacups of sugar to two gallons of juice), and boil. Be careful not to get it too sweet. Bottle the juice while it is hot and seal. Store in a dark place.

We very often make a first and second grade, using for the former the juice which runs through the straining cloth easily. To the remainder we add another quart of water and boil, and this we strain through the cheesecloth only. This juice will not keep for any length of time.

New York.

R. W.



A graceful arrangement of coreopsis and wistaria leaves in berry baskets. The foliage hides the baskets from sight



Suggestions for Cooking Peas and Beans

PEA S ought not to be kept for more than five or six hours from the time they are picked until they are eaten. In case it is necessary to keep them over night spread them on a cloth on the floor of a cool cellar; or if they are so far gone as to be stale or wilted, put them in cold water for an hour after shelling, and add a little sugar to the water while they are boiling. In order to have them retain their sweetness and color while cooking allow plenty of slightly salted water, cook only until they are tender and drain immediately.

French cooks prepare peas in a double boiler with lettuce leaves to provide the juice and a very young onion to give flavor. They also cook them with bits of bacon.

The following are some ways of using peas so as to provide variety:

In omelet.—Cook one pint of peas in salted water, drain and keep hot. Make an omelet of four beaten eggs, four tablespoons of the water in which the peas were cooked, butter, salt and pepper. Sprinkle some of the peas on the omelet and fold; butter the remainder of the peas and place around the omelet in the dish.

Griddle cakes.—One cupful of mashed and seasoned peas, a half cup of milk, one beaten egg, one-half teaspoonful of baking powder and one-quarter teaspoonful of flour.

COOKING DRIED PEAS AND LIMAS

One of the best ways of disposing of a surplus of garden peas is to dry them when they have reached full size but are still green and have a good flavor. Canning is a troublesome process in the heat of summer, and there is the added disadvantage of a much larger bulk to be stored for winter use than when the peas are dried, and there is also the expense for the jars.

As soon as the height of the season is past, we pull up the vines and strip off the pods. After the vegetables are shelled and picked over, we spread them very thinly on mosquito netting laid on a wire screen, the latter being raised a few inches from the table. A covering of mosquito netting is placed over the vegetables and they are dried in an airy room; in less than a week they will be sufficiently dry to rattle. As a further precaution against storing them for the winter with any moisture left in or on them, collect the peas and keep them in bowls in a warm, dry closet for some time. Make sure of a free circulation of air while drying so as to prevent the possibility of molding and keep away flies and other insects. After they are dried we sort them into grades—green, ripe, and medium.

A unique way of preserving green peas for winter use is recommended by an Australian seed catalogue. Shell and put into a wide-mouthed bottle. Shake well to make as compact as possible, then cork closely and seal. Bury in the driest part of the garden and dig up as wanted.

Before cooking soak the dried peas in cold water over night; parboil in water with a pinch of baking soda, then change the water and cook till tender, season with butter, salt and pepper.

A most delicious soup is made of one pint of the dried peas to a quart of cold water, with an onion, a carrot, a bay leaf and a small quantity each of celery and parsley, a speck of thyme and

clovers, a thin slice of salt pork (and a ham bone if liked). Set over a good fire and when it has reached the boiling point, place it on the stove where it will cook slowly. When done, strain.

With bacon.—Boil dried or old peas with a piece of bacon until done. Put the peas into a baking pan, slice the bacon, place on top of the peas, and set in the oven for a half hour.

Limas may also be dried in the pods, and are fully as good as when the beans are dried separately. Spread singly on netting screens in the garret, and leave until perfectly dry. They should be soaked over night before being cooked, covering with fresh water in the morning. Two hours, or less, before meal time put them on the stove in boiling water and cook for thirty minutes; then drain and cover with fresh boiling water containing one-eighth teaspoon of baking soda. Cook until tender, and add salt, pepper and butter.

New York. I. M. ANGELL.



Why Not Have a Rockery?

I THINK that rock gardening must always be costlier here than in England. True, Englishmen may have to pay as much for rocks as we, but skilled labor costs more here and we must take artificial means to cool the atmosphere. A first-class rockery is a complicated structure because it must provide every kind of exposure, many kinds of soil, a perfect water supply, and perfect drainage. But a good one is worth all its costs.

The great drawback to the rockery is the difficulty of cooling the rocks and atmosphere. The obvious way is to shade the rock garden by means of overhanging trees. Unfortunately, shade is fatal to the finest alpine flowers. Our only hope, I believe, is to use water freely. This is costly, I admit, but there is no use in doing things by halves. We must have plenty of water anyhow, for seventenths of the art of rock gardening is to give the plants a never-failing supply of moving—not stationary—water. There is an immense amount of talk in English books and papers about lime-lovers and lime-haters, but if we can only get a perfect water supply I believe we can cut out nearly all that pottering with special soils. Witness the best alpine garden in America (Mrs. Higginson's at Manchester, Mass.) where the gardener

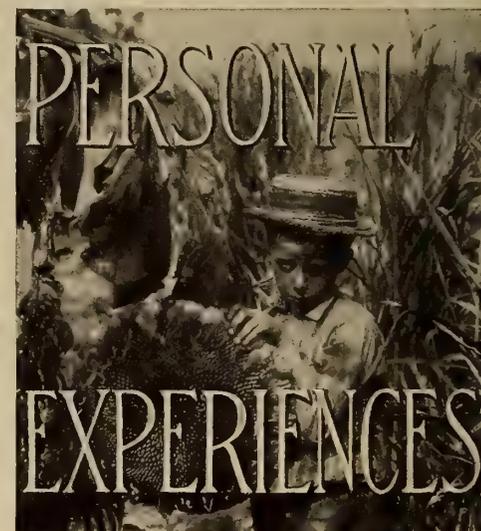


A rockery effect with ferns which seem to be growing directly out of the rocks

told me he never put a bit of lime into any compost. An idea got at the Cambridge Botanical Garden filled me with great hope. The scholarly and ingenious curator, Mr. R. Irwin Lynch, was making a rockery in which the central feature was a well. The paths all lead naturally to this moist, cool spot where a person could get a drink of fresh, cold water and admire the flowers on all sides and above him. The rocks, soil and air were all pleasantly cool and moist—not damp or sour. The moisture is expected to rise by capillarity through all the stones to the very top, without interfering at all with the quicker downward drainage through the soil.

I am well aware that Mr. William Robinson frowns upon connecting water features with rock gardening and I must confess that most of the lakelets, cascades, etc., which I saw in England in connection with rock gardens were displeasing or even ludicrous. Yet Mr. Lynch's idea seems to me adapted to our life in three ways. It has the practical advantage of quenching thirst. It has the cultural advantage of keeping the rocks cool instead of hot. It has the æsthetic advantage of supplying a dramatic conclusion to the whole effort. A well at the lowest point seems natural, and since the highest walls surround it, there is sure to be grateful shade in the heat of the day—a point we Americans appreciate. The heated period of the English day is only three hours or so; with us it is nearer eight.

New York. WILHELM MILLER.



Transplanting in Hot Weather

DURING hot weather people are often deterred from filling gaps in the flower beds and borders by the fear that if plants are moved they will die from the heat before they have had a chance to become established. Of course, one can wait for a rainy day, but I have hit upon a plan whereby plants may be moved at any time during the hot weather.

Every spring I save all rakings of grass and leaves, and put them in a pile to form leafmold. When transplanting I make the hole for the plant about two inches deeper than is really necessary, in which I place a layer of about an inch and a half of the partly decomposed leaves, having first wet them thoroughly with water. I then fill in the hole with soil, and when setting the plant use a dibble to make the hole for the roots.

The wet leaves put the moisture just where the plant most needs it—at the roots. The ground does not become caked around the roots, as is often the case when water is poured into the hole, but the moisture from the leaves is drawn to the surface by capillary attraction and the soil remains loose and moist around the plant for several days.

When lifting be sure to get as many of the roots of the plant as possible, and be especially careful not to expose them to the wind or sun while out of the soil.

Minnesota.

M. I. D.

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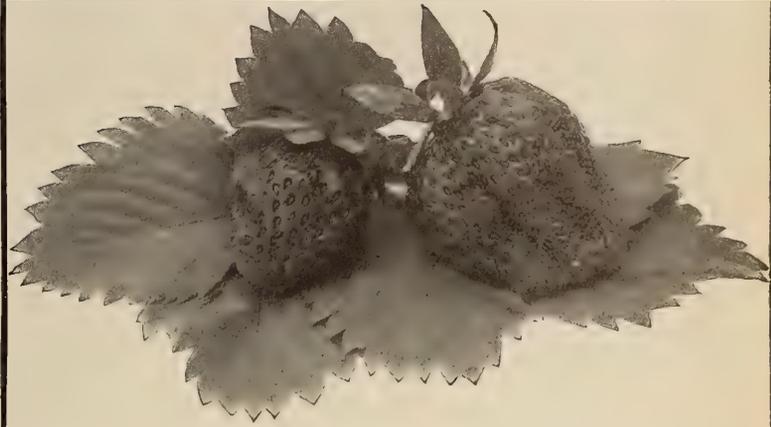
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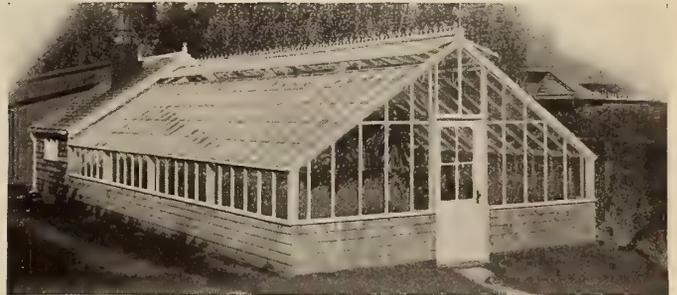
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Wild Flowers Worth Improving

V.—THE BROWN-EYED SUSAN

IT is strange that no plant-breeder, professional or amateur, has undertaken the culture of the Rudbeckia (which includes the brown-eyed Susan) and its allied genera, Echinacea and Lepachys, for Burbank's profitable experience with Shasta daisies has shown the extraordinary possibilities possessed by flowers which are so common that we usually think about them as weeds.

There are ten species of Rudbeckia which can be secured from American nurserymen, but the only famous one is the Golden Glow, a double variety of *R. laciniata*, which took the world by storm about ten years ago. This variety was not at all the production of hybridization. It was merely a chance product of Nature which some one was shrewd enough to save and sell.

Perhaps the commonest species in the wild is the brown-eyed Susan, or yellow daisy (*R. hirta*) which is illustrated herewith. To indicate its possibilities for improvement let me say that I found, in one hour nineteen variations that were highly distinctive and full of promise to the plant-breeder. These were all found in a suburban lot, and I transplanted them to my garden in flower; but, unfortunately, I was not able to save the seeds of any of them, as my family had to go away from home during the critical period when the seeds should have been saved. None of the seeds germinated the next year, and as the species is either annual or biennial, all these variations were lost. But that is of no matter, as our readers will doubtless be able to duplicate them by searching.

The largest flower I found was $3\frac{1}{4}$ inches across, which is an inch larger than the average size. The smallest flower was only an inch and three-quarters across, and the plant bore such a profusion of these dainty flowers that I thought a miniature flowered type might be worth developing. There was little evidence of doubleness. I found many flowers that had two rows of petals (strictly speaking, "rays"), but they did not give even a semi-double effect. The largest number of petals I found on any one plant was from seventeen to twenty.

The most interesting color variation was a rich, pure brown, as fine as any you ever see in the annual Coreopsis. This clearly suggested an important line of plant-breeding, and correspondents have written me of brown-eyed Susans in which one-half the petals are brown and the other half yellow, as is exactly the case in the corresponding variety of coreopsis. I have also found a lemon-colored variety and an orange and yellow variety, in which

the orange was down the centre of the petal with yellow at either side.

As to the form of head, I found three distinct types which I called for convenience, "cup-shaped," "stellate," and "shooting star," according as the petals pointed upward, horizontally, or downward. My observations were not extended enough to determine whether these forms were constant or merely represented different stages of development in the same flower, but I found one plant in which the cup-shaped condition seemed to be fixed.

As to form of petal, I found four exceedingly interesting types. One resembled the single cactus dahlia by reason of the margins of the petals being revolute, and more or less twisted, thus producing a flower of spirited appearance. Another was lacinate, but not particularly pretty.

The most exciting flower of all, however, was a tubular flower in which the entire petal was rolled up into a tight tube, producing exactly the same effect we get in quilled asters and chrysanthemums. Of this type I found three examples, of which one plant bore flowers three and three-eighths inches across, while another was only one and three-quarters inches across.

The rudbeckias all have yellow petals and the disk, or central portion, may be yellow, greenish, brown or dark purple. Some of these disks are flat and some make a rather high cone. The only important color variation that can be hoped for in the genus is brown and red.

The beauty of the genus Echinacea is that it supplies flesh color, pink, rose-purple, and crimson, also a singularly beautiful form of flower by reason of the downward-pointing petals.

The beauty of Lepachys is that it has a still higher cone which, combined with the downward-pointing petals, gives it a very animated appearance, like the cyclamen or shooting-star. The colors are yellow and pink.

Connecticut.

JABEZ TOMPKINS.

The Best Cup-shaped Lily

PROBABLY the most useful hardy lily for garden use," says Professor Waugh in his monograph on lilies in the "Cyclopedia of American Horticulture," "is *Lilium elegans*."

This is the species to which I have ventured to give the name Japanese erect lily because of its cup-shaped flower. It is a dwarf, large-flowered lily with red, yellow, or orange flowers. It is normally only a foot or two high, and bears from one to five flowers on a stem, each flower being five or six inches across. It blooms about the first of July.

The strong points of this lily are its vivid colors



Lilium elegans blooms about the 1st of July. The flowers, of vivid color, measure five or six inches across and are borne in clusters



The brown-eyed Susan, or yellow daisy (*Rudbeckia hirta*), which blooms from June to August

and ease of culture. Most lilies have to be carefully planted in light soil to which plenty of leaf-mold has been added, but the Japanese erect lily thrives in the ordinary border, and I have seen it multiply at a wonderful rate.

The best idea connected with lilies that has come to us in recent years is to plant them in beds of rhododendrons or other members of the heath family, because all these plants require the same sort of soil and winter mulch, also a cool soil in summer which will not dry out easily. Lilies, as a rule, have rather insignificant foliage, and are so uncompromisingly stiff in their habit that it is rather difficult to group them nicely with other plants. In the rhododendron bed, their defects of habit and foliage are more or less hidden. Lilies are, therefore, a natural complement of the heath family, and enable us to have life and color

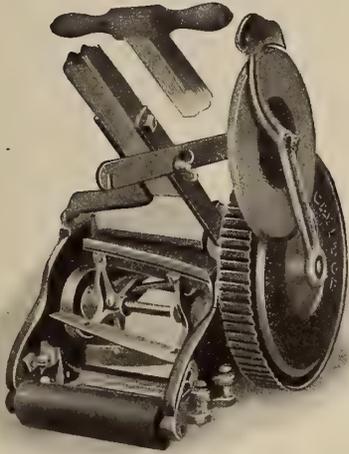
in these shrubby beds throughout the summer and autumn, when otherwise they would be devoid of flowers.

While the Japanese erect lily is commonly planted in rhododendron beds because of its cheapness, I would urge readers of THE GARDEN MAGAZINE to plant it in any ordinary garden soil, and when they have worked up sufficiently, start to mass them amongst the shrubbery.

There are about a dozen varieties, ranging in color from pale yellow through apricot and orange to bright red. So far as I know, the names *umbellatum* and *Thunbergianum* are exactly synonymous. *Lilium Batemannia* is a variety with apricot flowers, which grows about four feet high, and has rather narrower perianth segments than the type.

THOMAS McADAM.
New Jersey.

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Protecting Roses in the Northwest

IT IS perfectly possible to carry roses through the winter in the Northwest—that is, the Dakotas, Montana, Nebraska, northern Minnesota, and northern Wisconsin—where the temperature may fall to 40 degrees below zero and the wind cut like a whip. I have carried roses through the winter so that scarcely the tips of shoots four feet in length were injured.

If the fall has been a dry one give the rose bed a thorough drenching when you are certain that all growth has ceased. Then after the ground has dried somewhat bank about six inches of the surface dirt around the base of the rose bushes. Wait until a slight crust of frost has formed over the ground, after which bury the entire rose bed to the top of the bushes in dry leaves, which, of course, should have been procured beforehand, and must be dry when applied. I much prefer oak leaves for this purpose, and would avoid ash leaves altogether, as they soon crumble to dust. However, on our northwestern prairies we do not have a large variety of leaves from which to choose, and therefore we are often compelled to take what we can get. In regions where not enough leaves are obtainable—and there are such regions—I should recommend the use of loose straw, though personally, I have never tried it. Hay might also serve the purpose. Climbers and roses with bushes over three feet high will have to be bent over and tied down—not necessarily down to the ground, but just enough so that, with three to four feet of leaves, they will be nicely covered. In bending the bushes be careful to produce a long arch, never making a sharp bend that might break the canes.

After the leaves are in place cover them with boards arranged so that they will shed water; likewise support them in such a manner that their weight will not rest upon the leaves. Over this, like a roof to cover the entire rose bed, even the sides, spread an even layer of horse manure from six inches to a foot thick. Take all possible precaution so that the leaves underneath may remain dry all winter.

I am well aware of the fact that this method involves much laborious detail, but without work you cannot have roses, especially in this climate. Furthermore, it is best to place all your roses in one bed, or at least to mass them as much as is consistent with your scheme of planting, for this greatly facilitates winter protection on which rose culture in the Northwest depends.

North Dakota.

C. L. MELLER.

Bees and Fresh Flowers

THAT bees have a decided influence on the keeping qualities of flowers is a fact that is very easily demonstrated. It is simply a question of pollination. The ultimate object of the flower is, of course, seed production, and as soon as fertilization has been effected the mission of the flower has been accomplished and the energies of the plant are then immediately turned to the development and perfection of the seed. Commercial florists have adopted a practice which to my mind is much more important than they know.

Practically all growers of the Easter lily remove the anthers from the blossoms at an early stage of their development, preventing the pollen from maturing and falling upon the petals, and thus disfiguring and injuring the flowers. The golden

grains of pollen scattered upon the white petals are a disadvantage to the commercial quality of the flower, but aside from all this the emasculation of the flowers in this way has a very decided influence upon their keeping qualities. If the flowers are allowed to become pollinated their usefulness as cut flowers or ornamental plants is very greatly decreased by the shortened life which they possess.

This was brought to my attention very emphatically as much as twelve years ago by some studies which were being conducted with Easter lilies and Hibiscus. It was found that flowers which were pollinated, either purposely or accidentally, lost their beauty and usefulness very much more quickly than those emasculated or prevented from becoming pollinated, so that from the standpoint of the florist the exclusion of bees, or any means which contributes to the pollination of the flower, is a very important matter.

Washington, D. C.

L. C. CORBETT.



A Bamboo Seventy Feet High

POSSIBLY the tallest bamboo in America, grows in Arcadia, Florida, and is about seventy feet high. The clump has a spread of fifty feet, and the diameter at the ground is twelve feet. The specimen is only eight years old.

This is the common bamboo of India (*Bambusa vulgaris*). I believe it was brought to South Florida from the West Indies. In Jamaica it has become naturalized, and is popularly supposed to be indigenous.

This bamboo makes an astonishing growth during our rainy season, the canes often attaining their full height in six weeks, after which they begin to put out leaves. The canes are from four to five inches in diameter at their base.

Unfortunately, this species cannot stand low temperatures, and the specimen in Arcadia has frequently been damaged by cold.

It is the largest of the bamboo family that is grown to any extent in Florida.

In propagating any of the large bamboos, I cut the canes in four to six foot lengths, and plant them in a trench about six inches deep. They root readily, and send up two or three small shoots, six to ten feet long, the first season.

Arcadia, Florida.

C. S. BUSENELL.

Do You Know this Plant?

III—A VIVID MAPLE

ACER GINNALA is a maple found in Manchuria, China and Japan. It is a shrub or small tree, seldom growing to a height of more than eighteen or twenty feet. In habit it is graceful, particularly during its earlier years.

The leaves are three-lobed and from one and one-half to three inches long. In summer the foliage is thoroughly good, and in autumn, when it assumes its customary splendor, it is most charming. It turns earlier in the season than do the other maples, with the exception of the red maple, and keeps in good appearance for a long time.

The flowers are borne in early June in panicles, which are about three inches long. The individual flowers are yellowish green and fragrant, an occurrence uncommon among the maples. Thus it depends for its value chiefly upon its neatness of habit and charm of autumnal coloring. It is perfectly hardy and vigorous.

As to use it is desirable for planting when a



Foliage of *Acer Ginnala* turns bright red in autumn and keeps in good condition for a long time

small short-lived tree is desired in the background of a large shrubbery, and perhaps it might be useful as a nurse plant.

Massachusetts.

DANIEL A. CLARKE.

A Plant to Grow on Stone Walls

THE accompanying photograph shows a stone wall on which the wall pepper (*Sedum acre*) is growing. This plant is also known as stonecrop and love entangled, and is one of the commonest of all sedums in cultivation. It is often used in edging flower beds and also as a carpeting plant for bare spots. The variety *aureum* is cultivated for spring bedding, the bright yellow tips of the new shoots furnishing a dash of color in an otherwise dull season.

The flower stems of *Sedum acre* are about two or three inches high, and the flowers about one-half inch across. The leaves are very small—less than one-quarter of an inch long—and are crowded together. They are thick and have an acrid taste. This plant thrives even in poor soil and usually blooms from June to July.

Connecticut.

G. S. JONES.



The wall pepper (*Sedum acre*) is one of the commonest sedums in cultivation

This Month's Cover

THE lily shown on this month's cover is the white form of the Japanese spotted lily (*L. speciosum*, var. *alba*), and is probably the best white lily for general cultivation, being very thrifty although not so rugged as the red colored form, commonly known in gardens as *Lilium rubrum*.

The habit of the plant is very free and informal, and it makes a splendid subject in the mixed hardy border and in shrubberies. It is not only valued as a garden plant, however, but is extensively grown for cut flowers by florists. Specialists in lilies offer several named varieties of the speciosum lily, the best known being Melpomene and Krætzneri, in both of which the coloring is very intense.



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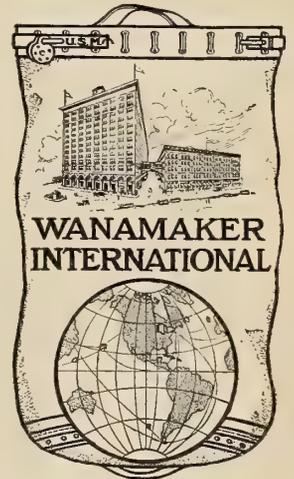
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Dahlias That Are Really Worth Growing

AS a dahlia fancier for a good many years past I have read with a great deal of interest the two recent articles in THE GARDEN MAGAZINE on my favorite flower. Of course, everyone is entitled to his own opinion as to varieties, and I have mine. After having grown nearly every thing that I could secure, and not merely one or two roots only but giving a thorough, comparative trial in every case, I feel that I am in a position to make some recommendations myself, and to point out some of the reasons why I do not entirely agree with all of the selections and opinions of Mr. Fuld.

I am glad that the writer is candid in his remarks about Madame Van der Dael. This, to my mind, is the loveliest and best-formed decorative dahlia I have ever grown. Kriemhilde (cactus) is, indeed, a lovely pink bloom, but it has such a short stem that 90 per cent. of my visitors pass it by, preferring others of the same coloring.

As the best white cactus yet grown I am inclined to name Schwan, although Lawine is preferable for the garden as it is a mass of white bloom, almost covering and hiding its green foliage; the flower, however, is loosely formed. Schwan is perfect in shape and ideal as to length of stem, contour, and petal. Amos Perry, bright scarlet, with me is not so well formed, though the coloring is so intense as to be really dazzling.

I agree that Wunderkum is the best type of the "indefinable color" group, although in the old Britannia is a color that has never been equaled. It, however, has a thick, meaty centre, though when specially grown for exhibition purposes it becomes a most beautiful flower. The Lilliputian class is not generally grown, and but little known by even the dahlia growers of this country.

While Prof. Mansfield is classed as a variegated decorative, it certainly has two distinctive types. I do not approve of calling A. D. Livoni a small bloom, but rather medium size, for if planted in rich soil and disbudded it will make flowers of very good size. All that is said of its commendable qualities is true.

Storm King with me seems to ripen up too fast, and gives now and then an impression of "ox-eye" or yellow centre. I have a white that is without exception the strongest in development from start to ripened bud, a very solid and beautiful flower, with a slight cream cast in the base of the petals. It came to me under the name of La Favorite.

Charles Lanier is comparatively new, having been grown only last season. Vashti I have not only never seen, but fail to find in any catalogue I have. Mr. Glasscock I have discarded after five years' trial—it was a rare thing to find a perfect flower. The blooms were 99 per cent. with false centres, the petals failed to fill out, and the purple color was very dark with no lustre. Edward Lefavour is not yet well enough known to warrant its being placed ahead of a standard tested variety generally approved; although I am led to believe that it will yet warrant all that is claimed for it.

In the pompons I am confident that there is no white like Snowclad, and I have over sixty varieties in my collection.

In single dahlias, the Twentieth Century class takes with all visitors to the garden, and at fairs and shows as well. I have received a new variety grown in England called Mrs. Tait, which I am looking forward to with no little curiosity.

Maurice Rivoire is indeed a very positive improvement in the colletteres over some of the older ones, for while the color is not so good, the flower is inclined to give more to the collar and not the main petals of the bloom. I think Eten-dard de Lyon, Gallia, Prince Galitzine and even old President Viger will be just as much in demand as those with immense white collettere petals.

No one who loves a white flower can gainsay the statement that Kaiserin Augusta Victoria is a regal beauty among the decoratives, but to say so much for Mrs. Roosevelt seems to me to be an error, for it is a heavy bloom and fades or grows velvety in its centre; it does not behave the same way with different growers, and I cannot get it to make good clumps of tubers. I have written to large concerns who deal in wholesale quantities,

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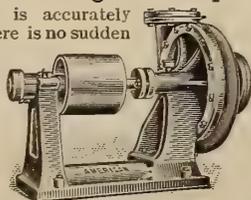
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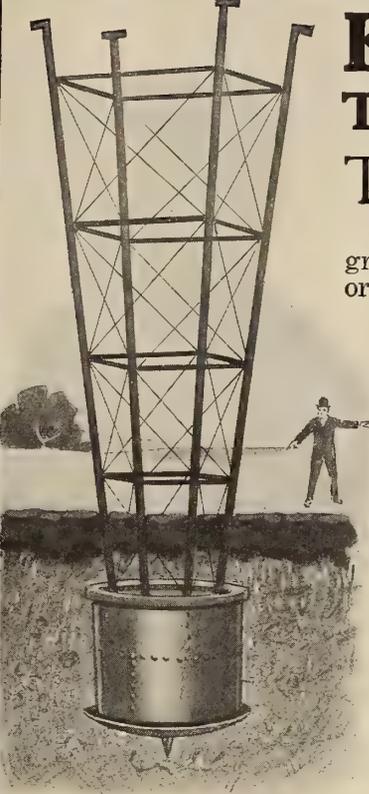
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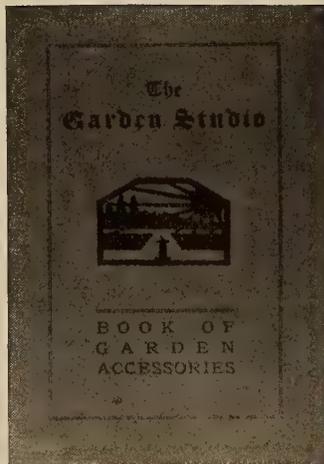
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and they have informed me to get sufficient stock one has to depend upon slips or cuttings and started plants. When cut for bouquet work it will not compare for beauty or keeping quality with Madame Van der Dael. It has a tendency to run out and is subject to a disease which will not allow it to develop into a strong bush.

W. W. Rawson is indeed a lovely bloom, but comparatively new and not yet tried by many outside of the professional growers. Delice is a beautiful shade of pink and I hope to soon be able to speak of its behavior.

I am sorry that the writer did not mention Lord Lyndhurst (decorative), which is a fiery scarlet just as good as the standby, Wm. Agnew, is of its color, scarlet crimson. Both are marvelously grand in border, shrubby or field, and in bouquet work it is hard to find their equal.

Jack Rose I am inclined to think has a tendency to over-bloom and so give flowers much reduced in size. Jumbo has been a very strong favorite with me, but it has too many flowers which drop down and hide their faces either in the bush or on the ground. Minos is one of the best dark maroons ever grown—tall, with long stems, and strong. Papa Charmet is a fit companion to it. I prefer either Siegfried or Henry Patrick to Flora, but believe that Mrs. Winters is better still.

The stem of Perle de la Tête d'Or is so rigid and hard that it does not lend itself to cutting or even to grace on the bush itself, as a rule, and the flower is stiffly flattened. A few blooms now and then are better than the average, but they are hardly to be considered normal.

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Every gardener should use manure, because it improves the texture of the soil, while commercial fertilizers do not. The drawbacks to manure are four: It contains relatively little plant food; the most valuable portion is likely to escape; it introduces weed seeds; and the odor is objectionable. However, it is invaluable for supplying humus, i. e., decaying vegetable matter. Therefore use all the good manure you can afford to buy, as there is no danger of overfeeding the heavily cropped vegetable garden with this fertilizer.

Another way to improve the texture of the soil is to sow crimson clover in July among corn and other wide-planted crops. In late fall or early spring plow under the clover to add nitrogen and humus.

A third method is to deposit all leaves and clean garden refuse in a pit where it may decay. Keep all decaying vegetable matter well covered with earth so as to prevent odors or unsightliness. In one year you will have invaluable fertilizing matter.

If you cannot procure sufficient quantities of manure at reasonable prices, use commercial fertilizers to make up the deficiency. The most satisfactory combination for me is bone meal and muriate of potash, together with what manure it is possible to procure.

Bone meal contains from 2½ to 4½ per cent. nitrogen and 20 to 25 per cent. phosphoric acid, but a large part of the latter is not immediately available as plant food, but it becomes so as the particles of bone decay. Bone flour, which is very much finer than the meal, costs more but is quicker in action.

Muriate of potash contains about 50 per cent. potash. I use it in the proportions of two parts by weight of bone meal to one of muriate of potash.

Nitrate of soda (15 to 16 per cent. nitrogen) applied at the rate of one pound to 400 sq. ft. or 100 lbs. to the acre, is of especial benefit in the early spring, when the effects can be seen in three to five days after rain or watering.

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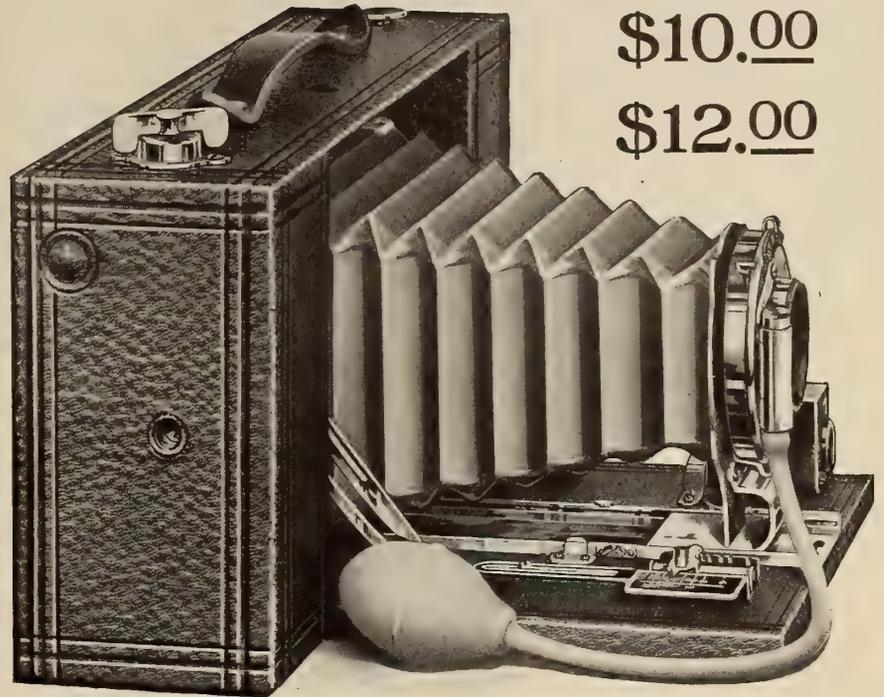
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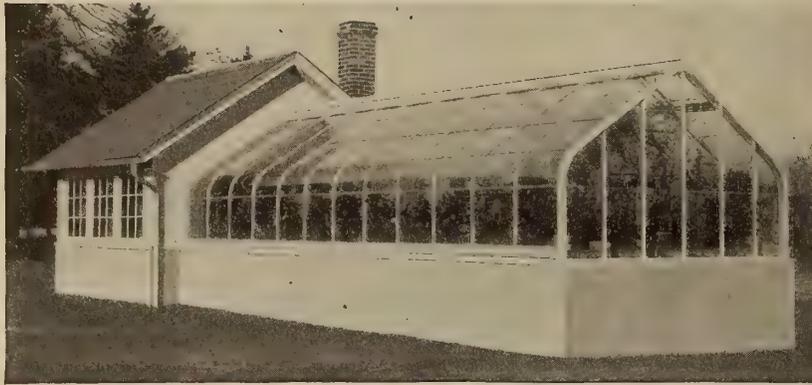
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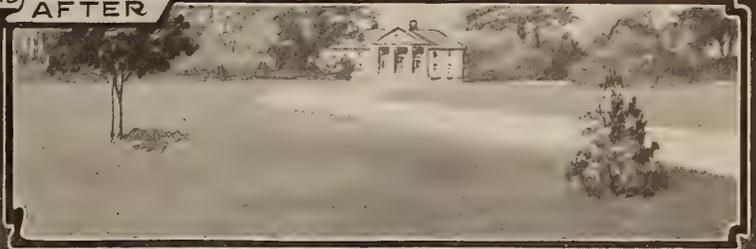
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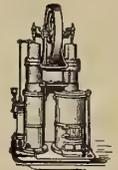
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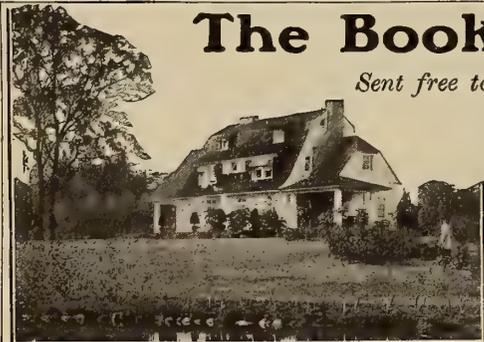
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This book contains photographic views of over 100 houses of all kinds (from the smallest camps and bungalows to the largest residences) in all parts of the country, that have been stained with

Cabot's Shingle Stains.

They are designed by leading architects and are full of ideas and suggestions of interest and value to those who contemplate building.

SAMUEL CABOT, Inc. Sole Manufacturers,
1 Oliver Street, Boston, Mass.
Agents at all Central Points.

Sold by the Seed Dealers

Grand Show of Asters— The Station Agent's Plan



My Aster beds are along the railroad track of the Central New England. It has been my pleasure to have a grand show. The black beetle and the striped bug are very troublesome. These pests will skin the whole bunch if we let them alone, but we don't let them alone, for as soon as the plants are well grown I take for as soon as the plants are well grown I take them and go over the whole. On a still day dust settles everywhere. Then when the blooms begin to open we give them another dose and we have the flowers. This year we let them go and the bugs or beetles got a start and we started for them, but they did us damage. For many years I have known Slug Shot and used it, and there is no use trying to raise flowers or fruit or vegetables without you watch them, because as sure as the sun shines you will have bugs, lice or beetles which you must get rid of. Now on cucumbers the striped bugs play havoc. You told me once to put some Slug Shot in water and sprinkle the rows. When that is done the cucumbers grow. The cherry trees will curl the leaves with lice; if you can blow Slug Shot over these ends the Slug Shot sticks to the sticky mess which comes where these lice are and they do not spread.

Yours respectfully,
LUTHER BRUNDAGE.

Billings, N. Y., October 25, 1908.

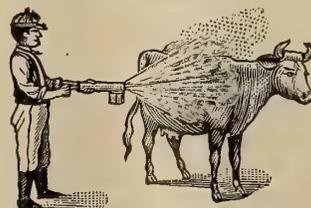
For Pamphlet on "Bugs and Blight" Worth
Having write to

Hammond's Slug-Shot Works

FISHKILL-ON-HUDSON, NEW YORK



Hammond's



"Cattle Comfort"

Practical Ideas from England

THE finest summer hyacinths I have ever seen were three and a half feet high. They were grown in pots of moss and fibre by Mr. Robert Sydenham, of Birmingham, at whose home I saw these glorious plants in July, 1908. If you want something new for hall or house decoration in summer try a dozen bulbs of *Galtonia candicans* in a large pot of moss and fibre.

I saw about three thousand grape hyacinths in bloom under oak trees in Lord Northcliffe's wild garden at Sutton Place in Surrey. Eight years ago a thousand bulbs had been planted there and nothing further had been done. They had bloomed every year and multiplied threefold. It is worth trying, even if you have only one oak tree.

Are you curing any tulip bulbs in the cellar this summer? Don't let the sun strike them or the skins will crack and split off. A bulb without a skin often sprouts too early.

What a shame that so superb a flower as *Ornithogalum pyramidale* should be married to such worthless foliage! Fancy a perfect pyramid of starry, white flowers, each blossom an inch across and the spike a foot and a half high — one hundred or more flowers on a single stalk! It is a prodigy of bloom and the very perfection of formal beauty. But, alas, the foliage turns yellow and begins to decay just before the floral display begins. This defect can be only partially hidden by setting the bulbs in the middle of a hardy border among plants that will be a foot high by the middle of June.

Who can tell us the most effective way of growing those lovely flowers — the English irises? They bloom in June, too late for spring bedding and seem to be used for dotting in mixed flower beds. Is there any way of massing them without giving up a bed to them for a whole year? Can they be combined with stocks or China asters?

It is hard to believe that so lovely a flower as *Allium Moly* belongs to the onion family, and, fortunately, it does not possess enough of the alliaceous odor to be objectionable in a flower garden. It has large umbels of yellow flowers in June, and makes splendid clumps in hardy borders or shrubberies. It is an old European plant sometimes called the "golden garlic."

Why not naturalize this golden garlic on some American estate as they do in England? What yellow flower of June can you name that has equal beauty and ease of culture? I saw the bulbs offered last fall for only \$5 a thousand. What a lovely sight a thousand of these would make in some New York or Pennsylvania meadow, where they would probably hold their own and multiply year after year. If you act on this suggestion won't you take a photograph for THE GARDEN MAGAZINE, or give us a chance to?

New York

W. M.

A Difficult Anemone to Grow

LAST summer, in THE GARDEN MAGAZINE, there appeared various reports, mostly discouraging, regarding the results from planting *Anemone blanda*, which had been highly praised the year before. I, however, have had such pleasing success that I would not be afraid to plant them in large numbers.

In July, 1907, I ordered the roots, about fifty in number, and planted them in September immediately upon receipt. They were set about twenty feet from the house, along a path leading toward the gardens. The spot is sheltered from the coldest winds and quite sunny in the early spring, when neighboring trees and shrubs are bare. The soil was sandy and poor, so I dug in a little fine bone. On the approach of winter I covered them with two inches of leaves and a few boards.

The following spring a large proportion of the plants appeared, sending up flowers of the most beautiful purple. In the fall I again gave slight protection and this spring they bloomed more freely, the bed keeping its beauty for quite three weeks.

My success I attribute to fresh, sound roots (they do not bear transportation and keeping very well), prompt planting, and a slight covering to protect them from "throwing" in the uncertain, changeable winters we usually have in this section. Massachusetts.

THOMAS L. SPRAGUE.

Send at Once for Our Book on Heating

It tells the experiences in heating their homes of many people in the coldest parts of the east. It explains why the

Winchester Heater

is the best for the large or small, new or old building; how it cuts down coal bills, and why your child can operate it.

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During our long experience as publishers of **Country Life in America**, **Garden-Farming Magazine**, and **The World's Work**, we have gathered together over 30,000 photographs showing an immense variety of Fruits, Flowers, and Vegetables, both in detail and environment. We are willing to loan or sell outright these prints. A line by mail to our **Illustration Department**, specifying the prints desired, will bring you samples of precisely the horticultural pictures you need.

Doubleday, Page & Company
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You need not lose your fruit crop this season. Spray your orchard early with a strong solution of

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It will positively destroy scale, apple scab, aphid, lice, bugs, worms, White Fly and all other insects and parasites which infest your trees, plants and shrubs. It contains no poisonous or injurious ingredients; no sulphur or mineral oils. It fertilizes the soil, and quickens growth. Endorsed by the

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The Freeman, and other Poems

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Pictures Against Talk

NO matter how complicated his cream separator, every "bucket bowl" manufacturer claims his machine is simplest and easiest to clean. Even the makers of disk machines—with 40 to 60 pieces inside the bowl—make the same claims. Yet none of these "bucket bowl" fellows dare put pictures of their separator bowl parts into their advertisements—they all realize that pictures would make their claims ridiculous.



One pan contains the single little piece used in Sharples Dairy Tubular bowls. The other contains nothing but disks from a single "bucket bowl." Which is simple and easy to clean?

The Sharples Dairy Tubular Cream Separator is, without exception, the **only** simple, sanitary, easy to clean separator made. We put pictures against "bucket bowl" talk. We frequently show you pictures of the light, simple Dairy Tubular Bowl and of heavy, complicated "bucket bowls." Compare them. They tell the whole story. It will take you less than thirty seconds to put "bucket bowl" claims where they belong.

The self styled "original maker of disk machines" is trying to maintain sales by patent infringement suits against equally cheap machines, that have been made for several years with disks like his. If you want to avoid work, expense and dissatisfaction, get a Sharples Dairy Tubular. Made in the world's biggest and best separator factory, Branch factories in Canada and Germany. Sales greater than most, if not all, "bucket bowl" separators combined. Write for catalog No. 215.



The Sharples Separator Co.

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a spray material for use on trees and plants in foliage. The unique method of packing makes it entirely different from other prepared Bordeaux. Send for testimonials and opinions showing how to increase the yield of your fruit and potatoes from 50% to 100% by its use.

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is a heavy oil, yet a free feeder. There is no acid in it—it won't gum and it won't rust. Winter or Summer, the best oil for heavy or much worn farm machinery is Ruddy Harvester Oil.

Comes in quart, gallon, 5-gallon cans, half barrels and barrels. Ask for it.

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(Incorporated)



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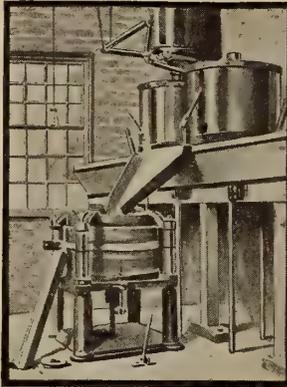
An old time painter making paint by hand.

Which, think you, will produce the better paint? When you buy modern paints you buy OXIDE OF ZINC paints.

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Do your paints contain Oxide of Zinc?

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National City Bank Building
55 Wall Street, New York

We do not grind Oxide of Zinc in oil. A list of manufacturers of Oxide of Zinc paints mailed on request.

Garden Notes and News

HALF a mile of roses! There is such a sight at the Payne Whitney estate, Manhasset, L. I. It is composed mostly of single wild roses, like the Carolina and prairie rose, and is, therefore, attractive in winter, as well as summer, by reason of the red stems and "hips."

What is duller than an alleged "grove" of trees with nothing but grass underneath? Answer: The same thing forty years later, when the trees all take on "stag-horn" shape and have no branches below. Both kinds can be seen side by side near Westbury, L. I., on an estate where the mania for neatness prevails and there is no conception of "landscape forestry."

People have begun to buy holly since THE GARDEN MAGAZINE has declared that it is the most desirable of all broad-leaved evergreens. Letters come to us asking if collectors and nurserymen have done well to strip off all the leaves at planting time. Yes. And it will pay you to wrap the stems with straw to retard evaporation until new feeding roots are formed.

Every collector of alpine plants should be eager to get a copy of Rydberg's "Flora of Colorado." There are no descriptions but every species is distinguished by means of keys and some day the flowers of the Rocky Mountains are going to be a fad in the East. The "Flora" is published as a bulletin of the Colorado Experiment Station and contains 446 pages of pretty stiff botany — too stiff for amateur gardeners without special skill.

Is there any hardy white flower to compare with The Pearl achillea for cutting? It produces an enormous number of "buttons" and will bloom from June through August. It is too sprawly for garden effect, but plant it in the vegetable garden in straight beds four feet wide and the plants will then hold one another up without the bother or expense of staking or pegging down. This idea is practised at the Breese estate, Southampton, L. I.

Everyone ought to "interlace" shrubbery instead of planting each kind in a solid block, which produces an absurd effect, like carpet bedding. To interlace groups, let a few individuals stray out from the "home colony" into neighboring groups. This is now a recognized principle of landscape gardening and if you have employed some one who has done otherwise, you may be sure that he is not a finished artist at planting.



Potting Soils for Amateurs

GOOD soil is an absolute necessity to success with plants, and there is only one way to get it — by mixing. A workable potting soil can be made from loam, sand, and manure, but it will be much better if it has an addition of leafmold, peat, or well weathered muck.

PASTURE LOAM FOR COMPOST

Where it is impracticable to make a compost heap, any good garden loam can be used, and it is not necessary to prepare it any length of time beforehand.

The best loam to use in a potting soil is well decayed sod taken from a pasture. The best time to secure it is in the fall after the grass has been killed by hard frosts; it can, however, be secured in the spring before the grass starts to grow.

MAY BE OPENED AT THE TOP FOR LIGHT

AND CLOSED AT THE BOTTOM FOR PRIVACY

The Burlington Venetian Blind

makes your porches perfectly secluded, gratefully shady and delightfully cool—home summer resorts to entertain friends in the open air, yet screened from public gaze, to take your ease, have luncheon or tea, do sewing—or play-places for the children.

Make Your Rooms Cool and Beautiful by the free ventilation and artistic half-light of Burlington Venetian Blinds. Very easy to attach. Made to Order Only, Venetian and Sliding, any size, wood and finish, at most advantageous prices. Window Screens and Screen Doors of improved design and superior material. Send for Free Catalog.

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Pure and Unequalled
CANDIES.

For Sale at our 55 Retail Stores and by Sales Agents throughout the Country.

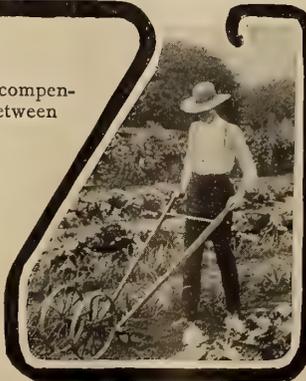
After the Garden's Started

Success is mostly a matter of cultivation. One kind of cultivation will compensate for drought. Another kind of cultivation will hold the weeds in check between showers.

IRON AGE Implements

permit many different combinations for different purposes and different crops. Built light enough for the woman who gardens for pleasure—strong enough for the man who gardens for profit. Our New Iron Age Book describes all. It's free. Write for it.

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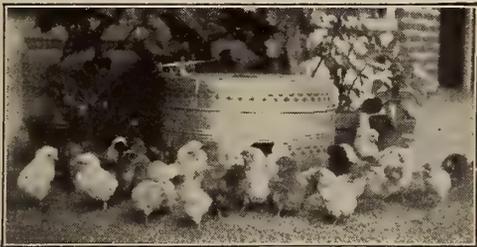


Poultry, Kennel and Live Stock Directory Information about the selection or care of dogs poultry and live stock will be gladly given.

Address INFORMATION DEPARTMENT, THE GARDEN MAGAZINE, 133 East 16th Street, New York.

A Living From Poultry on a City Lot

\$1,500 in Ten Months from Sixty Hens on a Corner of a City Lot



TO the average poultryman that would seem impossible and when we tell you we have actually done a \$1,500 poultry business with sixty hens on a corner in a city garden, 40 feet wide by 40 feet long, we are simply stating facts. IT WOULD NOT SEEM POSSIBLE TO GET SUCH RETURNS by any one of the systems of poultry keeping recommended and practised by the American people, still it is an easy matter when the new PHILO SYSTEM is adopted.

The Philo System is Unlike All Other Ways of Keeping Poultry

and in many respects just the reverse, accomplishing things in poultry work that have always been considered impossible, and getting unheard-of results that are hard to believe without seeing.

The New System Covers All Branches of the Work Necessary for Success

from selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make everything necessary to run the business and at less than half the cost required to handle the poultry business in any other manner.

Two-Pound Broilers in Eight Weeks

are raised in a space of less than a square foot to the broiler without any loss, and the broilers are of the very best quality, bringing here three cents per pound above the highest market price.

Our Six-Months-Old Pullets are Laying at the Rate of 24 Eggs Each Per Month

in a space of two square feet for each bird. No green cut bone of any description is fed, and the food used is inexpensive as compared with food others are using.

Our new book, the PHILO SYSTEM OF POULTRY KEEPING, gives full particulars regarding these wonderful discoveries, with simple, easy-to-understand directions that are right to the point, and 15 pages of illustrations showing all branches of the work from start to finish.

Don't Let the Chicks Die in the Shell

One of our secrets of success is to save all the chickens that are fully developed at hatching time, whether they can crack the shell or not. It is just as impossible to get a large egg yield without green food as it is to keep a cow without hay or fodder.

Chicken Feed at 15 Cents a Bushel

Our book tells how to make the best green food with but little trouble and have a good supply, any day in the year, winter or summer. It is just as impossible to get a large egg yield without green food as it is to keep a cow without hay or fodder.

Our New Brooder Saves 2 Cents on Each Chicken

No lamp required. No danger of chilling, over-heating or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all the lice off the chickens automatically or kill any that may be on them when placed in the brooder. Our book gives full plans and the right to make and use them. One can easily be made in an hour at a cost of 25 TO 50 CENTS.

Send \$1.00 and a copy of the latest revised edition of the Philo System will be sent by return mail. The latest edition has many pages of additional reading matter, and by ordering direct you are sure to get the latest and most approved book.

A TESTIMONIAL

VALLEY FALLS, N. Y., October 22, 1908.

DEAR SIR: A year's observation and some experience of my own, confirm me in what I wrote September 5, 1907. The system has been tried so long and by so many, that there can be no doubt as to its worth and adaptability. It is especially valuable to parties having but a small place for chickens. Seven feet square is plenty for a flock of seven. (REV.) W. W. COX.

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ABSORBINE

will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. Cures Lameness, Swellings, Boils, Bruises, Strains, Enlarged Glands or Veins, Painful Affections. A safe remedy to use anywhere. Will tell you more if you write. \$2.00 per bottle, delivered. Book 4-D free. Genuine mid. only by

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For Sale Registered Berkshires

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Standard Remedies and Disinfectants, Chick Manna, "Vigor" Foods, etc., are described in my free Illustrated Poultry Supply Book. It tells also about Portable Colony Houses, Roofing Materials—everything in short that tends to successful poultry raising.

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EGGS

If you want to get more eggs than your neighbors read "How to Make Money with Poultry," Ten Cents.

FARMER SMITH, 7 Union St., Cedar Grove, N. J.



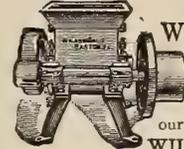
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and lively growing pigs are quick money-makers. Jersey Reds are the most satisfactory, all-round breed. Those who have tried them say so. Fatten easily and quickly, are small-boned, long-bodied, vigorous and prolific, quality of meat unsurpassed. Have some choice offerings now. Satisfaction guaranteed. Write quickly. Free Catalog. Arthur J. Collins, Box T, Moorestown, N. J.

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We greatly desire a high quality of names rather than a large quantity.

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G. M., 7-09

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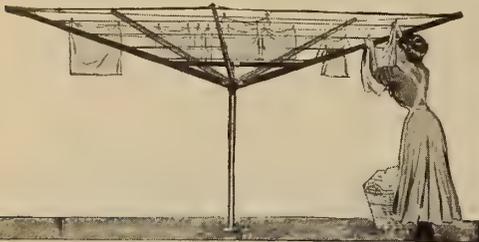
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We want to send you Free our handsome Folder printed in colors showing the Hill Dryers in use. Gives full information. Sent free for postal request. *Get it today.* HILL DRYER CO., 359 Park Avenue, Worcester, Mass.

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Panama Hats more popular than ever. All the rage this summer. By importing large quantities we can sell direct to user for this surprisingly low price. These hats are warranted genuine all hand woven, unblocked, and can be worn in that condition by Ladies, Gentlemen and Children. Easily blocked in any shape or style. Just as serviceable as the \$10.00 kind; the difference only in fineness of weave. Assorted sizes. Weight only 2 ozs. Sent postpaid on receipt of \$1.00. A rare bargain. Order to-day. Satisfaction Guaranteed. **Supply Limited.**

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Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. Helps nature hustle. For garden, lawn, trees, shrubs, fruits and house plants. **\$4.00 LARGE BARREL, Cash with Order.** Delivered to your Freight Station. *Apply now.*

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DETROIT ENGINE WORKS
229 Bellevue Place, Detroit, Michigan



Cut the sod three or four inches thick, and place it in a pile the grass side down. For convenience make the pile about four feet wide and high, and as long as necessary, and have the top hollowed out a little so that it will catch the rains and so keep the pile moist. Many people when making up the sod pile compost manure with it. If you prefer to do it this way add one part fresh cow manure to each three parts of sod, if done in the fall.

ADDING MANURE

When the compost is made in the spring the manure must be well rotted, and horse manure is preferable to cow manure. The compost pile must be thoroughly mixed two or three times by chopping it down with a spade and throwing up into a new pile.

A spring made compost heap will be ready to use in the fall, but the soil is apt to be rather coarse. The fall-made compost is sure to give much better satisfaction.

In my practice I have always found well-decayed horse manure better than cow manure; the latter can be used, however, but it tends to make the soil cold and clammy. Well decayed horse manure may usually be purchased in the suburbs and smaller towns from the livery and other stables. If you cannot purchase rotted horse manure, and if you have a convenient place in any out-of-the-way corner in the backyard where fresh droppings can be stored, well and good. They will require several months to rot properly. Protect from the rain and turn over frequently to prevent burning. If the manure gets too dry sprinkle it with water when turning.

Sheep, hen, pigeon, and other manures may be used in mixing potting soils, but very sparingly, for they are so strong that if a large amount is used the roots of the plants will be burned.

LEAFMOLD, PEAT, AND MUCK

Adding to the potting soil either leafmold, peat or muck makes it much more friable, increases its water-holding capacity, eases the circulation of air through it, and induces a better growth of roots. In no case is there actual fertilizing value. In raising from seed such plants as cyclamens, cinerarias, Chinese primroses, and begonias, leafmold is a necessity. Where manure is not attainable one of these three forms of vegetable mold must be used to supply the necessary humus, the plant food can thus be added in the form of a complete fertilizer which can be bought from any seedsman.

Peat is very scarce in this country and so is quite expensive, but it can be bought from nearly all the dealers in seeds or bulbs.

Leafmold and muck are much easier to obtain and usually cost nothing outside of the labor necessary to collect them. When the foliage is falling, late in September or in October, is the best time to lay in a stock of next year's leafmold. If there is no hardwood timber land nearby, where you can get clean leaves, then rake up the leaves which have fallen in the street. Maple leaves are best, but those of the elm and the oak will do. Sometimes an arrangement can be made with the city employees to dump in the backyard all the leaves they gather in cleaning the streets. In this way and at no cost an abundant supply of leafmold can be had in suburban districts.

HANDLING LEAVES

In the winter, the leaves can be used for banking coldframes and pits, to keep out the frost or for mulching the bulb beds. In the spring, when the pits are empty, throw all the leaves into a pit, wet them thoroughly, and allow them to rot. By fall they are in good condition to use. If this way of rotting them is followed, you will probably need to wet them several times during the summer. Another good way to handle the leaves is to dig as large a hole in the ground as you can fill with leaves. Pack in the leaves as tightly as possible, wetting them as they are being thrown in. A good time to do this is on a rainy day for then it saves the necessity of hauling water. If you have a hose you can do the work at any time.

If neither of these ways can be followed, the leaves can be put in a heap on the ground, thoroughly moistened, and tramped down. When treated thus, it will be necessary to water them



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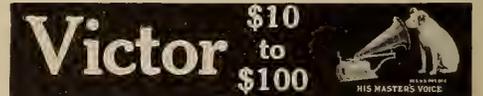
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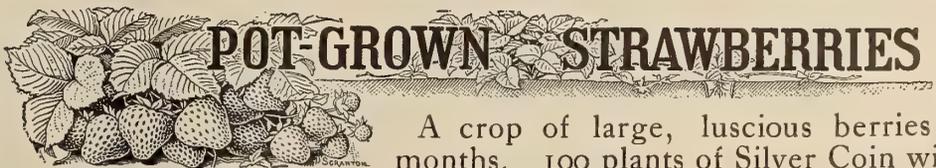
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oftener, because the pile presents more surface from which the moisture can evaporate. Turn the heap of leaves occasionally, and in two years the leafmold will be in usable condition.

Never bury leaves in your garden where you intend to grow plants next year. The heat caused by the fermentation will injure the roots of the growing plants.

Muck from either a fresh water or salt water marsh is equally good as leafmold, but it must be dug at least one winter before using. After digging place it on the upland, away from tides and floods, in triangular-shaped piles about three feet wide, three feet high and as long as necessary. By putting it in such small piles the frost and air have a much better chance to work through it than if it is in larger piles. Under ordinary circumstances exposure to the weather for one winter will sweeten it. But if not add a little lime; this will quickly neutralize any acidity.

VALUE OF DRAINAGE

One of the most important things in a soil to provide for is drainage. This is best secured by adding sand. Use a clean, sharp sand such as a mason would use for making mortar. If you cannot secure this from a nearby sand bank, you can buy bird sand, if only small quantities are needed, from the grocer. It comes put up in small packages. If sand from the seashore is used, get from the shore side of the sandhills and wash it thoroughly before using in order to remove any salt. Although I have never done it myself, I have seen coal ashes successfully used as a substitute for sand. They were, of course, screened to remove the coarse matter. On heavy soils coal ashes sometimes are a positive detriment, however, by making the clay into a sort of cement.

Where better drainage is wanted than can be given by simply adding sand, add charcoal. If the plants are to stay for a year or so in single pots without repotting (as is the case with palms) the charcoal is a distinct advantage, not only because of the better drainage it affords, but also because it prevents the soil from souring. Charcoal is cheap, and a little of it goes a long way.

It is very important to have on hand at all times the ingredients necessary to make up a good potting-soil, so in an outbuilding away from the weather or in the cellar, have bins in which a six months', if not a year's supply, of the articles just mentioned can be stored. You will find this a very decided advantage, especially in the winter, when the ground is frozen. Even the manure can be stored in the cellar, if it is well decayed, without the least inconvenience.

No hard and fast rule can be laid down for amounts of the different ingredients of a potting soil. They will vary with the character of the soil in your locality. I have found that a soil composed of equal parts of sand, rotted sod, leafmold, and manure will give excellent results with plants ordinarily grown in the house. If the rotted sod has been composted then it will be necessary to add only sand and leafmold.

Mix the soil thoroughly before planting. The best way to do this is to get the component parts together in layers and then throwing the mass over to make a new pile. Always shovel from the bottom of the pile and always throw the added matter on the apex of the new pile so that the soil can roll down the sides. If this is done and the pile turned three or four times the soil will be thoroughly mixed.

Before mixing the soil determine whether it is sufficiently moist. This may be told by taking a handful of the soil and pressing it firmly in the hand. If water can be squeezed out the soil is too damp and ought not to be worked over until enough dry soil has been added to take up the surplus moisture.

If after having been pressed in the hand the soil remains together but will break upon being lightly touched, it contains the proper amount of moisture. If it will not remain in a lump but breaks up immediately the pressure is released, it needs more water. Add it by means of a watering pot, the amount necessary can be judged better from experience than by any rules which can be given.

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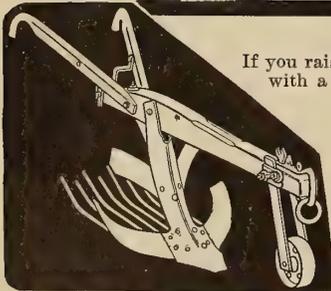
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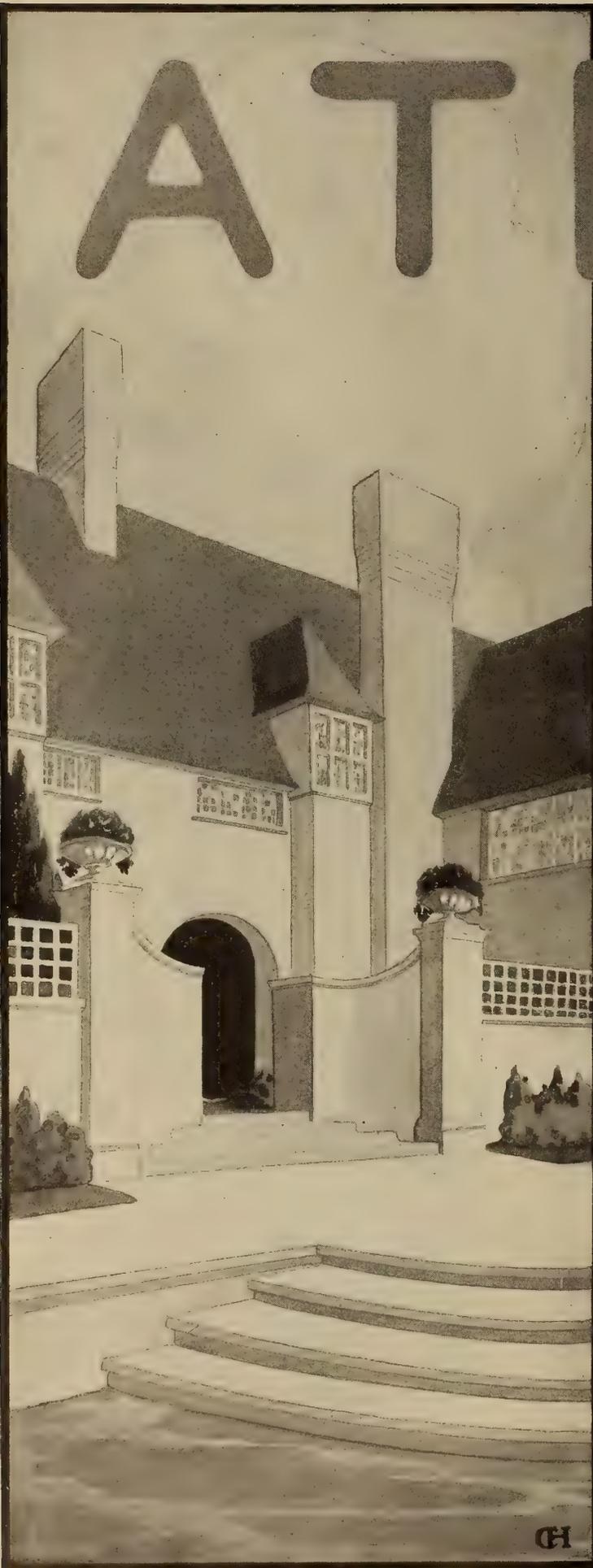
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