

THE GARDEN MAGAZINE



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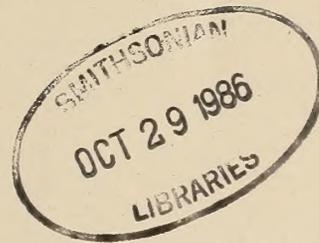
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THE GARDEN MAGAZINE

*Devoted to Planting and Managing the Grounds About the Home
and to the Cultivation of Fruits, Vegetables and Flowers*

Volume XI.

February, 1910 to July, 1910



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Fancy Apples for Everybody

Bog Gardens

What it Means to Plant Trees

Edging Plants

Hedge Plants for the Northwest

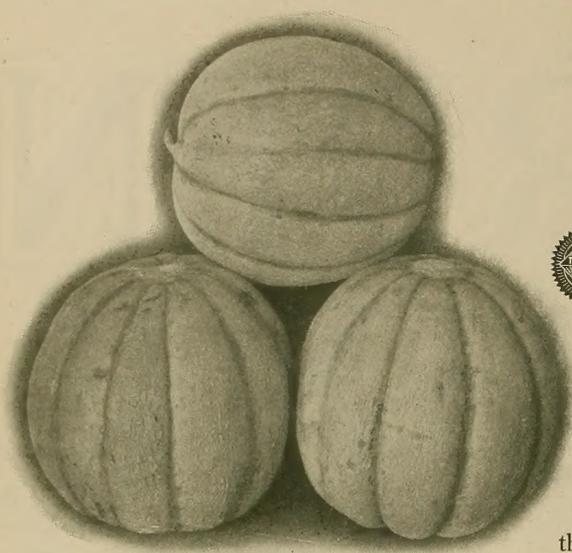
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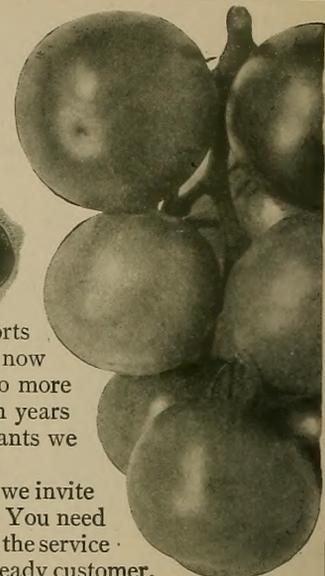
THE GARDEN MAGAZINE



FARMING



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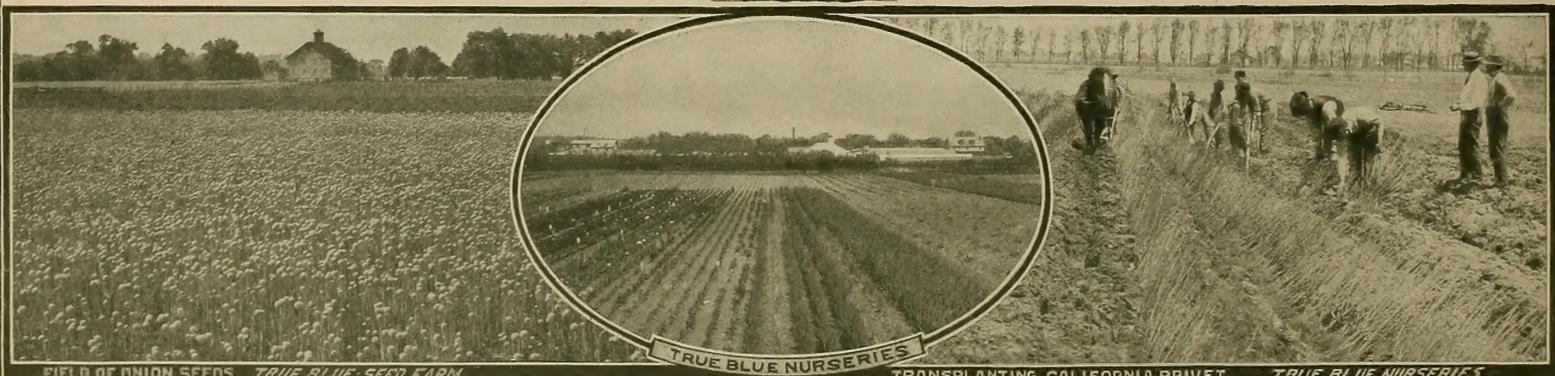
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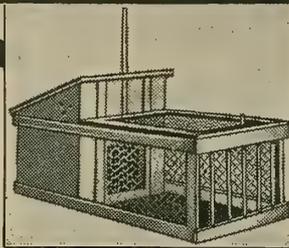
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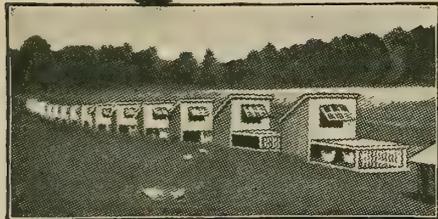


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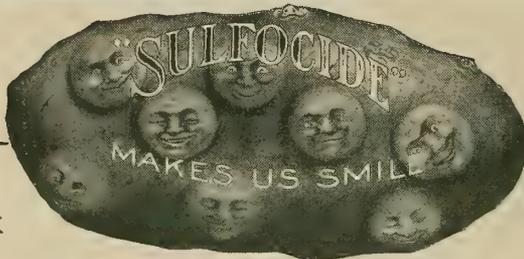
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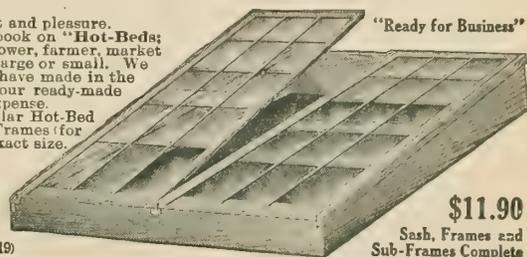
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NEW YORK CITY

Beauty of the Camphor Tree

THE camphor tree is now largely planted in the South both for beauty and profit. As to its beauty, the accompanying picture, gives some idea. It has broad evergreen leaves noted for their gloss and their refreshing odor. It is a quick grower, attains a height of about forty feet in southern Florida and California and makes a compact, symmetrical tree that looks well on a lawn. It is hardy as far north as Augusta and thrives in the South Atlantic and Gulf states. It does fairly well on a poor sandy soil. A four-year-old, pot-grown, camphor tree from Georgia costs less than a dollar. The camphor tree has been planted on a considerable scale in the United States for profit. The production of camphor, is an interesting process. The whole tree is used to produce the gum. It is



The camphor tree is native to Japan and China, but has been extensively planted in this country for the production of camphor

broken up and treated with water in closed vessels, the volatilized camphor being sublimated on rice straw.

Botanically, also, the camphor is interesting. It has small yellow flowers in axillary clusters, a study of which shows that it belongs to the family Lauraceæ, of which the poet's laurel is the type. It is related to the cinnamon and is often catalogued as *Cinnamomum Camphora*, but should be called *Camphora officinalis*. It is native to Japan and China.

Maryland.

WILLIAM ALLEN.

A Garden Patch Sowed on Washington's Birthday

AS a test of the hardiness of the seeds we sowed a small patch of vegetables on February 22d, 1909. The season was unusually favorable for the experiment, the frost was out of the ground for the time being, the soil was almost dry and the day mild. With any other conditions our Washington's Birthday garden would have been an impossibility.

The seeds used were radishes, lettuce, parsley, endive, turnips, beets, carrots and tomatoes. The hardiness of all but the last named had been proved, but the tomatoes were added to the list because they so often self-sow in the garden. All the seeds germinated and grew throughout the season.

The space and care given them were not sufficient to raise any record-breaking specimens, but the fact that they germinated and grew under such unfavorable conditions might be a useful hint for fall planting. Any seeds that weather the trying season between February and April surely deserve special mention.

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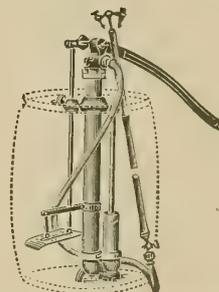
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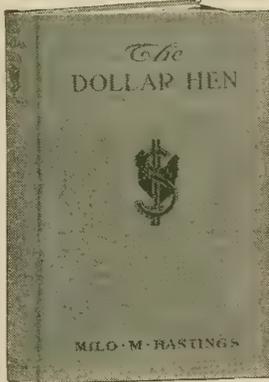
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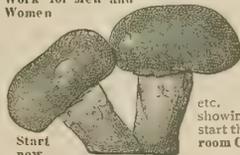
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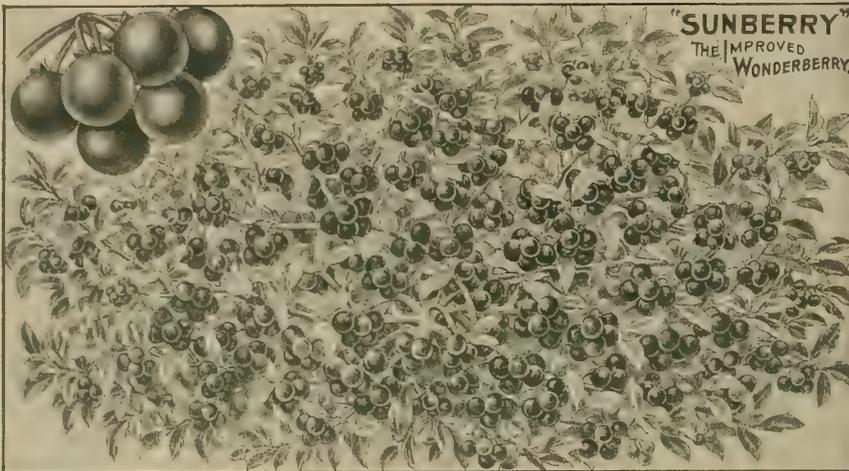
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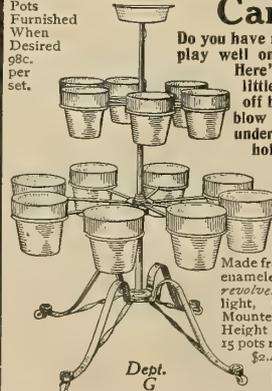
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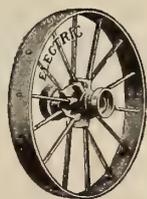
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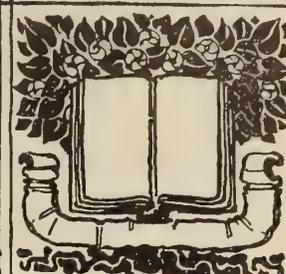
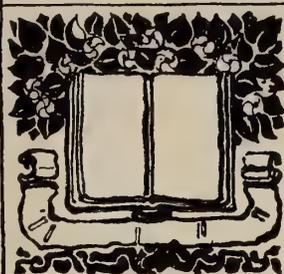
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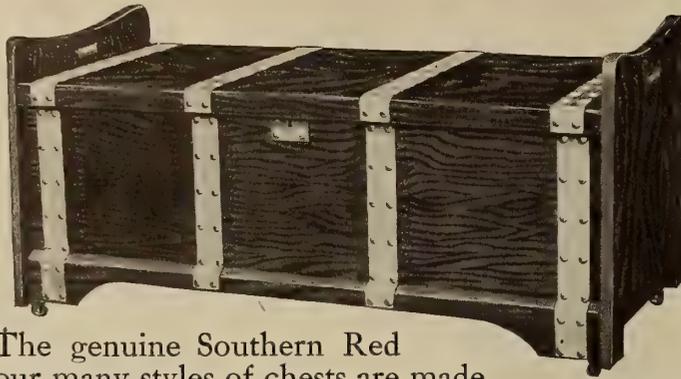


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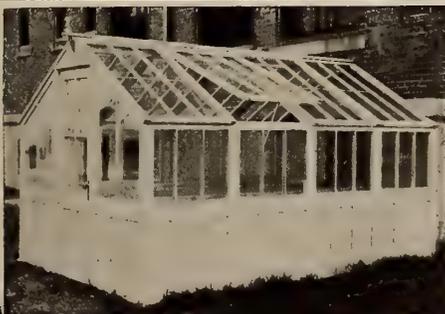
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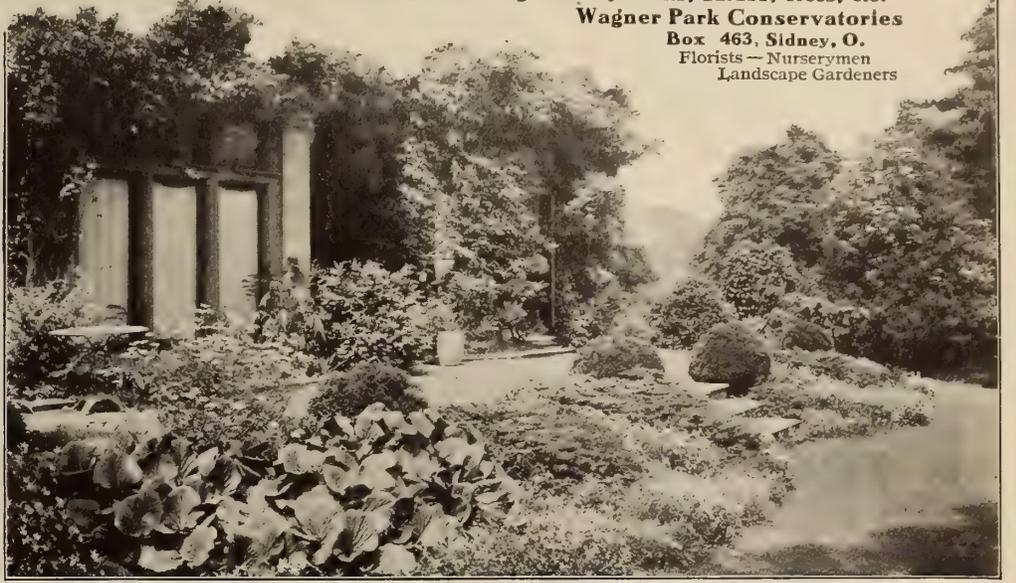
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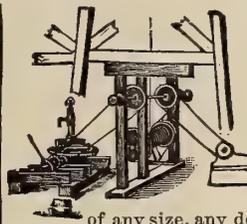
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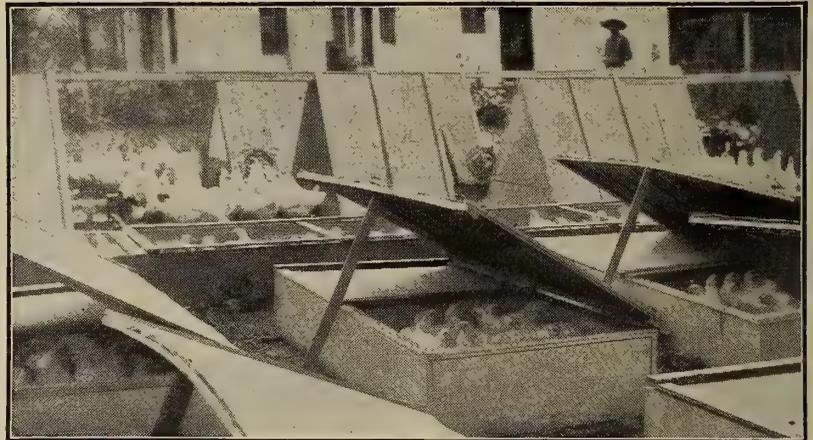
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TESTIMONIALS

year's experience, we could easily have made \$1000.00 from the six hens. In addition to the profits from the sale of pedigree chicks, we have cleared over \$960.00, running our Hatchery plant consisting of 56 Cycle Hatchers. We are pleased with the results, and expect to do better the coming year.

With best wishes, we are, Very truly yours, (Mrs.) C. F. Goodrich.

Mr. E. R. Philo, Elmira, N. Y. South Britain, Conn., Apr. 14, 1909.
Dear Sir:—I have followed your system as close as I could; the result is a complete success. If there can be any improvement on nature, your brooder is it. The first experience I had with your system was last December. I hatched 17 chicks under two hens, put them as soon as hatched in one of your brooders out-of-doors and at the age of three months I sold them at 35c a pound. They then averaged 2½ lbs. each, and the man I sold them to said they were the finest he ever saw, and he wants all I can spare this season.

Yours truly, A. E. Nelson.

Valley Falls, N. Y., Sept. 10, 1909.

My Dear Mr. Philo:—I want to tell you how pleased I am with my use of the Philo System during the past year. The fowls laid exceptionally well in the new Economy Coop, much better in proportion than those in my old style house. The fireless brooder has solved the problem for me of raising extra early chicks. I am going into your methods more extensively this coming year.

Wishing you success, I am, Sincerely yours, (Rev.) E. B. Templar.



FEBRUARY, 1910

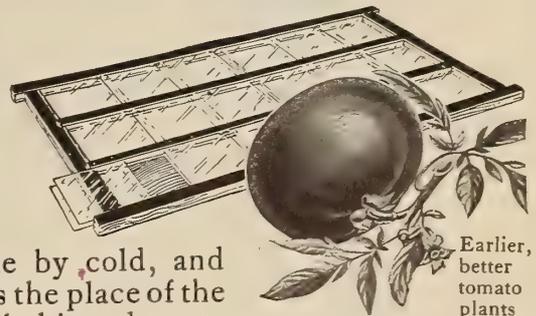
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The flesh is so firm and the tomatoes so heavy that they might be described "solid as a rock!" It is the most nearly seedless of all tomatoes. Of handsome dwarf, erect growth, the bushes produce enormous crops of the most beautiful tomatoes which are truly gigantic in size and absolutely unequaled in delicious flavor. Per pkt. 15 cts.; ¼ oz. 40 cts.; oz. \$1.50.

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"The Seal of Quality."

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The Garden Magazine

VOL. XI—No. 1
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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.]

Now for the Catalogues

THE new season's catalogues are now ready for distribution. See that you get them early so as to have plenty of time to study them and make up your seed list after careful consideration. Remember that the seed stores are almost "rushed to death" when the planting season really opens, because so many people never seem to realize that they will need seeds of any sort until the moment for planting is upon them. You can get better service by making up your list as early as possible; you will also have it off your mind and can give more attention to planning.

Rely on the old standard and tried varieties for your main crops. Try novelties by all means — as many as possible — but do not depend upon them to the exclusion of proven kinds. A really important vegetable novelty is a rare thing, and then local adaptations govern the case, too.

In plants and flowers novelties can be indulged in much more freely. In planning the garden try to reserve a small plot in an out-of-the-way place as a sort of testing ground, and there try out everything in which you may feel interested. Half the joys of gardening rest in reaching out into the unknown.

Orchard and Grounds

FINISH up all pruning in the orchard and shrubberies. Remember to distinguish in the flowering shrubs between those that flower on the old wood and those that flower on the new wood. At this time cut back only those that flower on the new growth. The only thing that can be done to the other class now is to thin out entire branches where growth is too dense, but do not prune by cutting back because that

will mean a sacrifice of the flower buds. Look to newly planted trees and shrubs. Keep down weeds that are around them.

Make hotbeds and prepare for the early starting of seeds in heat for transplanting later. As the weather opens up, look around the grounds and see that culverts, drains and everything of a permanent nature is in serviceable condition. Prevent washouts by being on hand whenever there is a thaw, and see that there are no little torrents cutting channels where they should not be.

Spraying before the buds burst can be done on all days when it is not actually freezing, and it is better to make sure now that spraying has been properly done than to realize the fruits of neglect after the season opens.

Flower Seeds to Be Sown

YOU can gain a great deal of time by starting nearly all the commoner flowering plants in heat now. Make a hot-bed, if possible (see page 30). If this is not convenient, by all means adopt some makeshift arrangement such as a seed-box in the window or in the cellar, as suggested on page 34. Take advantage of the heat wherever it can be caught, and start hardy annuals, such as calliopsis, *Phlox Drummondii*, etc., for earliest flowers out-of-doors. The half hardy sorts, such as China aster, gaillardia, salpiglossis, must be sown indoors if they are to give good results at all during the first half of the summer.

Cannas, castor oil plant, dahlias, pansies — all these are best started during February.

If you want stock of tender bedding plants begin propagation and pot up rooted cuttings as fast as you can.

Starting Early Vegetables

DURING February you can make a big start in the vegetable garden by starting globe artichokes for planting out later; also broccoli, all kinds of cabbage, including cauliflower, etc., cardoon, celeriac and celery, leek, onions, pepper. Make a sowing of lettuce; just a pinch of seed will give plants for the first outdoor crop.

Bush beans can be sown if you have room indoors for them to mature their crop. Also carrots, cucumbers, egg plants, kohlrabi, parsley for garnishing and melons, if you have a greenhouse. Sow tomatoes now for indoor crop, too.

There is still time to make a mushroom bed and get profitable returns before the warm weather comes. Space under the greenhouse bench can be utilized to advantage for this purpose.

For early salads, sow cress, mustard, radish. Just a pinch of seed every week for succession. The quality of all these depends upon getting them as young and succulent as possible. Make frequent sowings and discard any left-overs as soon as the new crop is ready.

If you want an unusual but easily grown delicacy try forcing potatoes. It is quite easy. About the end of January or the beginning of February, set the tubers on end in flats of sand until the eyes start. Then put them up in pots to finish the crop. Better select a small-tubered variety and one of the early-maturing kinds. Some of the English potatoes are very good for this purpose. The old-fashioned Ash-leaf Kidney has long been a favorite forcing potato.

Melons sown in heat now will give ripe fruit in May. It is better to sow seeds in pots so that the roots will never be disturbed when putting into the fruiting quarters. Put two or three seeds to a 2-inch pot and thin out to the strongest plant as soon as they are well sprouted.

Personality in Gardens

LET us try this year to make our gardens characteristic and personal. One garden is too much like another because we are afraid to be original. Let us work out plans to try out some one group of plants or make some one feature dominant. If you wish any assistance in deciding what you might do in this way, write to us and we will try to help you. We cannot make plans for individual gardens, but we will gladly help you to work out your own ideas and try to point out where errors may be avoided. If you submit plans you should also send photographs showing the lay of the land and surroundings.

There are lots of opportunities for the amateur garden to help along American horticulture. Do you know, for instance, what is the very best raspberry in your neighborhood for preserving; what is the best peach for canning; which plum gives the largest returns; what potato is the most prolific and the earliest?

Plan out experiments during this season to inform yourself and tell us what your results are. Plan to keep exact records and take photographs of interesting experiences. We will gladly pay for up-to-date information that will really help others.

Work out some color combinations in your flower-beds — how to keep a blue and white effect all the year around, for instance. If you have done it before, tell us about it, anyway.

There Was Once a Man Who Dreamed, — I — By Ida M. H. Starr, ^{Maryland}

OVER there, on a corner shelf, if you are disposed to investigate, you will find our collection of garden books. Dear books, some new, some old, on all sorts of subjects, from the growing of vegetables to the laying out of a "Parterre de Broderie."

It is a joy to-day to sink into the wings of a Martha Washington chair in front of the crackling fire, reach for a garden book, and read and dream.

So this splendid blustering day, I have been browsing among books as fancy chose. Much as I am disposed to enjoy the winter leisure, I am yet constrained by habit to run through the garden almanac that there may be no possibility of my having forgotten any of its arbitrary admonitions.

It reads as follows: "Resolve to have a better garden next year."

I did resolve that long ago when the fox-glove had finished blooming, and there was nothing left to take its place; when the poppies sent regrets and the mignonette was otherwise engaged; when the Canterbury bells would not ring and the Japanese lilies complained of the heat. The almanac maker was truly no psychologist. Had he been as skilful in reading the Past as he was in forecasting the Future, he would have omitted that first suggestion. Is a garden lover ever quite satisfied?

It is novel to find that instead of regretting an undue amount of work, I am disposed to be at odds with the almanac and our garden books, for having omitted one duty which seems more important than all the others combined.

Where in all our rich collection is the garden lover told to sit by the fire, when the north wind blows, to toast his toes and dream his dreams?

So I sit here and read that this be done, and that be done. How would anything ever be done in this great wonderful world, if there were not here, there and over yonder, dreamers by the fire, their open books lying half read before them. To dream, one should be comfortable — quite comfortable. People do not dream if they are cold and hungry. A man does not dream before breakfast, or when he is wet and shivering. But he does dream, and he always has dreamed, and always will dream after dinner, as he absorbs the gentle warmth of a crackling fire, when the January blast drives him indoors, and he thinks there is nothing finer on earth than his own hearth. Then the future steals winsomely into the chair beside him.

In our mild climate, December and early January are still tree months. Then the Master of the House takes his crew down into the woods, picks out specimen trees, and brings them on low-wheeled trucks to their new homes.

Day after day in different months of the year, as the hour seemed propitious, we have been planting trees until their number has reached into the thousands and their species over a hundred.

So, on the days when we were ready, we have planted windbreaks, orchards, outlined lanes, and dotted the shore with a view to landscape effects with sapling trees. There is an avenue from the house to the woodland creek a quarter of a mile long, planted with alternate red and white oaks, flanked on the outside by more thickly set rows of alternate junipers and hemlocks. These oaks were the especial winter task three years ago.

In twenty-five years the shadows will be long and cool, up and down that avenue. In fifty years, the trees will meet. In one hundred years a cathedral aisle, all green and lofty, will lead men's hearts to ways of peace. In two hundred years, oh! how glorious it will be in two hundred years!

I can see you smile, Mr. World Man. What did you say? "I may not be here in fifty years? You will not be here?" What of that? Some one else will be here; maybe my children, maybe yours, maybe not. Someone's children will surely be here in fifty, one hundred, two hundred years. Is it not enough that when they come they will find the shade, the beauty and the green aisle?

Our giant and ancient trees are the European beech, English linden, English walnut, English yew, paulownia, tulip poplar, sycamore, catalpa, ailanthus, elm, holly, locust, weeping willow, juniper, sweet gum, ash, and pear; these are the chief trees about the old house. I include pear advisedly, some of our pear trees being nearly three feet through, for here the pear is a vigorous plant and attains great age.

Now there is nothing particularly interesting in a list of trees, but there is something vitally interesting in the fact that once upon a time, one hundred, two hundred years ago, there was a man who toasted his toes by a crackling fire, perhaps burning in this very same fireplace, dreamed dreams of old world gardens, and then went forth to plant trees.

What is it we hear on all sides of us as you, Mr. World Man, and your friends, come down to us seeking homes in old Virginia or perhaps on the legendary "Eastern Shore" of Maryland? It is nothing but trees, the grove of grand old trees about the mansion for which you cry, for which you pay out that precious gold you have been picking up as you went along. That is all, just trees; and you feel, and every one about you feels, that if you own a bit of God's earth that has upon it some glorious trees and a view, you are then truly rich — no matter what the dwelling may be; and you are not truly rich until you do own some glorious trees framing a vista you love.

To be sure, all of this country has its woodland which is a part of every plantation — sometimes containing magnificent specimens of the native trees, but what satisfaction can they give the householder, when they are a half-mile from where he lives?

The woodland has its great value of course, in furnishing firewood, fencing material, and odd sticks of timber for use about the farm —

and it also has an æsthetic value since most of the woodlands have been kept for generations along the highways, so that our country roads are sweetly sheltered, the mansions having been placed by the early settlers in slightly locations far from the main highway, and usually near some beautiful stretch of water.

But what is the home without its guardian trees?

What are these Colonial mansions down in Maryland and Virginia? What are they before you make them comfortable by repairs and readaptation to modern ideals of convenience?

With all veneration I say it, for the true Colonial mansion is a fetish with us, these old houses are nothing as compared with the legacy of trees bequeathed to this country by nature and by those first builders of homes and framers of liberty.

We have an ancient yew, which, though estimated to be more than two hundred years old, is now only in its youth. To-day it is to us priceless. So with all our other great trees, aside from the pleasure their beauty gives us, they are all a part of an actual increasing value of the close about our home.

Now, these trees did not happen here. Trees do, fortunately for the human race, happen to grow in many fitting places because they must. But they do not happen in stately avenues — nor symmetrical circles. Avenues and circles of giant trees indicate that they were planted there by some man who dreamed, not for himself, but for the lovers of gardens, who should walk upon the earth long after.

He was not the man who strived for quick effects, who planted for this year or for the next, who planted only that he alone might live to see the joy of his labor. His planting was of those shrubs and trees which grew the slowest and the surest, whose climax of glory he would never witness, under whose shade he would never rest. He might not live to see his box in great billowy waves shutting in a dear garden from the world, but he planted his box hedges just the same. He brought his tiny yew tree from England in a pot, and he cared for it through months, when his soul was faint with forebodings on the great sea, and he knew he could not live to see his treasure reach an age of dignity; but he planted the yew tree in good faith, and its sombre plumes drooped over his grave.

And so with all of his great slow-growing trees — he planted them all; for he dreamed dreams, splendid dreams, whose end he could not see, dreams whose influence made him the truly great individuality that he was.

A beech! An oak! A tulip tree! Does that sound small — not worth while to be the guardian of your future, your immortality? Three small trees which you have planted. Let us say one tree, one oak. You plant the oak. You die. What of that? The

tree lives, and it grows more glorious year by year, and then, in three hundred years — wonderful — you come to earth again, perchance, and you go to see your tree, no longer a tree — it is *the* tree — it has become an individual, a landmark — it has entwined its mighty roots into the great constructive plan of Creation. And that which was you has worked the great miracle.

Is it possible that we, of this age, should fall so far short of the ideals of our progenitors, that we continue on and on in our childish craving for quick effects? Is it possible that when we leave this garden of life, we are to leave it bare and empty, strewn with the rubbish of short-lived, faint-hearted things?

Quick effects are not to be despised nor discouraged, for they do fill a need in supplying the garden lover an immediate gratification of his æsthetic taste — but, with the ephemeral planting for the joy of this year, can we not at the same time carry on that larger work for the growth of beauty upon this earth in after years?

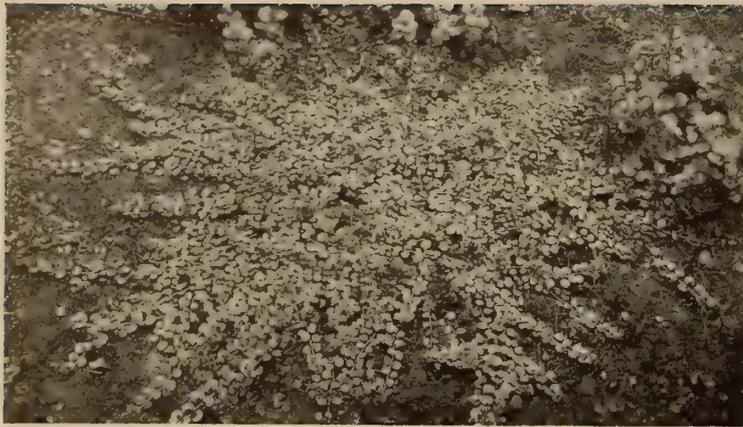
Come into our garden next May day. Walk down the long path. You come to the cypress. There you stop and turn, and your whole soul is filled with an ecstasy of wonder as your eyes catch the uptowering violet plumes of the paulownia, waving its luminous branches in clouds of azure to the morning. But this is not all, oh, no, there

is more — for there was once a man who dreamed. You turn down to the ancient yew and touch its silken tassels, and then step out from beneath the deep and solemn shade, to stand, transfixed, for before you, God's earth has reached up to the sky in flowering arms, in the embrace of a giant tree, quivering from earth to heaven with thousands of yellow tulips, of a fragrance at once so subtle and withal so far-reaching as to lead you to feel it must have scattered over the whole earth, leaving in the May morning's breath just enough for your delight.

Is it nothing that there was once a man who dreamed?



"You plant an oak. You die. What of that? The tree lives and . . . in three hundred years . . . it has become an individual, a landmark"



The bog pimpernel (*Anagallis tenella*) a British creeper that is covered with hundreds of tiny pink flowers



Mountain fleece (*Polygonum amplexicaule*) a Himalayan plant with spikes about six inches long of rosy flowers in midsummer

English Effects with Hardy "Bog Plants"—By Wilhelm Miller, New York

THE UNIQUE CHARM OF ORCHIDS, PITCHER PLANTS, LILIES THAT GROW TEN FEET HIGH, AND OTHER SUPERB FLOWERS WHICH WILL THRIVE ONLY IN SOIL THAT IS ALWAYS MOIST

[EDITOR'S NOTE.—This is the thirteenth and last of the articles in which Dr. Miller has shown what are the most important English effects that can be reproduced in America with permanent material, and which ones are sure to be a failure. The series began with Conifers in January, 1909.]

I HOPE I have no reader who imagines for one instant that "bog gardens" have anything to do with mosquitoes, malaria, green scum, bad smells, wet feet, or anything unhealthy or unpleasant. If so, let him read "What England Can Teach Us About Peat Gardens," in *Country Life in America*, for January, 1910, and his prejudices will melt away as "breath off'n a razor." Fifteen minutes in Sir Henry Yorke's bog garden would turn the most hardened skeptic into an enthusiast for life. The man whose soul does not thrill at the sight of a colony of lady slippers must be in a bad way. And these hardy orchids are typical of the wonders of the bog garden, many of which are amongst the shyest and most exquisite flowers in the world. The bog garden is a notable institution in England, and it should be even more popular in America, for, heaven knows, we have pest holes enough that should be drained and filled.

The ideal thing to do with a bit of low, wet land is to dig out enough of it to make a little lake and, if the land be springy, a brook leading to the lake. For then you can solve the whole problem of mosquitoes and malaria by simply putting goldfish into the lake. The running brook will do away with scum and sour soil. The splendid water supply will make every plant grow with luxurious abandon. The lake will attract birds to splash in the water and butterflies to hover over the flowers. Every flower that fringes the lake will have its loveliness doubled by its reflection in the mirror below. And, finally, the running brook will make your garden musical the year round, its every note brimming with suggestions of happiness and health. Truly, a delightful picture!

Another advantage in having a bog garden is that you *can't help succeeding* with it.

The water insures that. The wonderful luxuriance it will produce is a never-ending delight. No matter how rare, costly or interesting any plant may be, one cannot enjoy it to the full if it looks starved, dwarfed, unhappy. And waterside plants are so obviously prosperous and contented that it makes one happy just to look at them.

THE EFFECT OF TROPICAL LUXURIANCE

For example, you have probably seen and admired a border plant known as the giant knotweed (*Polygonum Sieboldii* or *cuspidatum*). In the hardy border it may grow three feet high, but at the waterside it grows six feet high and makes a huge, round bush that is a perfect cloud of white bloom in July. And this water-magic is even more remarkable in the case of another knotweed, known as sacaline (*Polygonum Sachalinense*), since the latter is altogether too rough and coarse for a formal garden. In the bog garden this objection vanishes and the plant takes on new interest. It is like the piece of stage scenery which seems outrageously crude when one stands right by it, but sufficiently refined when one is at the proper distance. In other words, the first æsthetic demand that a bog garden makes is for a certain number of plants on a heroic scale to illustrate the magical effect of water on vegetation. Of these heroic plants there are about three types.

First, the very tall plants. All the following attain six feet, and some twelve:

Chrysanthemum uliginosum. — **Eupatorium purpureum*. — *Ferula Tingitana*. — **Helenium autumnale*. — **Helianthus orgyalis*. — *Heracleum giganteum*. — *Heracleum villosum*. — **Hibiscus Moscheutos*. — **Hibiscus Crimson Eye*. — *Hibiscus Mallow Marvels*. — **Phragmites communis*. — *Polygonum Sieboldii*. — *Polygonum Sachalinense*.

*All the plants marked * in this article are American wild flowers.

This will show, in a general way, how much the English are indebted to America for their best bog garden effects. And it should encourage us, for there can be no question about the hardiness of the plants. Moreover, nearly all of them are very easy to grow, and practically all can be had from American nurserymen.

Second come the plants with wonderfully big leaves. Among these the greatest favorite in England is the Gunnera, which has the largest leaves of any plant in cultivation—often six feet across, sometimes ten.

Unfortunately, it is not hardy enough for our Northern states. The nearest substitute for it is *Rheum Collinianum*. Other water-loving plants with big leaves are:

Caltha polypetal. — **Saxifraga peltata*. — *Senecio Clivorum*. — *Senecio Wilsonianus*.

Third are those plants which are a never-ending marvel because of the uncountable multitude of their stems and flowers. For example:

Lysimachia clethroides. — *Lysimachia Ephemera*. — **Lysimachia punctata*. — **Lythrum Salicaria*.

GORGEOUS FLOWERING EFFECTS

While luxuriant foliage seems to me the first thing to provide for, the "man from Missouri" will want to know what are the showiest flowers he can have in a bog garden. Here is a short list.

Are these flowers large enough?

Siberian iris, 4 inches.—Tall yellow iris, 5 inches.—Japanese iris, 9 to 12 inches.—**Lilium Canadense*, 4 inches.—**Lilium superbum*, 4 to 5 inches.—*Hibiscus Crimson Eye*, 5 to 6 inches.—**Hibiscus Moscheutos*, 5 to 6 inches.—*Hibiscus Mallow Marvels*, 6 to 10 inches.

And if our Missouri friend still doubts whether a bog garden is any good let him

consider the following plants which have smaller individual flowers but are notoriously splendid in mass:

* *Asclepias incarnata*. — * *Caltha palustris*. — * *Chelone Lyoni*. — * *Lobelia cardinalis*. — * *Monarda didyma*. — * *Myosotis palustris*.

But, lest this seem too theoretical let me give the main features of the best bog garden I saw in England. Here are the largest colonies which Sir Henry Yorke has established, and I have arranged the plants in the order of their bloom. His main pictures are made with:

Azaleas, May.—Rhododendrons, June.—Japan iris, June.—Golden-banded iris, June.—*Canadian lily, July.—Japanese primrose, July.—†Torch lily, July to September.—*Purple loosestrife, August.—†Pampas grass, September, October. — Bamboos (foliage).

GRASS AND FERN EFFECTS

I have before me an English catalogue which offers fifty species of grasses, sedges, rushes and hardy bamboos, suitable for wet places. A good many of them are variegated with white and yellow and these my taste would reject. There is beauty enough in the green-leaved grasses, especially the bamboos, particularly the one for which I proposed the name Rivière's bamboo, viz., *Phyllostachys viridi-glaucescens*. This is noted for its great, billowy masses. Mr. Lynch, at Cambridge, told me it is the greatest cold-resister among the bamboos, and the best for large mass at the waterside.

New to me was the perennial wild rice (*Zizania latifolia*), which makes a magnificent specimen plant, growing to the height of a man and having a bolder and wider leaf than the commoner species (*Z. aquatica*), which is an annual.

Somehow I failed to see that well-known British plant, the blue-lyme grass (*Elymus arenarius*), which is noted for its blue-gray foliage. It makes clumps about four feet high and some gardeners think it looks best if the flowers are removed.

As to ferns, the bog garden is just the place for them, since they need plenty of water and shade for their grandest development. I must have seen two dozen species in English bog gardens, and I know that fifty are available, but for use on a great scale I saw nothing better than our own cinnamon and royal ferns. I wish, however, that my friends would experiment on a small scale with the

hart's tongue fern, which I have described on page 40.

CREEPERS AND GROUND COVERS

Since Sir Henry Yorke's bog garden is naturally composed of peaty soil he could choose nothing more appropriate for covering the ground beneath shrubs than heaths of all kinds. These ericas and dabœcias are evergreen, and have a considerable variety in color and season of bloom.

Another ground cover which he uses in great quantity is London pride (*Saxifraga umbrosa*), which I have often praised for its evergreen rosettes and its airy masses of dainty, white flowers. Most of the famous saxifrages cultivated in England are out of the question for America, but London pride is a British wild flower which I hope some day to see naturalized in American woods, growing by the million and furnishing an evergreen carpet to delight eye and foot the year round.

He also showed me three pretty little creepers of which I must say a word. The first is a midget called *Gunnera Magellanica*. You would never guess its relationship to the species with the titanic leaves. It is a lovely plant for the margin of a pool. It takes to water like a duck, and it is amusing to see this hardy little Patagonian creeper ride over the surface of a miniature lake.

The second, pictured on page 12, is the bog pimpernel (*Anagallis tenella*), a British plant related to the "poor-man's weather-glass." It bears myriads of tiny pink flowers, and is also admirable for its slender stems and the beauty of its paired leaves.

Third is the ivy-leaved bellflower (*Wahlenbergia hederacea*), which bears a great many pale bluish-purple flowers, not half an inch long, in summer and autumn. The blossoms droop in the bud, stand nearly erect when in full bloom, and often droop again when in fruit. It is as innocent and appeal-

ing as a baby, with its thread-like branches and its diminutive leaves that mimic those of the ivy. This, also, is a British plant.

WILDFLOWER EFFECTS

This loyalty to the native wild flowers is an admirable trait in English country gentlemen. In the same spirit country gentlemen in America will some day see to it that their neglected woods are carpeted with wildflowers by the ten thousand as they were in the days of the Indian. One man will plant 1,000 bulbs of Jack-in-the-pulpit* at a cost of \$35. Another will make a hit with the swamp pink (*Helonias bullata**). And perhaps some one will discover the possibilities of the dainty little star flower (*Trientalis Americana**).

In short, every wildflower that grows in damp woods should be lovingly studied by some one who has the patience to propagate it and help it establish a good-sized colony, for only when we grow a flower in a large mass, in its right environment, can we discover its true worth and meaning.

We must not hesitate to apply this principle to large, coarse plants that we ordinarily think of as weeds. For example, the viper's bugloss (*Echium vulgare*) is a draggletail weed along dusty roads, but at Iver Heath I saw it glorified almost beyond recognition by the easy magic of bog planting. A single plant had attained the enormous height of four or five feet and the flowers were about an inch long. You can tell at once that it belongs to the borage family, for the flowers are reddish purple at first, but change to a bright blue and are borne in numerous one-sided spikes. It blossoms all summer, and at the time I saw it was a prodigy of bloom.

HARDY ORCHIDS FOR BOG GARDENS

I was eager to see the European orchids having had some inkling of their glories from great picture books like "Hortus

Eystettensis." There are thirty-six of them native to Great Britain. I judge that the showiest is the old original lady's slipper (*Cypripedium Calceolus*), a brown and yellow beauty that is almost extinct in Britain. Second in showiness, I suppose, is the great or fragrant orchis (*Habenaria conopsea*) a rosy purple flower, which is common in the wild throughout Great Britain and blooms all summer. Another famous orchid is the spotted orchis (*Orchis maculata*), which bears in June lilac flowers spotted with purple, while the leaves are green spotted with brown.



Sensitive fern in the foreground. A mound of *Saxifraga peltata* in the background. Both native to America

* All the plants marked * in this article are American wild flowers.

† The plants marked † in this article are not hardy in our northern states.

These and many other hardy orchids may be procured from English specialists in hardy perennials and, strange as it may seem, from some of the Dutch bulb dealers who print catalogues in English. It is impossible to grow orchids under ordinary garden conditions. They will thrive only in bog or rock gardens or in moist woods. Americans should begin with American species, of which there are fifty-six, the most desirable being the showy lady's slipper (*Cypripedium spectabile*). To this the English give the place of honor in their bog gardens as it is undoubtedly the loveliest hardy orchid in the world.

THE CHARM OF PITCHER PLANTS

Some day I propose to buy a New England farm with a sphagnum bog on it, just for the pleasure of growing hardy orchids and pitcher plants. Not that I care to study their insectivorous habits very deeply, but I enjoy them socially. They are such strange, unique creatures that at first they seem to defy all the laws of man and botany. But our Northern sidesaddle flower (*Sarracenia purpurea*) has a certain wild beauty both in leaf and flower, and the Southern (*S. flava*) is undoubtedly the tallest and showiest of all. Fortunately, it has proved hardy in a sphagnum bog garden as far north as Massachusetts. English bog gardens all have the purple pitcher plant, but they do not seem to know about the yellow one.

A LILY TEN FEET HIGH

The finest lilies for American bog gardens are *Lilium superbum* and *Canadense*, of which I give an account on page 36. I saw only one thing to beat them in England. The summit of an Englishman's ambition is to grow the giant lily of the Himalayas which has been well named *Lilium giganteum*. I am sorry that I must show



The giant lily of the Himalayas (*Lilium giganteum*), with white trumpets six inches or more long and eight to twenty on a stalk

this as a greenhouse specimen, especially as the leaves look rather flabby. However, the picture shows the white trumpets, like those of an Easter lily, but larger and more numerous than on any lily you ever saw or heard of. Imagine a lily ten feet high, bearing twenty flowers, each nearly a foot long! It is very rarely that the dimensions I have named are attained in England, but a lily only six feet high, with only twelve trumpets which are only six inches long, is enough to take one's breath away.

Another feature which adds greatly to the interest of the giant lily is its broad heart-shaped leaves. I venture to say that you never saw a lily without long, narrow leaves and parallel veins. Indeed, parallel venation is one of the characters that separate the monocotyledons from the dicotyledons, the two biggest branches in the vegetable kingdom, so far as flowering plants are concerned. Yet this giant lily has broad leaves with netted veins — a great rarity indeed.

It is almost a "moral certainty" that any Englishman who owns a bit of moist peaty land will try to grow *Lilium giganteum*. I was told that at Lord Walsingham's it "grows like a weed," attaining magnificent size and even sowing its own seed. But nobody expects to have such luck as this and nobody pretends to tell other people just how to grow it. All agree that it must have bog garden conditions, *i. e.*, peat, shade for the lower part of the stems, and a never-failing supply of moving moisture, but beyond that all is experimental. It is essentially a "sporting proposition," and nobody who can afford \$20 a dozen for the bulbs seems to begrudge the price, for there is a chance to make superb pictures with this giant lily in a sheltered nook, surrounded by huge rhododendrons and, perchance, a musical little stream running past.

FRAGRANCE IN THE BOG GARDEN

The sound of running water and the fragrance of unseen flowers are two of the subtlest charms any garden may have. I cannot stop now to give a list of fragrant flowers, but I saw two plants with fragrant foliage in England, which I must describe.

The first is sweet gale or bog myrtle (*Myrica Gale*), which should not be confused with our native bayberry or candleberry (*Myrica cerifera*). "It is the only bush," said Mr. Amos Perry to me, "that grows with its feet under water all the time." It is never a showy plant, as the flowers are minute and borne in short, erect catkins; but it is very pleasant to brush against the foliage. When you grasp the leaves and crush them in the hand, there is a feeling of stickiness owing to the aromatic oil glands on the under surface of the leaves.

In great contrast to this bush is the Corsican thyme, the smallest flowering plant cultivated in gardens. I doubt if any plant in the world has so powerful an odor in proportion to its size. A full-grown plant is only about half an inch across, and consists of a rosette of leaves. It also has minute purple flowers which I have not seen. The fashion is to establish Corsican thyme in the



The shining, leathery, undivided leaves of the hart's tongue, a fern of the greatest interest. (See page 34)

chinks of a wall or walk, on stepping stones or wherever the foot may brush against it without crushing it. If you reach down to the ground and draw your thumb across this midget it scents the air for several yards in every direction. To raise such a plant from seed must be quite a job, yet wherever I saw it at all it seemed abundant, and I fancy it self-sows when established. The plants are offered by a well-known dealer in alpenes, in Geneva, Switzerland, at ten cents each, and I should think a dime would just about cover each plant. Corsican thyme is sometimes described under the name of *Thymus Corsicus*, but the catalogues offer it as *Mentha Requieri*, and, according to Bailey, the proper name is *Calamintha Requieri*.

EFFECTS WE CANNOT HAVE

Our summers are too hot and dry for primroses. Near the seashore the air is cool and moist enough, but we shall never have primroses by the million in our woodlands, and we have no conception of dozens of alpine species which English amateurs tuck away in rock and bog gardens. One of the finest mass effects I saw was a colony of *Primula Japonica*, about one hundred plants, forming a ground-cover under azaleas. It is hardy in our Northern states, but I doubt if it would self-sow as it does in England. Many of the primroses have piercing crimson and purple tones, but *Primula Japonica* is a good color in deep shade.

Musk is another plant which the English can grow by the hundred or thousand as a ground cover in bog gardens or beds of rhododendrons and azaleas. It is a dear old plant, but there are much finer things for use on a large scale. We need not weep because we cannot grow it well in quantity.

Gunnera, pampas grass and flame flower (or torch lily) are the only other plants of the first importance in English bog gardens that are not hardy in our Northern states.

AMERICAN EFFECTS

On the other hand, it is highly probable that we shall be able to develop an American type of bog garden which will be very charming, for we have a finer set of orchids and insectivorous plants, and we have many fine species of Ericaceæ, some of which are named on page 32.

Better Apples for New England—By George T. Powell, ^{New York}

WITH DECREASING FRUIT PRODUCTION UNDER THE OLD METHODS THE TIME ARRIVES FOR A MORE SPECIALIZED KNOWLEDGE OF WHAT AND WHERE TO PLANT—MAKING THE GROWING ORCHARD PAY ITS WAY

THE apple holds the position of the King of Fruits, because of the variety of uses for which it is available and the long season over which it may be used. The record crop of this fruit was produced in 1896, when sixty-nine million barrels were taken from the orchards of our country since which twenty-three millions to thirty-six millions has been the range of annual production. With the increasing demand for apples, from a rapidly growing population and a decreased supply, prices have become so high as to almost put them in the list of luxuries.

It is important that those who anticipate planting apple trees obtain specific information about the factors which influence the crop, that more and better fruit may be obtained from the land that is planted.

It need be understood clearly that the soil must be good, even highly productive; if otherwise, it should be made so. No one, however, need be deterred from planting

trees because the soil is poor or in a depleted condition — as much of it is, especially over portions of New York and New England. For, while the trees are growing, the soil may be steadily, even rapidly, improved. Where orchards on a commercial scale are to be planted, it is highly important that a right location be chosen. Apple trees cannot thrive if they are planted in a swamp or on low, wet land. They do best on elevations ranging from three hundred to twelve hundred feet above sea level; but it is desirable to grow apples on land that lies on a higher altitude, in such states as Maine, New Hampshire, and Vermont, and this may be done by choosing varieties specially suited to such conditions, rather than those that may be successfully grown only in the southern portions of New England.

The soil on hills or on elevated situations is, as a rule, well drained naturally, and the roots of the trees find genial conditions under which they thrive and produce the best fruit of which they are capable. Another impor-

tant fact to be understood in selecting elevated situations for orchards is, that trees require an abundance of pure air: they cannot thrive in low, wet land because the air does not sufficiently reach their roots; neither can the leaves do their work properly when they are enveloped in a misty, heavy atmosphere, as oppressive to them as to humans. Again, cold air settles to the lower levels, and frosts are more destructive, while on the elevation the air is lighter, dryer and warmer.

First of all is thorough tillage. The soil of New England is more or less depleted, but it is by no means exhausted; it is, indeed, marvelously supplied with plant food. With proper tillage the soil of New England will continue to improve for a thousand years to come. Tillage should be accompanied by the growing of leguminous plants (such as red and crimson clover, beans, peas, and winter vetch), to be sown annually after tillage ceases, and to be ploughed in early the following spring. Lime is essential in all soils, and one thousand to fifteen hundred



This kind of "filler" helps the orchard to pay its way. A four-year-old Wagener apple tree carrying 165 apples after thinning

pounds sown per acre every two years for a time will insure the growth of these cover crops, which will aid in restoring the soil to its original good condition.

If the supply of apples is ever again to keep anywhere near the demand, it seems to me that entirely new methods of laying out and planting must be adopted. In the old method of planting trees from thirty to forty feet apart, a large quantity of land is idle and not productive for many years, and only twenty-seven to forty-five trees may be planted on an acre at these distances.

There has been much discussion, but little actual practice upon inter-planting with filler trees, which is, to plant permanent standard trees 40 feet apart and inter-plant in the wide space left with early bearing varieties at 20 feet distance each way. By this method 109 trees occupy an acre. I have several thousand trees growing on this plan, and after five years have many of them bearing freely; but I wish here to emphasize the fact that those who attempt this method of planting must exercise eternal vigilance in intensive culture, pruning, and fertilizing, or they will harvest magnificent crops of cord-wood instead of apples! Unless trees are headed low, the tops kept down and side branches pruned in, the trees, from close planting, will be forced to grow high, and will produce but little fruit. The planting plan will be as follows for most varieties at 40 feet, interplanted at 20 feet distances; the X represents permanent trees, O the fillers:

```

X   O   X   O   X   O   X
O   O   O   O   O   O   O
X   O   X   O   X   O   X
    
```

After fifteen years, or at such time as experience will determine, the fillers will be removed, when the orchard will be thus:

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X           X           X           X
X           X           X           X
    
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My opinion is, that orchards managed under this method will give 100 per cent. more fruit in the first fifteen years, which will not only give more apples for the consumer, but will also yield larger profits to the producer.

WHAT VARIETIES TO PLANT

It is very important that the adaptation of variety to locality be carefully studied and known before planting trees, for it will save a lot of disappointment, besides loss of time and money.

We are getting to a better understanding of adaptability to locality, and if the filler system is adopted in planting we must pay very special care to the peculiarity of the variety in that particular region. From my experience I select the following for southern New York and New England for permanent planting for commercial purposes: Rhode Island Greening, Jonathan, Baldwin, Wagener, Hubbardston, Twenty Ounce, Fall Pippin, Red Astrachan. For the filler varieties, Yellow Transparent, Sweet Bough, Duchess, Maiden Blush, Jonathan, Wagener—all early bearers.

For central New York and New England, some of the above varieties would be included: for permanent commercial varieties, Rhode Island Greening, Baldwin, Northern Spy, Wagener, or Wealthy, Duchess, McIntosh, King, Twenty Ounce, Gravenstein and Pound Sweet. For fillers, Yellow Transparent, Sweet Bough, Williams Favorite, Duchess, Wealthy, Wagener, Alexander.

For northern New England, Maine, New Hampshire and Vermont; with a more rigorous climate the list of available varieties narrows very much. It will comprise Alexander, Wealthy, Fameuse, Gravenstein, North-western Greening, Talman Sweet, Duchess.

While the Northern Spy is a very high quality apple, it is practically worthless when planted in any Southern belt, as it then ripens prematurely and becomes a fall apple, with none of that crispness and high flavor that characterize it as grown farther north. In Long Island, Westchester County, New York, and in Southern Connecticut, it will decay upon the trees, before ripening, because it is out of its right environment.

Equally true is it that the Baldwin will not thrive too far north where the trees are at times greatly injured and sometimes killed by the hard freezing.

For the owners of small farms outside of city limits, and for suburban gardens, the list of varieties may be more varied, and some of the especially delicate kinds more difficult to transport long distances may be planted. Among some of these are: Early Harvest, Jefferies, Chenango Strawberry, Fameuse, Porter, Yellow Bellflower, all very choice. There are a few very old nearly extinct varieties that are of exceedingly fine quality, and that may be quite generally grown. They are Richard Graft, Knickerbocker, Yellow Swaar, and Esopus Spitzenburg. Some newer varieties of very high quality that are being introduced are Cox Orange Pippin—a rare English apple, Delicious, King David, and Winter Banana.

The foregoing varieties, tabulated according to their season, would be as follows:

SUMMER	
Early Harvest	Williams Favorite
Red Astrachan	Sweet Bough
Chenango Strawberry	Yellow Transparent
AUTUMN	
Duchess, Early	Wealthy, Late
Maidens' Blush, Late	Twenty Ounce, Late
Porter, Early	Maiden Blush, Late
Richard Graft, Late	Knickerbocker, Late
McIntosh, Late	Fall Pippin, Late
Alexander, Early	Gravenstein, Early
Jefferies, Late	Pound Sweet, Late
Fameuse, Late	Duchess, Early
Cox Orange, Sept. to Jan.	
WINTER	
Jonathan	Wagener
R. I. Greening	Baldwin
Northern Spy	King
Swaar	Esopus Spitzenburg
Yellow	Talman Sweet
Northwestern Greening	Winter Banana
Hubbardston	King David
Delicious	Yellow Bellflower

This list represents the best out of a very large number of varieties, and which may be grown over a wide territory.

For the individual with a small holding, who wants the luxury of real apples, the dwarf tree, as yet but little understood, furnishes most favorable material. These trees may be made to fit any space and may be planted closely, thereby making it possible for the amateur, on a small plot, to have a succession of good varieties over a long season.

All of the varieties named above may be grown as dwarf trees, which may be purchased for about half a dollar each, and in a short time—three or four years, with good garden care—they will be supplying fruit for the family. Just think of it!

PRUNING AFTER PLANTING

With this class of tree, as also with standards planted on the intensive plan outlined, pruning becomes a most important factor.

The instruction often given to prune a tree whenever the saw may be sharp is ill-advised. Why do we prune? There are several objects in view: to give proper form, to stimulate growth, to check growth, to stimulate early bearing. That standard trees may be made to closely conform to habits of dwarf trees is being proven by pruning at certain times, and in certain ways.

At the time of planting the tops should be pruned back one-half and the roots one-third. The second year, prune only to give the trees best form. The third year begin to prune top branches down one-half of the annual growth, to form low heads. Thereafter, keep up this top pruning and prune side branches one-third. If the trees make strong, vigorous growth, do the pruning at such time in June whenever there are signs that the terminal buds are ready to form, which indicates that the annual growth is about made.

At this period the active flow of sap will be checked, and diverted to spur and fruit bud development. The ideal trees of the future will be those that develop the largest possible system of fruit spurs on the lower portions of the branches, rather than in the tops, and this may be done by judicious summer pruning.

If the pruning is done too soon a second growth will start, and while this is the European practice, we do not want to follow it in our country, for labor is too costly and difficult to obtain. If, however, fruit spurs do not freely form on the lower branches, especially of dwarf trees, earlier pruning should be done, and the second growth from the end buds pruned off later.

This system of pruning should largely increase the yield of apples and, on the interplanting or filler plan, which carries so many more trees to the acre, if the foundation is laid early for prolific and early bearing, a great increase in the quantity of apples to the acre should be obtained. At five years from planting, I have had to thin apples, to half the quantity that set, as it is not wise to allow young trees to bear too much fruit.

If the trees do not make from twelve to fifteen inches growth annually, then it will be well to prune them in March when the wood is dormant, as this will have the effect of stimulating growth. Under those conditions summer pruning should be omitted.

How the West Grows Good Apples—By J. G. Cooke, ^{New York}

THE ESSENTIAL POINTS AS VIEWED BY AN EASTERNER—THE COMMERCIAL OPPORTUNITIES THAT ARE PRESENTED AND FINANCIAL FACTS THAT SHOULD BE BORNE IN MIND BY THE PROSPECTIVE ORCHARDIST

THE demand for first-class apples is growing the world over. A fruit so lovely to look at, so delicious, so wholesome, which can be transported thousands of miles over land and sea unimpaired, is never likely to lose favor. A very noteworthy interest was shown in the apple exhibits at the Seattle Exposition. There were always groups of the interested before the beautifully packed boxes of perfect, symmetrical, brilliant, and fragrant apples. Those in charge were continually questioned as to the varieties, where grown, the marketable qualities. Such a box of apples is a striking contrast to the old-time barrel of good, bad and indifferent that stood in the family cellar. Apple growing as a profession is attracting a great deal of attention. Many a young engineer or surveyor or traveling salesman is quitting his job to buy Western fruit land and plant apple trees.

It is not a business in which the penniless may engage. A bulletin recently issued by the Department of Agriculture advises no family to undertake it with less than \$2,000 in hand. From what I know of the situation, I should regard this as an under-estimate. Most families would find from \$3,000 to \$5,000 none too much for necessary expenditure, and to keep them going while waiting for returns. Although these Western trees perform prodigies of growth, far outstripping Eastern apple trees, still the grower must wait four or five years for any considerable yield.

It is a wonderful sight to visit the orchards of Washington, Idaho, and Oregon, the even rows of sturdy young trees reaching farther every year, obliterating the sagebrush. They form a modern army of civilization fast triumphing over the desert. They do not look at all like the orchards back East. They are low and trim, never permitted to be gnarly and raggedly picturesque. You may not repose under a Western apple tree, for the ground is kept ploughed and cultivated. The crops are a revelation of what may be obtained by

modern science plus the best modern intelligence. Visit the orchards when the autumnal sunshine is plumping out the fruit, deepening the reds and greens and yellows, and you find yourself in a color land more brilliant than Aladdin's magic garden, where all the fruits were jewels.

What is the cost of an irrigated orchard?

Unimproved land already under an irrigation project or shortly to come under one, is being sold in Washington, Oregon, and Idaho, from \$60 to \$110 an acre.

Too many people recognize the possibilities of apple culture for suitable land to be cheaply obtainable. For some years individuals and real estate concerns have been buying up unimproved and still arid lands, and are holding them for the sure leap in prices.

Most raw land costs from \$80 to \$250 an acre, or with water rights, from \$130 to \$300. Orchards in bearing, if within a few miles of a town, cost from \$800 to \$1,200 an acre. The finest bring from \$1,500 to \$3,500 an acre. Such prices for apple trees sound high back East. The owners justify them by showing the yearly receipts from these orchards.

Unimproved land must be cleared of sage-

brush—ploughed, levelled. It costs from \$5 to \$25 an acre, depending on the conditions, to make ready for planting.

Yearling trees cost from ten cents to thirty cents each. They should be planted not less than 22 feet apart; 30 feet apart is better, say the experts. Every kind of apple seems to do well here, and yet some better than others. For all-around marketable qualities the Winesap is most commended. Spitzenburgs do finely. So do Baldwins and a great variety of Pippins. It is an interesting fact that the most successful of these Western apples are varieties which have been transplanted from New York State, well known and long popular.

It costs from \$10 to \$15 a year per acre to take care of an orchard until it gets into bearing. Ploughing, harrowing, pruning, pinching, spraying, must be methodically performed.

People sometimes talk as though it is only necessary to plant the trees and shortly one may pick dollars from the boughs. This is misleading, and the unvarnished truth is good enough. But here, as elsewhere, the unintelligent, the shiftless, and the lazy come to grief.

Probably no business offers better return for skilled labor. From the moment the seedling strikes its head above ground, grows up to be grafted, it is in every way stimulated to growth and production. Here you have application of the most intensive methods.

From its first year the tree is pruned once, often twice a year, to keep it symmetrical whatever its situation and the direction of the prevailing winds. In general, the aim is to force production of fruit rather than wood, to keep the tree low and spreading for the better distribution of air and sunshine through the boughs, and to facilitate picking. The ideal of the economist of labor is to produce orchards which can mainly be harvested from the ground.

Spraying is not neglected. Even if



The low-headed tree finds much favor in the orchards of the West where economy of labor and a high standard of quality in the fruits are cardinal points

the orchardist himself were to grow careless as to this important precaution, government inspectors visit the orchards and see to it that he performs his task, or that it is performed at his expense.

Thinning is an important method of securing perfection. Not long after the blooms have set to fruit, the orchardist goes carefully over every tree, pinching off many of the sets leaving only as many as may, he judges, come to perfection. From three to five times during the season he mellows the soil by running a cultivator between his rows of trees.

He attends systematically to the irrigation. This is a delicate operation, generally misunderstood by those who live in rain-watered country. Irrigated trees are not continually being watered, as many seem to think. On the contrary, it is as much of a problem not to give them too much as it is to give them enough. The thirsty soil is given to drink only three or four times each season. The plugs are drawn from the flumes and ditches, the laterals fill, trickle into the tiny ditches prepared for them between rows. The orchard is kept wet for several days, a longer or shorter time depending on the condition of the soil, and then turned off. Water is far too precious to waste.

There is splendid economy at work, splendid, because from wisely lavish expenditure are obtained munificent results. The perceptive Westerner has learned one big lesson from Nature's methods. He avoids waste, but he scorns the niggard thrift which so often sacrifices the future pound to the present penny. Abundance springs only from abundance.

The Western apple man has no difficulty in disposing of his crop. Every spring private buyers and commission men from far and near visit the orchards, estimate the growing crop, bargain for it. With the aid of the Fruit Growers' Association the apples are sent to the big cities of the Middle West and of the Atlantic Seaboard. They go to British Columbia and to Alaska. They are finding a more and more extended market in the Orient. Nearly all are exported. Often the most impossible place to buy apples is in the heart of the apple country. Here, where their value is understood, you are asked fancy prices.

The irrigated apple is the product of the most favorable conditions plus intelligence, plus our latest science. The Westerner does not envy the Easterner his uncertain rainfall. He maintains that never can the Easterner compete with him. The deposit of volcanic ash in the orchards of the West appears inexhaustible. From 2 or 3 to 200 feet in depth, it perennially maintains its richness. The intrinsic ingredients of the soil are not carried out of it by seepage as where there is rain.

Coöperation is the watchword of the Western apple grower. He cannot obtain success alone. Irrigation works are costly. No one man can monopolize the water sources. This initial necessity has taught him the benefits of association with others in the same line. Fruitgrowers associations are formed. They help the individual

members to sell advantageously and in transportation arrangements. They also maintain a high standard of excellence in their respective localities. These associations have stringent rules. They will not allow apples of inferior quality to be shipped. Thus, instead of elbowing each other out of the way after the prevailing notion that to do so is a law of business life, the apple-growers help themselves in helping each other. Their emulation is the generous one of seeing who can get the best results.

The apple grower of the Northwest has learned various useful lessons from the earlier fruit growers of California. He has learned that the biggest fruit is not the best or the most marketable. He has learned that while beauty is important, flavor is more so. He is still suffering from the reputation of much California fruit as taste-



The apple trees are laden like this even after severe thinning. Ropes of fruit are the rule!

less. His apples are not tasteless, although they are beautiful.

At North Yakima, last summer, at a smoker in honor of the senatorial party which visited the Northwest, Winesap apples were served which had been in cold storage for ten months. They were firm, delicious, and fragrant as though freshly gathered.

A successful orchardist showed me a particularly fine Esopus (Spitzenburg), pointing out its merits from his technical standpoint. He laughed, finally, at his own enthusiasm.

"You Eastern folks don't feel about fine apples the way we do. You raise them for food same as you do potatoes. We regard them as a luxury. We are proud to be producing the best the world has ever seen in apples."

The picking is no careless business. Every apple is taken deftly into the palm of the picker; his fingers close gently about it so as not to bruise the glowing surface as he twirls it off its stem.

Every apple is wrapped in soft paper. The fruit is placed with care in the boxes. It requires some skill and practice to sort these apples as one packs, choosing those

of a size. So calculating that each box when packed will weigh about fifty pounds. Uniformity is the aim. Men become extraordinarily expert in such calculation.

After the fourth year profitable returns may be expected which will increase steadily until the trees are in full bearing, say ten years old, and then continue indefinitely. But while waiting for apples, the orchardist is usually able to secure a fair revenue from his land by cultivating alfalfa, or small fruits or vegetables between his trees.

The commonest question asked by the prospective orchardist is: "What are the average profits per acre? Don't tell me marvelous tales of fortunes made by the exceptionally lucky, but how much may the ordinary man expect?"

The profits depend upon the variety of the apples — the age and condition of the orchard. The average number of trees per acre is from 50 to 108. \$5 a tree net may be considered a fair profit. It is certainly not an over-estimate. Careful computation shows that most orchardists make from \$350 to \$500 per acre, and often anywhere up to \$2,000 per acre.

An average yield of apples is from 500 to 1,000 boxes per acre. These net from 75 cents to \$1.50 a box for ordinary grades. From \$1.75 to \$3.00 a box for those of highest quality. I visited an orchard last September, the owner of which had just shipped 700 boxes of fall pippins gathered from twenty trees. He had received \$1.50 and \$2.00 a box.

"I have eighty Rome Beauty trees that will bring me in \$2,500 this year," said a grower in 1908.

One rancher with an orchard of forty-three acres, confidently expects in ten years more to be taking in \$50,000 a year. Then the whole family are going to take a trip around the world "on our apples," he says joyously.

An able-bodied man ought to be able to take care of ten acres of apple trees. He cannot do justice to more.

One of the best-known apple growers in Yakima County, Washington, Mr. Gilbert, in the four years, 1905-1908, took in \$18,000 gross receipts from a three and a half acre orchard, of Winesap, eight and ten years old.

The foreboding ask: Is not the market likely to be over-stocked, prices drop below possibility of profit? Those who have studied the matter do not fear this. Methods of transportation are constantly being improved, so that soon we will be able to send apples all over the world.

Ardent optimism is a noticeable characteristic of the Western apple grower. Even if he himself has not yet arrived, he sees from the experience of others that any one who goes to work the right way is sure of creditable results.

His interest is kept fresh by the experimental nature of the work. Everybody is seeking fresh expedients to hurry trees into bearing and to stimulate fruit production. These Western apples shine in the displays of the high-priced fruiterers. Set choicely forth with other delicacies for the rich man's table, they retail at ten or fifteen cents each.

Gardening Suggestions, by "Veronica"—I.

EDGINGS FOR FLOWER BORDERS—SOME ARE A SOURCE OF ENDLESS TROUBLE AND EXPENSE—ONLY ONE PLAN SEEMS BEST IN EVERY WAY

[EDITOR'S NOTE.—Please do not ask us who "Veronica" is, and please do not send letters for her in our care. The communications which we are about to publish were not sent anonymously, but they are pseudonymous. They come from a lady who is not a professional gardener, and in that way these "suggestions" may perhaps be more interesting to other amateurs. To us they seem remarkably brief and pointed. We violate no confidence in saying that she lives in the State of New York, for the practicability of gardening ideas cannot be judged without knowing the region in which they are written. But remember, "Veronica" must not be bothered with questions.]

IN garden making, one of the first questions is, how to edge the borders. Many people, to get an immediate effect, put in grass edgings, forgetting what an endless source of trouble and expense they will be. They must be mowed, have their edges clipped straight, weeds taken out (for weeds look even worse in an edging than on a lawn)—and flowers hanging over will be injured by all these operations.

Box edgings are charming, but they are very expensive, and parts have to be replaced every year. Except in favored spots, or near the sea, they are not hardy, and must be heavily protected, which is, of course, both ugly and extravagant. Another delightful evergreen edging plant is the spring-blooming heather, *Erica herbacea*, var. *carnea*, but I hardly dare recommend it, as I have only seen it in my own garden. Two plants made a dozen in three years; it has proved itself perfectly hardy, and the little flower buds show all winter long.

We have put a few hemlock branches over it in winter, but that is, perhaps, unnecessary. The heath family requires peaty soil and perfect drainage, so this heather should not be tried in low or limy soil. Its flowers are among the very first in early April, and last a whole month, changing from soft, pale pink to magenta. The great objection to this plant is the price.

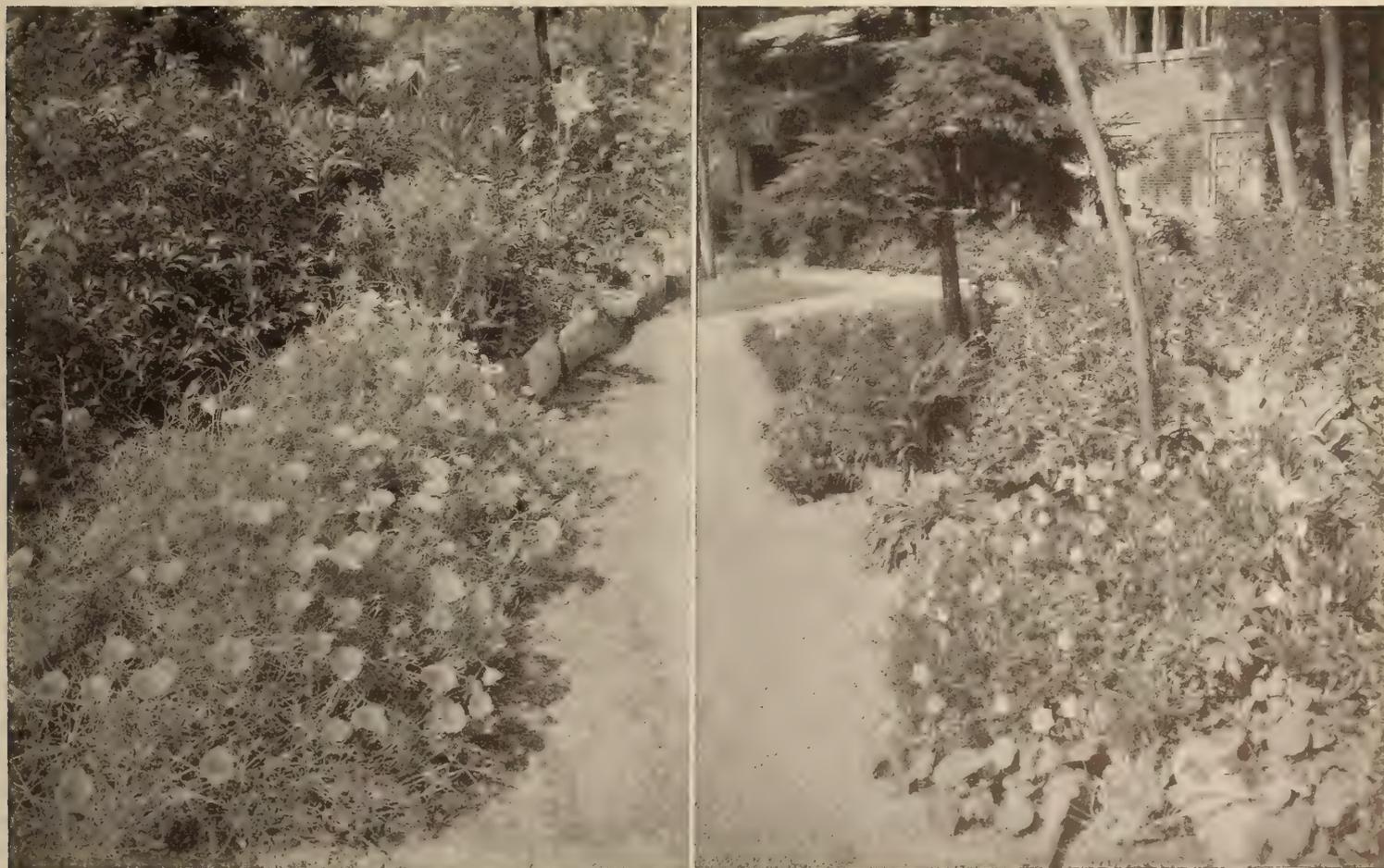
In England tiles and lead edgings are sometimes used, but they must be very good and unbroken to look well, and they are easily broken. Not long ago I saw a big, square kitchen garden, with flower borders about eight feet wide. It happened to contain a lot of the gray-leaved *Dianthus plumarius*, and this was being divided so as to form an edging. A grass edging about one foot wide being left, however, the two were not harmonious. In Miss Jekyll's charming book, "Colour in the Flower Garden," there are several pictures of just such borders, edged

with the dianthus, and very well they look.

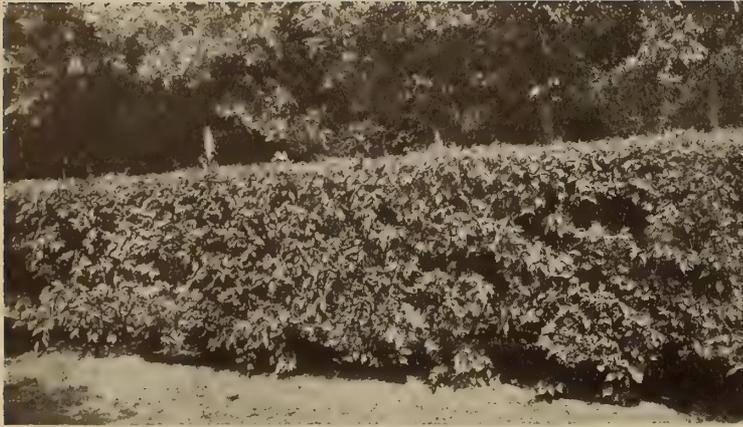
There remains making edgings of our own native stones, which are very plentiful in most places about New York. A small ditch should be dug, and the stones laid in with a line. The flowers will soon hide them, sow themselves between them, and delight in them generally, for the stones keep the roots moist and the flowers dry.

These photographs show self-sown plants of *Campanula Carpatica*, and *Eschscholzia*, and they are very fine specimens. The seed germinated between the stones because of the moisture there, and the blooms have revelled in the dry path.

Of course, such an edging is not for the formal garden, but if there were fewer formal gardens among people not very rich, there would be more garden beauty. A formal garden has to be so very perfectly kept up to be worth while, and it is not in harmony with rough, rocky country.



California poppy (*Eschscholzia*) and, on the right, Carpathian bellflower, both self-sown, are the striking features of these informal edgings



The wild plum makes a good ornamental hedge of five feet or more; it has attractive flowers and fruit



The common lilac holds its foliage longer than any other shrub and is also most beautiful in flower

Hedges for the Northwest—By C. L. Meller, North Dakota

WHAT ACTUAL EXPERIENCE HAS SHOWN WILL THRIVE IN THE COLDEST REGIONS AND WHERE THE EVERGREENS OF THE EAST ARE ALMOST IMPOSSIBLE—NEW USES FOR SOME OLD FAVORITES

THE Northwestern climate is strenuous in every detail. It differs essentially from that prevailing east of the Great Lakes to the Atlantic Coast. Comparatively few of the coniferous evergreens will serve for hedge purposes, and none of the broad-leaved evergreens. A boxwood hedge is impossible. For this latter, however, a fair substitute can be found in a hardy native shrub—the buffalo berry. Likewise shrubs that in the East are used but occasionally for hedge planting are used in the Northwest quite frequently because of some quality that fits them for a particular location or purpose.

LILACS FOR LATE FOLIAGE

The common lilac is our nearest approach to a broad-leaved evergreen. No matter what any one may say about other lilacs, I advise you to confine yourself to the common one, not alone for its fragrance and its hardiness, but primarily for the fact that its green foliage lingers after the frost has scattered the leaves from nearly every other shrub and tree. There still lives vividly in my mind a picture of the green of a lilac setting off a birch's white and thinning gold and the reddish brown of a spirea.

For a hedge that is to be allowed a height of at least six feet, the lilacs afford a splendid material, but they cannot be held to a less height for any number of years, as the bushes do not take kindly to severe pruning. The common, old-fashioned purple lilac is the best one to use, with the white variety a close second. Plant not less than eighteen inches, nor more than two and a half feet apart. Start with two-year-old plants, if possible; older material can be used, but it is difficult to prune a neglected hedge into any semblance of form.

The white lilac may easily be whip-grafted upon the purple, and vice-versa. But it is seldom advisable to set out a hedge of

white lilacs, for when fully blown they have a dingy appearance. You can obtain flowers of the two colors in the same hedge by grafting better than by setting out an occasional white plant among the purple ones.

FOR CLOSE-SHEARED HEDGES

None of the privets have proven themselves hardy in these regions. All things considered the best available material that we can at present boast for a closely sheared hedge is the buckthorn. Other hedges when severely pruned die out in spots, but a buckthorn never. In fact, within a limit of about six feet, a buckthorn hedge can be trimmed to almost any height or form desired. Being abundantly supplied with thorns and carrying its foliage well down to the ground, a buckthorn hedge should be used around the home grounds where it is desired to exclude dogs and street gamin from a lawn. It is advisable to start with young material, so that the hedge may be trained exactly to one's liking. The two-year-old plants should be set about a foot apart. The first winter after planting is the critical time in the life of such a hedge, as some of the plants

are sure to succumb. On this account it is necessary to start the hedge in spring to enable the young plants to gain a good root-hold in the soil before winter sets in. It seems impossible to avoid this loss, and one must not become discouraged if a buckthorn hedge does not start evenly. The leaves of the buckthorn are sometimes troubled with an aphid, which causes the affected leaves to curl up, but as the pest appears only occasionally, it is scarcely to be considered a drawback. After the first of August no pruning should be attempted as it induces a new growth which has no time to ripen its wood, and consequently suffers severely from the winter.

The common sloe (*Prunus domestica*), which, in its general appearance, resembles the privets much more closely than does the buckthorn, also endures hard shearing, but aphid or lice infest its foliage to such an extent each year as to make spraying a positive necessity. Where, however, the effect of a privet hedge is to be produced as nearly as possible, an attempt with this material might be made.

The Russian olive (*Eleagnus angustifolia*) requires vigorous pruning to be at its best as a hedge. Not only the top but the sides as well need attention. An untrimmed Russian olive hedge is irregular in its growth and far from pleasing in its outline. It can be held for many years as low as three feet, is compact in its growth and brings its foliage to a line with the lawn. The olive green leaves, greenish-gray on the underside, produce a distinct effect—somewhat gray, slightly dusty, green. In winter and early spring its peculiarly colored bark makes such a hedge appear dusty, by no means a disagreeable contrast with the white of the snow. It is an excellent shrub to use in dry and exposed locations. Nor should the fragrance of its inconspicuous yellow flowers be altogether overlooked, for, though this



The buffalo berry offers a sort of substitute for the boxwood of the East though deciduous

endures but little over two weeks, it is so subtly suggestive and unlike any other fragrance that it is well worth taking into account.

I find it rather difficult to select words that will adequately describe the exact shade of green that the small pinnate foliage of the Siberian pea tree (*Caragana arborescens*) presents to the eye. There is a suggestion of gold and, at the same time, of bronze about its green. Its color is its distinctive feature. As a hedge the erect habit of the shrub makes it compact though a trifle stiff in appearance and effectually precludes its use in very low hedges. When trimmed the foliage covers the entire hedge. Untrimmed, its tendencies toward a tree form completely destroy the hedge idea. Under five feet it cannot easily be held. Furthermore, it shows an inclination to die out in spots, the leaves withering or turning yellow, an untidy habit difficult to combat. Thus, though an available material, one needs to consider carefully before building a hedge thereof.

One of the most ornamental hedges is obtained by using the Tartarian honeysuckle (*Lonicera Tatarica*). But it should not be planted where there is any uncertainty of its receiving the proper care. A free use of the shears is necessary; moreover, there soon comes a time when it is imperative to freely remove the old wood, so as to prevent the bushes growing leggy and the hedge losing its character. When in bloom this hedge is magnificent, nor lacks it some charm the rest of the season, for its translucent, red coral-like berries are ornamental and not at all inconspicuous.

HEDGES THAT DETERMINE THEIR OWN OUTLINE

Unfortunately that prettiest of the barberries, the Japanese (*Berberis Thunbergii*), is not hardy throughout the exposed prairies of the Northwest, though where good winter protection can be provided it will live and prove itself worth the trouble, but, of course, in giving protection its beauty in the late autumn is sacrificed. Even with the best of protection it freezes down to the ground occasionally; and during very severe weather

may even die out entirely. If you have a sunny, sheltered location, perhaps a gently sloping southerly bank, at your command, and you are an enthusiast, not afraid of a possible failure, I should advise attempting a hedge of this kind for it is well worth while — but not otherwise!

The purple barberry, which is the next in size to the globular dwarf Thunbergii, is hardy and used to some extent as hedge material, but its color decides against it, certainly against using it in a very long straight line. With regard to this matter of color, however, we may not be too fastidious, when we recollect that in our Northwest it is not always a matter of what we might prefer but what we can actually grow that determines our material. The barberries being very thorny and compact in their habit of growth this particular variety will demand consideration wherever material for a protective hedge, that of its own accord is to retain a uniform height of from five to seven feet, is sought.

The tallest of the tribe is the common barberry, attaining a height of over eight feet. Knowing the natural height of this shrub, do not then make the mistake of attempting to hold such a hedge to three feet, for this barberry takes none too kindly to pruning and the hedge becomes patchy and dies out in places. This is emphatically a material which need not be pruned. This does not mean that dead canes are not to be removed, or that the tops cannot occasionally be pinched back to induce a bushier growth, but for a strictly clipped hedge there is more suitable material. Where its natural habit is not interfered with, the shrub tends to grow straight upward, spreading and arching its branches at the top. This imparts to the top of the hedge a width and natural curve not to be obtained with the shears.

Unhappily the barberries fruit but sparingly or not at all in the West; so one attractive feature in the East is lost entirely to us. Those living in the wheat sections need also consider that the wheat rust lives over the winter on the barberry.

As an ornamental flowering hedge not to be pruned, few shrubs excel *Spiraea Van*



The Russian olive stands very hard shearing. It thrives in dry places

Houttei. It cannot be improved upon by pruning; nor will it make a high or a defensive hedge. It is very hardy and where sufficient moisture is available makes rapid growth. Nothing quite equals the charm of its bloom in spring, the arching sprigs laden with white bending to the slightest breeze. There is likewise a certain beauty in its dark green restless foliage in summer; and well into the fall it delights us with its autumn tints. Close planting develops such a hedge to its best. The pruning knife should be used only to remove dead or dying wood, or to induce new shoots from the roots.

For a hedge that possesses a distinct, picturesque character, is hardy and withal inexpensive, plant the osier, or basket willow. The long slender pliant twigs of this willow, which bend and curve downward without any pronounced weeping habit, impart to a hedge an air of elegance and grace, quite unlike anything else. It bends to the wind with supple grace, swaying leisurely, but never atremble. The natural habit of this plant is arboreal, but it readily assumes a bush form when severely pruned in the early stages of its development. It is recommended only for special effects.

FRUITING HEDGES

In the Northwest the most delightful, the most invigorating weather of all the year prevails during the "Indian summer"—after the frosts have killed the flowers and scattered nearly all the leaves—and anything that carries its beauty through that period has a special claim upon the attention of the gardener.

There are two available roses—the native wood rose and the Japan or rugosa rose. Both need shearing to induce cane growth and to hold the foliage down to the ground, the native species much the most. Neither will make a hedge much over four feet, but when held well within this limit their vigorous growth, combined with the fact that the stems fairly bristle with small thorns, furnishes a barrier through which neither cat nor dog can be driven. The rugosa rose is in every way preferable, blooming from June until September, the native wood rose flowering only during two or three weeks in June. Both blossoms are single, those of

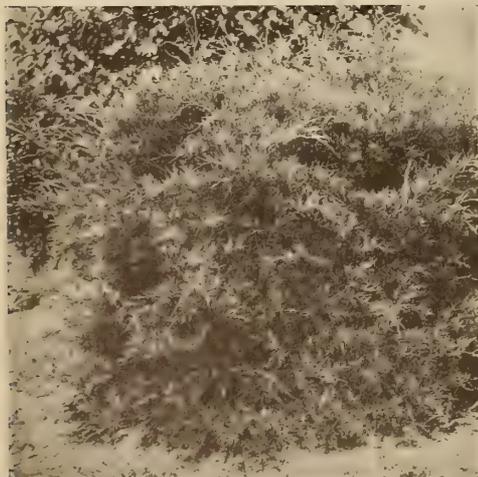


For gracefulness the osier or basket willow is unsurpassed

the native rose being of a pink or, more correctly speaking, of a pale red, whereas those of the rugosa rose are much larger and of a darker color. The hips of the wood rose are small and of a dull red color, while those of rugosa are fully four times as large and of a much brighter, glossier red. The foliage of rugosa is larger and darker. Both sucker freely, a habit which though it is helpful in producing a dense and compact hedge, may also become troublesome. At times a rugosa hedge shows a tendency to die out in spots but this is generally due to poor soil and bad drainage.

The native wild plum is worthy of note because it will thrive under considerable shade, but it cannot be held below five feet. It has fragrant flowers in early spring and the fruit makes a good jelly. When one considers that the plum is a tree, the need for constant pruning to retain a hedge form will be evident. In dense shade the tendency of such a hedge is to become bare and leggy at the base, while in full sunlight the foliage is borne from the ground up. Wild plums sucker somewhat, but such shoots can be easily kept down and are never a serious nuisance.

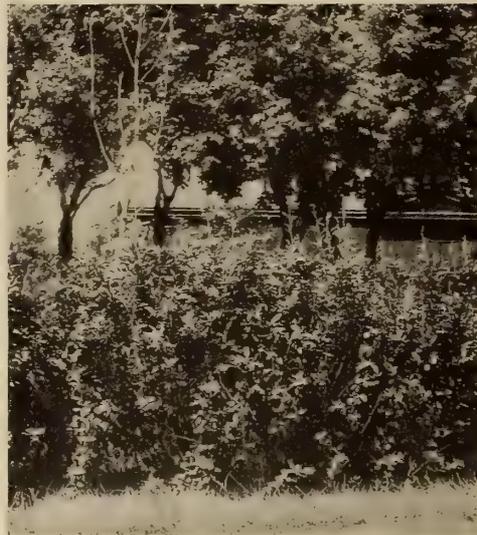
Our native thorn, a relative of the English hawthorn which it resembles, is worthy of consideration as hedge material and should be planted much more frequently than it is. The nurserymen may be in a manner responsible for this neglect as the seeds do not start until the second year after maturity, consequently the plant is not as profitable to grow as most other shrubs. The seedlings, however, are rapid of growth and bear transplanting well. Even large shrubs can be safely transplanted from their native haunts in the woodlands and wherever possible this is advisable. The bush grows to about the same height as the common lilac, never lower. The healthy, clean foliage is borne from the ground up and though somewhat too open to conceal entirely the framework of the shrub its value for hedge planting is not lessened thereby. The leaves are of a slightly leathery texture, light green beneath and of a dark, glossy green above, which contrasts most charmingly with the



As an evergreen, the native red cedar offers the best material. Leave untrimmed

abundant scarlet fruit, likewise acting as a pretty foil to the white flowers in spring. The numerous long sharp thorns make this a defense against four-legged intruders. Quite a number of thorns are native to this region and all may be used as hedge material. Aside from their fruit, their strong point and one that cannot be emphasized overmuch is the autumn tints of the foliage.

Another available native is the buffalo berry (*Shepherdia argentea*). The shrubs are dioecious, a fact not to be neglected where one desires to obtain fruit. A good plan is to have about every sixth shrub a staminate one. The fruit, however, is not very ornamental, being altogether too small, but it is excellent for jelly. Nor will the harvest entail as much work as would at first appear, for after the frost has touched the berries they may be jarred loose by sharply rapping the bushes and can be gathered upon sheets stretched beneath. Along the banks of the Missouri and its tributaries, where the buffalo berry flourishes



The common barberry is good for a hedge that is not to be pruned. The purple-leaved form is lower

on the sandy bottoms, people gather the fruit into washtubs! The leaves are about two inches long, of a narrow oval outline, and of an olive green color with a markedly lighter ventral side. The foliage, devoid of autumn tints, holds on well after frost.

The old boxwood gardens of the East might, in a manner, be reproduced in the West by the use of the buffalo berry, though it loses its leaves in winter. When closely pruned (and it will endure extremely close pruning) the twigs and branches interlace, producing the effect of an almost solid mass. The peculiar grayish bark, which is very pronounced on the new growth, gives the hedge some color value throughout the winter.

Being abundantly provided with spines, it will form a hedge through which neither cat nor dog will tear.

HEDGES THAT WILL ENDURE SHADE

Strangely enough, one of the best materials for shady places is afforded by a tree,



The soft maple makes serviceable hedge in dense shade, and colors well in the fall

the soft maple (*Acer saccharinum*). Professor C. B. Waldron has succeeded in growing such a hedge between two rows of trees where little direct sunlight ever enters, and for years it has been held within four feet. Naturally, the hedge is bare at the base and somewhat open throughout, but it assumes the characteristic color of the maples in fall, which, indeed, is its main charm. No doubt, after years such a hedge will eventually outgrow itself.

The only other plants worth serious consideration for dense shade are Indian currant, coral berry, and mock orange. Aside from its ability to do without direct sunlight, the Indian currant has little to recommend it as away from shade there are many other shrubs that will take its place to better advantage. In its general habit it resembles somewhat *Spiraea Van Houttei*, though much less graceful and less conspicuous of flower. The small, coral-like berries seem to nestle among the foliage. It requires almost no pruning, and its foliage is carried well down to the ground. The mock orange needs careful pruning to keep it within hedge form, though even with careful trimming, it is difficult to keep the hedge looking neat and trim.

Spiraea Van Houttei has started nicely for me under a row of low-headed box elders, where, moreover, the house also shades part of the day. The native thorn likewise grows fairly well in shade; and the wild plum will grow, but the foliage is sparse and open, and the fruiting meagre.

TREES AS HEDGES

Of the soft maples, I have already spoken. Its relative, the box elder (*Acer Negundo*), makes even a better hedge. It bears pruning well, is exceedingly hardy, a rapid grower, and free from insects. Start with two- to three-year-old plants (large numbers of seedlings may be found in the neighborhood of old trees, where they spring up almost with the persistency of weeds). On well-prepared soil, with a sufficient supply of moisture, a fair-sized hedge may be obtained in a few years. The very first year the trimming should begin by pinching back all the growing points to induce branching. I doubt



Use buckthorn for a compact, moderately high hedge with wide spread

if such a hedge can be sheared to a semi-circular outline with any degree of permanent success; but if the top is sheared off squarely, a wedge-shaped hedge results that from a narrow base widens considerably toward the top, and carries its green down to a line with the grass. The readiness with which the boxelder sends out sprouts from root and branch will prevent the hedge from ever becoming bare at the bottom, provided the pruning be persistent and judicious. It will seldom be necessary to trim the sides of the hedge. The light pea-green color of the foliage can often be employed to bring out into bolder relief the darker green of other shrubbery and plants. The leaves drop early in the fall, however.

THE EASIEST OF ALL

The cheapest and rapidest growing hedge is made by the Russian golden willow, and unlike other hedges this need not be started with rooted material, but can be grown directly from cuttings. The price, of course, varies with the market, though generally cuttings sell for \$2.50 per thousand and as these are placed from six to twelve inches apart, the initial expense is not large. These cuttings, about nine inches long, are best taken in spring, while the wood is still dormant or when the buds just begin to swell. They are set at an angle of 45 degrees into the ground, which is thoroughly packed about them, and should first have been well prepared. I have seen cuttings used from which the leaves had first to be stripped, but less than one-third of such material ever starts. Slant the cuttings one way, and leave only one bud exposed. After the cuttings are set, they must be regarded as a hoed crop; no grass or weeds being allowed to develop. Cultivation will conserve the moisture sufficiently to give the cuttings a start, though in dry seasons watering would be a great help.

For the first two years, at least, it is best not to touch the hedge with a knife. The first pruning should be not with an eye to symmetry, but rather low enough to induce abundant branching, and so establish the founda-

tion on which to build. A square outline is the easiest to trim to, and one to which the willows take most readily, the sides as well as the tops requiring the use of the knife. When allowed to grow much over five feet high, the bottom becomes bare and leggy, with the foliage more or less massed near the top. This willow makes a serviceable windbreak and snow fence; indeed, the Northern Pacific Railroad has, within the last few years, been replacing the wooden fences by willow hedges.

The twigs are a golden yellow color throughout the winter, changing to a pronounced red when the sap begins to flow in spring on the younger wood. In the landscape the color must be used with discretion or it not only becomes monotonous, but positively jarring.

EVERGREEN HEDGES

In the matter of evergreen hedges the West need neither envy nor imitate the East, for we possess some material which, though



The cheapest and quickest hedge. Willow, trimmed in the foreground, untrimmed behind

it will grow in the East is yet distinctly our own. An arborvitæ hedge can be grown, but not in the most exposed section of the Northwest, and even where it can be grown it is such an uncertain quantity, takes such an amount of labor, patience and replacing of plants to start that none but the most ardent and persistent amateur had better attempt it.

Certain of the red cedars do well. Trimmed or untrimmed, they make excellent hedges that will withstand equally well the cold of winter and the hot sun of summer. A hedge of this kind is by no means difficult to start, provided one sees to it that the plants have a good root system and that these are not exposed to the sun, for once dried out, evergreen roots will not revive. Such a hedge can be started any time from the middle of April to the middle of June. Set the plants about eighteen inches apart in well-prepared soil. Though the cedar will endure pruning, I am positive that where once

the feathery grace of an untrimmed hedge has been seen it will be preferred. At a height of about three and a half feet the hedge will be almost as wide as high.

Out in the western part of North Dakota lie the Bad Lands, far from bad for the botanist or the plant collector. Thither I have gone for the past two springs to gather cedars which, for their plume-like grace and silvery sheen, cannot be excelled. This is no exaggeration. These cedars are to other cedars what the blue spruce is to the ordinary spruce, with this difference—that the cedar is more refined. Hardy? You cannot obtain anything more so. With careful digging and proper packing these trees, when none over two and a half feet are taken, endure long-distance shipment. If you desire a hedge of pleasing outline, with a variegated silvery sheen running through its basic green, while the combined effect withal is so subdued and refined that it can be employed in large masses without fear of its becoming garish or vulgar, then use this cedar. In its native haunts it grows in almost pure sand, even clinging to the exposed sides of the buttes where the wintry winds bite deeply and the summer's sun shows no mercy. Among the buffalo berry thickets the seedlings spring up thickest. This cedar compensates the West for the broad-leaved evergreens that the East can grow. Unfortunately, this particular variety cannot be purchased from nurserymen, who, it seems to me, are allowing an opportunity to go unchallenged.

Where a low evergreen hedge is needed, one that of its own accord remains near two feet, the savin juniper affords tolerable material. It can readily be pruned to a flat, straight top, and will appear compact to an observer looking down upon it, but it has a habit of showing its branches along one side of the hedge. It is so low, however, that a heavy fall of snow, especially if there is the least drifting, covers it completely. The juniper is not hard to start, and though an occasional branch will turn brown, it maintains its green well throughout the year. It needs sunlight, but as it will grow in comparatively poor soil, it is the very material to use on rocky and exposed hillsides.



The gray-green color of the Siberian pea is unique, but the hedge dries out in spots

CHILDREN'S GARDENS EVERYWHERE



RESULTS SUCH AS ARE SHOWN HERE THIS MONTH ARE THE OUTGROWTH OF CONDITIONS, NOT EXTREME NOR UNUSUAL, WHICH REQUIRE TIME, COURAGE AND BELIEF IN ONE'S WORK.

Conducted by
ELLEN EDDY SHAW
New York



THIS month you will all be eager to read about the work of those who won the group prizes and why they won over others. Next year we shall make a rather different classification. For as the results came in, and as we inspected many gardens, it was very plain to be seen that while gardens of but one or two years' start were good gardens, these could not possibly win in a race against those of years' steady growth. For example, the garden at Poughkeepsie, N. Y., was a splendid piece of work for the first year. It was an unusually good garden, partly because it was made on a piece of ground which had been for years used for the same purpose, and so lent itself easily again to the growth of vegetables and flowers, and partly because it was well managed. This last is worth just briefly mentioning, for the benefit of those wishing to start work next spring. A man who knows how children should garden, was engaged for three days of each week during the entire summer. The other days the work was supervised by committees of ladies from those who stood behind the work.

Flushing, Long Island, had a first year garden connected with one of its public schools. Next year this garden will be one to look out for in the race.

Another garden of the first year class was that of New Paltz, (N. Y.) State Normal School. New Paltz had a garden before, but because of a new school site was obliged to begin all over again. More discouraging than this was the fact that it was impossible to get into form the permanent garden spot for this year's work. Did New Paltz go without a garden? Not much; she made a temporary one on a stubborn old slope of land.

Before taking up the prize-winners let us look again at the conditions so we may have

all things in mind. The group prizes fell into three divisions. They were to be awarded to the school or association showing:

A. The best display of garden products at its mid-summer or fall exhibit.

B. The finest looking garden irrespective of amount of product.

C. The greatest improvement of school grounds or unsightly spots under the direct care of contestants.

The prize offered in each division was a complete set of The Nature Library. This



De Witt Clinton Park garden won on general appearance. Its arrangement is very simple and suggestive to others

is a prize worth a whole school's work, because it means not only fifteen books added to the library, but also books which can be used right in the class rooms. And because of this, many schools competed. A teacher from Beaver Dam, Virginia, came personally to see us with the plan of her school garden to show us.



Where unsightly old buildings once stood the Tracy School children now plant cannas

DIVISION A

The prize-winner in this class was the Fairview Garden, Yonkers, N. Y.

In this garden about seven hundred boys and girls work. They not only plant and dig, but learn, too, of garden pests and garden helps along with considerably more of Nature work. I wish every boy and girl and all the teachers and mothers, too, might see this garden. It is a garden where good products are raised and where things are done in fine business shape. The garden was established by a committee of women who are banded together for this one purpose. But its management and care is under the direction of one man, who knows plants and children as well.

There was no question concerning the prize-winner in this class; the Fairview Garden just walked off with the prize. The next in order in this class were two Massachusetts cities, Waltham and Marlborough. Waltham Fall Show represented the work of the public schools of that city. A fine feature of this exhibit was its careful arrangement. Marlborough's exhibit was under the auspices of the School and Home Association. Especially to be noted with praise in this case is the breadth of work done and also the carefully prepared material sent in for competition purposes. It is also of interest that connected with the Marlborough work are 1000 gardens.

DIVISION B

The prize-winner of B Division was the De Witt Clinton Park Garden, of New York City. This is a garden right in the heart of the city, a spot that is a real garden for people living in hot, cramped quarters, where green things growing are rarely seen. This garden was founded and is directed by Mrs. Henry Parsons. A quotation from one of Mrs. Parsons' writings tells a little of this splendid garden work: "The seven years of the existence of the children's school farm in De Witt Clinton Park, Fifty-fourth Street and Eleventh Avenue, New York City, has given definite, conclusive proof of the vast use to which a plot of ground 250 x 135 feet in size can be put. There is more happiness to the square inch in this piece of ground than anywhere else in the world. The plan upon which this garden in New York is conducted has made it possible, at a conservative estimate, for 4,326 adults and children to derive profit, pleasure and health from April 1st to October 24th. Of this number, 150 were crippled children; 400 babies and younger brothers and sisters who came with the 'little farmers,' and 500 registered visitors."

Class B had some close rivals with South End Industrial School, Roxbury, and North Adams Normal School leading off. Massachusetts certainly showed up well for Wellesley, Great Barrington, and Melrose, besides these first two competitors, sent in reports and pictures of excellent work. Melrose garden was the only one entered which was under the management of the local Women's Club.

Public School 84, Long Island City, has taken a small strip of land in the school yard and has made, under the existing conditions, one of the best city school gardens we have seen.

A next year's rival to watch out for is a school in Ontario, Canada. The work here is amazingly fine in its niceness and finish. They learned of our competition too late to enter this year.

DIVISION C

This class had fewer contestants and closer competition than the other classes. To be mentioned with praise is a little school in Ardonia, New York, where the forty pupils and teacher did some of the best work we have heard of. But, unfortunately, the long summer brought great destruction. Ardonia is still at it, undiscouraged.

We finally could not decide between the work of the Tracy School, in Lynn, Massachusetts, and the Briggsville School, Clarksburg, Massachusetts. The former is a city school, the latter a country one. The work of each had such an effect upon the immediate neighborhood, that no one could say which had done the greater good. So they were both announced winners, and were given The Garden Library. The following reports from these two schools give a pretty good idea of their work:

Improving the Tracy Grammar School Grounds

IN 1906 this school yard consisted of 25,000 square feet of land, in the form of a trapezoid, the parallel sides being 225 and 275 feet respectively. The width was 100 feet. There was no garden in the yard, the condition of the grounds was that of the ordinary city school yard.

During the year 1906, the city authorities gave to us an addition to the grounds of about 15,000 square feet of land. On this land were two old buildings, three trees uncared for, and an ash dump. The buildings were torn down and removed, the trees were trimmed and put into shape, the ash dump removed, the land graded by the use of 200 cubic yards of gravel, 100 feet of granite curbing was put in place along the street borders of the grounds, a two-rail gas-pipe fence set along the northern border of the yard, a new fence along the eastern border, and an old apple tree removed.

The following is taken from one of the pupil's own accounts of this same work:

When the Tracy School was first opened, very little was done to beautify the yard,



The problem of grading and banking as met by the Briggsville School

but after two or three years the pupils of the ninth grade worked together and filled in and planted a small portion of the back yard with a few small shrubs and annuals. Later, each child contributed a small sum of money in order that we might buy a hedge to place along the front of the yard facing on Walnut Street. Not very much could be accomplished, because of the limited yard space.

This last year the city of Lynn added about seventeen thousand feet to our school yard.

A wide garden running the whole length of the yard is filled with shrubs and seeds, some of which were given to the school by the pupils. It is outlined with sods brought from the neighboring fields by the boys of the ninth grade. The school yard contains two very old horse chestnut trees which were planted in 1850 by a former resident of Ward Six.

In the centre of the yard there is a large bed of flowers laid out very prettily.

At the front of the building there is a semi-circular plot of grass in which a large bed of geraniums is placed.

FRANK L. WHIPPLE, Principal

Working Under Difficulties

THE work of the Briggsville School was done under hard conditions. The schoolhouse is placed upon a rise of land, land difficult to deal with because of its sandy nature, and because it formed a little

watershed. The work as done by the pupils has been described in a series of papers, each taking up a phase of the work, and written by different pupils. The headings of these papers are most suggestive, and since it is impossible on account of space to print all of the papers, the subjects given will help one to understand a little of the difficulties met with and conquered: I. The Pillars of the Schoolhouse and the Coldframe; II. Our School Garden; III. The Paths and Driveway; IV. The Lawn and Terrace; V. The Drain-tile; VI. The Flagpole. One of these accounts follows:

OUR SCHOOL GARDEN

By Dorothea Dunlop and Clarence Miller

When we first came to the school in the fall of 1907, the school building was new and the school grounds were just covered with loose stones, lime, boards, chips, weeds and about every kind of rubbish you can think of. We wanted a neat yard. We started by raking and picking up the stones and rubbish, and making the yard look as good as we could in the fall. Soon the ground was frozen so we couldn't do much.

But through the winter and in the spring we planned how we would fix the grounds. We decided to have a path right down to the road at the front and a terrace at the right of it, with a small garden next the building near the front porch and a long, narrow garden at the side of the building. We had the coldframe at the back of the school so we made a path from the main path to the coldframe around by the side of the building. The land between the paths formed a triangle. We had decided to make it into a garden; so it was ploughed up and all the stones picked out. Then we got a man to bring us some black loam for it, as the earth was just yellow sand or clay.

We gave a play to earn the money to get the land ploughed and the earth carried.

When we had a nice lawn we were anxious to keep it, but the rain seemed determined to run all over it and wash it into the gutter, so we decided to teach it better. We sank a drain-tile underneath the terrace from the beginning of the driveway to the edge of the road below. Now the school grounds are nicely drained.



These garden products were taken from the boys' own plots in the Fairview Garden. The work represented is entirely that of the children shown

ORCHARD & FRUIT GARDEN

"More and Better Fruit"

What Varieties to Grow

WHEN choosing varieties of fruits for family use, consider quality before all else. Quality is usually obtained at the expense of hardiness and quantity, and it requires study to learn how to grow successfully the best fruits and to protect them from their enemies. For these reasons, commercial growers generally do not plant fruits of the very highest quality. In the selection of trees consider the question of planting standards or dwarfs. Remember that the standards are for the orchard, and the dwarfs for the garden.

In considering varieties, I name only those with which I have had experience in southeastern New York, or in a latitude of 42 degrees and 2,000 feet above sea level, where the temperature is seldom lower than 20 degrees below zero and where the growing season is from the middle of May until the middle of September, without hard frosts. The same varieties will succeed in most of the Middle and Eastern States.

The apple is, without doubt, the most important of all fruits, and most of the trees selected should be high quality winter apples. Only a few early varieties are desirable, perhaps one tree each of Sweet Bough and Yellow Transparent will suffice. The best medium early apple is Strawberry and the best for late fall is the Fameuse (Snow) and Jersey Sweet, sometimes called Victoria Sweet. For late fall and early winter plant Banana and Grimes Golden. Newtown Pippin and King are the highest quality winter apples for those who prefer a mild or subacid flavor. The winter apples I most enjoy are Esopus, Jonathan, Swaar and Seek-No-Further. McIntosh Red is good and so is Northern Spy, with spicy flavor, but the flesh, in my opinion, is a little coarse. Roxbury Russet is best for latest use and, if wrapped in paper and packed in barrels, can be kept in fine condition until summer. That is the right way to pack all dessert winter apples. I would not grow other varieties for culinary purposes, for high-grade dessert apples make the best sauce and pies. Just grow enough of them! I find that twenty trees are none too many for my family.

The low-headed tree is the best for the family



Head your trees like this. It's much easier to care for your crop, and easier to gather than from a tall tree

orchard and garden, where maximum crops are not being worked for, and I would head back the trees to two or three feet. One does not enjoy picking apples from the top of a 30-foot ladder. I want to do all the work of caring for the trees and harvesting the fruit while standing on the ground or on a low step-ladder, so I head the trees low and prune to make them grow in the vase form, for all trees in the garden and orchard should be symmetrical and beautiful. Varieties of high quality, being of slower growth, need better soil and less pruning. Some trees need only sufficient pruning to keep them growing in the right form. Leaves are the trees' feeding organs and the gases in the atmosphere form over 90 per cent. of their food, so the larger the leaf surface the more rapid the growth. The characteristics of each tree must be studied to know how to rightly prune it.

Next to apples I most value pears. My choice is as follows: For earliest, Clapp Favorite; followed by Bartlett, Bar-Seckel, Bosc, Seckel; Anjou for an



The sort of thing you really do not want; gathering is laborious and even dangerous

early winter pear, and if I cared for pears all winter I would plant Winter Nellis. I would use Bartlett and Anjou in the greatest numbers. Pear trees require only sufficient pruning to start them right, and three or four feet is about the right height to head them. When the right form is established, it is best to leave the trees alone, so far as pruning is concerned, except to cut away any diseased wood or branches which are too close together.

Peaches can be grown with some success in most parts of New York State and in other sections having the same or a more southern latitude, although, like the apple and pear, they need special methods of culture in a cold climate. The white fleshed type is the best dessert peach, and is more hardy than the yellow-fleshed. Probably the Greensboro is the earliest peach that is good for anything;

Champion has the most delicious flavor and is very hardy. Peach trees need more pruning than pears, but I do not favor severe pruning of any tree in one year. If grown without protection in a cold climate, plant on high ground and in moderately rich soil. In my locality fair crops are produced in this way. The garden culture of peaches, trained to a trellis, is very interesting work for those who garden for pleasure, and for the family, and the largest and finest fruit is grown in this way.

My experience in plum culture has taught me some lessons. The highest quality I have found in the European plums, among the best of which is Reine Claude. The Bradshaw, Shropshire, Damson, Fallenburg, and a few trees of Japan plums are also desirable. Japan plums thrive best where the peach thrives, and under similar conditions; and I recommend Burbank, Abundance, Red June and Wickson. They are not of high quality, but are valuable for sauce and for canning. They bear very large crops and are less infected by curculio and black knot than other varieties.

Sour cherries are, perhaps, the most easily grown, and give the quickest returns of all tree fruits grown in my locality. English Morello and Montmorency are as good as any. I have several times planted sweet cherries, but in this climate, without treatment similar to that which you would give the peach, they do not live many years. The Windsor has done the best with me. Cherry trees require about the same treatment, as to pruning and culture, as pears, except that I would head them a little lower; with but very little pruning or care, they make very symmetrical and ornamental trees. There is no place where I enjoy being and working more than in a little cherry orchard, especially when the trees are in blossom or fruiting.

When one has growing on his place most of the varieties I have named, with, perhaps, a quince tree, he has about the best and most luscious fruits that can be grown in this climate, especially if they are rightly grown and picked only when fully ripe. One point which I would emphasize is that fruit growing can be made a pleasant recreation, and that the rewards are not only the pleasure of eating the fruit, but the work may bring rest to both mind and body, and better health and spirits.

New York.

W. H. JENKINS.



Train the young tree in the way it should go. Three years old, and destined for the vase form

Maule's Seeds

Once Grown Always Grown

Few gardeners have any idea of the size of the Maule Seed business. To one firm of celery growers I have sold in the last five years over 1,000 pounds of my XX Golden Self-Blanching Celery seed; this year I have already shipped them 200 pounds for their own planting. To another gardener I shipped last year \$550 worth of Maule's Prize Earliest Cauliflower; this year I am getting \$100 per pound for this seed. In one county in New York last season I sold almost 1,000 pounds of my selected Danish Ballhead Cabbage. One of my customers last year cleared up \$3,375 net on 15 acres of Maule's Earliest Valentine Beans; another made \$9,000 net profit on a 50-acre field of White Bush Squash; another, on 300 acres on an Island in the San Joaquin River, in California, made a net profit of \$92,000 on Maule's XX Golden Self-Blanching Celery. In the small town of Sunnyside, Wash., I shipped last year direct to growers 110 pounds of Maule's Earliest of All Tomato seed, while in a small town in Texas, with a population of 25, more than \$3,000 worth of Maule's Seeds are annually consumed.

Other facts are that in the last five years I have paid the U. S. Government \$214,898.07 in cash for postage. For years I have received more registered letters at the Philadelphia Post Office than any other Philadelphia seed house. In my home State of Pennsylvania alone I have 67,801 customers, fully 15,000 more than any other seed house in the country. During the late Boer War more cases of Maule's Seeds, bound for the Transvaal, were held up by the British Army than of any other seedsman, whether French, German, English or American. These facts may prove of interest to readers of the Garden Magazine who do not know Maule.

I will be glad to send my Seed Book for 1910 to every reader of Garden Magazine who will send me their address on a postal.

Maule's Seeds have today a reputation surpassed by none, equaled by few, and as you can get

Your Money Back if Not Satisfied

you need this book in your business. Send me a postal today and put money in your pocket.

WM. HENRY MAULE, 1721 Filbert Street, Philadelphia, Pa.



The Efficacy of Winter Sprays

BY the intelligent use of winter sprays combined with diligent summer treatment for insects and fungous diseases which can be controlled by spraying, we have a means of preventing many troubles which, before the advent of winter sprays, were not satisfactorily controlled.

Winter spraying has had two objects: First, the prevention of winter injury to trees from low temperatures, which has never come into wide practice, but which was carefully studied by Professor Whitten, of the Missouri Agricultural College Experiment Station, a number of years ago, when he attempted to prevent the warming up of the twigs of trees during the first warm weather of spring by means of spraying them with whitewash. He proved conclusively that the white cover, because it absorbed less heat than the normal bark, prevented the branches from absorbing heat, thus retarding their germination. As a result their blooming season was delayed so as to avoid periods of hard weather occurring about the time the trees usually start into growth. The delay caused by whitewashing was sufficient, in some instances, to save the crop. Whether or not this physiological effect is of any moment when the lime-sulphur spray is used, I am unable to say.

I am not familiar with any observations which compare the physiological behavior of trees sprayed and those not sprayed with lime-sulphur solution.

The lime-sulphur solution has, to a certain extent, the power of changing the color of the branches, the same as does the whitewash; and I should expect that the physiological effect noted as a result of whitewash might, to a certain extent, be found to follow the use of lime-sulphur spray.

Second, the object in spraying trees during the winter or dormant period is usually the control of scale insects or of some fungous disease which is known to pass the winter on the bark or branches of the plant. Besides this, however, it has been found that the winter spray, particularly of lime sulphur, has proven to be a very satisfactory means of controlling many insects other than scale insects. It is known that the application of lime-sulphur controls, to a very large extent, many plant lice. It is also a means of controlling the pear tree psylla, and is effective in destroying the pear blister mite.

In California, when applied late in the season, it has proved effective in controlling peach twig borer.

The most satisfactory treatment for anthracnose of the grape is found in the application of the standard iron sulphate-sulphuric acid spray during the winter months.

Washington, D. C.

L. C. CORBETT.

Hens Help the Strawberries

NEVER plant strawberries on sod land, as the white grub will be sure to destroy the plants, but after a hoed crop there is usually no trouble. Strawberries need new land, or sod that has been turned over and cultivated with some hoed crop, preferably potatoes, for one year. The ground should be plowed deep and enriched with a liberal supply of fertilizer containing considerable potash. With the majority of growers the matted row will give the greatest profit, as it will produce more quarts of berries to the acre. But if a grower wishes to cater to the fancy trade, he will get more profit by growing the plants in hills or in very narrow rows.

But to grow strawberries cheaply for home use, the following method is the most satisfactory that I have ever tried. I connect three chicken-runs with my hen-house and run the hens in all three yards the first year if they can succeed in keeping down the grass and weeds; if not, I confine them

to one yard, which they will keep clear and enrich the soil. The following spring, after spading up the ground in that yard thoroughly and deeply I set the plants and turn the hens into the next run, continuing the rotation each year. All I have to do is to set the plants and pick the berries; set a new bed every year and dig up the old one; and plant every year where the hens were the year before.

Massachusetts.

N. B. WHITE.

An Apple for Exporting

THE Yellow Newton Pippin is an apple that is more largely exported from this country than any other variety. It originated on Long Island and was afterward grown at the Pelham Farm on the Hudson River. From there it was exported to England, where it gained its reputation as one of the finest apples for export purposes. Scions of it were taken to Albermarle County, Virginia, and it was there renamed the Albermarle Pippin, the name it still retains to this day in Virginia. It is also grown in the Watsonville section of California and is shipped from there to England. There are some parts of Washington, Oregon and Idaho where it is now being grown. It is not adapted to Maryland, West Virginia or New Jersey and it only grows successfully in very few localities where the conditions of soil and climate are exactly suited to it.



In five years any one can have an orchard like this, and producing fruits worth having too. Why not begin yours now?

In the sections of Oregon, Washington and Idaho, where it is grown, bearing orchards are worth from five hundred to fifteen hundred dollars per acre.

Washington, D. C.

G. B. BRACKETT.

Roselle Jelly

SOME ONE recently lamented that it was impossible, in this latitude, to utilize the roselle plant for jelly, but that we must be content with the beauty of its foliage. It is true that the roselle does not bloom in this latitude, and the seed pods therefore cannot be so utilized; but having lived in California when the plant was first introduced into that state, I remembered the statement that in New Zealand, where the jelly is made in large quantities for export, the whole plant—stalk, stems, and all—was used. I tried it this year in Massachusetts and found that a large plant twenty inches high would produce about one-third of a pint of jelly as delicious as that made from the seed pods, and of a clear, transparent red, resembling the cranberry in both color and flavor.

The roselle is an annual. In California seed is usually sown in February or March. The plants are set four to six feet apart in rows six to ten feet apart, and all weeds are kept down. The plants attain a height of from five to seven feet; the flowers are large and yellow, each having a red eye. They last but a single day; in about three weeks the seed pods are fully developed and ready for picking.

Massachusetts.

L. A. W.

A Tennessee Recipe for Apple Butter

TO begin with, it is absolutely essential that you have apples. Folks down here rarely ever try to make it out of any other fruit than the regularly prescribed apple. In this respect the making of apple butter differs from rye "licker"; to make the cheering beverage all that is necessary is a bit of pure alcohol and ten cents' worth of chemical from the drugstore. Apple butter, though, is peculiar—you *must* have apples.

When you have your apples, the next thing to do is to get them ready for boiling. Skin them. To do this hold each one firmly by the head and with a knife remove it's hide. Next dissect it. It is not necessary to have every portion the same size. Remove the seeds. Eat the core.

I have found after a careful and exhaustive investigation that the main thing necessary to start out into the apple butter industry is to have seen some one else make it. Aunt Sally has seen millions of gallons, has made hundreds of them herself—so has Miss Mary—but neither one knows how many gallons of apples they ever made at one time, or how many pounds of sugar they used. Somebody *possibly* knows that a given quantity of apples requires for sweetening purposes a given quantity of sugar!

Apples, water, sugar, and cinnamon for flavoring: as many gallons of apples as your cooking

utensil will conveniently hold; as much water as is required to cook apples to make sauce; as much sugar added to please the taste of the maker—say, half a gallon of sugar added to a gallon of apples, after the apples have been cooked until they are soft and mushy. Granulated sugar, white sugar, is the best. When you have poured in your sugar and stirred the mixture thoroughly, take a spoon or paddle or shovel or something, and taste it. If it is sweet enough, then you have enough sugar; if it is not sweet enough, then you haven't got enough sugar. Then you flavor the whole with cinnamon. Cinnamon bark, not extract. Begin with a piece of bark about the size of your thumb, in length it may be four to six inches long; pulverize it, stir into the apple butter, then taste it again. Be mighty cautious with the cinnamon; too much will spoil

the butter. Don't forget to stir; if you do you will burn the "stuffin'" out of the whole mess. Don't cook it too long, or you will have a glutinous substance that will defy any knife or axe after it has been in crocks for awhile.

Folks down here also use cider in making apple butter. The proportions relative to apples are unknown. You just have to see somebody make it. This is "sweet" cider; I reckon it is used according to the dictates of conscience and judgment of the one doing the stunt.

The whole idea is perfectly simple—you boil apples for a comparatively short time, and behold you have marmalade. You boil them a little longer and, b'gosh, you have apple butter!

If you don't know how to cook apples you can't make apple butter. You might stand by the side of me and direct me in making bread—tell me to take a pinch of salt, so much soda, and so much of everything, but the result would be vastly different. I have tried it. I tried to make some bread one day when I was younger than I am to-day. My mother gave the directions and I did the work. The bread was a monument to my intelligent industry. It was very much like a monument. It was so firm and had so much strength of character that I used it for a block to keep my dog in the yard the rest of that winter. The chain finally wore out and the dog lost it.

Folks have told me how to make apple butter, and I have told you. I cannot make it; can you?

Tennessee

CLYDE



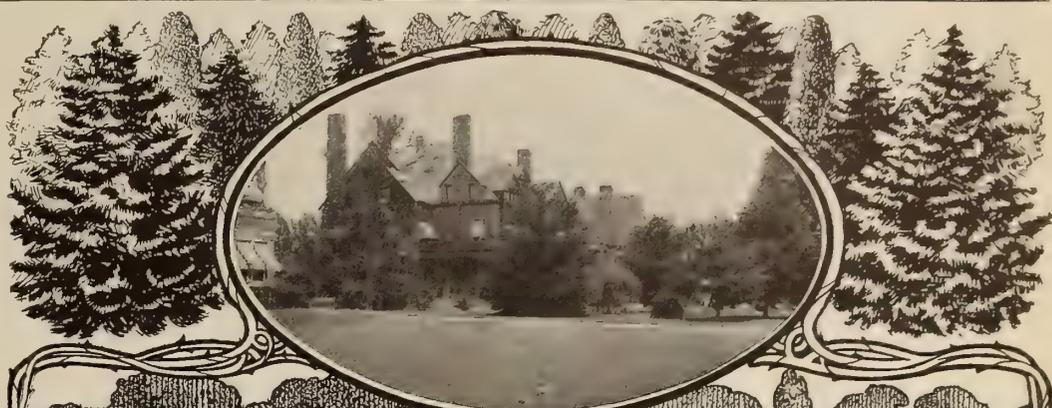
" I
Cannot
tell a
lie " —

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The 1910 edition of our great planting guide is the most complete, useful, practical nursery catalog ever published. It's a beautiful book, replete with illustrations of trees, shrubs and plants. Two full pages are reproduced in natural colors. More than half a century's experience has gone into the growing of

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Your Garden**

Just as easy for you to plant the very best seeds as the ordinary kinds.

My new 1910 seed catalogue is a directory of the kinds that bring best results. No guess-work—the varieties have all been thoroughly tried out, and you can have as successful a garden as if you had specialized in each vegetable and flower for years. My catalogue shows photographs of what the seeds produce—what you can raise yourself.

Special 10-Cent Offer I'll gladly send you a copy of Stokes' Seed Catalogue free. If you send me 10 cents in stamps or silver, and mention The Garden Magazine, I will send in addition a 10-cent packet each of my "Bonny Best" Early Tomato and "Stokes' Standard" Sweet Peas. Write today.

WALTER P. STOKES
Dept. A, 219 Market Street, Philadelphia

"Stokes' Standard" SEEDS

EVERYTHING for the GARDEN

is the title of **Our 1910 Catalogue**—the most beautiful and instructive horticultural publication of the day—a book of 200 pages—700 photo engravings from nature—8 superb colored and duotone plates of vegetables and flowers. It is a mine of information of everything in gardening either for pleasure or for profit, and embodies the results of sixty years' experience. To give this catalogue the largest possible distribution we make the following liberal offer:

Every Empty Envelope Counts as Cash

To every one who will state where this advertisement was seen and who encloses **Ten Cents** (in stamps) we will mail the catalogue and also send free of charge our famous 50 cent "HENDERSON" COLLECTION OF SEEDS, containing one packet each of *Giant Mixed Sweet Peas; Giant Fancy Parsnips, Mixed; Giant Victoria Asters, Mixed; Henderson's Big Boston Lettuce; Freedom Tomato and Henderson's Blood Turnip Beet* in a coupon envelope which, when emptied and returned, will be accepted as a 25-cent cash payment on any order amounting to \$1.00 and upward.

In addition, all ordering from this advertisement will receive a copy of our **Garden Guide and Record**, which we consider one of our most valuable publications. A book of condensed cultural information of which one of our customers who has had an advance copy, says: "It is the most complete, concise and comprehensive book of its kind."

PETER HENDERSON & CO. 35 & 37 CORTLAND ST. NEW YORK CITY



What You Gain by Starting Seeds in Heat

HAVE you ever visited any of the numerous flower and vegetable shows usually held early in November? Have you not admired the monster onions and great, heavy-stalked celery, leeks as large as one's arm, and other vegetables wonderful in size? I am not going to tell you that you can grow the same things because I do not know whether you can or not; but I am going to tell you this — that some of those vegetables were sown just as soon as the new seed could be procured, usually toward the end of January or early in February, especially the onions and leeks.

Increased size, however, is not the only advantage of early sowing. There are numerous other reasons, the most important of which is an early crop. With an early start you can have lettuce in April, cabbage in June, etc. And then there is the practical side. A friend once asked me why all his cabbage split; he was afraid he used too much manure. I laughed. I usually do when any one speaks of having used too much manure, because cases of that kind are about as frequent as springs in a desert. But after learning that my friend started his seed in April, I found the cause of his trouble — the cabbage would then be heading up in July — in the hot weather. Cabbage and cauliflower must be started early in the season. Make the first sowing of seed any time during February for early results, and another in May for a late crop.

Greenhouses are not an absolute necessity in the starting of early vegetables. A good bay-window will answer the purpose very well. Build a stand so that the top comes even with the sill. Make some seed boxes about two feet long, one foot wide and about four inches deep. Leave space in the bottom for drainage, which should consist of about one inch of cinders or stones. Place a sod over this; then put about one inch of soil in the box, but do not have any manure in the soil. Firm nicely with your fingers, then smooth with a board. Sow the seed and place the box in the window. If one box has a more favorable location than another, change them around daily to give all an equal opportunity, but this is not necessary until the seedlings are showing themselves. Try to keep the temperature in the room about 50 degrees at night, and do not water too freely.

Of course a small hotbed is better than the bay-window method, and though it will cost a trifle it will repay tenfold. Like other things, a hotbed can be built well or just knocked together for the occasion. I favor the former, but for temporary use you can build a cheap one from boards. Dig a hole about three feet deep, six feet wide and of

whatever length you think you can afford sash for. Board up the sides, giving the hotbed a height of six inches above ground in front (which, by the way, should be the south side so as to get the maximum amount of light). The back of the frame should be about six or eight inches higher than the front. Partly fill the hole with fresh horse manure well mixed with some leaves or bedding, and tramp it down well, being sure it is well moistened. Cover with about eight inches of good soil, the top of which should be level with the outside ground. Put the sash in place and wait for the soil to get warm before you sow the seeds.

But if you think you really want a good hotbed, do not build it of wood, as the wood soon decays. A concrete or brick hotbed will last a lifetime. A very good idea in building one on these lines is to have your back or north wall (which should be about four inches thick) rise about two feet above the level of the frame. Carry the ends down on an angle to meet the front line, and you have a very pretty and practical frame. This high back is a wonderful protection for the frames.

If you sow cabbage in February, you cannot plant it out-of-doors in March, and neither can you leave it in the frame just as you sowed it. The plants will require more room, so therefore do not put all your hotbed down at one time. One or two sash will suffice in which to sow the seeds for a hotbed of twelve sash; so you can see that it would be much more practical to divide the bed in some way.

Here is my way: For a twelve-sash hotbed I would start two sash for the seedlings. I would

whether they need it or not. Use a little judgment and do not overwater. For the benefit of the amateur I would say that when plants are small and growing under artificial conditions, there are a great many more killed from overwatering than from not having enough moisture.

Of course, the person with the small greenhouse has really got the best of it. He can grow early vegetables to perfection, and he is also able to have early vegetables of various kinds that it is not practical to start in a hotbed, such as carrots, beets, corn, etc. But it is still a trifle early for these vegetables, and they will not be considered until next month. It is convenient to sow seeds in the greenhouse in flats, as they are so easily moved around; but this is by no means a necessity, as the seed can be sown right on the benches or beds. Another advantage of the flat is that when planting-out time arrives the young plants can be shifted to a coldframe to be gradually hardened off; but if planted in the greenhouse benches the temperature must be lowered to do this, probably to the disadvantage of something else.

As to the vegetables that should be sown in February, get onions in as soon as you can — that is, if you want big ones that look like Bermudas and are so mild in flavor that you could eat them like apples. Handle leeks about the same as onions, sowing at the same time. Celery is next in order and should be sown about the middle of the month, if you want early or late celery that is far above the average quality. Toward the end of the month is a good time to sow cabbage and cauliflower, and if you ever have any trouble with

Brussels sprouts not heading up, try sowing them with early cabbage and handling them the same way.

Space should be reserved in the hotbed for the more tender vegetables, such as peppers, egg plant, etc. These will also be taken up next month.

Now is the time to get your manure in the garden. I do not mean dug under, but stacked on the ground where you intend to use it, and if it is turned again before it is used, all the better. Every turning the manure heap gets improves it greatly. Another advantage of getting manure in your garden now is the fact that you can safely drive heavy loads over roads and beds which, if you waited until the frost is all out of the ground, would be cut

up very much. As a reminder, if you have not yet secured pea brush, get it now.

New York.

W. C. McCOLLUM.

(EDITOR'S NOTE. — Next month we will take up the handling of seedlings, how to dibble them off, sowing tender vegetables, how to prepare the soil for starting the young vegetables, etc.)

Self-sowing Varieties

SELF-SOWING flowers offer a suggestion to amateurs; and even some vegetables occasionally self-sow. Fresh seeds can always be obtained in the fall and sowed for early crops the next season.

The seeds of the tender sorts of vegetables probably become buried deep enough to be protected by the soil during winter. Lettuce, mustard, tomatoes, squash, and others of the same tribe, potatoes and sometimes corn are those most frequently seen growing from self-sown seeds.

The best self-sowers amongst flowers are sweet alyssum, portulaca, cornflowers, annual larkspur, annual poppies and calendulas.

New York.

I. M. ANGELL.

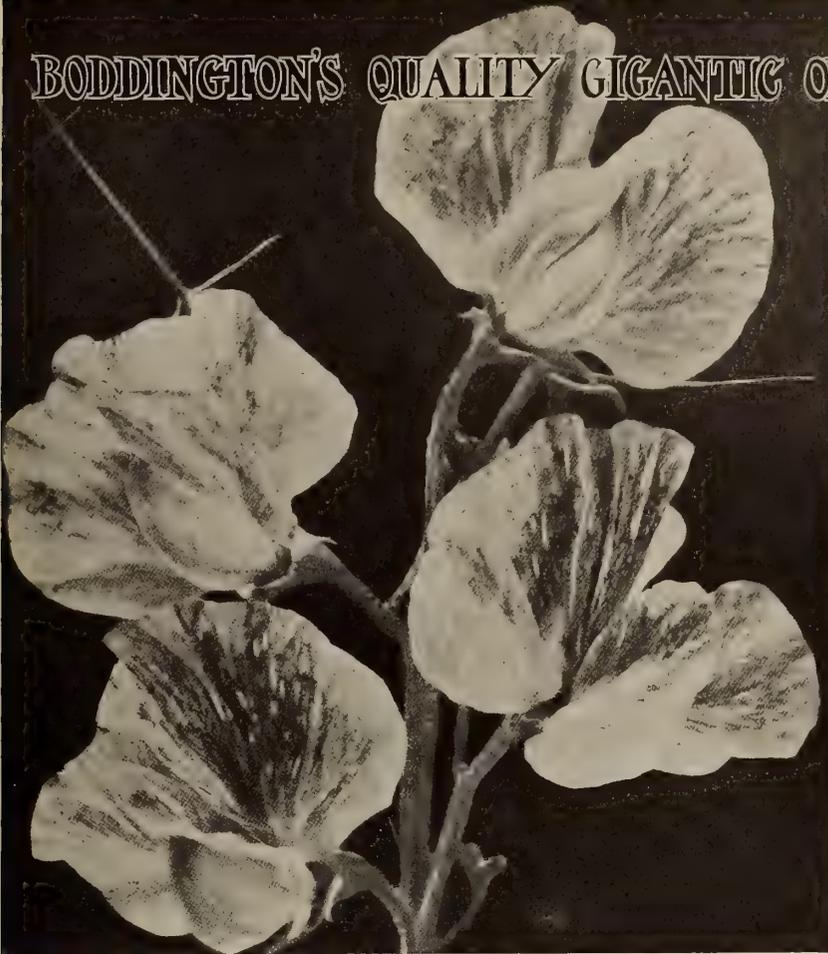


A concrete frame for a hotbed will last a lifetime; wood soon decays. Note the high back protection for the frames

have five sash ready to take the young plants about three or four weeks later; and about two weeks later I would have the others ready to take the balance, which would consist of slow germinating seeds. Some folks sow seeds in a hotbed in rows. I prefer sowing broadcast, and I am conceited enough to think that my method is the better, for this reason — by taking full advantage of all the room the plants receive the maximum amount of light. Mark a space off with sticks, laying them right in the soil; and always wait for the soil to get warm before you sow any seed. This will usually take a few days after the hotbed is made up.

If you haven't any cover for your hotbed you should provide one of some kind. If not a burlap or straw mat, some straw or leaves will do; but it must be removed on fine days to give the plants air and light. Ventilate the frame a little during the middle of the day on bright days, especially after the seeds have germinated, and never water the young plants in the afternoon, but always in the morning and on a rising temperature. Use a sprinkling can with a fine rose; the temperature of the water should never be lower than 50 degrees. Above all, do not get methodical in your watering and give the plants a bath every day,

BODDINGTON'S QUALITY GIGANTIC ORCHID FLOWERING SWEET PEAS



The superior quality of our Sweet Peas is a matter of general knowledge among expert growers, and now a subject of public record from the fact that, at the annual exhibition of the National Sweet Pea Society of America, held in New York City, July 7 and 8, 1909, we were awarded the C. C. Morse Company's

Silver Cup for the Finest Collection of Sweet Peas

For the 1910 exhibition, we take pleasure in offering a **Challenge Silver Cup, Value \$50**

Our Garden Guide, sent free on request, contains full particulars of this Cup offer and details of **The Largest Collection and Most Up-to-date Varieties of Sweet Peas in America**

Write to-day for a copy of this great book, which will be mailed free. It gives a complete history of the Sweet Pea, a grand, useful flower, and full directions for its culture; also of all other seeds, bulbs and plants. Our grand offer for 1910:

A Quarter of a Pound of Gigantic Orchid Flowering Mixed Sweet Peas for a Quarter

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Dept. G, 342 West 14th Street, New York City



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You know enough about roses to appreciate how uncertain some roses are. You know why this is, viz., because many rose growers force their roses for sale purposes only—and if they don't make good, why, then it's your fault. Then you'll appreciate some of the things we do to insure the growth and bloom of our roses.

We grow all our roses on their own roots under conditions similar to those they'll encounter when they are planted in your garden. They're grown slowly and surely —not forced.

That's why we can guarantee our roses to grow and to bloom. That's why they are the best roses in America—and more. That's why the leading rose growing amateurs, the finest and most exclusive estates and the United States Government buy roses from us. Now we want you to buy our roses and here's a suggestion for you:

**Send for THE BLUE ROSE —
"The Sensation of the Century"**

The Blue Rose is a new rose from Holland that originated from Crimson Rambler. It bears semi-double flowers of medium size, in large bunches. Those who have seen it praise the rose "Violet Blue" as a "very distinct and pleasing" novelty.

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With orders for the Blue Rose we will send you a copy of our instructive rose manual "HOW TO GROW ROSES" free of charge. Send remittance to-day.

**New Rose
Wm. Shean**

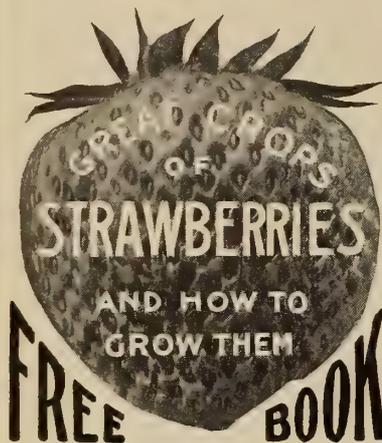
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For full information about this and 20 other new ones — get our 136-page Guide to "THE BEST ROSES IN AMERICA" and other Flowers.

This book is free to readers of Garden Magazine.

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The Conard and Jones Co
Box 24
THE BEST ROSES IN AMERICA
West Grove, Pa.

Our 1910 Edition of "Great Crops of Strawberries and How to Grow Them"



has been re-written from cover to cover. It is the most valuable text book on strawberry-growing ever put into print, because it teaches the Kellogg method of growing larger crops of better berries than can be grown in any other way. Every detail of the work is illustrated by photo-engravings and is explained in such a plain and practical manner that anyone who will read the instructions and study the pictures is sure to succeed.

**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 tells about the big yields. The man who wrote this book is the world's greatest strawberry expert. He has 110 acres in strawberries and every word is written from actual experience. He tells you how to increase the fruiting-power of the plants, and how to enrich the soil to make the plants do their best. He also shows you how to prune and set the plants, and how to mate them to insure a perfect berry from every bloom; how to layer runners to make an ideal row; when and how to cultivate; gives full instructions about spraying, mulching, picking, packing and marketing—all these essential features, as well as everything else pertaining to the work, are made perfectly plain by pictures. Besides all this the book explains how the Kellogg strain of thoroughbred plants is produced, and gives positive proof that

These Famous Plants Have Won the World's Highest Fruiting Record

The book also shows pictures of fifty-four different kinds of strawberries, with a complete description of each variety.

We feel mighty proud of this book. It is surely worth its weight in gold to anyone who has an ambition to become an independent, money-making strawberry grower. If you want one, just say so, **but don't send any money.** This ad says the book is free, and what we say we do, we do, and no backing out.

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

Kellogg's Thoroughbreds Grow Bumper Crops

MORE than 13,000 quarts of strawberries to the acre is the 1908 record of O. J. Wigen, of Creston, B. C., who writes as follows, under date of July 28, 1908: "Having just finished the marketing of 53,000 quarts of strawberries from a little over four acres of ground set with your Thoroughbred Pedigree Strawberry Plants, I feel it my duty to let you know of the performance of your plants in this part of British Columbia; and I would add that, under a more perfect system than I have been able to follow, this yield can be greatly increased." O. J. Wigen.

"Great Crops of Strawberries" Worth \$100.00 to Him

Farm Journal, 1025 Race Street
Philadelphia, Feb. 20, 1908.

R. M. Kellogg Co., Three Rivers, Mich.
Gentlemen: We have a letter this morning from Thomas B. Magee, of Browning, Montana, in which he says: "I have derived great benefit from your advertisements, especially the R. M. Kellogg Co., of Three Rivers, Mich., whose Strawberry Book is worth a hundred dollars to anyone interested." With best wishes,
Very truly yours,
WILMER ATKINSON CO.,
Chas. F. Jenkins.

Extra Early Tomatoes

WE who live in the Northern States have become accustomed to looking to the South for our extra early tomatoes or doing without until the home-grown crop comes on in August. But with a little care and trouble and no expense, I have had tomatoes from our garden by July fourth.

It is necessary to start the plants quite early as it requires one hundred and twenty to one hundred and fifty days to bring the fruit to maturity. About the first of February I plant the seed in a shallow box made a convenient size to fit the window sill. Holes are bored in the bottom of the box for drainage, an inch or two of broken brick is put in and covered with four inches of good garden soil. Seeds are placed an inch apart, then a quarter of an inch of soil is sifted over them and firmed by pressing lightly with a board.

Young tomato plants like plenty of warmth and moisture, but the soil must not be made so wet that it becomes soggy or sour. Such a condition often causes the fungus growth that produces "damping off." I use a small brush in preference to a sprinkling can for watering the plants. Once a week a little liquid manure is applied. It must be used sparingly, however, for it is apt to cause too rapid and consequently too spindling a growth.

When the plants are two inches tall I transplant them to a larger box where they will have more room to grow. They are set four inches apart. When about six inches tall they are again transplanted to pots or small boxes. Old berry boxes may be utilized, though they are rather shallow. In the pots the plants grow large and stocky and make strong root growth. By the first week in May, which is the time I usually set them out, they are well branched and have some crown blossoms open.

HOW WE CULTIVATE

The ground intended for tomatoes is given a liberal coat of stable manure in fall or winter, plowed as early in the spring as weather will permit, and usually some catch crop, as lettuce or radishes, is grown before the tomato plants are set. Hills are made ready the first of May, a shovelful of well rotted manure being placed in each. The soil in the pots is thoroughly soaked before lifting the plants, so there is little disturbance of the roots in setting out. The plants are shaded until they become thoroughly established. Three and a half feet is my rule for early tomatoes; closer than the main crop is set. Cultivation begins soon after the plants are set and is kept up with horse cultivator and hoe until the vines cover the ground. My soil is a rather heavy clay loam and I believe is best for tomatoes.

I believe it is a mistake to prune the vines as severely as some gardeners do. I have tried both methods and find little advantage in earliness and a distinct loss in yield when the plants are trained to just two stems. Except in an experimental way I do not trellis or prune my plants at all. Sometimes a late freeze catches my first setting, but usually it is safe to set plants the first week in May. If they have been properly hardened they will not be injured by even a moderately heavy frost if protected by newspapers or straw.

Ohio. NAT S. GREEN.

American Bog Plants

I HAVE already named (on pages 12, 13 and 14) American bog plants of a spectacular character, and I will now give some of our best native shrubs for wet places:

ERICACEAE

Wild rosemary, *Andromeda polifolia*.—Rhodora, *Azalea Canadensis*.—White Azalea, *Azalea viscosa*.—Dwarf Cassandra, *Cassandra calyculata*.—High-bush huckleberry, *Gaylussacia frondosa*.—Sheep laurel, *Kalmia glauca*.—Labrador tea, *Ledum latifolium*.—Deerberry, *Vaccinium stamineum*.—High-bush blueberry, *Vaccinium corymbosum*.

OTHER SHRUBS

Button-bush, *Cephalanthus occidentalis*.—Black alder, *Ilex verticillata*.—Long-stalked winterberry, *Nemopanthes Canadensis*.—Red choke-berry, *Pyrus arbutifolia*.—Virginia willow, *Itea Virginica*.
New York. W. M.



Prof. Craig

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Complete Home Study Course in practical Floriculture under Prof. Craig and Prof. Batchelor of Cornell University.

Course includes Greenhouse Construction and Management and the growing of Small Fruits and Vegetables as well as Flowers Under Glass.

Personal Instruction. Expert Advice.
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Plant for Immediate Effect NOT FOR FUTURE GENERATIONS

Start with the largest stock that can be secured! It takes over twenty years to grow such Trees and Shrubs as we offer.

We do the long waiting—thus enabling you to secure Trees and Shrubs that give an immediate effect. Price List Now Ready.

Andorra Nurseries

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Box G, Chestnut Hill, PHILADELPHIA, PA.

POTASH

The German Kali Works have talked Potash and its benefits for twenty-five years. They have never sold a pound direct to local agents or farmers.

You know how hard it was to buy and get Potash. Things have changed. The mines are now producing enough to enable us to offer

POTASH FOR SALE

in carload lots of twenty tons, to local dealers without interfering with the requirements of those to whom we have sold Potash to be used in mixed goods. We have, therefore, established a Selling Agency in Baltimore, Md., and in **Delivery Guaranteed** 1910 will sell all potash salts in carload lots for cash, direct from the mines to the buyers in original sealed bags, or kaint in bulk, at lower rates than were ever before quoted.

Potash Pays You can buy the real potash salts—plant food without fillers or make-weights—you save all the money you have been spending for interest, freight, excessive profits on fillers and mixing charges.

For particulars and prices write to

GERMAN KALI WORKS, Continental Building, Baltimore

Two Superb New Roses

Raised by JACKSON DAWSON

Now Offered for Sale for the First Time

Lady Duncan

THIS fine rose was awarded a silver medal by the Massachusetts Horticultural Society. It is a hybrid of the ever-excellent Rugosa and the Memorial Rose (*R. Wichuraiana*). It has the prostrate, long rampant growth of Wichuraiana, while the Rugosa blood shows in the luxuriant, dark, glossy foliage and in the profusion of large, single flowers. The petals of rich, glowing pink melt into an exquisite, large, yellow centre. Lady Duncan is perfectly hardy, even to Canada; is a strong grower, free bloomer and of long duration of blooming.

Daybreak

A ROSE of Wichuraiana type, crossed with the Rambler Dawson. A vigorous grower, profuse bloomer, excellent, too, for forcing. The flowers are single, in great pyramidal clusters of deep, yellowish pink, somewhat darker than Lady Duncan, the petals of a lighter shade toward centre. The foliage is bright, glossy green, and the habit trailing, like its parent Wichuraiana.

The stock is limited. Order now for Spring delivery

Good strong plants which will yield a mass of blossoms in late June of this year. \$1.00 each, \$10.00 per dozen.

EASTERN NURSERIES

Henry S. Dawson, Mgr.

Jamaica Plain, Mass.

Harrison's New Catalogue Free



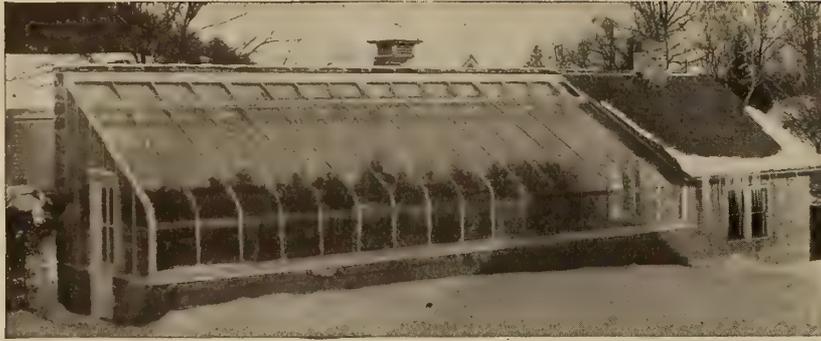
Not a big book, but big enough to tell you all about the biggest nursery in the country. No impossible color plates, but Cherries and Apples and Peaches and Strawberries shown in their *natural* colors. Every fruit offered has been tried out in the orchard or garden and proved to have real merit.

The envelope in which you will receive the Catalogue contains two coupons, one good for copy of our book "How to Grow Fruit" and the other for its companion volume "How to Plant About the Country Home." The regular price of each is 25 cts.

Edition of Catalogue is limited; coupons good only for a short while. Write today, mentioning special offer No. 22.

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BERLIN, MARYLAND

With Coupon Good for Two other Books



How About A Lean-to Greenhouse?

Haven't you a building or wall of some sort, against which you can put a lean-to greenhouse? It makes an inexpensive way to build.

This house is right in the heart of the Adirondack mountains, and all winter long it was just like a June day inside. Flowers and vegetables a plenty, besides hundreds of growing plants, all ready for spring setting out in the flower beds, window and porch boxes.

If you knew, say, half the pleasures and advantages of having a greenhouse, you would

not hesitate a minute in buying one, — that is, provided we could show you that the U-Bar house overcomes all the objections that other greenhouses have, and grows more and better flowers besides.

Several pages in our new catalog are devoted — just to lean-to greenhouses — not simply illustrations, but the facts you want to know. Of course, there are numerous other houses shown too. You may like some one of them even better. Send for the Catalog.

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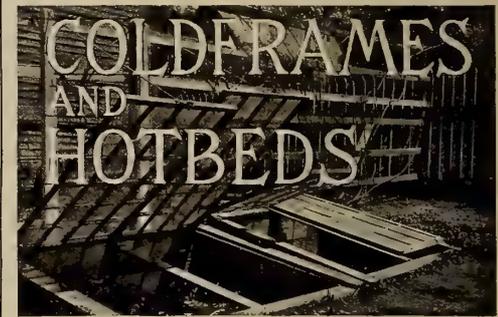
The Precious Hart's Tongue

NEW to me was the hart's tongue fern (*Scolopendrium vulgare*), which every English child knows and loves for the breadth and brilliancy of its thick, leathery, undivided leaf. The picture on page 14 is a fair portrait, but fails to show its charming environment. The hart's tongue grows on roadside rocks and walls, on shady banks and in ravines and looks like a stranger from the tropics. It generally grows about a foot high, with leaves twelve inches long and one and a half to two inches wide. Few people know the extraordinary number of fantastic forms to which the hart's tongue has given rise in cultivation. A nursery firm at Sale, near Manchester, which issues the largest fern catalogue in the world (122 pages), offers sixty-two varieties of the hart's tongue, varying in height from six inches to two feet and cut and crested in many odd forms. But the original wild type is, of course, the most precious for the bog garden.

If there is anything in England that looks impossible to grow in America it is this same hart's tongue fern. Imagine, therefore, my astonishment on learning that it actually grows wild in the United States, and thrives as far north as Vermont! In this country it is a very rare plant, growing only on limestone rocks. Some of our botanists call it *Phyllitis Scolopendrium*. Two American nurserymen now offer the hart's tongue and I doubt not their stock has been propagated in the nursery. It would be scandalous to offer collected stock of so rare and precious a plant.

New York.

W. M.



A Cellar Window Frame

If you have a cellar window with a southern exposure you can have, at very slight expense, a sort of compromise between a hotbed and a cold-frame which can be used very effectively in starting your early seedlings. The frame shown in the accompanying picture (with the top propped open) is 34 inches wide, 16 inches high, and 30 inches deep. It is made of 3/4-inch poplar, with 3/8-inch square strips nailed around the inside of the frames for the glass to rest against, the glass being held in place with putty, though other strips would do as well and, if put on with screws, facilitate the renewal of the glass in case it is broken. The frame is made so that it can be slipped into the window casing about 4 inches, fits snugly, and is hooked from the inside. The top, which is hinged at the outer edge so that it may be raised for ventilation, is also fastened inside with a hook for safety at night. When you are through using the frame, all that is necessary is to unhook it and remove it to some place where it may be stored for the summer.

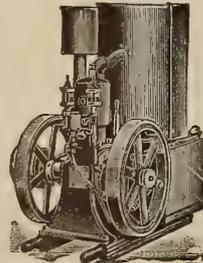
When the frame is put in place the window sash is removed, and the result is really an extension of the cellar (with about the cellar's temperature most of the time). By standing on a bench of convenient height you can care for your plants from within the cellar in all kinds of weather without exposure. The bottom of the frame should fit squarely on the ground, and it is well to bank it up a little on the outside. It is also a good plan to cover the bottom with sand as you would a greenhouse bench. At night, unless there is a cold wind blowing, the temperature in the frame will seldom fall much below that of the cellar. If a hood of old carpet is made to fit snugly over the frame the temperature can generally be held up to the cellar temperature. Covered in this way, the lowest temperature shown by the frame in the picture, last winter, was 38

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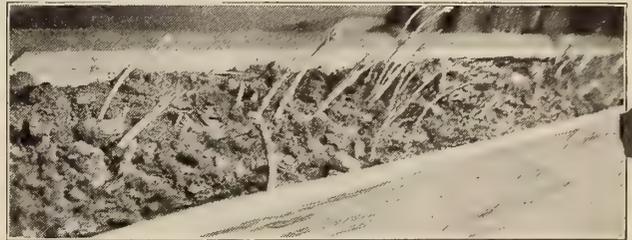
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degrees in February, in the teeth of a southwest blizzard, with the thermometer outside at zero. Ordinarily the temperature at night was about 58. On bright, sunny days, even when the weather is cold, the temperature runs into the 80's in a surprising way, and ventilation is given by raising the lid. Danger from high temperature is lessened by having the frame open into the cellar, which permits the excessive heat to escape and generally modifies the temperature to fairly safe degrees, just as it helps to keep the frame warm when the weather is cold.

Last spring plants for the family garden were successfully started here, including beets, cabbage, cauliflower, chard, kohlrabi, and lettuce; and later, when these had been removed to an ordinary cold-



Make a frame like this outside your cellar window and start your early seedlings in it. Remove the window sash, and the plants can be cared for, in all kinds of weather, from inside

frame, good plants of tomatoes, egg plants, peppers, cucumbers, muskmelon and English marrow were successfully forwarded. Of course, in so small a space not many plants of each kind can be raised, and a good deal of management is required in the way of getting the hardier plants started first and getting them out of the way for the tenderer ones when the weather grows milder. This sort of frame is a great help in advancing the kitchen garden, and it is just as effective with flowers.

Indiana. WOOD LEVETTE WILSON.

The Grandest Bog Lilies

THE most gorgeous lily we have east of the Rockies is the one that has been well named *Lilium superbum*. It has flowers about four inches across, orange, spotted with dark purple, and of the Turk's cap type, i. e. the flowers are drooping and the petals rolled far back. It blooms in August. In sunny meadows or in garden conditions this lily may grow only three feet high and bear four to ten flowers, but in American bog gardens it towers to a height of eight or ten feet, each stem being crowned with a great pyramid of bloom, often containing twenty and sometimes thirty flowers. The species nearest like it on the Pacific Coast are Humboldt's lily and the leopard lily, both of which do better in England than *L. superbum*.

Second to superbum among practicable lilies for the bog garden I should rank the Canadian wood-lily (*Lilium Canadense*), which bears red or yellow bells in July. The European dealers take pains to separate these two varieties and they even have a third color, viz., orange. I saw all three at Iver Heath, and it was a pleasure to see them doing better in an artificial bog garden than I had ever seen them in nature.

It is customary to speak of "bog lilies," but I hope that no one will imagine that the bulbs themselves like constant dampness. I would have no stagnant moisture in a bog garden, for it breeds sourness and scum and very few plants worth growing can stand it. The ideal is moving moisture — an unfailling water supply combined with perfect drainage. The bulbs of bog lilies should be a few inches above the line of constant moisture.

New York. W. M.

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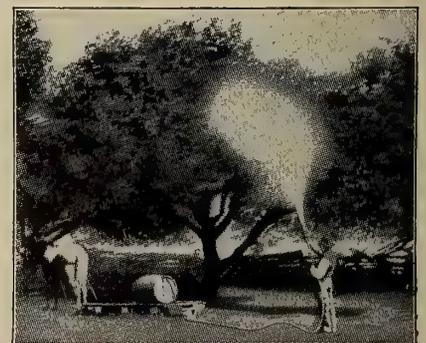
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Seeds to be Sown Now

EARLY in the month sow seed in the uplands, of tomato, pepper and egg plant in hotbeds. Sow sweet peas and seed of the early varieties of garden peas in trenches in the open ground before the 15th of February.

At about the same time plant early white potatoes. Do not use a rich, nitrogenous fertilizer for potatoes, as it makes them produce foliage at the expense of the tubers.

Sow beets, lettuce, turnips, radishes, spinach, celery, kale, mustard, carrot, parsnip, parsley, and salsify in open ground where it will be convenient to give protection, if it is required.

Also sow the seed of half-hardy annuals and perennials in a sunny place, where they will be protected from the frost. By getting them started early they will not only produce earlier and better flowers, but will also develop a stronger root system, and thereby be enabled to stand the hot, dry weather better.

In the Middle and Lower South, plant garden peas and white potatoes for main crops.

The cheapest and best method of growing onions is in the open ground. Sow the seed now.

Sow pepper, egg plants and tomatoes after the



Sweet potato plants that have been grown in a hotbed

tenth of the month in a sunny place in the open ground. Cover them on cold nights.

Plant out dahlias, gladiolus and tuberous roots now; also make hotbeds for growing sweet potato plants. Directions for doing this were given in Volume VII of THE GARDEN MAGAZINE, page 83.

After the tenth of the month, sow seed of sweet corn and early bush beans, also cucumbers, squashes, muskmelons, and watermelon. Cover on cold nights. Use horse stable manure in making the hills. The Improved Georgia Rattlesnake is one of the best early watermelons for the home garden.

Bermuda grass is the best lawn grass for the South. Plant out pieces of the grass now, or sow the seed.

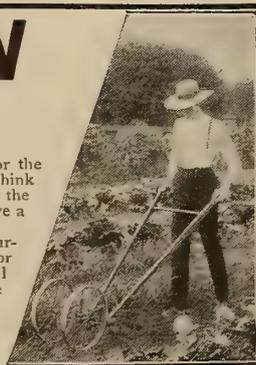
Every suburban gardener in the Middle and Lower South should plant some sugar cane; children are very fond of it, and it is good for them. Plant the variety known as Green Cane; it is softer than the Red, although not so sweet. Late in the month is the best time for planting cane.

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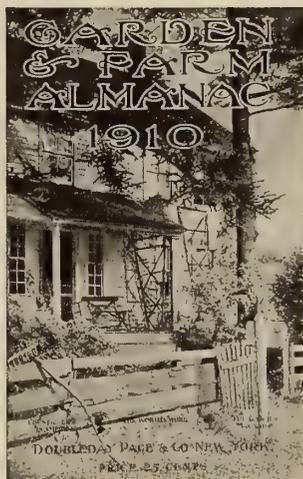
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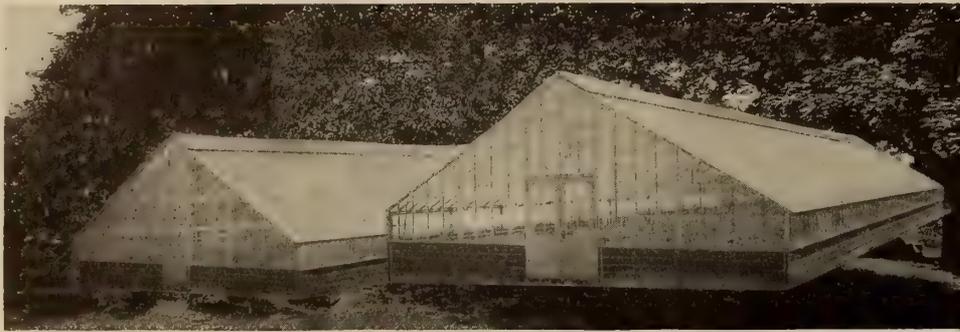
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Greenhouses As Money Makers

ALL this talk about luscious tomatoes and spicy carnations grown in your own greenhouse, is all very good for the man who wants a greenhouse as genuine pleasure, or can afford it for the contribution of enjoyment to others; but what chance is there for one who wants to make it a paying proposition? There is every chance! Carnations, for instance, are not specially difficult to grow, are free bloomers and always find a ready market, and can be followed in the early spring with a paying crop of tomatoes.

We can refer you to a recent instance, twenty miles from New York, where the owners paid for the cost of their greenhouse from the first year's carnation profits.

Growing roses requires considerable skill, but you can employ a man who thoroughly understands the business, and soon master the subject yourself.

You know American Beauties bring as high as \$1.50 each, wholesale, and it is a poor season indeed that won't pay a mighty good average right through.

Of course there is money in it! Go to Madison, N. J., and get a cabby to drive you about, and whichever way you may go there are greenhouses, and more greenhouses, all devoted to roses—and every year others are being built.

You would find violet growing highly interesting work. Take these houses shown

in the cut: A brother and sister started a very few years ago with a small house; they soon ordered, in quick succession, these houses, each 30 x 125 feet, and then another at the left, 185 feet long. Recently, 60 feet more were added to both the 125-foot houses. Violets have done it!

Yes, it does take money to start, because, to make a success of it, you must have thoroughly built and equipped houses, or soon all your profits will be eaten up by glass breakage and continued repair costs. But there is not an opening today, all things considered, that offers such attractions, both from the pay side and that of having a work every way enjoyable.

Here is a man in the City of Brooklyn, who is building three greenhouses in his back yard, and has given up the first floor of his house as a florist's store. Just now he has to buy all his stock, but in a short time will be growing practically all of it and securing a greatly increased profit. And this is the sort of thing people are doing all over the country, and many a person with impaired health is speedily regaining it.

Come and talk it over with us, or write, giving particulars as fully as possible, of just what you have in mind. It always takes some little time to make decisions, draw up plans and get things under way—so start about it at once.

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The Rookery



Improved Georgia Rattlesnake watermelon is a good early variety

Set out early cabbage now, and sow the seed for the main crop. Allhead Early, Surehead, Short Stem Drumhead, Succession and Early Summer succeed best with me. They are resistant to dry weather, and can be depended upon to head.

Plant out horse radish and rhubarb roots now in rich soil. Rhubarb should be planted in a moist place or where it can be easily watered during droughts. It should also be partly shaded from the late afternoon sun during the summer. Sow the seed now for roots for next year's planting.

Success with Cucumbers

FOR several years cucumbers have succeeded well with me, but never before have they been so thoroughly satisfactory as they were last season. I made fourteen hills three and a half feet apart each way, and in each hill I put a handful of cotton seed and a large shovelful of well-rotted manure. This was done very early in February, so that the cotton seed would have time to rot before the cucumbers were planted. Seed of the English frame type, Sutton's Lord Roberts, Green Cluster and mixed varieties were planted the first of March.

When the young plants had four to six leaves, they were thinned to one to a hill. A handful of fertilizer rich in potash was placed in a trench one and a half feet from each plant, and frequent shallow cultivations were given until the vines interfered. I never turn cucumber and melon vines if



Cucumbers, twelve to twenty inches in length, which weighed from one to six pounds

it can be avoided, as I find it injures them. Around some of the hills I placed straw to prevent the "cukes" from getting sandy and to serve as a mulch. Fortunately, we had lots of rain during the spring and early summer.

The vines began bearing the last of May, and not being allowed to mature seed, they continued to bear until August. The fourteen hills produced more cucumbers than I needed so several bushels each week were used as stock food.

The cucumbers were from twelve to twenty inches in length, and weighed from one to six pounds. Sutton's Lord Roberts is the largest and best eating cucumber I have ever tried. For pickles I prefer the American type of cucumber, and consider Fordhook Pickling, Green Cluster, Boston Pickling, Cumberland, and Fordhook Famous the best for the purpose. June and July are the months for planting these varieties, except in sections where the squash bugs and borers are very troublesome, when the seeds should be planted in early spring so that the vines will get a good start before these insects become very numerous.

Georgia.

THOMAS J. STEED.



Gillett's Ferns and Flowers

For Dark, Shady Places

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.

"LEAVENS MADE" FURNITURE



☞ Makes its strongest appeal to people of taste and refinement. A large business of supplying the purchaser direct has been built upon the simple, artistic lines of our designs, solid construction, and a variety of custom finishes, meeting every possible requirement of discriminating people.

☞ A large assortment of Furniture in the natural wood or stained to suit the individual taste. Your choice of any of several finishes to harmonize with the color scheme of your rooms.



☞ Send for full set of illustrations, mailed upon request.

WM. LEAVENS & CO.

Manufacturers

32 CANAL STREET, BOSTON, MASS.



Blood Red Japanese Maples American Grown

No other tree or shrub to-day has such intense, blood-red foliage as this beautiful Japanese Maple. It commands attention wherever seen, but unfortunately is almost unknown.

This beautiful dwarf tree should be on every property large or small. It is easily grown, attaining 8 feet only after

years of growth and is perfectly hardy as far north as Massachusetts.

To get the best, buy American-grown plants. They have more vigor and vitality and are thoroughly acclimated.

Meehan-grown Japanese Maples are recognized among well-informed gardeners as the choicest in America.

They are well-grown in every respect. Good roots, well-formed tops, and so frequently transplanted they move now with almost no disturbance or check to the growth.

Decide to have some of these beautiful plants of ours for your lawn or garden this spring. Order early—we can satisfactorily ship to all points.

The prices at which we offer these plants are exceptionally reasonable, especially when you realize they are from 6 to 8 years old. Bushy, well-formed plants in all the sizes:

12 to 18 inches, \$1.00 each, 5 for \$4.00 2½ to 3 feet, extra bushy, \$5.00 each, 5 for \$20.00
2 to 2½ feet, \$2.50 each, 5 for \$10.00 Specimens, 3 to 4 feet, \$8.00 to \$10.00 each

America's Best Perennial Creation

Thousands of Meehans' Mallow Marvels have been sold since their introduction in 1907 and from ocean to ocean have come letters commenting on their wonderful beauty.

They are acknowledged the choicest and best herbaceous perennial creation introduced for years and America's best product. Just picture them, bushes in one season, 5 to 8 feet high, completely covered with flowers and buds which come in late July and continue until frost.

The huge blossoms, from 6 to over 10 inches in diameter, in fiery crimson, rich blood red, soft pinks, and white.

Perfectly hardy, easy to grow and successful in any good garden soil.

Decide at once to have some of these gorgeous perennials on your grounds this season. *Send in your order at once.*

Big, two year old roots which will flower this season, in Crimson, Red, Pink or White—\$1.00 each.



Meehans' Garden Bulletin

New, intensely practical garden paper for the interested owner of home grounds. Edited by the House of Meehan—56 years old.

Full of dependable articles by experienced horticulturists, experts—men who know of what they write. Particularly dwells on landscape gardening, trees, shrubs, evergreens and hardy plants. The hints and suggestions are invaluable—no theories. Send 10 cents for three spring numbers. One number is well worth the price.

We will on request include with the Garden Bulletin our new price list (unillustrated) listing all our hardy plants.

Special. Anyone ordering plants from this ad. will receive "The Garden Bulletin" for three months and our new price list (unillustrated) free of charge.



Thomas Meehan & Sons, Inc., Box 17, Germantown, Philadelphia, Pa.



The New Idea in Rat Extermination

Harmless to human beings and household pets if accidentally taken in small quantities.

Safe Sure Scientific Clean to Handle

Shaped like a squash seed—the rat's favorite food. They do not die in the house but rush for open air and water.

A Single Tablet Will Kill the Largest Rat

15c and 25c at your druggists' or sent prepaid on receipt of price in stamps or coin.

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The best in trees, shrubs and plants is our hobby. Hundreds of satisfied patrons tell us that we know how to ride the hobby. Growing extra-fine stuff and supplying it to tip-top trade, as we do, we feel that we must offer our products through a book quite some out of the ordinary. So we've just completed a handsome volume, printed on fine paper and illustrated with cracker-jack pictures.

"Peter's Perennials and Other Plants"

A copy will be mailed free to any of the elect who know a good thing when they see it. When you write, tell us if our landscape department can be of service to you. We make a specialty of planting plans that don't bankrupt one to follow.

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SUGAR

BY GROCERS EVERYWHERE

**2 lb and 5 lb
Sealed Boxes!**

BEST SUGAR FOR TEA AND COFFEE.



A Home for Garden Tramps and Waifs

LAY out your border carefully; trench it, spading in old, well-rotted manure; prepare your plans carefully and accurately; plant it; and you have prepared a home for all the upstarts, waifs, intruders and tramps of the vegetable world, who will take possession so quickly it will make your head swim if you don't keep after them and serve ejection papers and use force when necessary.

New plants from the nurserymen, loads of manure, loads of leaf mold brought from the woods, birds and the winds, bring to this favored soil myriads of plant life all struggling to use the store of nourishment laid up for their betters. There are some interesting and entirely unexpected and inexplicable visitors that will appear without warning. The better the work of preparing the border is done, the more frequent and numerous the unbidden guests. The more the soil is stirred the more little tramp weeds appear.

Sometimes something worth while appears. At other times some noxious weed gets a foothold before you know it. Highly bred plants from the nurseries show strange fungus diseases and blight; new varieties of bugs and worms come with new plants, and there is really "something doing" every day!

A load of woods earth has great possibilities of welcome as well as unwelcome visitors when its myriads of seeds begin to sprout in a cultivated garden. One load of dirt had a few of the pretty little "Boys and Girls" (*Collinsia*), which I hadn't seen in a number of years. This same load of "leaf mold" also had more yellow dock in it than I believed there was in the whole world—hundreds and hundreds of little docks sprung up where this soil was spread. It is a mean weed to get out of the way when once its tap root gets sunk well into the soil.

There are plenty of indigenous pests, but it has been my ill luck to import more than a plenty. I now know that new plants will bear a close scrutiny for insects, for fungus pests, and new and strange weeds. I have one weed that I can't quite lose; I don't know what it is except that it is pestiferous and umbelliferous. It came with an order of spireas from the nurseryman, and, the foliage closely resembling one of the varieties, it was allowed to grow and cover a nice space under the mistaken idea that it was a spirea. The spireas blossomed but the umbelliferous interloper made only a fine crop of leaves so nearly like the spirea that it got by safely. Last spring I was much surprised and pleased at the alarming increase of the white, fluffy spireas. When blooming time came, these spireas seemed to change their nature. The real ones sent up their spikes, but the large colony of near-spireas sent up their characteristic flat top umbels, and I realized I had secured another prize package.

Having called this interloper so many names myself, I decided it didn't make much difference what the botanics called it, so I have never taken the trouble to run it through a key. It has been pulled up and dug up, but its long, wiry underground root-stocks seem to ramble all over and, killed in one place, reappear in another.

But all the waifs from the greenhouses and nurseries are not undesirables. I have a little patch of a feathery fumitory, with spikes of yellow blossoms resembling in shape half of a Dutchman's breeches, that is well worth a corner. It was a chance seedling in some woods earth. My first snowdrop was an accidental bulb in an order of



\$200

FOR BEST ASTERS GROWN FROM VICK QUALITY SEEDS

We offer these cash prizes at the New York State Fair next September. Fair officials will be the judges. No entrance fees.

Anyone can enter. It will be a wonderful show of the most beautiful flowers that grow—

Vick's Asters. Write for full particulars and we will send with them a copy of Vick's Garden and Floral Guide. This is the sixty-first annual edition and we've made it better and more helpful than ever.



Everylover of flowers should have it—write for your copy to-day.

\$340.00 IN PRIZES for the best specimens of vegetables grown from Vick Quality Seeds and exhibited at the New York State Fair next September. Anyone can enter, no entrance fees. Write for full particulars.

SPECIAL OFFER So you can find out for yourself how beautiful Asters can be, we will send 1 pkg. Vick's Daybreak, 1 pkg. Vick's Mixed Branching, and our book "How to Grow Asters"—all three for 10 cents.

James Vick's Sons, 362 Main St., Rochester, N. Y.

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Established at Leicester, England, in 1800.

ASTERS Single Chinese Asters are now in fashion. One packet each, white, rose and lavender and my *Little Green Seed Book*, 10c. Try the Adams' method. HENRY SAXTON ADAMS, Garden Expert, Wellesley, Mass.

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By the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz, of Pasteur Institute, Paris. Used with striking success for the past few years in England, France, 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. 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 or 5,000 sq. ft. floor space in buildings. Price: One tube, 75c; 3 tubes, \$1.75; 6 tubes, \$3.25; one dozen, \$6.00.

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10 Grapevines \$1.00 Sent Postpaid

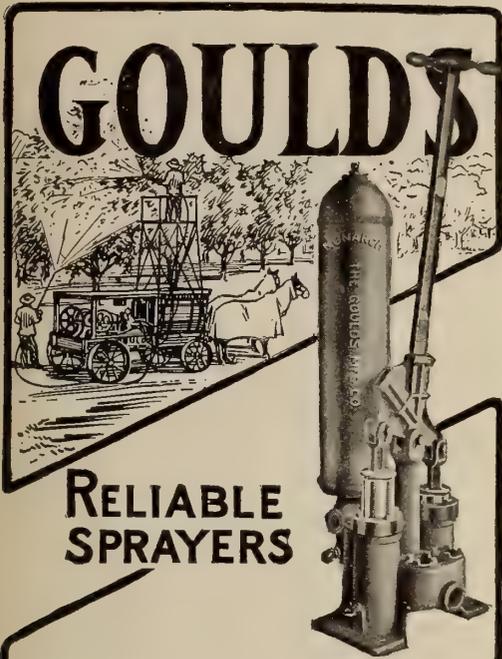
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These are strong, hardy vines, and will bear the year after planting. Order now and vines will be sent proper time to plant. With every order is sent free our valuable book how to plant, cultivate and prune. Grapes are easily grown and should be in every garden.

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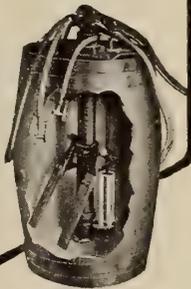
for both Hand and Power—all simple—all working parts brass to withstand wear and the chemical action of the solutions. Don't be caught experimenting with a cheap sprayer—see that the name Goulds is cast on the pump. Its presence is the assurance you are buying the very best Sprayer made. It guarantees satisfaction and reliability. Write for our book.

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It is full of interesting information and contains most valuable formulas for spray mixtures. Copy sent free on request.

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O a property-owner who expects to spend this spring from \$40 to \$1,000 on a piece of home decorating, exterior or interior, our “Dutch Boy Paint Adviser No. V,” though free, is worth at least an expert adviser's fee—say five per cent. of the expected expenditure.

¶ We have one reserved, free, for every property-owner who wants practical, authoritative directions and suggestions on the selections of harmonious colors, shrubbery arrangement for outside, drapery and rugs for interior, and the proper mixing and use of white lead and linseed oil for painting various surfaces.

¶ No property owner can afford to permit the use of anything but the best in building or decorating his home. Arguments for inferior substitutes sometimes seem plausible, but in

practice the genuine—the standard—thing is the cheapest in the end. Paint made of pure white lead and pure linseed oil remains the *reliable* paint. Ask your painter if this isn't so.

¶ Old patrons as well as new are requested to note that our white lead is now packed in steel kegs, dark gun-metal finish, instead of oak kegs as heretofore. The Dutch Boy Painter trade mark is on the side of these new kegs, as of the old, and is your guaranty that you are getting our pure white lead.

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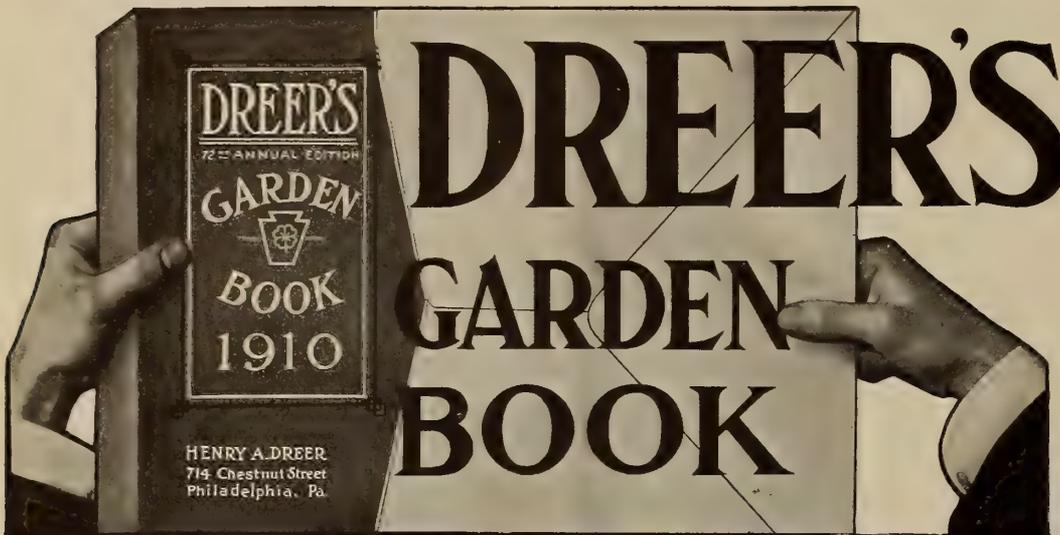
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NOT a mere felt or paper, but a matted lining that keeps out the cold as a bird's feathers do. Six times as warm as the best papers, and warmer and cheaper than back-plaster. Costs less than 1c. a foot. Keeps warm rooms warm and cool rooms cool. “It is cheaper to build warm houses than to heat cold ones.”



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Go by This Book

in your Spring planting. Describes and prices over 1200 varieties of flower seeds; over 600 varieties of vegetables; and more than 2000 kinds of plants, besides hardy shrubs, climbers, small fruits, aquatics, etc., etc.

256 large pages of gardening information and special cultural notes, based on an experience of 72 years. Illustrated with upwards of a thousand photo-engravings, including beautiful color and duotone plates.

Cultural Notes

on how to grow flowers from seeds — both annual and perennial. How to grow Asters, Sweet Peas, Dahlias, Gladioli, Palms, Ferns, Roses, etc.

On how to raise fine vegetables.

On how to grow plants in the house.

In short, the latest and most dependable information for both amateur and professional gardeners is to be found in Dreer's Garden Book for 1910.

Mailed to our patrons without application. If you haven't received it, we will send a copy free on mention of this magazine.

HENRY A. DREER 714 Chestnut St.,
PHILADELPHIA

daffodils. Last spring a kind-hearted nurseryman dropped a white Stokesia into an order, and this was a welcome guest, indeed.

These various tramps, waifs, intruders and upstarts that will happen along in the best regulated gardens, from one reason or another, add zest to gardening and sometimes accidentally disclose some exceptionally fine effects. Bluebells (*Mertensia*) and white tulips are as pretty a combination as could be desired, and I never should have known it had not the bluebells accidentally found a lodgment among the tulips. Probably a chance wind blew seed from a clump near by.

But if you once let a bluebell settle down, it will raise an enormous family if not speedily suppressed; and one wood violet can distribute its species more numerous and tenaciously than any innocent-looking little wildling I know of. Violets which were welcome the first spring, have become a positive nuisance in my garden. Pull out one root, and a dozen seem to appear to take its place. These violets came up in some woods earth and were a flourishing colony before discovered.

The unexpected reappearance of plants often gives interesting data as to the length of time seed may lie dormant in the soil. I have found *Nicotiana affinis* all over one long border, and there is no way of accounting for its presence except that it grew there three years ago. These "nicks" were the puzzle of the season. They did not appear until late in July and did not show buds until September. They were welcome, but a thick growth of young wild lettuce was not so welcome. Where this stuff came from is another puzzle, but it was present in force.

One spring a pretty little plant came to me in a paper of ten weeks' stock seed — Virginia stock.

I had never seen it before, but it looked like a miniature of the larger and showier ten weeks' variety. This charming little rose-colored visitor produced seed in abundance and it makes a fine low border for a few weeks. Planted with sweet alyssum, it can be pulled up as soon as its flowering season is over, and the alyssum will speedily cover the bare spots. One little plant will make a gay display. It was a garden waif, but I was glad to get acquainted with it and let it have a place to grow.

A pretty autumn flower wandered in from the woods or fields and took up a residence in a shady corner of my border, where it has earned the right to stay. This is the thoroughwort (*Eupatorium ageratoides*). With a cluster of white blossoms exactly like the ageratum in shape, it makes a very pretty clump in late August and early September, when flowers are scarce. It associated nicely with some of the earlier perennial asters.

I have a little fine-leaved, pale blue aster that appeared at the foot of a tangle of grape vines in a vacant lot near ours that is as pretty and neat as any of its more highly cultivated relatives. The foliage is so fine that the blue blossoms hide it entirely, and as it is a low grower, it is excellent to use in front of the tall-growing New England varieties. There isn't another colony of this little aster anywhere around that I can discover, and I can't tell where my plant came from.

Illinois.

SHERMAN R. DUFFY.

Ten Weeks' Stock

IN the November, 1909, GARDEN MAGAZINE "Veronica" gives a list of long blooming annuals, but she does not mention the old-fashioned — now new-fashioned — stock. To my mind nothing gives such satisfaction.

I have four bulb beds, each five by fifty feet. Each year I try at least one new annual to succeed the bulbs — verbenas, nasturtiums, tuberous begonias and asters — but the bed of stock and the pansy bed have never found successors. No other flower in my garden, save pansies, gives so long and so continuous bloom — from the first of July up to the second week in November. There was no cessation of bloom last year and I cut many bushels of flowers. No other plant has so successfully withstood the drought that tried all gardener's souls that summer, and no annual I know of is so free from all insect pests.

The pansies have the advantage in the spring but not in the fall. Ice has frozen them several times, but the stock is not hurt. Until this year, I only put in white, pink and lavender, but Canary-



Tree For Sale

It is an oak 28 feet high, with a 13 feet spread. A splendid specimen that has been carefully trimmed and scientifically root-pruned. It can be moved right to your place and planted on your lawn, and will grow right along as if nothing had happened.

We will do the moving for you, ship it by rail or deliver on tree mover; dig the hole and plant the tree. You will be entirely free from any bother.

There are at least 75 other Oaks quite as good as this in our Nursery, for you to select from.

If you would rather have an Oak that is not so tall, and with wider spread, we have them.

Or if you prefer Maples, Lindens or Catalpas, there are some exceptionally fine ones that we will sell singly, in pairs or by carload lots.

This buying and moving big trees, such as we grow, is a new thing to some, and they are skeptical, but we have been doing it with marked success for the last fifteen years, for hundreds of people.

Of course, if we have the large trees, there are also hundreds of smaller ones growing up in the Nursery, from which you are free to make your selections. They cost less to buy and move, but you must wait years for them to attain size.

Most people prefer to pay a little more and have the waiting left out, but this is one class of stock not usually available to the readers of this magazine, and here is another: Small trees at \$5.00 per 1,000 and upward. Pines, spruce, oak, magnolia, hickory and others.

The reason our way of growing and moving such large trees is successful, makes decidedly interesting reading—incidentally, it is convincing. Our catalog tells all about it, and shows exactly how it is done; besides numerous illustrations of various kinds of trees as they now appear on the grounds, after having been moved.

Come to the Nursery if you can and make your selection, or let us send you the catalog, and order direct from it.

Isaac Hicks & Sons
Westbury, Long Island

Spraying Means Insurance for Your Crops

THE value of spraying is now very generally recognized by the up-to-date grower and farmer throughout the country. Insect and fungi pests have increased so rapidly, that the man who does not spray lays his crops open to the attacks of these parasites, and unless he has unusually good luck, they are liable to suffer in size as well as quality.

To secure the best results from spraying and avoid all danger of burning or foliage injury, the grower or farmer should be sure that the spraying materials he uses are absolutely reliable and made of only the purest ingredients.

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INSECTICIDES & FUNGICIDES

comprise a line of spraying compounds that will do the work right for which they are intended—because they are made of the very purest materials. They will not only protect your fruit trees, vegetables and orchards from all leaf-biting insects, but from all fungi troubles as well, and will increase both the quality and the size of your crops. The line includes:

S-W Lime Sulfur Solution—a universal fungicide and an insecticide for sucking insects and mites. It should be used as a fall spray ten days after the leaves have dropped from the trees or as a spring spray just before the foliage opens. It is especially effective against San Jose Scale, Apple Aphis, Woolly Aphis, Elm Aphis, Pear Leaf Blister Mite, Peach Leaf Curl, Peach Moth, Red Spider, Scab and the Cottony Cushion Scale.

S-W New Process Arsenate of Lead—an insecticide for all leaf-biting insects. A spring spray for use at the time the buds are opening and at later dates as needed. Is effective against the Codling Moth, Plum Curculio, Brown Tail Moth, Canker Worms, Slugs, and the Elm Beetle.

S-W Paris Green—a popular spray for Potato Bugs.

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For the correct and satisfactory treatment of any room, there are

which will give the exact result desired in the most permanent and durable form.

Send for our free portfolio, "An Ideal Plan of Home Decoration," which contains in colors two suggestions for the exterior of the house, one suggestion for each of the following rooms—living-room, dining-room, hall, den or library and kitchen; two bathrooms and four bedrooms. These color schemes show just how the rooms will look, and are accompanied by complete specifications and descriptions telling just how these results may be obtained.

The Ideal Plan is Free

It will be sent to anyone on request. You do not have to use the Sherwin-Williams' Paints and Varnishes in order to secure a copy of this portfolio, but bear in mind that you will not obtain as good results as are shown here unless you use the Sherwin-Williams products.

The services of our complete staff of experienced decorators are at your service, free to make other suggestions in addition to these for any specific house or room you have in mind. Send for the portfolio today.

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Write today for artistically illustrated leaflet. S. L. de Fabry, Grower of Novelties, Little Silver, N. J.

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H. E. FISKE SEED CO.

Their 1910 catalogue states in a very concise manner the best varieties of seed to plant for a profit; the most useful Spraying Implements; the most important Perennials; Ornamental Shrubs and Trees. Mandy Lee Incubators and Brooders.

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It requires sharp tool-steel to cut grass

This is shown by the man with a scythe who frequently stops to "whet up." The Pennsylvania Lawn Mower is the only one made in which all the blades are *actually* self-sharpening, because they are all made of *crucible tool steel*, hardened and tempered in oil. The self-sharpening feature keeps the blades of the

PENNSYLVANIA LAWN MOWER

always in-first class cutting condition. Most any mower cuts when new—none but a Pennsylvania will cut equally well when a dozen or more years old and without spending a dollar for sharpening. Buy a Pennsylvania Mower for the same reason that you buy a high-grade carving knife or pair of shears—good service and lasting satisfaction.

Our booklet "The Lawn—Its Making and Care" was written by a well-known authority. It will be found invaluable to any one interested in lawns and shrubbery. We will gladly forward a copy free on request.

SUPPLEE HARDWARE COMPANY

Box 1575, Philadelphia, Pa.



bird this year has been such a beauty, and blended its soft yellow so well with the other colors, that it bids fair to rival my old favorites, Peach Blossom Princess Alice, Empress Augusta Victoria and Queen Alexandra.

Mammoth White Column is fine; the blossoms are the largest I have ever seen, but they are not so good for cutting. Its faint, delicious odor is never too strong. For cut flowers for any purpose, more people have asked for stock than for any flower in my garden.

It is easy to grow stock in flats in the house or in the hotbed. If planted by March first, it is



Grow a bed of stock in your garden this year and have flowers for cutting from July until November



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Plan now for the years to come. Nothing will increase the value of your property so rapidly or so greatly, as careful, consistent planting of shrubbery according to a well-formed plan. In planting shrubs and trees you are adding permanent value to your property as well as increasing its beauty and attractiveness. Correct landscape gardening forms a perfect setting for the house of pleasing appearance, and hides the defects of the mediocre structure. Any amount, large or small, spent with us will yield you magnificent returns.

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This is a hardy shrub that flourishes in all soils and climates. It is commonly known as the high-bush cranberry. The leaves are broad and color crimson in the fall. The flowers are white and are borne in clusters. Its brilliant red berries hang on the bush in clusters throughout the winter. Birds will not eat them. An excellent decorative shrub for both summer and winter. We are making a special introductory price of 20c on this shrub to demonstrate the large possibilities of a moderate outlay.

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often up in a week. Frequent transplanting is the secret of success. Kept in the hotbed till the leaves are out in May and then put in the permanent bed between the rows of tulips, it begins to bloom late in June, and never ceases.

In the winter one pays the florist a big price for stock, and the white especially is in great demand. But why do not more people grow it for an all-summer flower? "Veronica" should surely add it to her list.

Pennsylvania.

MRS. F. W. GRAVES.

A Record-breaking Wheat Crop

SEVERAL years ago a nine-acre field of winter wheat in Kansas produced a record-breaking crop for that vicinity, yielding, when threshed, an average of thirty-seven bushels per acre.

The land was a well-drained, rolling prairie upland. The soil was from three to eight inches deep, and consisted of a dark brown silt loam underlain by a brown clay. It had been in cultivation for a number of years, and never had been fertilized or manured.

In July the soil was broken with a 16-inch plow to a depth of from three to five inches, and was harrowed but once. The crop previously grown on this land was rye, and the rye stubble and a considerable growth of weeds were turned under in plowing. On September 27th the wheat was drilled in, a bushel and a half of seed to an acre being sowed on all the land with the exception of three acres, when, the seed running low, only three pecks to the acre were sown. No difference in the appearance of the growth or of the yield could be detected between the acres sowed with one and a half bushels to the acre and three pecks per acre.

The grain was threshed in August, and where the soil was of good depth—say six or eight inches—the yields were higher than where the soil was shallow, or where the subsoil came within two or three inches of the surface.

A peculiar feature was that although the season was good for wheat, another field of the same kind of land on the same farm yielded an average of but seventeen bushels per acre. The methods employed in the preparation of the land were practically the same, but oat stubble and few weeds were turned under on the field that yielded only seventeen bushels per acre.

Kansas.

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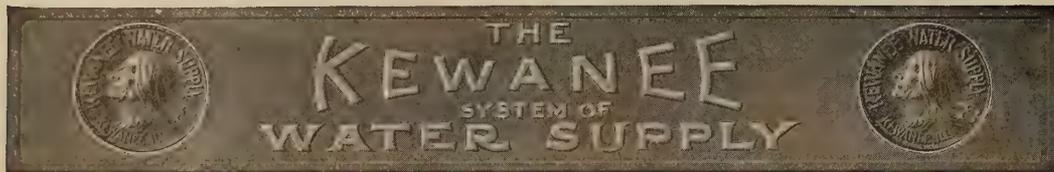


is the name of the best booklet ever issued on the subject of tomato culture. It contains 30 pages and illustrations fully describing the Potter method of raising tomatoes. By this method you can have bigger and better fruit and weeks earlier than otherwise. It teaches the secret and science of tomato 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.

DEPT. C. T. F. POTTER, Tomato Specialist, DOWNERS GROVE, ILL.

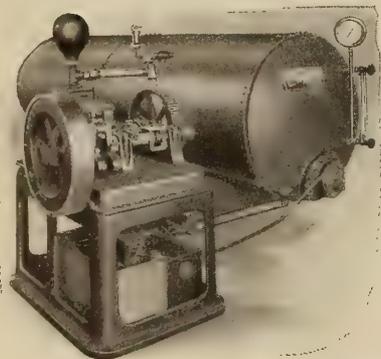


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[We are glad to answer specific questions for the readers of The Garden Magazine, and we are also glad to express an opinion on any suggested planting plan if it is submitted in full detail. It should be understood, however, that we cannot undertake the actual preparation of a plan or elaboration of an individual planting scheme.—Editors.]

FOR A GOOD HEDGE

For a hedge which will not receive much care, would you recommend an untrimmed hedge of *Berberis Thunbergii*? How far from the walk should it be planted?

Ohio. E. H. P.
—The best ornamental, least troublesome, hardiest and most picturesque hedge for your purpose is *Berberis Thunbergii*. It does not require annual trimmings, and yet will stand moderate shearing if necessity arises. It would be better to plant the hedge three feet from the walk. It is not probable that the plants will do as well in the shade as in the open. In fact, as one proceeds north from the latitude of Washington, D. C., plants show an increasing sensitiveness to shade.

BEGONIAS, GLOXINIAS, AND ACHIMENES

Are begonias, gloxinias, and achimenes greenhouse plants, or is it possible to grow them in a window?

Iowa. J. S.
—Begonias, gloxinias, and achimenes are among the best house plants. They are very easy to raise (see the February, 1908, number of THE GARDEN MAGAZINE, page 22), and can be grown successfully in the window of any dwelling. The temperature should be about 60 degrees, and the plants shaded from bright sun. After the first of June they can be successfully handled out-of-doors in a sheltered and shady position. Achimenes are in their glory when used as a ground work for palms or tall bedding plants, provided the foliage of the taller plants is of sufficient density to give the desired shade.

MAKING CONCRETE

Is it safe to make a wall of Portland cement, applied as a plaster, on a framework of wood lathing; if not, on metal lathing?

Massachusetts. W. E.
—The objection to using wood as a framework for cement is that the moisture in the cement causes the wood to swell. As the cement hardens the wood dries and shrinks; this leaves a space between the cement and the wood which is liable to cause cracking. Metal lath is perfectly satisfactory. Cement is applied in two coats, the first one, of about an inch thickness, not being allowed to set before the second one is put on. It is very important to have the first coat wet when the second one is given, and for this you can use a hose. Comprehensive articles on concrete garden furniture, etc., appeared in THE GARDEN MAGAZINE for June, 1908, and November, 1909.

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Tell us your problem—and without any retaining fee we submit suggested plan, detail planting list and exact cost of stock required.

If you want to

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be sure to get our booklet "Beautifying Home Surroundings." Shows examples like California Privet Hedge illustrated below—from photograph taken the day it was planted.

Sent free—with our 90-page Tree, Evergreen and Hardy Plant Catalog.



The Grounds Beautiful

A Home, to be ideal, must be set amid beautiful and harmonious surroundings. The costliest mansion is without attraction if the grounds about it are ugly or barren; while the house of modest pretensions in the midst of skillfully planned masses of green and flowering shrubs, or flanked by tasteful gardens, is possessed of immeasurable charm. Every home, old or new, where there is any room for planting, can be beautified by intelligent landscaping; nor need it call for great expenditure. No matter where you live we can accomplish this for you.

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You are offered the services of our large staff of professional landscape gardeners, practical growers, and expert planters; men who have designed and executed artistic and scientific landscape effects, who have grown and worked with plants all their lives.

We submit complete plans for beautifying city or suburban homes, public grounds or private estates. These plans are without charge. You, therefore, save the high fee and expense you would otherwise incur. There is no obligation on your part unless our plans for your grounds are acceptable to you. All you pay us for is the nursery stock necessary to work out the ideas.

All this stock is grown on our own extensive grounds of 1200 acres near Rochester, N. Y., the Flower City. We positively guarantee everything sold.

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We want everyone interested in landscape improvement to have this book—"Beauty Out of Doors." It describes and pictures ideal landscape architecture, shows the treatment suggested for various problems, and gives several plans for as many different types of homes. To receive the book address

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Our catalogue contains a complete list at prices which will surprise you. Let us know your needs at once. We have no agents but deal direct.

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Sweet Corn

IN making out your list of garden seeds for the coming season do not fail to include Ordway's Golden Sweet Corn.

It is a wonderful variety: early, tender, juicy and sweet—four qualities which constitute the ideal.

Waste no time in planting other than Ordway's Golden if you want the best. Carefully selected seed sent by return mail on receipt of price.

Trial packet, enough to plant thirty-five hills, 10c.; half-pint, 18c.; pint, 30c.; quart, 55c.; medium-sized ears, 15c. each. Address

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Order Dahlia roots from me and you will be sure of obtaining the best quality, for my Dahlias are prize-winners; they produce flowers that attract attention everywhere.

I took the Silver Medal at Seattle last summer with them—besides any number of first prizes and high awards at other places where I have exhibited.

My Dahlias will make your grounds constantly attractive through the blooming season. My new catalogue tells how to plant and care for them. It's free—write!

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New Ruby Nugget Tomato



A grand novelty which originated on our place and is now offered for the first time. While not large, still it is a handsome fruit, of delicious flavor and wonderfully productive—over 700 fruits have been grown on one plant. A cash prize of \$10.00 will be paid to the person growing the largest number of Ruby Nugget Tomatoes on a single

plant this year. Price is 35 cents per packet of 100 seeds, but to induce you to give our Choice Iowa Seeds a trial this year, we will send you a trial packet of about 25 seeds without charge, together with a copy of our large illustrated seed and plant catalog. If you have had our catalog this year, please say so. Mention this paper.

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Money in Early Tomatoes

One of my customers sold \$122.35 worth of big, red tomatoes from 100 plants in his back yard.

Another from 14 plants in her flower garden sold \$12 lbs. during July and August for \$16.70.

It's all in the knowing how and in using the right seed. They used my new tomato—

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Earlier than Earliana, as handsome as Stone, as solid as Ponderosa, and a greater yield than any of them. The greatest new tomato in 25 years. Small pkt. 20c; 3 for 50c; 1/2 oz. \$1. (This for specially selected seed, saved early.) My Garden Manual and Seed Catalog will give you lots of pointers and good advice about gardening. It's FREE—and people who claim to know say it's well worth reading. Get it and see.

Henry Field, Pres. Henry Field Seed Co.
Box 101, Shenandoah, Iowa



PLANTING IN THE GRAPE VINE BEDS

Is it practical to plant lily-of-the-valley in grape vine beds? I put tulips in one bed. What can I put in every year after these are out?

Pennsylvania. H. A. S.
—Lily-of-the-valley will grow in the grape-vine beds provided the ground is rich. But remember that you cannot cultivate or manure the ground for the grape vines on account of the lilies. Plant portulaca after the tulips have ceased flowering, as it can be sown right over the tulip bulbs and will make a very pretty showing.

THE ROSE BUG AGAIN

Is there any way to exterminate the rose bug? New York. L. M. D.
—We wish we could recommend something that is absolutely certain to not only destroy the rose bug but also act as a preventive against the return of the pest. In many large gardens it is found most practicable to keep a boy busy during the bug season doing nothing but hand-picking the bugs, throwing them into a pail of kerosene. Also try a spray made of one pound of arsenate of lead to ten gallons of water, applied with a force pump, and read the spraying calendar in the May GARDEN MAGAZINE.

GROWING BRUSSELS SPROUTS

When growing Brussels sprouts how are the best results obtained? New York. C. W. S.

—Sow seed in the open ground in drills during April or May, and transplant the small plants in July to about two feet apart. Cultivate in the same manner as cabbage. Sprouts will grow in any good garden soil, but do not plant on land where cabbage, cauliflower, or turnips have been grown the previous year. Best results are obtained from starting in heat dwarf or half-dwarf varieties in localities having short growing seasons. Dig the roots and store the same as cabbage.

KILLING ANTS IN A LAWN

Last spring I made a lawn and afterwards found it infested by ants. How could I have destroyed them?

Novia Scotia. T. P. C.
—The appearance of ants in any large quantity in a lawn, before the grass has really taken root, is usually fatal. The effect of their presence is to loosen up the soil to such an extent that the grass roots fail to obtain either moisture or nourishment. The presence of ants usually indicates a too light soil to begin with, and the entire plot may have to be remade, introducing a quantity of heavy soil or even well-rotted stable manure. The only method of attacking ants is by the bisulphide of carbon treatment. Buy it as a liquid and pour in about a tablespoonful to each opening of the ants. The liquid rapidly vaporizes, but the vapor, being heavier than air, penetrates the interstices of the soil. It is extremely inflammable. Follow this with a terrifically heavy watering, and as soon as it is possible use a lawn tamper and heavily beat the surface so as to pack the soil about the roots. L. B.

SAVING TREES IN TUBS

I have two bay trees and two box trees; one of the former is putting out new leaves, but the other is almost dead. The box trees are brown half way up from the roots, but the tops are green. Is there any way in which these trees can be saved?

New York. S. L.
—If the injury of your trees is an external one, due to a sudden chill, the possibility is that it is merely one of the accidental conditions from which the plant will quickly recover as the warm weather arrives. Of course, the damaged leaves will be sacrificed. If the result is due, however, to excessive drying out of the roots, the chances of recovery are not so great. Plunge the pots in the open ground, water copiously, and do everything possible to stimulate new growth. Do not place the trees in a position where they will be subjected to the full force of the midday sun. If possible, put them under a temporary shade of cheesecloth. To ascertain whether the wood behind the leaves is dead or alive cut back one of the apparently dead twigs. If there is any greenish color in the wood it is alive and, by following out the treatment advised, the specimens will recover without much delay. L. B.

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Deposits the Seed
In the Ground
Not on Top

Sow grass seed when conditions are right—wind or no wind. The rain cannot wash the seed away, the wind cannot blow it to some other place. Birds do not get it, because it is in the ground.

All old sod is root-bound, and the cutting action of the discs relieves this condition, cultivates the grass roots and puts new seed in the soil and properly covers it. You can sow as much or little seed as desired. This machine has positive force feeds, and each feed puts in every seed trench an absolutely equal amount of seed. No seed is wasted.

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If you want a pure, smooth, velvety lawn, sow pure-bred lawn seed in the ground with a "Velvetlawn" Seeder. If you want a miscellaneous collection of weeds, sod your lawn.

"Velvetlawn" Seeders sow ground sheep manure, bone meal, ground lime and screened wood ashes. Only machine in the world that will put them in the ground on a lawn.

It is also an ideal machine for sowing garden seeds, such as onion, radish, carrots, lettuce, etc. Can be regulated to drill 2, 4, 6, 8, and so on, up to 16 inches between rows. It assures an even distribution of seed, uniformity of depth and regularity between rows.

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But the owner could not hear its silent appeal! The tree butcher, years before, cut off a limb the wrong way, decay set in and disease followed. Slowly dying, the tree fought for its life, but to no avail.

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could have saved that tree, as they can save any tree, if called early enough; as they have saved thousands of trees. They understand tree language, and tree diseases, can read the trees' warnings and appeals, prescribe for their ills and heal their wounds.

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Farr's New Catalogue of Hardy Plant Specialties



describing a wonderful collection of *Iris*es, *Peonies* and *Phloxes*—everywhere acknowledged to be the most complete in this country—a quarter million *Iris*es and *Peonies*, in upwards of a thousand varieties, besides *Delphiniums*, *Poppies* and all the essentials of the Hardy Garden.

A Retrospect—A Boy's Garden on a prairie farm out in Iowa which developed a passionate love of "growing things." Then the great city, with "a nameless longing," till one day my doctor said: "Go back to the country and dig." A final surrender and an utter abandonment to an absorbing passion—a man's garden that long since overflowed out into the open fields, a glorious riot of color, an intoxication of delight. *Peonies*, *Iris*es, *Phloxes*—I must have them all, and for ten years I have gathered them from all over the world.

A Revelation; An Inspiration—My first catalogue, issued about a year ago, became almost a necessity, but in offering my plants to the public for the first time, I had many misgivings lest the pleasure from growing flowers just for themselves would be marred by growing them to sell. I little anticipated the generous response my first book brought forth. From all over the country have come the most delightful letters—a wonderful inspiration to me. I want to thank my many new-found friends, whose appreciation, so kindly expressed, has given me a new and unexpected pleasure.

A Resolution—But you have made me realize the grave responsibility I must assume if I continue to "make good" in the face of a business that has expanded so rapidly, maintaining the high standard I have set and returning the confidence with which I have been favored. New friends I hope to make, but I care more to keep the old ones, and I am resolved if possible to make **Farr's Hardy Plant Specialties** mean more than a mere name for selling plants. My new book I have tried to make more beautiful, more complete, and better in every way. If, as many wrote, the old one was helpful, I have tried to make the new one more so.

The new catalogue is free to all who love hardy plants. Send for it today if you have a garden and are interested.

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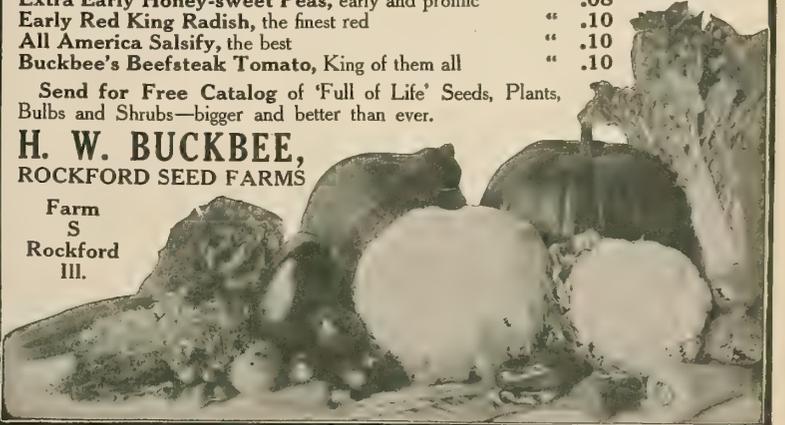
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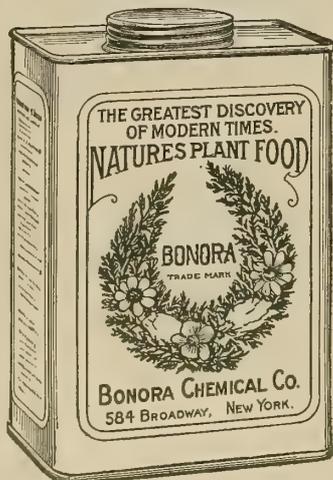
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Petunias of Many Colors

NOTHING is easier to grow than the common petunia (*P. hybrida*). It is a hybrid between *P. nyclaginiflora* and *P. violacea*, the former having white flowers, and the latter rose-red or violet. In the last twenty-five years plant breeders have so improved them that their small red and white blooms have given place to an almost inexhaustible variety of wonderfully beautiful flowers—single, double, and fringed, in pure white, pinks, mauves or vivid crimsons, in solid colors, symmetrical designs of contrasting colors (as seen in the "star" type), and grotesque daubs and splotches. The largest single sorts, beautifully veined and frilled, have flowers from four to five inches across—over a foot in circumference!

As the petunia has rather weak stems it needs some support, such as a pot-trellis, over which it may be trained. It makes a very effective plant when grown in hanging pot or basket. When grown on a trellis, it will be necessary to keep the plants trimmed into shape. This will increase the



Petunias will furnish an almost inexhaustible supply of beautifully colored flowers all summer. Nothing is easier to grow

number of flowers, because it will cause the plant to make new wood. The flowers are borne only on the new growth.

If seed is sown in January and the plants grown in a night temperature of 45 or 50 degrees, strong plants will be had for use during the summer as porch or window-box material. Upon the approach of fall the plants can be cut back, transplanted into pots, and carried indoors, where they will bloom all winter. For winter bloom in the house, sow seeds in August or early September.

When seeds for double flowers have been sown a very important thing to remember, when pricking out the young seedlings, is that the weaker ones are much more likely to produce double flowers. The single flowers are usually of larger size and better coloring.

New York.

B. W. R.

PRIZE REVIEWS OF MEREDITH NICHOLSON'S

"The Lords of High Decision"

We have to report a large number of reviews submitted for our prize offers for the best review, and again we are confronted with the most difficult task of selecting the prize-winners from so many very excellent reviews. However, we have decided on the following:

- 1st prize: Clio Harper, Little Rock, Ark.
- 2nd prize: Jessie Anderson Chase, 58 High St., Newburyport, Conn.
- 3rd prize: Mrs. Lillian Wright Smith, 1816 Ingle-side Terrace, Washington, D. C.
- 4th prize: Elizabeth L. Quinn, 539 North Main St., Waterbury, Conn.
- 5th prize: Mrs. Anna Sanborn Pyle, 651 Portland Ave., St. Paul, Minn.
- 6th prize: Henrietta S. Jaquette, 115 N. 34th St., Philadelphia, Pa.
- 7th prize: H. M. Stack, 1447 Second St., Baker City, Ore.

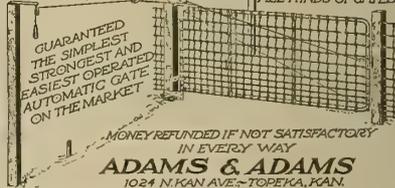
Copies of the pamphlet containing the prize winners on Mr. Meredith Nicholson's "The Lords of High Decision," Mrs. Ward's "Marriage a la Mode," and Mr. Benson's "The Climber," will be furnished free on application.



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and the addresses of two flower-loving friends and I will send you 4 choice packets of pure fresh seed: *Royal Show Pansies*, 100 colors; *Sweet Peas*, over 40 varieties; *Asters*, finest mixed; *Nasturtiums*, *Madam Gunther*. Also, free, "Floral Culture" and my handsomely illustrated 17th Annual Catalog.

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All the grapes a family can use, ALL thro the season, select vines, these choice varieties: 4 Delaware, RED, midseason; 4 Niagara, WHITE, late; 4 Worden, BLUE, early; or 12 year selection.

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If they're there, you will like them so well as to buy more every year. Gladioli and Dahlias are our specialties, but this month we want you to order seeds of these old-time favorites: Mixed Double Hollyhocks, Burbank's Giant Shasta Dahsies, Hybrid Foxgloves and Mixed Double Sweet Williams.

4 Large Packets of Seeds for 10 Cents

One packet of each. The envelope the seeds are sent in is good for 10 cents when returned with an order for \$1.00 or more. Postage stamps accepted. Write today. Catalogue free.
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Roses in the South Should Be Planted Before Easter

if a profusion of flowers is wanted this year. The long growing season, rich red soil and congenial climate of our Mountain Nurseries produce stocky, sure-to-grow plants, that cannot be equaled anywhere else for vigor, health, and strong, hungry roots.

We know and grow only those kinds that are certain to succeed and satisfy—and they are the very best kinds.

Write today for our free catalogue of mountain-grown Roses, Old-fashioned Hardy Perennials, Ornamental Shrubs, Shade Trees and Fruits.

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THE "OLD POINT COMFORT" REED ARM CHAIR, No. 3523

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This big book is more than a catalog, more than a list of goods and prices. It gives the Best Ideas—the last words of Fashion—from New York, Philadelphia and Paris. Each page fairly breathes Style-suggestions of value to you, and all the goods are dependable. Every offering is "on honor."

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AN IDEAL LAWN TREE

Decidedly ornamental, with a dense, perfect, half globular or umbrella-shaped head, high on a straight, upright stem. Very hardy; extensively used in formal gardens and especially adapted for lawn planting—

Umbrella Tree (*Catalpa Bungei*)

will thrive in almost any soil, and is generally a most satisfactory tree to plant. I make a specialty of *Catalpa Bungei* and other shade trees, evergreens, hardy flowering shrubs, roses, fruit trees, etc., in great assortment.

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Grown in New Jersey, with its soil and climate advantages, and is ready to start growth again anywhere, as soon as planted. Ornamental landscape plans prepared and executed. Beautifully illustrated catalogue free.

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February Talk with our Friends

YOU will be planning for your Gardens these long winter evenings: You wish it to be glowing with color, redolent with fragrance from earliest spring to late frosts.

May we give you a few hints HOW to attain this end?

Sow the following list of seeds for EARLIEST bloom NOW, in shallow boxes in the house. See that the boxes are WELL drained and the soil finely pulverized.

- Antirrhinum** (Snap Dragon), whole, velvety flowers, borne on rich spikes, glow in all colors of scarlet, rose, yellow, pure white, maroon.
- Ageratum** (Floss flower), soft lilac or white.
- Alyssum**, sweet scented, a mass of snowy whiteness.
- Lobelia**, clumps of tender azure or deep blue.
- Petunias**, single GIANTS or double ruffled.
- Ipomea BONA NOX**, the enchanting MOONFLOWER of starry nights.
- Pansies (BABY FACES)**, in any and all colors of your choice.
- Salvia**, burning scarlet bushes.
- Stocks**, deliciously fragrant, in white, rose, violet, purple, red.
- Zinnias**, gorgeous double flowers.

Your choice of color or flower, any large packet 10c., the 10 for 75c. Your choice of color or flower, any small packet 5c., the 10 for 40c.



AMARYLLIS are the Aristocrats of all Bulbous Plants

To succeed in flowering these is often considered difficult. By potting the bulbs NOW, when thoroughly dormant, and keeping them in a moderately warm room on a sunny window-sill, the foliage will soon develop, followed by the GRAND umbels of immense flowers.

We offer a FEW of the GRANDEST specimens of this family:

- Amaryllis Regina**, brightsalmon, with large white throat **20c.**
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Amaryllis bulbs we send are **LARGE, flowering first season**
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 70 Warren St., New York

Cement Porch Vases in Color

IT IS really very simple to make a square vase out of cement and with a little regard to proportions it can be made pleasing to the eye. The first thing to do will be to make a mould, for which any kind of lumber up to an inch in thickness will answer. Use boards from a drygoods box, or even a soap box will answer the purpose. Two moulds will be required, one having its inside dimensions equal to the outside dimensions of the vase, and another, to go inside the first, having its outside dimensions correspond with the inside measurements of the vase. Into the space between the two moulds, placed one inside the other, pour the cement mixture.

You will find that by making your vase wider at the top than at the bottom and adding a coping or flange, as it were, at the top, an artistic effect can be produced, provided, of course, that you are careful in your measurements so as to obtain proper proportions. Make the vase either 8 feet high, 14 inches across the top and 10 inches square at the base, with the coping four inches wide, or 10 inches high, 12 inches across the top and 8 inches square at the base. All these are outside measurements with a wall 1 1/2 inches thick, allowing an extra 1/2 inch for the coping. The smaller size is the best for the average porch.

For the space that is to hold the cement for the bottom of the vase use two short, round or square pieces of wood upon which the smaller mould rests



Porch boxes of cement are easy to construct and are very durable

when placed inside the larger one. This prevents the smaller mould from resting directly upon the bottom of the larger mould, which would give a bottomless vase. These pieces of wood should correspond in height to the thickness of the walls and be about a half-inch through. When placed about an inch apart in the middle of the base they will not only hold the moulds apart but likewise provide the necessary drainage.

In mixing the concrete take two parts of sand to one part of cement. Use only good sharp sand, or else the vase will be very apt to crumble. One bag of cement, costing about sixty cents, will be found sufficient for four of the larger vases. The color of the vase can easily be made to harmonize with the color of the house or with whatever else you wish to match it. Merely add the proper coloring matter to the concrete mixture.

Taking as a basis one sack of cement and 200 pounds of sand the following colors may be made: Red, by adding five pounds violet oxide-iron (raw); bright red, seven pounds English red; brown stone, four pounds brown ochre; dark blue, four pounds ultramarine blue; gray, one pound Excelsior carbon black; and black stone, by using three pounds of the carbon black. The ultramarine blue is found to add to the quality of mortar if not used excessively; most other coloring matter should be used sparingly. A little cinder dust will give a good shade of red.

North Dakota.

C. L. MELLER.

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showing the orchards, the cozy homes and the beautiful scenery.

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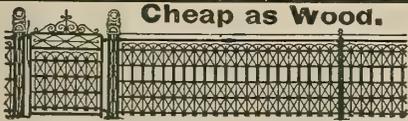
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is the title of our 1910 catalogue. It is a book of 200 pages with 700 photo engravings direct from nature, 8 superb colored and duotone plates of vegetables and flowers. Complete and thorough in every respect, it embodies the results of sixty years practical experience. We believe it is the best we have ever issued, and the premier horticultural publication of the year.

In addition, all ordering from this advertisement will receive a copy of our **Garden Guide and Record**, which we consider one of our most valuable publications. A handbook of condensed cultural information of which one of our customers who has had an advance copy, says: "*It is the most complete, concise and comprehensive book of its kind.*"

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Strawberry Secrets

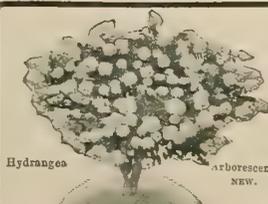
The secrets of America's successful strawberry growers are all told in the new edition of

FARMER on the Strawberry

A real book, not a catalogue, by L. J. Farmer, who has worked 27 years among strawberries. "Worth its Weight in Gold," but costs only 25c postpaid. *Your Money back if not satisfied.*

Big Norwood Strawberry, Plum, Farmer Raspberry, etc. Immense stock of Berry plants—all varieties. Write for free Catalogue to-day.

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with choice shade and ornamental trees, vines, hedges, shrubs and roses. Complete assortment of

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THE NEWEST LILACS**Double and Single
EXTRAORDINARY OFFERING**

FOR years we have been collecting from various sources the choicest Lilacs, and we take pleasure in now offering a collection embracing the best varieties known. We have imported annually the introductions of the celebrated French raiser, Mr. Lemoine, and have in stock the cream of his offerings.

The improvement in the Lilac, especially in the double sorts, is marvelous and all lovers of this flower will be delighted with these novelties. In size, form and color they far surpass the old favorites and we confidently recommend them to our patrons. Nothing that has been introduced recently is likely to prove so popular as the new Lilacs.

A beautiful illustrated booklet on Lilacs will be mailed on request, also our Illustrated General Catalogue which contains accurate and trustworthy descriptions of the best

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Here is a book by an enthusiastic and practical grower of one of nature's most glorious flowers. It is simple and practical and easily understood; in fact, it is "the last word" in successful Gladiolus Culture.

I began growing Gladioli years ago, merely for recreation. As the seasons came and went, I became more and more inspired with the marvelous beauty of these flowers, and grew them in increasing quantities.

Thus the plantings of Gladioli at Meadowvale Farm have grown into great proportions, and my bulbs nowadays are shipped into every state, and foreign lands—prized everywhere for the wonderful results they produce, even at the hands of the veriest amateur.

**I Will Help You Make
a Success With Gladioli**

My free book contains twenty pages and is handsomely illustrated throughout from photographs made at Meadowvale Farm, in addition to several reproductions of the flowers in their full colors—wonderful pictures made by the new French process and showing my Gladioli as they blossom for me and for my customers.

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Dingee Roses are to be found growing on most of the famous estates of the country. The Government purchases large quantities of our roses for the decoration of public grounds.

They are positively the best grown and are even more beautiful and more varied than ever before. Always sold on their own roots and warranted to grow and bloom. We send plants to any point in the United States and Canada, and guarantee safe arrival.

While our specialty is "Rose Growing," we also grow all other flowers worth while, Carnations, Chrysanthemums, Violets, Perennials, Hardy Flowers, Shrubs and Vines, etc. Finest varieties of Flower and Vegetable Seeds.

DINGEE Roses

America's
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Roses

The
Aristocrats
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The
Greatest of
Rose Books FREE

"Dingee Guide
to
Rose Culture"

To help you make your rose garden a success, to give you the knowledge of how to care for roses, and to make them grow and bloom abundantly, we will mail you upon request the "Dingee Guide to Rose Culture" for 1910, the leading rose catalogue of America. It contains 120 pages, beautifully illustrated from photographs, including eight full page pictures in natural colors. The cover contains an absolutely true picture of the marvelous new *Blue Rose*, the novelty of the Centuries in the Rose Kingdom. There is no other book of Roses that compares with it. If in the past you have failed in growing Roses, by all means secure this book—you will succeed. Send for a copy to-day.

THE DINGEE & CONARD CO.,
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70 Greenhouses.

The Leading Rose Growers
of America.

Established
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Jeanette Heller

American Beauty Roses in Your Own Yard or Garden

You can grow big, bursting American Beauties in your own yard or garden, blooming freely all summer, if you start with mature, own-root, home-grown plants. We are American Beauty Specialists, and *Heller's Roses* are famous all over America. It has been our experience that the American Beauty Rose is a good outdoor rose, and if you will follow our advice, plant good strong bushes, vigorous two and three-year old plants, ready to grow at once, you will have an abundance of roses the first year.

We sell only thrifty Roses and they are sent to you on their own roots. Before shipping we dip the roots in heavy, wet clay, making them practically air-sealed. They are then wrapped in waxed paper, protecting the roots from exposure.

What to do to have a rose garden, how to be as successful in growing roses as we and thousands of our customers have been, is explained in our

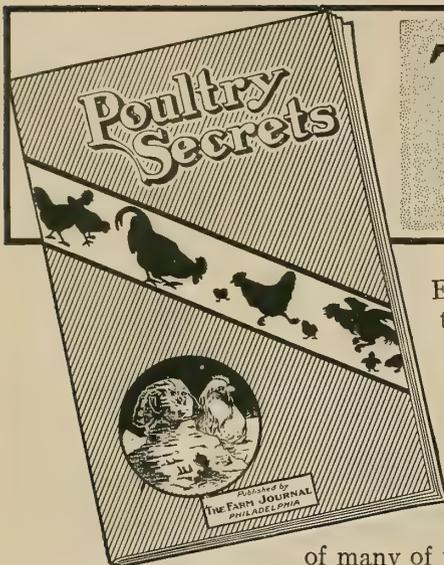
Beautiful New Book "Roses of the Garden"—FREE

This magnificent Rose Book, just out, gives you our experience in rose culture. Contains complete cultural directions, which, if followed, will lead to success, and a rose garden coveted by your neighbors. It shows American Beauty and other roses growing in matchless beauty. This magnificent book is so attractive and valuable, there will be a big demand for it, but you can have it free by writing for a copy now. It also shows and describes our wonderful new rose,

seldom attacked by insects. In color, it is a light blush-pink, beautifully shaded. It has proven to be a rose of unusual merit. Flowers may be cut from it early in May, and it continues blooming until late in the fall. No rose garden will be complete without this rose. One year size, 25 cents; two years, 60 cents; three years, \$1.00. *We pay expressage on all orders.*

Jeanette Heller, the Finest Rose in the World
The ideal garden rose, strong, vigorous and healthy, free from disease and

HELLER BROTHERS COMPANY,
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The Two Sensations of The Poultry Year



Every reader of *The Garden Magazine* probably knows that the most active and growing agricultural industry of the day is poultry raising. Within the last year we have greatly stimulated this activity by the publication of the two remarkable books shown at the top of this advertisement.

"Poultry Secrets"

told for the first time the secret methods and discoveries of many of the most experienced and successful poultry raisers of the country—secrets many of which have been guarded and protected with the utmost care.

"The Corning Egg-Book"

published last fall, told the remarkable story of how two city men with only three years' experience cleared last year more than \$12,000.00 from a small egg farm. For the first time the possibilities of scientific egg raising were placed before the American public by this remarkable demonstration.

Both of these books have been advertised with the Farm Journal in the Garden Magazine within the last twelve months, and we now wish to call attention to them once more in this page advertisement. Our two new offers will be found at the bottom of this page.

ABOUT "POULTRY SECRETS"



Is this cock properly held? Read "Poultry Secrets"

Michael K. Boyer, our Poultry Editor (known to poultrymen everywhere as "Uncle Mike"), has collected a remarkable list of little known or unknown methods and discoveries. We have paid cash for many; a very few have been donated; some are Mr. Boyer's own treasured secrets. All have passed careful tests of their practical value. We give a PARTIAL LIST:

- The Curtiss 60% pullet secret.
- Boyer's secret of fertile eggs.
- Felch's mating chart.
- The "15-cents-a-bushel" feeding secret.
- Secret of the Hogan and Palmer Systems.
- Davis's secret of saving chicks.
- McGrew's secret molting food.
- Lawney's insect powder formulas.
- Outline of the Philo System.
- Dr. Wood's egg-food secret.
- Other important feeding secrets.
- Kohr's system of selecting layers.
- Marshall's secret of show bird training.
- Prof. Rice's fat hen secret.
- Seeley's dry bran secret.
- Etc., Etc.

This list is perhaps sufficient to show the striking nature of these disclosures and their enormous value to every owner of poultry. The list quoted does not mention a quarter of those contained in the "Poultry Secrets" book. Some of the best we prefer not to name.

It should be added that purchasers should not hesitate to send for "Poultry Secrets"; no confidence has been violated; every secret has been obtained in an honorable way.

We will pay \$10.00 for any practical and valuable poultry secret not already in this book. (Under this offer, 25 new secrets are included in this last edition of "Poultry Secrets," which were not included previously.)

THE CORNING EGG-BOOK

Tells HOW the Cornings, father and son, cleared last year \$6.41 per hen on 1953 laying pullets, or over \$12,000 clear profit. Not theories, but FACTS; not air-castles, not expectations, but methods, tested and proved by experience. It tells how they found a market eager to get choice eggs at high prices. It tells how they learned how to meet that demand with an unfailing supply, in winter as in summer. It tells of their problems and failures, and how they overcame them and won SUCCESS. It gives photographic pictures of their plant, with working drawings of important buildings, etc.

The Corning Egg-Book tells:

- The price paid for CORNING eggs throughout the year.
- The number of eggs sold each month throughout the year.
- How to get the most eggs when other people get none.
- When to hatch chicks that are to lay winter eggs.
- How to grow juicy broilers in nine weeks.
- How to mix the feed that makes the most eggs.
- How to prevent the drafts that kill chickens.
- How to save 97 per cent. of the young chicks.
- How they make hens attend strictly to business.
- Why they raise only white-shelled sterile eggs.
- How to have May chicks laying eggs in October.

Let us emphasize again, this is not a theoretical book on "how to do" anything, but a record and statement of cold facts, showing exactly how, last year the Cornings DID DO THESE THINGS, and made \$12,000, and more, clear profit. Figures, names, dates, photographs—the whole story.



A Corning \$6.41 profit pullet

ABOUT THE FARM JOURNAL. This unique farm magazine has long been known as the best farm paper for poultrymen—that is, the one which possessed the most complete and valuable poultry department. In addition to this it is known throughout the country as the best general magazine for the rural or small town American home. It is bright, clever, clean, practical, honest, avoids long-

winded essays on technical subjects. It smells of the soil, it is for everybody who lives in or near the country, or ever has, or ever expects to. It goes into the finest country residences in America, and even into great city houses, as well as into village homes and scattered farmhouses. It is 33 years old this winter and has more than 650,000 subscribers. IN A DOZEN WAYS IT WILL BE FOUND UNLIKE ANY OTHER PAPER.

Offer and Coupon No. 1

FARM JOURNAL, 1011 Race St., Philadelphia, Pa.

For the enclosed 50 cents, send a copy of _____ (MARK WHICH BOOK) and Farm Journal for 2 full years to

Name R. F. D.

P. O. State

Offer and Coupon No. 2

FARM JOURNAL, 1011 Race St., Philadelphia, Pa.

For the enclosed \$1.00, send "Poultry Secrets" and "Corning Egg-Book," also Farm Journal 4 full years to

Name R. F. D.

P. O. State

MARCH

1910

Vol. XI. No. 2

Quality Fruits for the Amateur

Transplanting Vegetables
Planting of Trees

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THE GARDEN MAGAZINE



FARMING

COUNTRY LIFE
IN AMERICA

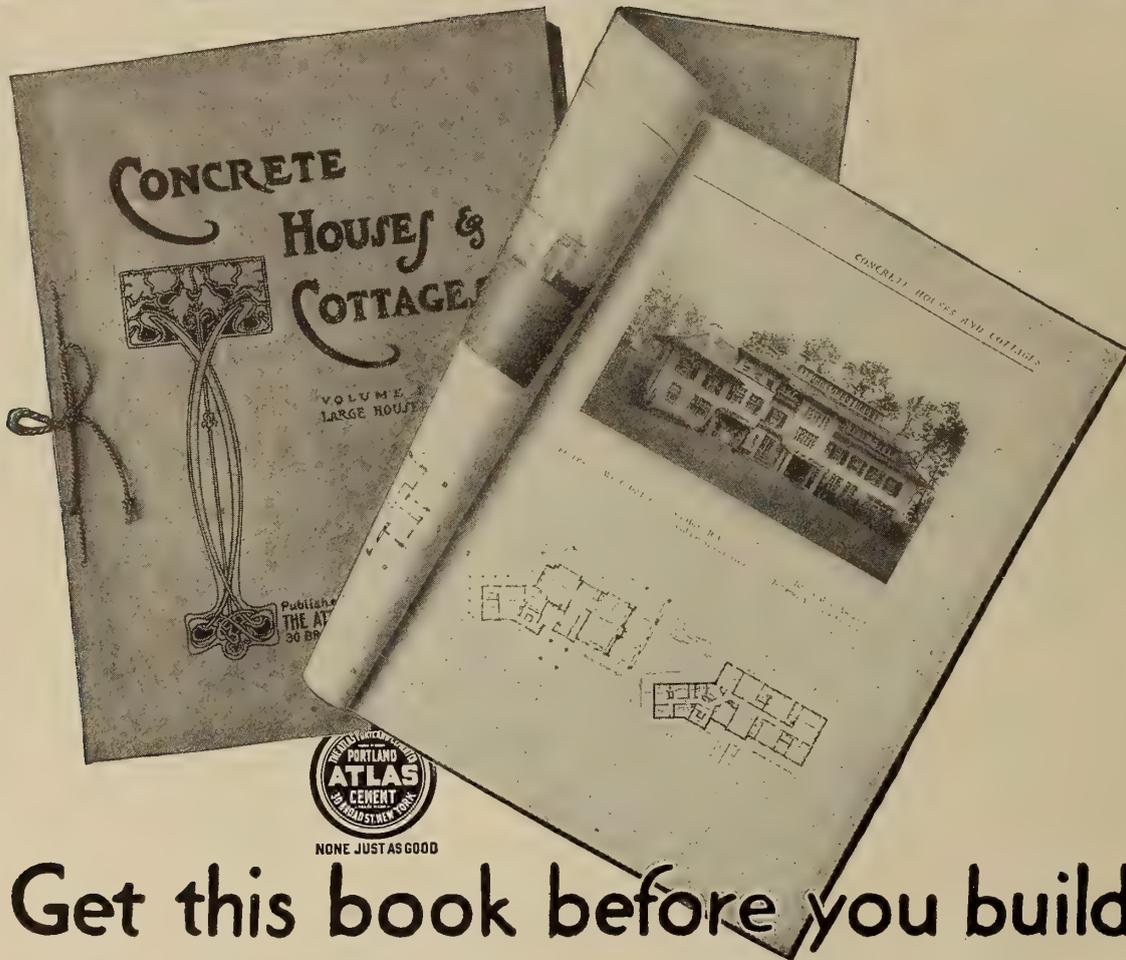


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IT is a book of houses of various sizes, of various kinds of architecture and at various prices, but all made with some form of concrete.

It demonstrates first, that any kind of house you desire can best be built with concrete, and second, that no concrete is successful unless the cement is the right quality—the quality found in Atlas Portland Cement.

Atlas Portland Cement is pure; is made from genuine Portland Cement rock; contains no furnace slag and has the quality needed to produce permanent, satisfactory concrete construction. Send for book:

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Volume I, \$1.00. Volume II, \$1.00.

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Concrete in Highway Construction.....	\$1.00
Reinforced Concrete in Factory Construction (delivery charge)10
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Concrete Cottages.....	Free
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Largest productive capacity of any cement company in the world. Over 50,000 barrels per day.



The Biltmore Nursery Book "Flowering Trees and Shrubs"

Under the title, "Flowering Trees and Shrubs," we have published a handsome 64-page booklet devoted to the foremost of the trees and shrubs which produce showy blossoms. No effort has been made in the pages to exploit our large and consistent stock of everything in ornamentals; but

rather we have aimed to help the amateur grower to find easy access to the most noteworthy kinds in one particular field. The booklet describes the brightest gems among the trees and shrubs that give transcendent floral beauty and lend to lawns and gardens the wholesome joy of profuse and fragrant flowers—illustrating these, so far as space permits, with faithful photographic reproductions.

A Book Filled With Faithful Facts

"Flowering Trees and Shrubs" 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 and pleasing ideas for planting home grounds, large and small, describing the trees and shrubs of the flowering class best adapted to the purpose. The book presents convincing evidence of the fact that trees and shrubs for permanent results can be so planted as to make the cost of obtaining a definite effect but little if any more than where annuals are employed. And of course the hardy and permanent plants afford a great deal more pleasure, first and last, than can be expected of annuals, however beautiful.

Some Hints as to Style and Contents

The pictures herewith are from some of the photographs used in the illustration of "Flowering Trees and Shrubs." These trees and shrubs are described by the book in the following words—with full information as to sizes and prices of plants:

THE MAGNOLIAS. *No other group of trees embraces such wealth of floral treasures—such effort on the part of Nature to excel! Beauty, gorgeous beauty, exquisitely fashioned in every petal, every flower, proclaims supreme achievement. Every species is characterized by the splendor of its flowers; some blossoming in earliest spring before the leaves appear, some when the foliage is almost fully grown, while others are evergreen.*

THE DEUTZIAS. *High praise and unstinted commendation pervade every testimonial which we receive from those who have planted the charming Deutzias. Few shrubs are of such easy culture, and still fewer which give such universal*

satisfaction and such myriads of flowers. The dazzling white or soft rosy pink of their pretty blossoms make possible many striking effects in garden and border plantations. They are really indispensable.

THE HYDRANGEAS. *Grand, free-flowering, hardy shrubs, with large clusters or panicles of showy flowers. The marvelous display of several varieties, the boldness of inflorescence and duration of beauty, have ranked the Hydrangeas among the most popular garden subjects. They are admirably adapted for border planting, either as specimen plants or in masses; and are most satisfactory and desirable for planting about summer homes and resorts.*

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 the grounds.

Biltmore Nursery
Box 732, Biltmore, N. C.



Wheelock "Rust Proof" Fence Co.

Slater Building, Worcester, Mass.

The clamp as shown in illustration is used only on Wheelock Rust Proof Fence, Flower Bed Guards, Tree Protectors and Trellis. It holds the cross wires securely without injuring them and permits of the most rigid construction.

GALVANIZED AFTER WEAVING and guaranteed RUST PROOF.

Send for our New Illustrated Catalogue

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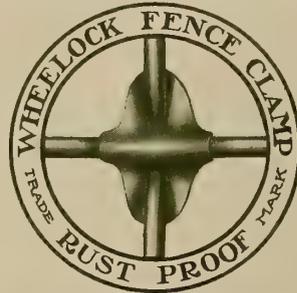
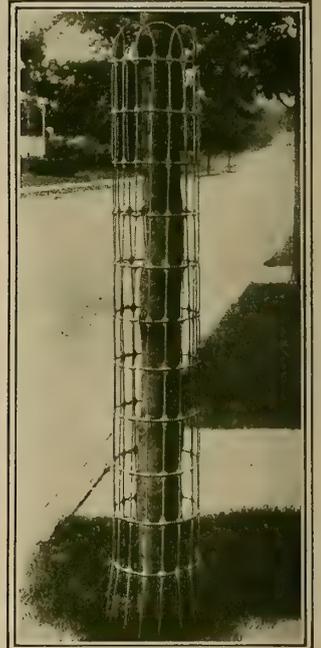
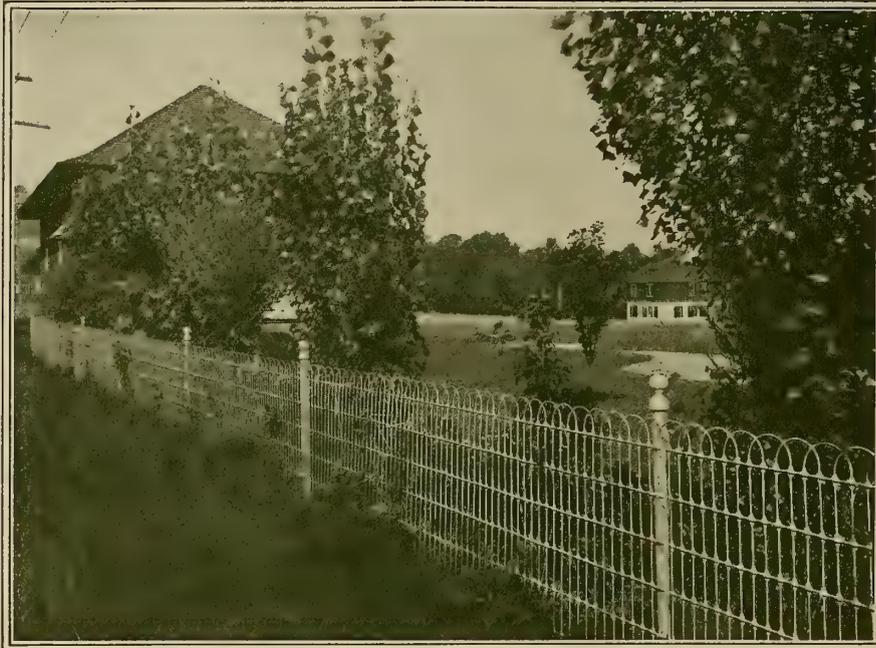


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The Wheelock is the most economical to buy—no repairs or painting required. Of great strength and durability. Symmetrical in form and an ornament wherever used. Order of your Hardware Dealer. If he can not supply you, write us, giving his name and we will see that your order is filled.

Be sure you get **WHEELLOCK RUST PROOF**



BASSETT'S DAHLIAS



WM. F. BASSETT
Dean of Dahlia Growers

Are the standard of flower markets. If you have motored to Atlantic City, you have seen them growing and know their quality. "How to Grow Dahlias" (free with every order) tells how you can grow them as well as he.

With every \$1.00 order we will send one root of the famous **Jack Rose Dahlia Free.**

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Strong, Healthy, Choice Nursery Stock

We offer for spring of 1910 the largest and finest assortment of Nursery Stock we have ever offered. A full line of small fruits, tree fruits, ornamental trees, plants and vines, all grown on our home grounds, guaranteed healthy and true to name. Our goods will surely give satisfaction. Get our prices before placing your business elsewhere. We also do landscape gardening in all its branches. Write to-day for our catalogue, it's free.

T. J. DWYER & CO.
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The American Flower Garden

By **NELTJE BLANCHAN**

Author of

"Bird Neighbors," "Game Birds,"
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This book has a continued success, proving its value to all who have gardens.

It covers the whole American Flower Garden and answers adequately the needs of the amateur whose garden is either extensive or the reverse; and every fact among the thousands is made quickly available by a fourteen page index. The pictures form, we believe, the best collection ever attempted in a book about gardens.

Four illustrations in color, and 80 superb plates in brown doubletone. Net \$5.00.
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5 Grapevines \$1.00

Strong, Hardy, Three-year-old Vines

Any five of the following well-known varieties:
(Red)—Brighton, Delaware, Lindley
(White)—Niagara, Diamond, Pocklington
(Black)—Concord, Worden, Moore's Early, Wilder

These vines will grow anywhere and will bear the year after planting. We guarantee them to be as represented or money refunded. We also offer 10 strong, hardy, two-year-old vines for \$1.00. This is a remarkable collection of grapevines at an exceedingly low price. Order now, vines will be shipped proper time to plant.

With every order we send our valuable book how to plant, cultivate and prune. Grapes are easily grown and should be in every garden.

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GRAPEVINE SPECIALISTS Established 42 Years



White Pine

is one of the most ornamental and at the same time one of the hardiest of our evergreens.

We have a particularly fine block of this tree in all sizes.

Orders should be placed now for spring delivery.

We also carry a very large stock of fine Conifers, Deciduous Trees and Shrubs, new Roses and Hardy Herbaceous Perennials. Write for prices.

Eastern Nurseries

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PRICES BELOW ALL OTHERS

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Plants that survive Maine winters can be depended upon to succeed anywhere

Send for catalogue of all the beautiful hardy perennials the best hardy Shrubs and my ironclad collection of Roses
W. LINWOOD FERNALD, Eliot, Maine

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A school for practical instruction in Gardening, Horticulture and kindred subjects will be opened this spring near Ambler, Pennsylvania. For further particulars address,

MISS J. B. HAINES

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PRIZE-WINNING DAHLIAS



Your Dahlia bed will show up in more glorious color this fall if you let me supply roots from my Prize-Winning Stock. My Dahlias received a silver medal at Seattle last summer, and high awards elsewhere. They are grown under the personal care of a Dahlia specialist and enthusiast.

DAHLIA BOOK READY MARCH 1st. My new Book, listing hundreds of the choicest varieties, will be ready about March 1st. Accurate descriptions, valuable cultural notes, etc. Sent free on request.

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Yes, You Can Refinish Any Piece of Furniture

We Will Send the Materials and Illustrated Book—FREE



We want to prove to you, at our expense, how simple—how easy it is to make an old piece of furniture like *new*—what beautiful, lasting results you can get from Johnson's Materials.

You will enjoy going through your home—dressing, coloring and polishing the worn chairs, woodwork, bric-a-brac—giving a needed touch here and there—brightening everywhere.

We will send a complete wood-finishing outfit, free—enough for an ample test—enough to restore and beautify some worn and discolored, but valuable piece of furniture.

Here is what we send:

A bottle of Johnson's Electric Solvo to instantly remove the old finish.

A bottle of Johnson's Wood Dye—choose your shade from list below—to beautifully color the wood.

A package of Johnson's Prepared Wax to impart that beautiful hand-rubbed effect—protect the finish against heel-marks and scratches. It will not catch or hold dirt or dust.

Johnson's Wood Dye

is not a mere stain—not simply a surface dressing. It is a real, deep-seated *dye*, that goes to the very heart of the wood—and stays there—fixing a rich and permanent color.

Johnson's Wood Dye is made in 14 standard shades:

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| No. 140 Manilla Oak | No. 121 Moss Green |
| No. 110 Bog Oak | No. 122 Forest Green |
| No. 128 Light Mahogany | No. 172 Flemish Oak |
| No. 129 Dark Mahogany | No. 178 Brown Flemish Oak |

Our book, "The Proper Treatment of Floors, Woodwork and Furniture," Edition No. G. M. 3, tells you how in every case, and will show you how to carry out other decorating ideas you may have in mind.

Send for the free trial packages today. Let them demonstrate what Johnson's Materials will do in your home. Use the coupon. Fill it out now, while you think of it. Address

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"The Wood Finishing Authorities"



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Please send me Free Booklet, Edition No. G. M. 3, sample bottle of Electric Solvo, sample bottle of Johnson's Wood Dye, Shade No. _____, and sample of Johnson's Prepared Wax.

Extremes Meet

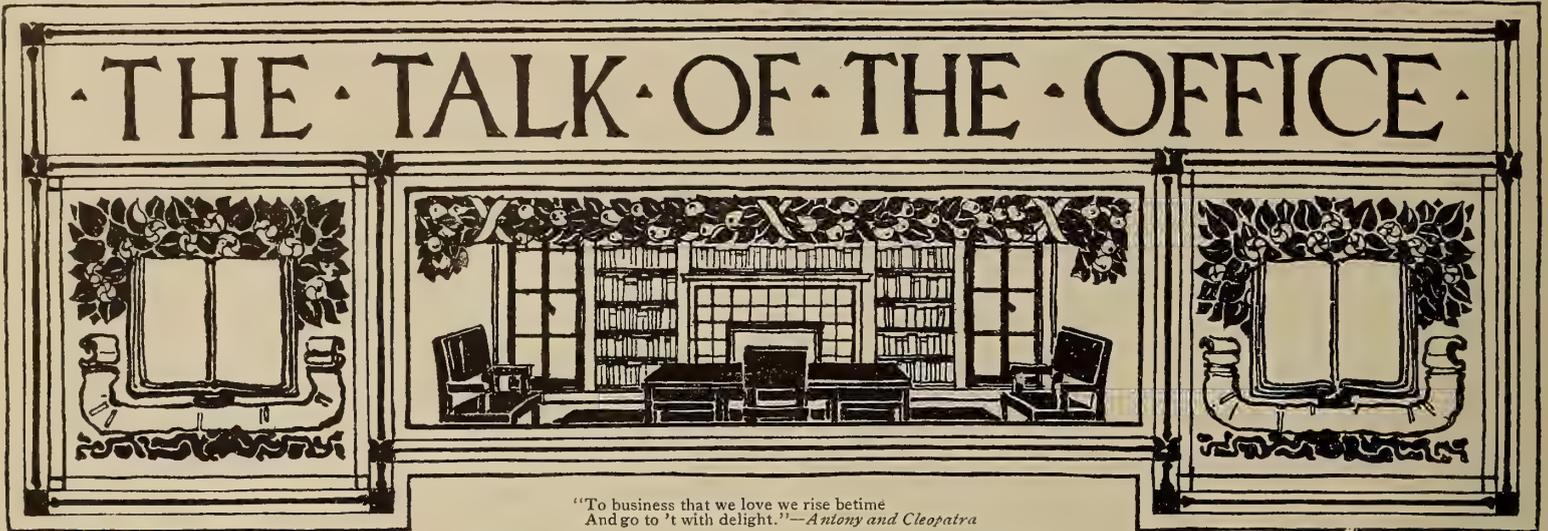
Minimum Cost—Maximum Quality

This is demonstrated fully in our 1910 catalogue of Perennials and other Hardy Plants which we grow exclusively by the acre.

Free for the asking

PALISADES NURSERIES, INC.
SPARKILL, N. Y.





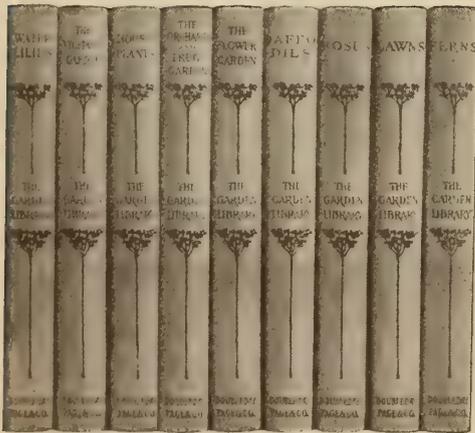
"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

GARDEN MAGAZINE PROSPECTS

Our readers will be glad to know that *The Garden Magazine* starts off upon the festive season of spring, full of the hope and encouragement that comes from having received during the past few months from twice to three times as many subscriptions as it ever did before, in a like period and plans for making a better magazine as well as a bigger magazine are working out, we think, in a most effective and successful way. A new color press, to enable us to make the magazine more attractive as to color, has been installed and we hope our readers will do what they can to extend the influence of the magazine among *Garden Magazine* readers.

THE GARDEN LIBRARY

Another thing which is gratifying us very much is the vastly increased sale of the books which we have been making for some years, devoted to the garden, and which we have gathered together in a uniform edition, and sell at a low price, and upon payments which enable the most humble garden lover to buy them without a strain on his purse strings.



The nine volumes, bound in serviceable cloth, size 5 x 7 7/8, abundantly illustrated, are as follows:

- "The Flower Garden," "The Vegetable Garden," "The Orchard and Fruit Garden," "Roses and How to Grow Them," "House Plants," "Ferns," "Lawns," "Daffodils," "Water Lilies."

COUNTRY LIFE ANNUAL GARDEN MANUAL

We want to call the attention of the readers of *The Garden Magazine* to this magazine's big sister, *Country Life in America*, which every year, in March, celebrates the return of spring. This Double Gardening Number is meant to be a manual useful the entire year round.

In this issue there will be an attempt to cover the whole wide range of gardening subjects—vegetable, fruit, flower, and landscape gardening of different types in a single article. This idea will be brought out most definitely in a series of planting tables, in a new and concise form, by Thomas McAdam—a series that will be worth preserving for all time. Other illustrated articles will be:

- "The Joy of Gardening," by Neltje Blanchan, with illustrations in color.
 - "A Little Garden on the Lewis and Clark Trail," by Hortense Ferguson Childs.
 - "What England Can Teach Us About Garden Cities," by Wilhelm Miller.
 - "A Newport Garden," by Leonard Barron.
 - "Garden Arbors and Pergolas Really Worth While." A page of photographs.
 - "How One Town Is Saving Its Trees," by Walter A. Dyer.
 - "Twenty-four Hours in a Garden," by Flora Lewis Marble.
 - "Old Gardens of a Connecticut Village," by H. S. Adams.
 - "Laying Out a Suburban Place," by Beatrix Jones.
 - "The Alpine Garden in America."
- The Homebuilders' Supplement will include "An Italian Villa in New Jersey," by Sherwin Hawley; "How to Make Old Time Rush Chair Seats," "Brickwork and Framework," and "How We Remodeled Our Country House," by Mrs. Lew Wallace.

And all the regular departments.

We wish we could tell the beauty and effectiveness of the pictures, but for them we must refer to the magazine itself. A single copy of this double number costs fifty cents on the newsstands—single numbers thirty-five cents. As a rule, they are sold out before most people remember to inquire for them, and, in case the reader wishes to buy a single copy, we strongly suggest that he orders from his news-dealer now. Subscription price, \$4 a year. It will be published on February 25th.

SHORT STORIES

We have recently taken under our charge for the Short Stories Publishing Company, a magazine of wholesome fiction, which has been published for twenty years under the title of

Short Stories, and which under our management, we are thankful to say, during the last year, has about doubled in circulation. Beginning with the March number, it is enlarged, and, we think, improved in every way. It has a very great news-stand circulation, and can be found on any news-stand anywhere in the United States. To those out of touch with the news-stands, we should be glad to send it regularly for a year for \$1.50.

BIND YOUR GARDEN MAGAZINES

We are constantly receiving letters from people, saying that they wish they had thought to bind their *Garden Magazines*, but did not get around to it until they had lost several of the back numbers, and they write to us for the back numbers, which we are sometimes not able to supply. This is not a matter of profit to us, but we earnestly suggest that all readers who are really interested in garden literature should spend the small sum necessary to bind their magazines, and file them away. They will find numberless occasions when the magazine will prove to be of value to them. We will furnish title page and index, free on application, and covers which you can give your local binder, for 50 cents; or if the magazines are returned to us, we will bind them for 75 cents. We have to ask you to pay the expressage on the magazines both coming and going. It is better to send us two volumes at a time, which covers a whole year, and thus save expressage. The last volume ended with the January number. February begins a new volume, the eleventh. We can supply bound copies of the following volumes:

Volumes V, VI, VII, VIII, IX, and X. Price \$2; carriage extra.

But we strongly recommend that our readers bind their own numbers. The advertisements are bound with the books, because we have found that they are often required for reference.

THE GARDEN ALMANAC

This is the time to use *The Garden and Farm Almanac* most. Most almanacs are planned to be used on the first of the year, and then dropped gradually into the scrap basket. *The Garden and Farm Almanac* is a useful handbook for the next three months. It costs 25 cents postpaid.

"Give us Fruit-More Fruit" Cry the People of the Cities

One of the most serious problems of the present day is the supplying our rapidly growing population with the necessities of life. That the supply is not equal to the demand is shown by the rapid increase of living expenses during the past few years. The Governmental investigations of these conditions may discover lots of things, but upon the farmer will be laid the responsibility of overcoming them. *We must go back to the soil.* The people of the cities are consumers—not producers—and from them goes up a continuous cry for more fruit—better fruit.

The doctors are growing wise. They know now, better than ever before, that drugs will not take the place of proper food—and the proper food to prevent many of the ills of mankind is fruit. Therefore, they are advising people to eat fruit and plenty of it. You know the old adage, "an ounce of prevention is worth a pound of cure"—doctors are working on this principle, but *the people can't get the fruit.* What is on the city markets today brings outrageous prices and is often poor in quality. The farmer who can put into market high-class fruit, packed properly, may demand his own price for it, and a good orchard these days is better than a gold mine—for the mine may run out. To produce good fruit you must have good trees and plants.

You Have the Place to Grow Fruit We Have Fruit Trees and Plants —Let's Combine Forces and Win!

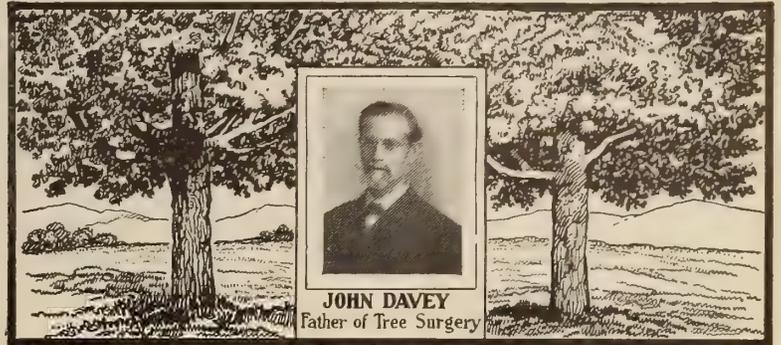
We are the largest growers of fruit trees and plants in the country. That may seem a bold assertion to make, but to prove it we need only explain that our nursery consists of over 2000 acres. It is located in a section where fruit trees and plants grow to perfection. All the conditions of soil and climate combine to entitle our part of the country to the name, "America's Eden," and trees produced here grow and thrive and produce fruit, no matter where they may be planted.

We grow only tested fruits—the kind that can be depended upon, and we have been supplying trees and plants to the same people for years. Persons who once buy from us come back year after year, and we don't believe there is a like concern in the country which has so many steady customers. This shows that our product is right and our prices are right—our immense acreage and the experience of two generations make it possible to produce the finest kind of stock at the least cost, and our patrons get the benefit.

Send for our free Catalogue—it won't obligate you to buy, but it will open your eyes to the great advantages of getting your trees and plants from us.

Address Office Number 24

Harrison's Nurseries, Berlin, Maryland



A Man Who Loves Trees as Friends and Has Spent His Life Among Them

John Davey has spent a long lifetime among the trees. He knows them and understands them; has studied them and experimented with them. He loves and encourages them, and works with and for them all the time. He has come to be known as the greatest tree authority in this country, and has been called "a brother to the trees." He has delivered lectures upon tree subjects all over the United States and is known as a missionary working in the interests of the trees. It is not strange that he should have solved most of the problems of tree life, therefore, or that he should have originated the science of tree surgery.

A Scientific System That Saves Tree Life

It has been found by John Davey that there is no necessity for trees dying. If they are properly treated they will live almost indefinitely. No matter how badly a tree is injured, he can treat it, and bind up its wounds, and in most cases it will live. He can save the life of trees that are badly decayed, and strengthen those that have become weakened from improper usage. Many people do not realize that their trees are diseased or injured until the trees begin to die. Thousands of fine trees die every year that could have been saved, if an expert had examined them and treated them in time.

Trees are too valuable to be given into the keeping of the tree butcher. Consult an expert concerning their condition. The tree experts, operating under the directions of John Davey and trained in his school of tree surgery will inspect your trees and tell you what they need. It costs you nothing to consult them. Write them today and tell them the number of trees you own, and where they are located. They will at once advise you as to the terms on which you can arrange to have your trees treated.

The Davey Tree Surgeons Are Trained by John Davey

"Our Wounded Friends, the Trees"

Graphically describes tree facts, many of them heretofore untold, and gives in detail the Davey methods of tree preservation. This book is unique, just as the Davey system is essentially original. It explains the superior efficiency of Davey methods and tells why only experts should be employed for tree surgery. The book has cost too much to permit promiscuous distribution, but we shall be glad to forward a copy, free, on request, to any person in the Mississippi Valley or Eastward who has fine trees that are decaying and who is interested in saving them.

The Davey Tree Expert Co.

153 Oak Street, Kent, Ohio

(Operating Davey's School of Practical Forestry)

Representatives in all principal cities in the Mississippi Valley and Eastward.

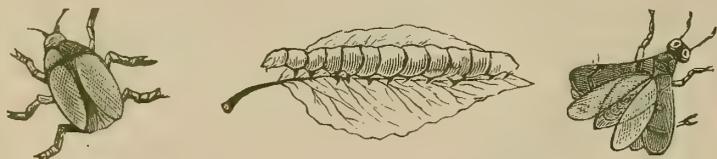
Send all inquiries to the main office for prompt attention.

"The Salvation of Our Trees"
A little booklet which gives facts about lecture of the same title delivered by John Davey. This lecture is an exposition of the unique science of tree preservation and is attention-compelling to the utmost degree. This booklet free.

"The Tree Doctor by John Davey"
John Davey's latest and most comprehensive work on the care of trees. An invaluable handbook for every owner interested in the preservation and care of his trees, written in plain language, for lay readers. Price, 50c, postpaid.

HAMMOND'S LIME, SULPHUR AND SALT

Concentrated
"HORICUM"
Trade Mark



The San Jose
Scale Killer

HAMMOND'S

SLUGSHOT

which destroys the pest. Use it now. This article does not readily wash off.

"Kills Bugs."
Sold by Seedsmen

For pamphlets worth having on "Bugs and Blights" write to

B. HAMMOND, Fishkill on Hudson, N. Y.



California Plants in the East

THERE are many plants in California worthy of growing in the East other than those which are mere novelties. Two plants which I would especially recommend are the Chilian watermelon from South America, and the Oregon Evergreen sweet corn. The watermelon ripens in Massachusetts about the middle of August and the quality cannot be excelled. The plants are very vigorous and to give space for proper development should be planted fully ten feet apart.

The Oregon Evergreen corn planted June 1st, 1909, was ripe September 7th, and continued in condition for use until cut down by frost October 15th. At this date there were many ears not ripe enough to eat. After the early ears were disposed of, new ears made their appearance near the ground, and our late supply came from these. We raised Golden Bantam, Crosby, White Evergreen, and Country Gentleman, but the Oregon gave by far the most satisfaction.

Massachusetts.

L. A. W.

6 good things for your garden

from Stokes' 1910 Seed Catalogue.

Stokes' Bonny Best Early Tomato
Finest ever introduced. Brilliant scarlet color. Enormously prolific. Pkt. 10c; oz. 50c.

Stokes' Sugar Sweet Muskmelon
Delicious flavor that everyone wants. Strong grower, blight proof, green flesh, good size. Pkt. 10c; oz. 25c.

Stokes' Hardshell Kleckley Sweets Watermelon
Without an equal. Absolutely uniform, long, dark green, weighs 40 to 50 lbs. Sugary sweet of finest texture. Pkt. 10c; oz. 20c.

New Strawberry Lettuce
Beautiful head with delicious crisp buttery flavor. Decided pinkish color in interior and when prepared for table resembles a dish of crushed strawberries. Pkt. 10c; oz. 25c.

Stokes' Standard Sweet Peas
Beautiful new orchid flowering type. Long stems, and in all colors of the rainbow. Pkt. 10c; oz. 20c.

Stokes' Standard Dwarf Nasturtiums
Magnificent blend of named varieties, giving all the prominent colors. Pkt. 10c; oz. 15c.

All for 25 cents
— six 20c. packets — to get you acquainted with "Stokes' Standard" Seeds. Write today, enclosing 25c. either in silver or stamps and mention The Garden Magazine I will also send free my new catalogue, beautifully illustrated from actual photographs and telling about the best seeds on earth.

WALTER P. STOKES
Dept. A, 219 Market Street, Philadelphia

"Stokes' Standard" SEEDS



SPECIAL SEED OFFER

To introduce our high grade seed we will send a full size packet of each of

Beet, Improved Blood Turnip; Lettuce, May King; Radish, Scarlet Turnip White Tipped; Nasturtium, Dwarf mixed; Sweet Peas, Finest mixed, and a copy of our new SEED, BULB and TOOL catalogue for 10c. Remember these are full size packets and should not be compared with those sent out in some collections. By all means send a postal today for the catalogue. It contains some of the newest introductions in vegetable and flower seeds together with a large list of the standard varieties. It's free and the largest and best we ever issued.

M. H. BRUNJES & SON
1581 Myrtle Ave. Brooklyn, N. Y.



Bulbs for Spring Planting

THERE is a miniature torch lily worth importing. It is called *Kniphofia rufa* (or *Tritoma rufa*). It is a dainty little thing with a spike only two or two and a half inches long. It is a pleasant contrast to some of the top-heavy kinds. I saw it in July, 1908, in Surrey, England.

They say that the earliest of all torch lilies is *Kniphofia Tuckii*. It belongs to the Abyssinian group and blooms nearly three months earlier than the old poker plant (*K. Uvaria*).

Everyone who likes the montbretias should try *Antholyza paniculata*, for it is a glorified montbretia, growing three to five feet high. It has broad, sword-shaped leaves and long tubular flowers of red and yellow which are borne in two-sided spikes in summer. If you cannot get this particular species, buy tubers of any antholyza you can get now and start them in a frame or in the house before seeing them out.

Picture to yourself a stately plant four feet high, bearing five to eight rose-colored bells each three or four inches long and you have some faint notion of the glory of *Crinum Powellii*, a magnificent plant for porch decoration. The huge tubers cost about fifty cents each, but are worth it, as they will last for many years. They will bloom outdoors a good part of the summer, if you grow them in a tub, leaving three-fourths of the bulb above the surface of the soil. In late fall move the tub to a cool house, and let the plants rest until February when growth will begin again. There is a white variety and a pale rose one also, of this truly regal plant.

New York.

W. M.

What Are Your Trees Worth ?

What is that big one worth to you in dollars and cents? In pleasure? In comfort? Or those trees along the street or drive-way?

You cannot replace them in your life-time, so can you afford to neglect them?

Have you an Orchard that does not bear as it should? This can be remedied.

We can give you honest, intelligent and scientific work without over-charging you. Write for particulars and references.

C. E. PERSONS & CO.,
Erie, Pa.

**LANDSCAPE GARDENERS
TREE SURGEONS
ORCHARD EXPERTS**

These are a few of the many thousands of unsolicited testimonials received by us every year



USE AND PRAISE HENDERSON'S SEEDS

AN APPRECIATION FROM USERS OF HENDERSON'S SEEDS IN EVERY STATE IN THE UNION

ALABAMA.—"My parents used your seeds, my wife's parents used them and now we use them."
C. R. CLARK, Montgomery, Ala.

ARIZONA.—"I have used your seeds for years and find them perfect in every respect."
Mrs. IDA E. GENUNG, Yarnell, Arizona.

ARKANSAS.—"The seeds I bought of you last year made my garden the best in this part of the country."
R. M. BURTON, Lewisville, Ark.

CALIFORNIA.—"For 28 years I have been buying seeds of you with perfect satisfaction."
Mrs. JULIA HUTCHINSON, Fillmore, Calif.

CAROLINA.—"We have used your seeds for two generations, and have never known them to fail."
Miss E. L. LIPPINCOTT, Ronda, N. C.

CONNECTICUT.—"I have helped to plant and pick a garden many a year, and can truthfully say never planted any seed as good as Henderson's."
Mrs. E. TERRILL, Naugatuck, Ct.

DAKOTA.—"I wish to compliment you on the quality of your seeds. They have proven first class. Our garden has been the envy of our neighbors."
B. R. CARTFORD, Watertown, S. D.

DELAWARE.—"Last year our seeds came from you, and gave us the best garden in the history of the institution."
E. W. SPAULDING, Ferris Industrial School, Marshallton, Del.

DISTRICT OF COLUMBIA.—"I add my indorsement to the reliability of your seeds and their splendid results."
LOUIS R. SMITH, Tacoma Park, D. C.

FLORIDA.—"Can get seeds nearby, but dare not risk them when I know Henderson's bring a crop every time."
J. M. TUCKER, Bushnell, Fla.

GEORGIA.—"For years I got my seeds from you until last season. Forgive me. In future I patronize old reliable."
G. S. GRAHAM, Rome, Ga.

IDAHO.—"I compliment you for the true merit your seeds possess. Everything from you has been satisfactory."
JAMES TORRENCE, Oreana, Idaho.

ILLINOIS.—"I believe you to be masters in your line of business and I enjoy dealing with masters. Everything from your firm has been most satisfactory."
A. F. SHELDON, 209 State St., Chicago, Ill.

INDIANA.—"Other seeds may be as good, but in my experience of 25 years have not been able to find it out."
J. H. McMILLEN, Logansport, Ind.

IOWA.—"This is the 9th year I have ordered seeds from you and I feel confident of getting the same high quality."
J. R. RAYMOND, Waukon, Iowa.

KANSAS.—"It gives me pleasure to commend Henderson's seeds. I have used them for many years."
T. H. JONES, Greeley, Kas.

KENTUCKY.—"I have bought from almost every seed firm in the United States. But I order from you because I never fail to make a successful crop from Henderson's seeds."
ARTHUR P. HOPKINS, Russellville, Ky.

LOUISIANA.—"Your seeds are the best I ever planted and I have had a garden for 40 years."
Mrs. CAROLINE E. MERRICK, New Orleans, La.

MAINE.—"I am so pleased with the seeds that you furnish me from time to time that I place the enclosed order with you."
CHAS. D. WOODS, Director Agricultural Experiment Station, Orono, Me.

EVERYTHING FOR THE GARDEN

is the title of our 1910 Catalogue—the most beautiful and instructive horticultural publication of the day—a book of 200 pages—710 photo-engravings from nature—8 superb colored and duotone plates of vegetables and flowers. It is a mine of information of everything in gardening either for pleasure or for profit, and embodies the results of sixty years' experience.

To give this catalogue the largest possible distribution we make the following liberal offer:

EVERY EMPTY ENVELOPE COUNTS AS CASH

To every one who will state where this advertisement was seen and who encloses Ten Cents (in stamps) we will mail the catalogue and also send free of charge our famous 50 cent "HENDERSON'S" COLLECTION OF SEEDS, containing one packet each of *Giant Mixed Sweet Peas*; *Giant Fancy Pansies, Mixed*; *Giant Victoria Asters, Mixed*; *Henderson's Big Boston Lettuce*; *Freedom Tomato* and *Henderson's Blood Turnip Beet* in a coupon envelope which, when emptied and returned, will be accepted as a 25-cent cash payment on any order amounting to \$1.00 and upward.

In addition, all ordering from this advertisement will receive a copy of our *Garden Guide and Record*, which we consider one of our most valuable publications. A book of condensed cultural information of which one of our customers, who has had an advance copy, says: "It is the most complete, concise and comprehensive book of its kind."

MARYLAND.—"Have always found your seeds so reliable we could not think of ordering elsewhere."
JOHN H. FRINGER, Supt. McDonogh School, McDonogh, Md.

MASSACHUSETTS.—"I order from you—because to have a good garden one must have good seeds and I have always found yours produce as represented."
B. H. BROWN, Royalton, Mass.

MICHIGAN.—"Your seeds always give such satisfaction that we think we can't use any other."
MARTIN T. STODDARD, Hingham Center, Mich.

MINNESOTA.—"Herewith is my 26th annual order, and I have never had occasion to complain."
M. P. MANN, Worthington, Minn.

MISSISSIPPI.—"We are better pleased with your seeds than any we have ever used."
W. A. COULSON, Moss Point, Miss.

MISSOURI.—"I received the gold medal at the Jamestown Exposition for the best collection of vegetables—and thought you might be interested in knowing they were grown from your seeds."
HENRY KIRKLAND, Columbia, Mo.

MONTANA.—"One year out of the last 23 I did not get my seeds from Henderson—and that was last year. I'll never leave you again."
PAT DUANE, Anacosta, Mont.

NEBRASKA.—"Am well pleased with all of your seeds. Consider me a continual customer."
Rev. PHIL R. LANDON, Sterling, Neb.

NEVADA.—"Have always had a successful garden from your seeds."
GEORGE RUSSELL, Elk, Nevada.

NEW HAMPSHIRE.—"I have tried most everybody's seeds, but none so satisfactory as yours."
J. H. LINDSEY, Reed's Ferry, N. H.

NEW JERSEY.—"This is my 50th consecutive yearly order to you. Need more be said?"
J. BERGEN THOMPSON, Ocean Grove, N. J.

NEW MEXICO.—"Your seeds succeed remarkably well in this climate; both vegetable and flower."
JOHN F. WIELANDY, Santa Fe, New Mex.

NEW YORK.—"This is my 28th anniversary order for Henderson's seeds. Nothing but satisfaction and gratification has followed their use."
S. B. ALLEN, Burdette, N. Y.

OHIO.—"I have been buying seeds from you for 30 years—and expect to continue so long as I live."
THOS. BEER, Bucyrus, Ohio.

OKLAHOMA.—"Our garden is fine; your seeds enabled us to produce grand results."
I. S. HINSHAW, Durant, Okla.

OREGON.—"I took first prize with vegetables from your seed at the Chamber of Commerce Show last October."
J. P. MAXTON, Marchfield, Ore.

PENNSYLVANIA.—"Since my first order to you 34 years ago I have entertained a high opinion of your seeds."
Rev. B. ROBERTS, Norristown, Pa.

RHODE ISLAND.—"I send you my order confident of receiving the best seeds procurable. I have used them for many years."
ERNEST KNOWLES, Narragansett Pier, R. I.

TENNESSEE.—"We are enraptured with the quality of vegetables from your seeds. Any one would serve as a model for your pictures."
C. H. ROY, Jellico, Tenn.

TEXAS.—"We heartily commend your seeds to our southern brothers as being without an equal, and we speak from experience."
THE HILLCREST FARM, Victoria, Texas.

UTAH.—"Other seeds are a little cheaper—but the high quality of yours appeals to us, as we never had a failure with them."
C. G. PORTER, Salt Lake City, Utah.

VERMONT.—"Have sent to you for seeds for over 30 years, and always found them as represented."
Mrs. CHAS. HALL, West Rutland, Vt.

VIRGINIA.—"As good seed is of vital importance to my success, I have in consequence been dealing with you for years."
Miss AGNES O'HOLLORAN, Lynchburg, Va.

WASHINGTON.—"I have purchased seeds from different houses, and yours prove the peer of all, in germination and results."
P. F. MORROW, Ballard, Wash.

WEST VIRGINIA.—"I never knew there could be such a difference in seeds. Yours are the best I ever grew."
J. A. ARBUCKLE, Elkins, W. Va.

WISCONSIN.—"Back in my childhood—I recollect that my father always claimed there were no seeds equal to Henderson's. I still use them."
F. M. CONLEE, Madison, Wis.

WYOMING.—"I praise the seeds received from you last year. Their products are the best we ever grew."
CLAUS ANDREN, Cody, Wyo.

PETER HENDERSON & CO., 35 AND 37 CORTLANDT ST., NEW YORK.

Poultry, Kennel and Live Stock Directory

Address INFORMATION DEPARTMENT, THE GARDEN MAGAZINE, 133 East 16th Street, New York.

Information about the selection or care of dogs, poultry and live stock will be gladly given.

The Cornings Cleared \$12,000 In One Year From Eggs

Readers of The Garden Magazine are probably familiar by this time with the Cornings' remarkable story — how they started raising eggs four years ago with thirty hens; how in their fourth year they cleared \$12,000, or \$6.41 per hen on 1953 pullets; how this winter they have 4000 hens, and are getting up to 75 cents per dozen for their eggs.

They have made a great success of this business, all because they have learned to produce the finest eggs, in great quantities, just when prices are highest. We are not sorry for the New Yorkers who paid 75 cents a dozen for Corning eggs. The eggs are worth every cent of it, and more. WE ARE SORRY for those who have chickens, or a place to keep chickens, and are so far behind the procession that they are not making their hens pay a handsome profit. Properly managed, as the Cornings do it, any one ought to be able to come close to the Corning mark of \$6.41 per hen per year. We make no promises, however — merely wish to say that the

CORNING EGG-BOOK

(entitled "\$6.41 per Hen per Year") tells in detail HOW the \$12,000 profit in a year was made; gives absolutely all the essential information about this business; describes how and where the Cornings get their market; how they produce perfect, clean, fine-flavored, sterile eggs, how they keep their pullets laying all winter, getting bushels of eggs when others get none, how they mix their dry mash to produce eggs, how they can keep 1500 pullets in perfect health in 2560 square feet, how they get eggs at a cost of only 14 cents a dozen, etc., etc.



Laying House No. 2 with 1500 pullets, shelling out eggs by the bushel

Remember, the Corning Egg-Book is not an encyclopedia; it tells nothing of raising broilers in 10 weeks or any other period; it promises no fortunes from four hens in a dry-goods box; it has nothing to say about beautiful, no-egg fowls for the show-room. What it does tell, and tells as it never has been told before, is how two men

MAKE MONEY OUT OF COMMERCIAL EGGS

and the methods others must follow if they wish to produce equal results. The FARM JOURNAL now offers, FOR THE LAST TIME THIS WINTER, its remarkably attractive combination of the Corning Egg-Book with a two year subscription to the brightest little home and farm paper on this planet. See offer below.

Farm Journal is a farm paper, but it is far more than this. It is for everybody outside of a big city flat; it is equally at home in town, village, suburbs, or on the rural routes. It is for "humans," not fat hogs; fat hogs are all right, but they do not come first. Every reader of The Garden Magazine will enjoy and learn to love the FARM JOURNAL as do its nearly 700,000 present subscribers, scattered all over the United States.

Poultry, the Farm, the Home, Horses, Swine, Sheep, the Cow and Dairy, Bees, Fruit and Garden occupy their proportionate share in every issue. Then there are the less technical and material pages devoted to matters of the home — fashions, housekeeping, recipes and bright, fresh reading for the younger members of the family.

Farm Journal need never be carried out of the house with the tongs. The advertising columns receive the most careful scrutiny of our editorial department and the bars are up all the time against medical, deceptive, suggestive or nasty advertising of any kind whatever.

Farm Journal is thirty-three years old, and has grown to be the leading farm and home paper of the world. Its score of editors are men and women who write "with their sleeves rolled up." They know what they are talking about, and can quit when they are through — a rare virtue. FARM JOURNAL is UNLIKE ANY OTHER PAPER.

SPECIAL OFFER:

We will send, postpaid, the CORNING EGG-BOOK and the FARM JOURNAL for two years,

Both for 50 Cents

cash, money order or check. Book and paper may go to different addresses, if desired.

FARM JOURNAL
1011 RACE ST. PHILADELPHIA

Cut out and send this Coupon

FARM JOURNAL, 1011 Race St., Philadelphia

Enclosed find 50 cents. Send the Corning Egg-Book and Farm Journal for two years to

Name.....

P. O.

Street..... State.....



Successful Egg Farming

Among people who can afford luxuries there is great demand for a regular supply of fresh eggs. The few growers who can furnish them regularly, winter and summer alike, get very high prices.

The Corning Egg-Book

(entitled "\$6.41 per Hen per Year"), tells how two men, in poor health, starting four years ago with only thirty hens, made from their little egg-farm a clear profit of over \$12,000 last year. It tells all about their experience, their failures, their methods and how others, men or women, with good sense, care and faithful work can make money in the same way. Not a detail left out.

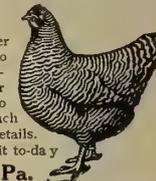
The Corning Egg-Book is sold in combination with the Farm Journal, Philadelphia, Pa., and we have made arrangements to make this

SPECIAL OFFER: — For \$1.00 (cash, money order or check) we will send postpaid the Corning Egg-Book and the Farm Journal for two years, and American Poultry Advocate two years, all for \$1.00 if order is sent at once to

AMERICAN POULTRY ADVOCATE
724 Hogan Block Syracuse, N. Y.

Greider's Fine Catalogue

of pure bred poultry for 1910 is bigger and better than ever, 200 pages, handsomely illustrated, 150 engravings, photos, 30 fine colored plates, describes 65 leading varieties of land and water fowls. Gives low prices of stock and eggs, also incubators, poultry supplies, etc. Calendar for each month. Tells how to care for poultry, giving full details. The price of this book is only 10 cents. Write for it to-day
B. H. Greider, Box 84, Rheems, Pa.



There's Money in Poultry

Our Home Study Course in Practical Poultry Culture under Prof. Chas. K. Graham, late of the Connecticut Agricultural College, teaches how to make poultry pay.
Personal instruction. Expert Advice.
250 Page Catalogue free. Write to-day.
THE HOME CORRESPONDENCE SCHOOL
Dept. G. P., Springfield, Mass.



NINE BIG CHAPTERS Practical Poultry Book FREE WRITE TO DAY

Nine chapters on the opportunities in the Poultry Business. Where to Locate, How to Build Cheap Houses, Foods, How to Recognize and Prevent Diseases. Valuable to both amateur and breeder. Describes the special features that make Model Incubators and Brooders the best in the world for producing bigger and stronger chicks.
Model Incubator Company, Dept. J, Buffalo, N. Y.



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. Your money back if you want it.
Write for booklet
H. C. & H. B. HARPENDING
DUNDEE, N. Y.

EGGS—EGGS

As an inducement to secure new customers I will sell eggs this spring at the following low prices:

	Per Setting	Per Setting	
Buff P. Rocks	13 \$1.00	R. I. Reds	13 \$1.00
Barred P. Rocks	13 1.00	Columbian W'd's	15 2.00
White P. Rocks	13 1.00	R. C. B. Minorcas	15 2.00
S. Wyandottes	13 1.00	S. C. B. Orpingtons	15 2.00
W. Wyandottes	13 1.00	S. C. B'k Orpingtons	15 2.00
Buff Leghorns	13 1.00	R. C. B. Orpingtons	15 2.00
S. C. W. and B. L'g'ns	13 1.00	S. C. W. Orpingtons	15 2.00
R. C. B. Leghorns	13 1.00	R. C. W. Orpingtons	13 2.00
Black Minorcas	13 1.00	R. C. B'k Orpingtons	13 2.00

S. C. Buff Orpington Eggs, \$3 for 30; \$8 for 100; R. C. Buff, Black, White and S. C. White Orpington Eggs, \$3 for 26; \$10 for 100. All other eggs, \$6 per 100. Forty years among poultry and now have the largest and best equipped Poultry establishments in America.

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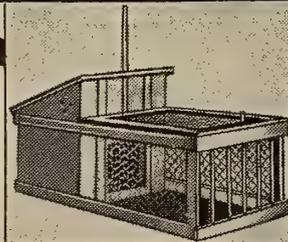
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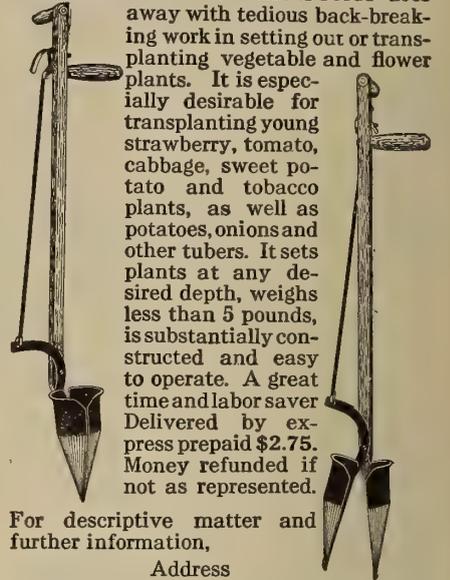
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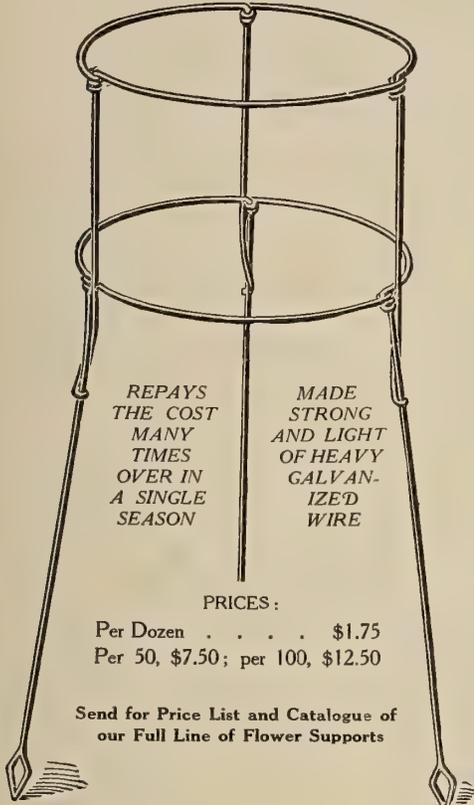
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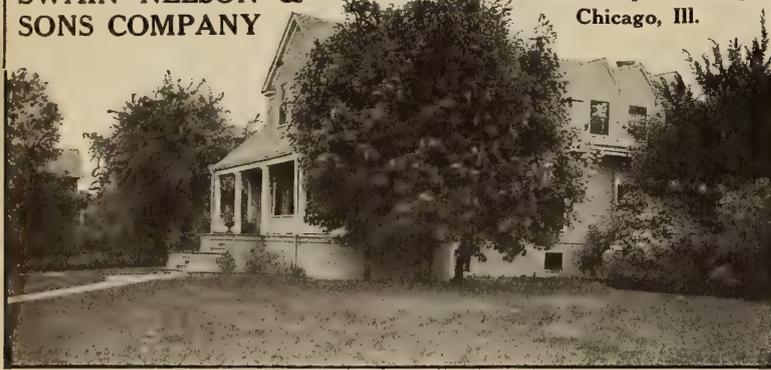
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SEED

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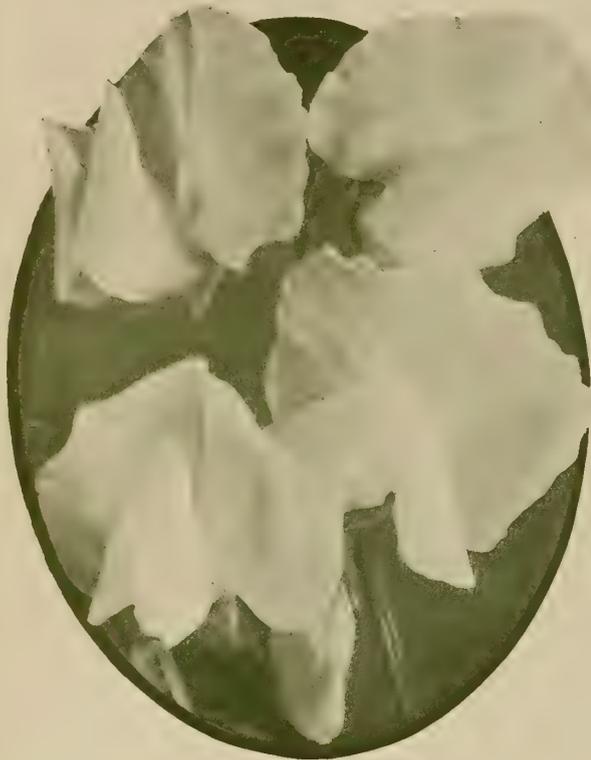
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The Garden Magazine

VOL. XI—No. 2
PUBLISHED MONTHLY

MARCH, 1910

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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.]

Relieve the Spring Rush

OUTDOOR work for the year begins in real earnest with this month, and from now on, as the weather warms up, important jobs begin to crowd each other with increasing intensity. Therefore, everything that can be done early means so much relief from the later crush.

Plant all the hardier seeds just as soon as the ground can be worked, especially sweet peas. Put these into the ground at the very earliest possible moment. Sow fairly thickly, and thin out to about three inches for each plant. For very superior flowers, if you have the time to bother about it, sow seeds singly in 2½ inch pots and keep the pots in a cool place just above freezing, with an abundance of light. Keep them as cool as possible, so as to discourage top growth; later transplant outdoors without disturbing the roots.

Important garden crops for early planting are potatoes and strawberries. Read Mr. Jenkins' article on page 94.

Vegetables for Present Sowing

IN the open ground, as soon as it can be worked, sow asparagus, carrot, chickory, corn salad, mangel wurzel, parsnip, peas (the round-seeded kinds are hardier than the wrinkled, but not sweet), salsify, seakale, spinach. Remember you do not have to wait two years for seakale; you can enjoy this delicious vegetable next winter by sowing seeds now and by following directions given in THE GARDEN MAGAZINE for March, 1908, page 78.

Under protection in the greenhouse or in the hotbed, or even indoors in flats in a well-lighted window for planting out as soon as the weather is settled, these: Peas, broccoli, cabbages of all kinds, cardoon, cauli-

flower, celeriac, celery, egg plant, kohlrabi, leek, lettuce, okra, onion, parsley, pepper, squash, tomato.

For extra delicacies, if you have the space to spare to mature the crops in the hotbed or greenhouse, make sowings of bush beans, cucumbers and melons. These are tender crops.

If you have a greenhouse or frame and can afford room for successions, sow cress, mustard, radish. Lettuce, sown thickly and the seedlings used entirely for fresh salad-ing, may also give good returns.

Flower Seeds for Present Sowing

YOU will gain much by making an early start in the flower garden during this month. Hardy annuals — that is, coreopsis, marigold, wallflower, etc. — may be sown outdoors where they are to flower, merely thinning as the seedlings develop some time during this month, according to location.

All kinds of hardy annuals should be started under cover for earliest flower. Sow in flats or in drills in the hotbed, and plant out when the weather is safe. This includes all the hardiest annuals, annual delphinium, snapdragon. Half-hardy annuals may be sown in the greenhouse or hotbed, transplanted while small, and gradually hardened off for planting outdoors when the ground is warm. Also some of the easier-flowering perennials. Such are: China aster; tropical bedding plants; cannas; cobea; cosmos (by all means start this now for a fall feature in your garden); dahlias (seeds, not roots; the latter need not be planted until the end of June); mignonette must be transplanted when very young, as it resents root disturbance; morning-glory; nasturtium; petunia; salvia; verbenas; and zinnia.

As soon as the ground can be worked, plant out hardy lilies, peonies, and hardy perennials of all kinds that you were not able to get into the ground last fall.

Work Around the Lawn

THE early part of the month uncover gradually any bulb beds that have had protection.

Look over dormant trees and shrubs and spray where necessary. If scale was present or near you last year, spray anyhow.

Bring in manure and mulch shrubs, vines, and, if it needs it, the lawn, too. Mulch rose beds especially.

Look over trees and shrubs for final pruning before growth starts. Repair winter damage by ice storms, removing broken limbs and smoothing rough wounds, etc. If any large branches have been broken

away, cut the stub clear back to the trunk and paint the surface.

Prune the roses. Remember the rule: For quantity of flower, prune moderately; for specimen blooms, prune severely, leaving four to six eyes. Again, the stronger the growth the less the pruning required.

Cut back severely *Hydrangea paniculata*. It flowers on the new wood.

As the frost leaves the ground, lawns may be seeded and sod rolled. Make other repairs by filling hollows and top dress. Remove rank, strong-growing weeds.

Toward the end of the month plant new rose beds, and remember the quantity and quality of the bloom is directly proportioned to the attention given now. Do all ground work necessary, digging sites for new beds, turning the soil and leaving it up roughly to mellow for a short time.

Gradually remove the heavier coverings from all plants as the weather opens. Nearly everything should be completely cleared by the end of the month.

Graft cherries and plums early. Thin out currant bushes. Prune apple trees, peaches, plums and pears. Dwarf trees will need more attention; cut back two-thirds of last year's growth; if it has not already been done. Prune raspberries, cutting uprights three feet and laterals one foot. The pruning of grapes is discussed on page 88.

Plants in the House

NOW is the time for repotting and shifting. Growth will be starting and new roots are forming. Look over everything, pick off dead leaves, and if any plants are pot-bound and it is not convenient to shift them, feed them weak liquid fertilizers. Watch for green fly and fumigate with tobacco or dip in dilute tobacco juice. Do not let any suffer for want of water.

Keep the pots turned around so as to get even illumination and an even development of the plant.

Take cuttings of geraniums for winter blooming, pinching off all flower buds during the summer.

Grow gloxinias if you have heat enough (60 to 65 degrees). Pot the corms in light, rich soil. Propagate fuchsias — the last opportunity. Chrysanthemum cuttings struck this month make the best plants. Pot up all summer-flowering bulbs that are to be kept in pots.

As the sunlight increases in intensity, shade the greenhouse by coating the glass with thin whitewash. Watch the temperature, and if it runs high, put on air. The shade, on the outside of the glass, will be gradually washed off by the weather.

The Evolution of American Fruit Growing, I.—By Wilhelm Miller, ^{New York}

TWO CENTURIES AND MANY THOUSAND DOLLARS WASTED ON A FALSE START—THE GOAL WE NOW AIM AT—HOW TO SAVE HEART-BREAKING DISAPPOINTMENT AND ADD MILLIONS TO THE NATIONAL WEALTH

IF GEORGE WASHINGTON could have invited Professor Bailey to share his inauguration dinner in 1789, it is probable that our first president could not have offered our greatest horticulturist a single variety of fruit which is in common cultivation to-day! And it is possible that Professor Bailey could have uttered a prophecy about American fruit-growing which might have added millions of dollars to the national wealth, saved nearly have a century of wasted effort, and made all the difference between happiness and misery in the lives of thousands of families.

For, in the first place, nearly all the varieties of fruit then cultivated were of European origin, while at the present time 80 per cent., or more, are of American origin. George Washington could not possibly have tasted a good American grape, for the first good one, the Catawba, was not discovered until 1802. Practically all our small fruits, save the currant, have been developed from American species since the death of George Washington. And even the tree fruits, which are mostly species of foreign origin, we cultivate more and more in the form of American varieties.

In the second place, a philosophical scientist, like Bailey or De Candolle, might have warned Americans against European fruits and stimulated them to raising new varieties of our native species. Of course, all the immigrants knew that the American climate is different from the European, and they must have noticed that practically all the trees, shrubs and wild flowers are different from the corresponding kinds in Europe. But only a scientist with a trained imagination could have reached the conclusion that the difference in flora is largely due to the difference in climate, and consequently the chances of permanent success with any European species in America are very small. Looking backward, this may not seem a great feat of reasoning power, but even a Bailey or De Candolle might not have been equal to such a flight in 1789, for Darwin's "Origin of Species" was not published until 1859.

If Washington could have come back a century after his inauguration, he would have been astonished to find America leading the world in commercial fruit growing. A hundred years is a short time for such an accomplishment and we may take a certain honest pride therein. But it is sickening to learn that we have made this marvellous progress largely in *spite of ourselves*. In nearly every case the improvement of our native fruits has come from necessity and not from the design of man. And throughout the whole process Americans have been singularly blind to the evolution that has been taking place before their very eyes.

For instance, we now know that it is

impractical to raise European grapes outdoors in the East or South. That fact should have been recognized by 1789. Yet it was after that the greatest effort to make America a wine-drinking country was made. A Swiss colony of vineyardists led by Dufour settled at Vevay, Indiana, and made a great experiment which was a total failure. The only grape that succeeded there was one called the Cape, which we now know was a variety of *Vitis Labrusca*, our wild fox grape. Yet Dufour indignantly repudiated the idea of its being American, considering that its character had been slandered. So, too, with the Catawba, which gave the first great impulse to grape growing in America. History tells us that it was found growing wild near Asheville, N. C., in 1802, and its botanical characters are clearly those of the fox grape, yet a German priest, who was misled by the vinous flavor of the fruit, pronounced it the "true Tokay" and the Catawba was therefore disseminated under the name of that famous European variety. Thus in the 'thirties, while the Catawba was driving out the European vines, the grape-growers were making a most determined opposition to native grapes. They wished America to be a wine-producing country and they favored the Catawba because it made good wine. This was natural because the European grape is primarily for wine. But these men never foresaw that American grapes would be valued primarily for eating out of hand.

Not only have the fruit growers fought against an inevitable evolution, but even the

botanists have failed to see that the fruit growers were unconsciously using species new to science. The most important of all raspberries, the purple canes, went without a scientific name until 1869 when Peck called them *Rubus neglectus*. Most people supposed our garden strawberries to be of European origin until 1896, when Bailey proved that they came from the Chilean strawberry, which is native to our Pacific Coast. No one understood that immense group of Southern plums of which Wildgoose and Miner are famous examples until 1896, when Bailey explained them as a group of natural hybrids between *Prunus Americana* and *angustifolia* and gave them the name of *Prunus hortulana*. In short, we had no clear conception of the botanical relationship of American fruits until the last decade of the nineteenth century, when T. V. Munson's grape discoveries ripened and Bailey published his "Evolution of Our Native Fruits."

We may take an honest pride in the fact that our country was the first in the temperate zone to make it possible for the poor to enjoy a variety of fruit the year round. But when we get "chesty" about the vast fortunes represented by American fruit growing, it will do us good to know that American pomology has rested until lately upon a most precarious basis and that we have not been very hospitable to new ideas.

For example, there was no wholesale way of destroying insects or preventing diseases until the discovery of spraying. Yet the potato beetle, which proved that we must have such a weapon, began its alarming career as early as 1860. For thousands of years apples have been wormy, yet Americans did not begin spraying against insects until 1878, and even then it was not against the codlin moth, but the canker worm. There was no wholesale preventive of plant diseases until 1883, when the Bordeaux mixture was first applied in a systematic, experimental way in France. And spraying did not become a general practice in the United States until 1895. Yet we now consider spraying as one of the four fundamentals in pomology coordinate with tilling, feeding and pruning. The wonder is how American fruit growing ever survived the onslaught of foreign pests, culminating in the San José scale.

Again, the grape has been cultivated for over 4,000 years, yet the self-sterility of fruits in general was scarcely suspected until the 'eighties, and it was nearly 1900 before we had a fair working list of all the self-sterile fruits. Here is another fundamental fact, for many varieties will not bear fruit at all unless they are planted near other varieties that bloom at the same time and have the power to fertilize them. Surely, somebody with a little imagination might have suspected something of the kind in the middle



Catawba, the first important native grape. About 1830 it began to displace European grapes, which cannot be grown commercially East or South



Gregg, the leading market variety of black raspberry. Black raspberries are unknown in Europe, but here they proved more popular than the red

of the eighteenth century, when Linnaeus declared that there was sex in plants. It was 1848 before Nicholas Longworth of Cincinnati succeeded in making the public understand that there are two kinds of flowers in strawberries, staminate and pistillate. Surely, some one might have inquired then whether the same phenomenon does not exist in all other fruits. Yet it was forty years later that the experiment station workers began a general survey which showed that self-sterility occurs in apples, pears, plums, grapes, etc. Was this rapid progress? Is there much chance here to boast? It looks to me as if American fruit growing has been on a safe basis for just about ten years!

The most remarkable fact, however, in the evolution of American fruit growing is our steady progress toward the day when all varieties of fruit will be of American origin and perfectly adapted to American conditions. To scientists it is all reasonably clear. They see that in all new countries, the native fruits are generally of poor quality, and pioneers inevitably import the fruits of the oldest countries, since these have had the longest time for improvement. But the old fruits are not hardy in the new climate and the settlers are forced to raise new varieties from the only fruits that are hardy, viz., the native ones.

The general public, however, does not realize this, and I can assure you that it is a fact of vital importance to thousands of families all over the United States. It is absolutely impossible to grow Eastern varieties of fruit in the cold Northwest. The growers in Minnesota and the Dakotas know this now, after several decades of bitter experience, but amateurs who go there from other states are almost sure to send "back East" for fruits to plant in their own gardens. Every year some gardener freshly arrived from Europe writes me that he plans to devote his life to raising European grapes in America and only last week a New York business man came to me for advice on this same proposition. I could cite many instances to show that tens of thousands of dollars are hopefully spent every year on nursery stock that is fore-

doomed to failure, simply because people do not know that there are, for practical purposes, *nineteen climates in America*, and that for one cent they can get a copy of Farmer's Bulletin No. 208, containing a list of all the varieties recommended for each section by the American Pomological Society in 1904. That list is far from perfect, yet if everyone would study it before planting, the aggregate saving would soon run into millions of dollars, to say nothing of the long years of waiting that end only in disappointment.

At the risk of dullness, therefore, I shall try to outline the evolution of each important fruit in order to show how history is the best prophet and adviser as to what we should do in the future.

EVOLUTION OF THE GRAPE

It took two centuries to convince the Americans that we cannot grow the European, or wine, grape outdoors in the East



Shafer, a leading variety of purple raspberry. The purple canes are the most important of all raspberries in America

or South. American grape culture began about 1825, when Adlum sent the Catawba to Nicholas Longworth at Cincinnati. By 1850 Cincinnati became the first great horticultural centre of America. The greatest Catawba-growing region to-day is that of Keuka Lake, N. Y., where the industry was started about 1830.

The first American grape of known parentage was the Diana, 1843, but it was not until 1853 that we have the first record of the Concord, which was the "first variety of sufficient hardiness, productiveness and immunity from diseases to carry the culture of the vine into every garden in the land."

The first authentic hybrid between European and American grapes was Allen's Hybrid, shown at Boston in 1854. The first great hybridizer was Rogers who secured the first of his still famous hybrids in 1856. But no primary hybrids among grapes are of commercial importance. Nature discourages violent hybridization, but encourages mild crosses, e.g., as between different varieties of the same species. The blood of the European grape must be much thinned before it can be safely combined with American varieties.

The European grape failed because of the black rot and downy mildew, two American diseases which American grapes had learned to resist in the progress of ages. Nature had also hardened our vines against the root louse, or phylloxera, but when this insect and the two diseases above-named reached Europe they revolutionized European viticulture. European vines are now grown on roots of American, or phylloxera-resistant, stocks.

The wine grape is grown on the Pacific Coast, but elsewhere grapes are essentially a dessert fruit. The dominant type in the North is the fox grape (*Vitis Labrusca*), of which Concord is the most famous example. The dominant type in the South is the summer grape (*V. aestivalis*), of which Norton's Virginia was the first good example, furnishing much of the wine made at Cincinnati about 1850. Another Southern type is the muscadine (*V. rotundifolia*), of which the most famous example is Scuppernong. The species which the Europeans use for stocks is our river-bank grape (*V. vulpina*).

A new race of grapes for the Southwest is being created by T. V. Munson of Denison, Texas, who describes all the American species, including several discovered by him, in "The Foundations of American Grape Culture."

European grapes can be grown in the East only under glass.

EVOLUTION OF RASPBERRIES

The European raspberries are red (rarely purple) and are all derived from *Rubus Idaeus*, so named after Mt. Ida in Greece. They do not like our cold winters and hot summers. Skilled amateurs are willing to fuss with them and the standard of quality is Brincklé's Orange, an American variety which fruited first in 1845.

Strangely enough the American red raspberry (*R. strigosus*) is so much like the European that many botanists do not



Agawam blackberry. America is the only country where this fruit is cultivated for market. If you are prejudiced against it read page 78

consider it a distinct species. Every fruit grower, however, knows that the European requires too much coddling for a market fruit. One would naturally expect the red raspberry to be the most popular type in America, but it is not. The first variety of it was Allen's Red, 1860, but the first great advance was made by Cuthbert, which is the leading market variety to-day. Bush fruits were not extensively planted before 1870 or 1875.

The black raspberry is so much hardier and more productive than the red raspberry that, in spite of its color, anyone nowadays can see that it is a better proposition for market. But people who had always eaten red raspberries could not be expected to see that. The first direct attempt to improve the raspberry was made in 1832 when Longworth introduced the Ohio Everbearing, which has gone out of cultivation and must not be confused with the prominent Ohio berry of to-day. The dominant variety now is the Gregg. The course of evolution has been from a long cluster of relatively small berries to a short cluster of large berries. The black caps have all been developed from *R. occidentalis*.

But the most important raspberries for market are the "purple canes," of which Shaffer is, perhaps, the leading variety. They are the most productive of all, and after canning their purple berries attain an attractive pink color, while the red raspberries fade badly. These purple canes are derived from *R. neglectus* and the first varieties were natural hybrids between the black and red caps. This species was not described until 1869 and not fully understood until 1890. The first raspberry of any kind that came into cultivation was one known as the "English Red," which was introduced about 1825, the name showing that it was supposed to be a European variety. Yet raspberry culture grew so slowly that in 1853 the American Pomological Society recommended only five varieties and all were foreigners.

EVOLUTION OF THE BLACKBERRY

The story of the blackberry is full of superlatives and apparent contradictions. (1) The hedgerows of Europe are full of blackberries, yet America is the only country which cultivates blackberries and dew-



Brandywine, an American strawberry The strawberries of continental Europe are everbearing, i.e., they yield intermittently from June to September. The everbearing type has never been a commercial success here.

berries for market. (2) No bush fruit is capable of yielding a larger profit than the blackberry, yet more prejudice against it exists to-day than against any other small fruit. (3) It is the latest in the season to ripen, and (4) it was the last of all fruits to take high rank commercially.

All these things are easily explained. The blackberry turns black before it is ripe, and therefore at first acquaintance it is regarded as unbearably sour. A blackberry is not ripe until it is soft and falls into your hand at a shake of the cluster. Then it is sweet. No fruit deteriorates more quickly after picking. It is the only fruit that is too easy to grow, becoming a troublesome weed, if neglected. It has the cruellest thorns of any fruit plant in cultivation. It is probably the most abundant in a wild state of any of the *Rubus* fruits and it has the largest berry.

The blackberry was not mentioned in any American fruit book until 1833. Its first variety, the Dorchester, appeared in 1841. The first market variety was the Lawton or New Rochelle, introduced in 1857, but not until 1875 did it attract wide attention to blackberry culture. About a decade later it was superseded by the Kittatiny, which gave way in ten or fifteen years to the Snyder.

The prototype of the long-cluster blackberries is *Rubus nigrobaccus*. Examples are Taylor and Ancient Briton.

The dominant type in cultivation now is

the short-cluster group (*R. nigrobaccus*, var. *sativus*). Examples are Lawton, Kittatiny, Snyder, and Agawam.

The leafy-cluster blackberries are *R. argutus*. Examples, Early Harvest, Dallas.

The loose-cluster blackberries are hybrids between the common blackberry and the dewberry. Examples are Wilson's Early (1854) and Rathbun.

EVOLUTION OF THE STRAWBERRY

The strawberry looks like an exception to our climatic rule, because our garden strawberries are derived from the Chilean strawberry (*Fragaria Chilensis*), a native of our own Pacific Coast, and therefore belonging to a climate comparable to that of Europe. But this is explained by Bailey.

"The strawberry is probably the most tractable of all our fruits as respects climates, because its stature and habit allow it to be protected from extreme cold and its short period of growth allows it to thrive in the cool season of the warmest sub-tropical regions."

Strangely enough none of our Eastern species are valuable in cultivation, as they respond to good treatment by making more runners than fruit. Yet, one of them, now called *Fragaria Americana*, was long considered by botanists to be identical with the chief European species, *F. vesca*.

England grows our type of strawberry, but the strawberries of continental Europe are essentially everbearing. Consequently seedsmen introduce every year with a vast hurrah, some new strawberry that will bear fruit from June to October, but the chances are dead against an everbearing strawberry becoming a market fruit in America. They are a pretty plaything for amateurs, but people soon tire of them.

The variety that revolutionized strawberry culture was the Hovey, which fruited first in 1836. But the variety that made strawberry culture a vast business is Wilson's Albany, exhibited in 1859. Varieties like it have ever since then been the dominant type. The Wilson of to-day is undoubtedly different from and better than the old Wilson. In fact the type is so variable that there may be a dozen strains passing under the name of Wilson.

In another article the evolution of the tree fruits will be outlined, together with a few words on the currant and gooseberry.

The Best Pears for Small Gardens—By P. J. Berckmans, Georgia

A SELECT DOZEN FOR GARDENS IN THE NORTHERN AND MIDDLE STATES, WHETHER DWARFS OR STANDARDS ARE TO BE GROWN, AS NAMED BY ONE OF OUR POMOLOGISTS

FIFTY years ago there were few varieties of pears grown. Now a host of varieties is offered. But this very profusion of varieties is bewildering, and one is likely to meet sore disappointment when the trees come into bearing.

The pear is not indigenous to the United States and it does not succeed equally well in all sections.

That many varieties have gradually degenerated is a fact well known by nurserymen who find it almost impossible to propagate some of the once old and best flavored varieties, as the White Doyenne, which for more than two hundred years was the most perfect of autumn pears. It was planted in all fruit gardens and known under nearly forty different names, showing its popularity.

After fulfilling a long term of usefulness its constitution has become so weakened that the grafts refuse to unite with their stock, or if by chance some survive this, they make such feeble growth as to seldom reach a fruit-bearing age. The amateur fruit grower must not let himself be led astray if he happens across a tree of some such old variety still bearing good fruit. It does not nec-



Beurre Clairgeau a very large, highly colored pear to be grown as a standard. October to November

essarily follow that any nurseryman can supply him with young healthy trees of that same sort.

More than fourteen hundred varieties are described in pomological works, and every year this quantity receives a liberal addition; still, the catalogues of the leading nurserymen seldom contain more than forty to fifty sorts. These are usually selected as combining vigor of growth, profusion of fruit bearing, good quality and adaptation to a large variety of soils and situations.

The commercial fruit grower restricts his selection to the really profitable sorts which is a lesser number than the average home fruit garden requires in order to supply the needs for family use — he selects sorts that combine vigor of the tree, and attractive color, large size, etc., but above all, long carrying capacity. Very few of the large commercial pear orchards contain more than a dozen varieties, and some even less. What this grower looks to is the profitable market returns; whereas the amateur grower requires a longer list to supply the household with fruits for both dessert and cooking or canning purposes.

The great difficulty confronting the average planter is in selecting varieties adapted to his particular soil. Fortunately, there are a few well known sorts which give excellent results in most sections of the country and on a great variety of soils; and the planting of these few limited sorts will seldom disappoint.

Some popular sorts, like Vicar of Winkfield are losing ground, because the quality of its fruit is so variable. In California, where the soil contains more or less alkali, it varies in quality accordingly, but where the soil is suitable it is a very good late pear, a profuse bearer, and keeps in perfect condition for a long time. In the upper sections of Georgia and Tennessee, where the soil is of a clayey texture and contains more or less lime, it is of excellent quality, whereas

in Middle Georgia, if planted in lighter soils, it is often so astringent as to be useless as a table fruit.

Bartlett is undoubtedly the most popular pear grown on this continent, yet it varies greatly when grown in different localities. It increases in quality and attractive color as it is grown on the Pacific Slope and in the Northern States, while if grown in the Middle South it loses in that peculiar musky aroma which is inherent to it in the first named sections, but frequently is increased in size. Another instance is that superlatively exquisite little pear, the Seckel, the standard of excellence of all American pears. It somewhat loses its exquisite flavor when grown South, but attains to double the size.

The matter of stocks is too little considered. Where space is restricted and tall growing and far spreading trees could not find sufficient space for full development, it is imperative that trees of low or bushy growth be grown. In this case trees budded upon the quince stock will come into place.



Seckel, the standard of quality in American pears. Small, but prolific. Best in the North

Unfortunately only a limited number of our best sorts are adapted to the quince stock; many like the Bartlett and Seckel are only occasionally successful, whereas the Duchesse d'Angoulême, the largest of our very good sorts yields abundantly, and its quality is improved if grown upon the quince. For commercial pear orchards trees grafted upon seedling pear stocks are preferred.

In the following list of "best varieties" the different purposes for which they are best adapted have been indicated and the object has been to give the amateur some real facts, so that in selecting a dozen varieties (which should be sufficient for a small garden) he can include the greatest range of quality and season consistent with trees of healthy and vigorous growth.

TREES ON QUINCE STOCK

WILDER: In this comparatively new variety of American origin we have a beautiful early pear, ripening early in August; Of medium size, pyriform in shape, with a

smooth surface, skin pale yellow with russet red; flesh melting, juicy and well flavored. One of our most attractive early good pears, does not rot readily at the core, as is the fault with so many of our older early ripening pears. The tree is very productive, but apt to overbear on quince stock, unless part of the fruit is thinned soon after the blossoms fall. It is equally an early bearer upon standard stock.

MARGARET: Follows the above in season of maturity, or later in August. Size medium, oblong, greenish yellow, overspread with deep dull russet red. Flesh melting, of delicious quality and by many pear cultivators considered the best of its season. The tree grows in a compact form.

CLAPP FAVORITE: Its great merit is that it ripens slowly if gathered a week or ten days before it would naturally mature upon the tree, and, if kept in a cool room in the house, it remains in good condition for the table for a long time. It is very productive, and matures during August. A very large oblong pear with yellow skin covered with russet red on the sunny side, flesh juicy, melting and of excellent quality.

HOWELL: This nearly follows the above in its ripening and if treated similarly can be carried for a long time. In some soils it is apt to be somewhat gritty at the core, but this is a slight defect which is offset by its rich flavor. The fruit is large, roundish, sometimes pyriform, bright yellow, with a pale red cheek; flesh melting, juicy and well flavored. Tree is a stout grower and bears well.

DUCHESSÉ D'ANGOULÊME: The largest of our good pears ripening during late September, and lasting several weeks if kept in a cool room. Average weight twelve to fifteen ounces, but specimens weighing two pounds and upwards are sometimes produced. Its color is greenish yellow,



Kieffer is the most resistant to scale. Of excellent quality in the South



White Doyenne, one of the oldest kinds, is disappearing from cultivation



Winter Nelis, a fine quality winter pear, keeping well

BARTLETT: Unquestionably the best known of good market pears, succeeding in nearly all sections of the United States. Few other pears are in demand while the Bartlett holds the market. It is unnecessary to enter into a lengthy description of such a well-known fruit. It ripens evenly in the house if gathered before maturity, and is best suited to warm, even gravelly soils. In damp soil the fruit loses some of its excellent flavor; while it becomes somewhat deficient in its peculiarly perfumed flavor it increases in size as it is grown Southward. Trees can be grown on the quince with a fair return of good and early crops; they do not as a rule live as long as standards.

ANJOU: Of first quality, high flavor, rich, vinous, and the tree very productive. It begins to mature during October, and if carefully gathered before frost and stored in a cool, dry room, the table may be supplied with this excellent pear until January.

VICAR OF WINKFIELD: A large pyriform pear, of golden yellow color. Its quality is somewhat variable; if planted in fertile soils the flesh is buttery, and of good quality, but becomes more or less astringent where the soil is not suitable. The fruit matures slowly and is therefore one of the best for our winter supply. It can be kept under proper cool, airy room storage until late winter. Tree of unusually vigorous growth and very productive on the quince.

GLOUT MORCEAU: A most excellent large pear, and another long keeper; can be used as a table pear during winter; very slow coming into bearing as a standard, and should always be worked on quince for the family garden. Either of these two last named pears will fill out the list of twelve desirable varieties for table and dessert purposes.

TWELVE PEARS FOR STANDARDS

Trees of this class require more space than dwarfs, and attain taller growth. In this class we have some varieties which are not successful if grown upon quince stock, but *must* be grafted upon thrifty pear seedlings.

SOUVENIR DU CONGRESS: One of the largest of the summer pears, ripening from August to September; showy and excellent.

BELLE LUCRATIVE: Above medium, yellowish green, flesh melting and vinous; September and October.

BEURRE CLAIRGEAU: Those who desire a very large, highly colored and juicy pear will find this a very desirable addition to their garden. Season from October to November. Productive.

WINTER NELIS: One of the highest flavored very late pears, although of medium size, this defect is fully made good by its quality. Keeps through winter. Tree is of straggling growth, but a free bearer, and fruit often needs thinning. This is one of the valuable winter fruits of the California growers, and seen in our markets as late as Easter.

BOUSSOCK: This variety is as popular a market fruit in some sections of Europe as is the Bartlett here. Fruit of large size, with lemon-colored and red skin, flesh buttery,

juicy and of good flavor, but texture sometimes a little coarse; matures during September. In many localities it has filled the place of the Virgalieu, which has proven unreliable as a tree.

KIEFFER: In every way a most desirable pear, of most healthy and luxuriant growth — very productive, as well as precocious bearer. Fruit large, if not allowed to overbear. Should be gathered before a heavy frost and house-ripened, when it becomes of fair quality at the North, but at the South it is far superior when thus ripened. The flesh is then very juicy, half melting, and vinous, with a richly perfumed flavor. It often attains a weight of eighteen to twenty ounces. No pear, except the Bartlett, is so valuable for canning and cooking — its long keeping and great abundance of bearing claims for it a place in every family garden. Fruit yellow with pale red, flesh solid, juicy, but brittle, with some of the flavor of the Bartlett. The tree is very seldom infested by the San José scale, but not immune from blight.

EASTER BEURRE: Large and of excellent quality. Keeps well from December to March.

TRIOMPHE DE JODOIGNE: One of the largest pears if grown in suitable soil, and especially if trained against a wall, when specimens weighing two pounds have been produced. Quality very good, and for the careful amateur who can train it to a wall in a sunny exposure, its enormous size and good quality will amply repay a little extra care.

JOSEPHINE DE MALINES: If one seeks for the most exquisite quality in a pear, he will find it in this variety. Not very productive, and listed here only for those who have a spare place in their garden and care to grow a fruit for its surpassing excellence rather than for its abundance. The tree is unattractive, with small foliage, and moderate growth, and the fruit of medium size. The flesh is of fine texture, melting, juicy, and of the most delicate and perfumed flavor; color of flesh of a pale yellow-pinkish tint, the fruit when cut giving out a delicate fragrance.



Bartlett, the most popular American pear succeeding almost everywhere

with russet splashes. Flesh juicy, melting and of excellent flavor, which is intensified when grown upon quince, when it is also enormously productive. We also find that it is less subject to the San José Scale than most pears.

FLEMISH BEAUTY: Seems to be successful over a large part of the country. Fruit large, with a red cheek, flesh melting and of very good quality. The tree is a regular and abundant bearer and the fruit follows the Angoulême in season of maturity.

LOUISE BONNE OF JERSEY: One of the favorite September pears, but somewhat variable in quality according to the soil. It prefers a heavy one. When the soil is suited to it the quality is very good, otherwise it is sometimes a little astringent, especially if planted far South. Upon the whole I consider it worthy to be numbered among the twelve good garden pears, if grown upon the quince stock. Season, September to October.

SECKEL: Although of small size, its exquisite flavor makes full amends. Fruit small in the average northern states, but increasing in size as it is grown Southward. There, however, while being a most excellent pear, it loses some of the peculiar musky characteristic which makes it the most luscious of small pears. If grown as a standard it is exceedingly slow in coming into bearing. Season from September to middle of October.

BEURRE SUPERFIN: This medium-size pear is certainly worthy of its name. Flesh exceedingly juicy, melting, with rich vinous flavor — ripens during October — the tree succeeds quite well upon the quince, but lasts longer as a standard.

Perfection in Plums—By J. W. Kerr, Maryland

[EDITOR'S NOTE.—*Mr. Kerr has spent a life-time in studying plums, and possibly has a better acquaintance with the real merits of the different varieties than any other horticulturist. We are fortunate in being able to present this epitomized result of such patient study and thought.*]

IT HAS not been such an overwhelming number of years ago when the average person's knowledge of plums was bounded on the north by an old damson tree in the garden, which bore intermittent crops for the benefit of the preserve closet, and on the south by the often-expressed annoyance that green-gages such as are grown in England were so scarce here, while on the east and west there was no knowledge of plums at all—just a contented, inconsidering ignorance.

Well, we have changed all that. Even the Average Person nowadays makes some slight effort to appreciate the varieties of the different plum groups which our horticulturists have so lavishly provided. He plants plums, he eats plums, perhaps he sells plums, in which last case, if his commission man is half-way honest, he even makes a good profit on plums.

I am a great believer in and admirer of our native plums. But here in the United States we ought, once and for all, to get it out of our heads that we can, anywhere, any place and anyhow grow successfully all kinds of plums. It is all very well to look in at a fruiterer's and say that we ought to be able to grow the Japanese plums, for example—but barring the extreme West and the Pacific coast in particular, they are not hardy enough for general planting. As for the domesticas, which are of European origin, they are grown with profit only on the Pacific coast and in western New York State and in some of the little villages in New England where they never plant anything which their great-grandfathers did not plant.

What the average plum-grower wants when he plants for market is a plum that is a reliable cropper, hardy in tree, and attractive enough in appearance to make the possible customer's mouth water, and his money leap from his hand.

The home grower, who plants for family use, wants a reliable cropper and a hardy tree, but he wants good quality before appearance, and he is willing also to sacrifice extreme productiveness for an extra measure of size and quality. There are some varieties, therefore, which are fine for him, but which wouldn't yield a fraction of profit to the man who is planting for revenue.

All these points bring us back to where we started—with the native plums. Suppose we look up their record and see exactly why they are so much superior for the average grower than either the Japans or the domesticas.

In hardiness they will compare favorably under any circumstances with the hardiest of the Japans. They are so much less eager than the Japans to bud out in the spring that the frost seldom catches them and thus the regularity of their crop is more assured. Another point in their favor is their greater

immunity from black knot, and here, too, they shine by contrast with the Europeans, for they are much freer of both black knot and leaf blight than this foreign group.

So far as general commercial orcharding goes, the natives are less exacting as to soil conditions than either Japans or Europeans. The same culture and care necessary to produce either fruit or trees of the foreign species will ensure both to a much larger and more profitable degree if expended on the best varieties of our native species, while for the successful management of the orchard the details are less exacting.

Another point in favor of the natives is the long life of the trees. They will outlast two of the Europeans or the Japans. I have now in my orchards Wildgoose plum trees which are forty years old, and are still healthy and bearing fruit freely.



Wildgoose, one of the best known of the native plums; very productive, valuable for home use or for market

Then—the horticultural layman asks—why doesn't everyone grow native plums and still more native plums? Why does anyone ever cast a thought elsewhere when thinking plums?

I have often asked the same thing, and I have come to the conclusion that it is because many nurserymen dislike to grow the native plums on account of their thorny growth when very young. This makes them disagreeable to cultivate and handle as compared with the young trees of the foreign species. The general public, who must be influenced to a large measure by catalogue descriptions, is offered no inducements in the way of carefully chosen adjectives setting forth the merits of plums which the nursery-

man would rather not grow—of that we may be sure.

Yet I must admit that native plums have one weakness—self-sterility. This is not caused by non-production of pollen, but because the pollen does not ripen at the same time the pistil matures. Therefore, he who plants natives must be sure that he has chosen varieties which will interpollinate and thus fertilize each other.

In compensation for this, however, let us summarize a few more of their points of superiority to the foreigners.

They are hardier in bud and open blossom.

The trees possess much greater recuperative powers which give them ability to bear annual crops.

While the fruit may not command fancy prices in market, the incomparable volume of it assures much greater returns per acre.

Their fruit is far more resistant to black rot and injury from curculio, when varieties are selected intelligently.

Taken all around, these make a pretty good recommendation.

The primary object of the market grower is the greatest return of dollars and cents per acre. It is a proven fact that a man who grows high grade first quality domesticas and Japans will in the end only make one-half the profit per acre that he will make if he grows natives and gives them the same care.

A variety that stretches its season of ripening to an undue length is a curse to the market grower. What he wants is a plum that ripens up its crop promptly, and does not dally round with a quart or two a day. It must get out of the way of the next variety ripening in succession. A commercial orchard must have its varieties selected to cover the season from the earliest to the latest. He will only require half a dozen kinds, for the license in the selection of varieties for the market grower is much more restricted than for him who plants for family use.

The best of the earliest is Milton. It has every requisite of a good market plum. It ripens early, it is very productive, and it is satisfactory in size. Its skin is a brilliant red and its flesh is yellow and juicy. Perhaps its flavor would not appeal to the epicure, but it surely does hit the masses. It is always popular and you can sell it when you cannot sell the finest Green Gages.

To succeed Milton the market grower should plant Wildgoose and Whitaker. These two plums are identical in season and appearance. They are both red plums, highly and most pleasingly colored. Both have yellow flesh and both are very juicy and sweet. They are both immensely productive, and they are always sure of finding a profitable market, for people like them and buy them and ask for more, year after year.

Following Whitaker and Wildgoose in succession comes Mrs. Cleveland, a variety which is rather larger and better in quality than either of the two just named. It is like them in color, however, and the tree is a vigorous grower and a wonderfully prolific bearer.

When planting these four varieties it is necessary to plant with them a certain number of trees of a variety which will pollinate them. These pollinating varieties should constitute one-fifth of the orchard, every fifth row in other words.

Perhaps the best pollinator for a market orchard is the Smiley, for it produces a fair sized plum which will sell in the market as readily as those it pollinates. Newman is also a good pollinator, but it has the objection of spreading its season of ripening too long, and for that reason proves less profitable in market.

Wherever the peach succeeds in cultivation it is safe to plant these plums. Any well-drained soil that will produce a good average crop of corn can be used for a plum orchard. Exposure and texture of the land has more or less influence on the season of ripening but little if any on the season of blooming. Like any other fruit tree the plum buds are controlled more by the temperature of the air than by that of the soil in this particular. A southern or sunny exposure and a light loamy soil will, as a rule, mature the same varieties a few days earlier than the opposites of such conditions. Where to be first in the market is financially advantageous, the warm exposure and the heat absorbing soil are

preferable. Each grower must determine this by his individual market.

To plant an orchard, plow the land and get it in condition as for any other crop. This accomplished, let a good plowman run furrows twenty feet apart each way. Well grown one-year-old trees are more desirable than two-year-olds. Cut them back to a height of two feet at most, or, better yet, to a foot and a half or one foot. This severe cutting back gives the trees low heads. Look after the trees carefully for the first year, with a view to forming the heads, rubbing off and removing all sprouts or buds that have started growth, leaving only from three to five, and select these so that they will grow from different sides of the stem or trunk. My experience would sav to go slow on much severe pruning or thinning out of the heads. Limbs will be broken or split from time to time by various causes; these, with any others that may cross and chafe, should be promptly removed.

I do not wish to go into the subject of the actual picking and marketing of the fruit, but I will say this: That plums will not sell unless they are marketed attractively, and look clean and well arranged. Mussy, specked fruit in broken carriers and baskets are so much loss. Better let the fruit drop and rot on the ground than send it to market in such condition.

Now let us go back to the subject of the family orchard and the man who wants to plant a few trees for fruit for his own table and for cooking. Here the more important varieties are confined to another group of

natives and ripen considerably later than those of the market gardener's choice. The Wayland, Benson and Reed are the kinds for the home grower and as these must be pollinated, plant a tree of Prairie Flower with them.

All of these are mighty "good cooking." They can even out-rank that old kitchen favorite, the damson. Stewed they are very good. In jellies and spiced, they are delicious. But when you get them preserved, rich and red and fruity, with all that peculiar delicious piquancy with which the Southern housewife can invest them, you have tasted one of the best things which mortal man may ever hope to enjoy.

Most people do not know half enough about the good qualities of the plum for eating. I have a neighbor who eats them ripe and raw, sliced like peaches with sugar and cream, and they are very, very good. Various forms of pastry in which plums are placed I can only speak of as a mere man who has eaten and enjoyed, but knows nothing of the mysteries of its construction. But I will take no back seat on the plum preserve question. Our native Wayland, properly combined with sugar and fire, is a dish for the gods, and if there were no other reason in the world for planting native plums, they would still be worth planting just for this one sweet.

Yes, the native plums are hardiest, least liable to disease, best croppers, most profitable—so on and so forth—and they surely are best in preserves.



The one fault of the native plums is their tendency to bear excessive crops. Therefore attend to thinning promptly

The Personalities of Some Early Apples—By John Craig, Horticulturist Cornell University

INTIMATE FACTS THAT THE PLANTER SHOULD KNOW, BUT BOOKS NEVER TELL, CONCERNING SEVEN EARLY APPLES THAT ARE MOST WORTH PLANTING FOR A COMBINATION OF GOOD QUALITIES

THE apple is the great fruit staple of north temperate regions. One writer remarked, very truly: "Foremost always among fruits interesting to an Englishman is the apple"—and we can safely extend the limitation to include English-speaking peoples. "The apple is of more use and benefit to the people . . . in general than all the other fruits put together." This is equally true of northeastern America. The apple expresses greater variety in color, flavor, and in the uses to which it may be put than any other fruit. There is no reason why every landowner in the Northeast may not have apples the year round, for he can introduce himself in July to fresh apple sauce made from his Yellow Transparent or Livland Raspberry while the last of his crisp Northern Spies of the previous year are still in cold storage.

The good apple satisfies, but it rarely cloys; in this respect it stands in sharp contrast to the fruits of the tropics. Incontestable evidence regarding the comparatively small food value of apples may be easily secured from the scores of youthful harvest hands found in orchard regions during the annual picking season. The enormous consumption of "meller" and prematurely ripened specimens does not appear to have the faintest cloying effect upon the appetite of those youths as they make their tri-daily appearance at the table. On the contrary, the appetite seems sharpened. Isn't this one of the missions of the apple?

The best way to know apples is, of course, through frequent communication. Each variety possesses an individuality. The laborer in the fruit tree nursery soon learns to recognize the kind which sets its roots deeply in the earth. It "digs hard," he says. The tree agent recognizes some varieties because of their puny growth and small stature. He remembers these because his customers object to them. This is unfortunate, for weak bodies are characteristic of some of our best kinds, and so it happens that when marked vigor of tree and low quality of fruit are associated we have a combination which may be looked upon as responsible in large measure for the rapid distribution of some of our distinctly mediocre apples. The nurseryman prefers to sell something which brings immediate satisfaction rather than to urge upon the customer a poor tree which he receives with protest and harbors under suspicion.

The apple picker soon recognizes the varieties which fill the barrel quickly, which are easily separated from the holding spur; which must be handled with care to avoid bruising; or which will bear rough treatment without showing it immediately. The packer, too, in his intimate association with the skin of varieties gains such an acquaintance with them that he not only recognizes

well marked differences of texture as between varieties, but the observant man may detect differences in the same variety attributable to different soils as well as to climatic influence.

Let us, therefore, make it our business to get acquainted with the personalities of a few early apples that are the best of their season; to know the tree, its likes and dislikes; to know the fruit, its beauties, defects, and uses; and so shall we learn how to select the one or two varieties that are superlatively adapted to our special needs.

EARLY JOE.—My earliest memory of apples and orchards is associated with forays upon the single tree of Early Joe in the home orchard in western Quebec. To my boyish fancy this variety typified all that was delicious and toothsome in an apple. During the wind-fall season in late August and early September, daily personally conducted excursions by the small boys of the family made the rounds of the early maturing apple trees, and attention was always focused upon Early Joe, although other seasonable kinds were by no means overlooked.

For certain good reasons Early Joe will always remain an amateur's variety. In order to be generally popular a variety must have vigor, must have certain commercial characteristics, such as productiveness, attractive appearance and carrying quality. The Early Joe is not noted for any of these. The tree is a rather slow, weak grower. This defect is to some extent offset by its early bearing habit, but again it is handi-



The comparatively small core of the McIntosh and Fameuse makes them economical in use

capped by susceptibility to one of the worst fungus diseases affecting the apple—black spot, or apple scab. This in its most virulent form, dwarfs and distorts the fruit so that it is hardly recognizable, but in these days of spraying such diseases are not absolute hindrances to the cultivation of any variety.

Early Joe is of Connecticut origin, although its birthplace was in New York, for Connecticut furnished the seed and Ontario County, New York, simply the seedbed requisites. It appeared about 1800, and came along with a goodly crop of varieties, for it was of the day and generation of Wagener, Spy, and Primate. These fine varieties appeared in western New York about the same time, and possibly from seed brought from somewhere in the same general vicinity.

While the tree is defective in point of vigor, especially when young, we can certainly enthuse over the qualities of the fruit. Small in size, and not surpassingly attractive, its coat of dull red and russet is nevertheless suggestive of high quality; the exterior is rather disappointing to the uninitiated; yet compensation comes when the interior is reached. The yellow, fine-grained, crisp, yet tender and juicy flesh, with its rich, sub-acid flavor is agreeable, nay more, satisfying to the very core. As a rule there is little core left, and in the case of a boy consumer "there ain't no core."

Give Early Joe warm, gravelly loam, feed it generously, which means not only fertilizing, but cultivating, too; spray it annually, and it will certainly bring pleasure to owner and family, and will also not fail to carry satisfaction to the discriminating buyer.

JEFFERIS.—Here is another apple of splendid quality, very poorly appreciated. It was in Chester County, Pa., that the variety originated with Isaac Jefferis, something more than a half century ago. There is nothing especially distinctive about the character of the tree; simply a typical apple tree, moderately upright when young, later



This ten-year-old McIntosh in Central New York has borne regular crops for five years



Chenango, oblong form, recalling the old Sheep-nose, a good apple for the home, ripening successively

assuming a round-headed habit. It is reasonably vigorous and not especially afflicted with fungous enemies. The very characters which disqualify this for commercial uses give it distinctive value for the home garden and the special market grower. Critics say it ripens unevenly. This is true, but when planted for home use a tree which does not ripen all its fruit in the same week is of greater advantage to the small gardener than the one which brings every specimen to maturity at the same moment and exactly on time.

The fruit is small to medium. Who can mention an apple of the largest size of high quality? If this variety lacks uniformity in ripening it makes it up in size and shape. This oblate roundishness is covered with a dull red, laid on in splashes and stripes, warmed up with bright carmine. Like the Early Joe, the core is small and the cells open. The flesh is almost white, of firm, fine, crisp yet tender texture. Its juiciness is a striking feature, while its mild aromatic qualities never fail to please. Jefferis is eatable in September; it may be kept until January without difficulty and in good condition. It may be set down as an unappreciated variety, but one which the grower will make no mistake in planting for home use or for a discriminating market.

PRIMATE.—This is regarded as the king of autumn apples with housewives in central and western New York. It is one of the few varieties honored by having a tablet erected to commemorate the place of its birth. One of the public-spirited townsmen of Syracuse, Mr. John T. Roberts, some years ago, becoming convinced that it had



Chenango, of more rounded form, grown on clay

its origin in a certain place in the township of Camillus, Onondaga County, was instrumental in placing upon the spot a bronze tablet bearing the following inscription: "On this farm Calvin D. Bingham, about 1840, produced the marvelous Primate Apple, named by Charles P. Cowles. God's earth is full of love to man."

The tree is moderately vigorous, of roundish form, fairly hardy. Fruit is of medium size, of rather unattractive whitish yellow color, occasionally bearing a slight blush, but never striped. The flesh is almost white, very fine-textured, very tender and juicy, and sprightly sub-acid, with pleasant aroma. In the region of its birth-place this variety is in season during August and September. Like Jefferis and Chenango (which follows), the fruit ripens unevenly and should be picked successively. Beach, in "The Apples of New York," says that it is "moderately long-lived and reliably productive."

If one grows Chenango, it is probable that Primate may be dispensed with, but those who have grown it usually become so much attached to it that they are very loath to be convinced that there are other varieties of this season better or even as good.

LIVLAND RASPBERRY.—Here we meet an out-and-out foreigner. It came to this country in 1870 with a large batch of immigrants entrusted to the care of the United States Department of Agriculture by the Director of the Imperial Botanical Gardens of St. Petersburg. The consignment proved to be a motley one, indeed, and among many scores of blanks Livland Raspberry proved to be a prize. Though it came to this country from Russia, it bears the German name, Himbeerapfel, and the probability is that Silesia or Poland was its place of birth. In common with the great majority of reputed Russian apples as grown in this country, it matures early; in fact, among the very first of the summer crop.

The tree is a round-topped, vigorous grower, quite hardy as far north as the valley of the St. Lawrence in Quebec, and is grown successfully in northern Ontario.

The fruit is very handsome — one of the handsomest summer apples I know — and for an extremely early apple, really worth while. I believe it will replace Red June and Early Harvest when better known, especially in sections where summer apple culture is a profitable industry. The apple is of medium size, of regular, roundish form, with smooth, tough skin, beautifully covered with bright red shading into crimson, thickly veiled with lilac-colored bloom. Its flesh is sparkling white, often tinged with red near the skin, very tender, melting, with a pleasant, mild, sub-acid flavor. Livland Raspberry, coming almost as early as that earliest of apples, Yellow Transparent, and very much better for eating, though not quite as good for cooking, is well worthy of cultivation in the home garden, and is an apple also to be carefully tested for commercial purposes on a large scale. Like most early summer apples, the flesh being tender, it is not adapted for handling in large packages. It is eminently a small package variety,

and when placed upon the markets in this way it will make a very attractive showing.

CHENANGO.—This is more often called Chenango Strawberry. Its name naturally associates it with Chenango County, New York, but Madison County offers strong evidence of being its birthplace. It is a relatively new variety, having been in cultivation but little more than half a century. The personal characteristics of Chenango are exceedingly interesting.

The tree is characterized by short, stout, sturdy branches, and by a vigorous, upright type of growth. The tree is not one of the largest, yet it attains a very fair size. The fruit is peculiar in form in that it suggests the old sheepnose variety, but is not so pronounced in its oblong conicality as that old door-yard favorite. In addition to its conical and oblong form it is often marked with pronounced ridges. The color is a clear yellow ground, overlaid with lively red in long stripes and occasional blotches. The skin is peculiarly smooth, not oily, but sug-



Jefferis, a high quality apple worthy of wider cultivation. Ripens unevenly. Very regular in form

gesting rather a highly polished surface. The flesh is white, tender, yet crisp and juicy, and one of its distinguishing characteristics is the notable aroma and aromatic qualities which become very pronounced in eating a specimen.

Chenango, like Jefferis, ripens its crop successively, continuing through September in central New York. It would be much more highly appreciated, if it did not happen to compete with the Crawford group of peaches. Chenango is a little too mild in flavor to make the best quality of apple sauce. It is essentially a table dessert apple.

Plant on strong, sandy loam, prune to an open head, in order to permit the admission of sunlight and feed liberally; if planted on the heavier grades of sandy loam, handsome fruit should be the annual reward.

FAMEUSE.—In New York and Michigan one hears of the Snow Apple; in the Lake Champlain district the Fameuse is spoken of; and in the Province of Quebec the habitant speaks of La Fameuse, La Belle Fameuse, and occasionally Pomme de Niége. They are one and the same!

This is by all odds the most widely known of Canadian apples. Its range of proper adaptation, however, is much narrower

than its reputation, and hence the reason for some disappointment. Its intrinsic excellence has been the means of extending its culture outside of its natural habitat.

It is essentially a northern variety. The Upper St. Lawrence, the Lake Champlain district, and the Northern Lake region of Michigan furnish congenial conditions. When grown in regions too cool for ripening dent corn, Fameuse attains that quality of crispness essential to the development of its highest flavors. In dent corn regions its keeping season is short and the flavor wanting in briskness. In no section is it a first-class cooking variety; if used for this purpose, it should be taken while still somewhat immature.

La Belle Fameuse may be found practically in every region in the St. Lawrence valley from Kingston to points far below the Sauguenay River, in fact as far east as apple growing prevails.

A brilliant crimson (the characteristic of the color of this apple) is sometimes laid on



Fameuse, the most widely known of Canadian apples suffers from being grown outside its region. At home it is a first quality fruit

in stripes and sometimes in heavily suffused masses. So clearly differentiated are these colors on different trees that people are occasionally of the opinion that they represent different varieties. In central and western New York we regard Fameuse as a fall apple, but in the district of Montreal it is often marketed in March and April from common storage.

The tree does not attain large size. At first it is round topped and compact, but later in life it assumes a somewhat spreading habit, rather dense withal. To offset this density it should be pruned annually, thinning the branches so that the sunlight may be made available to all parts of the tree. Fine, clean fruit of this variety is not easily obtained, for it is subject to apple scab in its most virulent form. Since the advent of spraying the disease is less feared, though in older Fameuse growing districts there is always a considerable percentage of loss. In soil requirements the variety is not so particular as some others; but, nevertheless, it has a decided preference for a porous gravel containing a high percentage of lime.

This type of soil brings to perfection the apple's natural and beautiful colors, and when coupled with a northern latitude, its delicious, crisp, yet melting qualities of flesh.

As commonly grown in the regions of the eastern townships of Quebec and the upper St. Lawrence valley, there is but a small percentage of No. 1 fruit. The heavy bearing proclivities of the tree, the susceptibility of foliage and fruit to scab, coupled with faulty pruning, all tend to reduce the grade of fancy fruit, and increase the amount of small and poorly colored specimens. The visitor to the markets of St. Hyacinthe, Sorel, or Trois Rivières during the winter months will be astonished at the marvelous assortment in the way of qualities of La Belle Fameuse laid out before him. He can buy samples from the size of marbles covered with scab fungus up to the normal and beautiful 2½ inch specimen, and this possibly from November until April.

For a number of years an apple grower of the Montreal district, Mr. R. W. Shepherd, has shipped a limited quantity of fancy Fameuse to a personal market in England. The package used is a box holding about one hundred specimens, constructed on the egg-case plan, each apple being wrapped and having a compartment to itself. This suits the soft-textured Fameuse admirably.

This worthy apple has been grown for nearly three hundred years in the Province of Quebec and, as a natural result of widespread cultivation of any variety, is now the parent of a goodly progeny. The most distinguished member of the family is the McIntosh. Others are: Shiawassee of Michigan origin; Princess Louise and Scarlet Pippin of the Ontario region. Besides these, there are several of local repute in the vicinity of Montreal. Growers in that region are well acquainted with Fameuse Sucre, Fameuse Noir, and Green Fameuse.

MCINTOSH.—Were I the originator of this apple, I would have reason to be a proud man. Allen McIntosh, the discoverer and introducer of the apple of his name, will, as the generations come and go, be rightly regarded as one of the people's benefactors.

While there is no proof that McIntosh is derived from Fameuse stock, its likeness to that variety and its general characteristics are so unmistakable as to remove all reasonable doubt from the question.

When this variety is grown on clay soil it is often slightly ribbed toward the cavity, as shown in this illustration; but the normal McIntosh is not ribbed. It is of medium size, averaging somewhat larger than Fameuse, regularly and unusually roundish in outline. The skin is thin and tough. The color of northern-grown specimens shades from a livid or bright red to deep purplish red, almost black, overspread with a delicate lilac bloom. Who sinks his teeth into a well-grown McIntosh in prime condition cannot fail to carry away a cherished remembrance. Its white flesh, flaky and melting, pleasantly sub-acid, and highly aromatic, represents a gift of the gods indeed.

McIntosh originated along the Upper



McIntosh, of the Fameuse group extends over a wider region. It should not be cooked

St. Lawrence and its distribution was commenced by the introducer, Mr. McIntosh, on whose farm it appeared as a chance seedling in 1870. The tree is hardy and vigorous, a moderately early and practically annual bearer. It succeeds over a wider range of territory than its reputed parent. One finds it growing from the Sauguenay River in eastern Quebec to the valley of the Fraser, and even on Vancouver Island in British Columbia on the west. At the National Apple Show in Spokane, in 1908, a carload of this variety was exhibited by the Bitter Root Valley Orchard Co., of Montana, grown at an elevation of some 3,000 feet and in a location where the thermometer occasionally touches 40 degrees below zero. In the colder regions of interior British Columbia I found an orchard (an old one for that region) some twenty years of age, where most varieties had been killed by cold and climatic difficulties; yet McIntosh was thriving and productive. In high latitudes it is smaller in size and firmer in texture, coupled with higher coloring than normal. McIntosh, like Fameuse, is a fancy apple, to be sold in small packages, to be eaten fresh out of hand. Don't cook it. In doing so you simply spoil a good thing. I do not think McIntosh will supersede Fameuse in the old home of the latter, but it will have much greater vogue in the newer apple region of British Columbia and the Northwest Pacific.



Pimate, much esteemed as an autumn apple. Long-lived and productive

Fancy Peaches in the Northwest—By J. G. Cooke, ^{New York}

SOME REMARKABLE FIGURES, SHOWING THE DEVELOPMENTS OF A GREAT MODERN INDUSTRY—HOW THE MATTER OF WATER CONTROL IS OF VITAL IMPORTANCE TO THE QUALITY OF THE CROP

FOR a couple of months last summer while in the State of Washington I looked out every day on a fine peach orchard. I watched its cultivation with great interest as an excellent illustration of successful up-to-date methods. Nothing was left to chance. Each tree was under severe individual tutelage, pruned according to its position in the orchard with reference to the prevailing winds. All the trees had been vigorously pruned back to obtain a low and bushy formation. During the first years the young growth had been cut back one-half or even more. Aside from the greater convenience in handling, trees kept low are less likely to freeze. The shrewd grower had well in mind the advantages of being able to gather most of his crops while standing on the ground. The use of ladders not only involves more time, but inevitably injures some boughs and bruises the fruit to some extent.

The trees were wonderfully clean and well-groomed looking. The general effect of the orchard was one of great symmetry. The trees were twenty feet apart and there was not a single break in the long green ranks. The cultivator turned over the soil several times during the season, and not a weed or blade of grass showed under the trees.

It is very important to the fruit grower to understand the different needs of his different fruits. For instance, apples are found to profit by one final irrigation shortly before the fruit is picked; the fruit quickly plumps out more satisfactorily. Peaches, on the contrary, with their softer, juicier flesh, are distinctly injured by being given to drink just before they are picked; the water softens them too much. Now and

again the gently melodious murmur of water flowing through the irrigation flumes and ditches came to me. I watched hurrying beneficent streams make their way through the tiny laterals to give the thirsty peach trees a drink. The water was kept on each time for from two to three days, and then the orchard was a sparkle under the fine western sunlight. Nowhere in the world does one realize the beauty and value of water as impressively as in the sections depending upon irrigation.

The tree kept low and reachable is the more easily cared for in the fight against curculio, the peach borer, San José scale,

gumming, or fruit rot. The peach orchard as well as the pear orchard cannot bear as strong sunshine as can apples. It should face north rather than south so as to lessen the liability to sun scald.

Last summer there was not a peach in that beautiful orchard. During the previous winter a cold snap unprecedented in that part of the state had frozen the buds. Yet the knowledge that he was to have no crop that year did not keep the owner from refusing an offer of \$3,500 per acre last spring for his peach orchard. He had made so much in past years and could definitely count on big returns in the future. It was only the

second time in the last twenty years that the peach crop failed in that section. The other failure also was due to unusual cold. In 1907 he took in \$1,489 per acre from his peaches.

No fruit makes stronger appeal through outward beauty than the peach. Its rounded contours, exquisite color, and velvety bloom claim attention, and then the delicious fragrance and flavor! There never was a time before when people cared so much for the beauty of fruit and were willing to pay so largely for that.

The peaches grown under irrigation will bear comparison with any. It is true that some of the beautiful California peaches are tasteless, thoroughly insipid, but those grown in Oregon, Washington, and Idaho will be found as delicious as they are pleasing to look at.

Although very large profits have been realized from peaches, many orchardists are afraid to grow them because of their delicacy and liability to winter killing. It is true that nature has not provided the fruit bud of the peach with as warm close-textured sheaths as



Is there anything more appealing than a peach tree laden with its luscious fruits? Each tree is given careful individual attention, vigorous pruning giving a low, bushy growth



In the irrigated orchards of the West, peaches attain large size and fine finish

have been given to apples and pears. Peaches are quickly killed if the temperature falls much below zero. The growers are continually trying to overcome the handicap by carefully developing more and more hardy peaches. A great deal has been already accomplished along this line. The Elbertas — the Wrights — and Russell — and some others as now grown are said to be hardier than they used to be. The first peaches carried west were only remote kin to the fine big luscious article which is now produced. The earlier specimens — small, inclined to be hard, of inferior flavor, were scarcely like the same fruit. [This is an important statement! We know of no case, properly authenticated, of actual increase of hardiness of the same variety — there may be hardier strains or selections; but these are, in fact, new varieties essentially different from the original.—EDITORS.]

The orchardist has learned that much can be done to protect the tender peach buds from frosts and nipping winds by the judicious planting of wind-breaks. Lombardy poplars and evergreens have been used for the purpose. Nut trees too, are thus utilized and produce their own marketable crop.

While in the case of the apple the demand is more and more for the medium-sized, rather than for the tremendous, the public appears to prefer peaches just as big as they can be got. Twenty-five cents a peach is not an unusual price; exceptionally fine peaches have found a market at two dollars each.

Such fruit is exclusively for the rich

man's table. There is, however, nearly always an excellent general market for fine peaches. It is one of the most generally popular of fruits.

A great variety of peaches is grown in the Northwest. The big yellow-meated Elberta is, perhaps, as popular as any. It does well nearly everywhere; is very prolific; so are the Crawfords, both the early and late, and the Morris White. Many of the varieties familiar to the eastern farmer are found here in a much finer state of development.

There was a time when the fruit grower sought sheltered lowlands for his peaches. Experience has taught him that this is a mistake. Peaches as well as apples do better on fairly high land, where they can have free circulation of air. The most thoroughly winter killed peaches I saw last summer were those situated on low land.

While the grower is obliged to wait five years or more before he can take a profitable crop from his apple trees, he can do so in three years from peach trees. Therefore it is his common practice to set out peach trees as fillers between the apples. These are destined for removal when the apple trees mature. Many feel as does a certain acquaintance of mine who plants his apples and peaches in separate orchards because he does so hate to take out the fine vigorous peach trees while they are still in active bearing. "Every one of those trees is such a good commercial proposition in itself that I just can't sacrifice it, can't find it in my heart to do it," he admitted. "So I leave them in between the apples, crowding them, making me lose in the long run, by injuring my apple trees. And there are lots more like me," he asserted. "Look around at the orchards and you'll see plenty of peach



As fillers in the apple orchards peaches pay handsomely in the early years

fillers that ought to come out, only the owners hate to do it. It's weak-minded, but it's awfully natural. Now, my best way is to keep the trees separate and trust to small fruits or potatoes for fillers. It doesn't lacerate my feelings to get rid of them at any time."

How much money do peaches yield? Official returns from peach growers give their receipts per acre from three to six year old trees from \$1,000 to \$2,580. There are usually about 100 peach trees to the acre. Each acre may be expected to yield from 200 to 2000 boxes of fruit, according to the age and condition of the trees. Peaches

bring anywhere from .50 to \$1 a box ordinarily. The fruit is often bought on the trees by agents from the commission houses. I heard of one grower who thus received \$6.50 a tree for his. Another states that \$1,200 an acre from three-year-old peaches is a fair estimate. One man had shipped 3,300 boxes from 450 trees. Another had sold 4,000 boxes from 3½ acres at an average price of .70 a box.

Well over a million peach trees are growing in Washington alone. More than half of these are in Yakima County. The wonderfully prolific orchards of this Yakima Valley are fast making it one of the famous fruit sections of the world.



One of the irrigation flumes in the Northwest orchard lands. The exact time for giving water varies

Pruning Grapes the Year Round—By Julian Burroughs, ^{New York}

DESCRIPTIONS OF TWO METHODS OF CONTROL FOR THE AMATEUR WHO WISHES TO GROW GRAPES FOR QUALITY RATHER THAN FOR QUANTITY

SOUR grapes hang high in reality as well as in fable—from the very fact of their hanging so high they must have been improperly pruned and consequently sour. Whenever I am asked to prune some grape vines, whether it is on some city-yard pergola or the few vines of an outlying farm, nearly always I find too much wood and a complete disregard for the principles of grape pruning. You may cultivate, spray, and fertilize, but unless pruning is attended to properly the grapes are pretty sure to lack in size, flavor, color, and aroma.

To begin with, do not be afraid to ruthlessly cut away the old wood. Remember that the fruit is always born close in on the season's growth which in turn—and mark this, for it is the keystone of pruning grapes—grows from the wood of the year before. Therefore we have a one-two rotation of grape wood, and except for the main stalk up from the ground no wood should be left on the vine longer than two seasons. In the commercial vineyards at least nine-tenths of all the wood is cut off every December. On arbors, trellises and pergolas, because of the utter confusion, it is rather hard to carry out this principle to the letter. Even in such cases it is well to try to establish a regular rotation and system—say a symmetrical series of main stalks, branched or spreading, that are permanent and from which the one-two order can be grown and cut back every year just as done in the Kniffin system.

The "two-arm" form of the Kniffin system is the best and simplest way of growing grapes and has been adopted by nearly all the commercial growers east of the Mississippi. It not only gets results in the fruit but it is impossible to think of anything more simple; it holds the grapes up out of reach of chickens, ducks, and geese, enabling one to grow grapes in a hen yard; it makes spraying easy and complete; it reduces the summer pruning to almost nothing; and permits the growing of small fruits and vegetables under the rows of grapes, thus permitting the grower to make double use of his ground. This ideal system is well shown in the accompanying photographs; it consists of one main or permanent stalk tied to a wire six feet from the ground which, in turn, is held up by solid posts of wood or concrete. On this wire, like the outstretched arms of a man, are tied the two eight-bud arms. These arms are grown new and are entirely cut away every year, their place being taken by two new arms, the ones that come out nearest the main stalk.

Around the year with this system would be: In December (or now) trim as directed above, dropping the old wood on the ground where it can be dragged into heaps and burned, the



Before trimming. The ends of the canes were bent down and tied to a lower wire; it is better to tie to one wire



After trimming. The two new arms are always of the season's growth. Leave to 8 or 10 buds

ashes being put back under the vines; in April securely tie the new arms to the wire, yet do not tie so tightly that room is not left for the season's growth—otherwise as the arms grow the string will girdle them; in May rub off the buds or suckers that come out on the main stalk; in June, and again in July, lightly untangle the new shoots, making them hang down freely like the ribs of an umbrella. Do not do this while the vines are in bloom. In later July "scissor off" the surplus bunches of grapes.

No specific directions can be given for this, so much depends on circumstances. One infallible rule can be given, however, and that is that grapes, once they begin to ripen, should continue to mature rapidly and *all* the bunches on the vine should be ripe within at least two weeks from the time the first one is fairly started. If they do not do this, but drag along in a sour, semi-colored condition you know at once that you have too many grapes on the vine and some of them, the greenest, should be dropped at once. If you do not do this the vine cannot ripen its wood and that means an injured vine and probably no grapes next year. Count the bunches on one or two average vines, write it down and next July "scissor off" down to that number. It is best to cut off too many rather than too few; remember that the bunches left on will in a large measure make up in size, and consequently in beauty and flavor, for those

dropped in July. The advantages of an early scissoring off is at once apparent.

As an example of this let me mention the Green Mountain or Winchell, a very early and very sweet grape. If allowed to overload, the fruit will very often remain bitter and hard until killed by frost. The Campbell Early, a very good home grape, when grown on rich soil, will invariably overload and often three-fourths of the bunches have to be dropped.

Now this summer budding, pruning, and scissoring off is not only a part of grape pruning, but it has a vital connection with the winter pruning in that, unless it is done, the vine cannot ripen its grapes in time to ripen the wood before frost, in which latter case the winter trimming is a farce and growing fine grapes an impossibility. Better do your pruning yourself than let Jack Frost do it for you. A grape vine can only ripen a given amount of grapes in a period of years. Since it will often try to ripen them all in one year with disastrous results, we must restrain it. This is especially true of the fine varieties.

Where grapes are not grown on the two-arm system, but are grown on arbors or trellises, the summer pruning requires more attention. The reason for this is that in the two-arm system the new shoots hang down naturally with the result that they make no undue growth, whereas on arbors or walls the season's growth, unless pinched back, will attain such length that only very inferior and straggly grapes are produced. It is necessary, therefore, in such cases to pinch off the ends of all shoots that do not hang down freely, not letting them attain a length of more than four or five feet. Often the seconds or laterals that come out behind each leaf have to be cut out or pinched back in turn. In short, the wood-producing propensity must be curbed, throwing the strength of the vine into the fruit, without, on the other hand, crippling the vine or so reducing its foliage that ripening is retarded. The leaves of a grape are its lungs and a full, healthy foliage means high-colored and sweet fruit.

Though grapes can be grown on any sweet, well drained soil, there are two things that interfere seriously and make it hard to produce fine grapes: the sod under the vines and large shade trees near-by.

The 2-8-10 fertilizer is about the best for grapes. Wood ashes are excellent, but stable manure alone without potash in some form is not sufficient. Campbell Early, however, must have either manure or some green legume plowed under. Watch the green wood, and if it does not ripen up along with or very soon after the fruit, apply more fertilizer rich in potash and phosphoric acid the next spring. "Ripen the wood"—on that depends proper pruning, on which depends the quality of your grapes.

There Was Once a Man Who Dreamed, II.—By Ida M. H. Starr, ^{Mary-}land

[The first part of this article was published in last month's number, page 10.]

THE second book on the corner shelf is bound in green. Who would ever expect to find this favorite volume of English Houses and Gardens in any but the tints of early spring, in the color scheme of those days when the north wind is pacified and there is a feeling of expectancy in the world without of wonderful things coming, more wonderful than ever before? There are chubby-faced cupids on the cover design, upholding emblems of the gardener's art, which seem more reminiscent of the past, than even the peacock strutting under the clipped yews or the greyhounds among the cypresses.

The turning of a page brings one into an atmosphere of delicious fragrance, and whatever may be one's surroundings, at once plain walls and treeless streets, or newly formed, unfinished gardens, are effaced by thoughts of courtyards and terraces, bowling greens and parterres, arbors, groves and avenues. What a leap from matter-of-fact to-day, to a "Parterre de Broderie" of the long silent century of romance!

You and I, garden lovers, turn to these old prints with much the same feeling of reverence as does the artist to the traditions of ancient Greece. Whatever their limitations, all gardens are more or less unconsciously patterned after the Italian Renaissance models of the seventeenth century, from the tiny plot of ground with its one round flower bed set in restful simplicity, to the splendid garden of great decorative scheme and stately proportion. For generations the garden lover has longed almost hopelessly to reproduce the knots, groves, bosquets and avenues of old English gardens. His despair of success has not been without reason. Glance through any collection of garden books in any library and then make an honest confession of the mental attitude into which you are plunged after having gone through a series of pictures illustrating English gardens. They are wonder gardens, overwhelming in bloom; perpetually verdant; cunning in device; geometrical enclosures adorned in consummate art by hedgerows of rosemary and box; long shaded vistas of

green alleys; labyrinths of endless foliage in century-old dignity; so finished, so perfect, so complete are these master gardens that they cease to be a pattern or an inspiration. You look hopelessly at picture after picture, and then close the book. The owners of these gardens, you feel, must always have had their own way, with unlimited means wherewith to procure unlimited effects: the garden could never have begun—it had always been; it had had no tragedies, trees never died nor was there ever any blight; the garden was never new nor crude. As you close the book you seem to hear the clang of a gate which shuts you on the other side of a high wall.

Here is a book which speaks at once to the individual. Why—you think—here are things I can do. I am not to be shut out after all, for here is a garden in the beginning; a dear, funny, bare garden just in its swaddling clothes, as is mine. So you lose yourself in these old prints of gardens, thought out centuries ago by men who dreamed.

Even the towering walls of a Castle, or a Manor House, here and there in their midst do not overwhelm you or lead you to feel that the plans of these early gardens are beyond your possibilities, for a homely truth is facing you as you turn page after page: that there was once a time when the now famous gardens of the world were not beautiful or luxuriant or overwhelmed with flowers or shaded by lofty trees, or perfect or imposing or anything else but just seed-beds and tree nurseries. Then out from this quaint crudity of plantations there blossoms

a splendid hope and a gate swings open, and you enter your dream garden, and in fancy picture your perennials after they have become a fixed possession of this earth; or it maybe your avenues radiating in every direction—whatever the dream, you have touched the hand of those early artists and you two have been made of one spirit.

If there should be any question in your mind as to the way in which English gardens were made in the beginning, examine the prints of that period. They tell the story. There you see parterres in their infancy, hedgerows in tiny slips and everywhere trees, thousands of trees set out with infinite pains and long-seeing purpose.

Examine the picture of "Chatsworth House, being ye Seat of his Grace, William Duke and Earl of Devonshire, Marquis of Hartington, Baron of Hardwick, Ld. Steward of her Maj'sts Household, Chief Justice in Eyre of all her Maj'sts Forrests, Chaces, Parks, and Kt. of the Most Noble Order of the Garter." It shows a sumptuous mansion surrounded by a scheme of gardening which bewilders the fancy even in its uncompromising black and white. In front of the house is the "Parterre de Broderie" surrounded by small trees; to the left are knots and bowling greens, surrounded by small trees; to the right a geometrical garden of solid clipped hedges, surrounded by small trees; farther out the kitchen garden and the water garden with fountains, surrounded by small trees; still further the fields, surrounded by small trees; and to the North, South, East and West, highways leading into the vanishing line dotted by small trees.

If you look clearly you will see riders toiling upon the mirey road. It is all new, young, muddy, awkward, angular and unfinished. The plantings of the little sapling trees look actually silly about the magnificent Manor House.

Look at Plate No. 11. Here is the famous Knole, near Sevenoaks, Kent. When Queen Elizabeth presented this gorgeous property to the Earl of Leicester, have you any idea that those trees were other than saplings, shivering, and dying, their places being refilled by stronger little trees of the same age?

Have you any idea that the long drive,



Trees do, fortunately, happen to grow in many fitting places, because they must

through the undeviatingly straight approach to the Castle was any but a hot and dusty way in the summer and a veritable bog of mud in the winter; that the out-riders were other than dusty, sweltering attendants on the shadeless highway in July, and worse in winter, as they labored along the newly planted, muddy roads to the destination of their liege lord? If you deceive yourself with the idea that English estates were never crude and awkward, that they never began, that they have always existed in their present glory, you need only look at these old plates.

In a certain sense, we of America are facing the same problem that our English forebears did in the seventeenth century. We are awakening to a realization, as they did, that trees do not always happen where they should, and that if we wish them to happen at all our hands and souls must be taught what tree-hunger is.

Not only Chatsworth House and Knole,

but dozens of others shown in these plates in a formative state, are surrounded by innumerable exclamation points of young plantings, in fact there is hardly a picture in this book of early landscape work on English estates that shows a tree of any size, except occasionally on the neighboring hills. Go to these estates to-day, and see what has become of the baby trees. These men were practical men, but at the same time they were dreamers above all else.

No one can look at these pictures and not feel the thrill of delight which must have filled the mind of the illustrious designer. He not only created superb gardens and parks, but he revelled in the thought of his designs growing, day by day, into the fashion he originated. It all grew very slowly, but it grew, and he saw it grow, and he knew it would go on growing, and that was his happiness, his greatest recompense.

Now this is just where the gate is opening

for you and me. If there was a time when the garden lovers whose work has since become a very part of the enduring earth — if these men, these master gardeners, were content to live their whole lives and expect nothing but a promise of future glory for their masterpieces, their trees — should not we, their disciples, be done with ephemeral gardens, and find our happiness as they did in initiating plans which may endure.

You buy a home in the country. You hire a gardener to make you a world of flowers. A gentle-voiced, silent man steps forth to bid the flowers come. And they do come, worlds and worlds of flowers and he — the silent man — finds his happiness.

You engage a landscape architect. He, the far-seeing man, withdraws within himself, and evolves a vision of supreme beauty, and his dream of your landscape takes him into a world apart. He finds his happiness.

Time goes on, and the vistas grow more beautifully enframed, but you do not find your happiness.

"What is it all about, this joy of gardens?" I hear you say.

"Why, it is just like buying a picture. I merely put up the money. It is an illusion, like everything else." And yet you know that the architect and the gardener have not the look of men who follow illusions. Your desire to discover the secret of their happiness leads you to the gardener. You step into what seems a sanctuary of flowers, it has been so loved by the silent man, and you turn to where, perhaps, a Japanese imperial iris has lifted its regal head, and you stoop to gather a blossom. A hurried, anxious step comes across the path. A gentle-voiced man, hastens to the flower, leans over it protectingly, as if it were a shrine: "Ah, sir, I beg of you, not to-day; perhaps to-morrow you may cut, but not to-day. See the blossom is not yet perfect."

Then you go to where the landscape architect is superintending the layout of your grounds. You suggest certain changes. "Your idea, sir, would be quite correct in some places, but it would spoil my design should it be carried out here."

The architect has been hired at much cost, so you leave him alone to work out his happiness and his dreams, and you hear the clang of a gate. You are standing without the wall of your own garden.

And you turn to walk — whither? Not in your garden — but on the outside of some other man's garden and you begin to understand that these men who are dreaming and watching and loving the things in your garden are absorbing from your own earth the happiness which should be yours, and they are not only being enriched by your rightful treasure of happiness but you are actually paying them to take it from you.

Oh — Mr. Worldman, believe me, the joy of it all is not to own a garden, but to make a garden; to feel that your intelligence is back of every flower that blooms and every tree that grows; to be yourself the man who dreams!



He knew he could not live to see his treasure reach an age of dignity, but he planted the yew just the same

CHILDREN'S GARDENS EVERYWHERE



IT IS TIME TO WORK IN THE GARDEN; BUT THE GARDEN MUST BE A PAPER ONE—WORK OUT THE PLAN AND BECOME MASTER OF IT SO THAT WHEN OUTDOOR GARDENING COMES, NO TIME SHALL BE WASTED.

Conducted by
ELLEN EDDY SHAW
New York



WHY not try something different in planting this year? Instead of having a garden of flowers and vegetables only, set aside a portion of your garden space for small fruits. They are worth trying because there is money to be made in small fruits and because there are problems to work out along with the cultivation.

Perhaps, for a first year, it would be the wisest plan to try but one kind of fruit and give up only a small space to this experiment. It is surprising what you can do on just a bit of land.

Strawberries would be the best small fruit to start with. You see you can have not only a strawberry bed on a given piece of land, but other things too. Suppose a little spot 6 x 2½ ft. is chosen. On this ten plants can be put in two rows of five each, and in between the rows radishes may be sown. Along the edges of the bed is space enough for lettuce. This is all any one could expect to get from a 6 x 2½ ft. strip of ground.

Now let us get down to the strawberry business. Strawberries should be planted just as soon as the ground can be worked in the spring. The plants had better be purchased from some one, right there in your own town, who has had success with his. Then you will doubtless have success too. Calculate on paying two cents for a plant. So for twenty cents the ten plants are bought.

Choose a spot in the garden not shady but sunny. If there is a moist spot, take that. Mind you, a moist spot does not mean a place with water standing on top

of it! This would never do. After choosing the place, work into the soil some well-rotted stable manure. Spade this in thoroughly and rake the earth until perfectly fine.

It may help in planting to mark off the garden, thus getting distances just right. Measure in 6 inches from each corner of the garden along its width, driving in stakes at these points. Now stretch strings lengthwise of the bed, tying to stakes. This gives two strings just 1¼ feet apart and 6 feet long. On one line measure down 9 inches from the stake, along the other line 15 inches, placing stakes; then from each of these points put stakes along the lines one foot apart. This gives the exact spot for each one of the ten plants. And in this way the plants alternate down the rows, giving plenty of space for spreading, without interfering.

Now set the plants. Dig a trench. Hold the plant against one side of the trench as shown in the picture on page 94. Then push the earth in from the other side, cover the root and press firmly in place. Be sure the plants are neither above nor below the surface of the ground, but exactly on the level. If during the first few days the sun is very hot, the plants should be covered lightly with some straw from the barn.

As the plants grow they will send out shoots called runners. All these runners, as they appear, should be cut from the plants. This way of handling is spoken of as "hill" culture. If not cut off, the runners twine in together and form what is called a "matted row." Such a method as this is field culture. But for this, the rows should

be placed three feet apart. You boys and girls had better choose the hill culture.

It is possible to get strawberries from these plants the very first year under high cultivation in rich soil; but it is better to wait for a second year's yield. You will gain by it in the end. So, if you decide to wait, pinch off the strawberry blossoms, as they come. Perhaps you'd like to leave just a few blossoms to see the sort of berry you have.

These ten plants may be as good as a puzzle for you. For some of you might like to work out other good varieties for your locality. If so, try ten different varieties. Or try two plants each of five varieties; or five plants of two varieties. Twelve plants instead of ten offer a greater number for combinations. In choosing varieties, choose those with perfect flowers and so be sure of fruit.

You will understand that there is real need for working out varieties for the locality when such a berry as Marshall is considered. For, although this is of the finest quality, it will only succeed in certain very heavy, rich soils. Although this might be a good one to experiment with, yet it would not be wise to choose it for all ten of your plants. Gandy is a variety which thrives on sandy soil, and, produces a late crop. Mitchell Early should be used for early crops. Nick Ohmer, Brandywine and Sharpless are other good varieties to try. We shall offer a prize to any one working out from ten varieties the one best suited to his locality or conditions. A prize for the best specimens from a first year bed; also from a second year bed.

SOME SMALL GARDENING PLANS THAT WORKED

IT MAY seem early to consider garden plans. But it is not. For just a little later when the ground is workable things come on with a big rush. So you will be glad then if the working plans for the garden are made.

Much depends upon the amount of space available for garden purposes. But plans for large spaces can be made over to fit smaller spaces.

In general a good rule to follow is this—have as simple an arrangement as possible.

Some bright pleasant day it will be possible to get out and measure the space you are going to use for garden purposes. Do this in order to make a working plan so that you may work out just the number of rows of seeds you are going to use for different things in the garden. Thus a good, general working idea of the garden is obtained.

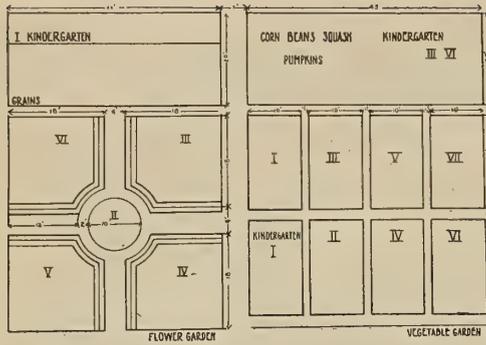
If it is a school plan, it is well to hand the general scheme directly to one of the upper grades to work out. Have enough big plans of the entire garden to put up one in each room. The single grade can work its own smaller, individual plan from this big one. For your home gardens do the same thing.

Choose an easy scale to work from. Suppose your garden is to be 20 feet long; then if ¼ inch is taken for the scale, this 20-foot line in the plan will be 5 inches long. If the garden is 12 feet wide, then make the plan-width 3 inches. This is quite simple. When the bare outline is drawn the rows of vegetables and plants may be put in with dotted lines. Then here is the entire garden before your eyes to work from. Later, when you go outdoors to really plant, this plan will be invaluable.

A number of plans are shown this month. From them you can see just how to make your own. You will also get points on arrangement of space and perhaps some on things to plant.

The explanations of these gardens, as given by the directors or assistants, will have in them suggestions for others, especially teachers. The feature of management has been touched on.

The Poughkeepsie garden was a city garden where space was unlimited. It was not a school garden. New Paltz represents a country school garden. But its connection with the Normal School gave it certain advantages of supervision, possible for any Normal School having a location in a small place, where school land is not limited. Typical country school conditions are represented by the Alford Garden. It was entirely managed by the teacher



The "Common plot" system, as employed at New Paltz, N. Y.

FLOWER GARDEN: I., sunflower; II., nasturtium; III., poppies; IV., marigold; V., zinnia; VI., bachelor button; VIII., candytuft, mignonette.

VEGETABLE GARDEN: I., lettuce, radish; II., lettuce, radish; III., lettuce; IV., beets and onions; V., herbs peppers; VI., tomatoes; VII., experimental.

herself. Dr. Melville's school, No. 84, is a city school, with just the limited space most city schools have to contend with. His solution of this problem for his own school is suggestive to others for theirs.

THE COMMON PLOT

THE New Paltz school garden was divided into large plots. Different grades took the management of a given plot or two, and the problem of raising a certain vegetable and flower. The Roman numerals on the plots stand for the grades, while the caption tells the kind of seed planted. For example, Grade V. has a plot in the vegetable garden for the raising of herbs and peppers. Now look over into the flower garden, and it is seen by consulting the key that zinnias belong to this grade and are planted at the extreme left, in the lower part of the garden.

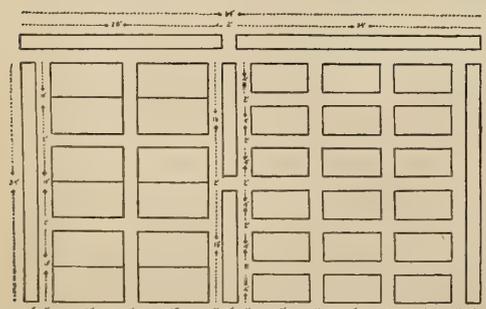
It is to be noted, too, that the flower garden is of the purely ornamental type, its color masses being broken by borders of mignonette and candytuft. This whole matter of color scheme was a problem worked out by the sixth grade in its art work.

The kindergarten had a long strip of land where large-seeded plants were planted. The sixth grade assisted the little children in their planting. Another big space was given up to the raising of grains thus assisting the industrial geography work.

COUNTRY CONDITIONS

NOTICE in the Alford garden, Great Barrington, Mass., that the double bed, at the left in the plan, is a space-saving device. All side strips have been utilized as well. In the following account by the teacher (Ethel H. Nash) the arrangement of working time is good and suggestive:

In the accompanying plan of the garden it is shown that the plots on the right were devoted to flowers and those on the left to vegetables. Each child had an individual plot, planting either flowers or vegetables, as he chose. Some of the older ones wished to plant both and were given the opportunity to do so, one plot on each side being given them. The long beds at the sides, in the middle and at the back were known as class beds. These



Individual plots, with vegetables and flowers in separate halves of the garden. The long beds are "class" beds (Great Barrington, Mass.).

were taken care of by all as they finished caring for their own beds.

We planted only such vegetables as would mature early in the summer: radishes, lettuce, peas and string beans. Each child carried home the produce of his garden. For flowers, in the individual plots we planted asters, California poppies, zinnias, African daisies, four o'clock's, poppies, China pinks, balsams, marigolds and bachelor's buttons.

In the long beds we planted nasturtiums, annual hollyhocks, cosmos, sweet peas, calendula and pansy plants. In arranging these we tried to keep in mind the height and colors of the various kinds so as to have a pleasing effect when they blossomed. Many of these seeds were started in the schoolroom in March, where we could watch their early development.

The whole class worked in the garden from half-past three until four o'clock every afternoon in the busiest season, and afterward as often as was necessary. At times, too, different ones were allowed to work in the garden as they finished their regular school work.

GARDEN MANAGEMENT

IN LAYING out and starting the work in the garden at Eastman Park, Poughkeepsie, N. Y., each child was assigned one plot and given a card bearing the number to correspond with the number on the marking stake placed at one end of the plot.

Each child was required to mark, plant and cultivate his own plot under the direct supervision of an assistant, who had been previously instructed in every detail. Assistants were not allowed to do any of the work for the pupil. After a pupil thought his work was completed for that day, the director inspected it. If all was well done then the number of the plot was taken on a card used especially for the purpose, and afterward copied in the register. If, after inspecting the plot, the work was not satisfactory the attention of the pupil was called to this. In no instance would credit be given the pupil before everything was done in businesslike shape.

The garden was open all day on Saturday and every day from three to six in the afternoon. There were one hundred and seventy-six individual plots in the garden. Three times that number of children applied for plots during the season.

Sections of the garden used for observation work and portions set apart for flowers were prepared, planted, and cared for, during the entire season, by all the children working in a company. The children worked these after their work in the individual plots was done. In this way, these sections were always kept in fine shape. In these sections we planted and cultivated vegetables and plants not grown in individual plots.

Each child raised beans, lettuce, beets, carrots, onions and turnips on his individual plot; and planted two kinds of sweet corn, pop-corn, brown corn, tomatoes, cabbage, cauliflower, hemp, flax, buckwheat, wheat, peanuts and a large variety of flowers for observation work.

The size of the individual plot was six feet, with a foot path between plots. Main paths measured three feet. Along these main paths, or streets, were narrow borders of grass.

Once each week all the pupils assembled together under some nearby shade tree and a little talk or lecture on some feature of plant life was given, or some simple experiment was performed.

WM. L. WILDEY, Director.

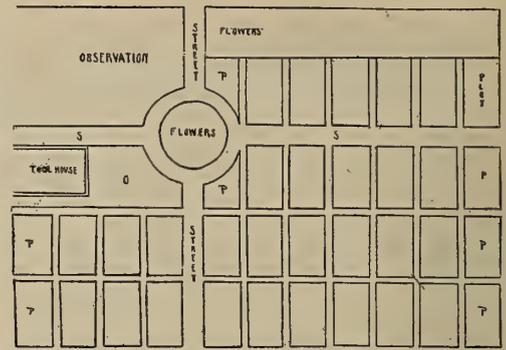
A GROUP SYSTEM

THE garden work at Dr. Melville's school, No. 84, New York City, is confined to the third and fourth grades, as space is limited. Each plot is 3 x 4 ft.

The flower beds, marked F, in the plan, are community gardens. The plants for these are donated by the children.

The plots are marked for observation purposes. In these are planted all kinds of grains, broom corn, flax, hemp, parsley, Brussels sprouts, tomatoes and melons. Such a selection as the above is intended to supplement the work of the individual plot and also to acquaint the children with the grains and the fibre plants.

Another feature of this garden which is worth trying is that of fruit raising. This work is usually left out of the school garden. It is well worth trying.



The Poughkeepsie, N. Y., school shows a good model for use where there is plenty of space

O, observation work; P, individual plot; S, street; F flower bed

Three entirely different sets of children work the individual plots. The first group does the spring sowing and has the care of the garden up to the time of the summer vacation. The second group is represented by the children who care for the garden during the summer. The third group does the fall planting. So, although the amount of garden space is limited, the group system offers opportunity for many children to work. Each group is entitled to the crop which is ripe at the end of a period of ownership. A water faucet was placed on the outside of the building nearest the garden.

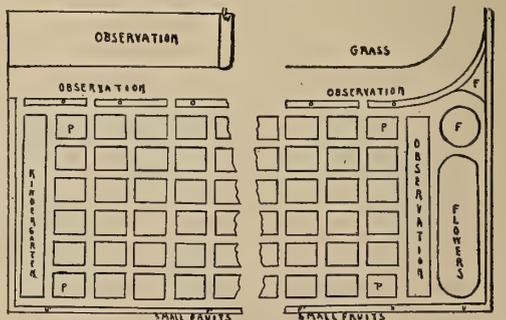
Just before the close of school in June, the individual plots are assigned to pupils who promise to care for them during vacation. Boys and girls come on alternate days. The boys and girls are in charge of pupil monitors who are responsible for the care of the tools and for the general care of the garden. The assistant principal is in charge of the garden work and with the principal visits the garden frequently during the vacation.

AGNES CORDING.

CARE OF BULBS

WHEN the bulb is all through its blossoming, the flower stalk and leaves should not be cut off immediately if you wish to use the bulb again. To be sure the plant looks most unsightly with its faded flowers and straggly leaves. It need not be kept before one's eyes, but may go down cellar to mature. When this process is all over, the leaves and old blossoms should be cut off to almost two inches above the bulb itself. Take the bulb from the pot, shake all clinging dirt off. Place on a paper until it is entirely dry. Then all such bulbs may be put away in a cool place in a box until ready to be planted outdoors early next fall.

CONTEST BULLETIN 1909-1910: The bulb contest closes April 1st. This is a contest for schools and individuals. All reports and pictures of flowering bulbs should be in on this date. Prizes will be awarded as soon as possible after the close of the contest. For information write directly to Children's Garden Department.



Making the most of small space at Public School No. 84, New York City, N. Y. Three separate sets of children work one plot

O, observation work; K, kindergarten bed; V, violets; F, small fruits; W, water tap; P, individual plot; F, flower bed; G, grass; V, vines; S, shrubs



Planting and Transplanting

MARCH is a very busy month for the progressive gardener. Seed sown now sprouts, but because of cool nights the top growth is slow. The roots, however, are foraging and as soon as climatic conditions are right, you have a big-rooted plant ready to push right ahead.

Last month we recommended sowing some of the early vegetables in the hotbed or greenhouse. If you haven't done this, do it now. Sow onions, cabbage, cauliflower, celery, leek, lettuce and Brussels sprouts; and you can also sow some of the heat-lovers, such as peppers, tomatoes and egg plant which were left out last month. If the temperature goes too low for these soft, sappy plants they soon turn yellow and it takes a long time to get them back to normal condition. But in a properly prepared hotbed it is safe to sow them any time after March 15th. A good plan is to partition off the section used so that it can be kept slightly warmer than the balance of the frame; and if you have space to spare in the cool part of the frame, sow some beets, carrots and parsley. These should be sown broadcast and rather thinly, as they need not be dibbled off but can be transplanted directly to the garden when the proper time arrives.

Seed planted last month should by this time have developed young plants quite well advanced, and they will soon be ruined for want of light and air. We must now prepare some sash for receiving the young plants. Put the hot manure in the frame the same as you did for the seeds; put the soil on top, but this time it should be rich. When it has become well warmed, the frame is ready to receive the plants. Take a 4-inch board the length of your frame, place it against the end of the prepared ground and mark along the inside with a sharpened stick. Turn the board over and mark again, and so on until finished. You will not need to mark the opposite way if you use a little care in setting the plants. If you get the first row right — the plants four inches apart — the others will follow right along; but always "break" the rows — that is, plant opposite the spaces, aligning the plants of alternate rows.

In setting out the plants or dibbling off, a little care must be used. To begin with, the plants must not get frosted; so select a nice, sunny day, take a seed pan or board and lift a clump of the young seedlings, covering them well if the weather is cold and with a newspaper if the sun is shining. Do not take out any more than fifty at one time. When these are planted, return to the seed bed for more. Use a little judgment in regard to the condition of the soil both in the seed bed and frame. The soil should be moderately moist, and in the newly prepared bed it should be about the same as in the seed bed. The advantage in this is that the roots will bind more quickly.

Take a sharpened stick about three or four times the thickness of a lead pencil, stick it in the ground and turn it around, bearing on the

outside of the hole. With the left hand hold the young plant by the top of the few leaves, drop the roots of the seedling into the newly made hole and firm. This is done by pressing down with the end of the stick, holding it almost horizontal instead of perpendicular. The depression made in the ground is left, as that forms an excellent medium for watering the young seedlings. Be careful to plant the seedlings at the proper depth — a mere trifle deeper if they have had plenty of air and light in the seed bed. If they have been allowed to stay in the seed bed too long, or if the seed was sown too thickly, the seedlings are very apt to "draw up" or get spindly, and they will have to be set deeper accordingly. This applies more particularly to the cabbage family.

The proper time to start dibbling the young plants is when the third leaf is almost developed; but if it is neglected until after the plants have passed this stage, a good plan is to pinch them back slightly after planting. By removing about one-half of each leaf from cabbage, cauliflower, celery, etc., the plants, having less to sustain, are not so liable to flag and will quickly start root action. Sprinkle the plants well after planting but do not flood them. If the young plants are moistened every fine day *in the morning*, with a sprinkling can with a *very fine rose*, they will pick up quickly.

Another good scheme for small gardens (but is impracticable for large places because of the time consumed) is to plant the seedlings in paper flower pots. I do not mean the heavy paper kind, but the cheap ones made of pasteboard. They can be set very close together and when planting-out time comes it saves the plants from a second check. You need not wait for a dark rainy day, either, to do your planting, as the roots, being confined, form a ball and none are lost even though the pots have been torn or destroyed. I do not recommend pots for celery plants, but for cabbage and cauliflower they are excellent. I always advise the use of pots for egg plants and peppers. Use flats or pots in greenhouse work, as explained last month, because they are easy to handle and the plants can be gradually hardened off before planting out.

We are not confined to the hotbed and greenhouse for the month of March. There are numerous things outside that can now be done. Plant some early potatoes about the end of the month. This is not a joke; the sooner you realize that all potatoes are better when planted early, the better it will be for you. I always try to have them all in by the middle of April, for by planting early the plants get well established before the dry weather of summer comes on.

In any event, do not permit March to pass without getting in a few rows for use about the latter part of June in this locality. In planting early potatoes always use manure in preference to other fertilizers, as it keeps the ground slightly warm until the eyes throw out shoots. In case of a late frost after the shoots show above ground, go along the row with a hoe and draw a little soil over them. In cutting seed potatoes always cut to one eye and remove entirely the butt end with all the eyes on it. After cutting the potatoes dip them in sifted ashes and spread them out on the cellar floor for a day or two to dry well before planting.



Lettuces newly dibbled. Plants are just at the right size

This is also a good time to think about setting out an asparagus bed. Do not get large roots as they are very slow in starting. The two-year-old roots will be found preferable to the larger sizes. To grow really good asparagus you simply must make a perfect bed: trench the ground three feet deep — four is even better — and add an abundance of well-rotted manure. Put four layers of manure in each trench. A year ago I put into a bed 180 feet long and 100 feet wide about 100 loads of manure.

Dig a trench about six inches deep and about twelve inches wide, go along the trench and place the young plants, crown up, about eighteen inches apart, taking care to spread the roots nicely. Run the rows north and south, if convenient. Throw a couple of inches of soil over the roots and firm nicely with the feet, but don't tramp on the crown. About the middle of summer pull another couple of inches of soil into the trench and in the fall level of the surface.

Now is the time to give the established asparagus bed its first application of salt. Apply liberally, as it not only kills weeds but is a valuable fertilizer for asparagus. Salt is also a wonderful catcher and holder of moisture.

The old asparagus bed should be spaded over and manure turned in, if it was not done last fall. Do not be afraid if you break a few roots in doing this, because new roots will quickly shoot out. In cases of old beds, where the crowns have raised themselves nearly level with the ground, a good plan is to ridge them up, and if you like your asparagus white pile about six inches of soil on the roots. If, however, you prefer it green, leave the bed as it is.

You can also start work now on a rhubarb bed and if you have an old one that shows sign of age and is getting seedy, dig up the roots, chop them into quarters and reset them, using plenty of manure in the ground. This must be done now or not at all, as rhubarb is one of the first vegetables to start growth and you cannot get good, heavy succulent stalks from an old, seedy bed.

You will save a lot of needless confusion if you dig over a space in the garden for the first lot of outside seeds. Use plenty of well rotted manure and dig the manure well under, as the deeper the manure goes the deeper the roots will penetrate. Do this toward the end of the month, and if the weather is good, and the frost is out of the ground, sow some seeds of onions, lettuce, peas, etc. If, however, the ground has been left by the frost in a soft and sticky condition, wait until it dries out, which is usually about April 1st.

The various beds that were mulched last fall, such as the small fruits, strawberries, currants, gooseberries, etc., had best be dug under as soon as frost leaves the ground. In digging in a mulch, do not cut any more roots than you can help, but get the manure in as deep as possible. Manure near the surface draws the roots up, and the hot weather dries them out.

W. C. MCCOLLOM.
New York.

(EDITOR'S NOTE. — Next month's article will be devoted to seed sowing; and to the preparation of the ground, essential to a good garden, etc.



Seedlings: The large plants in background are ready for planting out; second size were dibbled about two weeks ago; small ones have just been dibbled

ORCHARD & FRUIT GARDEN

"More and Better Fruit"

Big Strawberries for Everyone

THIRTY years ago, when a boy living on the homestead farm, I planted the first strawberry bed in that locality. The plants were the old Charles Downing, in many ways one of the best varieties that I know. The berries possessed so much of the true strawberry flavor that I did not care for anything else for family use. Since that time we have every year enjoyed an abundance of the best varieties grown in our own garden.

The strawberry, when left to fully ripen on the plant, is so sweet that little or no sugar is needed. It has, to a large degree, the flavor of the wild strawberry, and is of good size. The vines are hardy and fairly productive, and the berries, of fine color, are sufficiently firm to keep well for a day or two if picked when ripe. Nearly every one can have a fair crop of the Crescent or Warfield type of berry, for they can be grown nearly as easily as potatoes. Among the best dessert strawberries we have now are the Marshall, Wm. Belt, President, Bubach, Gandy, and the Goldsborough, if one can grow it. There are other good varieties, but it is best not to try to grow too many. The ones I name are as good as any and can be grown in most localities. Before setting out a strawberry bed, it is a good plan to learn which varieties are succeeding well in the locality.

By growing your own plants you are of course sure to get good ones; from long experience, I would not lose time in establishing a satisfactory bed by growing the plants in my own propagating bed. I would buy strong, freshly dug plants from the nearest grower, in lots of 50 or 100. When rightly transplanted, they will suffer but little check. It might be well to set a small plot for fruiting with plants taken from the nursery or from a neighbor's bed.

Make the propagating bed, perhaps a rod or two square, where the soil is well drained, mellow, and fairly rich. Set the plants in rows three feet apart, eighteen inches apart in each row. Cut off the first small runners, but about July first, when they have become strong, spread them out so that they cover the ground, and bed them. In the fall the plants should stand three or four inches apart all over the bed, with all the small weak plants cut out. Give clean cultivation, and mulch the bed with straw in the fall. As we continue to grow strawberries year after year, we find the greatest results are obtained by making a new propagating bed each year with plants selected from the fruiting bed. The hills that show the greatest number of good points at fruiting time are staked and numbered, and a memorandum made of the names of the varieties. Runners are bedded from these hills, and the plants removed to the propagating bed the following spring.

For New York, and all states in the same or a more northern latitude, there is but one right time to set plants in the fruiting bed and

that is when the leaves first start in the spring, and before they are more than one or two inches long. If your own plants from the propagating bed are transplanted, there should be no failure in getting a bed well started.

One advantage in growing one's own plants is that it allows time to properly prepare the soil, though of course the clover sod is about the best place for all plants to grow. One of the most successful growers takes a year to prepare the soil for his bed. He plows early in spring, applies



Give plenty of room for the roots and be very careful to have the crown exactly on the surface level. Deep planting prevents fruiting

a light coat of stable manure with some fresh ground phosphate rock, or South Carolina rock, muriate of potash or wood ashes. He in fact, summer-fallows the land. In midsummer, more manure and chemicals are applied. Light applications of manure, and aeration by frequent harrowing, prevent fermentation of the soil.

A one-fourth-acre fruit garden of good corn land that was planted to some cultivated crop the preceding year will do very well for the average family. The soil should be put in good tilth, i.e., so well drained and the particles so finely separated, that a handful of soil will fall apart in fine particles and not pack or cling together in lumps. It should not be over-rich with nitrogen, for that would cause too rank a growth of foliage. If strong stable manure is used supplement it with ground South Carolina phosphate rock, and potash in the form of either wood ashes or muriate of potash, so as to make a balanced fertilizer and use less manure. Make the soil just rich enough to yield a large crop of corn. Pulverize six or eight inches of the surface soil, by plowing in the spring as soon as the soil will cleave from the plow and harrowing several times. The last harrowing is followed with the roller or plank drag.

If pistillate varieties are set, plant every third row to bisexuals. I try to transplant from the propagating bed to the fruiting bed in April. If you use a horse and a narrow cultivator, that can be narrowed down to twelve inches, set the plants in check rows twenty inches apart each way. If the cultivation is to be done with wheel and hand hoes, set the plants sixteen inches apart. Use a garden line, stretching it tight across one side of the plot. A hand-made marker, having three or four teeth, can be drawn along the line so as to get the first rows straight; then continue with the marker until the plot is marked one way. Next stretch the line across the marks, beginning at one end, and set the plants where the line crosses the marks. Dig a few plants at a time, with a little soil adhering to the roots. If the roots are long, shorten them somewhat, but if the plants have been properly grown in the propagating bed, each should have a bunch of fibrous roots. Two men are necessary for rapid planting — one having a sharp spade, which he presses down into the soil, making an opening, in which the other man, who carries a basketful of plants, places a plant with roots fan-shaped and sticking straight down. Then the spade is drawn out, and the soil falls in around the plant, which should be set just level with the surface of the ground. When a row is set, walk back over it and press the soil close around the plants with the feet, so that the plant cannot be pulled out without breaking the stem. I will repeat that this work

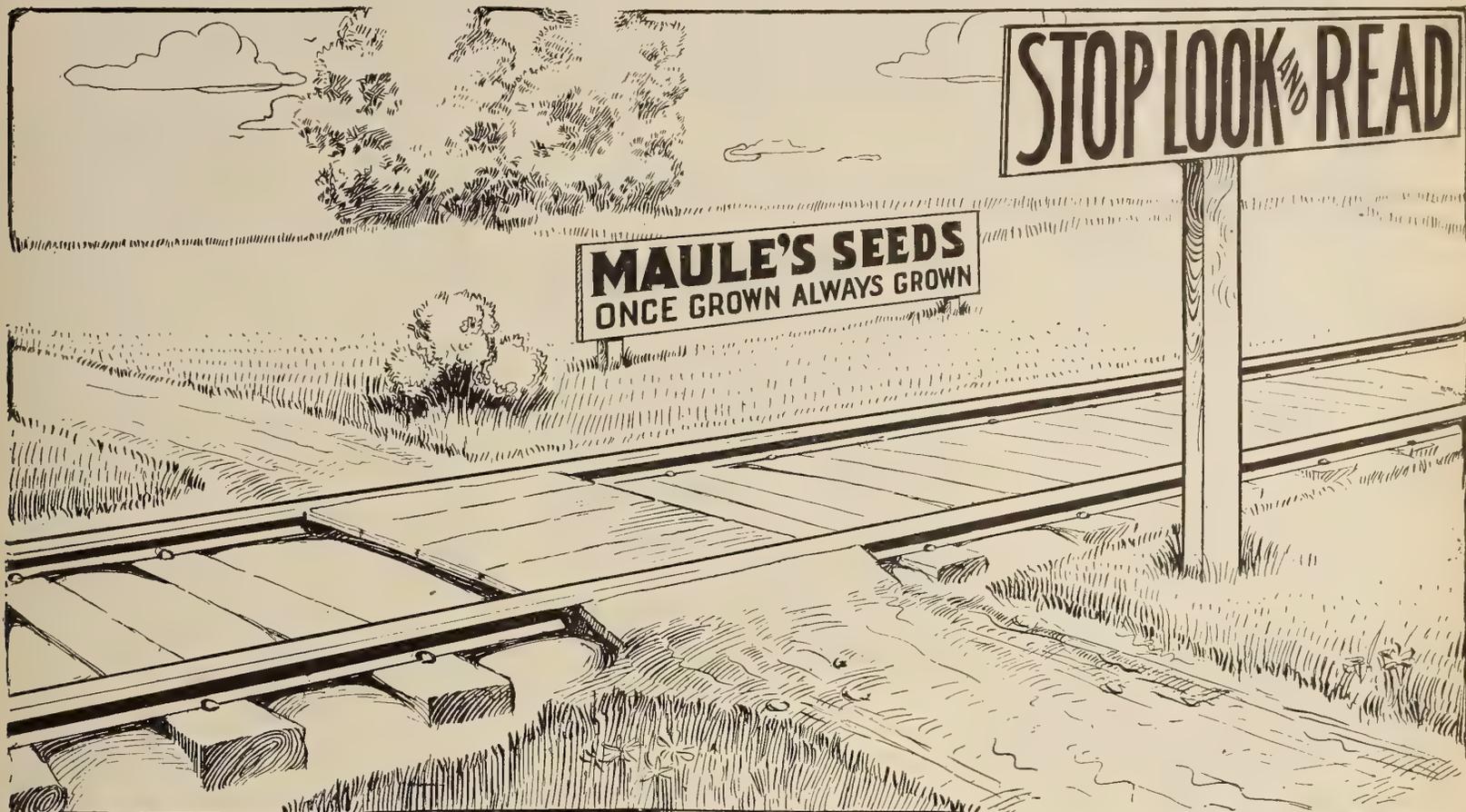
should be done when the foliage first starts, and the leaves are not more than two inches long.

Begin cultivation with the horse or wheel cultivator almost as soon as the plants are set. It will be easy to keep plants clean if the cultivation is done before the weeds appear. I usually cultivate as close to the plants as I can without disturbing them with the horse cultivator, next go over with the garden wheel hoe, and if any weeds are left very close to the plants they are taken out with a narrow onion hoe.

(Continued on page 96)



One quart of berries to each plant is the proper yield. Give hill culture for finest specimens



Few gardeners have any idea of the size of the Maule Seed business. To one firm of celery growers I have sold in the last five years over 1,000 pounds of my XX Golden Self-Blanching Celery seed; this year I have already shipped them 200 pounds for their own planting. To another gardener I shipped last year \$550 worth of Maule's Prize Earliest Cauliflower; this year I am getting \$100 per pound for this seed. In one county in New York last season I sold almost 1,000 pounds of my selected Danish Ballhead Cabbage. One of my customers last year cleared up \$3,375 net on 15 acres of Maule's Earliest Valentine Beans; another made \$9,000 net profit on a 50-acre field of White Bush Squash; another, on 300 acres on an Island in the San Joaquin River, in California, made a net profit of \$92,000 on Maule's XX Golden Self-Blanching Celery. In the small town of Sunnyside, Wash., I shipped last year direct to growers 110 pounds of Maule's Earliest of All Tomato seed, while in a small town in Texas, with a population of 25, more than \$3,000 worth of Maule's Seeds are annually consumed.

I will be glad to send my Seed Book for 1910 to every reader of Garden Magazine who will send me their address on a postal.

Other facts are that in the last five years I have paid the U. S. Government \$214, 898.07 in cash for postage. For years I have received more registered letters at the Philadelphia Post Office than any other Philadelphia seed house. In my home State of Pennsylvania alone I have 67,801 customers, fully 15,000 more than any other seed house in the country. During the late Boer War more cases of Maule's Seeds, bound for the Transvaal, were held up by the British Army than of any other seedsman, whether French, German, English or American. These facts may prove of interest to readers of the Garden Magazine who do not know Maule. Maule's Seeds have today a reputation surpassed by none, equaled by few, and as you can get

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The runners are cut until the last of June; then one runner on each plant is bedded in the row, half way between two plants, so that the plants will stand twenty by ten inches, or sixteen by eight, according to the plan of setting. After this I try to remove all the runners, and cultivate the field one way with the horse cultivator and one way with the hand wheel cultivator.

I may say here that it is well to set a part of one row very thickly with plants with which to fill in if plants are destroyed by the white grub. It is also well to set the propagating bed for next year



Keep out weeds by frequent cultivation early in the season

at the same time that the fruiting bed is set; or the ends of the rows in the fruiting bed may be used for propagating plants. There is nothing now to do but to keep the runners cut off and to keep the bed free from weeds for the remainder of the summer.

When the ground first freezes in early winter mulch the bed. Clean straw is best, but sawdust or leaves and brush can be used. Manure, if used for mulching, will bring in weeds, but if the soil is not sufficiently rich, I would mulch with strawy manure.

When the plants start to grow in the spring, rake off part of the mulch and leaves between the rows, and keep out the weeds until fruiting time. After picking mow the plants, cultivate between the rows, and clean out the weeds. Sometimes it pays to keep the same bed three or four years.

New York. W. H. JENKINS.

Cherries for Your Own Garden

MY EXPERIENCE is that it is much easier to grow cherry trees and keep them in a healthy condition and fruiting well than either plum or apple trees. It may be possible that difficulties increase when they are grown on a commercial scale. My experience does not cover this.

Like all other drupes, the cherry does best on sandy soil. This is not due so much to the physical condition of such soils as it is due to their well-drained condition. If a heavy soil is tile drained, cherries will do well on it, too. The ground must not contain an excess of nitrogen or humus, for then the trees may produce wood and foliage at the expense of fruit. Thrifty and productive trees are found on gravelly soils and rocky hillsides, never where water stands at the roots.

Cherries are more successful in the North than in the South, but they will do well in mountainous altitudes of the Southern States. Different parts of our country require different varieties, but for general planting the following are recommended: Early Richmond, Black Tartarian, Large Montmorency, Morello (English variety). There are other good varieties that do well, or better than those mentioned, in certain districts, which can best be ascertained locally.

PROPER TIME TO PLANT

Plant in the spring; but before planting, the fall previous, if possible, the land should be plowed, or

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spaded when a few trees are to be planted, and where the plow can not be used. The holes must be dug large enough so that the roots will not be crowded. Any roots that are injured should be pruned in order to have the cut surface lie flat on the soil. Cut the limbs back, too, so that they will not evaporate more moisture than can be conveyed to them by the pruned roots. This would produce a stunted growth of foliage. I also wish to advise against the prevailing tendency to fill the tree holes with manure, or better soil taken from elsewhere. The trees should stand from twelve to twenty feet apart each way. The distance is governed by the varieties and their habits and the natural fertility of the soil.

While the trees are young, and especially during the first year of growth, the soil should be stirred often to preserve moisture. As one is more inclined to cultivate well and regularly when some crop is grown among the trees, corn—the first and second year—potatoes, melons, or some other hoed crop may be grown in the young orchard. As soon, however, as the trees have attained bearing size and age, the land should not be cropped.

If possible, chickens should be allowed full range under them to destroy the curculio and other insects that drop from the trees. Chickens are indeed great "spraying machines."

Barnyard manure may be used liberally if the soil is sandy or lacks humus. After the trees have



By all means plant some cherries: any deep soil not too rich will do

reached bearing age, they require more mineral fertilizing elements, especially potash. This can be supplied in the form of commercial fertilizers—potash salts and phosphates—or ashes and hen manure. When the distance is not too great, the house slops should be poured around the trees. They contain fertilizing elements in a soluble, and therefore readily available form and will produce a luxuriant, healthy growth of foliage.

During the first few years of growth, care must be taken to secure a proper distribution of the limbs that are to form the framework branches of a tree. Sweet cherry trees may need severe cutting back at first to maintain them within bounds. Of course, it will be necessary to cut out dead and decaying limbs and those interfering. Sweet cherries must be pruned so they will produce an upright form, while the sour varieties are inclined to grow in woods and should be pruned to produce a drooping habit.

The fruiting habit of the cherry is closely related to that of the apple and pear, therefore, the shortening of the annual growth is of less importance with it than with the peach.

Wisconsin.

F. A. STROHSCHEN.

New Lilacs on Their Own Roots

OF LATE years there has been a multitude of new varieties of Lilacs grown and many of them have very great beauty, but, unfortunately, almost all the stock offered, both in this country and Europe, has been budded on privet and is practically worthless, for lilacs grown on this are certain to die in a few years. Nurserymen bud Lilacs on privet because they can produce a large stock quickly and inexpensively, but one Lilac on its own roots is worth a score of budded plants.



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A Plum Tree that Paid its Board

IN the fall of 1904 I bought six plum trees to plant in my chicken yards. They were assorted varieties and one of them was the Japanese Abundance plum, a variety with which I had no previous experience. The trees cost me sixty cents each. It was my custom in cleaning out the chicken houses to throw the sweepings, a mixture of chicken droppings, lime and ashes around the base of the trees. I used the lime and ashes in the coops merely for sanitary purposes.

The trees were thus highly fertilized and made wonderful growth. The third year after they were planted, I picked 32 quarts of plums from the



This Japanese Abundance plum tree cost sixty cents and bore three dollars' worth of fruit when three years old

Japanese Abundance tree which I sold for 10 cents a quart to the local grocer. I thus obtained \$3.20 for the crop from a tree that cost me but sixty cents. The next year the same tree bore about five quarts of plums and this year about twenty. The other trees have not done well and have never borne good crops.

I have never been quite sure why this one tree proved to be so prolific, but I am convinced that the variety had a great deal to do with it. I own about ten acres of land similar to that on which this tree grew and if I could feel sure of duplicating my success with it, I should surely go into plum culture on a large scale. By planting the trees 15 feet apart each way I could plant 2,000 trees on my ten acres and if they would yield but half the average of my one tree for the past three years, which has been 16 quarts per year, or \$1.60 per tree I would have half of a gross income of \$3,200—certainly sufficient for my modest needs. Can I do it?

New Jersey. HENRY RUPP.

Management of Dwarf Pears

DWARF pears, all of which should be trained with very low stems, must be planted in rich soil, well fertilized and set ten to twelve feet apart. For many years during the life of Mr. Charles Downing, the celebrated pomologist and author, I made an annual pilgrimage to Newburg, N. Y., his home, to receive his friendly and valuable teachings. It was noticed that the surface of the ground in the dwarf pear orchard was covered with straw or refuse hay, and no care or cultivation given, as no weeds appeared. This covering was renewed, or added to, every two or three years. The crop of fruit was regularly abundant.

While this may have been perfectly satisfactory in that locality, other pear growers hold that the soil should be highly fertilized and surface lightly cultivated during the growing season, repeating this every year.

I do not presume to say which of these plans is the better, but experience tends toward moderate fertilization with potash and phosphates and shallow summer cultivation, and no ammoniacal manure. Georgia. P. J. B.

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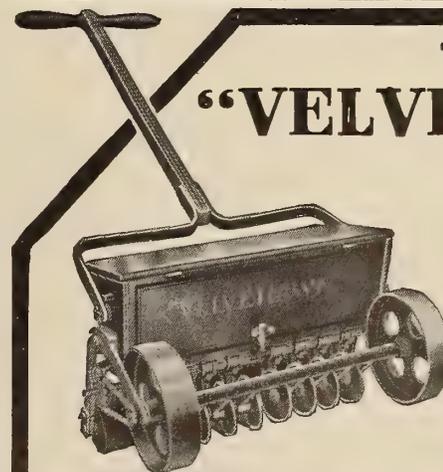
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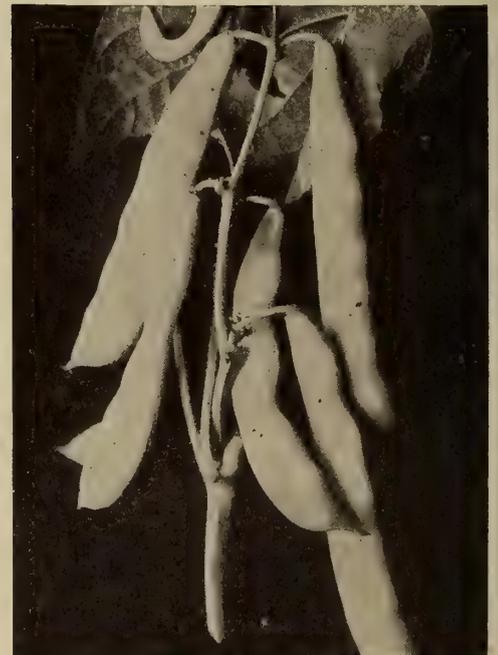
As the Frost Leaves the Ground

IN THE middle and lower South we very seldom have any frost after the middle of March; therefore, seed of all tender annuals, such as nasturtiums, marigolds, morning glory, sunflower, cypress vine, moonflower, etc., may be safely sown in the open after the fifteenth.

The following roots and bulbs may also be planted about the same time: cannas, montbretias, zephyranthes, gloxinias, caladiums, begonias, hop and moonflower vine, and tender roses. After the fifteenth sow seed of tomatoes, for main crop and canning; also seed of ornamental gourds. The garden fence makes an excellent support for them, as it permits the handle or neck of each gourd to grow straight.

Watermelon and muskmelon for main crop should be planted the last of this month.

Plant field corn after the tenth of the month. Apply at planting time half of the total amount



Cover young bean plants when frost threatens and the beans will be earlier and better

of fertilizer you intend using, the other half at the second plowing of the corn.

In the upland South, sow seed of early sweet corn, squash, cucumber, muskmelon and watermelon after the middle of the month. The soil should be a warm, sandy loam where the plants can easily be given protection on cold nights.

Towards the middle of the month plant out tuberose, gladiolus and dahlia, iris, calla and hardy lilies, if you failed to plant them in the fall. Also plant main crop varieties of Irish potatoes, and bed sweet potatoes.

Sow grass seed for lawns and seed of early bush beans in warm loamy soil, that has been given a dressing of stable manure. Bountiful, Early Mohawk and Burpee's Stringless Green-pod, are the best early green-pod varieties and Brittle Wax of the yellow-pod wax sort. Cover the young plants when frost threatens.

TOO BAD



Too bad any woman must wash a complicated cream separator. Too bad anyone is misled into thinking complicated bowls are necessary. Look at the upper picture. Those 52 disks were all used in one common disk machine that was discarded for a Sharples Dairy Tubular.



Look at the lower picture. It shows the only piece used inside the wonderfully light, simple, sanitary, easy-to-clean, wear-a-lifetime Sharples Dairy Tubular Cream Separator bowl. Any wonder Tubulars probably replace more common separators every year than any one maker of such machines sells? Tubulars skim faster and cleaner than any other separator.

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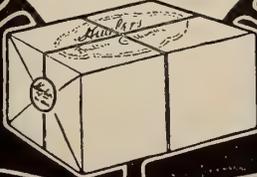
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Auto-Spray No. 1. Handpower, capacity, 4 gallons; is just the thing for all-round work for small orchards or field crops up to 6 acres. Fitted with the Auto-Pop Nozzle, this sprayer does more work and does it better than three ordinary sprayers. It is the best machine obtainable for whitewashing and disinfecting poultry-houses and stables.

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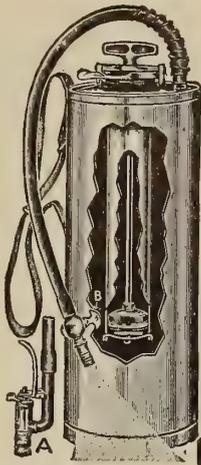
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Traction-Power Auto-Spray No. 23.



The garden fence makes an excellent support for ornamental gourds

Sow seed of late garden and sweet peas early in March.

Sow seed now of nasturtiums in boxes or in hot-beds. They will be ready for transplanting to open ground about the first of April. Take up some of the soil with the roots so that transplanting will not check their growth. The new variegated leaf sorts are well worth a trial, but do not plant them in rich, nitrogenous soil, as it tends to increase the green foliage at the expense of the variegated leaves and flowers. For full particulars as to growing nasturtiums see THE GARDEN MAGAZINE, Volume VIII, page 15.

Georgia.

THOMAS J. STEED.

Southern Vines in Northern Climes

IT IS not at all necessary, here in Washington (or even in the somewhat more trying climate of Southern Illinois in the same latitude) to build a stone or brick wall in order to grow, out-of-doors, the cross vine, Cherokee rose, or Carolina jasmine. I have had all three growing on my place in the outskirts of Washington, wholly unprotected, even by mulching, for the past nineteen years; they have never been injured by our coldest winters, even during the severe one of 1898, when the thermometer in our suburb reached twenty degrees below zero (the Weather Bureau minimum in the city being at the same time fifteen degrees below). With the cross vine and Cherokee rose the only difficulty was to keep them under control. They both bloom early in May.

The Gelsemium has not done so well, because it was moved two or three years after its first planting from a sunny, somewhat protected position, in loose and deep soil, to a porch terrace composed of impervious clay (from well and cellar) and directly exposed to the strongest and coldest northwest winds. There it has maintained itself, never killing back any, but growing very slowly, and it has never bloomed since transplanting, more than fifteen years ago. (It bloomed profusely during the two or three years prior to its transplanting.)

A small Cherokee rose (a cutting from my Brookland, D. C., plant) has stood two winters without injury at my country place in Richland County, Ill., without any other protection than a slight mulching of dead leaves; but I came near losing it (and many other things) from the severe and prolonged drought of last year. And this prompts the observation that, while I do not remember to have ever lost any tree or shrub from cold, I have lost many from drought, and that in my experience the latter is by far the more serious contingency in this climate.

On my country place in Illinois I am experimenting with a large number of trees, shrubs and vines with the view to testing their hardiness. *Hedera Helix*, in its several varieties; *Euonymus radicans*,

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1 package Poppy, double mixed,	5c.
1 package Coreopsis, mixed,	5c.
1 package Phlox Drummond, mixed,	5c.
1 package Pansy, mixed,	5c.
1 package Bachelor Buttons,	5c.

The above ten packages by mail postpaid for 10 cents in coin, together with our handsome calendar and our profusely illustrated catalogue for 1910. With the above collection we will enclose a certificate worth 25 cents. If returned with \$1 you may select seeds in packages or ounces to the value of \$1.25.

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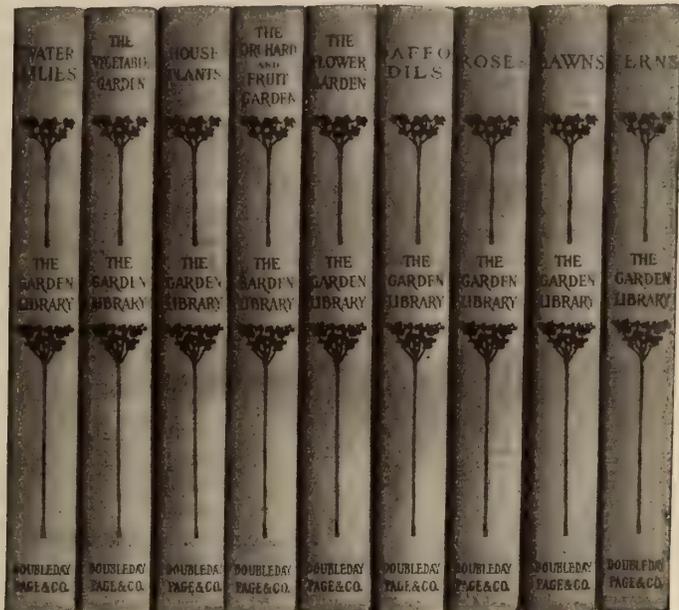
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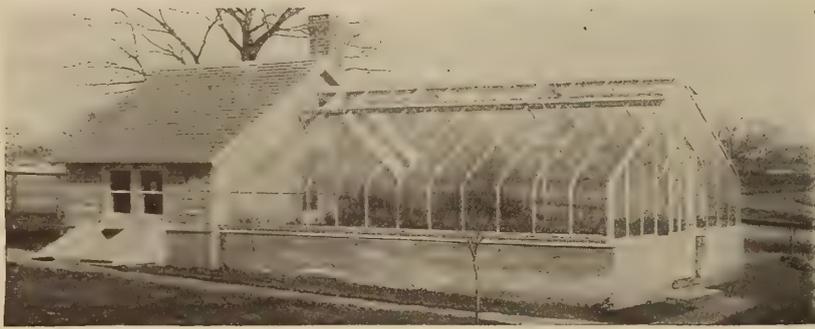
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three varieties; *Bignonia crucigera*, cross vine; and *Decumarea barbara*, have become thoroughly established in the three years since planting. Last April and May these were supplemented by *Tecoma grandiflora*, *T. Thunbergii*, *T. "Mad. Galen,"* *Actinidia arguta*, *Akebia quinata*, *Aristolochia macrophylla*, *Gelsemium sempervirens*, *Trachelospermum difforme*, *Vitis Coignetia*, *V. Henry*, *Ampelopsis heterophylla*, *A. Lowi*, *A. Veitchii* (*tricuspidata*) and its variety *robusta purpurea*, *Polygonum Baldschuanicum* and *P. multiflorum*. Most of these are of course hardy there; in fact the *Gelsemium* is the only one which may reasonably be considered doubtful. Among the trees and large shrubs I have planted *Magnolia grandiflora*, *Lagerstroemia indica*, and *Laurocerasus Schiphacensis*. Next year I want to plant *Albizia*, *Citrus trifoliata*, and quite a number of other things in the same class as to hardiness.

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by an intimate knowledge of the indigenous flora, which (locally) includes the cross vine, *Aristolochia tomentosa*, *Cocculus Carolinus*, *Ampelopsis cordata* and *bipinnata*, mistletoe, cane (*Arundinaria tecta*), cypress (*Taxodium*), water locust (*Gleditschia aquatica*), *Ilex decidua*, *Crataegus cordata*, *Ulmus alata*, *Quercus lyrata*, *pagodaefolia* and *Michauxii*, *Forestiera acuminata*, and a whole lot more distinctively southern species. Not all of these, it is true, grow naturally in the vicinity of my place, but they are characteristic components of the flora along the Wabash River a few miles to the eastward, where the climate conditions are precisely the same, only the soil and other purely local conditions being different. In the town nearest my place (two and a half miles distant) are two of the finest specimens of *Magnolia glauca* I have ever seen anywhere, each being at least twenty feet high and finely developed in every way.

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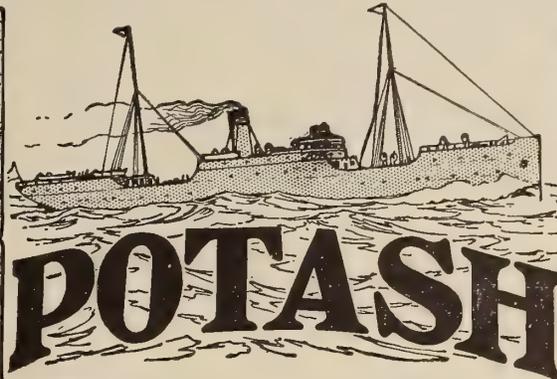
I have gone thus into detail in order to show you why I think many southern trees, shrubs and vines are likely to prove hardy much farther north than the limits usually assigned them. I really believe that there is reason, in fact need, for much experimenting along the debatable line. As to my own experiments there may be some disappointments in store for me—indeed I expect some, for my selections will include some very doubtful things—but there is nothing like actual demonstration and the experiments are worth trying.

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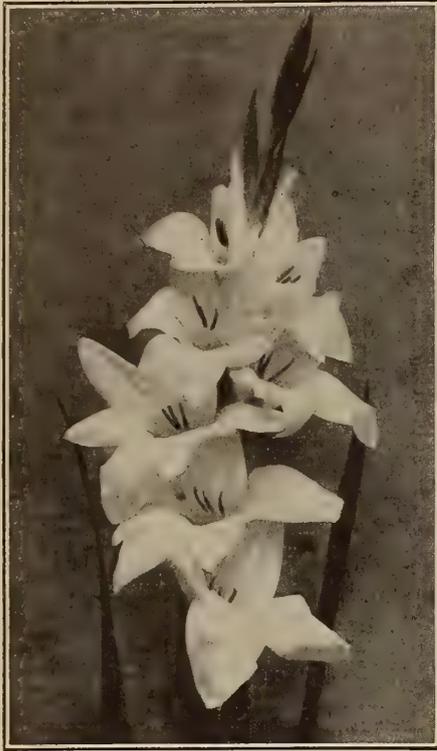
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Pruning the Boxelder

THE boxelder when used as a lawn or a street tree must be considered as the exception to the rule that a shade tree should never be pruned beyond cutting out dead wood or an occasional troublesome branch. The eccentric habits of this tree, its crooked trunk, its low branches and its tendency to sap sprouts are not the best recommendations for street or lawn planting. Nevertheless, on the prairies, where we do not have a very extended choice, its hardiness and rapid growth make the boxelder a very desirable tree, and it is here that the pruning knife will need to be used with caution to correct its waywardness and to shape it properly. There are numerous examples in many northwestern towns where these trees bear mute evidence to the strenuous endeavors, on the part of the owners, to trim them so as to conform with their recollection of eastern shade trees, little aware of the all important fact that they were dealing with an altogether different kind of tree.

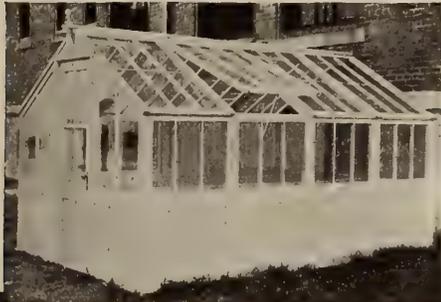
When properly pruned the boxelder is a tolerable street tree, not without a certain beauty in its youth; but when neglected, or trimmed without due regard to its natural habit of growth, it can become an eyesore and a positive menace in the street, as the large, poorly supported branches very frequently break off in a high wind. To make the most of a boxelder it must be taken into hand when young.

The first serious drawback to be overcome are the low branches. Remove all the branches or side shoots from the trunk up to at least six feet from the ground, and attend to this while the tree is young so as to avoid large wounds. The natural bends or crookedness of the trunk cannot be improved.

The most harmful and at the same time the most difficult defect to combat is the persistent tendency of the boxelder to form crotches. When two branches of equal size grow in opposite direction from the same point on a tree they naturally tend to pull apart and it takes much tougher wood than that of a boxelder to prevent such limbs from splitting. Most trees have a well-defined leader or central trunk and do not have this structural weakness, but as soon as the trunk of a boxelder begins to branch it runs into three or four branches, all of which tend to develop equally. Though the tree cannot be forced to carry a leader up through its branches, endeavor to so prune that one or, at most, two branches will forge ahead of the others and virtually take the place of a leader even though it is, as it always will be, at an angle to the trunk. Thus, where a trunk gives up its own identity and divides into two equal branches, one should be removed and a bud or twig, that is already growing in the direction in which the severed limb pointed some inches six above the cut, should be encouraged to develop into a principal branch. Thus will the worst crotch of any tree be avoided. Furthermore,



Incorrect pruning. One of these limbs should have been removed when the tree was young



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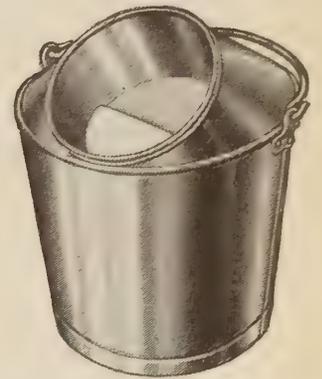
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it is good policy never to permit two branches to grow out at the same height from the ground, especially when the branches grow out so close that their bark comes into contact, which is by no means an infrequent occurrence on boxelders. One of two such branches should always be removed. Sometimes a branch will divide into two equal limbs, within a few inches of the trunk or main branch it grows upon, so that if allowed to remain there would soon be two heavy branches inadequately supported. In such cases it is generally best to cut off both branches and to induce a shoot nearby to take their place, though where such branches have already attained a considerable size one may be allowed to remain.

Very rarely will a boxelder need heading in, though occasionally it becomes necessary to remove about a foot from the extremity of a very rapidly growing branch to induce a more stocky growth. The readiness with which sap-sprouts spring up along the main branches is often the cause of an excessive number of small twigs on the inside of the tree, a so-called nest of twigs, which are more or less injurious inasmuch as they draw upon the vitality of the tree without contributing anything toward its growth. These must therefore be removed, which,



A correctly pruned boxelder such as this one is a thing of beauty when in full leaf

however, does not mean that all the twigs on the inside of a tree should be cut out, but that a sufficient number be retained to give a certain density to the top, without these latter crossing or interfering with each other.

TIME TO PRUNE

Ordinarily the time at which pruning is done does not appear to affect the healing of the wounds.

Late winter or early spring is considered by good practitioners to be perhaps the best time to do the work. But the boxelder is a maple (*Acer Negundo*) and those who are familiar with the making of maple-sugar know that there will be a very copious flow from the wound if a maple be cut into in early spring, during the time the sap rises. This is popularly known as bleeding. Only excessive bleeding will injure a tree, though it will keep a wound wet for two or three weeks and thereby retard the healing process. Avoid pruning the trees in early spring just before the sap starts—at least be rather cautious about making any large wounds, say more than an inch in diameter, at that time. Where a wound is made in late fall or winter the healing process cannot begin until the next spring and sometimes the alternate thawing and freezing of winter causes the bark with the cambium layer underneath, wherein the life of the tree resides, to loosen from the wood and thus effectually prevent the subsequent healing of such a wound.

A good time to prune a boxelder is late summer or early fall (September and October) as there is then enough activity left in the cambium layer to start the

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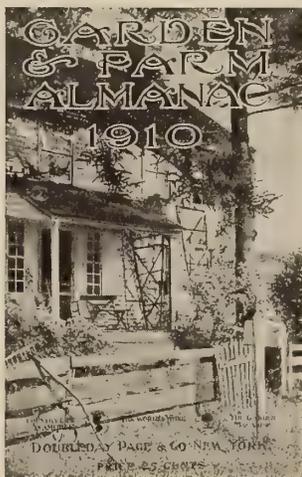
Their 1910 catalogue states in a very concise manner the best varieties of *seed to plant for a profit*; the most useful *Spraying Implements*; most important *Perennials, Ornamental Shrubs and Trees*; Mandy Lee Incubators and Brooders.

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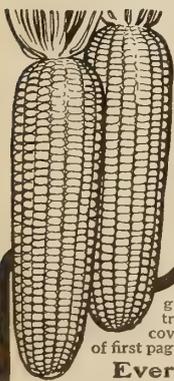


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Bulbs, Vines, Shrubs, etc. Hundreds of car lots of **FRUIT and ORNAMENTAL TREES.** 1200 acres, 50 in hardy **Roses,** none better grown. 44 green-houses of **Palms, Ferns, Ficus, Geraniums** and other things too numerous to mention. **Seeds, Plants, Bulbs, Roses, Small Trees, etc.,** by mail postpaid.

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By far the most complete and attractive book we have ever issued. Eighty large pages, describing and illustrating our full line of seeds, implements, etc. All pictures of grains, grasses, vegetables and flowers are from true-to-nature photographs. The outside covers are in natural colors—see miniature of first page below. The contents are *practical.*

Everything Good for Farm, Garden and Lawn

Has been the guiding principle in our seed business for more than twenty years. We have consistently aimed to give our customers their money's worth or a little more, and we have succeeded—patrons have bought of us every year since we started. Trade cannot be held year after year for a fifth of a century, except upon satisfaction.

The Best New Things and the Tested Old Ones

Are to be found in this 1910 catalogue of ours. There's Eureka Ensilage Corn, which we control—producing more good material for the silo than any other. Also Brewer's Yellow Dent, the grower of which was awarded first prize for best acre of corn in the United States. Clovers, grasses, and forage crops, vegetables and flower seeds—all carefully selected. In everything quality is our aim. Tools, fertilizers, incubators, etc.—a full line.

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The edition is limited—free while we have copies

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formation of a protective callus. Care must be exercised, however, that one does not cut off too many or too large branches and thereby impair the balance between the root capacity and the evaporating surface of the leaves. The tree in its endeavor to make a balance will continue growing late into the season, and is forced to meet the approaching winter with a lot of soft and succulent wood.

Where a large and long-neglected tree needs attention it is well to do the lighter pruning in early spring and then finish up in summer, though it is nearly always advisable to extend such work over two years.

In removing limbs the cut should always be made close to the trunk or branch from which the limb grows as smooth as possible and at such an angle that water will not stand upon it. A thick coat of white lead paint will afford all the protection that can or need be given the wound. The accompanying illustrations show very clearly the effect that good and bad pruning has upon the boxelder. The trees are of about the same age, the one with the bad crotch being typical of the boxelder under average care, the other example of good pruning is to be found upon the grounds of the North Dakota Agricultural College under the care of Professor C. B. Waldron.

North Dakota.

C. L. MELLER.



Do You Know This Plant?

IV.—RED LEAVES AND RED BERRIES

PHOTINIA VILLOSA is an upright shrub of neat habit, usually six to eight feet high, but capable of growing to a height of fifteen feet. The leaves are broadly obovate, somewhat coriaceous, with prominent veins, and dark green in color. The foliage covers the branches well and has a certain degree of refinement. In the autumn it assumes brilliant scarlets—a display which it maintains well into November. The blossoms are white, hawthorn-like, and are borne in corymbs which are, perhaps, two inches broad. The flowers appear about the second week in June, and certainly give the plant a showy appearance.

The fruit which follows is very handsome. When it matures, which is about the middle of October, it is at least one-third of an inch long and of a shining scarlet color. It remains in a bright and attractive condition until the middle of winter, provided it is not eaten by the birds. Its various good qualities make it a very desirable plant, yet I feel that Boston is, perhaps, a little too far north for its extensive use, for it not infrequently disappoints us in some respect or other.

Massachusetts.

DANIEL A. CLARKE.

Improving the Garbage Can

MY home in the country really has no backyard, as the house faces Narragansett Bay. In looking for ways to prevent defacement of the grounds, I made a receptacle for the garbage can by burying an 18-inch vitrified sewer-pipe, bell end up, level with the ground. In this a galvanized can is kept. A double wooden cover, painted green, fits loosely into the bell. The cover has a U-shaped iron lifting handle about a foot high, is made from 7/8-inch pine, and has an air space to prevent radiation of heat; consequently, the contents are cool in summer, and do not freeze in winter. The cost was about \$3.50.

Rhode Island.

E. W. E.

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A Toilet Treasure

Without exception the best and most popular Toilet Perfume made

IN the Bath it is cooling and reviving; on the Handkerchief and for general Toilet use it is delightful; after Shaving it is simply the very best thing to use.

ASK YOUR DRUGGIST FOR IT. ACCEPT NO SUBSTITUTE!

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To grow the finest flowers and most luscious vegetables, plant the best seeds. Ferry's seeds are best because they never fail in yield or quality. The best gardeners and farmers everywhere know Ferry's seeds to be the highest standard of quality yet attained. For sale everywhere.

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Better Fruit,

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Better Vegetables and Freedom from Insects

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It kills all leaf-eating insects, caterpillars, etc., prevents unsightly blemishes; also improves color of apples, pears, peaches, etc. It increases yield of potatoes and vegetables. Enough to make 50 gals. solution \$1.75. Booklet free. No experiment. Introduced 1898.

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Also Specialties for Scale Insects, etc. Bring all your outdoor "Bug" troubles to us.



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PEARLINE is Condensed Soap — Energy — the Original Washing Powder. It established the directions, a Table-spoonful to a Pail of Water. You will have to use double or more of its followers to accomplish the same work.

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ROADS OF DESTINY THE TRIMMED LAMP THE VOICE OF THE CITY THE GENTLE GRAFTER HEART OF THE WEST CABBAGES AND KINGS Doubleday, Page & Co., 185 E. 16th Street New York

The greatest implements ever invented

Planet Jr farm and garden implements have done more to lighten labor, save time and money and produce bigger crops than any other implements in farming history. They are used by over two million farmers and gardeners—a positive proof of their practical working and saving power.

They were invented by an ingenious farmer who was determined to have implements that would do quicker and better work. He has now had over thirty-five years' additional experience at manufacturing Planet Jrs and the Company which he heads operates an immense plant to produce them.

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Planet Jrs fill a real need for profitable cultivation that was never met before. They will do almost any kind of cultivation required in farm or garden. They are light, yet strong and compact, and will last a lifetime.



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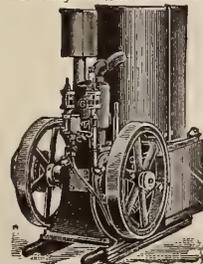
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perfectly. Runs on gasoline, too, better than any other. Basic patent. Only 3 moving parts. Comes complete ready to run. We will send a "Detroit" on free trial to prove all claims. Runs all kinds of farm machinery, pumps, saw rigs, separators, churns, feed grinders, washing machines. Silo fillers and electric lights. Money back and freight paid both ways if it does not meet every claim that we have made for it. Don't buy till you get our free catalog. 2 to 24 h. p. in stock. Prices \$29.50 up. Special demonstrator agency price on first outfit sold in each community. 2000 satisfied users. We have a stack of testimonials. Write quick. (20)

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PLANTS and SEEDS insure greatest pleasure and satisfaction from gardening.

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From our collection of novelties, new and standard Roses, we offer the sensational BLUE ROSE, most wonderful creation of a century, postpaid, to any address in the United States, on receipt of 25c. in stamps.

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14c. in stamps brings our unsurpassed collection of showy, quick growing and flowering Porch Vines—Japanese Variegated Hop, Small Ornamental Gourds, Heavenly Blue Moonflower and Cobea Scandens, postpaid; the envelope enclosing this collection of seeds will be accepted as 14c. payment on any 70c. order from our catalogue.

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The McGregors Bros. Company Station H, Springfield, Ohio, U. S. A. Garden by McGregors' Guide



"My Policies"

It's exceedingly hard to make a good cigaret and sell it at popular prices.

So hard that only a few people try it.

So hard that most of those who try it fail, and either go out of business or "do like the rest of them" and cut the quality.

So hard that we (my partners and I) went without a profit for five years, and put tens of thousands of dollars into the business, in order to keep up the quality and build the business to a volume which would leave us a net profit out of the mighty small gross margin in a quality cigaret.

We spent years in getting together enough of the right men to make enough Makaroff Cigaretts to make them a national proposition.

For some years we discontinued our advertising, because we couldn't make enough goods and make them right, to justify advertising; but the public went right on buying our goods as fast as we could make them. There is something beside good advertising in sales of that kind.

I have always believed that if we produced the quality, the public would produce the sales. And that faith has been justified.

Our advertising is intended and our salesmen are instructed to produce public confidence rather than sales. If we can do that the sales will take care of themselves. You will always find in

MAKAROFF RUSSIAN CIGARETS

a quality that corresponds with the straightforwardness of the advertising. We have now introduced the goods so thoroughly to dealers that you can get them almost anywhere in the best cigar stores, hotels, cafes, dining cars, etc. Any dealer who hasn't got them can get them quickly from his local jobber. If he doesn't want to, we will supply you promptly, by mail, on receipt of the dealer's name and address, or simply his address, so that we may investigate his reason for refusal.

If you do not like these cigarettes at the first trial, remember that they are mighty different from what you are accustomed to, and that the difference is all in your favor. Take time to get a little used to them and you will find out just what we mean.

Makaroffs are absolutely pure, clean, sweet, mild tobacco, untouched by anything whatever to give them artificial flavor, sweetness, or to make them burn. You will find that you can smoke as many as you want of them without any of the nervousness, depression or "craving" that follows the use of ordinary cigarettes.

Pure tobacco won't hurt you. You may not be used to it, and you may not like the first Makaroff, but you'll like the second one better, and you'll stick to Makaroffs forever if you once give them a fair chance. We have built this business on quality in the goods and intelligence in the smoker—a combination that simply can't lose. We waited quite a while, but it has won in our case and won big. The result is, that

"This is a Makaroff year—nearly everybody smokes them now"

Makaroffs are 15 cents and a quarter in boxes of ten.
\$1.50 to \$6.00 for 100's—packed in cedar boxes.

Makaroff - Boston

Mail address, 95 Milk Street—Boston, Mass.



Raising Your Own Chrysanthemums From Seed

OF COURSE you can get definite results as to varieties only by taking cuttings from last year's plants. But, if your interest lies in working out the unknown, and if you want to enjoy the pleasure of seeing as many varieties of bloom as you have plants, then there is a great satisfaction in growing from seeds, for hardly ever will you find, out of the same seed-head, two plants that will produce similar flowers. And there is always the possibility of the development of something quite unusual. It may not be up to the florists' standard as an exhibition bloom, but it may possess other qualities and attractiveness of form and coloring which will make a stronger appeal to the amateur.

Chrysanthemums may be grown successfully and easily from seeds planted about the end of March in seed trays or boxes three inches deep—one inch for drainage and one for soil. Charcoal broken up into small pieces keeps the soil sweet by absorbing all the impurities that it may contain and forms the best drainage material. The soil should be composed of one part of light garden loam, one part of leafmold and one part of fine sand, thoroughly mixed and sifted. After the drainage is placed in the boxes or trays, press the soil down firmly with a piece of board. The day before the seeds are to be planted give the tray of soil a thorough soaking of water so that it will be moist when the seeds are sown.

HOW TO SOW SEED

Sow the seeds thinly, and cover with a light covering of sifted soil, pressing down firmly and evenly. Cover the tray with a pane of glass or newspapers to prevent the moisture from evaporating rapidly. Do not give water until the soil looks in need of it; then place the tray in a tub partly filled with water and allow the water to soak up through the soil. Too much water will cause the seedlings to "damp off."

The seeds germinate in about five to seven days after planting, and when the third leaves appear transplant into another tray containing the same kind of soil, leaving a space of one inch between each plant. When the plants have attained about three inches in height, transplant to two and one-half inch pots and place them in a shady position. A window with a northern exposure will do. Give them plenty of water during the summer to promote growth.

The potting soil should be composed of two parts of garden loam and one part of well-rotted cow manure. If cow manure cannot be secured, use pulverized sheep manure which can be purchased at any florist's. Use enough sand to keep the soil open, and make it a little richer at each shift of the plants to larger pots. An increase of two inches in the size of pot at each shift will be sufficient, the blossoming size being an eight-inch pot.

Chrysanthemums are gross feeders and should be given rich soil and plenty of water. When the plants have made a growth of six inches, pinch out the centre of the main stem at the top to cause it to put forth side shoots which, in turn, should be pinched as soon as they have made a growth of six inches. These will push forth new shoots, and a fine bushy plant will be the reward. Allow one bud to mature upon each stem if large blooms are wanted.

Spray the plants often to prevent attacks of



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We make plans for laying out your grounds, and offer the greatest bargains in the finest selection of ornamental and fruit stock in the country. Thirty-four years of square dealing has enabled us to attain our present standing as one of the largest nursery firms in the country.

Write at once for our Free illustrated catalogue, containing plans and suggestions for all kinds of Gardening and Landscape Work.

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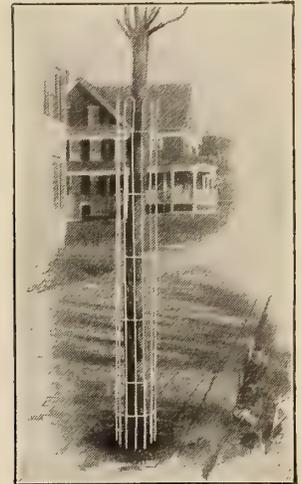
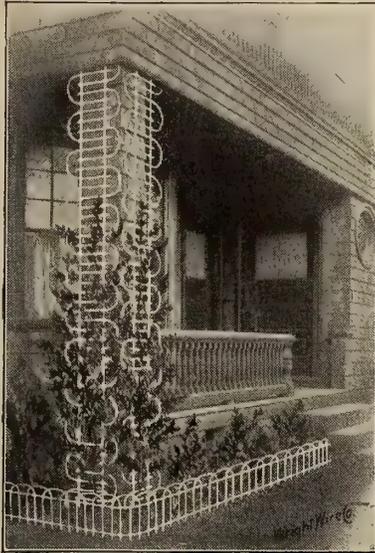
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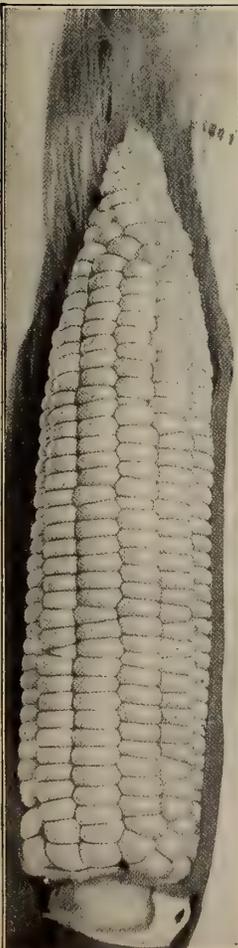
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**Golden Bantam
 Sweet Corn**

SURPASSINGLY delicious in flavor. Without exception, Golden Bantam Sweet Corn is the richest in flavor of all sweet corns; a variety of which one will never tire. The kernels are a rich, creamy yellow: the ears are just the right size to handle at the table. Being an early variety makes it especially valuable for both the home and market garden. It pleases every one; we have yet to hear the first complaint from those who have tried it.

Prices:—Large pkt., 5c; pint, 20c; quart, 35c, postpaid. By express or freight at purchaser's expense; pint, 15c; quart, 25c; 4 quarts, 90c; 1/4 bu., \$1.25; bu., \$3.50. A complete description of this superb sweet corn is given in our

26th Annual Catalogue

CONSIDERED the most informing and complete, as well as the handsomest seed catalogue published in America. It is entirely free from exaggeration both in descriptions and illustrations. Every one of the 140 pages is filled with information valuable to the seed planter. No farm or garden is so large or so small that this book will not assist to greater profits. It is expensive and cannot be distributed indiscriminately, but we send it free to those who wish to buy seeds.

NORTHROP, KING & CO., Seedsmen
 367 Bridge Sq., MINNEAPOLIS, MINN.



Have you an empty corner by your porch? Beautify it this way. In the above illustration evergreens give a rich effect all winter. Here and there German Iris brightens up with conspicuous flowers in the Spring. It is our business to improve such corners. We do it inexpensively and quickly.

Have you a wall to hide? A spot where a few trees would improve the view from your windows?

Send us dimensions of corner to be planted, exposure, length and height of wall to be screened, or the number of trees wanted. We will suggest variety and costs.

Our nurseries have the advantage of being located at a distance from the gases and smoke of a great city. We have over four hundred acres. The young trees and shrubs are allowed plenty of room, are transplanted frequently, and are cared for by men who have been in this work since 1872.

Before you do any planting send for Moon's Catalogue—Hardy Trees and Shrubs for Every Place and Purpose.

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Grow Chestnuts

Like This For Profit

Whether you have one acre or a hundred, you can make more money per acre growing Sober Paragon Chestnuts than from any other crop you could plant. One crop from the Paxinos 6 year old orchard brought \$30,000.00.

3,000 BEARING TREES 8 to 10 feet high

SOBER PARAGON Mammoth Sweet Chestnut

Must be removed from the Famous Paxinos Orchard the coming Spring, because the planting, six years ago, was done too closely. It has taken years to grow these trees—we've done the waiting.

Pay Back Their Cost the First Year.

You secure at once, specimens that will give immediate and permanent results. Start with bearing stock—your investment then pays dividends from the beginning. A single 5-year old tree in the Paxinos Orchard grew 500 burrs in one year. Three to five nuts in each burr.

U. S. Pomologist, G. C. Brackett says: "The Sober Paragon comes nearest to the native chestnut of any of the specimens I have examined. It is of large size, fine appearance and excellent flavor."

For Lawn or Park.

For decorative purposes, the Sober Paragon is unequalled. Hardy, rapid symmetrical growth;

luxuriant foliage; spreading boughs; clean trunk; stateliness.

The Sober Paragon is the only large sweet chestnut in the world.



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We own exclusive control of the Sober Paragon. This copy-righted metal seal is attached to every genuine tree when shipped.

Free 16-Page Booklet.

Testimony from growers, produce, commission merchants, Forestry Experts, etc., and

Our 1910 Catalog

which includes nut culture dept, also 3,000 varieties of conifers, trees, shrubs, roses and perennials with illustrations and descriptions invaluable—

10 foot Bearing Tree mailed on request. Address

GLEN BROS., Desk B, ROCHESTER, N. Y.



black lice. The best remedy for this pest is tobacco or fine snuff dusted over the plants when the moisture is upon them. Tobacco stems placed among the pots is very good. If mildew appears dust the plants thoroughly with flour of sulphur, both on the under and upper sides of the foliage when it is moist. This disease is caused by having the plants in a draughty position, and by a sudden change of the weather.

FEEDING THE PLANTS

Liquid manure should be given to the plants once each week. Sheep manure can be used if



A chrysanthemum plant which had the centre of the main stem at the top pinched back to induce branching

When you buy hardy perennials, you want the choicest varieties—our new 90-page catalog lists a thousand varieties, all in

strong field-grown plants

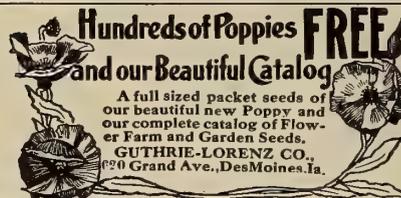
the best for quick results.

Includes the choicest hardy Shrubs, Roses, Vines, Rhododendrons, Evergreen Trees, Hedge Plants, and tells how to insure continuous bloom and varied display.

This catalog is free. Write for it today. If in doubt regarding hardness or treatment of any perennial or hardy shrub, etc., write me personally, and get the benefit of my 38 years' experience as a nurseryman, free.



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J.T. Lovett. Box 125 Little Silver, N. J.



Hundreds of Poppies FREE and our Beautiful Catalog

A full sized packet seeds of our beautiful new Poppy and our complete catalog of Flower Farm and Garden Seeds. GUTHRIE-LORENZ CO., 220 Grand Ave., Des Moines, Ia.

2 Grand Prizes and 5 Gold Medals

All the Grand Prizes and all the Gold Medals given to Pumps by the Alaska-Yukon-Pacific Exposition at Seattle last summer, were awarded to

"AMERICAN" Pumping Machinery

The reason why "American" centrifugals attain higher efficiencies than others is the impellers are accurately adjusted and machined true to fit the casing and the flowlines are all easy curves with no sudden change of direction of fluid in passing through the pump.

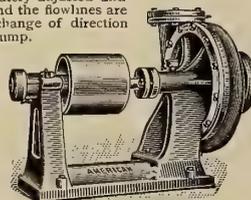
"American" centrifugals are made in any size, equipped with any power and guaranteed rigidly. Complete Catalog No. 104 Free.

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Aurora, Ill.

Chicago Office: First National Bank Building,



well-rotted cow manure cannot be secured. Place two large spoonfuls of pulverized sheep manure in a cheesecloth bag, and let it soak for two days in two quarts of water. Do not use it too strong, but weak and often gives the best results. Put the pots in the garden in a shady position in a trench about three inches deeper than the pots. Place coal ashes over the bottom of the trench and fill in with the same material. This will keep the roots of the plants cool and prevent worms from entering the pots. Mulch the soil around the plants with manure to keep it cool and moist as well as to enrich it. Give the plants a thorough spraying early morning and a good watering every evening. When the frosty nights arrive, take up the pots and place them in a cool room, where they will develop blooms which will last longer.

After the plants have flowered, place them in a cool cellar where the temperature is not below 25 or above 40 degrees. Never allow the soil to become dust dry while the plants are resting. The next spring they can be brought up, and placed in the light and given water. When the shoots have made some growth, they can be cut and rooted in moist sand.

New York.

C. B. WYNKOOP.

Transplanting Cherries

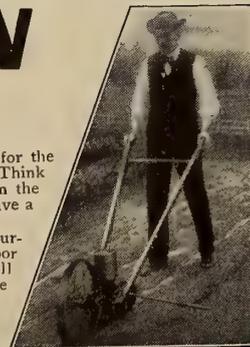
CHERRY trees are not easy to transplant. If you wish to move them prepare for the change at least a year beforehand, by trenching—that is, severing the main roots, thus inducing a mass of fibrous root in the ball of the tree. The ball should be lifted in the winter time when it is in a dormant condition; do not attempt removal in the fall.

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Here once again, "gentle grafters" weave their plots and recite their hopes and failures; a Caliph and a Grand Vizier walk and breathe for us within a few yards of Broadway; while everywhere O. Henry's keen insight, softened by his quaint and kindly humour, reveals to us the tragedies and comedies in the lives of "The Four Million" who like his readers, "figure in the census."

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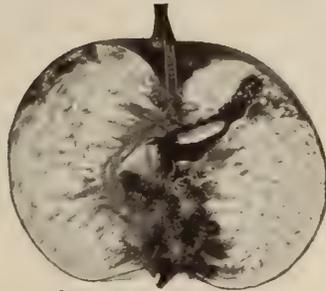
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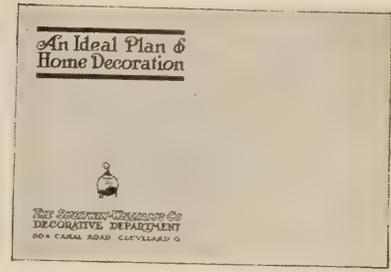
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SO many chances are thrown away each year in the average garden that a thrifty-minded gardener is hoarse from protesting. People are constantly saying they "wish they could afford flowers and beautiful grounds"; or "it takes too much money to start a garden." When one explains that it does not necessarily take much money, but only a little money and thoughtful work at the right time, some of these talkers may begin by buying a few shrubs and flowers and starting a garden. There it often ends in neglect, for they do not give the thoughtful work at the right time. A man said as he trimmed his one hydrangea bush that he "wished he could afford to buy fifty more"; but he ruthlessly burned up the branches he had cut off, not thinking that with a little care he could raise the fifty bushes for himself.

Either cuttings or layering can be adapted almost endlessly to the needs of the economizing gardener to the endless beautifying of his estate and the



Deutzias fifteen months after being started from cuttings

profit of his cash account, only do things now and always. A bush that you start *now* will be a year old the next time this season comes to your garden.

ECONOMY OF CUTTAGE

Cuttage is the gardener's name for propagating plants by cuttings. A cutting to be grown out-of-doors should be made about six inches long from ripe wood that is hard enough so that it will break, not bend. The top should be cut close to a bud.

A hydrangea bush is trimmed in February or March. The branches taken off should be made into cuttings and tied in bundles with all the tops together to facilitate planting. These should be stored in a cool cellar until the garden soil is right for setting them. Then dig a trench in soft, well-worked soil. Have it deep enough so that each cutting will show above the ground about an inch.



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Novel, but practical, and intensely interesting. Require less room. Easily cultivated, pruned and sprayed. Bear fruit earlier than the standards. Make little shade, permitting other crops to be grown between the rows. May be trimmed and trained on wire to grow in almost any shape. Suburbanites, farmers and amateur horticulturalists alike find pleasure and profit growing dwarf apple trees. No garden or orchard is now complete without several of these wonderfully productive trees.

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All banding substances like cotton, burlap, fly paper or tar do not do the work. Unsightly cotton is carried off by the birds. Fly paper does not fill in between rough spaces of bark, allowing caterpillars to crawl under it, and the stickiness dries up, allowing them to crawl over it; burlap they also crawl over and under. Tar preparations



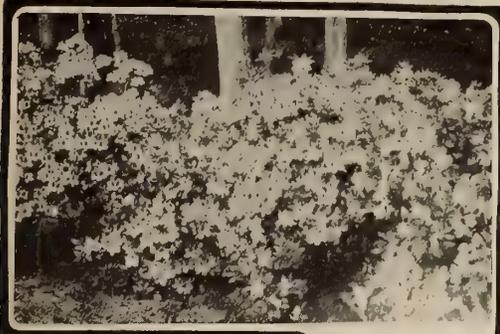
dry up, besides disfiguring the trees for all the year.

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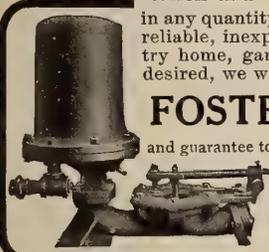
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OUR Two P's booklet tells you. Not in glittering generalities, but it gets right down to facts. Tells how you can get six weeks' to two months' start in your garden this spring—gives you valuable hints on flowers to grow—tells you how to make a hot bed, shows how you can have vegetables next winter.

Then there is a planting-time table for both flowers and vegetables. You will find this decidedly convenient—it not only tells you the time to plant, but gives a good bit of other valuable information besides.

It describes and prices our various styles of frames, of which we make three.

First, there is our Standard size to take sash that are three feet wide and six feet long, such as you generally see in gardens; then come our Juniors, which is a smaller size made especially for the convenience of those who find the larger sash rather heavy and unwieldy to handle. Any

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Three melon frames placed over a row of rhubarb, to force it

Lord and Burnham Company

Irvington, N. Y.

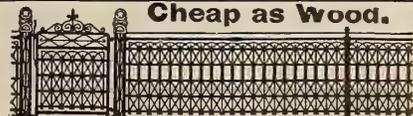
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Send to-day for New Fruit Catalogue, and a copy of Big Fruit Instructor, all a gift to you. Established 30 years. Capital, \$100,000.00. Send 10c for Green's Book on Fruit Growing, worth \$1.00.
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This book tells how to select the home Refrigerator — how to know the poor from the good — how to keep down ice bills. It also tells how some Refrigerators harbor germs — how to keep a Refrigerator sanitary and sweet — lots of things you should know before buying ANY Refrigerator.

It tells all about the "Monroe," the refrigerator with inner walls made in one piece from unbreakable SOLID PORCELAIN an inch thick and highly glazed, with every corner rounded. No cracks or crevices anywhere. The "Monroe" is as easy to keep clean as a china bowl.

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The "Monroe" is installed in the best flats and apartments, occupied by people who CARE — and is found today in a large majority of the VERY BEST homes in the United States. The largest and best Hospitals use it exclusively. The health of the whole family is safeguarded by the use of a Monroe Refrigerator.

When you have carefully read the book and know all about Home Refrigeration, you will know WHY and will realize how important it is to select carefully. Please write for the book today. (4)

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that I cannot afford to mark my fruit with Bordeaux," says Mr. Geo. T. Powell of Ghent, N. Y., a grower of fancy apples. "I have less scale and finer foliage than ever before." REASON: Five years' consecutive use of

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The Strongest, Healthiest and Most Productive Strawberry Plants in the World Today

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If you have a notion of growing strawberries either for market or home use, cultivate that notion; it's a good one. It will make you money.

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for it is just as easy to grow a big crop of big, red, delicious berries as to grow a small crop of the little sour fellows. The kind of plants you set out will determine the quality and quantity of berries you will have to pick. KELLOGG PLANTS PRODUCE BERRIES OF SUPERIOR QUALITY IN ENORMOUS QUANTITIES.

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Stand them in about four inches apart and pack the earth firmly about. If they are set in a vegetable garden, or flower bed, where they can get half shade, so much the better. I planted some in April, 1905. One out of every three or four lived. They were moved that fall to permanent positions. They bloomed sparingly in 1907, but the summer of 1908 they were thrifty bushes three feet high, with abundant flowers. A larger percentage of cuttings will live if they are made in mid-summer, but you may not want to cut a bush to get them at that time.

In July, 1907, the dog chased a cat into a deutzia bush in the garden. Several branches were broken from the heart of the bush by the fight that ensued, but these broken branches were made into cuttings the required length and set in a trench close to a mignonette border in a flower bed. The mignonette grew about them and sheltered them as they rooted. Late in the fall they were mulched down to keep the soil from freezing away from the stems. They were taken from this trench and photographed in October, 1908, after the foliage had been ripened and was ready to drop. They were immediately planted in their permanent positions where they will bloom the next spring. I found myself fourteen deutzia bushes to the good, and the damage to the old bush entirely forgotten.

Each summer, when the crimson ramblers are through blooming, the old wood is partially cut away and rows of cuttings arranged among the flower beds also. In this way thrifty stock can be raised on its own roots without a greenhouse or much work. A cutting started one summer will bloom the second summer following.

WHAT LAYERING CONSISTS OF

Layering is the process of growing roots on a branch of the parent plant while it is still attached to and nourished by it.

In the summer of 1905 when the young shoots about the root of an old lilac had grown about three feet high, they were all trimmed back to the earth except one, which was saved for layering. Being young and easily bent, it was curved over to the ground into a hole three inches deep, dug the proper distance from the old bush. The shoot was notched through the wood on the lower side that went into the ground and fastened down with a clothes pin. The earth was put over it and the end of the shoot was turned upward and fastened to a stake driven in the ground. By fall this shoot had become a bush with good roots of its own. In the spring of 1906 it was moved to a permanent position. In setting it out one long root was left near the surface, and stretched as far from the bush as possible, in order to get upright shoots from it. A number of shoots appeared from this long root during the summer of 1907. These were all trimmed off



This trumpet vine grew ten feet the year after layering



"Pomona" Evergreens

end beauty and elegance to the landscape, they are the final and artistic touches of creation, and such specimens of the leading hardy varieties, with elegant root system and shapely tops as I am offering. GROWN IN NEW JERSEY with its soil and climate advantages are sure to give satisfactory results. I grow evergreens as they should be grown, and have them for all purposes. SHADE TREES AND HARDY FLOWERING SHRUBS in abundance. FRUIT TREES AND SMALL-FRUIT PLANTS all fully described in my beautifully illustrated catalogue. It's free.

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25 Bulbs, 25 Cents



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The Garden
Week by Week

By WALTER P. WRIGHT

This is a practical handbook, covering English gardening operations for every week in the year.

No one can fail to find it useful for the culture of flowers, vegetables and fruits—outdoors and in greenhouses and cold frames.

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with Good Paint



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Just as you select the texture of a fabric in relation to its proposed use (to beautify or to resist wear or to do both), so you can secure the proper effect in paint for every possible purpose by using pure white lead ("Dutch Boy Painter" trademark). The good painter knows how to get the effect you wish with hand-mixed white lead paint.

With pure white lead paint any conceivable tint can be made to your order; and it has the exclusive peculiarity of "flowing together," so that a beautiful surface without brush marks results.

To property-owners who expect to spend from \$40 to \$1,000 this Spring on decorations, exterior or interior, our "Dutch Boy Paint Adviser," though free, is worth at least an expert adviser's fee, say 5% of the expenditure. To anyone not interested in painting, it would not be worth the stamp used in sending for it. If you wish it, it is free on request.

The "Dutch Boy Paint Adviser No. V" is free to anyone contemplating painting or decorating of any kind. Write for it.

Our Pure White Lead ("Dutch Boy Painter" trademark) is now packed in steel kegs, dark gun-metal finish, instead of in oak kegs as heretofore.

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By our method all this is now changed. If you have any space for planting, you can afford to beautify your property. By our plan, in fact, you can't afford to neglect to thereby add so much to the appearance and value of your home.

Superior Landscape Service Without Cost

We give you without charge all the expert advice of our large staff of professional landscape gardeners, practical growers, and expert planters; men who have designed and executed artistic and scientific landscape effects, who have grown and worked among plants all their lives.

Write us at once all the information you can about your grounds. We will then send you a plan, and a list of plants so you will know just where each plant is to be placed, together with the cost of these plants delivered. We show you just what we would do and just what the exact cost will be. If you don't like our plan and prices, that's our fault and costs you nothing. If you accept our plan, all you pay us for is the necessary nursery stock to work out the ideas. The plan shows you how to plant the stock, and how to actually fulfill your desire—a wonderful improvement at the lowest cost.

Send to-day, and we will enclose our handsomely illustrated book—"Beauty Out of Doors."

BROWN BROTHERS NURSERIES, Dept. E. Rochester, N. Y. (The Flower City)

Our complete descriptive catalogue of fruits, ornamental trees, shrubs and flowers sent on request.



Hydrangeas started from cuttings three years ago will bloom like this

except the one farther from the bush. The spring of 1908 saw the first blossoms on the bush, while already the shoot was of the size to assume independent existence, and by mid-summer it was moved to its permanent position where it bloomed in the spring of 1909.

Clematis, climbing roses and trumpet vine can also be started by layering. A long vine branch is bent over from the parent vine and planted at intervals under two inches of soft soil. Shoots will appear at every exposed bud. When they are thoroughly rooted the stalk can be cut and the young vines removed.

Pennsylvania.

FLORA LEWIS MARBLE.

Sweet Peas in the Vegetable Garden

THE sweet pea is often very effectively used as a border plant in the vegetable garden. The earlier the seed is sown the better. If sown in fall and wintered over by means of an impromptu frame the plants are much better than if sown in spring, but as this is out of the question for this year we will make a point to get them into the ground as early as possible. Plant the seed just as soon as frost is out of the ground. Sow in trenches six inches deep, in which some good manure has been turned under, and as the seeds sprout and grow, keep them covered with soil until by spring the trench is level with the surrounding ground. In filling the trench do not throw in the soil with a spade but take a handful and rub it between the hands to thoroughly pulverize it.

The benefit from this early sowing is that although no top growth of any amount is made, the roots keep going deeper and deeper, and by the time summer arrives they are down in cool, moist earth and do not feel the ruinous effects of drought.

New York.

W. C. MCCOLLOM.

A Hedge For a Driveway

IF the driveway to your house curves up a steep hill both guests and horses will feel apprehensive about pitching over the bare bank. You can remove this danger and add great beauty by planting first an edging of Japanese barberry, then a line of tall shrubs, and finally a line of tall trees. There is a beautiful example of this on the Steele estate near Westbury, L. I. The place was originally planted by Mr. Charles D. Lanier.

Black Spot on Roses

FOR black spot on roses spray with three ounces of Bordeaux mixture or potassium sulphite dissolved in ten gallons of water. Spray thoroughly so that all the leaves are well covered, especially on the under sides. Black spot is a fungous disease.

Millions of Trees PLANTS, VINES, ROSES, ETC.

The oldest, largest and most complete nursery in Michigan. Send for catalog. Prices reasonable

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with the **Empire King**

He who attempts to grow fruits without a sprayer is handicapped. Blight and bugs, rot and rust, mold and mildew, all conspire to damage the crop, and in all cases succeed if the farmer does not spray. This is the only hand pump having automatic agitator and brush for cleaning strainer. Valuable book of instruction free.

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Small Evergreens For Sale

WHAT might well be called our bargain offer, is 1,000 small trees for \$10.00. You can plant them in the grass just where you want them, or in rows in your vegetable garden, being your own nurseryman, and year by year as they grow to the size you want, transplant them.

If you want the larger trees, we have them in various sizes, up to 15 or 20 feet high.

To assure yourself of the kind of trees we grow, look at the white spruce in the illustration. It is one foot high, has a splendid top and the innumerable flexible roots that are the essential requirement for success in transplanting. Whether the tree be large or small, we carefully preserve the roots just the same. That is one of the reasons why Hicks' Trees live.

Come to our Nursery if you can and pick out just the trees you want, or order direct from our catalog, and we will take particular pains to see that everything is satisfactory. If it fails to be, we will gladly make it so.

Send for the catalog, whether you are ready to buy right now or not.

Isaac Hicks & Son
Westbury, Long Island

Fill the Roller With Water and Get ANY Weight You Want

Just fill the hollow drum of the "Water Witch" with water or sand—use a hose or bucket and funnel. Make the weight JUST RIGHT for a soft and wet lawn, or a hard, dry lawn—anywhere from 115 lbs. to 970 lbs., according to the amount of water or sand you use.



WILDER'S "WATER WITCH"

is the most convenient of garden tools. It runs easily with the heaviest ballast. Don't crack your walks by crossing them with a heavy roller. The "Water Witch" can be emptied in a jiffy—and filled as quickly. Dump out the ballast and the roller is easily lifted.

CAN BE CARRIED



What's the use of a heavy, clumsy solid iron or cement roller that costs more to buy and ship; that is so heavy that only a strong man can run it; that is generally too heavy or too light to do your lawn the most good—that is in every respect unsatisfactory? Remember that a difference of fifty pounds in the weight of a roller may mean success or ruin to your lawn—that a half ton roller will spoil a lawn in early spring—a 200 lb. roller is too light for summer work.

Avoid a patchy or rank lawn by rolling it RIGHT. The cheapest, easiest and most convenient way is with a "Water Witch."

FOR A GARDEN ROLLER, the "Water Witch" is just the thing—can be made light enough for flower beds, shrubbery or general truck gardens. In short, it's a DOZEN ROLLERS IN ONE.

WRITE TODAY for our little booklet "Care of the Lawn," or use this coupon. (Sent free and postpaid).

The Wilder Strong Implement Co.
BOX 6, MONROE, MICH.

WILDER STRONG IMPLEMENT CO., Monroe, Mich.
Please send me free your booklet, "The Care of the Lawn," also folder regarding the "Water Witch" Roller.
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Enjoy that luxurious rest and relaxation which gives renewed energy and makes the hot, sultry days cool and delightful. Be truly comfortable when reading, resting or ill. The expense is only nominal. Any position, from upright to horizontal obtained without effort or jar. Canopy entirely automatic and easily detached if desired. The chair folds in small, flat bundle for storage or travel and is particularly adapted for invalids at all times.



The famous Superior Quality Line

embracing over sixty designs, is made of the best material, by highly skilled craftsmen, for the most exacting judges of what summer furniture should be. If your standard is HIGH,—if QUALITY appeals to you,—if you are PROUD of your home and want truly comfortable designs, sensible, attractive finish, such as only skilled mechanics can produce,—insist upon SUPERIOR QUALITY stock from your dealer. It is the acme of perfection in every point and represents the very finest quality and the greatest intrinsic value at prices all can afford.

Send four cents in stamps for this Art Catalog, No. 139, in colors, illustrating over sixty designs of lawn and porch furniture. Every piece trade-marked and absolutely guaranteed without restrictions of any kind.

Why not buy the best at popular prices? Nothing could be more unsatisfactory than inferior Lawn Furniture at any price.

KALAMAZOO SLED COMPANY

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Kalamazoo, Mich.



BARGAIN in DAHLIAS

OWING to change of residence, I desire to dispose of my entire collection consisting of 400 varieties including the best of the Cactus, Decorative, Show, Peony, Single, Collarette and Pompon. Correspondence solicited.

Descriptive lists furnished to interested parties.

ARTHUR R. BERRY, Ossining, N. Y.

Send for Sample of PAGE WOVEN WIRE FENCE

We offer to send, free of charge, an actual sample of Page Woven Wire Fence, just as it comes from the big looms. Each one is "a sermon in steel." The tremendous success of Page Fence which is now on its Quarter Centennial Year, is due to the fact that its makers have always given full measure of honest value. It is the old, reliable, time-tried wire fence that **outlasts them all**. Admitted to be the strongest wire fence in existence.

Send today! See the real Page Wire! Get next to the "Page Knot"! Get the great Quarter Centennial Edition of the Page Fence Catalog and learn the difference between Page Fence and the ordinary kinds. Find what Page Fence means in **economy**. Write at once and both the free sample of Page Fence and the big Catalog will be sent promptly. Address

Page Woven Wire Fence Co.

Box 200 K

Adrian, Mich.

Sweet Corn

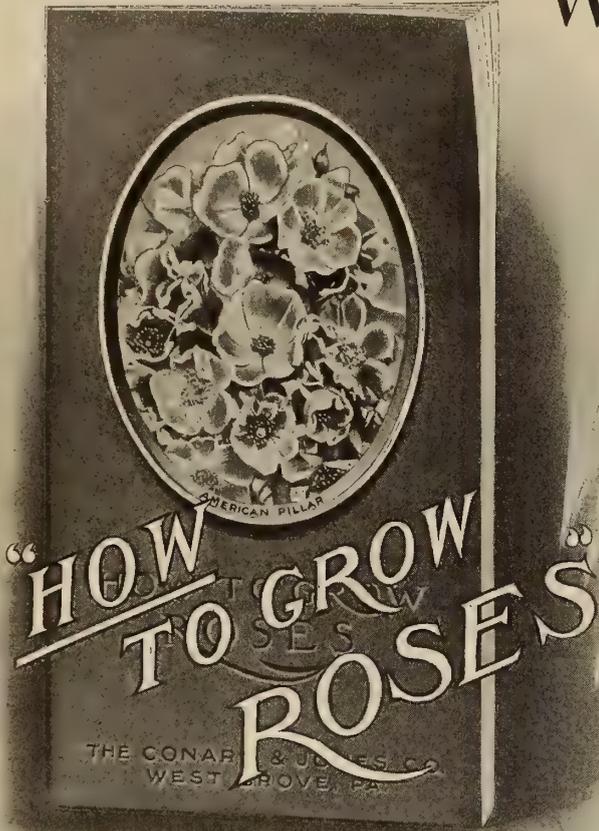
IN making out your list of garden seeds for the coming season do not fail to include Ordway's Golden Sweet Corn.

It is a wonderful variety: early, tender, juicy and sweet—four qualities which constitute the ideal.

Waste no time in planting other than Ordway's Golden if you want the best. Carefully selected seed sent by return mail on receipt of price.

Trial packet, enough to plant thirty-five hills, 10c.; half-pint, 18c.; pint, 30c.; quart, 55c.; medium-sized ears, 15c. each. Address

O. P. Ordway Saxonville, Mass.



WE will gladly send you a Rose at Planting Time and this valuable Rose Manual, one of the best published, together with our big 132 page "Guide to the Best Roses in America," for ten cents in stamps.

Do you know all about roses?

Do you know, for instance, the roses most suitable for different purposes—for small or large gardens—for hedges, for arbors?

Or do you know about some of the newer varieties

of roses—roses that are creating a lot of talk among the cognosceni?

Again, do you know what roses are best suited for certain localities—when to plant them—how to be sure of the right rose—and how to cultivate, fertilize, spray, mulch and prune it?

If you know all these things, you don't need our practical little book, "How to Grow Roses." And if you don't know them, you do need it.

For here's a book that is simply crammed from cover to cover with intensely practical information as to roses.

It isn't written by theorists, but by rose growers of nearly fifty years' experience in growing roses. Men connected with our institution, men who have been growing the best roses in America—our roses—for a lifetime.

This book represents thousands of dollars in experience alone. We sell it ordinarily for 10c. a copy, but in order to get in touch with you,

We'll Send our Book—a Rose Bush and Guide for 10 Cents.

and for good measure we'll throw in a splendid rose bush at planting time guaranteed to grow, our big 132-page "Guide to the Best Roses in America" and other flowers and a coupon valued at 25c. on your first dollar purchase—all sent post-paid for ten cents.

You had better send to-day for this valuable book—the edition is being rapidly exhausted.

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

Address

Box 24

Making Money from Cannas

A FRIEND of mine has a canna bed about twelve feet across at the side of his house. After putting the bulbs in for several years, the clumps became so large that he was obliged to give many of them away to his neighbors. The idea came to him one day that perhaps he could sell some of the bulbs, and he was astounded at the quickness with which his first lot was bought. He then sold in clumps, but experience has taught him it is better to divide the bulbs into fair-sized pieces. He grows only the red-leaved variety, for which there is always a demand, and attributes the ready sale to the excellent plump condition of the bulbs, from which he makes between eight and ten dollars each season.

Plenty of water is necessary during the growing season, and the bed should be well drained. Mix with the soil a goodly supply of leaf mold and plenty of coarse sand.

After the growing season, the bulbs are lifted from the ground and left in the air for a few days to dry. They are then spread on the cellar floor and left there for some days longer so as to insure perfect dryness. The earth is then rubbed off and the bulbs stored away in sand in boxes which are piled on shelves for the winter months. They are inspected frequently to see that no dampness, which speedily ruins canna bulbs, has crept in.

It is the winter storage that determines the condition of the clumps in the spring. If they are taken from the ground in the fall and put in some corner that is not frost-proof or where the heat will be excessive, the clumps will show rot or shriveling. If, on the other hand, they are thoroughly dried after being taken from the ground, and afterwards



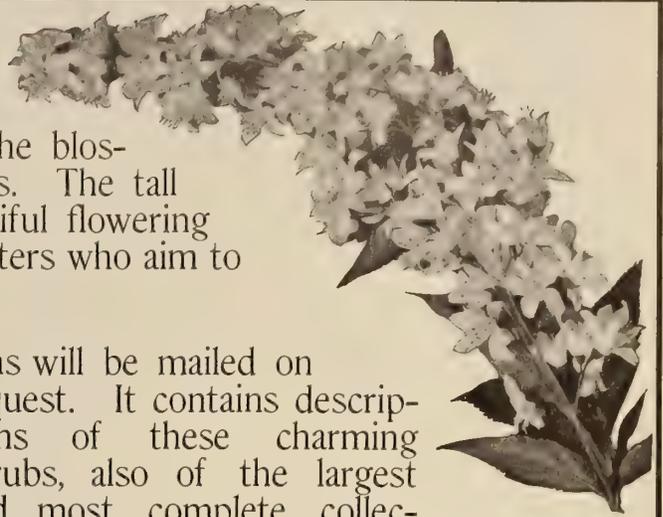
An average-sized clump of canna before being divided



The tops are cut off some days before the bulbs are dug up

Deutzia Lemoinei

Is one of the choicest small shrubs, covered in the blossoming season with a profusion of pure white flowers. The tall varieties of Deutzia are also among the most beautiful flowering shrubs and should receive more attention from planters who aim to produce effective results.



A beautiful catalogue with many new illustrations will be mailed on request. It contains descriptions of these charming shrubs, also of the largest and most complete collections to be found in this Country of

*Fruit and Ornamental Trees
Shrubs, Roses and Hardy Plants*

ELLWANGER & BARRY

Mount Hope Nurseries, Rochester, N.Y.

Our Roses Are Grown Right —Will Bloom the First Year

When you start a Rose garden, it's worth a great deal to know that your plants are reliable and trustworthy — that they have been carefully tried out by growers of experience.

All of our Roses are that kind; we know that they will thrive and bloom freely in your garden. Comparatively few kinds will do that; we've made it our business to learn which they are. In learning this, we have tested hundreds of varieties — and have kept only a few.

Your Rose Garden, set with our vigorous, splendidly rooted, two-year budded plants, will yield magnificent flowers beginning this year. Our Roses require no more attention than the inferior plants sometimes offered you; but ours produce results—they're worth many times over the slight difference in cost.

We'll gladly tell you more about them and the other good things we grow here — Bulbs, Plants, Shrubs and Trees. Our Catalogue is free — write.

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ROSES

Hardy, everblooming and guaranteed to be true to name. No finer roses have ever been offered or grown.

SPECIAL OFFER

of New Roses—made to build new business. **Blumenschmidt**, Pure Yellow; **Gen. MacArthur**, Crimson Scarlet; **Snow Queen**, Pure White; **Killarney**, Deep Rose Pink; **Mrs. Rivoire**, Golden Yellow; **Gainsborough**, Hardy Climber with magnificent Pearl-White flowers.

The above 6 Grand Roses mailed post-paid anywhere in U. S. or Canada for 25c.

My NEW and RARE COLLECTION

Mrs. Aaron Ward, Golden Orange; **Betty**, Copper Yellow; **My Maryland**, Glorious Pink; **Rhea Reid**, Deep Glowing Scarlet; **Wm. R. Smith**, or **Maiden Blush** (also sold as **Jeanette Heller**), Blush Pink; **Mamie**, Hardy Climber, a strong grower, color, Delicate Fawn with heart of Pink.

These 6 New, Grand and Rare Roses mailed postpaid anywhere in U. S. or Canada for 50c.

The Climbing Rose **Mamie** is worth the price of the entire collection, and all other varieties are usually offered from 15c. to 20c. each by other rose growers. On account of this BARGAIN OFFER only one collection will be mailed to any one address. Send your order to-day. You will get the finest roses that have ever been offered.

DAHLIAS

Six varieties. Easily grown and all will bloom this season. **C. W. Bruton**, Rich Yellow; **F. L. Bassett**, Royal Purple; **Countess of Lonsdale**, Deep Salmon; **Winsome**, Snow White; **A. D. Livonia**, Deep Pink; **Red Hussar**, Ruby Red. Each Dahlia in the above collection is fine in color; have won first prizes at flower shows and is the coming flower for Decorations, Parties, Weddings, etc. One tuber of any variety for 15c., any three for 40c. or the complete set of 6 Dahlias for 75c. postpaid. The collection will richly repay you with its wealth of flowers. Order early, as the stock of these rare varieties is limited.

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New Century, Cactus, Black, Striped, Double and Single of all colors. For 10c. I will send you 50 seeds—enough for a fine Dahlia Garden.

Write to-day for my new catalog which contains everything you may need to make your surroundings beautiful.

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Grow Asparagus In Four To Five Weeks In Your Back Yard

Big, white, showy stalks can be grown in four or five weeks. Most dainty and healthful vegetable at a minimum cost. No trouble, no care from the time the bed is made until out.

Reliable, practical method. A bed six by three feet will produce asparagus enough for a family of five with some to sell to your neighbors. Intensive cultivation is the most profitable method of vegetable growing.

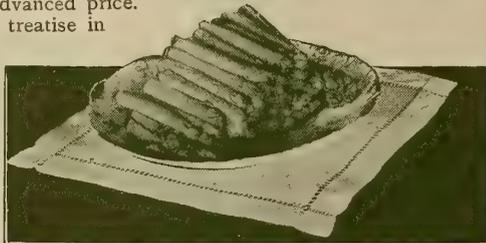
It produces the best crops and the earliest. Getting to market first with the earliest vegetables brings the advanced price.

Our book is the only practical treatise in this country on the French

method of intensive cultivation. Besides the story of asparagus forcing, the book tells in a simple way all the principal methods that allow the working of the smallest amount of land with the largest financial returns.

Flexible Cover, \$1.00 ; Library Edition, \$1.25, postpaid

ALBERT S. DIETZMAN
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Home-grown asparagus raised by French method of forcing

packed away in sand and occasionally inspected during the winter to guard against rot, the clumps will surely be plump and in good condition in the spring, at which time they are divided and most of them sold.

My friend divides the clumps March 1st and plunges the divisions into the sand. He markets them April 15th. He never sets the bulbs in the ground before June 1st.

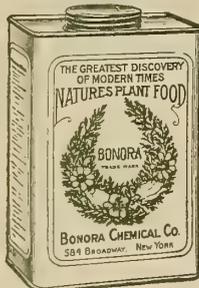
Cannas are propagated by division, a good-sized clump making a dozen or more new plants.



A 12-foot canna bed yielded ten baskets of bulbs like this

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

1 lb.	" 28 gallons, postpaid	.65
5 lbs.	" 140 "	\$ 2.50
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50 lbs.	" 1120 "	22.50
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ASTERS Famous Aster, Lady Roosevelt, gorgeous pink, marvelous beauty, 20 to 40 inch stems, Scientifically grown and separated seed, 25c. and soc. pkts. postpaid. Order today, J. S. WEAVER, GLEN MAWR SEED FARMS, BOX A, KINZERS, PA.

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We want to convince you of the value of an old established business and our years of experience, so let's get to know each other at once. Please send for our

CATALOGUE FOR 1910

We are sure it will interest and be of real service to you. It is most complete and will be a thoroughly worthy guide to you in planning the vegetable and flower garden this spring. We believe you will find it in many ways the most attractive and distinctive catalogue you have ever owned.

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ONE of the loveliest vines which warm countries alone may grow is *Clerodendron Thompsona*, known to nurserymen as *C. Baljouri*. The striking peculiarity of this vine is the great contrast between the great bag-like calyx and five-parted corolla, the former being white and the latter scarlet. One of the accompanying pictures gives a good idea of what the individual flower is like, while the other shows the great profusion of

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This story is based on a new idea—that of an English Marquis, discredited, penniless and cast adrift in America, fighting his way from the bottom up.

Mercenary and worthless at first, he at length proves himself to be a man, fit to marry the real American girl, and to be a worthy successor to his cousin "Lady Betty."

By C. N. and A. M. WILLIAMSON
Authors of "Lady Betty across the Water," "The Chaperon," "The Car of Destiny," "Set in Silver," etc.

There seems little doubt that this book will equal or outstrip all the authors' previous successes.

The demand for it before publication far exceeded that for "Set in Silver," and the reorders for the book predict an unusual sale.

Illustrations in color by George Brehm
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Doubleday, Page & Co.
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BEFORE setting out your trees and shrubs, let us help you with your plans. We furnish this service to our customers without charge. It's a waste of time and money to plant blindly. We are prepared to give you valuable advice. Our landscape gardener has had years of experience on all kinds of work, including parks, estates, cemeteries, boulevards, also grounds surrounding smaller residences and cottages. He will tell you how to make the best use of the space at your disposal, how to take advantage of trees already grown and the natural contour of the land—in short he will give you explicit directions for making the most of your surroundings. Write at once for full particulars of our plan.

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Plan now for the years to come. Nothing will increase the value of your property so rapidly or so greatly, as careful, consistent planting of shrubbery according to a well-formed plan. In planting shrubs and trees you are adding permanent value to your property as well as increasing its beauty and attractiveness. Correct landscape gardening forms a perfect setting for the house of pleasing appearance, and hides the defects of the mediocre structure. Any amount, large or small, spent with us will yield you magnificent returns.

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This is a hardy shrub that flourishes in all soils and climates. It is commonly known as the high-bush cranberry. The leaves are broad and color crimson in the fall. The flowers are white and are borne in clusters. Its brilliant red berries hang on the bush in clusters throughout the winter. Birds will not eat them. An excellent decorative shrub for both summer and winter. We are making a special introductory price of 20c on this shrub to demonstrate the large possibilities of a moderate outlay.

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A strong, sturdy, young cherry tree, Early Richmond, Montmorency, Black Tartarian and other desirable varieties only 25c. Remarkable opportunity to start an orchard. Other fruit trees at correspondingly moderate prices.

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Send for our book on landscape gardening, "A Handy Book of Hardy Plants." If you are interested in modern methods in landscape gardening you ought to have this book. You may be surprised at the results that can be produced for a very small expenditure. Learn what plants, shrubs and trees are suited to your locality. Let us tell you about our facilities for furnishing plans of landscape gardening. We can give you the effects you want in color, variety of foliage, special effects in summer and winter. This book sent prepaid on your request. Address

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Place a sundial in your garden or on your lawn and it will return an hundred fold in quiet enjoyment. Write us for free booklet of

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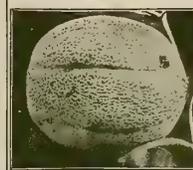
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Choicest Named Dahlias

10 Cents each, \$1.00 a dozen, postpaid
20 My Choice for \$1.00, postpaid

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A WHOLE GARDEN-10c

Send us one ten-cent piece or stamps today for this Incomparable Vegetable and Flower Seed offer. **Cabbage**, Early Winningstadt. **Cucumber**, Cool and Crisp. **Radish**, Early Long Scarlet. **Lettuce**, Wonderful. **Tomato**, Earliana. **Asters**, Prize Mixed. **Balsams**, Templin's Ideal Mixed. **Pansies** Excelsior Mixed. **Sweet Peas**, Incomparable Mixed. **Verbenas**, Mammoth, all colors mixed.

These seeds would cost you \$1 bought separately. From us only 10c and this refunded, too. Get the collection and see how we do it. Fine Catalog free, filled with other great offers.

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Roses in the South

Should Be Planted Before Easter
if a profusion of flowers is wanted this year. The long growing season, rich red soil and congenial climate of our Mountain Nurseries produce stocky, sure-to-grow plants, that cannot be equaled anywhere else for vigor, health, and strong, hungry roots. We know and grow only those kinds that are certain to succeed and satisfy—and they are the very best kinds.

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900 Missionary Ridge Chattanooga, Tenn.

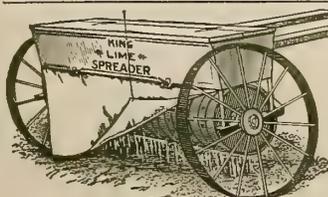
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Send postal for our Booklet, "Strawberry Plants That Grow," which describes best methods of Culture and best New and Old varieties of Strawberries; also Raspberry, Blackberry, Currant, Grape and Asparagus Plants which we offer for sale at very low prices. All stock warranted true-to-name and up-to-grade, or your money refunded.

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Freight Paid.

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Get shades that wear

Brenlin is made entirely without the "filling" used in ordinary shades. It doesn't let through the light in spots and streaks, doesn't wrinkle or bag. For a few cents more, you get shades that look right and wear so much better. *Anything cheaper is false economy.* Don't be put off with any other shade material. Write today for samples and names of dealers in your city.

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Look for **BRENLIN** along the edge.



A spray of *Clerodendron Thompsonae*, showing the scarlet, spreading corolla: white, bag-like calyx; long, protruding stamens

blossoms, the vine being almost covered with flowers. The panicles are from five to eight inches long.

The main flowering season lasts about six weeks, beginning here in April, but there are a few blossoms on well-grown plants nearly all the time.

The plant shown in the picture is only four years old. The *Clerodendron* grows so quickly that well-rooted cuttings will attain a height of ten or fifteen feet in one season.

The *Clerodendron* will stand a light frost. If frozen down, strong plants will sprout from the root and make a growth of twelve or fifteen feet as far north as Macon, Ga., provided the roots have been protected by a heavy mulch of coarse stable manure.

The vine is evergreen, woody, and a twiner. It blooms on the new wood.

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Good's Caustic Potash Whale Oil Soap No. 3

Contains no salt, sulphur or mineral oils. Nothing to injure trees, plants or shrubs. The oil and potash fertilize the soil and quicken growth. Used and endorsed by State Experiment Stations and U. S. Department of Agriculture.

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is made of Trinidad Lake asphalt. There are no secret materials in it. There's wool-felt for foundation, and mineral surface (on some) for finish. The Trinidad Lake asphalt is the life and backbone. It prevents cracks and breaks; does away with leaks and repairs, and makes Genasco last longer than any other roofing.

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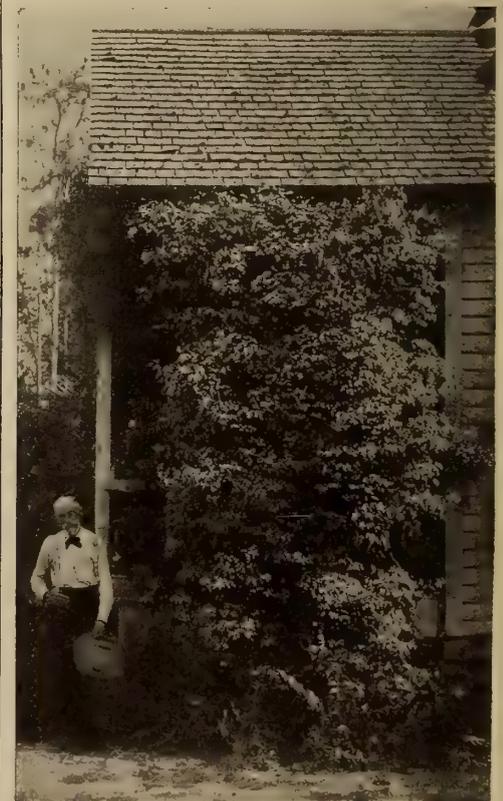
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Clerodendron Thompsonae in Florida, showing how the vine is covered with flowers

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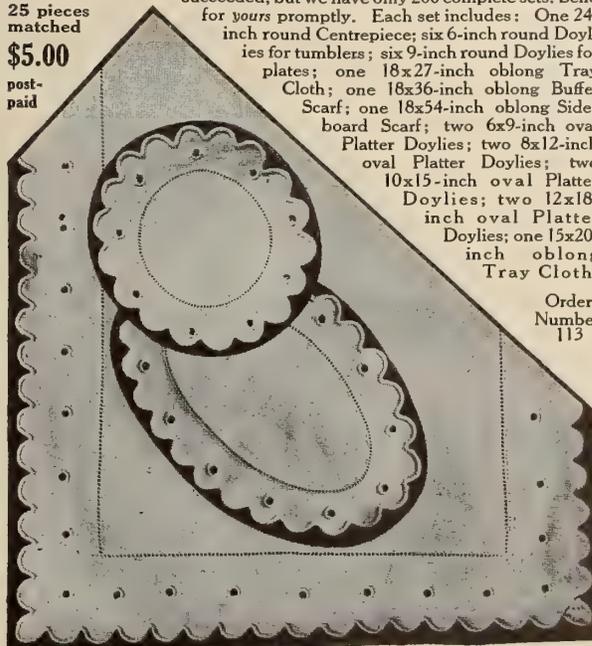
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This tool is used extensively among gardeners, and in Florida it is also used for orchard culture. It is a great labor saver.

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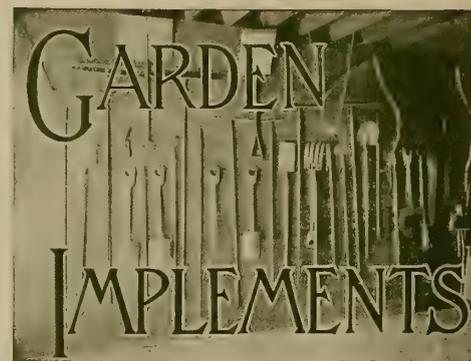
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ing, styles of gardens, verandas and window boxes, public and private grounds, vines, bedding plants, hardy plants, shrubs, trees, hedges, etc., all fully illustrated and described so that you too can be sure of success. Plans and book mailed postpaid for 50c, which will be credited to you on any future order of \$5 or over. Send today and we shall also be glad to give you individual advice and help. Ours is a service nursery. We do more than the mere selling of plants and shrubs. We can tell you what varieties are best suited for your purpose and suggest the plan that will give you the effect desired. Let our Landscape Department help you. It is at our patrons' service **FREE**.

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Florists — Nurserymen — Landscape Gardeners



Tools and Their Cost

THE cheapest outfit I would recommend for even the smallest garden is as follows:

Planting trowel	\$.60
Dibber, iron or brass	.60
Hand weeder	.25
Weeding hoe, 8-inch	.60
Warren hoe, 6 1/2 or 7-inch, for seed furrows	.65
Hilten hoe, 8-inch	.75
Garden rake, full bow, 12 to 16-inch	.75
Spading fork	.90
	\$5.10

The Hilten hoe is a new form of scuffle hoe superior to any other on the market, a set of three consisting of a 6-inch, an 8-inch and a weeder, cost \$1.60. For description and uses of other tools see the series of articles in THE GARDEN MAGAZINE, 1908, March to June, inclusive.

If the garden is of fair size a wheel hoe should be purchased. A hill and drill seeder will also save considerable time in sowing seed and do it better than by hand. Or a combined wheel hoe and hill and drill seeder would give the use of both at a slight advance in cost over either. The purchase of these tools is not extravagance, but economy. With care they will last for years and save their cost many times over. The price of these tools varies chiefly according to the number of special tasks you wish to perform. Wheel-hoes cost from \$3.25 to \$8.50; a hill-and-drill seeder costs from \$8.50 to \$13.00; a wheel-hoe and hill-and-drill seeder combined costs from \$8.50 to \$13.00.

To the garden equipment should be added an iron bar for setting bean poles, etc., a garden line, and iron stakes or reel. The wheel hoe marks rows perfectly and the owner of one can dispense with the garden line. The Warren hoe may also be left out if a seeder is purchased.

By a little attention to the hang of a tool and the set of the blade, i.e., the angle of hoe blade to handle, any hand hoe can be made more effective and therefore correspondingly easier on the user. To get efficient service and long wear from tools, keep them bright. The soil sticks to rusty tools and makes greater exertion necessary. Dry and oil them every time they are put away after use. It will more than repay the small amount of care necessary. Give all wood parts a coating of linseed oil — it makes them wear smooth and they are more pleasant to handle. Have a place for each and every tool. The neatest way to arrange them is to hang them up.

Pennsylvania.

J. L. K.

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IS IT WORTH A CENT ?

Send a postal for Crawford's Catalog and see. Information concerning some new strawberries—Francis and Americus which sold at 40 cents a quart at wholesale last season, King Edward, which is to be offered this spring for the first time, and others. Also a new blackberry, the Watt, which continues in bearing until October.

M. CRAWFORD COMPANY (c)

Box 703 Cuyahoga Falls, Ohio

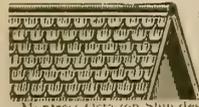
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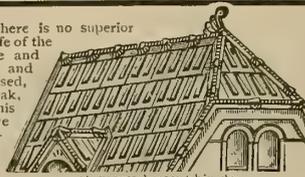
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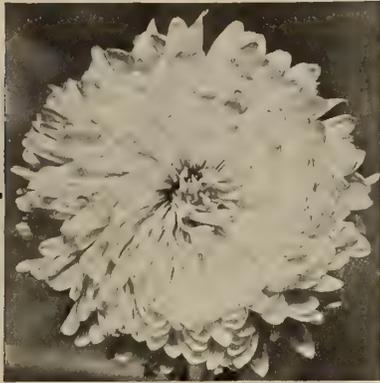
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Hills or Drills

ALL plants should be grown in hills or drills, never broadcasted, as plants in rows are much easier to keep free from weeds.

By "hills" we do not mean raising a mound of earth where each group of plants is grown, but rather that the plants, though grown in rows, are also in groups of three or four to each place or hill. Sufficient seed is planted at regular intervals to produce the number of plants wanted in each hill.

In drills the seed is sown thinly in a line and the resulting plants are thinned to stand the proper distance apart in the row. When the distance between the plants is four inches or more, sowing in hills and then thinning to one plant in a place is liable to give a more uniform stand than sowing in drills. Also it saves seed and much of the labor of thinning.



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It is free for the asking. Or, if you will send me 20 cents, I will send you also seed of

3 Splendid New Asters

- Namely:—1. Vick's New Pink Rochester or Mikado
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Also 4. New Blanche Ferry Spencer Sweet Pea,
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My Asters and Sweet Peas receive many commendations. Let me send my catalog anyhow. A postal card request is sufficient.

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The plan involving the least outlay of money and effort is to sow seeds of sunflowers and of the wild cucumber vine (*Echinocystis lobata*), since these are about the cheapest seeds any one can buy. Sunflowers cost only ten cents a pound. Wild cucumber may cost ten cents an ounce, but in my neighborhood is a bank on which this vine has run wild and covered about 2,500 square feet. Two children could collect in one hour there enough seeds to beautify all the raw banks along river, roads, and railways in a city of 60,000 inhabitants.

I recommend only such seeds as can be sown broadcast without the labor of preparing soil or even raking in the seeds. Obviously the only seeds suitable for such a purpose are very large ones, because they have a food supply big enough to help the young plants during a period of drought. It would be little trouble to soak the seeds over night and sow them during a prolonged wet period.

The great drawback to the above method is that it presupposes tolerably good soil and moisture conditions, and whenever that much is granted, Nature will generally do the rest. In other words, it cannot be relied upon for the commonest conditions, which are the ones that seem desperate to a beginner — viz., dry banks of sand or heavy clay.

The surest, and in the long run the cheapest, way to hold banks that are too steep to mow conveniently is to plant them with shrubs and vines that have a genius for spreading by suckers or underground stems, thus holding the soil and preventing landslides and gullies. Shrubs will always hold a bank more effectively, and at less expense than grass, and if you give some thought to the season when each bush or vine is most attractive you can transform these eyesores into beauty spots which will be attractive the year round.

FOR THE SANDY BANKS

The sandy bank is generally thought to be a hopeless proposition, because of the scanty plant food, water and humus. But Virginia creeper grows wild in sand dunes, fruits more freely, and takes on new beauties in these hard conditions. Red cedars are also native to the dunes, also pitch pines and the wax or candleberry (*Myrica cerifera*). These are all native plants but ordinarily it would not be practical for you to dig them. You could probably get them cheaper from a professional collector in southern New Jersey or from some one who makes a specialty of growing seedlings by the millions for the nursery trade. For example, you could get one thousand two-year-old white spruces two or three inches high, for \$5; or one hundred pitch pines a foot high at five cents each. Hall's honeysuckle and *Rosa Wichuriana* can be had so cheaply from regular nurserymen that you can afford to give them away even to a "soulless corporation" like a "mean old railway company." And think of the pleasure you would get when that staring sandbank is covered with semi-evergreen foliage and fragrant flowers in July!

The clay bank that is sticky during rains and bakes like a brick in a drought, can be covered



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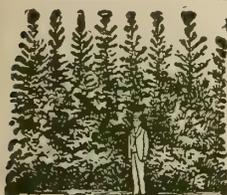


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For fifteen years we have sold guaranteed bulbs, all over the world. If you are looking for up-to-date Dahlias send for free catalogue to *The Eastern Dahlia King*, the largest Dahlia grower in America.

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Trees, Shrubs, Vines, Plants

Anything, in fact, needed in the planting of the home grounds, may be had from our Nurseries. Our stock grows well because it is acclimated. Our Landscape Department will gladly furnish, without charge to you, information, estimates, etc., covering any planting scheme, extensive or limited. Write for our handsomely illustrated catalogue—it's free. Southworth Brothers, Nurserymen, Beverly, Mass.

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"THE VILLAGE OF VAGABONDS" tells a story of life and happenings in the little forgotten village of Pont du Sable, on the Norman Coast.

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NEW YORK

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Haphazard planting is unsatisfactory. We can make a landscape design for you which will add distinctive beauty to your home.

We are growers of all kinds of Hardy Trees, Shrubs, Plants and Bulbs and can supply you with anything you may want. Catalog and particulars on request.

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The Wheel of Life. The Voice of the People.
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ALL COLORS, 10 CENTS EACH
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10 CENTS

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Magazine readers are familiar with the charm and grace of Mrs. Richmond's contributions. The successful longer stories here listed surpass in interest and popularity her short stories.

Round the Corner in Gay Street, \$1.50
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The Indifference of Juliet, \$1.50
With Juliet in England, \$1.50
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THE BEST INVESTMENT ANY COW OWNER EVER MADE

That's what more than One Million COW OWNERS the world over have found the DE LAVAL CREAM SEPARATOR to be, after thirty years of separator use.

A DE LAVAL FARM SEPARATOR costs from \$45.00 to \$175.00 according to capacity. It saves butter fat and produces a cream of superior quality over any setting system or any other separator every time it is used,—twice a day every day in the year.



DE LAVAL
The World's Standard Cream Separator

It involves far less labor than any setting system, and runs easier, has greater capacity and lasts from two to ten times longer than any other separator.

That's how a DE LAVAL separator saves its cost at least the first year, and frequently in a few months, and then goes on doing so right along for an average of twenty years.

So far as other separators are concerned they leave off where the IMPROVED DE LAVAL machines begin, and the DE LAVAL makers, with thirty years of experience in separator construction and develop-

ment, have forgotten more about separators than all the others know. In fact it's what the DE LAVAL has forgotten and discarded that the others use.

That's what makes the DE LAVAL CREAM SEPARATOR the best investment any cow owner ever made, and an investment no cow owner can have sound reason for delaying to make.

And in buying a DE LAVAL machine you don't have to part with one cent until you have satisfied yourself that every word of all this is simple truth.

Any desired separator information can be had of the nearest DE LAVAL agent or of the Company directly.

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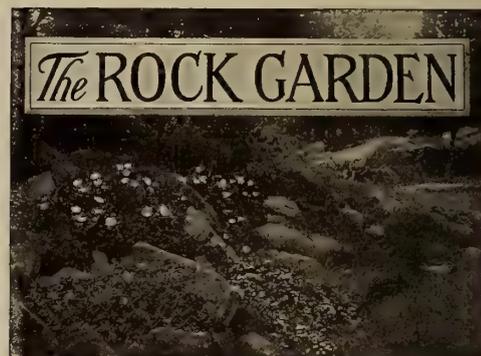
14 & 16 Princess Street
WINNIPEG

1016 Western Avenue
SEATTLE

with beautiful bushes and vines in the same way. A good plan is to spend an hour or two driving about and seeing how nature holds the oldest clay banks in the neighborhood. Select the two or three plants that are commonest and, if you do not know the names, give leaves and flowers or fruit to a botanical friend or nurseryman.

Moist banks are, of course, very easy, because willows and the native red-twigged dogwood grow so very fast that they are extremely cheap. You could easily propagate enough of these at home to cover any moist banks in your neighborhood that are objectionable.

Are you willing to do something of this sort? If so, join the Roadside Gardening Club now. There are no officers or expenses of any kind, but if you will tell us what you want to do, we will help you accomplish it with the least expenditure of time and money.
New Jersey. THOMAS McADAM.



Rocks in Prairie Gardens

A PLEASING manner in which to utilize rocks, especially out on the prairies where, in certain localities, as in the Red River valley, their scarcity lends them a charm of their own, is shown in the accompanying picture. Such an arrangement filled with hardy ferns and lily-of-the-valley is very effective, and is at times the only treatment possible at the foot of a porch facing due north.

As brought out in the picture, the result is more satisfactory when the stones describe a slight curve. Placing them in a straight line is apt to suggest



Out on the prairies rocks can be very charmingly arranged in this manner

rigidity. Color may likewise be introduced into such a scene by using the tuberous rooted begonias which will bloom freely in the absence of any direct sunlight, provided they are supplied with a fair soil and sufficient moisture.

In arranging stones in this manner some care should be exercised that the smaller stones be used at the curves and the larger ones nearest the building. If this is not done there will be an air of abruptness about the stones and the whole will lack the necessary coherence with the house. In other words, the transition from the lawn to the stones and from the stones to the porch will not be gradual enough.

North Dakota.

M.

"A Little Book About Roses"

"If a man can write a better book, preach a better sermon or make a better mouse trap than his neighbor, the world will make a beaten pathway to his door."
—Emerson.

It is the above sentiment which has inspired me from the beginning and which, zealously lived up to, has placed this business far and away ahead of anything of its kind yet attempted. If at all interested in out-door rose growing, you cannot possibly afford to be without a copy of "A Little Book About Roses" which tells in detail how you may achieve a success with this flower beyond your fondest dreams. This booklet also describes in honest detail (and prices) the cream of the world's best roses for out-door culture.

It is beautifully illustrated with exact photographic reproductions only. The high quality of this booklet reflects the class of my stock and will prove a treat to the intelligent, discerning man or woman who can sift the gold from the catalog dross.

Mailed on Request

GEORGE H. PETERSON

Rose and Peony Specialist

Box 50, Fair Lawn, N. J.

Reproductions of old New England furniture in the natural wood, or finished to suit the individual taste.

WM. LEAVENS & CO., 32 Canal St., Boston, Mass.

The "Lou Dillon" Tandem Garden Cultivator



It can be set to stir the soil any depth desired and to cultivate astride the row or between the rows.

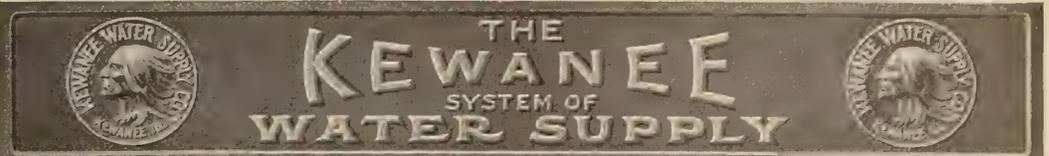
One third quicker and easier than any other garden cultivator, easier to push than a lawn mower.

No gardener can afford to be without one.

Write for descriptive catalogue and testimonials. If your local dealer does not handle them, write to us for special introductory price.

Dept. D

THE SCHAIBLE MFG. CO. ELYRIA, OHIO

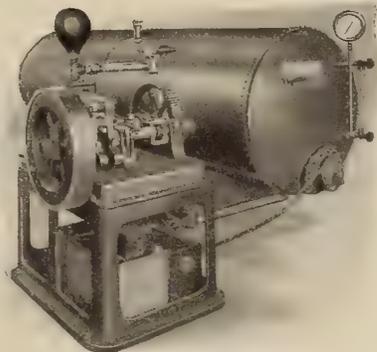


Here are Nine Reasons Why Kewanee Water Supply Systems are Satisfying Over 10,000 Users



This illustration will give you some idea as to the cost of a complete Water Works System for a building of similar size.

This building is equipped with the **Kewanee System No. 250**, which includes a gasoline engine pumping outfit.



The cost of the apparatus was about \$300, and the Water Works System is as perfect and complete for this house as the water works system for a large city.

Write for details about your own water problem. Our engineering department gives this service free. Ask for 64 page illustrated catalog No. 16.

- 1.—Always sure of plenty of water under strong pressure—60 lbs. if you want it.
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- 3.—No hair trigger regulations to get out of order. No manipulating. Everything simple and sensible.
- 4.—Water in storage. No need to start the pump every time you want a glass of water.
- 5.—Your **Kewanee System** is designed for your particular requirements.
- 6.—**Kewanee** Pumping machinery is designed for the special requirements of air pressure service—built for long and steady service. **We make our own machinery.**
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- 8.—**Kewanee Systems** now satisfactorily serve 10,000 owners. Your water supply problem is in the hands of experts when we handle it. Results are certain. No experimenting.
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Kewanee Water Supply Company, Kewanee, Illinois.

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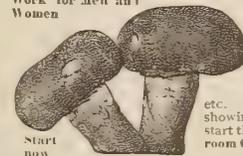
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Work for Men and Women



300% PROFIT MADE Growing Mushrooms

Markets waiting for all you can raise. No capital or special place necessary. Grow in cellars, stables, sheds, boxes, etc. Write for big illustrated free booklet showing our beds and farm and learn how to start this easy business. National Spore & Mushroom Co., Dept. 9, 154 Summer St., Boston, Mass.



Small Fruits for the Country Home

A variety of grapes, berries, currants, etc., will add greatly to the enjoyment of your country place. Our stock comprises the best new productions as well as standard kinds.

Choice Fruit Trees

direct from our own nursery grounds at wholesale prices. Quality stock. Government inspected. Also

Ornamental Trees, Shrubs, Vines and Roses

Send today for our new illustrated catalogue with prices.

GROVER NURSERY CO., 94 Trust Bldg., ROCHESTER, N. Y.





The "Hanover"—German type. Mahogany finish; plain seat; button back.

Furniture of Luxurious Comfort

The beautiful productions in "Reliance" Leather Furniture with their ample provision for lounging comfort and enduring service, offer a fine treatment for Library and Living-Room.

These roomy, deep-seated chairs and sofas have a permanent value all their own. Use enhances their beauty and comfort. Long association brings fuller appreciation of their charm.



"Hanover" Chair

"Reliance" Leather Furniture is at its best when the costly fabric covered furniture is worn out. Yet "Reliance" productions costs no more than the less worthy kind.

"Reliance" Leather Furniture

The "Reliance" line includes a wide range of handsome designs in comfortable leather furniture, including many beautiful examples in Flanders and Mission types.

Our trademark on leather furniture is your guarantee of genuine, natural-grain leather, warranted not to crack, peel or fade. It also assures you perfect cabinet work, skilled workmanship and finest finish.

"Reliance" Leather Furniture is made in a large variety of styles for Library and Living-Room, Den, Office and Lobby. It is sold by furniture dealers everywhere. While "Reliance" is recognized as the standard of leather furniture construction, it costs no more than ordinary leather furniture.



"Hanover" Rocker

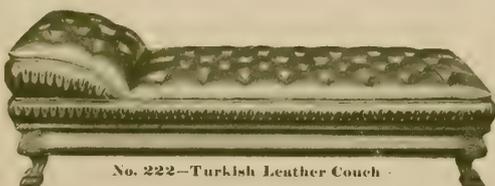
Write for Our FREE Book

Our Book "G," shows many beautiful designs in "Reliance" Leather Furniture for the library and living-room. It contains information about leather furniture that will be invaluable to you. With this book we will send you the name of the local dealer who will supply you with the genuine "Reliance" Leather Furniture. Send today.

JAMESTOWN LOUNGE COMPANY

Jamestown, New York

Specialists in the Manufacture of Comfortable Leather Furniture



No. 222—Turkish Leather Couch



COMMERCIAL FERTILIZER

A good commercial fertilizer is constituted of what ingredients?

Illinois.

H. B. H.

—A high-class complete fertilizer, suitable for the variety of vegetables usually grown in a garden, contains all three of the needed constituents in about the following proportions: 98 pounds nitrogen, 120 pounds phosphoric acid and 120 pounds potash per ton, and should be applied after plowing and before harrowing at the rate of 500 to 1,000 pounds per acre; and hoed crops may be further stimulated by two or three supplementary side-dressings during the growing season, using 100 to 200 pounds per acre for each application.

THE EUCALYPTUS

Will you give me some particulars regarding the eucalyptus tree?

Michigan.

B. C. K.

—The eucalyptus is a valuable hardwood tree, most of the species being of rapid growth. It is a genus of about 140 species, all Australasian, excepting about five found in the East Indies. While but few species are really hardy, most of them, however, can be successfully grown in California and countries having a similar climate. The timber is exceedingly durable and largely used in Australia by shipbuilders, railroad engineers, implement makers, and for building purposes. Felling for timber should be done towards the end of the dry season, when the flow of sap is least active.

RECLAIMING A SALT MARSH

I have on my estate fifteen acres of salt meadow, which, from a system of drainage through the property for the past three years, contains a small proportion of sodium chloride; but the soil is somewhat peaty and boggy. It will be in condition to plow this spring; is there any crop I can grow for the future purpose of putting the ground in grass?

Connecticut.

T. A.

—If the land is covered with a thick mass of salt grass roots the ideal time to plow it for the first time would be in the autumn. It should then be allowed to remain undisturbed during the winter, thereby the freezing and thawing would tend to disintegrate the soil, separate it from the roots, and put it into condition whereby it could be more easily cut up the following spring. In the spring use a sharp and medium heavy disk harrow, disking and cross-disking the land thoroughly. If possible, it might be well to use no crop, but to allow the natural vegetation to start, after which the disking and harrowing must be repeated. If any roots are brought to the surface, rake up with a stalk rake and burn, the process being repeated until the land is in condition suitable for the crop that is to be grown. Another method would be to sow a forage crop, such as sorghum or millet. This could be cut for green feed or for hay, after which the land should be again plowed, thoroughly disked and harrowed. After the plowing this spring, if the land can be gotten into condition for a crop, a forage crop might be used, although it will sometimes be found advantageous to use an intertilled crop, and to continue the tillage of said crop at frequent intervals during its growth. The practicability of this would depend largely on the condition of the soil as to whether or not it can be economically done



For Verandas, Porches, Lawns and Indoor Use Combines Hammock, Couch and Swing Settee

The Perfect Couch for Out-door Sleeping

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, with or without national spring, thick mattress, with sanitary removable cover. Holds six persons. With or without windshield (see cut) which folds flat under mattress. Complete, with lines and hooks ready for hanging, delivery charges prepaid in United States, carefully packed.

WRITE FOR DESCRIPTIVE BOOKLET

and prices of different styles and sizes

Small silk name-label is on every Rowe Hammock

E. L. ROWE & SON, Inc.
461 Water St., Gloucester, Mass.

Are Your Flowers Strong and Beautiful?

Send for list of plants suitable for city and town gardens. Our flowers are grown in the smoky vicinity of Pittsburgh and are adapted to such conditions.

Hillside Hardy Flower Gardens
TURTLE CREEK, PA.

Do You Need Curtains

In your bungalow or country house; curtains that will be a fitting frame to the old-fashioned garden beyond the window? We make attractive curtains ornamented with quaint cross-stitching, as well as other sorts of handiwork, \$2.00 a pair up. Our designs are all original, can be made to harmonize with your color schemes. Simple work as well as elaborate. Also bed-hangings, runners and scarfs for all purposes, pillow-covers, breakfast and porch sets. Hand-woven linens a specialty.

EDITH ALLEN HALL

BERNARDSVILLE

NEW JERSEY

REMOVABLE STEEL CLOTHES POSTS

fit into sockets driven level with the ground, leaving it free for lawn mower. Posts are held rigidly but can be removed in a moment. Adjustable hook helps you in hanging the clothes.

Don't Dig Holes and spoil your lawn. Keep it beautiful and save labor by using these posts.

Cheaper, Better Than Wood
Wooden posts last only a few years and are always inconvenient and unsightly. Removable steel clothes posts cost less than cumbersome wooden ones, look better, and last a lifetime. Ask your dealer or write for Catalogue A.

MILWAUKEE STEEL POST CO.
Ask Your Dealer. Milwaukee, Wis.

Last a Lifetime



So Easy



A HEDGE OF LIGUSTRUM AMURENSE
AMOOR RIVER PRIVET

LIVE FENCES

There is no fence so artistic as a live growing fence, one that you can shear or one that naturally grows into a beautiful shape. There are no better hedges than the two illustrated in this ad.

BERBERIS THUNBERGI, (Japanese Barberry)

Look at this Hedge; is it not beautiful? It is hardy—graceful—protects from everything. Has the most beautiful color in Autumn, and loads of red berries in Winter. Can you beat it? 6 to 12 in. plants, \$6.00 per hundred. 12 to 18 in. plants, \$8.00 per 100. Larger plants for a little more money.

LIGUSTRUM AMURENSE (Amoor River Privet)

The one Privet without a fault. Perfectly hardy around Chicago. Resembles California Privet. Beautiful foliage. Lovely flowers. Makes a Hedge like you see in Europe. The grandest trimmed hedge. Price for 2 ft. plant, \$25.00 per 100. If you want the Best Hedge in the World, Plant This One.

41 Bargain Collections. Get this sheet to-day.

AURORA NURSERIES, AURORA, ILLINOIS

SHRUBS---ACRES OF THEM

We grow shrubs. Buy direct from the grower. You get them fresh and alive and save agents' big profits.

OLD FASHIONED FLOWERS

The hardy ones, just like mother used to love. You ought to plant them. They are the most useful and are satisfactory. Our hardy gardens comprise more than four acres containing over 100 kinds. Send for our catalogue to-day and learn how cheaply you can buy them.

OUR CATALOGUE

You want a copy. It fully describes our stock of fine shrubs, etc., and will be sent free for the asking. It is not a fancy book gotten up at heavy cost, with the cost tacked on to the price of the goods, but it is a book that contains such low prices that you will sit up and take notice. Look at these prices: Apples 15c, Pear trees 25c, Cherry trees 15c, Grape vines \$2.50 per 100, Bridal Wreath 10c and up, Shrubs 10c and up, Old Fashioned Flowers 5c and up, and many other bargains, in fact every item is a bargain. Send for the catalog and see for yourself.

EARLY ORDERS

We want your order but prefer to get it in February or early in March and will tell you how to save money by ordering early. Send for the catalogue and bargain collection sheet to-day and we will give you full information about Saving Money by Early Orders.

AURORA NURSERIES, AURORA, ILL.



HEDGE OF BERBERIS THUNBERGI, (Japanese Barberry)

BANNERMAN
ARMY AUCTION BARGAINS

Tents . . . \$1.40 up	Revolvers . . . \$1.65 up
Leggins, Pair .15 "	Cadet Guns . . . 1.20 "
Bridles90 "	Navy Reptg. Rifles 5.40 "
Saddles3.00 "	Side-Arm Sword . .35 "
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Largest stock GOVT. AUCTION BARGAINS in the world. 15 acres required for its storage. 340-page catalogue, 3,000 illustrations, including 1910 list, ready about APRIL. Net wholesale and retail prices. Mailed 15c. (stamps).
Cannons, Flags, Pistols, Rifles, Spears, Drums, etc.
FRANCIS BANNERMAN, 501 Broadway, New York

MISS C. H. LIPPINCOTT
Pioneer Seedswoman

Offers 50 seeds of **Giant Marguerite Carnation** for 4 cents in stamps, and the names and addresses of two of your flower-loving friends. This offer, made to introduce her standard

FLOWER SEEDS

also includes her 17th Annual Catalog, with beautiful lithograph cover in Pansies and Dahlias, and free copy of "Floral Culture," which tells how to grow flowers from seed. Send for the **only carnation that blooms in 4 months** from sowing.

MISS C. H. LIPPINCOTT, Dept. 86
Hudson, Wis. (One hour's ride from Minneapolis)

BLOOMING CACTUS

Cactus is the most fascinating and beautiful plant you can grow. The endless variety of shapes and species, bearing exquisite flowers in scarlet, yellow, purple, etc., delight all. We are in the heart of the cactus country and sell the healthiest, hardiest plants, guaranteed to bloom, at lowest prices.

Special Introductory Offer. We will mail you a rare 75c Cactus Plant (variety E. C. Dayacanthus) with beautifully colored spines; bears handsome yellow flowers 2 to 3 ins. wide for our **Special 28c** Introductory Price of only

Write Today for Free Catalogue. "Cacti and How to Grow Them." Include with order the name of two flower-growing friends and we will add a free sample of our delicious Cactus Candy.

THE FRANCIS E. LESTER CO. DEPT. J 3, Mesilla Park, N. Mex.

ROSES

that bloom from June until November give best results, and are the most popular varieties for the garden.

Walsh's rambler roses are unexcelled for garden decoration as they give a succession of bloom from mid-June until August. These are universal favorites.

Lord Penzance sweetbriars should have a place in every garden, also the double-flowered hybrid rugosas, which are described in my catalogue containing cultural directions.

M. H. WALSH
Rose Specialist
WOODS HOLE, MASS.

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.

DEPT. C. T. F. POTTER, Tomato Specialist, DOWNERS GROVE, ILL.

Special and Unusual Plants from Meehan

In America the "House of Meehan" is known from ocean to ocean as one of the oldest and largest horticultural establishments of its kind. But more highly prized is the reputation it has among thousands of sending out the best trees and plants mother earth can produce. A Meehan-grown plant needs no excuse.

Hundreds of readers of the Garden Magazine are familiar with our sturdy plants from actual experience, but we want to extend our acquaintance. We want you as a customer if not already one, knowing we can give you plants that will be a source of pleasure.

Look over these few specialties picked from hundreds we have in our extensive nurseries. If you have a lawn or garden large or small you can surely use some of them.

Send us your order for Spring delivery, and we will guarantee satisfaction. We must be assured of your satisfaction for the success of our business. Our shipping facilities make possible the serving of customers in Oregon as satisfactorily as in Philadelphia.



A New Althaea

Here is a real treasure in a Rose-of-Sharon. Beautiful, brightly variegated-leaved variety, surpassing all other variegated-leaved shrubs we know and not to be classed with the old form.

The flowers, however, are the real merit of the plant. Beautiful, satiny-lavender blossoms of single form produced in abundance in August and continuing for weeks.

Plant it for its foliage and flowers. It is called Meehans' Variegated-leaved Althaea. It is just as reasonable as the old, less satisfactory kinds.

18 to 24 inches, \$.25, 10 for \$2.00
 2 to 3 feet, bushy, \$.35, 10 for \$2.75
 3 to 4 feet, bushy, \$.50, 10 for \$4.00



Blood-Red Japanese Maples American-grown

No other tree or shrub today has such intense, blood-red foliage as this beautiful Japanese Maple. It commands attention wherever seen, but unfortunately is almost unknown.

To get the best, buy American-grown plants. They have more vigor and vitality and are thoroughly acclimated.

Meehan-grown Japanese Maples are recognized among well informed gardeners as the choicest in America.

They are well grown in every respect. Good roots, well formed tops, and so frequently transplanted they move now with almost no disturbance or check to the growth.

Bushy, well formed plants in all the sizes:

12 to 18 inches . . . \$1.00 each, 5 for \$4.00
 2 to 2½ feet . . . \$2.50 each, 5 for \$10.00
 2½ to 3 feet, extra bushy, \$5.00 each, 5 for \$20.00
 Specimens, 3 to 4 feet, \$8.00 to \$10.00 each.

Hardy Garden for \$5.00

Some years ago, when the old-fashioned hardy perennials again became popular, we made up and offered our customers a collection, carefully prepared, from which we knew satisfactory results would be had.

The success of this collection was phenomenal, not alone from the number sold, but the great satisfaction resulting.

This spring we shall again offer this dependable collection, and it is an unusual opportunity to get real choice perennials at a very moderate price.

In this collection are 56 perennials, which will nicely plant 80 square feet, and ordinarily sell for \$8.40, at the special price of \$5.00.



The Most Gorgeous Flower I Ever Saw

Such is the comment of one who grew and flowered our Mallow Marvels for the first time last summer. There are thousands of others just as delighted and surprised at their wonderful beauty.

Meehans' Mallow Marvels are distinct from other perennials in many respects.

In late July, just when the flower gardens' bright display is beginning to wane, the brilliant flowers of the Mallow Marvel begin to open. On seeing them for the first time one is amazed at their gorgeous and striking beauty. The huge blossoms, from 6 to over 10 inches in diameter, come in four colors. Vivid fiery crimson, rich blood-red, soft shades of pink and white. Each flower has its individual beauty—all are strikingly beautiful.

The display only begins in July, often the flowers continuing to come until frost, giving 6 to 8 weeks of brilliant display.

The foliage is remarkably attractive and produces a good effect before the flowers appear.

The plants develop each season to good-sized bushes from 5 to 8 feet high, dying to the ground in late autumn.

From Canada we have had reports declaring they have succeeded after exposure many degrees below zero.

Anyone can be successful with them in regular good garden soil.

Here are our big two-year-old roots at one-half their original price.

These roots will flower abundantly this season if given good garden soil.

Crimson, Pink, Red or White Marvel \$1.00 each
 25, in any assortment . . . for \$20.00
 100, in any assortment . . . \$75.00



Dwarf Star-flowered Magnolia (Magnolia stellata)

The very first breath of Spring brings with it the delicate fragrance from the myriad of flowers of this grand, dwarf-growing Magnolia.

The small, star-shaped flowers are a delicate pink in bud, unfolding to a pure white.

A young, vigorous plant will be covered with quantities of flowers, and, as you can see by the above illustration, a large specimen is completely covered with the flowers. Use this variety in the shrubbery border, or as a specimen on the lawn. It will, with considerable age, reach 8 to 10 feet in height.

18 to 24 inch, bushy, at \$1.50 each. 2 to 2½ feet, fine, \$2.50 each.

Big Shrub Offer

Some of our big specimen shrubs from 3 to 6 feet must go to make room for others,—that is what prompts this special offer.

They are beautiful plants, full of good roots and with bushy tops.

In this collection are one dozen, and sold individually they would cost from \$7.00 to \$8.00.

Just suited for screening or filling out shrub borders. They are so perfect that they may be used as single specimens.

The collection, while they last, for \$5.00

Meehans' Garden Bulletin



New, intensely practical garden paper for the interested owner of home grounds. Edited by the "House of Meehan"—56 years old.

Full of dependable articles by experienced horticulturists, experts—men who know of what they write.

Particularly dwells on landscape gardening, trees, shrubs, evergreens and

hardy plants. The hints and suggestions are invaluable—no theories.

SEND 10 CENTS

For three Spring numbers. One number is well worth the price. We will, on request, include with the Garden Bulletin, our new price list listing all our hardy plants.

Special. Anyone ordering plants from this ad. will receive "The Garden Bulletin" for three months and our new price list free of charge.

Thomas Meehan & Sons, Inc. Box 17 Germantown, Philadelphia, Pa.

How to Grow American Beauty and Other Good Roses

You can grow American Beauty and other good roses in your home garden if you start right. The first step is to plan your rose garden now, and plant only sturdy, own-root, home-grown roses.

As American Beauty specialists, our experience will prove of value to you. We are the leading growers of American Beauty Roses in the country. Heller Roses are known everywhere. We can show you how to have roses blooming all Summer, and a rose garden coveted by your neighbors. At your command is all the experience we have accumulated during the many years we have been growing roses. We have helped thousands to complete success in Rose culture. We have hundreds and hundreds of letters and pictures from our many pleased patrons, showing American Beauty and other good roses grown profusely from the thrifty and vigorous plants we supply.

In our new and beautiful book just published—

“Roses of the Garden”

we tell you of our successes, and give complete cultural directions, which, if followed, will start you right and help you to grow all kinds of roses. It illustrates and describes all the leading varieties of Roses. A special department is devoted to Carnations, Chrysanthemums, Clematis, etc. There will be a big demand for this valuable book, and it will be advisable to write for a copy to-day. It also contains a description of our wonderful new Rose

Jeanette Heller, the Finest Rose in the World

The ideal garden rose, strong, vigorous and healthy, free from disease and seldom attacked by insects. In color it is a light bluish-pink, beautifully shaded. It has proven to be a rose of unusual merit. Flowers may be cut from it early in May, and it continues blooming until late in the Fall. No rose garden will be complete without this rose. One year size, 25 cents; two years, 60 cents; three years, \$1.00. We pay expressage on all orders.

All our roses are sent to you on their own roots. Before shipping we dip the roots in heavy, wet clay, making them practically air-sealed. They are then wrapped in waxed paper. By this method the roots are kept from exposure. Write to-day for “Roses of the Garden.”

HELLER BROTHERS CO.,
American Beauty Specialists,
Box 21, New Castle, Indiana.

Jeanette Heller

After whom the finest rose in the world is named.



The Name “Dingee” Guarantees Quality in Roses

Rose growing is our specialty. For sixty years we have been in the business, and to-day the name “Dingee” is associated with America’s most famous roses. It’s the sterling mark for roses—your guarantee of quality. Dingee Roses are positively the healthiest, hardiest and best grown. They are “the aristocrats of the rose garden,” not only because they are found growing on most of the famous estates of the country, but because they are sturdy, hardy roses, of beautiful colors and tints, evidence of their high-bred quality that has made them famous. The

Government is a large purchaser of our roses for the decoration of public grounds.

With seventy greenhouses, a large acreage of the finest Rose land in the country, and over a million Rose plants in a thousand varieties to choose from, it is small wonder that lovers of roses invariably plant

DINGEE Roses

Such sturdy, hardy roses cannot be had elsewhere, because “Dingee” methods of cultivation are essential to their production. They are always sold on their own roots, and are guaranteed to grow and bloom. Just give them a place to bloom and they will furnish you with a profusion of roses, richly rewarding you for the little care required. We send plants to any point in the United States and Canada, and guarantee safe arrival.

In order to help you make your rose garden a success, to give you the knowledge of how to care for roses, and to make them grow and bloom **abundantly**, we will mail you upon request

The Greatest of Rose Books Free

“Dingee Guide
to
Rose Culture”
For 1910

This is the leading rose catalogue of America. It contains 120 pages, beautifully illustrated from photographs, including eight full page pictures in natural colors. These color pages are real, rich, charming photograph reproductions in all the soft and delicate tints of Nature. The cover contains an absolutely true picture of the marvelous new *Blue Rose*, the novelty of the Centuries in the Rose Kingdom. There is no other book of Roses that compares with it. If in the past you have failed in growing Roses, by all means secure this book—*You will succeed.* Send for a copy to-day.

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Established 1850

The Leading Rose Growers of America

70 Greenhouses





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"KING EDWARD" SPENCER.
Exactly Natural Size.

Burpee's Six New "Spencer" Sweet Peas

All for 25 Cents!

These six are of the Choicest Re-selected strains,—all true to type, and of such quality as has not been possible to obtain before at any price!

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Eight Grandiflora Sweet Peas for 25 Cts!

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25 Cts. buys either of the above collections, or **\$1.00 any five collections**, mailed to separate addresses, if so ordered.

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The Only Gold Medal of the National Sweet Pea Society ever won by any growers outside of Great Britain was awarded to the American Firm of Burpee, at the great exhibition in London, July 23, 1909

An immense amount of interest was taken in the very fine display made by Messrs. W. Atlee Burpee & Co., Philadelphia, America. The name suffices as a guarantee of excellence, and we can truly add that the excellence of the flowers staged was such as to uphold the fame of the American sweet pea specialists.—From THE GARDENERS' MAGAZINE, London, England, July 31, 1909.

Beautiful New Giant-Flowered Pansies— Burpee's Best-Blend

This is the finest complete Mixture of "Truly Giant" flowered Pansies yet produced. It includes all colors of Burpee's Defiance, illustrated here-with, and the new Burpee's Hercules Giant; also Prest. McKinley, Prest. Carnot, etc., with all colors of Blotched Bugnot and Giant-Ruffled Masterpiece. Per pkt. 15 cts.

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For 25 Cts. We will mail the above four and also one regular ten cent packet each of the grand Novelty RED GIANT MIGNONETTE, largest spiked of all, deliciously fragrant,—DIANTHUS FORDHOOK FAVORITES, single and double, in unequalled Mixture,—"FUCHSIA-FLOWERED" IPOMCEA, most attractive and unique new quick growing climber, and the lovely dwarf LITTLE GEM SWEET ALYSSUM. **25 Cts.** invested in no other way—unless in one of our Sweet Pea Collections—can be productive of so much pleasure. The seeds are all of THE BURPEE QUALITY and better strains cannot be had at any price!

☞ Whether ready now to order or not, yet if interested in having seeds that will produce the **Choicest Vegetables** and **Most Beautiful Flowers**, **Burpee's 1910 Annual** you should write To-day for

Buying seeds by mail made safe and easy. Kindly name THE GARDEN MAGAZINE. **W. ATLEE BURPEE & CO.** PHILADELPHIA



Send One Dollar and write simply "for All the Seeds advertised in the March Garden Magazine." You will then receive by return mail **All the 25 Packets** named in this advertisement (including the three 15 ct. packets of New Spencers named at bottom of first column), and also a liberal 15 ct. packet of BURPEE'S NEW ROYAL RACE OF VARIEGATED-LEAVED NASTURTIUMS, as improved for 1910, all neatly packed in a pasteboard box. ☞ This makes **26 separate packets for only One Dollar!**

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A Flower of
BURPEE'S NEW
QUEEN VICTORIA
SPENCER
Exactly natural
size, engraved from a
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One of these **Special Dollar Boxes** would make a most Acceptable Present to a distant friend or near neighbor. **Entire Satisfaction Guaranteed or money refunded.** If you do not consider that you have received **more than double value**, write us at any time this winter, spring or summer, and your dollar will come back to you immediately—without question! **Your word alone** is sufficient. We never knowingly have a single dissatisfied customer.

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Burpee's Annual for 1910, an elegant book of 178 pages and a trustworthy Guide, which has been long and favorably known as "The Leading American Seed Catalog."

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W. ATLEE BURPEE & CO. Burpee Building PHILADELPHIA

APRIL

1910

Vol. XI. No. 3

Spring Planting Number

Practical Color Schemes — Successful Vegetable Gardens
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THE GARDEN MAGAZINE



FARMING

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Climax Lawn Sand

Produces the most magnificent lawns imaginable. It kills all weeds, including dandelions, plantains, etc. It fertilizes the grass and restores burned and parched lawns to their natural beauty. Very quick and thorough in its action.

B. W. Burrell, Elkhart, Ind., writes:

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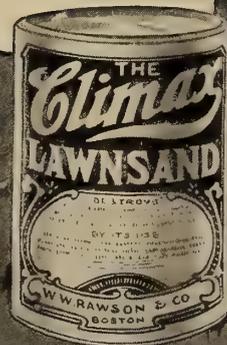
Climax Lawn Sand is put up as follows:

3½ lb. cans \$0.60	7 lb. cans \$1.00	14 lb. cans \$1.75
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Booklet sent free giving full particulars.

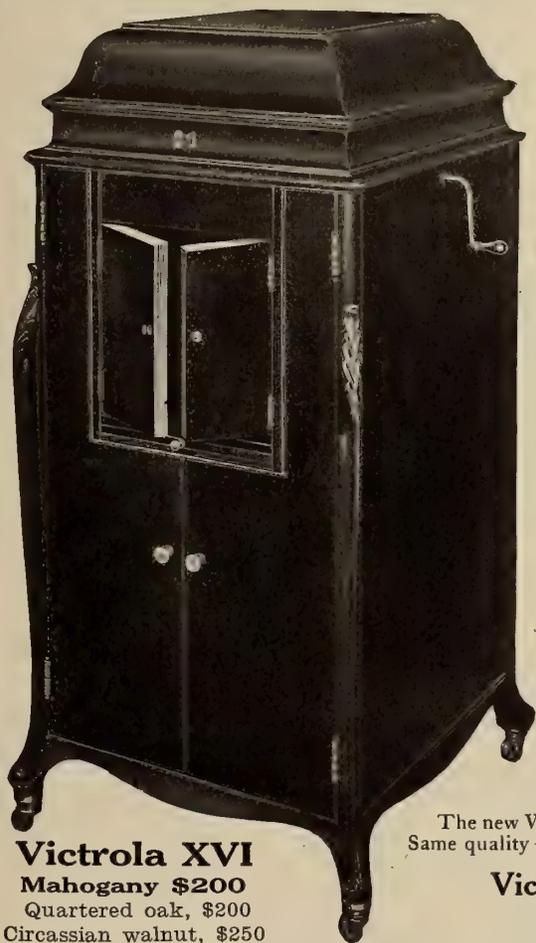
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Go to the nearest Victor dealer's, and he will gladly play on the Victrola any Victor music you want to hear.

If you are fond of grand opera, ask specially to hear Caruso's "Forza del Destino" solo (88207); if you prefer instrumental music, ask to hear one of Maud Powell's beautiful violin solos; or if you'd rather listen to some amusing songs, ask to hear the new records by that great Scotch comedian, Harry Lauder.

All these records are made by the new Victor process, and show the wonderful advances recently made in the art of Victor recording.

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New Victor Records are on sale at all dealers on the 28th of each month

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Special designs created for any purpose and to harmonize with any style of architecture desired. Sketches submitted.



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lend beauty and elegance to the landscape; they are the final and artistic touches of creation, and such specimens of the leading hardy varieties, with elegant root system and shapely tops, as I am offering, GROWN IN NEW JERSEY with its soil and climate advantages, are sure to give satisfactory results. I grow evergreens as they should be grown, and have them for all purposes. SHADE TREES AND HARDY FLOWERING SHRUBS in abundance. FRUIT TREES AND SMALL-FRUIT PLANTS all fully described in my beautifully illustrated catalogue. May I mail you a copy?

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ALL COLORS, 10 CENTS EACH
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10 CENTS

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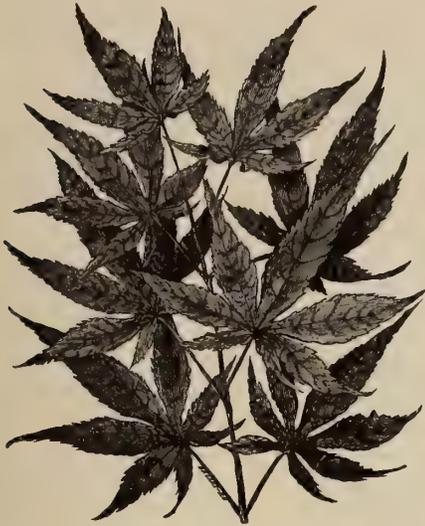


Are the standard of flower markets. If you have motored to Atlantic City, you have seen them growing and know their quality. "How to Grow Dahlias" (free with every order) tells how you can grow them as well as he.

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Always plant them in preference to the weak frail imported kinds that are so commonly sold.

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Send 10 cents for a copy of our 80-page tree and hardy plant book and a current copy of our Garden Bulletin

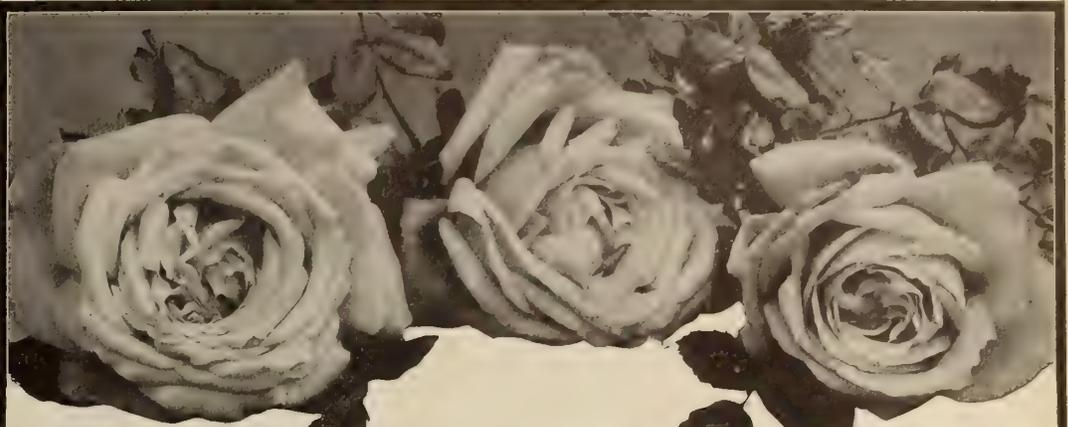
You need this handbook if you intend doing any planting this spring. The **Garden Bulletin** is a new distinct practical garden paper of more than ordinary value. It is the only real practical paper of its kind.

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Box 17, Germantown Philadelphia, Pa.



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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 sixteen years of earnest, untiring effort, until to-day “PETERSON ROSES” are spoken of as in a class by themselves?

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

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Rose and Peony Specialist

Box 50 FAIR LAWN, N. J.

144 Rutheven St., Roxbury, Mass.
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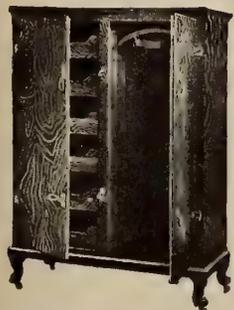
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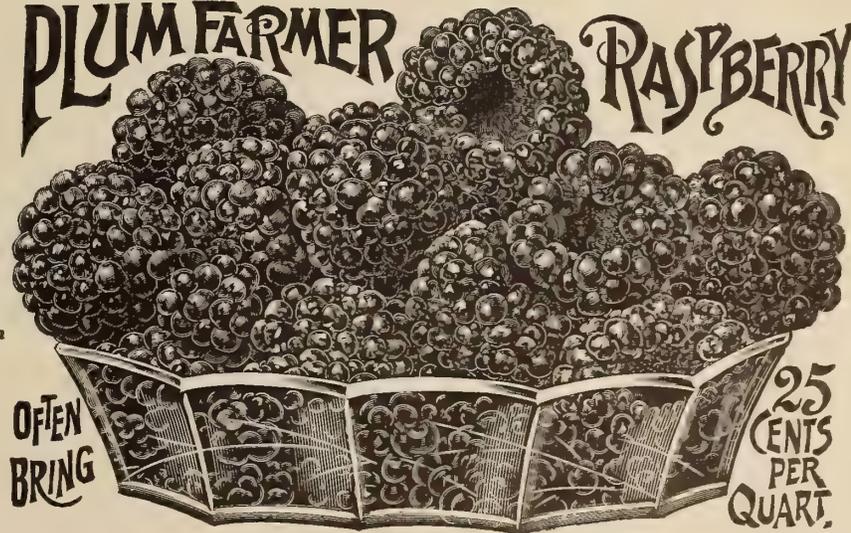


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This altogether beautiful and original work tells all that can be needed about the garden in America.

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NET PROFIT FROM 30 HENS IN ONE SEASON ON A LOT 24x40. IT IS NOT AN EXPERIMENT, IT HAS BEEN DONE ON THE Kellerstrass Farm

My New Poultry Book

Covers all branches necessary for Success with Poultry. It tells you what I have done. It was written from actual experience.

IT TELLS YOU HOW—

- HOW** I made \$3,600.00 in one season from thirty hens on a lot 24 x 40 by feeding them the scraps from my table three times a day. The test was made to show what can be done on a city lot as well as on a farm. I also furnish you the names of the parties who paid me over \$2,000.00 for the eggs alone from these thirty hens, for reference, which is evidence undisputable. Remember this book is written by a man who has had the actual experience.
- HOW** I make my chickens weigh two and one-half pounds when they are eight weeks old.
- HOW** I prepared my chickens for the show room so that I won over 90 per cent. of all the blue ribbons that were offered during 1907 and 1908, the last season that I showed. A "secret" that has never been published before.
- HOW** I built my indoor and outdoor brooders for 85 cents each, to be used either as fir-less or with heat in them and plans for the same.
- HOW** I raise ninety-eight chickens out of a hundred that I hatch.

- HOW** I took a flock of chickens and made them lay \$68 worth of eggs per hen in ten months!
- HOW** I keep my male birds from fighting without injuring them.
- HOW** I raised the five chickens I sold to Madame Paderewski for \$7,500.00.
- HOW** I feed my chickens for egg production.
- HOW** I keep my chickens healthy and free from sickness.
- HOW** I select a good laying hen from the poor layer.
- HOW** I break up my broody hens without injuring them.
- HOW** I pack my eggs so they will stay fresh.
- HOW** I mate up my chickens for breeding and fertility.
- HOW** I run my incubators and supply moisture.
- HOW** I raised my famous \$10,000.00 hen "Peggy."
- HOW** I build my hen houses and plans for the same.
- HOW** I bred my big egg-laying strain.

It also tells about broiler plants, egg plants, and remember, there is also an article in this book called "Two Years on the Kellerstrass Poultry Farm," which explains hundreds of things—just what we do in two years on the farm, or in other words, a two years' course on the "World's Greatest Poultry Plant." This is the greatest article ever written by a real practical poultryman.

Remember, this book was written by a man who has sold the highest priced chickens in the world, who also sold \$68.00 worth of eggs per hen from a flock of hens in one season, in fact, if you breed a chicken of any kind you know my reputation as a breeder. This is the first time I have ever offered to sell any of my "methods or secrets" to the breeder or to the public.

IF YOU RAISE CHICKENS OF ANY KIND YOU NEED THIS BOOK



Try My Way and You Can Raise Them by the Thousands

READ WHAT OTHERS SAY

- Kellerstrass Farm, Kansas City, Mo.** Burnett, Cal.
Dear Sir:—I received your book sent me Saturday A. M. I would have been worth to me \$500.00 if I had had it last spring. "Good Book" Common Sense, Brained by hard earned experience. Worth \$500.00 to me. Respt., (Signed) L. R. HAYWARD.
- The simplest sort of thing—common black dirt—has solved the problem of eradicating a chicken disease which cost thirty million chicks' lives annually, a disease which scientists of the National and State Experiment Stations have been stymied without success for ten years. Ernest Kellerstrass, the Kansas City poultry fancier, found the secret.—St. Louis Republic.
- 95 Orange Ave., Irvington, N. J., Nov 8th, 1909.
Ernest Kellerstrass, Dear Sir:—Received your poultry book, it's worth many times the price and should be in the hands of every one handling chickens as it contains information that would take many years to learn. I remain, yours very truly, (Signed) JOHN SENFELDER.
- Dear Sir:— Winchester, Kans.
Received your book all O. K. this A. M. and find same very interesting, and full of good sound logic. Yours truly, CHAS. FORSYTHE.
- Mr. E. Kellerstrass, Kansas City, Mo. Oct. 16th, 1909.
Dear Sir:—Received your book alright. Am well pleased with book; best dollar's worth I have ever received.
Yours truly, (Signed) CHAS. P. GOETZ, Buffalo, N. Y.

- Adah, Pa., Oct. 20th, 1909.
Mr. Ernest Kellerstrass, Kansas City, Mo.
Dear Friend:—The book at hand, it is the best book that I ever opened on poultry talk. I think every person that has a bird on his lot or farm should have one of these books. I was surprised when I read where you owned those chicks and found lath nails and ticks in their crabs. I never heard of such a thing; it stands to reason that would kill them.
Yours truly (Signed) H. M. GROVER.
- Cincinnati, Ohio, Dec. 31st, 1909.
Mr. Ernest Kellerstrass, Kansas City, Mo.
Dear Sir:—I consider your book chock full of valuable information for anyone, especially a beginner. I have already received more than my money's worth and have only read about one third of the book.
Yours respectfully (Signed) GEO. W. BENCKENSTEIN.
- Ernest Kellerstrass, Kansas City, Mo.
Dear Sir:—I herewith include you affidavit, also trap nest record of the Kellerstrass Strain Crystal White Orpington Hen register No. 503, that laid two hundred and sixty-three (263) eggs in 272 days.
(Signed) P. F. HARLLEE, Chattanooga, Ga.



My Dear Mr. Kellerstrass:—I have sixteen of your hens that average two hundred and thirty-one (231) eggs per bird in 12 months.

LAWRENCE JACKSON, Pittsburg, Pa.

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Dear Sir:—Congratulations on the splendid showing you have made by selling \$68.00 worth of eggs per hen from thirty hens in one season.
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The economy and efficiency of JEWEL FURNACES have been proven by thousands of users in every section of the country.

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Not only economical, efficient and quick heating, but the easiest to operate and care for. Ball-bearing Grates—easy, smooth, quiet. Sectional Fire-pot—correct in form, weight and thickness. We have convincing information to submit that will be sent to you on request. Ask for it. A postal will do.

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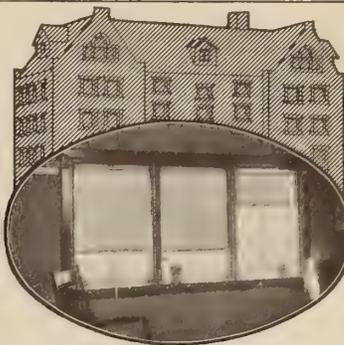
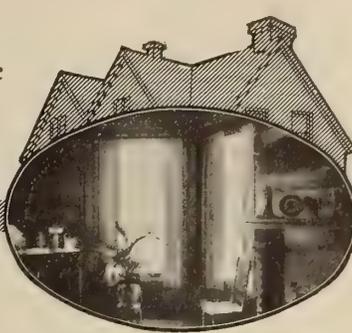
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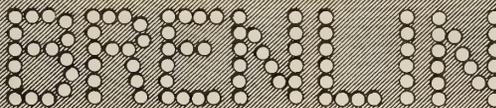
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For flats, stores and Rental property, Brenlin is by far the most economical shade that you can get—does away with the continual replacing of shades, thus eliminating a source of considerable maintenance expense. It sells for a little more than the ordinary shade but costs you much less because it lasts so much longer.

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Drop us a postal or mail us the attached coupon and we will send you this book by return mail together with name of Brenlin dealer nearest you. Look for name BRENLIN perforated in margin of every shade you buy.

A Brenlin shade 7 feet long, 38 inches wide, complete with best roller, costs \$1.00.



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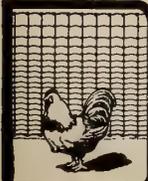
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STOCK STRONG - RUST PROOF

Bottom wires 1 inch apart. Will not sag or bag. Requires no boards—top or bottom—and fewer posts. Costs less than netting. We pay freight. Send for catalog.

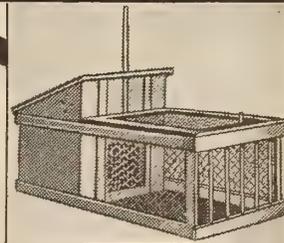
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BUILT LIKE A HOUSE

Here you have the perfect home for your poultry—a convenient, protected place for Biddy and her chicks, or a safe and sanitary Poultry Home for a flock of 10 or 12. Damp-proof and draught-tight—necessary conditions for handling poultry successfully are found in

Hodgson Poultry Houses and Brooders



All parts made in sections convenient to handle for putting up or taking down in a short time.

Note the lower illustration—15 in a row. These houses are so popular, poultrymen buy them by the dozen. Just the house for a dozen hens—an ornament to any gentleman's place. Complete with feed trough, cage fountain, roosts, nests. Easily cleaned, adjustable ventilator. Put in your hens and let them thrive.

Send for our catalogue of Poultry Houses, Brooder Houses—everything for the live hen.

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DOUBLEDAY, PAGE & COMPANY'S NEW BUILDING AT GARDEN CITY, LONG ISLAND

THE WORKING OUT OF AN AMBITION

Having just completed our first decade, we purpose to celebrate the event by moving our business into the country, following out a plan which has long been in our minds.

For eight out of the ten years of our existence, we have been advocating country life in season and out of season, and now we propose to accept our own advice. Some wise philosopher has said that when your inclination and your duty seem to run side by side, it is time to begin an investigation.

The study of conditions has convinced us that, for such a business as ours, New York is not the ideal place, though we feel the need of being in close touch with the commercial centre of the land. Each year, conditions in the great city become more and more difficult; land is so expensive that sunlight is available only at a tremendous cost; the population increases 100,000 annually; these people crowd into the flats and homes available, forcing up rents so that the average employee has to travel an hour or more to get to his work, or pay a very high rental, or live in dark, cramped and unattractive quarters.

These same circumstances apply to a business. The best conditions for manufacturing such products as Doubleday, Page & Company devote themselves to require large floor spaces, on one level, and plenty of good light. Five years ago, we built our present home on Sixteenth Street, New York: this building, which has many attractive features, provided seven times as much space as we occupied in our original quarters. For several years it has not been possible to make room for all our people under one roof, a stock room had to be rented outside, and much of our work distributed in a score of different places.

The necessity for putting up a building in which we could house all our various departments, developed the fact that a small space, say, 100 ft. x 100 ft., would be the minimum land that could be employed within the limits of economy in New York; for our needs this would call for a structure of twelve or more stories, and about half of the floors would even then be more or less dark. Also, this would leave us no space to grow, and we propose to grow as rapidly as our customers will approve of our enterprises.

After a good deal of investigation, covering all the pros and cons, we have decided that the tendency must be away from the crowded city for making those things which do not, for some good reason, have to be made in the city itself.

Looking far into the future, we have purchased forty acres in Garden City, Long Island. *The Country Life Press* will stand on a crescent-shaped piece of land about half a mile long, and five hundred feet deep in its widest part, backed by our own railroad spur, where the cars will be loaded with our books and magazines. This piece covers about eighteen acres, and will allow for all the expansion in this direction we can reasonably expect. The building will face Franklin Avenue, so named by that great merchant, Alexander T. Stewart, forty years ago, no doubt with our establishment in his prophetic mind.

At the back of this are seven or eight acres, and across Franklin Avenue is a full block of fourteen acres. We shall not attempt here to give particulars of what we hope to plant and grow in these spaces. It is perhaps sufficient to say that they will be devoted to those country things which we think will most interest our readers, and particulars will be forthcoming from time to time.

By August, 1910, we expect to have the building completed—the development of the grounds we hope to work on for many years.

The press will be reached from the new Pennsylvania Station, at Thirty-third Street, New York, by tunnel under the East River, thirty minutes by direct electric train, or, from downtown by the subway. The firm will have a New York Office in or near Thirty-fourth Street, close to the station, for some of its selling departments. Private telephone trunk line wires will connect the two exchanges, one in the New York office, and one at the press, so that customers and friends in New York will be within as quick and convenient reach of every department as though the whole establishment were in the city.

While the plans outlined seem in many respects to be novel and unusual, the whole idea of the change has been thoroughly considered, and founded upon what we consider to be conservative business practice, with the view of securing the greatest economy and efficiency, as well as attractive and healthful surroundings.

The architects of the building are Messrs. Kirby and Petit.

The materials used are brick, cement, steel, and glass. It will be a thoroughly fireproof structure, and abundantly lighted in every nook and corner. With the exception of two small sections, there is no place in the building more than twenty-five feet from outside light and air. The building will be about 400 feet long; it will be 225 feet deep, built around a hollow square. The entrance will be an arched opening of

generous size, looking into the court which will be planted as a large garden, with its fountain, gravelled paths, rhododendron, laurel, and evergreens, to keep it green and attractive in winter. English ivy and other vines will be planted everywhere on the building.

The extensive grounds, carefully landscaped and planted, will help to keep the general appearance as much as possible unlike a commercial building. The plan, as now laid out, will eventually exhibit to the visitor those things that the owner or builder of a country home desires to know about. In this the firm is expanding and carrying out its "Service Department," which each year answers thousands of questions from readers on all sorts of subjects, but chiefly connected with country life. So far as is known, there is at present no place where all that is necessary and desirable to make rural life agreeable is exemplified in one locality.

Our entire printing and binding plant, stock rooms, paper storage, packing, and plate rooms will be on one floor. The paper will be received directly from a railroad car in the paper stock room; it will go from there to the pressroom; then to the folding room, to bindery, and to stock room and packing room in uninterrupted progress. Thus it is hoped to secure a great saving in what, in manufacturing parlance, is called "unproductive labor."

On the second floor, immediately over the press room, will be the composing room, the photo-engraving department, and the electrotype foundry. The remainder of the second floor will be devoted to the offices of the firm, editorial rooms, cashier's and bookkeeping departments, subscription clerks, mail order departments, etc.

The new press is expected to be practically complete in every department and to do all the various parts of making a magazine or a book. A separate electric motor will be attached to every machine for its operation, no matter how small. A driven well will provide water, boilers will supply heat for the building and greenhouses, and everything will be done to make the press complete and up-to-date.

With the exception of some presses now used in New York, and the composing room material, new machinery will be installed throughout in every department. The machinery now ordered will manufacture our present output of nearly 15,000 magazines and 5,000 books a day, but the entire enterprise is planned for an expected and logical growth.



"HAMILTON-MADE" Garden Hose

What garden hose ought to be.

GARDEN HOSE ought to be *tight*, so as not to leak; it ought to be *strong*, so that it will stand pressure; it ought to be *stiff and springy*, so that it will not "kink"; it ought to be *tough*, so as to stand wear. And it ought to be *tested*, so that the maker may know before it leaves his factory that it is ALL it ought to be.

In garden hose, *quality* is the vital point. You can't tell the quality of rubber by sight or feeling. Your best security is the NAME OF THE MAKER.

Garden hose has been for many years a SPECIALTY of this company. Every method and process has been thoroughly tested, and every REAL improvement adopted. HAMILTON-MADE HOSE is made by our OLD, SLOW PROCESS, which produces such *tough*, springy, lasting hose. An inner tube of pure "live" rubber is wrapped with layer after layer of close-woven duck, all vulcanized tight together. Over this is put a strong, tough outer cover, like the sole of a shoe, to take the wear.

And then, after being well seasoned, every foot of it is TESTED under tremendous hydraulic pressure—500, 600, even 700 pounds to the square inch. (Even in steam boilers the pressure is rarely as much as 200 pounds.) If any defect shows, that length is rejected.

This old-fashioned, slow method makes hose that no quick, made-by-the-mile process can equal for strength, toughness, and durability. It has given HAMILTON-MADE HOSE the highest reputation for quality and real economy.

Which is cheaper—to buy low-priced hose and pay for a new lot every year, or to pay a little more at first and get HAMILTON-MADE HOSE?

Sold by Dealers Everywhere

If your dealer has not HAMILTON-MADE HOSE on hand, we will deliver to you anywhere in the United States, FREIGHT PREPAID, 50-foot lengths of our highest-grade hose, complete with standard brass couplings, for the regular price, \$12.50 EACH LENGTH.

This splendid hose stands a pressure of 750 POUNDS TO THE SQUARE INCH, and while it is our highest-priced garden hose, it lasts so long that it is in reality probably the CHEAPEST hose made.

If you want a hose of a different grade, write us for samples, and the names of dealers near you.

Hamilton Rubber Manufacturing Co., Trenton, New Jersey

ALWAYS ASK FOR "Hamilton Made" Garden Hose

And Look for that Mark
on the Hose



THERE'S a Hamilton-Made Hose FOR EVERY USE and every pressure, at 10 to 25 cents a foot, each kind made BETTER THAN IS NECESSARY to meet the requirements for that use. Whatever kind or grade of hose you need, ask the dealer for Hamilton-Made, and you will be sure of getting the BEST HOSE OF THAT GRADE that can be bought.

Below are shown the marks on some of the leading grades of Hamilton-Made Hose. The names "Kenmore," "Progress," etc., designate the different *grades*, but you will note that EVERY grade bears the mark

"HAMILTON-MADE"



Trinidad Lake Asphalt
has no equal as a waterproofer. After we have used it for thirty years, everybody is learning its value for every waterproofing purpose.

Genasco Ready Roofing

is made of genuine Trinidad Lake Asphalt.

There is no roofing substitute for Genasco—none will last so long.

Ask your dealer for Genasco. Mineral or smooth surface. Look for the hemisphere trademark. That's a surer guide than the looks of the roofing. It is your real guarantee, but we'll write you a guarantee, if you think you need it. Write for the Good Roof Guide Book and samples.

THE BARBER ASPHALT PAVING COMPANY

Largest producers of asphalt, and largest manufacturers of ready-roofing in the world.

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Cross-section, Genasco Stone-surface Ready Roofing



Gravel
Trinidad Lake Asphalt
Asphalt-saturated Wool Felt
Trinidad Lake Asphalt
Asphalt-saturated Wool Felt

What Are Your Trees Worth?

What is that big one worth to you in dollars and cents? In pleasure? In comfort? Or those trees along the street or drive-way?

You cannot replace them in your life-time, so can you afford to neglect them?

Have you an Orchard that does not bear as it should? This can be remedied.

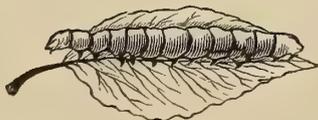
We can give you honest, intelligent and scientific work without over-charging you. Write for particulars and references.

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ORCHARD EXPERTS**

HAMMOND'S LIME, SULPHUR AND SALT

Concentrated
"HORICUM"
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**The San Jose
Scale Killer**

which destroys the pest. Use it now. This article does not readily wash off.

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**"Kills Bugs."
Sold by Seedsmen**

For pamphlets worth having on "Bugs and Blights" write to
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Groff's and Childs Hybrid Gladioli. Grandest large-flowering types, the very best kinds for Garden Decoration and for Cut-flowers; first sized bulbs 5 cts. each; 25 cts. per doz.; \$1.00 per 100; \$5.00 per 1000.

100 Varieties of Asters, the finest the world produces, 15 cts. per doz.; \$1.00 per 100; \$6.50 per 1000.

Get our surplus list before ordering.

If you would like to be a Florist, yet lack the capital with which to start, we have a proposition that will help you.

This proposition is for only one lady or gentleman in each community. When sending your order ask about this proposition.

WE MUST HAVE GOOD REFERENCES.

NATIONAL CO-OPERATIVE SHOW GARDENS
Spencer, Indiana, U. S. A.

JOHNSTON'S BEST WATER SYSTEM
affords you every convenience of City water. Fire protection, adds value to property, cuts out water tax and labor. Freight prepaid. Write for complete literature.



JOHNSTON MFG. CO.
J-1 Sharp, Kansas City, Mo.

Cheap as Wood.



We manufacture Lawn and Farm Fence. Sell direct shipping to users only, at manufacturers' prices. No agents. Our catalog is Free. Write for it today. **UP-TO-DATE MFG. CO., 914 10th St., Terre Haute, Ind.**

75c CACTUS for 28c

Grow Cacti Easiest of all flowers to grow, indoors or out you can't kill them. Immense variety of forms and species. Exquisite flowers, 1 to 5 inches wide, in scarlet, yellow, purple, etc. We are in the heart of the cactus country, and ship the strongest plants only. Note these **Special Introductory Offers**—This rare Cactus (Ec. dasyacanthus), beautifully colored spines, bears exquisite 2 to 3 inch golden flowers, price 75c. with directions for 28c growing, mailed for only

Eight small Cacti, assorted, all bloomers, prepaid for **\$1.00** Send with order names of two flower-growing friends and we will add free sample of our delicious Mexican Cactus Candy. **Free Catalogue, "Cacti and How to Grow Them." Get it today.**

THE FRANCIS E. LESTER CO., Dept. J 4, Mesilla Park, New Mexico



WIZARD BRAND
4 BARREL EQUALS
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STABLE
MANURE

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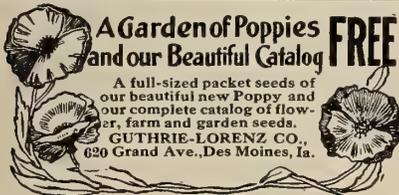
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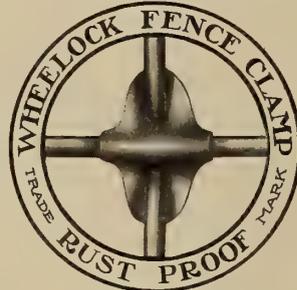


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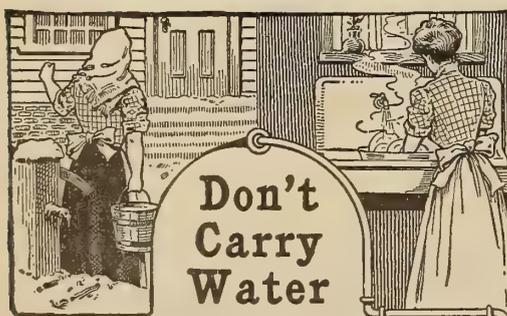
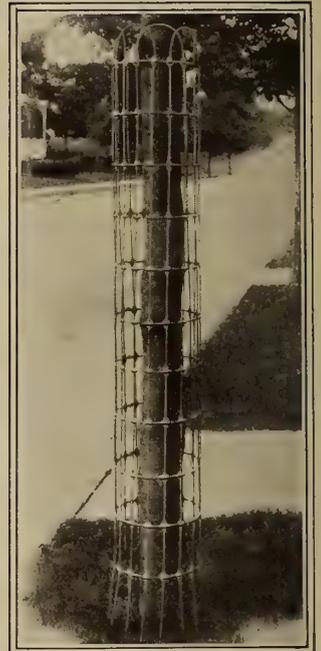
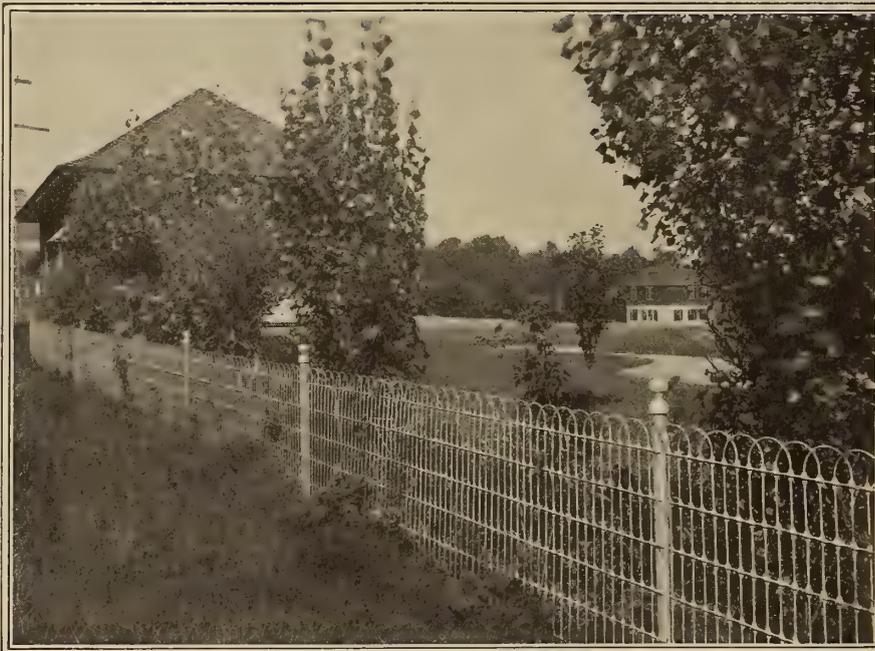
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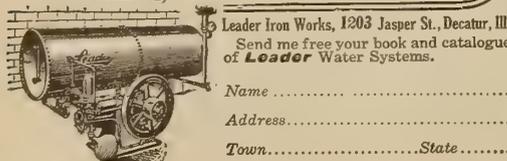
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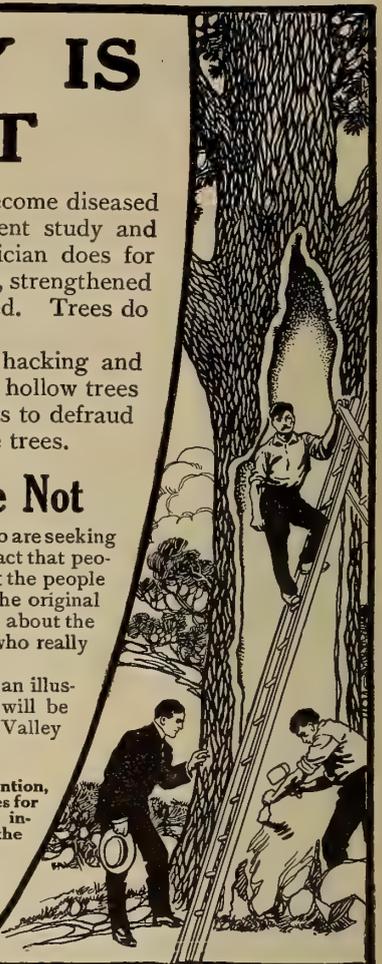
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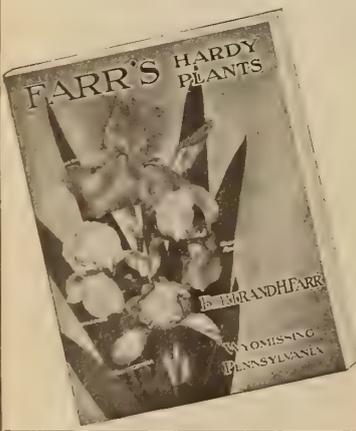
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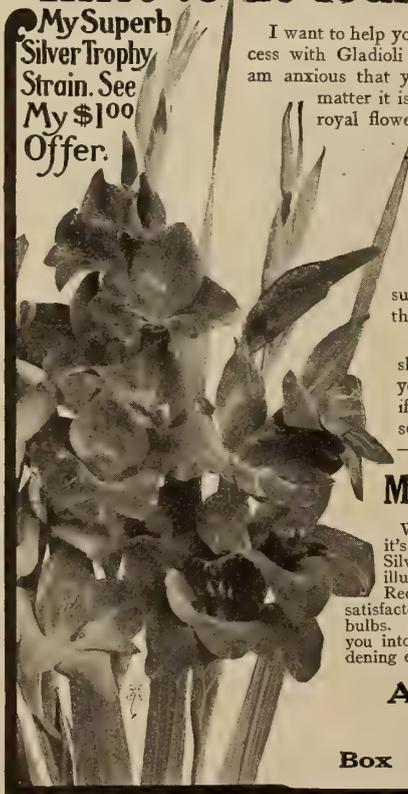
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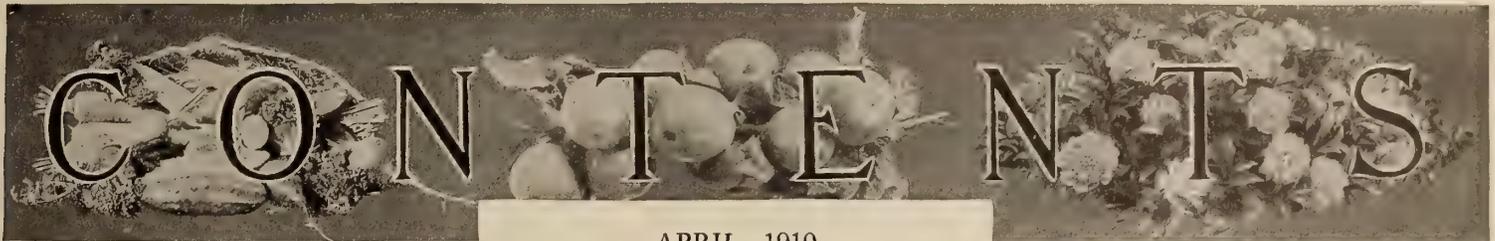
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APRIL, 1910

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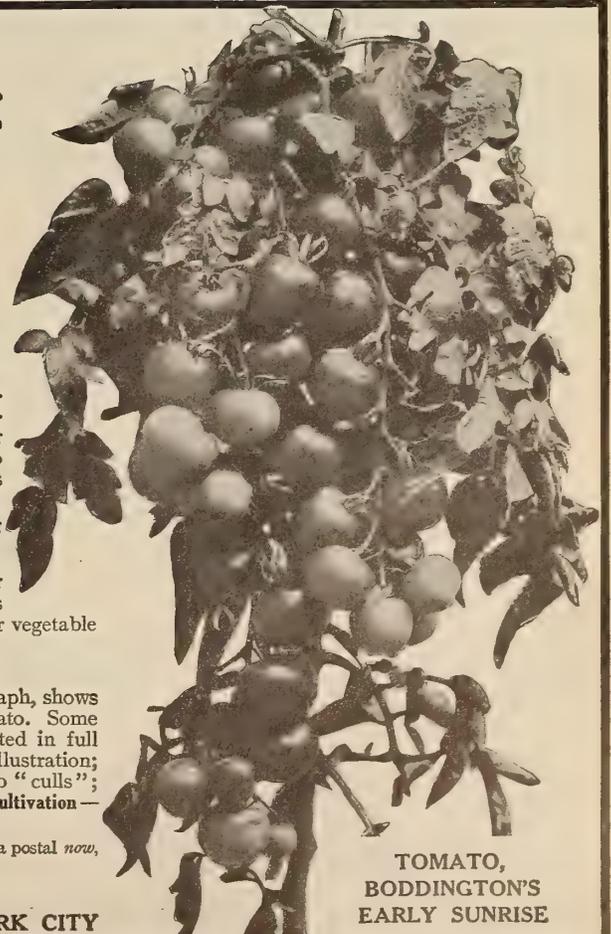
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The accompanying illustration, made from a photograph, shows the wonderful productiveness of this remarkable Tomato. Some of its good qualities are **Earliness**—has been exhibited in full fruit on July 4th; **Wonderful Cropping Properties**—see illustration;



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Tabloid Hints

EVERY gardener looks back over his season's work, and sees where he could have saved a good deal of effort and have got better results by more careful planning. If you have made a garden last year think over all its details before beginning this spring. Bear in mind the great importance of planting for succession—that is more important to most of us than planting for great quantity. Everything seems to demand attention all at once in the early spring, but the rush can be relieved and the problems all smoothed out by deliberate forethought. Therefore:

Indoors before April 1st.

1. Make a plan.
2. Prepare a seed list.
3. Order seeds, roots and tools.

Then you will have time to consider the matter of fertilizers. Make out an order for whatever materials you decide on. Also buy a spraying outfit.

Make a hotbed. Look over the tools in order to see that twine, labels, paint, stakes and all the sundries are on hand.

But remember: Get the seed order made out first of all.

Outdoors before April 1st.

1. Clean up and remove all rubbish that has accumulated during the winter.
2. Prepare any broken fences, trellises, supports.
3. Attend to grading and draining.
4. Fertilize, roll and repair the lawn.
5. Prune and train fruit trees and berry bushes.
6. Fertilize asparagus and rhubarb beds.
7. Mulch the strawberries.

All these things done you will be ready to attend to planting deciduous trees and shrubs, roses, fruit trees, also shifting and rearranging the shrubbery border.

Get pea brush ready for immediate use. *Outdoors by the middle of the month.* (As soon as the ground can be worked and before all danger of frost is past.)

1. Plow, dig and trench the whole vegetable garden.
2. Sow seeds of hardy vegetables.
3. Sow seeds of hardy flowers.
4. Lift up and divide and replant perennials.
5. Prune established roses.
6. Do not forget to spray (where necessary) with miscible oils or whale oil soap, especially shrubbery and fruits.
7. Hardy vegetables started in frames may be transplanted.

In heat, April 1st or before:

1. Sow tender annuals in the hotbeds.
2. Start canna roots.
3. Gradually harden off plants that have been wintered or started in the hotbeds.

Effective Planning

IF YOU would have the greatest results from your garden, carefully plan how you are going to use the ground for its greatest efficiency. The easiest way will be to make a plan on quadrille paper.

The planting schedule described by Mr. Baldwin will tell you how to keep your ground busy without spending much forethought—he has done all that for you. Mr. Baldwin has based his schedule on several years' experience in the Middle West. Eastern readers will be perfectly safe, however, in following the dates just as though the table had been written in the East. There is no radical difference between the conditions of the East and the West in such things. Springtime is springtime all over the Northern Hemisphere.

These hints in designing will help:

Make the rows the long way of the garden—you do not have to turn around so often.

Provide a windbreak if the place is exposed. An effective windbreak means earlier vegetables in spring and later crops in the fall.

Run the rows north and south if possible and get even illumination. Never run rows at right angles.

Place the permanent crops—raspberries, asparagus, rhubarb—in one group.

Put the tall crops at the north end of the garden—they will not shade the dwarf ones.

Allot space, first of all, for the vegetables you most need, then fill in with the extras.

Plant beets, carrots, parsnip, turnips, and all the root crops in one plot, which can be alternated with other crops next year.

Remember tomatoes do not thrive con-

tinuously on the same ground. Plant in fresh soil if possible.

Put the vines in one patch, so that disease and the squash bug can be fought more effectively.

Put all the tropical plants—tomatoes, egg plant, peppers—in the full sunshine.

Put the cabbage family in one group, so that if club root appears the lime treatment can be given in one spot.

Plant onions in the richest and most finely pulverized soil.

On newly turned sod put a hoed crop—potatoes or corn. Never plant strawberries on turned sod because of the white grub. If it appears, poison with carbon bisulphide.

Radishes and lettuces can be planted anywhere as fillers, or even as markers among the long-germinating seeds.

If you use a wheel-hoe, adopt a unit width and make everything multiples of that to save readjustment of the tools. This will also allow you to put fillers between the wider spaced rows and still maintain the unit system. For example:

One foot: Radish, lettuce, onions, root crops.

One and a half feet: Kohlrabi, spinach.

Three feet: Celery, peppers, tomatoes.

Four feet: Potatoes.

Six feet: Vines.

A few timely suggestions for the fruit garden will be found on page 172.

Planting for Color

IN SEVERAL articles of this month's number of THE GARDEN MAGAZINE, you will find some real facts about planting for color—combinations that have been perfectly successful. We shall have more to say about this in succeeding numbers, giving the experiences of amateurs in various parts of the country, and written in response to the invitation made in this column in the February GARDEN MAGAZINE.

The planting table for shrubs will help you to find the shrub that will give certain colors at certain seasons, and has been compiled by selecting the best available material from all the shrubs offered in the nursery trade.

Readers of THE GARDEN MAGAZINE will, of course, refrain from pruning flowering shrubs until after they have flowered, with the one exception of *Hydrangea paniculata*. Remember that the spring-flowering shrubs flower on the wood made last year. To prune back now is to remove all the flower buds.

The same thing is true of the fruit trees. Cut out superfluous branches and thin out to let in light, if for nothing else.

Planting for Color Harmony in the Flower Garden

SOME ACTUAL SUCCESSES THAT HAVE BEEN TRIED OUT UNDER FAIRLY TYPICAL AMERICAN CONDITIONS, AND WHICH WILL HELP YOU TO GET REAL HARMONIES THIS YEAR

[After the garden is made, complete according to the design, comes the supreme test of planting, and the hardest to solve, the most elusive problem in the making of gardens lies in the perfection of color effects. It would seem, indeed, that a majority of people are practically insensitive to color, or that a few are abnormally sensitive. Yet amateurs everywhere grow plants for the colors of the flowers, rather than for any other one attribute. Should they not, therefore, exercise skill in producing perfect harmony, rather than merely trusting to the power of the all-unifying greens and whites which in the worst cases avoid offense by toning down, by diluting, and not by any positive relation. The final art of flower gardening in any country must be peculiar to that country, an evolution in fact. The American amateur has hardly yet had time to evolve a number of best "combinations," because he has so rich a mass of materials to use. We feel glad, therefore, in presenting to the readers of THE GARDEN MAGAZINE some positive facts in the case, from the pens and gardens of those who have achieved success. In succeeding numbers we shall publish several communications from readers. — THE EDITORS.]

Some Well-Tried Effects from March to August

By MRS. FRANCIS KING, Michigan

THE past-mistress of the charming art of color combination in gardening is, without doubt, Miss Jekyll, the well-known English writer; and to the practised amateur, I commend her "Colour in the Flower Garden" as the last word in truly artistic planting, and full of valuable suggestion for one who has worked with flowers long enough to have mastered the complications of his soil and climate.

Miss Jekyll's remarks on the varying conceptions of color I must here repeat, in order to make the descriptions below as well understood as possible. "I notice," she writes, on page 227 of "Wood and Garden," "in plant lists, the most reckless and indiscriminate use of the words purple, violet, mauve, lilac and lavender; and, as they are all related, I think they should be used with greater caution. I should say that mauve and lilac cover the same ground. The word mauve came into use within my recollection. It is French for mallow, and the flower of the wild plant may stand as the type of what the word means. Lavender stands for a colder or bluer range of pale purples, with an inclination to gray; it is a useful word, because the whole color of the flower spike varies so little. Violet stands for the dark garden violet, and I always think of the grand color of *Iris reticulata* as an example of a rich violet-

purple. But purple equally stands for this, and for many shades redder."

In an earlier paragraph the same writer refers to the common color nomenclature of the average seed or bulb list as "slip-slop," and indeed the name is none too hard for the descriptive mistakes in most of our own catalogues. Mrs. Sedgwick in "The Garden Month by Month," provides a valuable color chart; so far as I know she is the pioneer in this direction in this country. Why should not books for beginners in gardening afford suggestions for color-harmony in planting, a juxtaposition of plants slightly out of the ordinary routine, orange near blue, sulphur yellow near blue, and so on. A well-known book for beginners in gardening, is Miss Shelton's "The Seasons in a Flower Garden." This little volume shows charming taste in advice concerning flower groupings for color. I look forward to the day when a serious color-standard for flowers shall be established by the appearance in America of such a publication as the "Répertoire De Couleurs" sent out by the Société Française Des Chrysanthémistes. To this the makers of catalogues might turn as infallible; and on this those who plant for artistic combination of color might rely.

In the groupings for color effect given below there has been no absolute copying of any one's suggestions. To work out these plantings my plan has always been first, to make notes on the same day of each week

of flowers in full bloom. Then, by cutting certain blooms and holding them against others, a happy contrast or harmony of color is readily seen and noted for trial in the following year.

BLUE AND CREAM-WHITE — MARCH

The earliest blooming color combination of which I can speak from experience is that illustrated in Fig. 1. Here, backed by Mahonia, and blooming in one season as early as late March, thrives a most lovely group of blue and cream-white spring flowers. *Tulipa Kaufmanniana* opening full always in the sun, spreads its deep creamy petals, while below these tulips a few hundred *Scilla Sibirica* show brilliantly blue. To the right blood-root is white with blossoms at the same moment, while behind this the creamy pointed buds of Narcissus Orange Phoenix carry along the tone of the cream-white tulip. Narcissus Orange Phoenix is a great favorite of mine; leader of all the double daffodils, I think it, with the exception of *Narcissus poeticus*, var. *plenus*, the gardenia narcissus, with its true gardenia scent and full ivory-white blooms; with me, however, this narcissus so seldom produces a flower that I have given up growing it. Where this does well the most delicious color combinations should be possible.

As for *Tulipa Kaufmanniana*, earliest of all tulips to bloom, it is such a treasure to the lover of spring flowers that the sharp advance in its price made within the last



Fig. 1. A spring effect in blue and cream-white from scillas and tulips



Fig. 2. Pink, lavender and white from tulips, lilacs and bleeding heart

two or three years by the Dutch growers, is bad news indeed for the gardener. A tulip of surprising beauty, this, with distinction of form, creamy petals, with a soft daffodil-yellow tone toward the centre, the outside of the petals nearly covered with a very nice tone of rich reddish pink. Its appearance when closed is unusually good, and its color really excellent with the blue of the scillas.

BLUE AND PURPLE — APRIL

A very daring experiment this was, but one which proved so interesting in rich color that it will be always repeated. It consisted of sheets of *Scilla Sibirica* planted near and really running into thick colonies of *Crocus purpureus*, var. *grandiflorus*. The two strong tones of color are almost those of certain modern stained glass. The brilliancy of April grass provides a fine setting for this bold planting in a shrubbery border. The little bulbs should be set very close, and the patches of color, in the main, should be well defined. In fact, I prefer a large sheet of each color, to several smaller groups with a resultant spotty effect. To my thinking, it is impossible to imagine a finer early spring effect in either a small or a large place than these two bulbs in these two varieties to the exclusion of all else.

The dwarf *Iris reticulata* — which should be better known as no early bulb is hardier, richer in color and in scent — with its deep violet purple flowers, planted closely in large masses, with spreading groups of scilla near by, would produce an effect of blue and purple nearly like that above described.

PINK, LAVENDER, AND CREAM-WHITE — MAY

A fine effect for late May, that has been rejoicing my eye for some years, is shown in Fig. 2. The flowers form the front of a shrubbery border composed entirely of Lemoine's lilacs in such varieties as Marie Le Graye (white), Charles X (deep, purplish-red), Mme. Abel Chatenay (double white), President Grevy (double blue), Emile Le Moine (double, pinkish), and Azurea (light blue). While these are at their best drooping sprays of bleeding heart (*Dicentra*) show their rather bluish pink in groups below, with irregular clumps of a pearly lavender — a very light-grayish lavender — lent by *Iris Germanica*. A little back of the irises, their tall stems being considered, stand groups now of the fine Darwin tulip Clara Butt, now of Reverend H. Ewbank, contralto and clergyman, who,



Fig. 3. Rose pink phlox against the blue of the sea holly

though they may or may not be friends in England, are not only friends here but peace-makers for the entire border. The slightly bluish cast of Clara Butt's pink, binds the dicentra and the lavender lilac and iris to each other, and the whole effect is deepened and almost focussed by the strong lavender of Reverend H. Ewbank tulip, in whose petals it is quite easy to see a pinkish tone. The contrast in form and habit of growth in such a border is worth noticing. The lilacs topping every thing with their candle-like trusses of flowers; the dicentra, the next tallest, horizontal lines against the lilacs' perpendicular, as well as a foliage of extreme delicacy, contrasting with the bold dark green of the lilac leaf; the tulips again, their conventional cups of rich color clear cut against the taller growth, and grayish clouds of iris bloom, with their spears of leaves below, these last broken here and there by touches of a loose-flung rather tall forget-me-not (*Myosotis dissitiflora*) — all this creates an ensemble truly satisfying from many points of view.

Speaking of tulips, why is not the May-flowering tulip Brimstone, more grown? And what is there more lovely to behold than masses of this pale lemon colored double tulip, slightly tinged with pink, with soft mounds and sprays of the earliest forget-me-not, gently lifting its sprays of turquoise blue against the delicately tinted but vigorous heads of this wonderful tulip?

CARMINE, LAVENDER, CREAM-WHITE, AND ORANGE — LATE MAY

On a slope toward the north a few open spaces of poor soil between small white pines are covered by the trailing stems of *Rosa Wichuraiana*. Up through these thorny stems, along which tiny points of green only are showing, rise in mid-May

glowing blooms of the May-flowering tulip Couleur Cardinal, with its deep carmine petals on the outside of which is the most glorious plum-like bloom that can exist in a flower. The exquisite true lavender of the single hyacinth Holbein, a "drift" of which starts in the midst of the carmine-purple tulip, and broadens as it seems to move down the slope, becomes itself merged in a large planting of *Narcissus Orange Phoenix*. This narcissus with its soft, creamy petals (both perianth and trumpet, interspersed with a soft orange) does not, as the heading of this paragraph might suggest, fight with the

color of the tulip which is far above it on the slope and whose purple exterior is beautifully echoed in softer tones of lavender by the hyacinth.

CREAM-WHITE AND REDDISH-ORANGE — JULY

In early July a wealth of bloom is in every garden, and the decision in favor of any special combination of color is a matter of some difficulty. A very good planting in a border, however, is so readily obtained, and proves so effective that it shall be noticed here. Some dozen or fifteen large bushes of the common elder stand in an irregular rather oblong group; below the cream white cluster of its charming bloom are seventy-five to a hundred glowing cups of *Lilium elegans*, one of the most common flowers of our gardens, and one of those rare lilies which renders its grower absolutely care-free! Eighteen varieties of this fine lily appear in one English bulb list — many of these are rather lower in height than the one I grow, which is *L. elegans*, var. *fulgens*.

Below these lilies again, that the stems may be well hid, clear tones of orange and yellow blanket flower (*Gaillardia*) appear later in the month carrying on the duration of color and in no way interfering with the truly glorious effect produced by the elder and lilies. While the lilies are tall, the elder rises so well above them, that a beautiful proportion of height is obtained.

An improvement on this grouping would be the planting of masses of *L. elegans*, var. *Wallacei*, among the *gaillardia* below the taller lilies. The nearer view of the great mass of July would then be perfect.

BRIGHT ROSE, GREY-BLUE, PALE LAVENDER AND WHITE — AUGUST

In figures 3 and 4 an arrangement of color for August bloom is set forth. The first

photograph can give no adequate idea of the charming combination of phlox Pantheon, with its large trusses of tall rose-pink flowers against the cloudy masses of sea-holly (*Eryngium amethystinum*). While Miss Jekyll generally makes use of sea-holly in a broader way, that is as a partial means of transition between different colors in a large border, I think it beautiful enough in itself to use at nearer range (and always with pink near by), in a small formal garden. Pantheon is a good phlox against it, but Fernando Cortez, that glowing brilliant pink, is better; it is the color of Coquelicot, but lacking the extra touch of yellow which makes the latter too scarlet a phlox for my garden. To the left of the sea-holly is *Achillea Ptarmica*, and far beyond the tall pink phlox *Aurore Boreale*. In figure 4 phlox Eug. Danzanvilliers raises its lovely lavender heads above another mass of sea-holly, a few spikes of the white phlox *Fräulein G. Von Lassberg* appear to the left, and *Chrysanthemum maximum* provides a brilliant contrast in form and tone to its background of the beautiful eryngium.

A use of verbena which does not appear in these illustrations, but which is frequently made with these groupings, is as follows: Below phlox Pantheon, or the Shasta daisy (or *Chrysanthemum maximum*), whichever chances to be toward the front of the planting, clumps of that clear warm pink verbena *Beauty of Oxford*, complete a color scheme in perfect fashion. The pink of the verbena is precisely that of the Pantheon phlox, and the plants are allowed to grow free of pins.

How I Learned Some Lessons from Nature

By S. R. DUFFY, Illinois

COLOR schemes in print are altogether orderly, logical, and appear perfectly feasible, but when it comes to transferring them from book and paper to the soil, and reproducing these ideas in leaf and blossom—it's different. Perhaps people who know nothing about color schemes are to be envied. I was happier with my garden when I could unblushingly grow orange marigolds, purple petunias and glaring blue annual larkspurs all in a bunch and admire them.

Analyzed down to first principles, there really is nothing new in the ideas of a color scheme. The general thought is the same as the principle found in the chapter on light in elementary text books on physics—that the colors of the spectrum are arranged in perfect harmony and appear in the order—violet, indigo, blue, green, yellow, orange, red; or, more simply, blue, yellow, red.

The mistake I made was in trying to follow illustrative plans too closely without considering the fact that the writers' climates, seasons and summer sunlight were not the same as mine. The glaring summer sun softens colors and makes permissible and admirable combinations which are not even hinted by writers in more gentle climes.

I endeavored to imitate these color arrange-

ments as closely as I could, with unfortunate results. The flowering seasons did not correspond, and that broke up the combinations of color in short order. The plans omitted plants which I had, and wanted in my border, and they didn't match up with the ones suggested; so finally I gave up trying to imitate and set about devising plans of my own.

But with all my endeavors I had some fierce-looking messes owing to my own misunderstandings of color terms and to misunderstandings of catalogue writers. The very worst was in planting *Spirea Anthony Waterer* next to oriental poppies in the belief that the spirea was crimson and would associate with the scarlet poppies!

I understood crimson to be red, good and red, like a college color ribbon, something to arouse Taurus. *Anthony Waterer spirea* was described as bright crimson. That description was surely written by a color-blind man, or one deserving of that shorter but uglier word. Those spireas didn't even make a good bonfire. *Asclepias tuberosa* blooming close to a wire fence covered with perennial peas also proved most unhappy.

The trouble in endeavoring to attain a good color scheme is that new colors are discovered every few minutes. There are more kinds of reds and blues and yellows that don't mate up than we have imagined in our philosophy, when you get to looking them squarely in the face.

The idea of bringing a rainbow to earth and reproducing it in its changing colors in a flower border is undoubtedly an admirable one, but I can't do it. There is too much latitude in the blues and yellows and reds. Blues will combine better than anything else for me. They will make a happy family with pale yellows and then the yellows can deepen and hook up nicely with orange and scarlet; but there is a vast tribe of magentas, lilacs, lavenders, heliotropes, and that color called mauve which I haven't been able to identify twice alike in plants offered as mauve. They seem to vary from deep purple, as I understand it, to dirty whites.

The only way I can get along with these subjects is to let them flock by themselves and connect by easy stages through patches of white with something else.

Working with subjects that bloom at the same time simplifies somewhat the difficulties of securing a good color scheme, for it is a simple matter to cut the blooms and spread them out and rearrange them until the colors seem well disposed and plant the border accordingly. But right there occurs another kink. The season of flower for most hardy perennials is comparatively short. With a good color scheme arranged for one month, what is to be done for the next and the next and so on until frost? Some plan had to be discovered that I could work out with some degree of success. It is simply impossible for me to handle more than two or three colors at a time with any degree of success and produce anything like a pleasing effect, so I have adopted the suggestion of a very plebeian model and the farther I go with it the better I like it.

A section of the railroad over which I pass every week has escaped the devastating scythe of the section hands for several seasons, and was worth looking at every day during the summer. It was some six or seven miles long and every week it presented a complete flower garden with one distinct prevailing color with just enough variation to break up the monotony. It seemed to be a whole garden and everything seemed to belong. Every month presented some special scheme, and the entire space was covered. It needed no attention and received none. What better model could be taken?

During May the prevailing effect was shooting stars (*Dodecatheon Meadia*), in pinks, deep rose and white, with variations of *Anemone Pennsylvanica* and quantities of blue-eyed grass, yellow star grass, *Viola pedata*, and other low-tufted plants around and among the larger. In June the deep rose prairie phlox and the wild hyacinth or quamash prevailed. July brought the gay asclepias and *Rudbeckia hirta* in spots and patches with plenty of green. In early August came myriads of spires of liatris, purple rudbeckia, the taller, long-coned rudbeckias, and golden rod, with occasional clumps of physostegia. September brought banks and drifts and clouds of asters—dark blue, light blue and white, asters everywhere, with the later wild sunflowers.

If that wild strip along the railroad track without the care of a gardener could unfold one complete garden after another through the entire season, from early spring until October, and with harmonious coloring all the time, it was succeeding with a gardening principle that had eluded me. I studied that wild garden pretty thoroughly, and while the colonies of plants were fairly well defined, there being thickly settled families of them, they were scattered so well all over the space under observation as to give the effect of an entire garden. Measuring off a square foot of one of the most densely populated colonies, I took a census of its denizens and found in this small space five shooting stars, one purple rudbeckia, six spikes of phlox, three quasmash or wild hyacinth, one aster, five clumps of blue-eyed grass, two clumps of yellow star grass, and one clump of bird's-foot viola, besides some little weeds that I didn't recognize. That seemed a tremendous lot of plant life for one square foot!

That was not a very illuminating study when applied to my border unless I copied exactly the wildlings I had enumerated, and I didn't want them. I'd go crazy trying to jam eight different kinds of plants into one foot of space, owing to the study necessary to secure combinations that would get out of each other's way, but it did appear that the whole secret was overlapping and interlacing colonies blooming at different seasons so that no space ever was wholly vacant. And the farther I go the more convinced I am that the interlacing and interweaving of colonies selected with a view to harmony of growth and coloring and seasons is the true secret of securing continuous bloom over an entire border during an entire

season. However, it is out of the frying-pan into the fire for its a tougher job to mingle colonies than to plant them with definite outlines.

I compromised by overlapping the outlines of various colonies, and taking one plant right straight through the length of the border, then another and so on until I had as many as could well occupy the space, using species that would give a succession of bloom.

The most successful experiment, so successful, in fact, that I am altogether satisfied with it, I started with columbines, (*vulgaris*, and the long-spurred hybrids). They were planted straight down the centre, a well-defined colony every now and then with individual plants and groups of two or three scattered about to give just a suspicion of an entire bed. Then larskpurs went in. Foxgloves were the next to be added in clumps, and individual plants. German iris on account of its bulk and permanence was used toward the front with stokesias in front of the iris, and scattered in groups and ones and twos. Japanese anemones and chimney bellflowers found places to nestle all along the length and gradually climb up as the earlier flowers were failing.

Occasionally there was a colony of some plant that did not extend over the entire scheme. This arrangement serves to break monotony and emphasize the beauty of the general scheme. I used last year the Dropmore anchusa and two or three patches of *Platycodon Mariesi* with one "picture" group composed of *Eryngium amethystinum*, *Echinops Ritro* and *Achillea The Pearl*. This combination I imitated bodily from Miss Jekyll, and it is of unusual beauty.

In planting this border I left room for groups of daffodils and tulips so that in early spring it is a bulb garden. It has been the one really worth while hardy border that I ever grew.

The prevailing colors are blue, pink and yellow in the paler shades. After considerable experimenting the columbine struck me as a good basis upon which to figure color schemes, for a perfect rainbow could be devised from columbines alone.

The pink and rose colors of the foxgloves, and the blue peach-leaved bellflowers formed a fine late May and early June combination with the earlier columbines. The long-spurred columbines in scores of colors and combinations lasted well into July, while

the German iris covered the transition period and as the late columbines were disappearing, the stokesias began to show flower with a finale of pink and blue again, with chimney bellflowers and Japanese anemones.

Another border is given over to the deep yellows and bright reds, and is still in process of evolution. With a background of hollyhocks and Miss Mellish and Wolley Dod sunflowers, the main subjects are coreopsis, gaillardia, Shasta daisies, the new "annual sweet Williams," and hardy pompon chrysanthemums, with clumps of asclepias, tritoma, hemerocallis and purple rudbeckia hybrids, the so-called "red sunflowers."

The third section of the border is devoted to oriental poppies in variety and hardy asters. It is planned for two distinct effects without relation to each other. The edging is of grass pinks and it has plantings of *Pentstemon barbatus*, var. *Torreyi*, to give it character during the latter part of June before the earlier asters are in flower.

A garden, it seems to me, should be subjective rather than objective. What may appear excellent to the owner of a garden may not appear in the same light to others. That makes for individuality of gardening.



Fig 4. The lavender heads of Eug. Danzanvilliers phlox, with blue sea-holly; white Fraulein G. Von Lassberg phlox to the left and Shasta daisy in front



A good lawn and woodland tree—elm

The Best Trees for Lawn, Street and Woodland Planting

SELECTED ACCORDING TO THEIR RE-
QUIREMENTS OF SOIL, MOISTURE, ETC.

By J. J. Levison,

Arborist, Brooklyn Parks, N. Y.



The best street tree—ginkgo

WOODLAND TREES

NAME	SPECIAL ADVANTAGES	REQUIREMENTS
Red oak [<i>Quercus rubra</i>]	Surpasses all oaks in rapidity of growth. Grows to large size and produces valuable wood.	Wants considerable light and will adapt itself to soils of medium quality.
Pinoak [<i>Quercus palustris</i>]	Very long lived; has straight trunk and quality of the wood.	Will do best in a fairly rich moist soil.
Red maple [<i>Acer rubrum</i>]	Strong oak-like with pleasing combination of colors at all times.	Will do best in a fairly rich moist soil.
Sugar maple [<i>Acer saccharum</i>]	Adds a charm to the forest scene in the fall, but is often subject to disease and insects.	Prefers a fresh well-drained soil and will grow in dense shade.
Tulip [<i>Liriodendron tulipifera</i>]	Grows rapidly into a stately forest tree with a clear tall trunk.	Requires a fairly moist soil. Use small tree, plant in spring. Protect root in transplanting.
American elm [<i>Ulmus Americana</i>]	Fairly rapid growing and often attains a height of one hundred feet. Will not endure too much shade.	Best in deep fertile soil, moderately well drained, but will adapt itself to poorer soils.
White pine [<i>Pinus Strobus</i>]	Rapid grower and endures but little shade. Wood valuable.	Will do well on a large range of soils, though best on light sandy, fresh deep soil.

DECIDUOUS LAWN TREES

NAME	SPECIAL ADVANTAGES	REQUIREMENTS
American elm [<i>Ulmus Americana</i>]	One of the noblest of trees. possesses majestic umbrella-shaped crown. Easily transplanted.	Requires a wide space and is suitable to a great variety of soils.
European silver linden [<i>Tilia Europea</i> , var. <i>argentea</i>]	Grows rapidly to large size with branches close to the ground. Easily transplanted.	Allow sufficient space around the tree to expose its noble appearance.
Oriental plane [<i>Platanus orientalis</i>]	Has a wide spread of sturdy irregularly branching limbs and blends with other trees.	Will grow in ordinary soil.
Norway maple [<i>Acer platanoides</i>]	Has a large round massive head and blends well with other trees.	Will grow in ordinary soil and is easily transplanted.
Schwedler's maple [<i>Acer platanoides</i> , var. <i>Schwedleri</i>]	Leaves assume purplish crimson color during spring and early summer, changing to dark bronze green.	Like the Norway in hardness and ability to withstand poor soil.
European copper beech [<i>Fagus sylvatica</i> , var. <i>purpurea</i>]	Exceedingly beautiful, in form, bark and foliage and possesses great longevity and sturdiness.	Hard to transplant and it is, therefore, best to use a small tree from three to six feet in height.
Red oak [<i>Quercus rubra</i>]	Broad spreading, rugged habit; very durable and possesses very beautiful color in the fall.	Hard to transplant and therefore best to use a small tree.
European white birch [<i>Betula alba</i>]	Graceful tree making a valuable addition to any landscape.	Plant in early spring and take care of its roots. Set against a background of evergreens or in shrubbery.

DECIDUOUS LAWN TREES — Continued

NAME	SPECIAL ADVANTAGES	REQUIREMENTS
Tulip [<i>Liriodendron tulipifera</i>]	Attains immense size, rapid grower and resists disease and insects.	Use a small tree and plant in early spring.
Kentucky coffee tree [<i>Gymnocladus dioica</i>]	Sub-tropical effect produced by its leaves and by the unique winter aspect of its branches. Free from insects and disease.	Wants plenty of light and is suitable for any soil.
Ginkgo [<i>Ginkgo biloba</i>]	Picturesque effect produced by its branching and dainty foliage. Beautiful color in fall.	Will require plenty of space in later years.

EVERGREEN LAWN TREES

NAME	SPECIAL ADVANTAGES	REQUIREMENTS
Oriental spruce [<i>Picea orientalis</i>]	Great dignity and picturesqueness.	Hard to transplant unless set out when very young and with great care.
Austrian pine [<i>Pinus Austriaca</i>]	Very hardy and possesses a beautiful spreading form.	Will grow in soils of medium quality.
Bhotan pine [<i>Pinus excelsa</i>]	Very thrifty, dignified and beautiful.	Requires a fairly good soil. Plant young trees in spring and protect the roots.
White pine [<i>Pinus Strobus</i>]	Graceful branching. Subject to scale insects which, however, can be easily overcome.	Prefers sandy soils. Plant young trees in spring. Protect roots from sun or wind.
Hemlock [<i>Tsuga Canadensis</i>]	Maintains a compact form for a long while and seldom suffers in winter.	Use for background and give special protection to roots in transplanting.

STREET TREES

NAME	SPECIAL ADVANTAGES	REQUIREMENTS
Norway maple [<i>Acer platanoides</i>]	Very hardy. Possesses straight trunk and symmetrical crown and is comparatively free from insects and disease.	Will withstand the average city street conditions.
Oriental plane [<i>Platanus orientalis</i>]	Fairly fast growing; very hardy and highly resistant to insects and disease.	Will do well under the average city street conditions.
Red oak [<i>Quercus rubra</i>]	Fastest growing of the oaks, very durable and highly resistant to disease and insects.	Will stand poorer soil and conditions more moist than other oaks.
Ginkgo [<i>Ginkgo biloba</i>]	Hardy and absolutely free from insects and disease. Best suited for narrow streets.	The sparsity of its branching will allow it to be planted eighteen feet apart.
Red maple [<i>Acer rubrum</i>]	Pleasing combination of colors at all seasons.	Best suited for suburban sections in a fairly rich, moist soil.
American elm [<i>Ulmus Americana</i>]	When planted in opposite rows, will form a majestic arch.	Plant on wide streets and where soil is deep and fertile.
European linden [<i>Tilia Europea</i>]	Beautiful shade-bearing crown.	Very responsive to good soil and moisture; therefore best for suburbs.
Pin oak [<i>Quercus palustris</i>]	Graceful, drooping symmetrical crown.	Requires fairly moist soil; this and its low branches confine its use to suburbs.

The Season's History of a Common Geranium—By Luke J. Doogue ^{Massachusetts}

THE STORY OF THE PROPER HANDLING OF THE MOST ADAPTABLE PLANT IS BRIEFLY TOLD IN THESE PICTURES. READ CAPTIONS RIGHT ACROSS THE PAGE



The old plant is potted and started into growth



And soon is well covered with strong shoots which



Are taken off as cuttings. A second crop starts



Two weeks latter it flowers. More cuttings taken



And like the others started in sand



At three weeks the potted cuttings are ready for a shift



And will be sturdy plants for putting out doors



By the middle of summer full of flowers



In fall cuttings are taken off for stock over winter

A Real Planting Table for Vegetables—By S. Prentiss Baldwin, Ohio

NOT A THEORETICAL CHART THAT HAS TO BE TESTED, BUT AN ACTUAL WORKING SCHEME, SHOWING WHAT TO PLANT, WHEN AND JUST HOW MUCH

THIS is an exact schedule of instructions which the busy man need not even read. Let him hand this schedule to any able-bodied man who can read English, direct the man to follow the instructions word for word, to plant the varieties named, on the dates named and in the manner described—and he will have an abundant supply of the best vegetables, evenly distributed through the season.

For some years we had been accustomed to employ, each year, a gardener. At one time we had radishes enough for a village; then at one season a flood of beans followed by a dearth of beans for the rest of the season.

This system was devised to bring order out of chaos. We have used it now for four years. Our gardener is a farmer who spends three or four days each month in planting exactly as described by this schedule. All of the rest of the work is done by an Italian laborer, who knows weeds and fights them day after day. There is no mystery about it.

An explanation of use of the schedule is as follows:

The varieties here named are mostly old standard varieties recommended by all seedsmen. These are safest to use. The quantity to plant is estimated for fifteen to twenty persons. You can adjust this to your needs.

We require the planting done on the dates named unless weather forbids, and

in that case it is only delayed to the first good day.

A stout cypress stake marked with the variety, name and date is placed at the head of every row; then, by recording the date when ready for use, we are able to adjust the schedule for next year to make the supply run evenly.

The earliest dates for beans, peas and corn seem to you too early? If frost gets them you do not lose much, while in favorable seasons you will surprise your neighbors.

Our soil is a heavy clay. We are compelled, therefore, to make a special soil for the melon tribe. Our soil, and no doubt most soils, require heavy applications of manure, plowed down in the fall, and commercial fertilizer in spring.

The real way to use this schedule is to scratch off the vegetables you do not like, and change the amounts to suit your requirement.

The editor asks how much time I devote to the garden. An evening in winter to correcting the schedule for next season; and I walk through the garden three or four times in spring to make sure the schedule is followed.

In using the table, it will be found a great help to have this checking list in which the items are arranged by date.

March 1. Under glass: Beets, cabbage, cauliflower, celery, eggplant, lettuce, pepper, radish, tomato.

March 15. Under glass: Bush lima, Brussels sprouts, cucumber, lettuce, radish, squash.

April 1. Under glass: Cauliflower, corn, muskmelon, watermelon (two varieties), tomato, lettuce, radish.

Outside: Carrot, onion, peas, potato, spinach.

April 15. Under glass: Celery.

Outside: Beans, beets, chard, corn, onion (two varieties), parsley, peas, parsnip, salsify, spinach, turnip, lettuce, radish.

May 1. Under glass: Brussels sprouts, cabbage, cauliflower.

Outside: Bush lima, wax beans, corn (two varieties), cucumber, muskmelon (three varieties), watermelon (two varieties), peas (two varieties), potatoes, spinach (two varieties), lettuce, radish.

May 15. Outside: Pole lima, green beans, beets, corn, kale, peas, potatoes, pumpkin, squash (four varieties), lettuce, radish.

June 1. Outside: Wax beans, carrots, corn (two varieties), cucumber, peas, spinach, lettuce, radish.

June 15. Outside: Green beans, beets, corn, peas, turnip, lettuce, radish.

July 1. Outside: Wax beans, cucumber, endive, kale, peas, lettuce, radish.

July 15. Outside: Green beans, beets, corn, peas, lettuce, radish.

August 1. Outside: Peas, lettuce, radish.

August 15. Outside: Peas, lettuce, radish.

September 1. Outside: Spinach, lettuce, radish.

NAME	VARIETY	TIME TO PLANT	QUANTITY	DIRECTIONS
Bush Lima Beans	Burpee Improved	March 15 under glass May 1 outside	30 pots 100 foot row	Tender. Set out in May 2 inches deep Rows 2 feet apart
Pole Lima Beans	King of Garden	May 15 outside Ready in 10 weeks	50 hills	Tender 2 inches deep Hills 4 feet apart Pinch off at 6 feet high 1 pint seed to 50 hills
String Beans	Bountiful Hodson Wax Bountiful Hodson Wax Bountiful Hodson Wax Bountiful	April 15, outside May 1 outside May 15 outside June 1 outside June 15 outside July 1 outside July 15 outside Ready in 6 weeks	75 feet 50 feet 75 feet 50 feet 75 feet 50 feet 75 feet	Tender 2 inches deep 6 inches apart in row Rows 2 feet apart 1 pint seed to 75-foot row
Beets	Eclipse Crimson Globe	March 1, under glass April 15, outside May 15 outside June 15 outside July 15 outside Ready in 9 weeks	100 feet 100 feet 100 feet 100 feet 100 feet	(Transplant outside in April). Hardy 1 inch deep 6 inches apart in row Rows 2 feet apart Soak seed over night 1 oz. seed to 50 feet Winter in sand or pits
Brussels Sprouts	L. I. Half Dwarf	March 15, under glass May 1, under glass Ready in 20 weeks	Transplant to garden 100 early 250 late	½ inch deep 1 foot apart in row Rows 2 feet apart 1 oz. seed to 1500 plants Hang in cellar for winter

A REAL PLANTING TABLE FOR VEGETABLES—Continued

NAME	VARIETY	TIME TO PLANT	QUANTITY	DIRECTIONS
Cabbage	Early Jersey Wakefield Drumhead Savoy Premium Flat-Dutch	March 1, under glass March 1, under glass May 1, under glass Transplant to garden Ready in 18 weeks	100 plants 100 plants 200 plants	Hardy ½ inch deep 2 feet apart in row Rows 3 feet apart Manure well 1 oz. seed to 2,500 plants Winter in pits upside down
Cauliflower	Dwarf Erfurt	March 1, under glass April 1, under glass May 1, under glass Transplant to garden	100 plants 100 plants 100 plants	Hardy ½ inch deep 2 feet apart in row Rows 3 feet apart 1 oz. seed to 2,500 plants Manure well
Carrot	Half-long Danvers	April 1, outside June 1, outside Ready in 15 weeks	100 feet 100 feet	Hardy ½ inch deep 6 inches apart in row Rows 1½ feet apart 1 oz. seed to 100 feet Winter in sand or pits
Chard	Lucullus	April 15, outside Ready in 8 weeks	100 feet row	Hardy 1 inch deep 1 foot apart in rows Rows 2 feet apart 1 oz. seed to 50 feet
Celery	Golden Self-blanching Fin de Siècle	March 1, under glass April 15, under glass Ready in 18 weeks	200 plants 300 plants	Hardy. Set out in May Barely cover ½ feet apart in rows Rows 3 feet apart Rich, moist, transplant twice 1 oz. seed to 3,000 plants In August bank up to blanch Winter in pits
Corn	Golden Bantam Evergreen Country Gentleman Mexican Country Gentleman	April 1, under glass April 15, outside May 1, outside May 1, outside May 15, outside June 1, outside June 1, outside June 15, outside July 15, outside Ready—Early 9 weeks; late 11 weeks	30 pots 75 hills 75 hills 75 hills 75 hills 75 hills 75 hills 75 hills 75 hills	Tender. Set out in May 2 inches deep 2 feet apart in row Rows 4 feet apart Manure and remove suckers 1 quart to 200 hills
Cucumber	Cool and Crisp	March 15, under glass May 1, outside June 1, outside July 1, outside Ready in 9 weeks	5 pots 5 hills 5 hills 5 hills	Tender. Set out in May 1 inch deep 4 feet apart 1 oz. seed to 50 hills
Endive	Green Curled	July 1 Ready in 8 weeks	100 feet	Hardy Rows 2 feet apart 1 foot apart in row 1 oz. seed to 100 feet row. Transplant to dark cellar to blanch for winter
Eggplant	Black Beauty	March 1, under glass, with good heat Transplant to garden Ready in 15 weeks	30 pots	Very tender ½ inch deep 2 feet apart in row Rows 3 feet apart Rich and moist 1 oz. seed to 1,000 plants Store dry for late fall use
Kale	Dwarf Scotch Siberian	May 15 under glass Transplant to garden like cabbage July 1, outside Ready in 20 weeks	200 plants 200 feet	Hardy ½ inch deep 1 foot apart in row Rows 2 feet apart 1 oz. seed to 200 feet Mulch for winter
Lettuce	May King	March 1, under glass March 15, under glass Outside every 2 weeks to September 1 Ready in 6 weeks	50 feet 50 feet	Hardy ¼ inch deep Rows 1½ feet apart Rich 1 oz. seed to 3,000 plants Shade and water in summer
Muskmelon	Emerald Gem Defender Montreal	April 1, under glass May 1, outside May 1, outside May 1, outside Ready in 6 weeks	15 pots 20 hills 20 hills 20 hills	Tender. Set out in May 1 inch deep Hills 4 feet apart Pinch off ends of shoots Make special soil of sand and manure 1 ounce seed to 50 hills

A REAL PLANTING TABLE FOR VEGETABLES—Continued

NAME	VARIETY	TIME TO PLANT	QUANTITY	DIRECTIONS
Watermelon	Cole's Early Halbert Honey Cole's Early Halbert Honey	April 1, under glass April 1, under glass May 1, outside May 1, outside	5 pots 5 pots 10 hills 10 hills	Tender. Set out in May 1 inch deep Hills 6 feet apart Make special soil of sand and manure Pinch off ends of shoots 1 ounce seed to 30 hills
Onion	Yellow Danvers Prizetakers	April 1, plant sets Seeds April 15, outside Seeds April 15, outside Ready in 18 weeks from seed	100 feet 200 feet 200 feet	Hardy Seeds $\frac{1}{2}$ inch deep Sets 2 inch deep Rows 2 feet apart 1 ounce seed to 150 feet Dig and dry for winter 1 quart sets to 100 feet
Parsley	Triple Curled	April 15, outside Ready in 8 weeks	50 feet	Hardy. $\frac{1}{2}$ inch deep 6 inches apart Rows 2 feet apart Soak seeds over night Seeds slow to start 1 ounce to 150 foot row
Parsnip	Hollow Crown	April 15 outside Ready in 15 weeks	50 feet	Hardy $\frac{1}{2}$ inch deep Rows $1\frac{1}{2}$ feet apart Seeds start slowly 1 ounce seed to 200 feet Winter in place or in pits Improved by frost
Peas	Thomas Laxton Juno Telephone Laxton	April 1, outside April 15, outside May 1, outside May 1, outside May 15, outside June 1, outside June 15, outside July 1, outside July 15, outside Aug. 1, outside Aug. 15, outside	150 feet 150 feet	Hardy 3 inches deep early varieties. 4 inches deep late varieties Early in double rows Late rows 3 feet apart Moist 1 quart seed to 150 feet Ready in 8 weeks
Pepper	Chinese Giant	March 1, under glass Set out in May Ready in 20 weeks	25 pots	Very tender $\frac{1}{2}$ inch deep Rows 2 feet apart Start in good heat Hang in cellar for winter
Potatoes	Noroton Beauty Gold Coin	April 1 (early) May 1 (early) May 15 (Main crop) Ready in 12 weeks		2 inches deep, early 5 inches deep, late Rows 3 feet apart 1 peck to 100-foot row 8 or 10 bushels to acre Sprout before planting
Pumpkin	Winter Luxury	May 15, outside Ready in 15 weeks	20 hills	Tender 6 feet apart Manure 1 ounce seed to 50 hills Winter warm and dry
Radish	French Breakfast	March 7 under glass and every two weeks Ready in 4 weeks	25 feet each time	Hardy $\frac{1}{2}$ inch deep 1 ounce seed to 100 feet Soil light and rich
Salsify	Mammoth Sandwich Island	April 15, outside Ready in 18 weeks	200 feet	Hardy $\frac{1}{4}$ inch deep Rows 2 feet apart 1 ounce seed to 100 feet Winter in place or in pits
Spinach	Viroflay New Zealand Viroflay	April 1, outside April 15, outside May 1, outside May 1, outside June 1, outside Sept. 1, outside Ready in 5 weeks	100 feet 100 feet 100 feet 100 feet 100 feet 200 feet	Hardy 1 inch deep Rows $1\frac{1}{2}$ foot apart 1 ounce seed to 200 feet Very rich soil Winter under straw cover
Squash	Delicata Early Golden Custard Crookneck Delicata Early Golden Custard Crookneck Hubbard	March 15, under glass March 15, under glass March 15, under glass May 15, outside May 15, outside May 15, outside Ready in 7 weeks May 15, outside Ready in 15 weeks	3 pots 3 pots 3 pots 6 hills 6 hills 6 hills 20 hills	Tender 1 inch deep 4 feet apart Hubbard 6 feet apart Winter warm and dry 1 ounce seed for 25 hills For Hubbard make special soil of sand and manure
Tomato	Earliana Crimson Cushion	March 1, under glass April 1, under glass Set out in May Ready in 18 weeks	50 plants 150 plants	Tender $\frac{1}{2}$ inch deep Keep hotbed cool 3 feet apart in row Rows 3 feet apart Pinch off side shoots 1 ounce seed to 2,000 plants Hang in cellar for early winter
Turnip	Early Milan White	April 17, outside June 15, outside Ready in 9 weeks	25 feet 25 feet	Hardy $\frac{1}{2}$ inch deep Rows $1\frac{1}{2}$ feet apart 1 ounce seed to 200 feet Winter in pits



The garden path in May, with the picking border to the right, where plants are "tried out"

Planting Flowers for Succession Effects—By M. T. R., Ohio

MY "garden path" began in a very small way indeed, as a sort of catch-all for everything not needed or wanted in my little formal garden, into which the path leads, making it one continuous whole. Then I called it the "picking border."

The path itself is 218 feet long. The flower borders, which are five feet wide, run parallel, and are separated from the path itself by a border of sod one foot wide. They are planted full to overflowing with perennials and any gaps are filled with annuals.

One has a great opportunity for effects in a path of this kind, and I have found several ways of obliterating waste places left bare by early blooming perennials. As I always grow hundreds and hundreds of foxgloves and Canterbury bells (which latter flower is to me the most lovely thing in the garden), the slump is great when they are over. One of my schemes is to plant calendulas among foxgloves, which are cut to the ground when they have bloomed. The calendulas bloom beautifully until frost. Those particular ones were the best in the garden, probably because planted far apart.

In the same way I planted salvia among canterbury bells, which were cut to the ground when over, and the salvias were a great success. Gladiolus bulbs I plant thickly among Canterbury bells, and also among irises. In fact, I use these bulbs everywhere with good effect. In many



A combination of snapdragons and madonna lilies

places I pull up the foxgloves and Canterbury bells entirely, make the beds over and transplant into them coxcomb, annual helianthus, Empress candytuft, or any other easily transplanted annual. I find the seed of 'annual baby's breath useful for bare spots, and scattered over dead-looking oriental poppies, it covers them nicely and doesn't hurt the poppies.

I am enthusiastic over annuals, and grow them in profusion in my "picking border." This border is the length and width of the others, and is on the right side of the path border. Here I grow all of the well-known annuals in rows, which makes it easier to care for them (from seed planted May 1st in the open ground). A few are started in the hotbed March 1st — snapdragon, stock, salvia, phlox, Empress candytuft, and sometimes others. I have found better success with these started early. Empress candytuft is a most successful annual—some of mine measured eighteen inches tall, and had heads like hardy phlox. We make several plantings during the summer, and I was picking it all November.

Last summer the quaintness of their names induced me to try Joseph's coat, love-lies-bleeding, and Flora's paint brush, and I found only the latter pretty enough to try again. Two most charming annuals have been quite a discovery to me as they are not generally known in this vicinity: Godetia, which looks like a small pink and white poppy is a mass of bloom all summer, and enduring till frost; and the pink agrostemma.



By June the border is full of color, which is kept up in a constantly changing succession of effects until frost

Flowering Shrubs for Continuous Effects—By E. L. D. Seymour, ^{New York}

A PLANTING TABLE THAT SHOWS WHAT ARE THE BEST HARDY SHRUBS ACCORDING TO THE COLOR OF THE FLOWERS AND ARRANGED IN THEIR SEASON OF BLOOM

WHY not provide color after color the season through, and even then be able to anticipate cheery fruit clusters or warm, bright foliage all winter? In the woods for the mere trouble of transplanting, and in the nurseries for prices more than reasonable in proportion to the ultimate effects possible, are materials for the garden artist who aims at impressionistic painting for permanent effects.

Plant for mass and border effects, rather than for individual specimens. The former soften the lines of boundaries and buildings, carry the eye gradually about the landscape, and either supply backgrounds for herbaceous plants, or

take their place in front of imposing forest masses.

Thorough soil preparation is of prime importance. In poor locations, either undrained or barren, provide practically a new soil of rich loam, well supplied with humus. Give the roots room to stretch out, then pack the earth firmly around them.

Keep in mind the relative leaf and root surfaces, and when the injured roots have been cut off cleanly, reduce the top in proportion.

The heavy mulch of coarse manure, straw or leaves is usually necessary the first winter, but thereafter the falling leaves provide all that is ordinarily needed.

Anything may be planted in spring, and

in the case of quick-growing, delicate shrubs is essential. Fall planting will often prove most convenient, however.

Refrain from systematic annual pruning of shrubs. If they have any form at all when planted, and are cut back carefully then they can be relied upon to grow gracefully, naturally and effectively. Take out dead wood, remonstrate with long spindling branches, and once in a while remind the shrub of the form it should take—then let Nature look out for the rest.

Besides those noted below, the main winter effects are gained with the evergreens and the shrubs of bright-colored fruits or barks, which are not discussed at this time.

Color symbols: W, white; Y, yellow; Pi, pink; R, red; Pu, purple; B, blue. The figure (2) after the common name indicates the plant belongs rather to the second half of the month. The asterisk (*) marks the evergreen species. The reader will note that the illustrations are arranged by season, too

Common Name	Botanical Name	Col.	Character of Flower	Height of plant (feet)	Habit	Remarks of Special Interest
MARCH						
Weeping filbert	<i>Corylus Avellana</i> , var. <i>pendula</i>	...	Drooping catkin	5-10 ft.	Weeping	Thrives in almost any soil. <i>C. Avellana</i> an erect and smaller form. Var. <i>aurea</i> has attractive yellow foliage. Several varieties useful also for their nuts.
Japanese pussy	<i>Salix multinervis</i>	...	Catkins	4 ft.	Drooping	Supposedly a hybrid of <i>S. Caprea</i> , a much larger form. Catkins are large, abundant and attractive. Like all willows, grows well in wet places. Propagated by cuttings.
Bush honeysuckle	<i>Lonicera Standishi</i>	W.	Single	3-6 ft.	Spreading	Half evergreen shrub. Flowers faintly blushed, very fragrant. Showy scarlet berries in autumn. In North needs a sheltered position, but worth it.
Hall's magnolia (2)	<i>Magnolia stellata</i>	W.	Single	5-10 ft.	Spreading	The earliest shrubby magnolia, the large (3-inch) sweet-scented flowers appearing before the leaves. Flowers freely at an early age. Plant against background.
Spice bush	<i>Benzoin oederifera</i>	Y.	Rosettes	6-15 ft.	Upright	One of the earliest flowering shrubs. Honey-colored rosettes appear before leaves, with crimson fruit in fall. Foliage yellow in autumn. Entire bush aromatic.
Cornelian cherry	<i>Cornus Mas</i>	Y.	Small	6-20 ft.	Dense	With glossy foliage, yellow flowers in small clusters in early spring and bright red berries in autumn, a very attractive shrub. Almost any soil and either sun or shade.
Leatherwood	<i>Dirca palustris</i>	Y.	Single	2-6 ft.	Branchy	Strong-growing in any moist loam soil. Hardy, and though not very showy, produces its small yellow flowers very early, before the leaves which are smooth and shiny.
Fragrant sumach	<i>Rhus Canadensis</i>	Y.	Spike	3-8 ft.	Spreading	Thick spikes of small yellow flowers appear before leaves. One of the best cover plants, especially for dry, rocky banks. Foliage tinted in fall. Large red fruit clusters.
Flowering almond	<i>Prunus Japonica (nana)</i>	Pi.	Single	2-5 ft.	Bushy	Hardy. Flowers abundant, rose-colored, always double, appearing with the leaves. Somewhat resembles <i>P. triloba</i> or flowering plum, but smaller and less used as stock.
Japan quince (2)	<i>Cydonia Japonica</i>	R.	Single	3-6 ft.	Dense	Thick spiny bush, excellent for hedges. Scarlet flowers (1-2 in.), single or in small clusters, followed by odd green fruit. Other varieties with flowers ranging to pure white.
Daphne	<i>Daphne Mezereum</i>	Pu.	3-flowered	4 ft.	Erect	The only hardy deciduous daphne. The flower clusters appear before the leaves often as early as February. Needs well-drained, light soil, and prefers some shade.
APRIL						
Dwarf juneberry (2)	<i>Amelanchier Botryopium</i>	W.	Short, loose	4-6 ft.	Tree form	Small flowers in loose, small racemes in profusion. Berries dark red and edible. Stands variety of soils. <i>A. spicata</i> smaller, more profusely flowered, but slightly less hardy.
Leather leaf*	<i>Chamadaphne calyculata</i>	W.	Long, thin	1-3 ft.	Spreading	Low evergreen spreading shrub. Tiny white bell-like flowers along nodding terminal leafy branches. Hardy. Thrives in peaty and sandy moist soil.
Japan oleaster or "Goumi" (2)	<i>Eleagnus longipes</i>	W.	Single	3-6 ft.	Erect	Creamy white flowers inconspicuous but fragrant. Scarlet, edible berries very showy in June. <i>E. argentea</i> (silver berry) very attractive, with silvery foliage and fruits.
Pearl bush (2)	<i>Exochorda grandiflora</i>	W.	Long plumes	6-8 ft.	Open	When in flower the most brilliant shrub of its season. Covered with drooping racemes, dazzling white. Ugly, thin foliage. Prune for shape, or use in background.
Swamp leucothoe	<i>Leucothoe racemosa</i>	W.	Short, erect	5-10 ft.	Erect	Prefers moist situations, and some shade. Terminal erect racemes of small flowers. Not as showy as <i>L. Catesbaei</i> , but hardy in the North where the former is not.
Siberian crab	<i>Pyrus baccata (Malus baccata)</i>	W.	Short, few flowered	6-8 ft.	Tree form	The common decorative crab with pure white blossoms, bright green foliage, and abundant small red fruit in clusters. Various forms, but all hardy.
American bladder nut (2)	<i>Staphylea trifolia</i>	W.	Loose, nodding	6-12 ft.	Upright	Hardy, stout shrub, with pretty white flowers into May, and odd, inflated seed pods. Use for massing. <i>S. Bumalda</i> , with creamy blossoms in June, may be planted singly.
Chinese (or Japanese) azalea (2)	<i>Azalea Sinensis (mollis)</i>	Y.	Loose, erect	3-8 ft.	Erect	The largest-flowered azalea. Yellow to deep orange. Later than <i>A. Canadensis</i> (purple) and <i>A. nudiflora</i> (pink); but more showy. Easy to transplant spring or fall.
Barberry (2)	<i>Berberis Thunbergii</i>	Y.	Single	2-4 ft.	Dense	Fine for low hedges. Hardy, vigorous, preferring dry soil. Foliage handsome all season, berries all winter. <i>B. vulgaris</i> larger, with long yellow racemes in May, June.
Golden bell	<i>Forsythia suspensa</i>	Y.	Single	5-8 ft.	Weeping	Small flowers thickly along stem. Var. <i>Fortunei</i> , smaller, but more erect and vigorous. All the forms hardy, vigorous, and largely free from insects and disease.
Garland flower* (2)	<i>Daphne Gneorum</i>	P.	Thick heads	1/2-2 ft.	Trailing	A low-trailing evergreen form. Often blossoms again in summer. A good cover for rockeries, thriving in sunny places. <i>D. Blagayana</i> more ascending, flowers whiter.
Sand myrtle* (2)	<i>Leiophyllum buxifolium</i>	Pi.	Flat head	1-3 ft.	Dense	Resembles dwarf box and is suited to borders and rockeries in both sun and shade. Pink or white flowers in profusion. In flower throughout June.
Stagger bush	<i>Pieris Mariana</i>	Pi.	Nodding, slim	2-4 ft.	Arching	Graceful, hardy species. Flowers pink to white in long drooping clusters. <i>P. Japonica</i> larger, more beautiful, but less hardy. <i>P. floribunda</i> a dense evergreen species.



Weeping filbert



Bush honeysuckle



Hall's magnolia



Flowering almond



Leather leaf



Pearl bush

Siberian crab

Bladder nut

Chinese azalea

Japan barberry

FLOWERING SHRUBS FOR CONTINUOUS EFFECTS—Continued

Common Name	Botanical Name	Col.	Character of Flower	Height of Plant (feet)	Habit	Remarks of Special Interest
Red chokeberry (2)	<i>Sorbus arbutifolia</i>	R.	Small	6-12 ft.	Upright	Good for borders, preferring moist soil. Flowers red-tinged to white. Clusters of red fruit make attractive showing. <i>S. melanocarpa (nigra)</i> a lower form, with black berries.
Hardy evergreen azalea*	<i>Azalea Indica</i> , var. <i>amena</i>	Pu.	Variable	1-8 ft.	Erect	Rich purple flowers early and in profusion. Hardy usually around New York. Several forms and crosses showing various shades of red and purple.
Lilac (2)	<i>Syringa oblata</i>	Pu.	Large	5-12 ft.	Bushy	The earliest-flowering species, usually before the end of April. <i>S. vulgaris</i> and <i>S. Chinensis</i> follow quickly, including many colors from white to purple.
Yellow root or brook feather	<i>Xanthorrhiza apifolia</i>	Pu.	Drooping	1-15 ft.	Shrubby	Bright yellow wood. Handsome foliage becoming golden in autumn. Flowers small, dark, in loose, hanging lashes. Prefers moist, shady situation. Often not hardy.
MAY						
Ghent azalea	<i>Azalea Gandavensis</i>	W.	Loose	2-4 ft.	Erect	Includes many varieties, all hybrids, some of undetermined parentage. These embrace all shades of white, yellow, pink, red and lilac. Flowering May to July.
Red-osier dogwood	<i>Cornus stolonifera</i>	W.	Dense, small	4-8 ft.	Erect	Red-branched, profusely flowered species. There is a yellow-barked var. <i>C. candidissima</i> is later and smaller, with gray branches, free flowering. Grow in most soils.
Chinese cotoneaster	<i>Cotoneaster multiflora</i>	W.	Small cymes	3-6 ft.	Arching	The most decorative hardy cotoneaster; bears red fruit. <i>C. buxifolia</i> , a low, evergreen species with especially attractive red berries. Needs well-drained soil and sun.
Japanese snow flower	<i>Deutzia gracilis</i>	W.	Ragged	1-3 ft.	Arching	Very beautiful when covered with snowy blossoms. <i>D. Lemoinei</i> more spreading and more hardy in New York. Well-suited for shrubby borders in well-drained soil.
Snowdrop tree or silver bell (2)	<i>Halesia tetraptera</i>	W.	2 or 3-flowered	5-10 ft.	Bushy	Naturally is irregular and bushy, but may be trained to tree form. Flowers like snowdrops before leaves. Easily transplanted from woods and grows well in shelter.
Mountain laurel* (2)	<i>Kalmia latifolia</i>	W.	Thick	4-10 ft.	Erect	Needs treatment like rhododendrons, but is less particular as to soil. Transplant in early fall, and mulch the first winter. Provide shade if moisture is lacking.
Japanese bush honeysuckle (2)	<i>Lonicera Morrowi</i>	W.	2-flowered	3-6 ft.	Spreading	Dark green foliage sets off the many white, changing to yellow flowers, and the bright red fruit from August until winter. Another var. with yellow berries.
Mock orange (2)	<i>Philadelphus coronarius</i>	W.	Small	5-10 ft.	Upright	The common, reliable form, including varieties of different colors, some double. The hybrids <i>P. Zegheri</i> and <i>Lemoinei</i> are lower, more spreading, more effective.
Beach plum	<i>Prunus maritima</i>	W.	Single	3-8 ft.	Spreading	Flowers small but abundant. Purple decorative fruit edible. Grows vigorously anywhere not too wet. Well suited to sandy soil. Often attacked by black knot.
Evergreen thorn*	<i>Pyracantha coccinea</i>	W.	Flatish	3-6 ft.	Stiff	Hardy in Massachusetts, with some protection. Red fruit in profusion usually last all winter. Grows well in most soils; prefers a sunny position. Is easily trained.
White kerria	<i>Rhodotypos kerrioides</i>	W.	Single	3-6 ft.	Branching	Conspicuous for its large white flowers and bright green foliage. Shiny black fruit usually persists over winter. Will do well in almost any good soil.
Rose	<i>Rosa rugosa</i>	W.	Single	3-6 ft.	Dense	A thorny, hardy, very ornamental shrub. Large white flowers, dark foliage persisting late, and large orange-colored fruits all winter. One of the best roses.
Spirea	<i>Spirea arguta</i>	W.	Flat masses	3-6 ft.	Arching	The most effective early spirea. Other valuable species are <i>S. Thunbergii</i> , <i>Cantonensis</i> , <i>Van Houttei</i> , <i>bracteata</i> and <i>prunifolia</i> . All these do well in moderately moist soil.
Japanese snowball	<i>Viburnum tomentosum</i> , var. <i>placatum</i>	W.	Spherical	3-8 ft.	Spreading	Hardy. Gradually replacing <i>V. Opulus</i> , var. <i>sterile</i> , the common snowball often infested by aphids. <i>V. macrocephalum</i> , var. <i>sterile</i> , huge flower clusters.
Xanthoceras	<i>Xanthoceras sorbifolia</i>	W.	Thick spikes	5-12 ft.	Upright	Resembles mountain ash. Showy terminal flower clusters and decorative foliage. Will grow in most any soil; hardy when established. Comparatively free from insects.
Barberry	<i>Berberis vulgaris</i>	Y.	Slender	3-5 ft.	Spreading	Hardy, vigorous. Drooping tassels of yellow replaced in fall by red berries, persistent over winter. Will thrive almost anywhere. Good for single or mass planting.
Siberian pea tree	<i>Caragana frutescens</i>	Y.	Single	6-10 ft.	Erect	Handsome pea-like flowers. <i>C. arborecens</i> , much larger, and <i>C. microphylla</i> , <i>C. ham-lagu</i> , and <i>pygmaea</i> dwarfs. Hardy and grow best in a sandy, sunny location.
Scotch broom	<i>Cytisus Scoparius</i>	Y.	Single	3-30 ft.	Erect	Recommended for covering raw and broken bits of landscape. Fairly hardy north, but if winter killed will grow new branches. Flowers appear along nearly bare stems.
Strawberry bush	<i>Euonymus alatus</i>	Y.	Small, few flowered	3-8 ft.	Spreading	Especially handsome with its purple fall foliage. <i>E. obovatus</i> a low-trailing species, and <i>E. radicans</i> a climbing evergreen. Easily grown in almost any soil.
Sea buckthorn	<i>Hippophoe rhamnoides</i>	Y.	2- or 3-flowered	2-6 ft.	Low, straggling	Silvery foliage and orange-colored berries very effective. Will stand sandy soil. Excellent for seashore planting. To obtain fruit effects mix forms in planting.
Golden chain	<i>Laburnum vulgare</i>	Y.	Wistaria-like	6-15 ft.	Erect	Give plenty of space for spreading and to show the drooping terminal clusters. Does well in sun or shade in ordinary soil. Comparatively free from pests.
Buffalo currant	<i>Ribes aureum</i>	Y.	Thin, small	3-6 ft.	Bushy	The most decorative of the currants. Dark blue or black fruit. <i>R. alpinum</i> has red berries. Both species hardy and vigorous everywhere. Free from thorns.
Buffalo berry	<i>Shepherdia argentea</i>	Y.	Dense, small	6-15 ft.	Upright	Flowers many but small. Especially valuable for its silvery foliage and yellow, edible berries. Plant in prominent positions. <i>S. Canadensis</i> may do better.
Japan Judas tree (Japanica)	<i>Cercis Chinensis</i>	Pi.	Thin, small	3-10 ft.	Tree form	A shrub in culture, by nature a tree. The most beautiful species, but less hardy than <i>C. Canadensis</i> , a larger form. Transplant when young in rich, sandy loam.
Weigela	<i>Diervilla florida</i>	Pi.	few-flowered	3-6 ft.	Arching	Very free-flowering, showy and rather hardy. Varieties range in color from a white to deep rose. Thrives in warm garden soil, shade and moisture being most desirable.
Rhododendron*	<i>Rhododendron Californicum</i>	Pi.	Large	5-8 ft.	Bushy	An early species, but as hardy as <i>Catalwbiense</i> . Blossoms pink to rosy purple. Needs good soil and some shelter without shading. Excellent around large, high trees.
Rose acacia	<i>Robinia hispida</i>	Pi.	Loose, erect	2-8 ft.	Spreading	Blooms into June and often during summer. Good for banks or isolated masses, where its spreading habit will not affect other plants. Injured by borers.
Himalayan lilac (2)	<i>Syringa villosa</i>	Pi.	Large, dense	4-8 ft.	Bushy	A pink medium early species. The culture for all the lilacs is the same. Cut off dead blossoms and prune them to give time for next year's flowering wood to grow.



Garland flower

Hardy azalea

Japan snow flower

Snowdrop tree

Mountain laurel



Spirea arguta



Japan Snowball



Scotch broom



Rose acacia



Tree peony

FLOWERING SHRUBS FOR CONTINUOUS EFFECTS—Continued

Common Name	Botanical Name	Col.	Character of Flower	Height of Plant (feet)	Habit	Remarks of Special Interest
Tamarisk.....	<i>Tamarix parviflora</i>	Pi.	Many small spikes.....	6-15 ft.	Erect.....	Graceful, feathery foliage and long, loose inflorescences into summer. <i>T. Gallica</i> more spreading. Later. Fine for seashore planting. Will stand salty sand and spray. The only peony shrub. Easily cultivated and hardy in deep, rich, well-drained soil. Water generously, especially when blooming. Has huge, rich red blossoms May, June. The well-known garden lilac. Supplies the most beautiful of purple, lilac, and red flowers at end of May and early June. Many varieties. Hardy and grows anywhere.
Tree peony (2).....	<i>Paeonia Moutan</i>	R.	Single.....	3-6 ft.	Branching....	
Common lilac (2).....	<i>Syringa vulgaris</i>	Pu.	Large, dense..	5-10 ft.	Branching....	
JUNE						
Wild rosemary*.....	<i>Andromeda polifolia</i>	W.	Single.....	½-2 ft.	Low, spreading.....	Dainty, nodding flowers in some forms pinkish. Is well adapted to planting with rhododendrons, and azalea. Peaty soil best.
European Juneberry.....	<i>Amelanchier vulgaris</i> ..	W.	Short.....	2-4 ft.	Upright.....	A dwarf form. Ornamental racemes and later blue-black berries even more showy. Has wide range of soils and climates.
White azalea.....	<i>Azalea viscosa</i>	W.	Variable.....	4-8 ft.	Branching....	Abundant flowers white or rose-tinted 1 to 3 in. For other color effects <i>A. Pontica</i> yellow and orange, <i>A. Albrechtii</i> , purple, and different varieties of <i>A. Gandavensis</i> .
Deutzia.....	<i>Deutzia Lemoinei</i>	W.	Large, broad..	1-3 ft.	Spreading....	One of the hardiest and most vigorous. Flowers profuse and showy. Excellent to follow <i>D. gracilis</i> in border being more beautiful.
Hydrangea.....	<i>Hydrangea radiata</i>	W.	Globular.....	4-10 ft.	Erect.....	With <i>H. arborescens</i> , the hardiest early species. <i>H. arborescens</i> , var. <i>sterilis</i> is Hills of Snow. Best in rich, moist, sunny location. Cut back for larger flower clusters.
Regel's privet.....	<i>Ligustrum Iboia</i> , var. <i>Regelianum</i>	W.	Drooping....	4-8 ft.	Dense.....	The best privet for flower effects. Low and dense. <i>L. ovalifolium</i> (California privet) stiff but best for hedges, flowering later. <i>L. Amurense</i> and <i>vulgare</i> also hardy.
Pernettya*.....	<i>Pernettya mucronata</i>	W.	Single.....	2½-2 ft.	Branching....	A low, pretty evergreen, with drooping flowers and berries, white to purple, in winter. Prefers porous, peaty soil, with sunlight. Good for rockeries in the south.
Ninebark spirea.....	<i>Physocarpus opulifolius</i>	W.	Thick, round.	4-10 ft.	Spreading....	An easily grown, graceful shrub. Profuse clusters of white flowers and inflated or red pods very attractive. <i>P. Amurense</i> more vigorous. Almost any soil satisfactory.
Rose bay*.....	<i>Rhododendron maximum</i>	W.	Large.....	3-6 ft.	Shrubby.....	One of the hardiest, most reliable species for this season. Varieties range from white to pink and rose. Splendid for massing. Rich, well-drained, but moist soil.
Rose.....	<i>Rosa arvensis (repens)</i> ..	W.	Few-flowered	2-4 ft.	Trailing.....	A white-flowered, deciduous, low shrub. Some branches trailing. Hardy in New York. Good for walls or rockeries, where fairly good soil is supplied.
Common elder (2).....	<i>Sambucus Canadensis</i> ..	W.	Flat, dense..	5-12 ft.	Shrubby.....	Very free-blooming and handsome, both with flowers and purple, edible fruit. Hardy vigorous, will grow anywhere. A beautiful shrub deserving more cultivation in gardens. Showy terminal panicles of white flowers. Handsome foliage early in spring. Good for wood or shrub border or along stream. In suitable soil spreads rapidly.
Ash-leaved spirea.....	<i>Sorbaria sorbifolia</i>	W.	Thick, upright	3-5 ft.	Upright.....	A pretty form for rockeries. <i>S. Van Houttei</i> , <i>Cantonensis</i> , <i>bracteata</i> , etc., are, perhaps, blooming at this time. <i>S. Japonica</i> has light to dark pink flowers. All hardy.
Spirea.....	<i>Spirea decumbens</i>	W.	Small, thick..	½ ft.	Procumbent..	Attractive, hardy shrubs for borders or banks. Easily grown and transplanted. Small flowers so abundant as to make whole plant showy. In <i>S. Tanaka</i> foliage colors. Thrive best in light, porous soil. Are handsome in flower and loose, spreading habit. <i>S. Obassia</i> , and <i>Japonica</i> are other hardy, vigorous species.
Stephandra.....	<i>Stephandra flexuosa</i>	W.	Loose, drooping.....	2-5 ft.	Fountain-like	This species and <i>S. Amurensis</i> , with yellow-white flowers, are nearly the latest and among the largest lilacs. Fine for lawn specimens. Same culture as <i>S. vulgaris</i> .
Storax.....	<i>Styrax Americana</i>	W.	Few-flowered	4-8 ft.	Spreading....	A later species than <i>V. dentatum</i> (arrow wood) but with more beautiful dark green foliage. Blooming with <i>V. tomentosum</i> and <i>V. Opulus</i> , but continuing later.
Lilac.....	<i>Syringa Pekinensis</i>	W.	Dense, large..	6-15 ft.	Spreading....	Spreading, narrow leaves form a base from which stalks rise, bearing huge clusters of white flowers like giant lilies-of-the-valley. Desires a sandy loam, if possible.
Snowball.....	<i>Viburnum molle</i>	W.	Roundish....	5-15 ft.	Upright.....	A hardy shrub with showy bright flowers and finely cut, light green foliage. Not particular as to soil, but delights in sunny exposure.
Spanish bayonet.....	<i>Yucca filamentosa</i>	W.	Tall, loose....	3-6 ft.	Lily-like.....	Thrives in any fair soil, preferring moisture and shade. <i>D. sessifolia</i> slightly larger and hardier. Some other species with pink to crimson flowers.
Wild senna.....	<i>Cassia Marylandica</i>	Y.	Loose.....	3-4 ft.	Erect.....	Bright and ornamental when in bloom. This and a smaller spiny species, <i>G. Germanica</i> , not entirely hardy, but in sheltered place and with winter protection will thrive.
Weigela.....	<i>Diervilla Lonicera</i>	Y.	Flat, crowded	2-3 ft.	Spreading....	An attractive shrub all the year. Var. <i>flora pleno</i> has double, more showy flowers. Hardy in well-drained, slightly sheltered position. Flowers are better in shade.
Dyer's greenweed.....	<i>Genista tinctoria</i>	Y.	Long, erect..	1-3 ft.	Erect.....	A vigorous, hardy, useful shrub. Flowers all summer. Prefers moist, but will grow in dry soil. <i>P. argentea</i> for dry, rocky soil. <i>P. tridentata</i> , low evergreen.
Globe flower (Japanese Corchorus)	<i>Kerria Japonica</i>	Y.	Single.....	4-8 ft.	Spreading....	One of the most effective bush honeysuckles. Delicate flowers, coral berries August. Like sunny situation, any fair soil. Several varieties with flowers lighter and deeper.
Shrubby cinquefoil.....	<i>Potentilla fruticosa</i>	Y.	Single.....	½-4 ft.	Branching....	Handsomeness, hardy compact rose. <i>R. lucida</i> more upright, attractive foliage. <i>R. Carolina</i> (Swamp Rose) fine for low, marshy place. All have large, bright fruits in winter.
Upright bush honeysuckle	<i>Lonicera Tatarica</i>	Pi.	Small, many..	4-10 ft.	Upright.....	Handsomeness foliage and very sweet, large reddish-brown flowers. Almost hardy North. Any well-drained, rich soil, in either sun or shade.
Sweetbriar.....	<i>Rosa rubiginosa</i>	Pi.	1-3-flowered..	3-6 ft.	Dense.....	A peculiarly beautiful shrub all summer. The feathery purple clusters become gray and smoky against the coloring leaves till late fall. Hardy and thrives in drained soil.
Carolina allspice.....	<i>Calycanthus floridus</i> ..	R.	Single, large..	3-6 ft.	Erect.....	A hardy, sun-loving, low shrub of easy culture any where. Showy purple flowers. <i>H. coronarium</i> a familiar red-flowered species. Former is especially good for rock-work.
Smoke bush.....	<i>Rhus Cotinus</i>	Pu.	Feathery.....	4-10 ft.	Branching....	A dwarf form following <i>K. latifolia</i> . With light green foliage and simple or compound flowers. Several varieties with white and pink or red blossoms.
Hedysarum.....	<i>Hedysarum multi-jugum</i>	Pu.	Long, drooping.....	2-5 ft.	Straggling....	For New York the hardiest and best species; includes a number of varieties of all shades, white to purple, as <i>Purpureum grandiflorum</i> , <i>Roseum elegans</i> , <i>John Waterer</i> .
Sheep laurel.....	<i>Kalmia angustifolia</i>	Pu.	Dense.....	1-3 ft.	Shrubby.....	
Hardy rhododendrons.....	<i>Rhododendron Catawbiense</i>	Pu.	Many-flowered.....	3-10 ft.	Branching....	



Lemoines deutzia



White azalea



Common lilac



Flat hydrangea



Common elder



Chinese lilac

Kerria

Spice bush

Smoke bush

Rhododendron

FLOWERING SHRUBS FOR CONTINUOUS EFFECTS—Continued

Common Name	Botanical Name	Col.	Character of Flower	Height of Plant (feet)	Habit	Remarks of Special Interest
Flowering raspberry . . . ●	<i>Rubus odoratus</i>	Pu.	Varying	3-6 ft.	Spreading . . .	Strong-growing, hardy and bold in shrubbery. Flowers rosy purple resembling single roses. Prefers shady woods and banks, and in fair soil will spread rapidly.
Abelia	<i>Abelia grandiflora</i>	Pu.	Plumes	2-5 ft.	Erect	The hardiest, most free-flowering species. Blooms from June to November, white-tinged to purple. Likes sandy loam and should be protected in winter.
Hardy buddleia ○	<i>Buddleia Lindleyana</i>	Pu.	Drooping	3-6 ft.	Branching . . .	One of the hardiest and handsomest. If killed back in winter, sends out new branches. Thrives in light soil and warm sunny situation.
Burning bush, wahoo	<i>Euonymus atropurpureus</i>	Pu.	Slender	6-18 ft.	Tree form . . .	Assumes beautiful fall coloring and scarlet berries. Hardy, and grows in any soil. Other species with yellowish flowers. <i>E. radicans</i> trailing and climbing evergreen.
JULY						
Dwarf horse chestnut	<i>Aesculus parviflora (macrostachya)</i>	W.	Large, erect . . .	3-10 ft.	Erect	Handsome for lawn clumps. Large, showy terminal clusters and large leaves. Does best in moist loamy soil. Flowers into July. Followed by smooth fruit.
New Jersey tea	<i>Ceanothus Americanus</i>	W.	Loose	1-3 ft.	Erect	Grows best in light, well-drained soil. Usually hardy, but flowers more freely if taken up and stored in pits in winter. Prune half last year's growth for increased bloom.
Button bush	<i>Cephalanthus occidentalis</i>	W.	Globular	3-12 ft.	Erect	Blooms until September. Glossy foliage also attractive. Hardy, thriving best in a sandy, somewhat moist soil. Propagate by means of hardwood cuttings taken in fall.
Sweet pepperbush	<i>Clethra alnifolia</i>	W.	Erect	3-10 ft.	Bushy	Valuable for the late appearance of the showy, fragrant flowers. Moist, sandy or peaty soil gives best results.
California privet	<i>Ligustrum ovalifolium</i>	W.	Compact, long . .	5-15 ft.	Upright	The best hedge privet. Flowers attractive in July and foliage purple in late fall. Cut back when set or transplant three times, each deeper to give thick base.
Memorial rose	<i>Rosa Wichuwaiana</i>	W.	Single	1-3 ft.	Creeping	A hardy, handsome half-evergreen rose for banks and rockeries; also for edgings. Blooms until September.
Spirea	<i>Spiraea Bumalda</i>	W.	Spreading	2-3 ft.	Spreading . . .	A late hardy, free-flowering species. White to deep-pink flowers. Var. <i>Anthony Waterer</i> , one of the best known, but a dangerous color in combination.
Japan lilac	<i>Syringa Japonica</i>	W.	Very large	5-20 ft.	Pyramidal	The latest and largest-flowering lilac. Creamy white. Var. <i>argentea</i> , with variegated leaves. Liable to become very large if not pruned back.
St. John's wort ●	<i>Hypericum aureum</i>	Y.	Few-flowered . . .	3-4 ft.	Dense, stiff . . .	Very showy. Needs moisture and some shade, but does well even in rocky soil. <i>H. calycinum</i> (Aaron's Beard) a low, rapidly spreading species.
Douglas spirea	<i>Spiraea Douglasi</i>	Pi.	Dense	5-8 ft.	Erect	A western species, with deep pink flowers. Hardy North, and showy. Several crosses as <i>S. Billardii</i> , <i>Californica</i> , etc., somewhat similar but smaller.
Snowberry ●	<i>Symphoricarpos racemosus</i>	Pi.	Loose	2-6 ft.	Spreading	Pink flowers replaced in fall and winter by profuse white berries. <i>S. vulgaris</i> (coral berry) more compact; leaves and fruit persistent. Both easy to grow, good for massing.
Tamarisk	<i>Tamarix Odessana</i>	Pi.	Nodding	4-6 ft.	Upright	A useful late-bloomer. Hardy in Massachusetts, and excellent for seaside planting, standing even salt spray. Handsome feathery foliage.
Smooth sumach	<i>Rhus glabra</i>	Pi.	Large, erect . . .	6-15 ft.	Branching	The best late-blooming species for massing or background planting. Var. <i>laciniata</i> has fern-like leaves. Richly beautiful in fall. <i>R. typtuna</i> , deeper red flowers, earlier.
Callicarpa	<i>Callicarpa Americana</i>	B.	Fruit	3-6 ft.	Erect	Flowers inconspicuous, but beautiful blue fruit from July into fall. Not entirely hardy, but will grow up each season. Better protect in winter and give sheltered position.
Chaste-tree ○	<i>Vitex Agnus-castus</i>	Pu.	Dense	3-10 ft.	Tree-form	Late-flowering and hardy in New York, with a little shelter. Thrives in sandy loam in dry, sunny location. <i>V. incisa</i> a less showy species, but of graceful habit.
AUGUST						
Heather* ○	<i>Calluna vulgaris</i> , var. <i>alba</i>	W.	Small	½-3 ft.	Low, bushy . . .	A fine, hardy evergreen for borders, dry, sandy slopes and banks. Prefers sunny position. Cut branches keep. Four other varieties with pink and red flowers.
Tamarisk	<i>Tamarix hispida</i>	Pi.	Dense	3-6 ft.	Upright	One of the latest pink-flowering shrubs. <i>T. juniperina (Japonica)</i> , much larger, but otherwise similar. Both excellent for sea-coast use.
Verbena shrub ○	<i>Caryopteris Mastacanthus</i>	B.	Dense	1-5 ft.	Low, broad . . .	Usually winter-killed in the North, but valuable for the blue flowers appearing each summer on new growth. Give warm sandy soil, sunny position and protection.
Swamp huckleberry	<i>Vaccinium corymbosum</i>	B.	Small spikes . . .	4-12 ft.	Straggling	Not valuable for its flowers but for the abundant dark blue edible fruit and brilliant foliage in August. Thrives in gardens or wet, low soils. Easily improved.
Althea, rose of Sharon	<i>Hibiscus Syriacus</i>	Pu.	Single	6-12 ft.	Branched	Very common and hardy shrub. Very variable in color of flowers, white to deep purple. Grows in any fair soil flowering until very late. Var. <i>speciosus</i> , double flowers.
SEPTEMBER						
Groundsel bush ○	<i>Baccharis halimifolia</i>	W.	Large tassels . . .	3-12 ft.	Angular	Very late flowers, followed by filmy white fruit tassels resembling clouds of white flowers. Hardy. Prefers sunny location. Fine for salt shore planting.
Bush clover	<i>Lespedeza Sieboldi</i>	R.	Sprays	1-3 ft.	Spreading	Actually a hardy herb. But its strong, wiry stems resemble a shrub. <i>L. bicolor</i> , a shrub 6-10 feet, slender, purple blossoms. Also a white variety.
OCTOBER						
Witch hazel	<i>Hamamelis Virginiana</i>	Y.	Single	6-20 ft.	Bushy	Star-like flowers along branches. Grows any where, especially in moist, peaty soil. Valuable for shrubberies. Foliage yellow and red in fall. Odd explosive fruit.
Spindle tree	<i>Euonymus Bungeanus</i>	Y.	. . . . .	5-15 ft.	Slender	Fruits, not flowers effective, lasting late in profusion. <i>E. Europaeus</i> bears fruit varying from white to red and purple. All hardy of easy culture.
Blue dogwood	<i>Cornus alternifolia</i>	B.	Fruit	3-8 ft.	Bushy	A handsome shrub with deep blue fruit. <i>C. canadissima</i> bears pretty, white flowers on red stems. Useful for massing where general fall effect is desired.
Matrimony vine	<i>Lycium vulgare</i>	Pu.	Fruit	2-6 ft.	Thick, bushy . . .	The profusion of red berries against the rich foliage is very effective. Trailing habit, good for covering walls. Any fairly dry soil. Don't plant near flower beds.
Beauty fruit ○	<i>Callicarpa purpurea</i>	Pu.	Fruit	1-4 ft.	Thin, low	Much smaller than <i>C. Americana</i> ; beautiful because of purple berries. Needs sunny situation and warm, dry soil. Protect in winter.



Dwarf chestnut

Sweet pepper bush

St. John's wort

Beauty fruit

Rose of Sharon

The Great Importance of Yew—By Wilhelm Miller, ^{New York}

ONE of the most artistic gardens in England is the one at Broadway Gloucestershire, England, for which Mrs. Francis D. Millet, wife of the famous American artist is responsible. A singular feature of the garden is the quaint old tower shown in the accompanying picture. I believe it was used as a viewing place by an eccentric former owner, but its history is of no consequence for my purpose, since this is obviously the sort of feature which it would be foolish not to preserve, but which it would be equally foolish for you or me to build.

The important thing to which I wish to call attention is the superb old trimmed hedge of yew in front of that tower. There is not a hole or break in it anywhere, or any patch of a different color. The uniformity and density of it are a marvel and a joy. And, most important of all, see what a splendid background it makes for the flowers! How fine it would be to have a flower garden surrounded by a high wall of yew, as one often sees in England!

Alas, the English yew (*Taxus baccata*) is not sufficiently hardy in the Northern United States. Our nearest equivalent is the Japanese yew (*Taxus cuspidata*) which

is hardy, but little known. Our native yew (*Taxus Canadensis*) or "ground hemlock," has the same flat spray and feathery texture as the English yew and American hemlock, but since it is practically a trailing plant, no one ever thinks of it as a possible substitute for English yew. Nevertheless, I am not at all sure that it could not be trained and trimmed as a hedge and it is possible that some one may discover a single plant of it which naturally grows erect and could be persuaded to attain a height of six or eight feet. Indeed Mr. Rehder declares that in cultivation the American yew generally becomes more upright. And I have even heard of a variety, *macrophylla*, obtainable from a nursery in France which is said to attain a height of ten feet in eight years!

The best tall evergreen hedge for flower gardens, in my opinion, is box, but that must be protected from winter winds and sunshine and is therefore out of the question for most American families. The choice generally narrows right down to hemlock, which has practically the same texture as English yew. It is not quite as dark, but it is rich, shining and more cheerful than yew. I have strong faith that, as the

centuries roll by, hemlock will become our favorite evergreen hedge for ornamental purposes. It grows faster than yew, but is likely to lose its foliage at the base. However, such gaps can be obscured by planting small, cheap hemlocks in such a way, that, when trimmed, they seem to be part of the original hedge.

Although hemlock grows more quickly than yew it is far too slow for the average American in our present mood. But we must learn patience from the Englishman. The American who "can't wait" plants privet—a vile substitute—and of course his place lacks charm. We ought to buy old sections of hemlock hedge, root-prune them, transplant them and patch them up. Of if we cannot afford this we ought to plant hemlock and wait. Never, never, never shall we have American gardens as charming as the English until we learn to be as patient as the English. Your typical Englishman is not appalled at the idea of waiting twenty years for a yew hedge ten feet high. And neither should we. Those twenty years are not a blank. There is beauty enough while you are waiting for the supreme touch that age alone can give.



A splendid piece of yew in the garden of Mr. and Mrs. Francis D. Millet at Broadway, Gloucestershire, England



Ten Years Growing Hardy Carnations—By Mrs. L. J. Bates New York

YOU CAN RAISE THEM FROM SEED WITHOUT GREENHOUSE OR COLDFRAMES—MARGUERITES BLOOM THE FIRST YEAR, BORDER CARNATIONS THE SECOND—FINE COLORS AND DELIGHTFUL FRAGRANCE—PLANTS MAY LAST SIX YEARS

WE Americans have a singularly distorted idea about carnations. To us the name suggests only the varieties that florists force in winter for cut flowers. In Europe the word "carnation" refers to a summer-blooming race of flowers which are charming for garden effect, as well as for cutting.

These hardy border carnations are shamefully neglected. True, their flowers may not be quite as large or their stems as long as

greenhouse carnations are such sad misfits in the garden is their ungainly habit. Their flowers may be large, but they are too few, and the stems are uncomfortably long. On the other hand, border carnations have a charming habit, and fit to perfection. They make bushy plants covered with flowers, bear more flowers on a stem, and the stems are just right in every way.

The evolution of these garden carnations is highly interesting. There have been two main lines of effort on the part of hybridizers. One is to make the plants bloom earlier, for the border carnations as a class do not bloom until the second year from seed. This line of work has culminated in the Marguerite class which blooms the first year. Marguerites can be coaxed into flower in three to five months from seed, depending somewhat upon the variety, but more upon cultural conditions.

The other great line of evolution has been toward the everblooming character. Normally, the garden carnations bloom for a fortnight in June or July, and are then gone until next year. There are a great many strains and varieties that pretend to be perpetual, and in Europe they may be, just as the roses are; but in our hot, dry climate we can only expect scattering flowers after the main rush of bloom. How many flowers we get in August and September depends partly on the variety, but chiefly upon cultural conditions.

Therefore, we believe, our readers will welcome this full and careful account of cultural methods by an amateur who has grown hardy carnations successfully for ten years.—THE EDITOR.]

There is no use in denying that it takes patience and a good deal of love to raise hardy carnations, but think of the glorious harvest. Think of the enormous number of flowers you get, their fair size, good colors, strong stems, attractive habit, refreshing odor, and their ability to live five or six years with little or no covering! In my opinion hardy carnations are *the most satisfactory flowers that grow*. Only the rose may vie with them in fragrance and excel in sentiment, but roses require a good deal of care. Surely hardy carnations are easier to grow than greenhouse carnations. Indeed, they are only a little harder to grow than the common annual flowers.

The immense number of carnations offered in European catalogues is bewildering to an American amateur,

but the simple classification given by Professor Bailey in his "Survival of the Unlike" quickly brings order out of chaos.

1. Most important to the florist are the *forcing carnations*, which are designed for winter bloom.

Unlike the following, these are suitable for summer bloom in a garden.

2. Most important to the gardener are the border carnations. These bloom the second year from seed.

3. The Marguerites may not be equal to the finest border carnations in all respects but they will bloom the first year from seed.

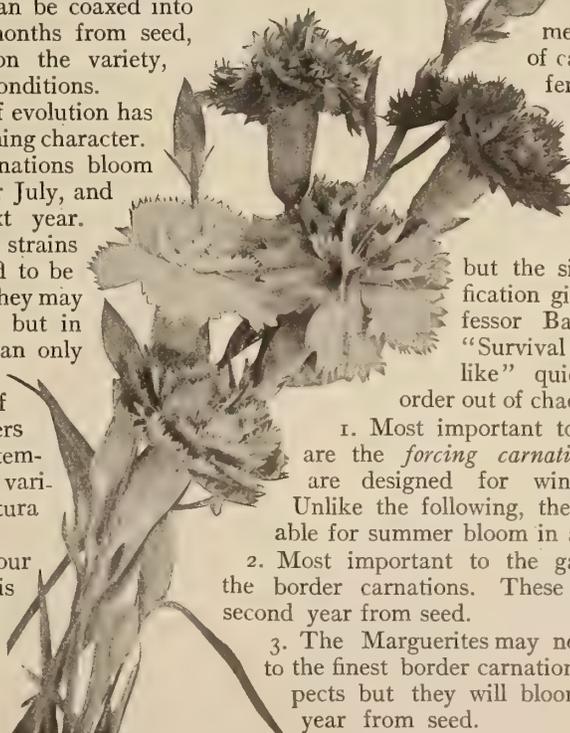
4. The Grenadines are a race



Among the improved annuals are doubles like this

the winter-blooming varieties, but then, not every one can afford a greenhouse! And besides, greenhouse carnations are discarded after a single season, whereas these may give good results for five or six years.

People sometimes say: "How fine it would be if the greenhouse carnations were hardy!" Hardiness is not the point at all. As a matter of fact, greenhouse carnations will often survive the winter outdoors. But people forget what a weary round of staking, disbudding, feeding and spraying would be required to bring outdoor blooms up to the indoor standard. And the chief reason why



Giant Marguerite carnations

developed chiefly for the perfumery trade. They have the strongest scent.

I have no greenhouse, hotbed, or cold-frame for my carnations, and all are started from seed. The plants are set into the open ground when about three months old, and there they stay. Some I have positively known to live through five or six seasons.

I plant the choicest seeds I can get—Red Grenadines, Fancy Picotees, Chabauds, double perpetual improved and Giant Chabauds, Perpetuals (florists'), etc. I have not, as yet, tried any of the named varieties, such as Comtesse De Paris, Enfant De Nice, Sparkling, etc., but mean to do so this year. One of the leading American seedsmen tells me: "All carnations are hardy the first season from seed; but as they grow older they become more tender." Yet, I have had plants to live many years and give enormous crops of flowers every year. All the varieties I have tried so far have lived, except the Marguerites. These I have tried three seasons. From them I got a few inferior flowers in September, and plants have invariably died, while plants of the other varieties standing on the same ground, and given the same treatment, have come through the winter in fine condition.

In March or April I plant my seeds in boxes about 12 x 14 x 3 inches deep, exactly in the same manner that one would plant early cabbage plants. They sprout in from five to eight days if left warm, and in about three weeks I transplant to fresh boxes of ordinary garden soil, not too rich, and sifted. The seedlings are as prone to the damping off fungus as any tender seedlings, therefore have to be watched very closely. If I see any signs of plants damping off I transplant at once even though the seeds still cling to the tiny seed leaves. They are very delicate to handle, but anyone who has patience can soon learn just how. In these second boxes plants should be set about one and a half inches apart each way. Like celery, the oftener they are transplanted the better they seem to like it, making large root growth and little top. About the middle of June I set them into the open ground. They may not then be over one and a half inches high, but if given clean cultivation from then on, by fall will be fine, large, stocky plants. I have had spring-sown seeds make fine plants that a half-bushel basket would not cover in September.

My soil is clay loam, not over rich, but holds moisture well. After setting out the plants I water thoroughly once, and cover each plant with an old quart berry box. Plants should be set twelve inches apart. The baskets or boxes I find the best protection as they give shade, and a plentiful supply of air, and if a stone is placed on each, will not blow away. I leave these over the plants

three or four days unless it rains. In case it does, I remove the cover, but never water after, no matter how dry the season, only cultivate, hoe, and rake. Of course, I know there are soils where watering might be necessary, but water, I find, is their only enemy.

If placed in a situation where water may stand around or near the roots, they will rot, at any season. This rot, of course, is most likely to occur in early spring, although last July, when plants were loaded with buds and blossoms, we had nearly two weeks of cold, wet weather in which I lost nearly one-third of my plants by this means. Therefore, one should be very careful to plant on high ground, and also not to set the plants too low in the ground. A little too high is far better than a little too low. They have a long tap root, sometimes twelve inches long. Yet the plants themselves, when not in bloom, seldom exceed six inches in height.



For mass effects the single pinks are unsurpassed—and fragrant too

As the plants grow older, they winter-kill more easily. Therefore, I plant seed enough each spring to fill all vacancies and thus keep up the supply of plants. I have raised these plants continuously for ten years, and have never but once been without from 250 to 300 plants except in 1903. That winter I lost every plant I had; but it was a time when everyone did the same.

Concerning mulching, I have found manure too heating. Straw seems too attractive to mice. Evergreen boughs are the very best mulch, as they do not hold moisture and do hold plenty of snow and ice usually until really growing weather sets in, and still give plenty of protection from cold. If these cannot be procured, a shingle firmly set at the northwest side of each plant will serve as well as anything. These, too, are not always convenient, and I have had plants go through several seasons without being mulched at all or any other protection; but it is not the safest way.

As I grow for flowers and not for effect,

my plants are set in rows four feet apart and cultivated with a horse, same as the berry bushes beside them, and kept well hoed. I sometimes use a little bone meal, plenty of unbleached wood ashes, which give long, stiff stems and brilliancy of color, and, when I can get it, well-rotted stable manure, which is free from straw. They like a very compact soil, therefore do not need the straw or other lightening material.

I have tried rooting cuttings in the open ground in August. They grow and survive, but give so few flowers I find it a very poor practice unless one has something very choice one wishes to save.

I think I have covered all of the subject except the flowers themselves. These I have had in every known color of carnations except green. The form of some will be poor. These I cast aside with the single ones, filling their places with young plants.

The size ranges from one and three-quarters to two inches in diameter. Yet I have had Chabauds two and a half inches, of the most perfect form and fragrance.

These Chabauds bloom in six months from seed for me, and if one could start seed very early, they would give quantities of flowers the first season. They are the only carnations I know, except Marguerites, that bloom before the second summer. Their season lasts about six weeks or a little more if one is very careful in picking the flowers. But in such profusion one almost wonders they can live through the blooming. I have had a single plant so large a bushel basket could not be turned over it to cover it, and fully 200 hundred flowers from one plant in a season. But not all are such profuse bloomers.

In the Fruit Garden

FINISH pruning in the orchard as soon as possible. Graft over poor trees with selected scions of better varieties. If you have a good, strong-growing tree it is better to graft it than to cut it down.

If planting new orchards, consider the advantages of the low-headed tree rather than the tall one. Or better still, plant on the filler system advocated by Mr. Powell in the *MARCH GARDEN MAGAZINE*. Remember that planting an orchard differs from planting a vegetable garden; you can remedy the errors in the latter next year, but you do not get the first fruits from an orchard for several years. Therefore, very carefully consider your needs and plant exactly what you want. It is wise to pay the best prices for high quality nursery stock. Good young apple trees are very scarce now and correspondingly high priced.

Prune blackberries. Draw off, pile up and burn the brush. Make a wire trellis to train the bushes on. Wire lasts longer than wood and is not so cumbersome.

Gardening Suggestions, by "Veronica"—II.

THE SUBTLE SURPRISES OF GARDENING—HOW THE BEST-LAID SCHEMES OF MEN MAY "GANG AGLEY" BUT ARE SUPPLANTED BY OTHERS OF NATURE THAT YIELD UNLOOKED-FOR BEAUTY

[EDITOR'S NOTE.—The former article, dealing with edgings, appeared in the February number.]

WHAT was your greatest success last year, and what were the best garden pictures you saw? The amusing thing about gardening is the unexpectedness of it—the way things turn out, in spite of all one's planning. After expecting to have my best effect a combination of fifty red hollyhocks and a mass of Shirley poppies, I was very much surprised to find that some white phloxes in three varieties and Honorine Joubert Japanese anemones made my most lovely pictures. They had both been planted three years. After peonies, hollyhocks, delphiniums and phloxes, they are surely the loveliest perennials, and unless the first-mentioned are the best of their kind, Honorine beats them all. The dark Japanese anemone is not nearly so good, but Queen Charlotte mixed with gray grasses gives a lovely effect of silvery pink. The annual verbena makes an excellent foreground for the tall anemones.

To go back to my phloxes, they are the wonderful *Fräulein Von Lassberg*, which is very much larger than any phlox I ever saw, and, unlike some of the new, big-flowered ones, it is also fairly tall. The other two kinds are older and commoner white ones—Anna Crozy and Jeanne d'Arc—and just as Anna begins to lose her freshness



Annual verbena fronts the Japanese anemone

Jeanne comes out, so I plant them mixed for a succession, cutting off any heads that may become shabby. One stem of Jeanne d'Arc measured six feet because it was struggling to the light among tall boltonias. These phloxes are never so good after three years, as they exhaust the soil and want dividing and replanting. Phloxes increase so fast in rich soil and are so easy to raise from seed that it is a mistake to keep the ugly magenta ones in a garden. In the first place they are bound to swear with everything (though worst of all with Golden Glow), and they will spoil your seed, as the bees mix the magenta seed with the seed of fine phloxes. Planted in open woods, however, they are charming, and they can perfectly well be moved when

in bloom, though gardeners deny this. I've moved dozens when in bloom, and never lost one. They must, of course, be well watered, both before and after moving, and not be kept out of the ground long. All transplanting is best done in gray, showery weather, and in midsummer this is doubly important.

I once arrived at a hired house at the end of July, and found a woefully bare garden. The cottage gardens were filled with phloxes just showing color, and for a few shillings I got a fine display and brought them home in the carriage. This was in England, but the same can be done here, especially with hardy chrysanthemums, which are so easy to move.

The accompanying photographs show the same lot of phloxes looking from the north and from the south, and the oak in the foreground, with a small grape vine climbing up it, is the same in each picture. The stocks in front of the phloxes are the pale pink cut-and-come-again, and were marvelously generous, for they stayed in bloom for months, and made a charming effect on the warm days of a wonderful November. In front of them are *Saponaria ocymoides* and *Oenothera speciosa*, both beautiful pink things to hang over gray stones, the former in May, the latter in June, when they made a charming harmony with pink Canterbury bells and foxgloves.



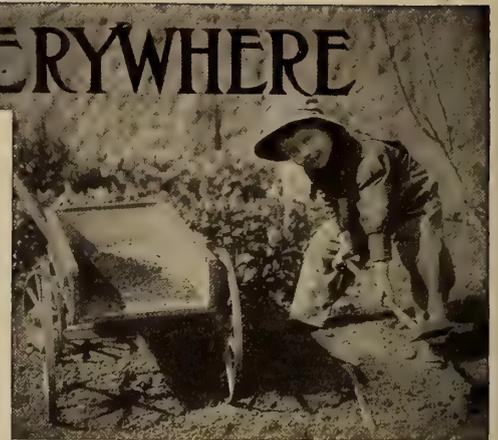
These pictures show the same walk from opposite directions. White phloxes and Japanese anemones made the unexpected feature

CHILDREN'S GARDENS EVERYWHERE



THIS IS THE LAST MONTH FOR INSIDE PREPARATIONS; HAVE READY FOR OUTDOOR WORK ALL PLANS, SEEDS, TOOLS, EVERYTHING—EVEN TO TOMATO SEEDLINGS. DO NOT PUT OFF THESE THINGS; THERE IS NO TIME BUT NOW

Conducted by
ELLEN EDDY SHAW
New York



GARDEN plans were worked out last month. Now go a step further by deciding on what you intend to plant. Send for a seed catalogue from some good reliable house and choose the seed.

Mark with lines on the garden plans the rows of vegetables you intend to put in. Suppose you intend to put a row of radish the full length of the plot. The plot is twenty feet long. Then you must have seed enough to plant a 20-foot drill. The following table will help you in estimating amount of seed.

Name	Hills or Drills	Amount of Seed
Beans	Hills . . .	1 qt. for 100 hills
Beets	Drills . . .	1 oz. " 50 ft.
Carrot	Drills . . .	1 oz. " 100 ft.
Corn	Hills . . .	1 qt. " 150 hills
Lettuce	Drills . . .	1 oz. " 120 ft.
Parsley	Drills . . .	1 oz. " 150 ft.
Radish	Drills . . .	1 oz. " 100 ft.
Squash	Hills . . .	1 oz. " 50 hills

It is not a bit too early to buy seed. Later, when the rush comes, you may not be able to get what you choose when you wish it. Another thing to remember is this, that it is rather the best plan to choose one variety of a certain seed and stick to it.

This is going to be a very busy month. I'd advise you children reading over the monthly reminder on the first page of the magazine. What the grown-up gardeners have to do, we have to do also.

OUTDOOR PLANTING

As soon as the ground is workable both garden and sweet peas may be put in. To plant garden peas dig a trench six inches deep. Drop two seeds in together, placing one pair about three inches from the next pair. As the peas grow, fill soil into the trench. Trenches should be about three feet apart. Thin the seedlings out later, if necessary. The ground for peas should be light and moderately rich. No manure should be used unless it is fine and well-rotted.

"Brush" the peas, that is give them a support of brush to twine upon. Do this when the peas are about an inch above ground. Brush with a great many twigs on it is the best to use. If the variety you have chosen does not grow more than two feet high, then you may do away with brush.

To plant sweet peas, dig the trench the same as for garden peas. Then sow the

seed thickly in this trench. Later thin out the plants to two inches apart. Fill the earth into the trench the same as for the other peas and put in some brush before the seeds start up.

Unless you have a place fully and freely exposed to the sunlight, do not plant peas at all. For without direct sunlight these plants will not thrive.

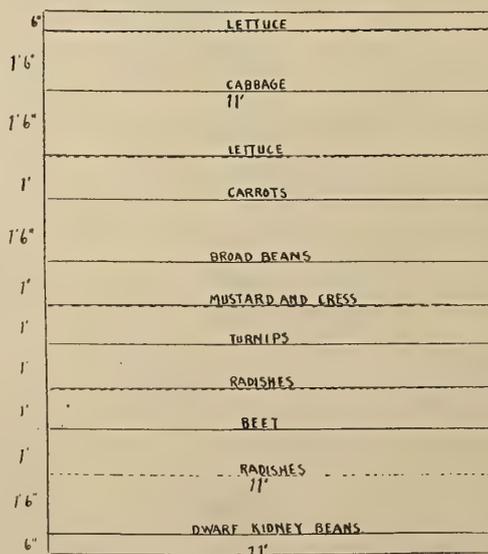
The soil should be rich; made so by plenty of well-rotted manure.

Of course you are looking for abundant bloom? Then keep the blossoms well picked and let no seed pods form.

INDOOR PLANTING

It is an excellent time to start indoor planting. That is, to plant those things you wish to get a good start before the ground is ready to work.

The question next comes up of what seeds we shall start indoors. It is not necessary at all to start certain seeds like beet and nasturtium, for example. It pays to start pansy seed, verbena, salvia, aster, stock, ageratum, petunia, lettuce, radish and tomatoes. The lettuce and radish had far better be planted in the hotbed, if you have one; otherwise leave the radish entirely for outdoor planting. For schools, inside planting had better wait until after spring vacation.



A schoolboy's garden plan; the dotted lines are used to represent successive plantings

When starting with the indoor-box, plant most seeds a half-inch deep in furrows about one inch apart. The pansy and verbena seeds plant nearer the surface than one-half inch. As the seedlings grow, thin out and transplant into another box. If the little seedlings are left in too crowded a condition they will grow yellow and spindling. Look out for this.

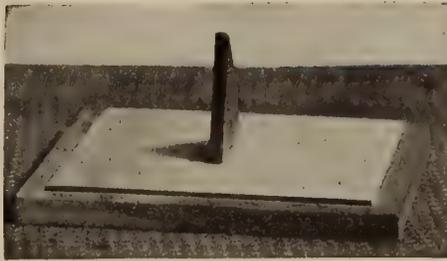
COLOR SCHEMES FOR FLOWER BEDS

Some of you might like to try flower beds of but one color. If blue be a favorite color of yours, try a blue bed this season. A yellow one might please you. In planning such a one-color bed there are certain points to hold in mind. One point is height, another is combination. You may exclaim, straightway, "combination of one color!" Surely; certain hues of yellow may clash badly, while others be perfectly harmonious. Do you see?

Suppose you choose a blue bed. Let us pretend it is to be a strip of land alongside of an old fence. Use the fence as a background, planting morning glories against it. Now you have a blue and purple combination to start with. What shall come next? Something tall, but not such a high grower as to come above the top of the fence. Neither are those plants desirable which grow so bushy that glimpses of morning glory flowers cannot be caught through the foliage. Cornflowers, do you say? All right. Let us hunt up the height to which these grow. We find the height to be twenty-four inches. Now, if you hunt up variety and color carefully it is possible to get an aster of a rather light blue, not a purple, but just off the purple. There is a little plant often used for borders called ageratum. It has a bluish flower, too. Ageratum grows eight inches high. How do you like your blue garden?

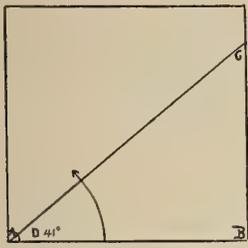
Another blue combination, a little more rare, would be purple foxglove which grows about three feet high and either blue Canterbury bells or larkspur, bordering this with a lower growing purple aster.

Some one wishes a yellow garden. This is not a narrow strip with a fence as a background, but just an oblong, ordinary-shaped garden spot. You might like marigolds as a mass through the centre. These have not only yellow but heavy orange shades in the



This simple sundial, if carefully made, is a fairly accurate timepiece

blossoms. To relieve this the California poppy, with its light yellow sort of blossoms would go well. Then border all of this mass of yellow and yellow-orange with nasturtiums having the same hues.



A HOME-MADE SUNDIAL

A sundial will add much to the general appearance of your garden. The directions, given by Mr.

John Corcoran of the New Paltz Normal School, are easy to follow.

Some soft wood, such as basswood or whitewood, will do for this. A harder wood, while more difficult to work with, is more satisfactory. Take two pieces of the wood you have chosen: A, $6\frac{1}{2} \times 6\frac{1}{2} \times \frac{1}{4}$ in. and B, $7 \times 7\frac{1}{2} \times \frac{1}{4}$ in.

Construction: True up each piece to the given dimensions, and sand-paper carefully.

Be careful to stroke the wood always with the grain — never across the fibres.

Next make a shadow-piece, or gnomon, as it is called. Get a thin piece of the same kind of wood as is used in piece A, and lay it out as follows: With the fibres running in the direction A, B, beginning at point A construct an angle equal to the latitude of the place where the dial is to be used. For example, if the latitude of your town is 41 degrees construct the angle D 41 degrees, or if it is 42 degrees, let D be 42 degrees. Then cut from A to C, and sand-paper carefully. Take the wooden shadow-piece and fasten it to the centre of piece A. Fasten by two brads or small nails about $\frac{3}{4}$ inch or 1 inch long, or glue it. Place piece A over piece B so that a margin of $\frac{1}{4}$ inch will be left on all sides.

Place A so that the fibres will run at right angles to B to prevent the boards from warping. These two pieces may be fastened together by driving a brad in each corner, or gluing, or both. It hardly seems possible that the shadow cast by the gnomon will really tell time. But it will.

Sun time and clock time are not quite the same. There are four days in the year when, if you work out the sun-shadow time, your dial will be almost accurate. These dates are April 15th, June 15th, September 1st, and December 24th.

Before you go outdoors draw on the platform of the sundial a straight line from angle B of the gnomon to the front edge of the platform.

Set the dial out in direct sunlight. The shadow cast must fall right on the straight line which you previously drew. When the



Garden tools for children's work. A spading fork may be substituted for the spade

shadow and the line coincide, mark the extreme end of the line XII. This stands for twelve o'clock. Now screw the sundial in this position to the column you have made for it to rest upon. At one o'clock mark where the shadow points, and keep on with this for every hour.

You remember the gnomon angle was the number of degrees corresponding to the degrees in latitude of your special place. Poughkeepsie boys and girls will be interested to know that if a sundial be brought to them from Rome, it will be right for them. And if New York City boys and girls could get one from Florence, they would find it quite accurate for their own use.

THINGS TO BE ATTENDED TO IMMEDIATELY

- I. Clean all rubbish off the garden spot.
- II. While the ground is still frozen, cart barnyard dressing, horse manure, on to the garden. This is to be spaded in later, when the frost is out of the ground.
- III. Plant in little boxes indoors those flower seeds you wish to get an early start. Tomato and pepper seed may be planted indoors also.
- IV. Sow in the hotbed: radish, lettuce, and onion seeds. Onions thus started and later transplanted into the open garden will be mild in flavor.
- V. If you are not quite sure how the seedlings of the plants you have chosen look as they come up plant some in boxes inside. Do this just to get acquainted with them.
- VI. Uncover the outdoor bulb bed. Rake off the old manure if evidences of it are left on the bed. You will be surprised to see how fine and strong the new bulb-shoots look, although, naturally, they

- will look yellow from the long stay away from the light.
- VII. Cut brush ready to brush the peas, also poles for the beans. If you choose bush beans, or lazy wife beans, no poles will be needed.
- VIII. Buy the tools necessary for garden work: trowels, spading forks, hoes, rakes, watering pots, and weeders are really enough. Burn on the wooden handles your initials or the school number.
- IX. Buy plenty of strong twine for stringing off beds.
- X. Once again heed this — buy your seed.
- XI. Certain things may be made: A reel for the garden line, stakes and markers, dibbers, a sundial and a good bird house are all a part of garden work.
- XII. Mark off on a rake-handle a scale of as many feet as the handle permits of. Two of these feet mark off into inches. This saves carrying foot rules or yardsticks outdoors in planting time. If the garden is a large one, then a tape of from 60 to 100 feet is almost necessary.
- XIII. Test seed. You may have some old seed and do not feel quite certain about using it. It is possible to be quite certain by testing it. Choose twenty seeds of a kind, place between damp blotting paper or on moist cotton. Leave in a warm place, keeping them moist until the seeds germinate or sprout. Let us suppose fifteen out of the twenty seeds germinate. Then $\frac{3}{4}$ or 75 per cent. have shown life. This test speaks well for the seed. Use it. Now suppose out of another kind only five out of twenty sprout. Then only $\frac{1}{4}$ or 25 per cent. show life. It doesn't speak very well for this seed does it? Throw away all seed where the germinating power is low.
- XIV. Make a germinating table—as the ger-

minating power of seeds is worked out, a germinating table might be filled in at the same time. For example, it takes garden peas from six to ten days to germinate. How many days does it take to germinate radish, lettuce, beets and all the rest of the seeds you intend to use? Work all this out, it will be of help in the outdoor work.

OVERCOMING DIFFICULTIES

The accompanying photograph shows what two small boys on a Colorado ranch did with a box of dirt and a five cent package of morning glory seeds. The soil here is a heavy, sticky clay, which bakes like a brick in the sun. This clay was mixed and pulverized with an equal quantity of well-rotted barn yard manure, the seeds planted, and frequently watered.

The plants grew luxuriantly and made a grand display each morning of exquisite red, white, and blue blossoms which were enjoyed by the entire family.

The more credit is due because of difficulties which had to be overcome in the way of carrying water some distance and guarding against chickens. They insisted on snipping the plants and buds. With a little more training the vines might easily have been made to cover three times the amount of space.

JESSIE I. CARPENTER.
Colorado.



A box is a possible garden



Children should brush the peas earlier than this, so as not to injure the young plants

ORCHARD & FRUIT GARDEN

"More and Better Fruit"

Planting the Cane and Bush Fruits

I THINK one is more easily reconciled to do without fresh strawberries if he can, when they are gone, begin eating raspberries, currants and gooseberries that have been well grown and left on the canes or bushes until fully ripe. Raspberries, I think are regarded by most people as the best of the small fruits that immediately follow the strawberry.

It should be understood that one class of raspberries is propagated by layering the tips of the canes, and to this class belong the black and purple berries. The other class is propagated by sucker plants that grow from the roots. Those which we call "black caps," or the tip varieties, are usually a little earlier than the red or yellow, or sucker varieties, and among the best of these for the table are Gregg and Kansas. The Columbian is the best of the purple. Though not of high quality, it is liked by some people and is desirable for canning. The best of the hardy red raspberries are the June (from the New York Experiment Station) and Cuthbert. Plant some yellow Golden Queen which is superior in quality to most of the hardy raspberries, and is excellent for serving mixed with Cuthberts.

The best blackberries are the Eldorado and Rathbun. Among the best currants for the family garden are Perfection and Wilder (red); and the White Imperial. The best gooseberries are Downing, Pearl and Keepsake. These varieties are for Southeastern New York.

Save time and insure good results by starting a propagating bed in which to grow plants for planting elsewhere. Of course, if one has no berries at all it may be well to set a few plants where they will quickly furnish fruit. The soil in the propagating bed should be rich and mellow; set the raspberry and blackberry plants in it two by six feet apart. Currants and gooseberries generally live and grow under adverse conditions; you can do as you please about propagating these (which is done by planting cuttings). They will grow in any soil rich enough to produce a large crop of corn. If I wanted ideal conditions, I would fit the land for growing a good crop of clover, sow barley on it in the spring as a nurse crop to seed clover with, and so grow a clover sod in which to plant my fruits.

When my plants and soil were ready, I would prepare the plant bed right now by thorough plowing and harrowing, then furrow it four feet apart for currants, six feet for blackcaps, seven for the red, yellow, and purple varieties, and nine feet for blackberries. In order to mellow the soil, and make a furrow just right for planting I attach a



Showing the supports for growing raspberry and blackberry plants. If substantial they last for years



Plums and cherries planted between rows of cane fruits is economical of room for the small place

furrower to the rear of my twelve-tooth horse garden cultivator, and gauge it so that it runs about six inches deep. A small plow also does very well to make the furrow. When all is ready I dig only last year's canes, pruning them so that each one is about a foot long and has a good sized piece of root attached to it. It is well not to shake off all the soil, and if the sun shines keep the plants covered when they are being handled. Blackberry roots, if so cut that there is a good eye on each piece of root, will usually grow if just dropped into the soil, covered two or three inches deep, and the soil well firmed; but I prefer to plant a piece of root that has sprouted.

Raspberries should be planted a little deeper than they originally grew, and two or three feet apart in the furrow. Blackberries will fill in well if planted four to six feet apart in the rows, while two feet apart in the row is sufficient for currants and gooseberries. When a row is planted walk over it and firm the soil close around the plant with the feet. With a space of six feet or more between the rows of plants, a cultivated crop, as potatoes, can be grown in the rows between the plants the first year. With cultivator and hoe, the plot should be kept free of weeds the first year. The growth of canes will be so small no pruning will be needed until the second year.

The second year, in the early summer, thin the sucker varieties of raspberries to an average distance of one foot apart in the rows. If you wish to propagate plants keep one row, or part of a row without being thinned. If the variety has proved hardy, grow each cane in the tree form by pinching off the tip when four feet high, and shortening the laterals or arms later in the season. If this plan is practiced a support will be needed. A good one is made by nailing arms on posts, and attaching wire to their ends so that they support a row of canes on either side. A little fruit can be gathered the second year, a good crop the third year, and

every year thereafter as long as the canes are well cared for.

If there is any doubt about the canes being hardy, or the supports are not used, it is better not to thin the plants so much nor shorten the canes. They can then be bent over in the fall and covered. If not supported they will stand up better if grown in narrow hedge rows.

The currants and gooseberries can be trained to tree form and much are more ornamental. Whether they grow in the tree or bush form makes little difference as to quality and size of fruit, if they are kept well pruned. Currants and gooseberries need no supports.

Do not make the soil too rich in nitrogen if you wish strong hardy canes; the canes will be more hardy on an elevation than on low rich lands. Blackberries will be benefited by more thinning and pruning than raspberries, and black cap raspberries need less than the red and purple kinds. The variety and growth, however, must determine the pruning.

It is very important to remove the old canes at once when a crop is harvested, for then the new canes will grow much faster, harden up more and be in better shape for winter. When the old canes are taken out the new ones should be pruned, but the thinning should be done earlier or at the time of the first cultivation, the last of May or the first of June.

The most successful growers of cane fruits cultivate with horse and cultivator frequently all summer, and keep all weeds cut out with the hoe until July, or just before the berries begin to ripen. They then place a mulch of strawy manure between the rows to retain moisture, and to furnish the fertility needed the following year. An occasional light dressing of stable manure, supplemented with ground South Carolina phosphate rock and potash will keep the soil in good condition for cane fruits.

The only disease that is liable to injure cane fruits is orange rust, and the remedy is to pull out and burn all infected plants. The worms that infest bush fruits are quickly destroyed with Paris green, using one teaspoonful to about twelve quarts of water. Apply with a sprinkling pot as soon as the worms make their appearance, which is usually just after the leaves appear. Do it again just before the fruit ripens. The rain and dews will wash off what little of the mixture may be adhering to the fruit, so that there will be no danger in using it.

New York.

W. H. JENKINS.



Leave cane and bush fruit on the plants to fully ripen. Pick fresh for each meal



Sowing the Seeds

IT MUST be remembered that the garden cannot be planted in a few minutes; gardening requires patience, a strict adherence to small details, and also considerable foresight. Try to have your garden a little better than your neighbor's. Feed your ground; there is no use trying to grow crops on poor, impoverished soil on which chickweed could hardly exist. Some soils respond readily to fertilizers, but in most cases well rotted farmyard manure proves the best tonic. Don't feed in spoonful doses, but give liberal applications.

One of the chief values in manure lies in its capacity to catch and store moisture; lack of manure, and therefore lack of moisture, causes more poor vegetables than anything else. Vegetables are quick growers of a succulent nature, and are curiously affected by a lack of moisture. With carrots, for instance, the core gets very hard and dry and the outer part peels off. In beets it will be noticed by white, hard lines; in peas by small size; in beans by the pod being curved and very stringy. In celery the stringiness is, in nine cases out of ten, the result of insufficient manure, which will also cause peppers to become very strong and cabbages to form club roots.

If you have new ground to break for a garden, have it well plowed, using a subsoil plow to break the bottom. Digging is better if you can afford it, in which case trench it about three feet deep, throwing the top soil to the bottom and adding plenty of manure.

After the ground is dug the section which is to be used for early vegetables (that is the highest or best drained ground) can be raked over with a wooden rake to smooth it off. Then run a roller over it before sowing the seeds.

The idea to be remembered in sowing seeds is that they should not be planted too deep nor too shallow; too thin, nor too thick. The depth of the drill varies according to the vegetable to be planted. Allow about one-quarter of an inch for lettuce and seeds of that size; about one-half inch for parsnips and such seeds; about one inch for beans; and about two inches for peas, except the first sowing, which should be about four inches deep. Sow enough seed to have a good full row and reduce the thinning out to a minimum, but do not throw the seeds in by the handful.

In making drills, measure with a line and have it straight and taut. For peas use a spade, which will give a drill one foot wide. For beans in double rows use a hoe, making the drill the full width of the hoe. For seeds that require single drills not less than one-half inch deep, use the hoe edgewise; for small seeds, where a really shallow drill is required, use a sharpened stick or a plant label. Always

use labels of some description to tell where each vegetable is planted. Twelve-inch garden labels cost but a cent apiece, but if you feel you cannot afford to buy them, use strips of shingles. Always mark the variety and date of sowing on the label. If you mark the same thing on your garden plan it will certainly help you next year when planning your garden.

Starting from one side of the garden, mark off one row for parsnips, one for salsify, then Swiss chard, parsley, celeriac, scorzonera, and chickory and dandelion if you wish. Sow more than one row if you think you will need it. Then sow onions and leeks. All these vegetables should be put together, for only one sowing is made and they remain in the ground the entire season. If you grow potatoes it would be wise to plant them next to the vegetables just mentioned, as they are all in the same class.

If you have room for the first sowing of early vegetables alongside the all-season crops they may be planted there; but if not, prepare another strip. Sow early peas, spinach, radish, lettuce, etc.

In filling the seed drills a wooden rake is most generally used. If you are in the habit of using a rake to cover seeds, be careful not to dig into the ground, but gently pull the soil back into the drill. A better plan is to do this work with the feet. Place the feet on the drill, heels together, and each foot at an angle of 45 degrees. Walk along, first pushing one foot forward and then the other, being careful not to raise the feet from the ground. This shoves the soil back into the trench and firms it at the same time.

Root crops are sometimes attacked by maggots; onions are invariably, and radishes are also easy victims. The best preventive is soot, which can be procured from any seedsman. Sow this right on top of the drill where the seed is planted, using a five-inch potful for every fifty feet of drill.

SOWING FOR SUCCESSION

After you have sown parsnips, onions, etc., you are through sowing this class of vegetables for the season, but peas, radishes, lettuce, carrots, etc. require occasional sowings to keep up a fresh supply. They should be sown from time to time as follows:

Bush beans: every two weeks from April 30th to August 15th.

Beets: every three weeks from April 1st to August 15th.

Carrots: every three weeks from April 1st to August 15th.

Chervil: if used for flavoring or garnishing salads, etc., should be sown every three weeks from April 1st to August 15th.

Corn: every two weeks from May 1st to July 30th.

Cucumbers: every three weeks from May 1st to July 30th.

Lettuce: every two weeks from April 1st to May 15th; then every week until September 1st; then every two weeks until October 1st. The idea of this is to sow in small batches during the hot weather, as it soon runs to seed.

Onions: If you are fond of green onions, you can have them by sowing every three weeks from April 1st to September 15th.

Peas: every week from April 1st to June 1st; then again, on July 15th, begin sowing every two weeks until September 1st.

Radish: every week from April 1st to October 1st.

Spinach: every week from April 1st to May 30th. Then stop until August 1st; then sow every week until September 1st.



Making a 12-inch drill with a spade and a 6-inch drill with the broad side of a hoe. Stand on the line to keep the drill straight

Turnip: every three weeks from April 1st to May 15th. Then again from July 30th to September 1st.

The following varieties of vegetables are the best in my opinion, for April sowing:

Asparagus, Palmetto, D'Argenteuil; *Beans,* Green Podded, Black Valentine; *Beet,* Early Eclipse; *Brussels sprouts,* Brechin Castle; *Cabbage,* Early Jersey Wakefield; *Carrot,* Guerande; *Cauliflower,* Earliest Dwarf Erfurt; *Celery,* Chicago; *Celeriac,* Erfurt; *Chervil,* Curled; *Kohlrabi,* White Vienna; *Leek,* American Flag; *Lettuce,* May King; *Onion:* for large onions, Prizetaker and Alsa Craig; for best keepers, Red Wethersfield, Yellow Globe Danvers and Southport White Globe; *Parsley,* Moss Curled; *Parsnip,* American Hollow Crown; *Peas:* Alaska, earliest of all peas, but very poor quality; New York Market is a good early pea, but sow Gradus at the same time. Make three sowings in the month, using one or two rows of New York Marshall or Nott's Excelsior, and the balance all Gradus, a pea you will never tire of. *Potatoes:* For early use, Bovee, very free bearer, or Noroton Beauty; for main crop use Carman No. 3, Green Mountain, or Uncle Sam. *Radish:* Ne Plus Ultra or French Breakfast. *Salsify:* Mammoth Sandwich Island. *Spinach:* Viroflay and Victoria. and, towards the end of the month, sow a row of New Zealand for summer use.

If you have no coldframes or hotbeds and have no early-sown cabbage plants, you can make a sowing of this vegetable about April 1st at the same time as cauliflower and Brussels sprouts seeds.

Celery can now be sown outdoors for the late or main crop and will follow up the early lot which was started in February.

Get your potatoes in now. You do not gain anything by putting off such jobs. As suggested last month, cut your seed to one eye and plant about twelve to fourteen inches apart in the row.

Now is the time to prepare melon hills. Use a liberal amount of manure, and if you can procure some fresh sod, it is a good plan to mix it with the manure, using two-thirds sod and one-third manure. Dig holes two feet deep and three feet across and fill them with the compost, raising the hills a few inches higher than the ground level. Then place the frames to give the ground a good chance to get thoroughly warmed. If you haven't any frames, do not try to grow melons in Long Island, because melons, without the help of sash frames, do not ripen until the middle of September. As the nights then get very cool the melons lose their flavor, crack considerably and are at the mercy of the melon blight. Build a few frames; they will not cost very much. All you require is a 1-foot square box nine inches high in front and twelve inches in back, and a 4-glass sash to cover it. Get the hills prepared early in the month and the frames placed, and sow the seed any time after the twenty-fifth.



Make a very shallow drill with a wood label



Sow the smaller seeds direct from the packet



Keep the edge of the hoe against the line



Sow beans in a double row two inches deep



How to sow peas in a 12-inch drill two inches deep

You can also prepare lima bean hills now, but I would not advise sowing until after May 1st. Dig good deep hills for the limas and add plenty of manure to the soil. Mark off the row and place poles by making good deep holes with a crowbar; then dig around the pole and fill in with the soil that has been removed, to which about one-third manure has been added. I use a wheel-barrowful to every three hills.

Before setting plants of cabbage, cauliflower, Brussels sprouts, leek, lettuce, etc., out in the open ground, harden them off slightly. Start by having a little air on the frame at night and keep gradually increasing the amount until by the end of the month the sash can be left off altogether.

Egg plant, peppers and tomatoes are best left in the frames until the end of May and should not be subjected to the hardening-off process. So partition off your warm plants in some way.

Make drills about three or four inches deep for cabbage, cauliflower, Brussels sprouts and leeks with the edge of a hoe. The drill protects the newly set plants from the wind and sun, and catches water; the soil can easily be leveled off after the plants have attained any size. It is not practical to do this with lettuce or onions. When planting out vegetables always place your line and make a drill as a guide to getting straight rows, but for lettuce and onions and such vegetables, make it very shallow, one inch being deep enough.

New York. W. C. McCOLLUM.

[Next month we will take up the sowing of lima beans and other heat lovers; sowing for succession; thinning out, etc.—THE EDITORS.]

A Washing Tank for Vegetables

IF you have no place where the vegetables can be washed before taking them into the house and if you do not feel inclined to build a proper washing tank, use a barrel sawed in two or an old butter tub. But a tank would not cost very much; it could be made as follows:

Dig a hole about eighteen inches deep, three feet long and two feet wide. Build inside of this a tank of bricks, putting a partition in one end, the partition wall being about two inches lower than the side walls. Place a pipe in the bottom of each basin leading to a barrel or some other drainage, and then plaster the bottom and side walls with cement. Place a cork in the pipe in the large washing compartment, which is only used to draw off the water in winter. All the sand is held in the first compartment by the partition. Throw the vegetables right into the tank; if you have a half barrel alongside to hold refuse it will help.

New York. L. I. C.



Double Crops All Season

SHOULD I call my garden work last year a success? I suppose the professional might be richly indignant did the same ground yield him no better returns; but since I got a double crop from nearly every foot of land and a yield that supplied my table and some of my neighbors' all summer, and which is still proven by turnips, winter radishes, beets, celery and oyster plant in my cellar, I feel satisfied and, indeed, gratified.

Like some of you who are now planning next summer's garden, I began mine last February. My recreation from business during the evenings was in searching seed catalogues. Moreover, as I knew little about gardening, I got from these catalogues many valuable ideas on planting, caring for crops and harvesting. I secured from our agricultural college reports on small gardens, to learn what might be expected to grow luxuriously on soil of poor quality, and on a patch only 40 x 40 ft. Later when I became acquainted with the nature of my soil I felt ashamed of myself for trying to produce anything until I had enriched it and it seemed audacious to think of double crops.

But I was an amateur and worked along in blissful ignorance. Before my open fire I drew design after design of that garden. I plotted it out, and produced my crops time after time in imagination, until at last planting time actually arrived and I was so eager to get the seeds into the ground that the plots and plans were well-nigh forgotten.

I had, however, spent one winter evening in making garden labels. They were whittled from cigar-box wood, just wide enough to write in the name of the seed, variety and date of planting. These came in very handy, for when one has covered even 40 x 40 ft. with different seeds, it is most difficult to remember which is which and where is what. Moreover, these sign posts afforded an opportunity for further study.

In a single row forty feet long I planted spinach. A half dozen inches away I put a row of earliest

corn. Lettuce and radishes had been sown together in a long row. As the radishes were ready for pulling earlier than the lettuce they were gotten out of the way, the lettuce being coaxed into developing big heads. Immediately beside this I planted a second row of corn which had the field to itself as soon as the lettuce had ripened.

My several varieties of peas—several because we are particularly fond of peas—were gotten out of the way in season for tomatoes. These were my pride. I raised eleven different varieties, including the small strawberry, from house-sown seeds. Each alternate tomato row was provided with a stick to which the vines were tied. While the closely pruned vines yielded earlier, they did not produce as abundantly as those which were allowed to spread over the ground.

We had string beans all summer. The last were picked after the first frost and were, I believe, the most delicious of the year, or did they seem so because of their unseasonableness? As fast as they ripened, cabbage, Brussels sprouts and pepper plants followed. After early beets I set hotbed-raised cucumber and squash plants. Summer squash plants were removed in time for celery settings that had been growing in the hotbed. Later peas gave way to later corn; oyster plant and parsnips succeeded more early beets.

But best of all to me was that where I had raised my first spinach and early corn I was enabled to get a third crop—turnips. This was compensation for a joke I had played on myself in my planting. Our family was particularly anxious for melons, but I had said that too many children played near our backyard—I would not place a melon temptation in their way. I therefore planted cucumbers, watched them carefully, hoed them diligently, watered and fostered and coaxed them to grow. They did; they even surpassed the earlier planted cucumbers in another corner of the lot. I boasted about those cucumbers and even ordered the brine prepared for cucumber pickles. But one day I opened my eyes and found those cucumbers were muskmelons! That land bore but one crop.

Mind you, this is the garden of an amateur. Even to-day, after a season's experimenting I am not sure I could plant to the expert's liking. I know I could and will make improvements next year and hope then to get double crops by my amateur intensive method.

Yet I am not dissatisfied with my first effort. I can not give all the figures, for late in the season we were away so much that a strict account was not kept. However, our 40 x 40 ft. garden yielded us—

30 quarts peas	6 bushel tomatoes
22 quarts string beans	½ bushel parsnips
½ bushel cucumbers	¼ bushel salsify or oyster plant
½ bushel beets	Abundant supply of corn
½ bushel turnips	18 cabbages

Also radishes, lettuce, summer and winter squash, spinach and Brussels sprouts.

Massachusetts. GEORGE F. JENKS.

Japanese Iris from Seed

IT IS indeed strange that the Japanese iris is not more generally grown, as it is perfectly hardy, free from insects and will bloom the second year from seed.

Beginning five years ago with one plant, I now have forty varieties, the colors ranging from purest white through pale silver, dark blue, royal purple, pink and rose to deepest wine. The shades and colorings are indescribable.

In just a few feet of ground in a city garden I have had in one season over fifteen hundred blooms. The first blossom usually opens June 6th, the last one July 27th, making a long period of bloom.

The third season from planting I had as many as fifteen blossoms on a plant at one time. I know of no other hardy flower as desirable in every way as the Japanese iris. The culture is very simple—just give plenty of water and the best soil you have. After that they will take care of themselves.

Before the iris comes into bloom, the bed where they are to grow is full of forget-me-nots. When the irises finish blooming, the cardinal flower takes their place, so that from early spring all through the season the iris bed is a beauty spot, requiring but very little time and labor in comparison to the results.

New Jersey.

MATILDA LANING.



Japanese iris will bloom the second year from seed. It is hardy and free from insects



A. G. Richardson, Architect.



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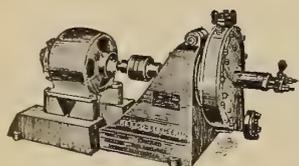
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Astonishing Improvement in Easter Lily Culture

FOR many years the culture of the Easter lily has been in a most unsatisfactory condition, owing to the diseased condition of the Bermuda-grown bulbs. A few years ago Dr. Albert F. Woods discovered that bulbs grown from seed, instead of scales, were practically free from disease, and about the same time Mr. E. M. Byrnes found that by crossing different varieties of *Lilium longiflorum* he could get plants more vigorous than either parent.

Mr. George W. Oliver then showed that it was possible to raise salable bulbs from seed in only two years, whereas it was formerly thought that six years were necessary. He distributed seeds to cultivators in all the warmer parts of the United States, with the result that California seems to be the best place for the new industry. Incredible



Two years from seed! Thirty-five buds and flowers on this hybrid Easter lily

as it may seem, the Californians can raise first-class bulbs much more quickly from seed than they can grow from scales or small bulbs. A few plants of the first generation show the disease, but in plants of the second and third generation it is hard to find a diseased plant.

At first the farmers and florists would not believe that it was possible in twelve month's time to raise a flowering plant from a seedling not more than two inches high. Yet it is entirely practical to raise bulbs four inches in diameter in two years from the sowing of the seed. One florist cleared \$250 for cut flowers from seedlings grown on a space 25 x 45 feet, and this was only for the flowers he did not want for seed. Such temptations for immediate profit, however, must be resisted by bulb growers, because the removal of flowers and stems results in bulbs of an inferior grade.

The best results have been obtained by crossing the varieties giganteum and Harrisii, and the gain in the number of flowers on a stem is wonderful. At Santa Ana, California, hundreds of plants had twenty or more lilies on a stem, and the accompanying picture shows a stalk bearing thirty-five flowers!

Professor Galloway and his associates in the



5 Grapevines \$1.00

Strong, Hardy, Three-year-old Vines

Any five of the following well-known varieties:

- (Red)—Brighton, Delaware, Lindley
- (White)—Niagara, Diamond, Pocklington
- (Black)—Concord, Worden, Moore's Early, Wilder

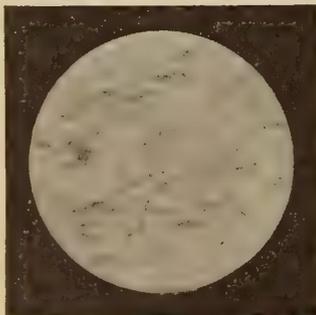
These vines will grow anywhere and will bear the year after planting. We guarantee them to be as represented or money refunded. We also offer 10 strong, hardy, two-year-old vines for \$1.00. This is a remarkable collection of grapevines at an exceedingly low price. Order now, vines will be shipped proper time to plant.

With every order we send our valuable book how to plant, cultivate and prune. Grapes are easily grown and should be in every garden.

T. S. HUBBARD COMPANY, 364 Central Ave., FREDONIA, N. Y.

GRAPEVINE SPECIALISTS Established 42 Years

Use Paint made with Oxide of Zinc



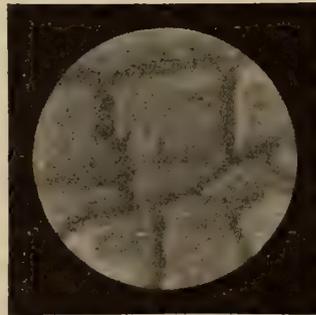
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The Microscope Tells Why

Properly made, prepared paint lasts long, while ordinary hand mixed paint quickly crumbles and chalks off.

It is OXIDE OF ZINC that makes the prepared

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Does your paint contain Oxide of Zinc?

Oxide of Zinc is unalterable even under the blowpipe

The New Jersey Zinc Co.
55 Wall Street, New York, N. Y.

We do not grind Zinc in oil. A list of manufacturers of Oxide of Zinc Paints mailed free on request.



Chrysanthemum Novelties

are my specialty and I import varieties from all over the world and distribute the best to the American grower.

Are you interested in new Singles? A dollar packet of seeds will give you varieties equal to the best named kinds. These will flower abundantly for six weeks in the Fall when everything else is black and dead.

Our catalogue, *which is yours for the asking*, contains descriptions and prices of 400 of the finest varieties of chrysanthemums, also all the up-to-date varieties of roses, carnations and such like stock to select from.

If You Have No Greenhouse

you will find in the catalogue over 100 varieties of the hardy Pompon chrysanthemums that are sure to interest you. They will make your garden more attractive this Fall than it has ever been before.

CHARLES H. TOTTY

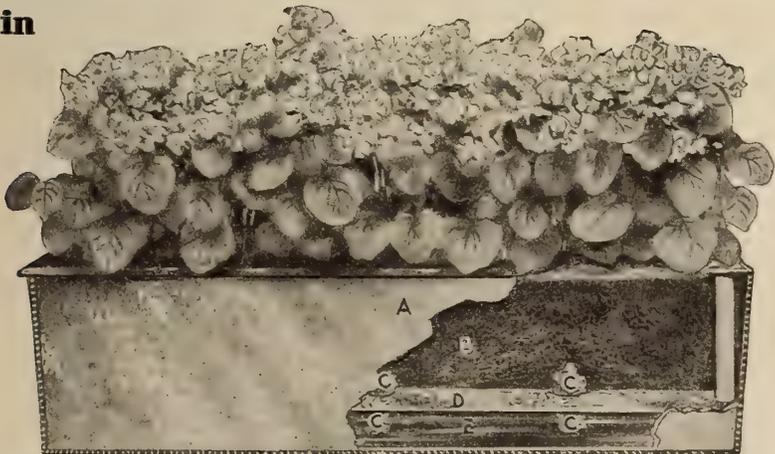
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NEW JERSEY



Beautiful Flowers Grown Easily in



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Illinois Self-Watering Flower Boxes

You can have beautiful flowers and strong, hardy, luxurious plants in your apartment, city house or country home by using Illinois Self-Watering Flower Boxes. You don't have to be an expert gardener to grow them. Simply fill the box with earth, plant a few seeds or slips, fill the reservoir once in two weeks—the plants will sprout and grow rapidly without further attention.

Reservoir in bottom of box supplies just the proper amount of water to make plants strong and healthy without rotting them. Water comes up from the bottom and reaches roots first, therefore has no chance to decay stalks as in case of pouring water on top of soil—which quickly becomes hard and does not allow proper absorption. Observe illustration above—“A” shows exterior of box, “B” earth in same, “C” sponges which suck up moisture and supply roots, “E” water in reservoir. They are made of nicely finished metal, rust and leak proof. Made in a large variety of styles and sizes for indoor or outdoor use on porch, window sill, lawn, etc. Inexpensive, indestructible. Other styles to order. Clubs, Hotels, Conservatories, Public Institutions and Homes completely equipped. We can also supply very handsome alabaster or cement Boxes, Urns, etc., equipped with our patent Self-Watering liners.

30 DAYS' FREE TRIAL

Write today for illustrated descriptive booklet containing article by a National authority on Care of Plants, with 15 Combinations for Window and Veranda Boxes. It's Free.

ILLINOIS HEATER & MFG. CO., 33 Dearborn St., Chicago, Ill.
503 Kamm Bldg., San Francisco, Cal. Conard & Jones Co., Distributors for N. Y., N. J., and Pa.

ROSES

Hardy, everblooming and guaranteed to be true to name. No finer roses have ever been offered or grown.

SPECIAL OFFER

of New Roses—made to build new business. **Blumenschmidt**, Pure Yellow; **Gen. MacArthur**, Crimson Scarlet; **Snow Queen**, Pure White; **Killarney**, Deep Rose Pink; **Mrs. Rivoire**, Golden Yellow; **Gainsborough**, Hardy Climber with magnificent Pearl-White flowers.

The above 6 Grand Roses mailed post paid anywhere in U. S. or Canada for 25c.

My NEW and RARE COLLECTION

Mrs. Aaron Ward, Golden Orange; **Betty**, Coppery Yellow; **My Maryland**, Glorious Pink; **Rhea Reid**, Deep Glowing Scarlet; **Wm. R. Smith**, or **Maiden Blush** (also sold as **Jeanette Heller**), Blush Pink; **Mamie**, Hardy Climber, a strong grower, color, Delicate Fawn with heart of Pink.

These 6 New, Grand and Rare Roses mailed post paid anywhere in U. S. or Canada for 50c.

The Climbing Rose **Mamie** is worth the price of the entire collection, and all other varieties are usually offered from 15c. to 20c. each by other rose growers. On account of this BARGAIN OFFER only one collection will be mailed to any one address. Send your order to-day. You will get the finest roses that have ever been offered.

DAHLIAS

Six varieties. Easily grown and all will bloom this season. **C. W. Bruton**, Rich Yellow; **F. L. Bassett**, Royal Purple; **Countess of Lonsdale**, Deep Salmon; **Winsome**, Snow White; **A. D. Livonia**, Deep Pink; **Red Hussar**, Ruby Red. Each Dahlia in the above collection is fine in color; have won first prizes at flower shows and is the coming flower for Decorations, Parties, Weddings, etc. One tuber of any variety for 15c., any three for 40c. or the complete set of 6 Dahlias for 75c. postpaid. The collection will richly repay you with its wealth of flowers. Order early, as the stock of these rare varieties is limited.

DAHLIA SEED

New Century, Cactus, Black, Striped, Double and Single of all colors. For 10c. I will send you 50 seeds—enough for a fine Dahlia Garden.

Write to-day for my new catalog which contains everything you may need to make your surroundings beautiful.

MISS JESSIE M. GOOD (DAHLIA SPECIALIST)
Box 152, SPRINGFIELD, OHIO





"Reap Results" Dreer's Garden Book

A veritable storehouse of horticultural knowledge—the result of more than 70 years' experience. Every bit of information in its 256 pages is told in so simple a way that any amateur can understand. Yet every page holds something of value for the trained gardener.

Some of the things it tells:—

- The best way to grow annuals, and how to raise hardy perennials from seed.
- Making and care of hot beds and cold frames.
- Hints and suggestions for the amateur florist on soil for pot plants, insects, fertilizers, watering and other subjects.
- Palms for the adornment of the home.
- How to grow roses, including advice on the situation and preparation of the bed, rose enemies, planting and pruning and winter protection. This guide will carry the amateur through every critical step in the production of the rose.
- The making and care of an old-fashioned hardy border.
- Shrubs, their planting and care.
- Water-lilies and their culture.

Many of these articles were written especially for Dreer's Garden Book by horticulturists of national reputation. But besides these special articles, every page holds knowledge that will aid you in the garden. Every important plant is the subject of a special treatise. More than 1,200 varieties of flower seeds and 600 varieties of vegetables are dealt with, and 2,000 kinds of plants. Throughout, this book is profusely illustrated, containing, besides hundreds of smaller flower pictures, eight rich color and duotone plates. *The Garden Book sent free on receipt of request, mentioning this magazine*

HENRY A. DREER, 714 Chestnut St., PHILADELPHIA

United States Department of agriculture are to be congratulated upon this splendid achievement. We are indebted to the Department for the accompanying photograph which is taken from Bulletin 120 of the Bureau of Plant Industry, entitled: "The Production of Easter Lily Bulbs in the United States." **W. M.**

A Busy Man's Vegetable Garden

FOR the season of 1909 we had the good fortune to realize one hundred dollars in value from a vegetable garden 80 x 100 ft. in size. This is the best we ever did on so small a tract of land.

To begin with, the ground was in first class condition, being fertile, friable, and comparatively free from weed seed. Late in the fall of 1908, however, I had five loads of stable manure spread over the ground and then had it thoroughly plowed.

As early in the following spring as the weather would permit I planted half the lot to potatoes—early, medium early, and late varieties. They came on with a rush. From this plot we harvested \$30 worth of potatoes, not counting what were used on the table during the summer. When the cultivation of the potatoes was completed, sweet corn was planted between alternate rows, the vines of the intervening rows being laid together. This gave us a good supply of late roasting ears.



These turnips were the third crop from the same ground in one season

The potatoes were removed from the ground by August 6th, and half of the plot sown to turnips and the other half to rye to be used as winter food for a flock of thirty chickens. The turnips were excellent, and were worth \$3. This gave us three splendid crops from one-half of the garden.

From the grape arbor, which occupies a central strip ten feet wide the entire length of the garden, we gathered \$25 worth of grapes.

The opposite side of the garden was given up to onions, radishes, beets, cucumbers, sweet potatoes, early corn, beans, pumpkins, etc. Four dozen tomatoes were planted, each being put over a half bushel of well-buried manure. The result as to thriftiness and production was astonishing; the vines were staked up and reached far above one's head. They hung full from the ground to the top nearly all season, and were covered with big, meaty, fine-flavored fruit.

The product of three pumpkin seeds consisted of twenty-one Thanksgiving pumpkins, weighing from ten to forty pounds. They occupied the corners and spare places.

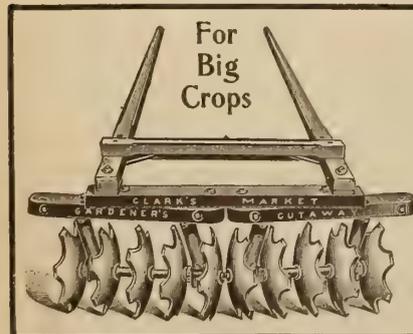
The various articles produced were estimated as follows:

Grapes	\$25.00	Potatoes	\$30.00
Sweet potatoes	5.00	Green corn	10.00
Green beans	5.00	Tomatoes	10.00
Cucumbers	2.50	Turnips	3.00
Pumpkins	2.60	Radishes	1.00
Lettuce	1.50	Onions	2.00
Chicken greens	2.40		
		Total	\$100.00

Ohio. **C. A. HARTLEY.**

D SELECTED SEEDS AND BULBS for Flower and Vegetable Garden. Reliable varieties; accurate descriptions. Before you order, write us for our Catalogue—yours free. **MILLS & CO., Dept. 2, Mamaroneck, N. Y.**
DAHLIAS OUR SPECIALTY

SQUIER'S WEED KILLER
Will clear your drives and walks of all vegetation quickly, more efficiently and enduringly than by any other way. U. S. Government uses SQUIER'S. Avoid substitutes. Send for circulars to **C. Harrison Mfg. Co., Rahway, N. J.**



ORIGINAL "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 is a great labor saver.

Made in Three Sizes:

- No. O, 1 horse with two gangs of 5 14-inch disks each.
 - No. OO, Light 2 horse, two gangs, 6 14-inch disks each.
 - No. OOO, Heavy 2 horse, two gangs, 7 14-inch disks each.
- Send to-day for our FREE booklet describing 120 styles and sizes of Cutaway Tools.

CUTAWAY HARROW CO.

902 Main Street

Higginum, Conn.



BRINGTON, ENGLAND
The entrance to Althorp Park and home village of Washington's ancestors.

BRINGTON CHURCH
where are buried Washington and Spencer ancestors

HENDERSON'S
GREAT AND GRAND
NEW SPENCER SWEET PEAS
GEORGE — MARTHA
— AND —
WASHINGTON — WASHINGTON

— RAISED IN AMERICA —
FROM ANCESTRY ORIGINATING IN ENGLISH HOME SOIL OF THE WASHINGTONS

Sweet Pea evolution has resulted in the creation of a glorified race, "The Spencers," so surpassingly superior that older types are destined to be superseded as rapidly as corresponding colors among the Spencers can be trued up and sufficient seed produced.

The characteristics of the Spencer Sweet Peas, grown under congenial conditions are: robust growth, the plants attaining a height of from 6 to 10 feet, requiring for full development to be a foot apart. The flowers are giants among Sweet Peas, measuring 2 to 2½ inches across. They are beautifully formed with huge standards, open and upright and immense wings gracefully poised. Both standards and wings are daintily waved, the undulations reflecting high lights and casting shadows in the depths, thus showing a varied harmony of tones which greatly enhances the coloring. Three and often four of these queenly blossoms are borne on long, strong stems, rendering them unsurpassable as cut flowers for vases, bouquets and other decorations. Their long continued profusion of bloom is phenomenal, but accounted for by the fact that a majority of the flowers of true Spencers fall as they fade—before the seed pod is formed—thus continuing the succession of bloom—for as all know when Sweet Peas set pods, the flowering diminishes.

When visiting the English home of origin of Spencer Sweet Peas last season we discovered that we were also on home soil of the Washingtons. The coincidence was so striking that we tarried a day or two longer, collecting information and getting photographs amid scenes and environment of the fore-fathers of America's father. These we will publish as "pot-pourri" in a little booklet which will be mailed free to interested purchasers of our two Washington Sweet Peas.

HENDERSON'S
GREAT AND GRAND NEW SWEET PEA
GEORGE WASHINGTON

This glorious crimson-scarlet self we believe surpasses all the World's Sweet Peas of similar coloring in size of flower, form, substance and in brilliant purity, untarnished by burn or scald, though grown unshaded under most trying sun. The flowers of gigantic size are true Spencers, having round, open standards pleasingly undulated from throat to border. The waved wings also are of huge size and gracefully poised over the keel, almost hiding it from view.

These gorgeous blossoms are borne usually in fours, but sometimes in threes, on strong stems 10 to 12 inches in length. The plants of exuberant, healthy growth display such a continued profusion of bloom they appear for weeks as if mantled in richest scarlet.

Nearly 40 years ago we offered the first red Sweet Pea "Scarlet Invincible" and very popular it became, but progressive evolution brought forth better and yet better varieties of similar color which we have offered in turn as one supplanted another. At the present time, in the Sweet Pea World, among the new race of Giant Spencers there are several rival aspirants awaiting the honor of being acknowledged—best—in the crimson-scarlet group. We have grown or seen these and most are good, but better under British conditions than in our climate. We therefore reiterate, Henderson's Great and Grand new Sweet Pea—George Washington—surpasses all, particularly under American conditions.

HENDERSON'S
GREAT AND GRAND NEW SWEET PEA
MARTHA WASHINGTON

A radiantly beautiful new Spencer Sweet Pea, most daintily colored pearl-white from throat to center, then appears a veiled flush of pink deepening in intensity as it merges into the marginal zone of soft tyrian-rose. The standard and wings are adorned alike, front and back being tinted and colored just the same, a remarkable and pleasing characteristic, thus the flowers present the same exquisite color effect which ever way they face, in vase, bouquet or on the plant.

The flowers of lasting substance are perfection in form and of the largest size, standards upright, open, well rounded out and beautifully waved. The wings are also very large, gracefully waved and poised almost enclosing the keel. Usually four of these peerless blossoms are carried, well arranged on long strong stems. They vase charmingly and where shown have elicited enthusiastic encomiums.

The plants are luxuriant, healthy growers, blooming long and in prodigious profusion, producing more four-flowered stems than any Sweet Pea we know of. A group of plants in bloom is a picture decidedly decorative in any garden. Considering the many merits of Henderson's Great and Grand new Sweet Pea—Martha Washington—we believe it to be the finest variety of the decade.

A portion of
ALTHORP GARDENS
The home of
The Spencer Sweet Peas.

ALTHORP HOUSE
The home of the Spencers.
Neighbors and Colleagues of
Washington's ancestors.

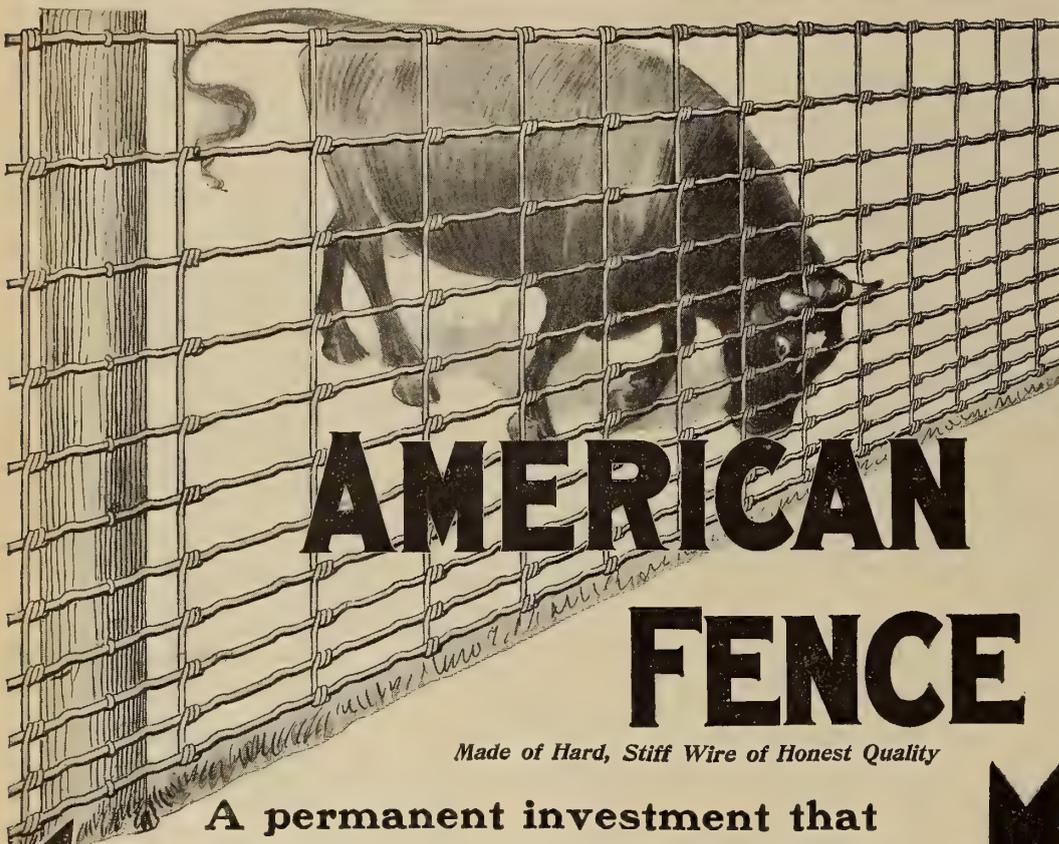
PRICE
HENDERSON'S GREAT AND GRAND NEW SPENCER SWEET PEAS
George Washington and Martha Washington,

EITHER VARIETY
25c. PER PACKET OF 25 SEEDS.
Both Varieties—1 Packet Each, 50c.
Including Booklet Offered Below.

HENDERSON'S
WASHINGTON BOOKLET
free to purchasers who mention
THE GARDEN MAGAZINE
Photographic scenes and interesting
data collected on our visit to the
English home of the Washingtons



PETER HENDERSON & CO., 35 AND 37 CORTLANDT ST., NEW YORK.



AMERICAN FENCE

Made of Hard, Stiff Wire of Honest Quality

A permanent investment that gives the greatest satisfaction in appearance and service

THE fence that gives the finishing touch to any place—adds that well-kept look that sets it apart from others; keeps in the stock and gives the most permanent satisfaction to the owner.

Your place requires a fence that is more than a mere boundary line. Good fencing is a necessity to its successful operation. For the man who owns many acres of country land or a small country home, American Woven Wire Fence gives greatest return on the investment.

American Fence is made of hard, stiff steel wire drawn expressly for woven-wire-fence

purposes. Galvanized by latest improved process—the best that the skill and experience of years has taught. Built on the elastic, hinged-joint (patented) principle, which effectually protects the stay or upright wires from breaking under great strain.

Test American Fence under all conditions. You will find that the steel, the structure and the galvanizing are equal in durability, strength and efficiency to the hardest usage. Agents everywhere.

Let us tell you the name of the one nearest you.

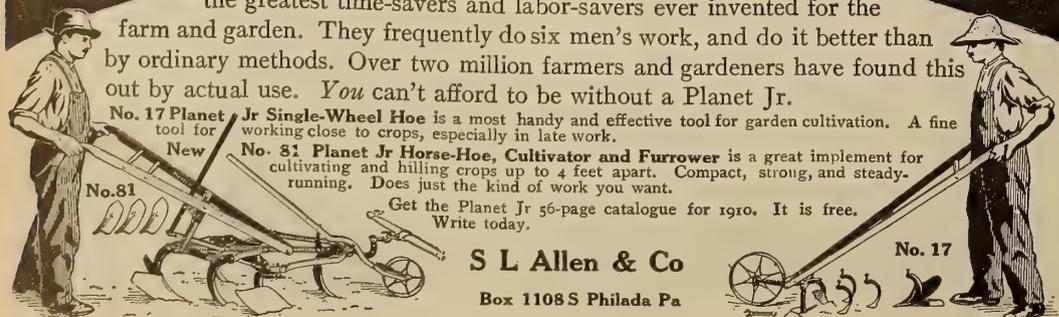
F. BAACKES, Vice-Pres. & Gen'l Sales Agent
American Steel & Wire Co.
 CHICAGO NEW YORK DENVER SAN FRANCISCO

NOVELTIES! CAL. PRIVET!
French Asparagus, Hungarian Raspberry and Strawberry plants. Rare Shrubs!
 Write today for artistically illustrated leaflet.
S. L. de Fabry, Grower of Novelties, Little Silver, N. J.

If You Want to Know
THE BEST FARM PAPER
 Send 10 cents for 10 Weeks
The RURAL NEW-YORKER, 419 Pearl St., New York

Planet Jr.

Planet Jr implements are the greatest time-savers and labor-savers ever invented for the farm and garden. They frequently do six men's work, and do it better than by ordinary methods. Over two million farmers and gardeners have found this out by actual use. *You can't afford to be without a Planet Jr.*



No. 17 Planet Jr Single-Wheel Hoe is a most handy and effective tool for garden cultivation. A fine tool for working close to crops, especially in late work.

New No. 81 Planet Jr Horse-Hoe, Cultivator and Furrower is a great implement for cultivating and hilling crops up to 4 feet apart. Compact, strong, and steady-running. Does just the kind of work you want.

Get the Planet Jr 56-page catalogue for 1910. It is free. Write today.

S L Allen & Co
 Box 1108 S Philada Pa

A Woman's Vegetable Garden in a New Hampshire Camp

OUR summer home on a lake in New Hampshire was first termed a "camp," but we soon found the surrounding pines and birches needed relief by a patch of green lawn. From success in growing this we evolved the vegetable garden, the gardener being myself, a city-bred woman, fifty years old, with no experience whatever.

The spot selected for this garden was necessarily in a deserted pasture full of granite rocks which could be removed. The fringe of pines along the lake on the north and east formed a shield from cold winds, and, by breaking the direct rays of the early sun, would permit me to work late, as well as early, on summer mornings. The water tank that supplied the camp with water was near this spot.

October found two neighboring plowboys, with two horses, a plow, dragging chains and crowbars, hard at work. After the surface stones were dragged aside, the plow outlined a space averaging seventy-five by thirty-two feet. The sod was turned and left to the action of the frost and snow until about April fifteenth, when it was plowed four times lengthwise; and each time I followed in the furrow. As often as the plow grazed a stone, the crowbar was planted near the offender, and by working, wedging and burrowing a space was made, the chains were adjusted and each stone was hauled out by the horses. To complete the work the plow was turned crosswise. Out of this little space was taken stone sufficient to build a wall two feet thick and two and a half feet high around the plowed space, with the exception of a rustic gate at the south end and a turn-stile between two small white pines at the north end. A cluster of white birches shaded a rough stone seat midway of the western wall. On the east, the curving road, leading to the camp, was outlined by the wall, making the garden space irregular but symmetrical.

In New Hampshire it is the custom to plow around the rocks. To cultivate little but to do that little thoroughly, is a thing they need to learn.

My plowing was completed amid the jeering of the experienced plowboys, but each in turn privately applied for the position of gardener. But I could hardly wait to see the plowboys and horses disappear over the hill toward their home before I took from its hiding place my bright new spade.

I began what it took me four days to complete. I spaded the entire garden space—"spade deep"—and removed every stone the size of my fist, and many that were larger. Into this space were deposited two cords of manure (at eight dollars a cord)—which had been hauled from a point five miles distant. This the plow boys again spread for me and harrowed it in well.

I proceeded with rakes to pulverize the soil and then to lay out the garden. I used my tennis-court roller to mark a two-foot-wide path around the entire garden, following the irregularities of the wall and about eighteen inches from it. Between this walk and the wall, and close to the wall, I planted at intervals the dwarf and climbing nasturtiums, scarlet runner bean, wild cucumber, morning glory, kudzu and gourd vines which combined made a mass of glory over the stone wall all summer.

Nearer the path I planted at intervals bachelor buttons, mignonette, calendula, poppies, hollyhocks, and near the rustic gate were massed sunflowers and golden glow. Just here, had I been acquainted with THE GARDEN MAGAZINE and had the April, 1909, number with its table for planting, I should have wasted less time. But I passed many hours figuring on the place, the distance and, especially, the depth of my sowings. I remembered having heard that a seed—

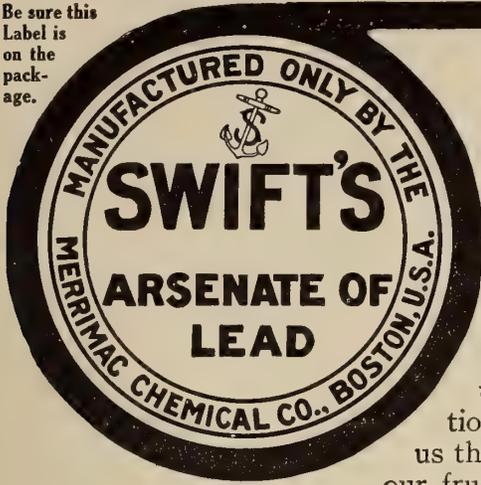
"Sowed four times its length,
 Paid for in strength."

So on that principle I worked, using, in the hills and drills as I sowed, a good powdered fertilizer.

Beginning near the turnstile, that the small vegetables might be easy of access, I spaced rows eighteen inches apart and then skipped to midway of the garden and prepared a drill for peas which I sowed at once and left space for successive sowings.

Then back to the spaces near the turnstile I hurried and planted in turn, in rows across the garden, onion sets, onion seeds, radishes, Black

Be sure this Label is on the package.



25c. for Every Wormy Apple in Any Barrel Sold

There is one class of fruit growers who can afford this sort of an offer. Here's a letter (dated Nov. 1, 1909) from a prominent fruit grower.

"We have been more than busy harvesting our fruit and preparing an exhibition at the New England Fruit Show, where we secured fifteen prizes. We used Swift's Arsenate on our fruit trees and currant bushes, etc. One application on the currants kept the bushes absolutely clean and free of worms and gave us the finest crop I have ever seen. As to apples, in this poor season we have sold our fruit at the Depot Restaurant at 10c. each and sold all our Winter apples at \$5.00, \$6.00 and \$7.50 per barrel. They are fair and **absolutely free from worms**, so much so, that I have offered 25c. each for any wormy apples found in any barrel we sell. Need I say more? In connection with Swift's Arsenate of Lead, we use Bordeaux mixture."

Every fruit tree or vegetable vine that you don't spray with Swift's Arsenate of Lead means lessened profits

Swift's Arsenate of Lead has received wonderful praise from farmers, fruit growers, fruit associations, State commissions and other experts.

Swift's Arsenate of Lead is fatal to all leaf-eating pests on fruit or vegetables. It is washed off the leaves only by the heaviest rains. Therefore, one spraying with Swift's often outlasts two to four sprayings with other materials. It never burns or scorches foliage.

It mixes readily with water, stays in suspension, and does not clog the pump.

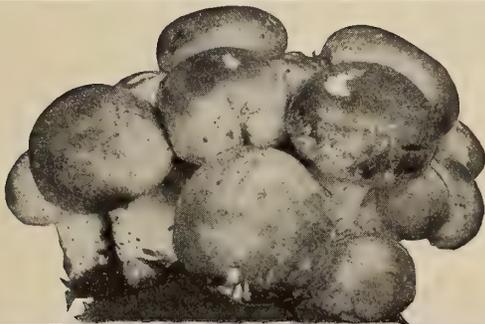
Tens of thousands of farmers and fruit growers are cutting down their loss through leaf-eating bugs and insects by adopting **Swift's**. It uniformly increases the quantity and quality of the yield.

You will never secure the full possibilities of profit in your fruit and vegetables until you use Swift's Arsenate of Lead.

Write for our valuable book on leaf-eating insects. Give your dealer's name.

MERRIMAC CHEMICAL COMPANY

59 Broad Street, Boston, Mass.



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 North Western Ave.

CHICAGO, ILL.

Buy Your Roses Where Good Roses Grow

Down in Virginia where the season is long and the weather mild, yet not so warm as to make them tender, is a famous Rose-growing country, producing the best Roses to be had anywhere in the land.

100,000 I am located right in the heart of that section **200**
Plants and my Fairfax Roses are ideal types. **Varieties**

My splendid two-year plants are heavily rooted and vigorous; they may be depended on to produce the most satisfactory results. My book "Fairfax Roses for 1910" tells of them. It's interesting reading and will be forwarded to you upon request. Shall I send it?

W. R. Gray, Box 6, Oakton, Virginia





Grow Chestnuts

Like This For Profit

Whether you have one acre or a hundred, you can make more money per acre growing Sober Paragon Chestnuts than from any other crop you could plant. One crop from the Paxinos 6 year old orchard brought \$30,000.00.

3,000 BEARING TREES 8 to 10 feet high

SOBER PARAGON Mammoth Sweet Chestnut

Must be removed from the Famous Paxinos Orchard the coming Spring, because the planting, six years ago, was done too closely. It has taken years to grow these trees—we've done the waiting.

luxuriant foliage; spreading boughs; clean trunk; stateliness.

The Sober Paragon is the only large sweet chestnut in the world.

Pay Back Their Cost the First Year.

You secure at once, specimens that will give immediate and permanent results. Start with bearing stock—your investment then pays dividends from the beginning. A single 5-year old tree in the Paxinos Orchard grew 500 burrs in one year. Three to five nuts in each burr.

U. S. Pomologist, G. C. Brackett says: "The Sober Paragon comes nearest to the native chestnut of any of the specimens I have examined. It is of large size, fine appearance and excellent flavor."

For Lawn or Park.

For decorative purposes, the Sober Paragon is unequalled. Hardy, rapid symmetrical growth;



Reg. U. S. Pat. Office.

We own exclusive control of the Sober Paragon. This copy-righted metal seal is attached to every genuine tree when shipped.

Free 16-Page Booklet.

Testimony from growers, produce commission merchants, Forestry Experts, etc., and

Our 1910 Catalog

which includes nut culture dep't, also 3,000 varieties of conifers, trees, shrubs, roses and perennials with illustrations and descriptions invaluable—mailed on request. Address

GLEN BROS., Desk B, ROCHESTER, N. Y.



10-foot Bearing Tree

Address

Tennis Ball lettuce, salsify, Swiss chard, carrots, parsnips and beets.

I had gone to the camp from the city simply to start this garden and could not remain to watch it. I returned, however, about May thirteenth for a second visit and more work! At this time I planted (necessarily dangerously early) one dozen early and one dozen late tomato plants and set the hoop frames for their support. And at the same time I set out one dozen Sweet Bell pepper plants. Then I made successive sowings of the earliest vegetables.

This brought me midway of my garden where the first and second sowings of peas were beginning to show themselves. While sowing the third row of peas I discovered a big-leaved vine near the first sowings, and thinking this perchance might be a melon I left it undisturbed. As the peas bore fruit and "passed by," it showed such a desire to spread that I pulled up the withered pea vines and gave the intruder a chance to show itself. It spread over the entire space once occupied by the six rows of peas, and yellow blossoms appeared at intervals. By the time the peas were all gathered this vine was bearing huge, green, melon-looking fruit, which, upon inquiry, I found was the vegetable marrow so much used in England, but of which I find no mention in seed books. Inside it resembles a squash, and we prepared it for the table as we did egg plant. When fried, it was a fine substitute for meat at lunch, during the entire hot season. This year the intruder will be an invited guest in my garden.

May eighteenth found me preparing to return to the city and one of my last acts was planting Golden Bantam corn. Nothing could be more delicious; it is golden in color, full of milk and honey, dainty to serve and seems to have reached perfection. We frequently stripped these dainty ears of corn down to the last thin, paper-like husks and boiled and served the corn with that soft covering on. This was an innovation and served to retain the juices as well as the heat.

A series of corn plantings brought me to a row for dwarf stringless beans, then a row of Lima beans and another of the stringless beans. Then rows of the early potato, enough to supply us through two months, enabling us to dig them when so new we could rub off the thin skin and serve them entire in a rich cream sauce.

Summer squash and cucumbers completed the vegetable garden; with the exception of parsley, which formed a border to the line of flowers along the paths. My permanent chive and mint beds are near the garden wall where the roots can lie undisturbed by plow or hoe.

These facts prove that my garden was really a success; it was two weeks earlier than any neighboring garden, and it supplied the summer table for four adults. No one in our locality had a dinner party that did not receive from me a long shallow basket filled with all kinds of vegetables, washed, cleaned, tied in bunches, tops down, graced with parsley and mint, and topped off with a bunch of blue bachelor buttons, nasturtiums or asters. Before summer was over my garden had become famous.

October found a profusion of good things coming along, but Jack Frost came stealing over the wall. The fireless cooker was the means of preserving, in glass, entire stringless beans that look as if they had grown in the glass, tomatoes, small carrots, Swiss chard greens, and Swiss chard stalks (which are delicious used as asparagus is used, especially as a foundation for a salad), pickled onions and tomatoes and cucumber pickle. The parsnips and salsify I left in the ground for early spring use. A frost-proof closet built in the cellar of the camp contains all these goodies.

The wild fruits, too, have their place there. Three varieties of blueberries and huckleberries thrive on our acres, also raspberries, strawberries and blackberries. Each of these were gathered and preserved and shelved to await the coming of Thanksgiving, Christmas and Washington's birthday house parties.

For this luxurious harvest I give the credit to dry irrigation. I cultivated deeply and thoroughly before planting; and with my little two-wheeled machine cultivator kept the soil loose and free from weeds. I resorted to the hose only half a dozen times, and then in the middle of August

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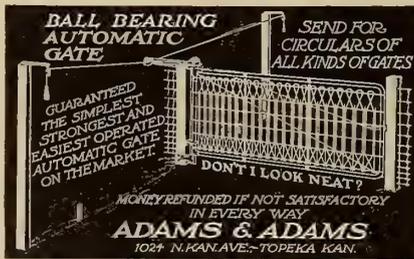
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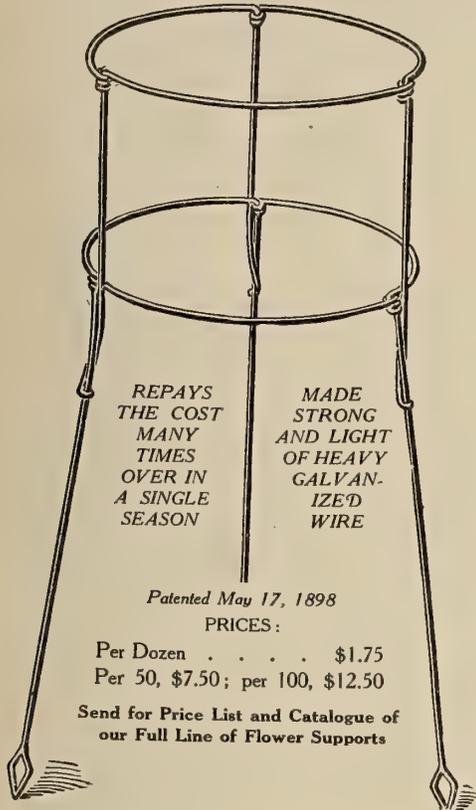
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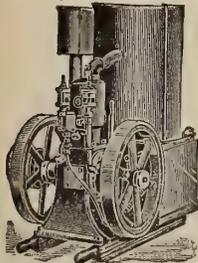
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I've smoked cigarets off and on for more than twenty years. I smoked American cigarets long before the more exotic Oriental kinds were heard of in this country. Until eight years ago I flirted with about every new cigaret that came along, always hoping to find one I could stick to, because I have always preferred a cigaret to any other form of smoke. A good trial always convinced me that I was in wrong. Eight years ago I came in contact with a number of Russian officials. They smoked Russian cigarets. I smoked with them. Here at last was something different. I began importing them for my own use—five and ten thousand at a time. But I couldn't keep them on hand. My friends wanted them too badly.

I went on in this way for two years, smoking as many as I wanted (when I had them) without feeling the slightest effect except one of exceeding satisfaction with my smoke—never any of that "craving" before smoking and "depression" afterward, with which most cigaret smokers are familiar. I investigated the Russian cigaret industry pretty thoroughly. I went after reasons—and I found them. I imported the Russian blends in bulk and experimented with the making of cigarets. I studied the cigaret industry in this country. I finally acquired from my Russian manufacturers all rights for America in their blends, trade-marks, etc., and their foreman to start my factory.

I have been making Makaroff Russian Cigarettes in this country now for six years. Our principal difficulty has been in getting together enough Russian workmen to make enough of these cigarets to make them a national proposition. But now we have them.

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a quality that corresponds with the straightforwardness of the advertising. We have now introduced the goods so thoroughly to dealers that you can get them almost anywhere in the best cigar stores, hotels, cafes, dining cars, etc. Any dealer who hasn't got them can get them quickly from his local jobber. If he doesn't want to, we will supply you promptly, by mail, on receipt of the dealer's name and address, or simply his address, so that we may investigate his reason for refusal.

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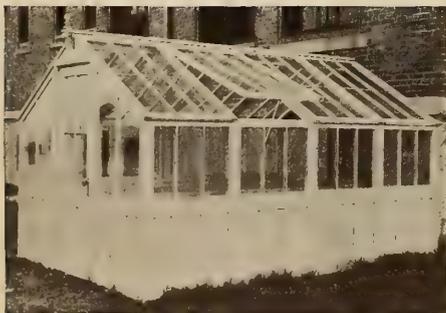
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when we had a plague of grasshoppers. I found nothing that seemed to affect these swarms of pests except a good drenching and that only cooled their ardor. I picked nasturtiums every day, but the grasshoppers got ahead of me and ate the buds unless I sprinkled them.

I found Mr. Cutworm did not enjoy plaster of Paris as a condiment on young cucumber and squash vines. Mrs. Squashbug disliked bug death as did the entire potato bug family, and crows objected to strands of white streamers waving over the corn hills.

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One Hundred Dollars from a Small Lot

WE CAME to the city from the country with no idea of being identified with garden work. But a case of ptomaine poisoning, which resulted from eating store vegetables, and a longing for the fresh products of the farm soon set our minds on a city garden.

The first of November, 1908, found us encamped upon a suburban lot—a waste of yellow sand with a ditch to be filled in and a conglomeration of tin cans and debris to be disposed of.

At times it did not seem worth the effort demanded to subdue and enrich this desert: but recollections of past successes, of the barrenness of city life (according to our standards) without a garden and a vision of what might be set us to work. We had about a quarter of an acre to till.

We brought in several wheelbarrow-loads of manure and early in April started to dig up the soil. All the coal ashes which had accumulated during the winter were used to fill in below the spading depth. And, by the way, coal ashes make one of the best subsoils, retaining a degree of moisture for dry weather and yet supplying good drainage.

One bed, extending from the house to the back fence and bordering the line fence, was about nine feet wide. Here we sowed kohlrabi, peas, beans, carrots and beets, and had a large bed of cabbage plants and another seed-bed for flowers, the contents of which were transplanted in due season and provided for a succession in the garden proper.

Along in May we planted three rows of Stowell's Evergreen and Golden Bantam corn, lengthwise and through all the other plots of vegetables. This plan, aided by the use of a sufficient mulch to retain the moisture, worked out splendidly. We also planted Golden Bantam corn in the middle plot of the garden, where tomatoes, egg plant, lettuce, pepper and cucumbers were growing. Later, among the corn, we planted squash.

In the middle space close to the house we had a circular bed of roses which bloomed continuously from June to November. Next to this was a large circular bed of gladioli, a clump of cosmos and dahlias flourishing in the centre of it.

The plan followed with these two moisture-loving plants was to make a depression in the centre so that all possible moisture could be held. During the summer we emptied a pail of water around the roots each evening.

Between the house and the shed we left a plot of sod for the children to play on, and between the walk and the south line fence (a strip about two feet wide) we had a gorgeous array of poppies and sweet peas. Along the north line fence we had sweet peas and later Japanese cucumbers and Lima beans.

A record of value received might disclose this result, which, deducting \$3.50 for seeds, etc., gives a net profit of \$110 for one season:

Peas	2.00
Beans	1.00
Corn	12.00
Tomatoes	2.00
Cucumbers	5.00
Other vegetables	4.00
Value of flowers	10.00
Cabbage plants	4.00
Various plants sold	3.50
2,000 pansy plants in stock for spring sale	40.00
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Total	\$113.50

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Recently, however, I have made them grow and I attribute my success to very early planting and to a carefully prepared seed bed. Just as soon as I can stick a spading fork into the ground, I prepare my bed. Last year it was March 10th. I planned for a row about thirty feet long but about six feet of this came under the shadow of some evergreens and was frozen as hard as a rock. It would have taken dynamite to dislodge it. I merely tell this to show how closely I followed on the heels of winter.

I first dug a trench about eight inches wide and a foot deep where digging was possible. In the bottom of this trench I placed some well-rotted stable manure, a 4-inch layer of rotten bog hay,



Be sure to cut your sweet peas every day or two, or else they will go to seed and stop blooming



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VARIETIES:—Duchess of Oldenburg, yellow, striped red; Winter Maiden's Blush, red cheek; Bismarck, red, beautiful; Red Astrachan, crimson. I also carry a complete line of Nursery Stock, Asparagus Roots, California Privet, Strawberry Plants, etc.

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Our "Guide to Good Books" sent free upon request

and the moss that a nurseryman had sent me when shipping some plants. I mixed the three ingredients as thoroughly as possible and covered them with a layer of earth which, as a matter of fact, was mud.

I then filled the trench to within four inches of the surface with a mixture of mud, dry sand and coal ashes. It was surprising how the sand and ashes dried up the soft earth and made it possible to work. The seed was planted in two rows about three inches apart and perhaps an inch or less apart in the rows. The planting was completed when I had sifted a half-inch of layer soil and sand over the seeds. This I gently packed down with a board to be sure that the soil was in contact with the seeds — an important point with any kind of planting.

As soon as the tiny seedlings appeared I carefully weeded the row and covered them with soil. I repeated this process until I had filled the trench level with the adjacent ground. The result was a fine row of stocky plants, ready to withstand the hot July suns, deeply rooted in material that would hold the moisture.

It may be claimed, and not without reason, that all this trouble is unnecessary and that sweet peas may be grown without it; but the same method that may produce a fine result one year because of

Tower's Fish Brand Slicker

Is Famous for its Sureness

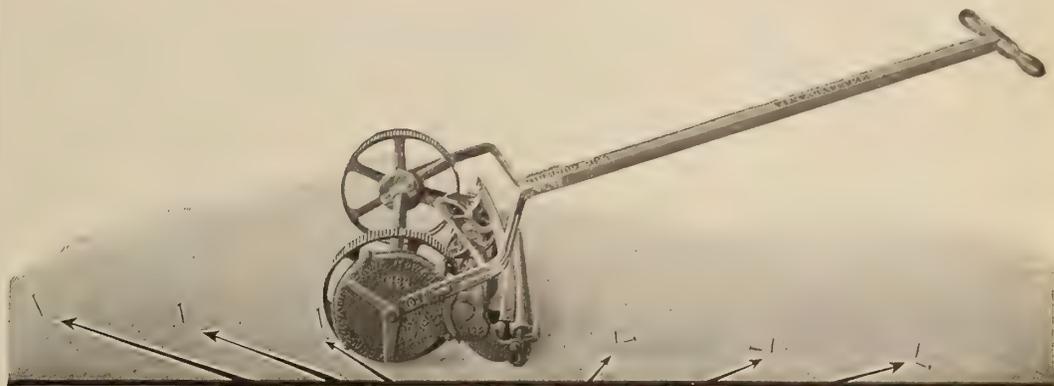
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THE Pennsylvania Lawn Mower cuts nails because all the blades are made of *crucible tool steel—hardened and tempered in oil.* This is true of no other lawn mower in existence, because no other mower has all its blades made of crucible tool steel.

These blades are self-sharpening. They are always in the *best* cutting condition without the slightest attention from the sharpener—a feature impossible with anything but crucible tool steel.

All bearings and bearing surfaces are ground true and accurate—making a light running, easy cutting mower—"As True as a Watch." Keep these facts in mind when thinking about that new lawn mower. Once you have bought a

"PENNSYLVANIA" LAWN MOWER

all you need think of is the grass and oil can.

ABOUT THE PICTURE. Just to show the cutting abilities of the Pennsylvania Mower we drove a few nails in the floor, then ran a "Pennsylvania" over them. This performance was then photographed as shown above.



We have a booklet of concentrated lawn and mower wisdom—"THE LAWN—ITS MAKING AND CARE," which should settle for the next 25 years your lawn and mower problems. This book was written by a well-known authority. Glad to send it free.

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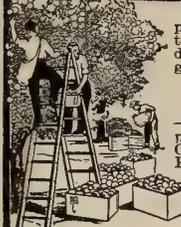
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The Fruit-Grower is the world's leading fruit and farm magazine. January — Special Spraying Number; February — a Gardening Number; either issue worth a dollar — sample free. The "100,000 Club" is a National Organization to benefit fruit growers in a practical way. Everyone will want to join. Send coupon today, get busy and earn a prize.

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Tell me how I can earn the Auto or Big Cash Prizes.

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Write for Our Free Book on Home Refrigeration

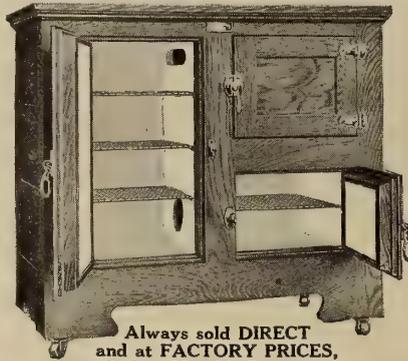
This book tells how to select the home Refrigerator — how to know the poor from the good — how to keep down ice bills. It also tells how some Refrigerators harbor germs — how to keep a Refrigerator sanitary and sweet — lots of things you should know before buying ANY Refrigerator.

It tells all about the "Monroe," the refrigerator with inner walls made in one piece from unbreakable SOLID PORCELAIN an inch thick and highly glazed, with every corner rounded. No cracks or crevices anywhere. The "Monroe" is as easy to keep clean as a china bowl.

The "Monroe"

Most other refrigerators have cracks and corners which cannot be cleaned. Here particles of food collect and breed germs by the million. These germs get into your food and make it poison, and the family suffers—from no traceable cause.

The "Monroe" can be sterilized and made germlessly clean in an instant by simply wiping out with a cloth wrung from hot water. It's like "washing dishes," for the "Monroe" is really a thick porcelain dish inside.



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The high death rate among children in the summer months could be greatly reduced if the Monroe Refrigerator was used in every home.

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When you have carefully read the book and know all about Home Refrigeration, you will know WHY and will realize how important it is to select carefully. Please write for the book today.

Monroe Refrigerator Co., Station 13, Cincinnati, Ohio

NOTE CAREFULLY The Solid Porcelain Monroe is so costly to manufacture that but few could afford it if sold through dealers. So we sell direct and give our customers the dealers' 50 per cent commission. This puts the Monroe within the reach of the MANY, at a price they can afford.

Sent Anywhere on Trial

We will send the Monroe to any responsible person anywhere to use until convinced. No obligation to keep it unless you wish to. The Monroe must sell itself to you on its merits.



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Minimum Cost—Maximum Quality

This is demonstrated fully in our 1910 catalogue of Perennials and other Hardy Plants which we grow exclusively by the acre.

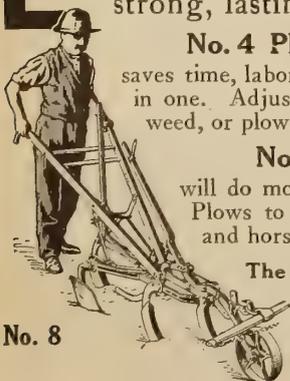
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SPARKILL, N. Y.

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No. 8

No. 4 Planet Jr Combined Seeder and Wheel-Hoe

saves time, labor, seed and money. Almost all useful garden implements in one. Adjustable in a minute to sow all garden seeds, hoe, cultivate, weed, or plow. Pays for itself quickly, even in small gardens.

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The 1910 Planet Jr catalogue is free. It illustrates and describes 55 different implements for the farm and garden. Write for it today.

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No. 4

favorable weather conditions, will, the next year, result in failure. Early planting, however, gives them the advantage of the warm spring days in which to get started and the moss and hay at the bottom of the trench will hold moisture even in a drought.

I always use birch brush for sweet peas, having discarded wire because the wire became so hot in summer as to dry up the little tendrils by which the vines cling to it.

Last year I planted several new varieties, each by itself; but the effect was not nearly so pretty as where a mixture was used.

Remember that unless sweet peas are cut every day or two they will soon go to seed and stop blooming. And it is better not to plant sweet peas in the same place two years in succession.

New York City.

F. H. MOORE.

Nasturtiums Grown on a Slate Pile

IN one corner of my garden a stratum of slate comes so close to the surface it is impossible to dig the soil with a spade and for several years was allowed to remain idle, for I thought the soil was too poor to grow anything.

Needing more space for a nasturtium bed, and knowing that the nasturtium does not require ideal conditions, I dug the soil with a pick, making a bed about 10 x 20 feet in size, raked off the coarser slate and early in the spring planted the seed. The result well repaid the effort, and the following spring, making a better selection of seed, I had increased pleasure in more beautiful flowers, and in the knowledge that something had been accomplished. Last year (1909), I selected the seed, fifteen packets, so that the dark reds, browns, dark and light rose colors predominated, with enough lemon, orange and light colors to make a contrast. I use the trailing nasturtiums only, as they cover the ground and hide the rough surface. The flowers are picked every few days to prevent seeding, and the bloom is continuous from early summer until the vines are cut down by frost. A half bushel basket is often filled at a picking, giving a greater return for the money expended than any flower I have ever grown.

Each year some of the slate is removed, but the spot is still a slate pile, and will remain so for a few more years.

No fertilizers have ever been used on this bed, but we gave it a light covering of manure last fall, and we will dig it under very early this spring. Plenty of water has always been given to the growing vines.

Pennsylvania.

W. B. REED.



Soils. By C. W. Burkett. Orange Judd Company, New York, 1909; pp. 300, illustrated. Price, \$1.25 net.

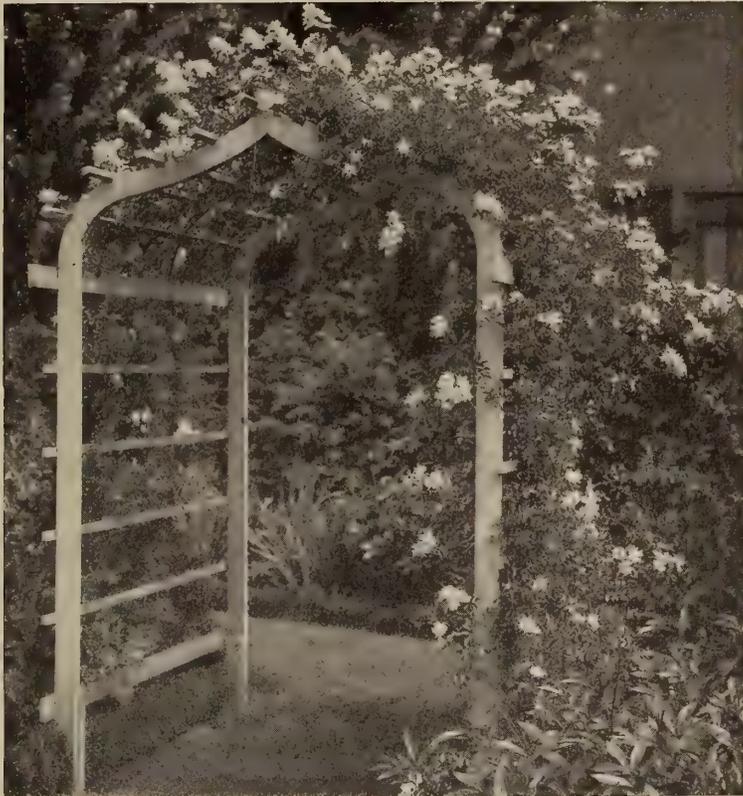
A most comprehensive study of the soils. Farm conditions and their improvement are handled with practical suggestions for betterment. The subject matter becomes very real under Mr. Burkett's method of handling it.

Rural School Agriculture. By Charles W. Davis. Orange, Judd Company, New York, 1907; pp. 263, illustrated. Price, \$1.00 net.

This is a book of experiments in agriculture. These experiments teach in a practical and simple way the underlying principles of agriculture. One important phase of the work is that of throwing some of the experiments back into the home, so uniting home and farm interests.

Pink Climbing Rose—

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WITHOUT doubt the most valuable of all the new climbing Roses of comparatively recent introduction. The beauty of the double pink flowers is admirably set off by the rich green of the foliage, which is free from the attacks of insects.

In addition to this charming kind, we have all the popular varieties in climbing and bush Roses. Our General Catalogue, which will be mailed on request, contains descriptions of all the best Roses—also

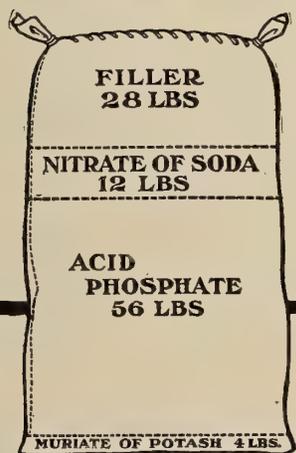
Fruit and Ornamental Trees Shrubs and Hardy Plants

ELLWANGER & BARRY

Mount Hope Nurseries

Rochester, N. Y.

100 lbs. of an ordinary Fertilizer
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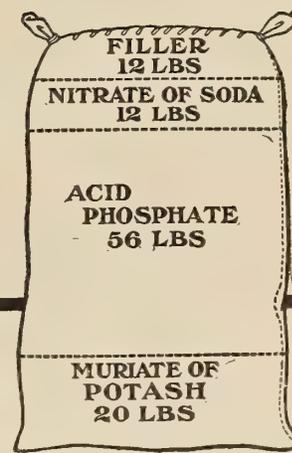


Needs Sixteen Pounds of
Muriate or Sulphate of

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to make it a

Well-balanced Fertilizer
(testing 2-8-10)



If you prefer ready-mixed fertilizers, insist on having enough Potash in them to raise the crop as well as to raise the price.

Crops contain more than three times as much Potash as phosphoric acid.

It was found years ago that the composition of the crop is not a sure guide to the most profitable fertilizer, but it does not take a very smart man to figure out that a **balanced fertilizer should contain at least as much Potash as phosphoric acid.**

Insist on having it so.

Talk to your dealer and ask him to carry Potash in stock or order it for you. It will pay you both, for

If you do not find the brand you want, make one by adding enough **Potash** to make it right.

To increase the Potash 5 per cent., add 10 pounds of Muriate or Sulphate of Potash to each 100 pounds of mixed fertilizer; to increase it 10 per cent., add 20 pounds.

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ECONOMICAL — THOROUGH — RAPID

SPRAYING is absolutely essential. You must control plant diseases and insect pests to get the most from your field crops and fruit trees. There is no argument on that point. But get the right spraying outfit—to do the work right, at the least expense, in the shortest possible time, with the least work. One of the Famous spraying outfits meets your needs exactly—no matter what style or size you want. The outfits are complete—engine, pump and all accessories, mounted on skids or trucks. You can

Use the Engine for Other Work

An I H C spraying outfit is a year-'round money-maker. You can easily detach your 1 or 2-horse-power engine and use it to operate any machine you have on the farm—grinder, washing machine, saw, separator, churn, pump, etc. You know the reputation of I H C engines for simplicity, economy, dependability. They are making big money for thousands of farmers, gardeners and fruit-growers everywhere—and the fact that you can use your I H C engine for any purpose beside spraying, makes it invaluable to you.

Don't tie your money up in an outfit that can be used only for spraying purposes. Investigate the I H C line. We furnish blue prints so you may build your own spray wagon, tank, etc. Our valuable spraying book will interest you immensely. Let us send you a copy or get one from our local agent—with full particulars about the I H C line of Famous spraying outfits.

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Chicago U S A



2 Grand Prizes and 5 Gold Medals

All the Grand Prizes and all the Gold Medals given to Pumps by the Alaska-Yukon-Pacific Exposition at Seattle last summer were awarded to

"AMERICAN" Pumping Machinery

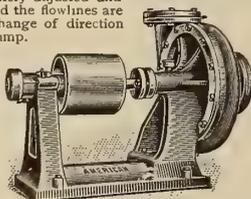
The reason why "American" centrifugals attain higher efficiencies than others is the impellers are accurately adjusted and machined true to fit the casing and the flowlines are all easy curves with no sudden change of direction of fluid in passing through the pump.

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specimen trees 14-18' 2-4" dia.

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CAL. PRIVET for hedge;

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Gillett's Ferns and Flowers

For Dark, Shady Places

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.



FIELD CROPS

Potato Growing

THE potato plant cannot survive standing water more than a few hours; at the same time it must have large quantities of moisture to produce a good crop. Do not grow potatoes on steep, sloping ground where water is carried away very rapidly, and do not plant in soil having a cold and over-saturated subsoil.

Stable manure is generally preferable to market fertilizers, because the vegetable matter in the manure keeps the land open to the air and holds and distributes the moisture.

We prefer fall to early spring plowing of sod. Fall plowed land always contains a higher percentage of moisture than that plowed late in the spring, and the work is out of the way when the spring rush begins. Early spring plowing, however, has this advantage over fall work: the land is open from the action of frost and the plow can be guided evenly, maintaining a uniform depth of six inches. This is usually deep enough for seed to be planted.

Fall plowing necessitates winter manuring, and winter manuring holds moisture from evaporating in the spring. We fall plow and winter manure and very early in the spring spread manure over the ground and plow it under. The land must be pulverized with the disk harrow as soon as the soil is dry enough to hold moisture—three or four times over with the disk, lapping half a width each time, so as not to ridge the land, and then finished with the smoothing harrow. We put four horses on a twenty-inch disk, setting it at full depth.

PREPARATION OF SEED

A good many experiments have been made with different sized pieces of seed for planting, but quarters of medium-sized potatoes are most commonly used. Larger pieces, however, will produce, under field conditions, heavier yields, but it is expensive seeding. Plant immediately after cutting. We have held the seed potatoes, spread thinly in a cool, dry, shady and airy place, for ten days with no appreciable loss; but they should not be sacked (or barreled) longer than a few hours, or be exposed to the hot sun, or planted in a dry, hot soil.

Some farmers believe in dusting the cut surface with land plaster; we put the seed potatoes in crates in the cellar before summer weather comes, and nail several thicknesses of coarse sacking over the windows after removing the sash. This permits a good circulation of air, at the same time keeping the place cool and dark.

For unknown reasons, seed potatoes sometimes



A potato plant just pushing through the soil



Hicks Has Big Maples For Sale

WHAT is the use of waiting fifteen or twenty years for saplings to grow up, when you can come right to our nursery and pick out trees that in a couple of years will be dense, beautiful specimens like this one?

You say, "they cost more." Of course they do, but what do a few more dollars matter when you get the trees you want, just the size you want and just when you want them?

Wouldn't you be willing to pay \$30 or \$70 for a fine, big Maple, Linden, Pin Oak or Catalpa, 30 to 40 feet high and 12 to 20 feet wide, if we will dig it up, move or ship it to your grounds, and plant it for you, and then guarantee it will live? Certainly you would!

If you can, come right to our nursery, and pick out just the tree or trees you want. If you can't, then send for our new catalog and make your selections from that. It is an easy thing to order from the catalog by number, as many of the trees are illustrated and numbered just as they stand in the nursery. We arranged the catalog in this way to make it the easiest possible for you.

Even if you are thinking of coming to the nursery, it will be well to send for the catalog just the same.

Isaac Hicks & Son
Westbury, Long Island

HENCH'S 20TH CENTURY Steel Ball Coupling Pivot Axle Cultivator with Double Row Corn Planter and Fertilizer Attachment complete in One Machine.



Awarded GOLD MEDAL at World's Fair, St. Louis. A wonderful improvement in cultivators, combining every possible movement of gangs and wheels required. Easily changed to different styles. Thousands in use. Manufacturers of all kinds of Agricultural Implements. Agents wanted; write for circular.

The Hench & Dromgold Co., Mfrs., York, Pa.



What Is the Use of Trying to Get Along Without a Sunshine Shop?

You will build one sooner or later, and we believe if you knew how reasonable in price our Sunshine Shops are, what a great amount of pleasure can be derived from them, and what a help they are in carrying on your garden operations, you would straight away have one.

This greenhouse itself is 11 feet wide and 25 feet long—just a nice size to start with. The work-room you can make cost little or much, just as you incline. Perhaps you have some building on the place that will answer the purpose; or why don't you attach it direct to

your house, and put the boiler in the cellar, and omit the workroom entirely?

The frame of this greenhouse is made of steel with just enough wood to secure the glass, making an extremely light, attractive and very durable house. It is just the kind of house you will have no end of pleasure working in now and then. When you find out just how much pleasure, it's a chance if you won't insist on doing all of it.

This house is fully described in our catalog, so send for it.

U-BAR GREENHOUSES

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DESIGNERS AND BUILDERS

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Fill the Roller With Water and Get ANY Weight You Want

Just fill the hollow drum of the "Water Witch" with water or sand—use a hose or bucket and funnel. Make the weight JUST RIGHT for a soft and wet lawn, or a hard, dry lawn—anywhere from 115 lbs. to 970 lbs., according to the amount of water or sand you use.



WILDER'S "WATER WITCH"

is the most convenient of garden tools. It runs easily with the heaviest ballast. Don't crack your walks by crossing them with a heavy roller. The "Water Witch" can be emptied in a jiffy—and filled as quickly. Dump out the ballast and the roller is easily lifted.



What's the use of a heavy, clumsy solid iron or cement roller that costs more to buy and ship; that is so heavy that only a strong man can run it; that is generally too heavy or too light to do your lawn the most good—that is in every respect unsatisfactory? Remember that a difference of fifty pounds in the weight of a roller may mean success or ruin to your lawn—that a half-ton roller will spoil a lawn in early spring—a 200-lb. roller is too light for summer work. Avoid a patchy or rank lawn by rolling it RIGHT. The cheapest, easiest and most convenient way is with a "Water Witch."

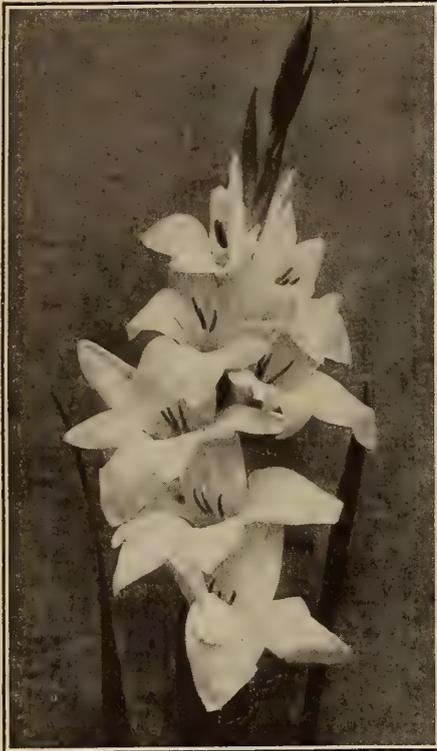
FOR THE TENNIS COURT, it's just the thing. FOR A GARDEN ROLLER, the "Water Witch" is just the thing—can be made light enough for flower beds, shrubbery or general truck gardens. In short, it's a DOZEN ROLLERS IN ONE.

WRITE TODAY for our little booklet, "Care of the Lawn," or use this coupon. (Sent free and postpaid.)

The Wilder Strong Implement Co.
BOX 6, MONROE, MICH.

WILDER STRONG IMPLEMENT CO., Monroe, Mich.
Please send me free your booklet, "The Care of the Lawn," also folder regarding the "Water Witch" Roller.
Name _____ Street _____ Address _____

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"BLANCHE"

Special "Garden Collection"

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| America —Conceded to be the most beautiful variety in the world. Flesh pink, tinged with lavender..... | Each
\$.10 |
| Attraction —Deep, dark, rich crimson with a very conspicuous large pure white center and throat. At once a most beautiful and attractive sort..... | .10 |
| Blanche —Large flowers, pure snow-white, with but faint marks..... | .20 |
| Canary Bird —Finest yellow..... | .10 |
| Irene —Fine large flower and spike. Color a fine shade of pink, freely flaked bright crimson..... | .05 |
| Kate —Blush white, with crimson blotched throat..... | .05 |
| Little Blush —Dwarf habit, compact spike of a blush white..... | .05 |
| Superb —Enormous flower and spike, one of the very largest; pink, flaked and striped with salmon pink..... | .05 |
| 1 Bulb each for \$.50 5 Bulbs of each for \$2.00 | |

Grand Mixed Gladioli Childs' Hybrids—Mixed \$.35 per doz.
Floral Park Mixed—Hybrids of the very finest Childs', Gandavensis and Lemoinei, \$.75 per doz.

Complete catalogue free on request

JOHN LEWIS CHILDS, Dept. Wh., Floral Park, N. Y.

rot badly after planting, and we have also seen the cut surface become greasy looking if kept for a few days before planting. Such pieces are hardly worth planting, but if used, had better be planted near the surface. Four inches is deep enough to plant. Never plant on land plowed so shallow that the potatoes lie on a hard unbroken bed. Have about three inches of well-prepared soil below where the seed is actually planted.

Potato plants which come up slowly, unevenly, and with little spindling stalks result from the seed rotting in the ground. If dropped by hand in open furrows, on a dry, hot day, the seed often rots. Machine planting is better, because the row is directly in line, uniform in depth, the soil is cool and moist, and the seed is covered immediately; but hand-planting, if well done, will grow as many bushels to the acre. Every miss in dropping, every seed without any eyes, as occurs with machine cutting, means many bushels less in the yield with equal labor.

Many potatoes are of inferior quality because of late planting. They will grow in cooler soil than corn; therefore may be safely planted earlier in the spring.

METHOD OF PLANTING

Three feet between rows and sixteen to eighteen inches in the row is our rule. If given too much space, the potatoes will grow too large, and by crowding the land with seed the size of the tubers will be reduced. For early home use we plant whole potatoes, of good size, twenty-four to thirty inches apart. If a ridge of earth is thrown up at planting time (and this always is to be removed or leveled



The same potato plant showing the root development. Do not make the mistake of planting too late; allow plenty of time for the tubers to properly mature before harvesting

later on) be sure it is done before the plant comes into it; never remove the soil surrounding a plant so as to expose to the sun a tender white stalk. This checks its growth. Harrow as much as necessary before the plants are up, so as to be sure to kill the weeds.

When the row shows green do not dig deep and close with the cultivator. Remember, at the joints in the stalk above the seed little rootlets develop, also the stems upon which the potatoes grow. Never disturb nor tear these off. Some are forming when the top is up but a few inches, and simply disturbing these will affect the whole growth of the plant.

Begin hilling by throwing a little dirt toward the plant. This must be done early and finished before the plants are eight inches high, so as never to destroy an established rooting; then give shallow cultivation between the rows as long as the tops can be passed.

For early crops plant just as soon as the ground is settled after winter—the exact time will vary with the season and the place.

Wisconsin.

M. STENSON.

We Can Help You on The Fence Question



Of course live fences are best but they have been too expensive—the first cost of the hedge plants too great. Some years ago we determined to overcome this by improved methods of growing the plants, and producing them in enormous quantities. We selected California Privet, after exhaustive tests and wide experimentation, as the best all-around hedge for fences. Now we can offer this superior

HEDGE FENCE AT \$200 PER MILE

and in smaller quantities at prices but slightly higher. Compare this with the cost of wire and posts, or lumber, and consider the fact that if you take proper care of it a hedge fence is good for all time. Write for better information and let us send you our new catalogue of fruit trees, shade trees, small fruits, shrubs, plants, etc. We give it free to owners of real estate—or those who expect to be. Address Nursery No. 24

HARRISON'S NURSERIES, Berlin, Md.

Hardy Azalia Mollis

in many bright colors; bushy plants with plenty of buds to bloom this spring, about 12 inches, with ball, at 45 cents each; \$4.50 per dozen; \$35.00 per 100.

Send for our illustrated special.

Sunnyfield Nursery Co., Poughkeepsie, N. Y.

Good's Caustic Potash Soap No. 3

Best for spraying trees, plants, shrubs. Protects berries, small fruits, flowers, grapes, cabbages, etc.

Kills San Jose Scale

Sure death to all parasites and insects. Contains active fertilizers.

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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.

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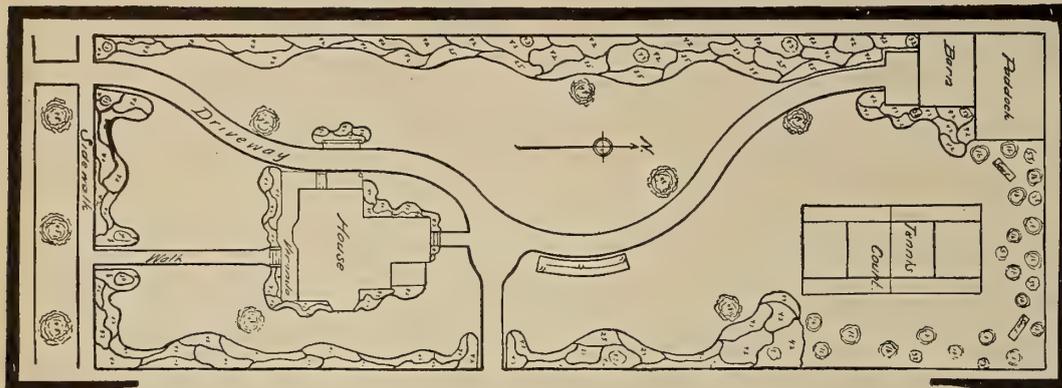
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Planting in Full Swing

DURING April give frequent, shallow cultivation to all growing vegetables and flowers in order to get earlier, more productive and better quality crops. Do not cultivate the soil when the plants are wet, as it will cause them to rust. Plowing when the soil is too wet is the principal cause of cotton wilt.

In the upland sow seed of main crop varieties of tomatoes in the open ground. Matchless, Trophy, Stone and Success are the best sorts among the large red varieties; Trucker's Favorite, Beauty and Acme of the pink and purple sorts.

Continue to plant tuberose bulbs; they succeed best in a friable, red clay soil which does not become dry and hard. They require a long time to make flowers, but are so very pretty they are well worth waiting for. There is a variety known as Mexican Everblooming, which flowers from June until frost and is well suited for growing in the South.

During the middle of the month sow seed of Lima and running snap beans, also edible varieties of cowpeas. Early Black Eye or Six Weeks is



Plant gladiolus bulbs in trenches and fill in with soil as the plants grow. This will help support the tops

a very early and productive cowpea of bush shape; Gallavant's or Lady is small and late, and the vines are very productive; Yard Long, a very productive, medium early variety of good quality, the pods being long and filled with small pea-like seeds; Rice, similar to Gallavant's, but earlier, and the peas are a little larger.

After the middle of the month put out moon-flower plants or cuttings. This is an excellent vine for screening verandas, fences and arbors.

In the middle and lower South sow seed of castor bean for ornamental purposes. Plant in very rich soil so as to get the most beautiful mammoth foliage.

The Perpetual Charm of Hardy Gardens

Has given them an enduring place in the hearts of every lover of the beautiful in Nature that no other form of planting can claim. While natural and restful in general effect, the beauty of the hardy garden is ever new and ever appealing, for flowers may be found in it through the season—something of interest every day. Inspiration for the best outdoor decoration of recent years has come from gardens planted long ago, with hardy flowers. They have grown into richer, fuller and mellow beauty with the passing of the seasons, instead of fading with time, sometimes out-living, on the same spot, three generations of owners.

Old-time Gardens Models of Beauty and Grace

We are learning to take the finer, more enduring old gardens for our models, welcoming back to our borders the drifts of Snow-pinks, the gay Peonies and Hollyhocks, the sweet-breathed Day Lilies, the brilliant Poppies, the Larkspurs, the Phloxes, the Irises and all the year's train of old-time hardy flowers. Yearly we find new uses for them, entirely within the bounds of real landscape art—for instance, the employment of pretty, creeping plants to cover bare spots rejected of the grasses and the planting of tall perennials among trees and shrubs for life and color during midsummer.

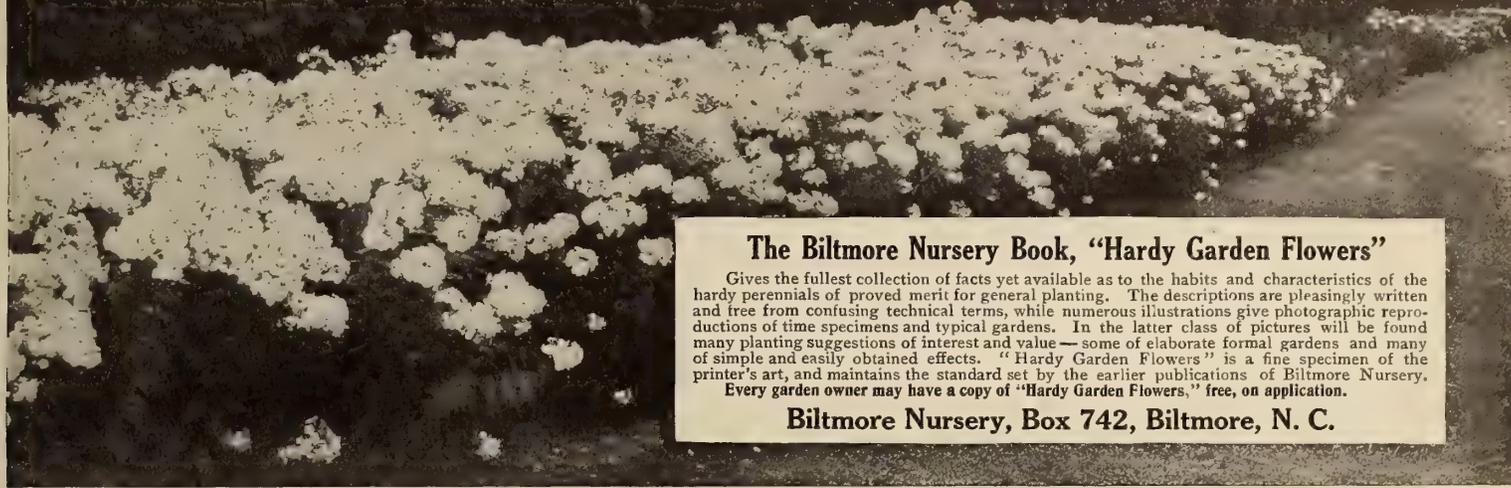
Plants of Equal Value to Gardeners and Amateurs

The renewed popularity of hardy, herbaceous perennials rejoices the heart of the landscape gardener, for it means his emancipation from petty and futile efforts with tender foreign materials and his return to broader, freer, more permanent effects with less expensive materials. With perhaps only a strip of dooryard at his command, the true amateur gardener finds the hardy plants his source of greatest pleasure. The showy annuals yield a temporary beauty and fragrance at comparatively small cost, it is true; but in a very few years the hardy flowers will prove themselves far less expensive.

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Gives the fullest collection of facts yet available as to the habits and characteristics of the hardy perennials of proved merit for general planting. The descriptions are pleasingly written and free from confusing technical terms, while numerous illustrations give photographic reproductions of time specimens and typical gardens. In the latter class of pictures will be found many planting suggestions of interest and value—some of elaborate formal gardens and many of simple and easily obtained effects. "Hardy Garden Flowers" is a fine specimen of the printer's art, and maintains the standard set by the earlier publications of Biltmore Nursery. Every garden owner may have a copy of "Hardy Garden Flowers," free, on application.

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Emerson and the Kewanee System of Water Supply

"If a man can write a better book, preach a better sermon, or build a better mouse-trap than his neighbor, even though he build his house in the wilderness, the world will make a beaten track to his doorway."
—Ralph Waldo Emerson.

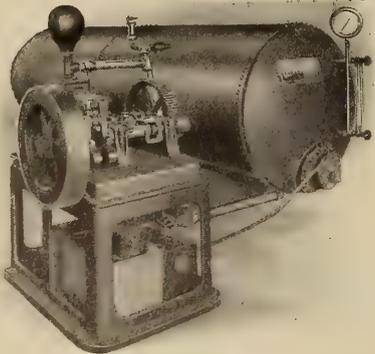
Emerson was right. Many are the paths which the world has made to the doors of people who do better things in the fields of letters, science, art and manufacture.

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First, we originated a **better tank** in which to store the water. Not an elevated or attic tank to leak, freeze, overflow or collapse. The Kewanee Tank is located in the cellar or in the ground and it delivers the water by **air pressure**.



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Set out cabbage, tomato, pepper and egg plants after a rain at any time during the month. Also sweet potato plants. For best results set them deep in the soil on ridges or banks.

Plant gladiolus bulbs now and every month for succession of bloom. The best method of planting them so as to enable them to stand the dry weather is to make trenches four or six inches deep and cover the bulbs with two inches of soil. Fill in the trenches as the plants grow.

Set poles for running Lima and snap beans to trail on. Select the poles which have but little brush upon them.

Early in the month sow seed for the late, main crop of sweet corn.

Sow seed of okra now. Do not cover the seed with more than three-quarters of an inch of soil. Lady Finger and White Velvet are two of the best varieties.

Perennials grown from seed should now be large enough to set out in their permanent quarters in the flower garden.

Sow seeds of beets now for second crop. Soak the seed in water over night before planting so as to insure rapid germination.

Georgia.

THOMAS J. STEED.

Growing Asters by the Hundreds

ANYONE can grow asters like these! I speak with all the confidence and the knowledge of a first success.

A strip of ground one hundred feet long in my garden was full of tulips and narcissus just coming into bloom. I had decided to grow asters there, but a friendly florist and market gardener warned me of the usual fate of amateurs when growing asters and told me of all the bugs, underneath the earth and above, that would prey on them. I was not to be daunted; and later, when I was able to add to his usual country fair display a few hundred blooms finer than any he had, he was as pleased as I.

On April 27th, seed of Early Branching Semple, Ostrich Plume and Vick's Early Branching Everblooming, in lavender, white and pink, were sown in the hotbed. In a week the plants were up, and,



Asters four months after being transplanted to the open ground from the hotbed

as soon as they had half a dozen leaves, were transplanted to another part of the hotbed. On May 29th, while the last tulips were in bloom, the asters were put in the bed between the rows of tulips. The foliage shaded the plants so well I did not lose a single one. I did not pinch back for I wanted every blossom.

The last week in August the black blister beetles appeared. The first sight of them—a beetle on every half-open flower—was dismaying. In THE GARDEN MAGAZINE I found a remedy, so taking a pan with gasoline in it, I went over the plants twice a day for a week, just knocking the beetles off into the gasoline. After that week we never saw another bug.

Pennsylvania.

Mrs. F. W. GRAVES.

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It's easy to apply, does not stick to the tree when removed, will last an entire season. The caterpillars can't crawl under it because it fills up the chinks of the bark. They won't crawl over it.



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Notes for the Spring Season

THE quickest way to get a hardy evergreen vine is to plant climbing euonymus with Englemann's ivy. The former is said to climb up faster than the latter when used alone.

Do salmon-barked willow and red-twigged dogwood brighten in March when the sap begins to move? Or do they only seem brighter, because there is more sunshine then and we are outdoors more?

March flowers are so rare that every new one is worth trying. *Adonis Amurensis* (or *Davurica*) "blooms two weeks earlier than any other hardy perennial" in southern New Jersey. Plants cost about \$5 a dozen, but should be worth it.

American holly is probably the most desirable of all hardy evergreens, because it has red berries all winter, yet there are only two or three nurserymen who handle it. Any estate owner who will plant it by the hundred in his woods will make a name for himself that will go down to posterity. The cheapest way would be to have a collector gather a peck of berries in southern New Jersey. It could be done for \$5. Then stratify the seeds, which germinate the second year. At the end of four years a man would have a thousand holly plants two feet high, half of which would live after being transplanted.

Have you ever brushed through a thicket of bayberry (not barberry) in March? What a joyous fragrance! Even when the leaves are off and the waxy white berries are beginning to disintegrate this lovely native shrub is enjoyable. And how splendid its coloring in November, a month after the trees have shed their leaves! Why not plant it for November color and winter fragrance?

Everybody knows the Cornelian cherry (*Cornus Mas*), because it blooms in March before the forsythia, but have you ever heard of *Cornus officinalis*, which blooms two weeks earlier? It is the Japanese equivalent of *C. Mas*, having the same sort of small yellow flowers in flat clusters followed in summer by showy red fruits. March bloomers are so rare and precious that you would think every nurseryman would jump at the chance to propagate this Japanese beauty.

The best time to buy big clumps of perennials cheaply is in the fall, but the following are said to give better results the first year if planted in spring from four-inch pots: phlox, gaillardia, coreopsis, stokesia and sweet William.

Climbers that twine are tough; those that cling are brittle. Therefore, don't plant English ivy or climbing euonymus on wood. You may want to take them down in five or six years to paint the house. It will be a hard job to take them down and replace them.

How many centuries will it be before we wake up to the beauties of sassafras? Its yellowish flowers in May are as pretty as those of Norway maple: its autumn foliage is even more brilliant—purple, red and gold; and its green twigs are vivid in winter. Children love to hunt for the "mitten-shaped" leaves and those with two thumbs. Yet few nurserymen keep it and rich planters seem to be asleep and snoring.

Any one who likes red columbines can have his fill by planting *A. Canadensis* for April and early May; *A. formosa* for late May and early June; and *A. Skinneri* which will bloom most of July and August. The second kind is usually advertised as *A. Californica*.

The run-wild hyacinths of Virginia have lost all the grossness of the Dutch hyacinth and have all the delicacy of an American wild flower. It is pleasant to see them in old farm yards where they have maintained themselves for forty years. We have seen them blooming there in March. They look somewhat like English blue bells (*Scilla nutans*) but have all reduced to only one or two flowers on a stem. A pretty purple-blue variety is before us as we write. We presume it to be *Hyacinthus orientalis*, because the tube is nearly half an inch long. It is certainly not a scilla, for true scillas have the petals united only at the very base.

Make Him Show Up

If any cream separator manufacturer tries to sell you a disk-filled or other common, complicated machine, tell him to wait a bit.

Ask him why you should buy his machine instead of a simple, sanitary Sharples Dairy Tubular, when Tubulars probably replace more common separators every year than any one maker of such machines sells?



The only piece inside Sharples Dairy Tubular Bowls.

Remind him of our guarantee to print at least ten names of farmers who have discarded his class of machine for Tubulars, to every name he can print of farmers who have replaced Tubulars with his machine. Ask him why he has not printed any? Make him show up.

World's biggest separator works. Branch factories in Canada and Germany. Sales easily exceed most, if not all, others combined. Tubulars are the World's Best—and better this year than ever.



Write for Catalogue No. 215.

THE SHARPLES SEPARATOR CO.,
WEST CHESTER, PA.
Chicago, Ill. San Francisco, Cal. Portland, Ore.
Toronto, Can. Winnipeg, Can.

PRIZE MEDAL DAHLIAS

Wm. F. Turner & Co.
New Bedford, Mass.

Winners of Dobbie Silver Gilt Medals in 1908 and 1909 offered to the most successful exhibitor at New England Dahlia Society Exhibitions in Boston.

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This Potato Digger Gets Them!

You know the ordinary potato digger, but have you tried the "Success, Jr."? Ever seen it? Ever seen the catalog that tells how it's made, what it's made of, how little it costs? Just write a postal to learn of the potato digger that gets the potatoes!

THE SUCCESS, Jr.

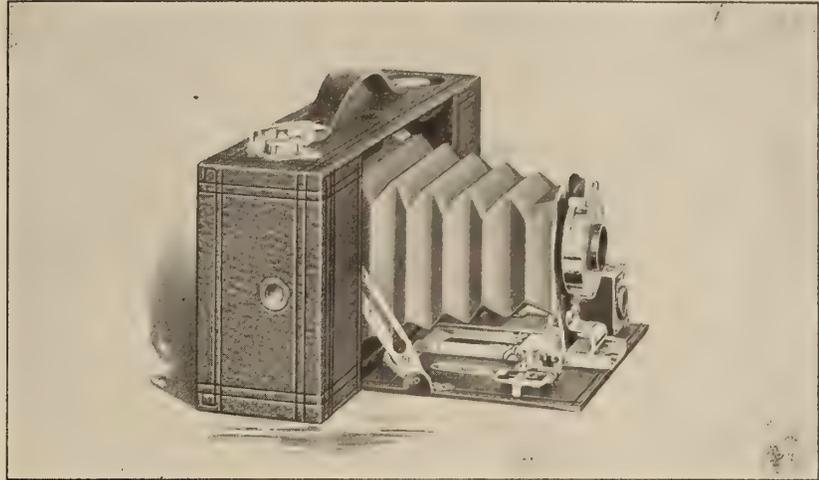
To deny yourself a really good digger another season is positively wasteful. The cost of a "Success, Jr." amounts to nothing, compared to the sweat and work it saves you, the horse flesh you save and the potatoes you save. And think of it! This potato digger is the limit of long service! Nothing to give out—nothing to wear out—nothing to break.

The "Success, Jr." is the real article in plow potato diggers. You can't ask us too many questions about it. If you want a digger for big jobs, ask about our "OK" elevator potato digger. Write. Get off your postal to-day for Catalog on potato diggers. Address,

A. B. FARQUHAR CO., Ltd.
Box 217 YORK, PENNA.



IT WORKS LIKE A KODAK



2A Folding Pocket BROWNIE

Here is a new member of the Brownie family, which gives a picture of that highly popular size, 2½ x 4¼, in a folding pocket camera, at the extremely modest price of \$7.00. The illustration above not only shows the camera itself, but designates also the exact size of the picture it makes.

The 2A Folding Pocket Brownie loads in daylight with Kodak film cartridges, has our pocket automatic shutter, meniscus achromatic lens, automatic focusing lock, reversible finder for horizontal or vertical views, two tripod sockets, and is in every respect a well made and well finished little camera.

Now on Sale by all Kodak Dealers. Price \$7.00.

Catalogues of Kodaks and Brownies free at the dealers or by mail.

EASTMAN KODAK CO., Rochester, N. Y., The Kodak City.



EVERGREENS

Largest stock in America, including
Colorado Blue Spruce and Douglas Spruce of Colorado
Also Ornamental Shade and Forest Trees
R. DOUGLAS' SONS
WAUKEGAN, ILL.



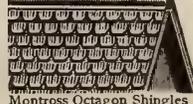
Place a sundial in your garden or on your lawn and it will return an hundred fold in quiet enjoyment. Write us for free booklet of

Sundial Information

Chas. G. Blake & Co.
787 Woman's Temple, Chicago, Ill.

MONTROSS METAL SHINGLES

protection against fire and lightning, and the most severe rain, hail and snow storms. Cheaper than slate or tile, and outwear wood shingles.



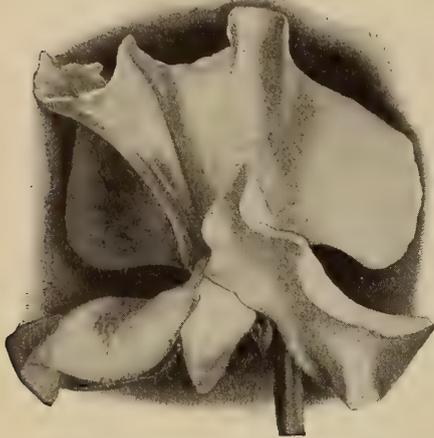
Embossed, then galvanized or painted, and make an attractive roof. Will not crack or break, are no experiment and will stand the hardest kind of service. Use them this spring when you build, or if you re-cover any roofs. They are sure to give constant satisfaction.

Write for a copy of our complete catalogue, containing illustrations, testimonials, prices and reasons why they excel all other roofings.
MONTROSS METAL SHINGLE CO., 122 Erie St., CAMDEN, N. J.

For Durability, Service and Economy, there is no superior roofing. 21 years' test proves they last the life of the building. Offer sure



Montross Victor Shingles



Burpee's Six New "Spencer" Sweet Peas

In Six Separate Packets

All for 25 Cents!

These six are the choicest re-selected strains—all true to type, and of such quality as has not been possible to obtain before at any price!

For 25 cts. we will mail one regular packet each of BURPEE'S KING EDWARD SPENCER, the largest and best of all crimson-scarlet Sweet Peas; OTHELLO SPENCER, the first gigantic rich maroon; ASTA OHN, the large lovely waved true lavender Spencer; BURPEE'S WHITE SPENCER, largest and most beautiful of all whites; HELEN LEWIS, a glowing crimson-orange, and our re-selected pink, COUNTESS SPENCER, the parent of all this new race of "Truly Gigantic," ruffled, Orchid-flowered Sweet Peas.

These six superb Spencers, together with our new Leaflet on culture, mailed for only 25 cts.; five collections for \$1.00, and mailed to separate addresses if so ordered.

Even at our reduced prices for 1910, if purchased separately, these six packets of NEW "SPENCERS" would cost sixty cents.

The Leading American Seed Catalog for 1910!

AN ELEGANT BOOK OF 178 PAGES—it is "THE SILENT SALESMAN" of the World's Largest Mail-Order Seed Trade. It tells the plain truth about the best seeds that can be grown—as proved at our famous FORDHOOK FARMS—the largest, most complete Trial Grounds in America. Handsomely bound with covers lithographed in nine colors, it shows, with the six colored plates, Nine Novelties and Specialties in Unequaled Vegetables, and five finest Beautiful New Flowers, including two superb "Gold Medal" Spencer Sweet Peas. Shall we mail you a copy? If so—write To-day!

W. ATLEE BURPEE & CO.
Burpee Building, Philadelphia

Coöperative Gardening in a City Lot

IN THE summer of 1907 a note to the Editor of THE GARDEN MAGAZINE telling him of a coöperative gardening venture in which two of my friends and myself were interested was answered with the remark that if we finished the summer good friends we must be very different from the ordinary run of human beings.

We not only finished one summer, but three summers,—and are still the best of friends!

In the spring of 1907 we secured, rent free, two lots measuring altogether 70 x 125, located close to our respective homes. After clearing the ground of an accumulation of ashes, tin cans and other rubbish, the ground was plowed, harrowed and fenced on three sides. The fence was made of 2 x 4s and 4-foot chicken wire. On the fourth side was a neighbor's fence.

My two associates knew absolutely nothing about gardening, so that the directing and planning fell upon my shoulders. By the aid of THE GARDEN MAGAZINE a complete plan of the whole garden was drawn to scale and the times of the various plantings marked. The lot faced the east, so the rows were run north and south, the tall growing vegetables being kept at the back, the shorter ones next, then a narrow flower bed and a grass plot seeded in front the same depth as the neighbors' lawns. The wire fence came only as far as the grass and was on a line with the front of the houses on the street. A clump of Golden Glow roots was planted by each post all around the garden. These came from an overgrown bed of Golden Glow in my own back yard.

The grass plot in front, the narrow strip of annuals, the clumps of Golden Glow around the whole garden, the successive rows of varied colored



A coöperative vegetable garden which repaid four-fold its original cost

vegetables, each a little taller than the ones in front with giant Stowell's Evergreen corn for a background, made a beautiful picture from the street. Although the garden was purely a vegetable one, the general appearance and the narrow border of flowers won for it favorable mention in a flower garden contest covering the whole city.

Up to the time when the seeding was finished it was one garden, each man helping to the best of his time and ability under proper direction. At this time the garden was divided into three equal parts by two rows of stakes from front to back and each gardener was responsible for his own plot, and to do his own cultivating, watering, and gathering.

The cost the first year was:

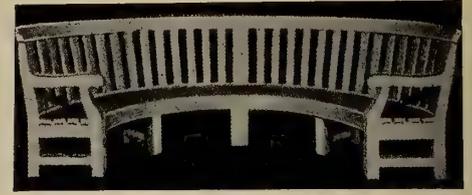
Plowing and harrowing	.....	\$4.00
Fence posts and wire	.....	8.00
Fertilizer	.....	5.00
Seeds	.....	8.00

Total \$25.00

From this vegetable plot of 70 x 100 ft., exclusive of the portion planted to flowers and grass, we estimated that at current prices for wilted store vegetables, we took about one hundred dollars' worth of the most delicious vegetables one could desire.

In 1908, not having a fence to pay for, a combination wheel hoe and seeder was purchased, which

For Beauty and Adornment



Old English Garden Seats,
Pergolas, Garden Houses,
Rustic Furniture

SEND FOR CATALOGUE

NORTH SHORE FERNERIES CO.
BEVERLY, MASS.

Will bring you
\$3 Flowering Geraniums
for your garden
Double, Crimson, Scarlet
and Pink.

Grown in paper pots.
C. W. SCHNEIDER Little Silver, N. J.

ENTERPRISE FOUNDRY & FENCE CO.
INDIANAPOLIS 100 DESIGNS OF GATES
285 S. SENATE AVE., INDIANA
IRON PICKET AND WOVEN WIRE LAWN FENCE
CATALOG FREE



A Mess of fresh 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., Dept. 2, St. Paul, Minn.



DON'T WATER PLANTS
In the House Daily

JOY-O Jardiniere Flower Pots

Save time, trouble and temper if you fill reservoirs once a week. No stained pots, slopping water or dirt. 5 clay 4-inch *JOY-O* Pots, \$1.

Dept. G M of
FISKE SEED CO., BOSTON, MASS.

GROW YOUR OWN FENCE POSTS

Strong, healthy Seedlings of true Hardy Catalpa—Catalpa Speciosa—100 for \$1.00 Postpaid, or 300 for \$2.50 by Prepaid Express. Safe arrival guaranteed. Seed 25c per oz. or \$2.00 per lb. postpaid. Special Prices on large lots of seed or seedlings.

HENRY FIELD SFED CO., D pt. 101, Shenandoah, Iowa.



Prof. Brooks

Make the Farm Pay

Complete Home Study Courses in Agriculture, Horticulture, Floriculture, Landscape Gardening, Forestry, Poultry Culture, and Veterinary Science under Prof. Brooks of the Mass. Agricultural College, Prof. Craig of Cornell University and other eminent teachers. Over one hundred Home Study Courses under able professors in leading colleges.

250 page catalog free. Write to-day.

THE HOME CORRESPONDENCE SCHOOL
Dept. G. A., Springfield, Mass.



Two of Harrison's Spring Dainties

Grow your own Asparagus this year—your own Strawberries, too; it's easy and will save you money; besides, it will give you a vastly better product than you could buy at any market.

We have enormous stocks of each—200,000 Asparagus Roots and 10,000,000 Strawberry Plants—we're offering both at very reasonable prices to get them moving this spring. These are strictly reliable plants of varieties that have made money for us in our market gardening department. *They will succeed for you.*

Write for Catalog, and if interested in California Privet for fences, or in any of the following variety of fruits, drop us a line—Now—asking about the varieties on which you wish prices; Concord or Moore's Early Grape; Bartlett or Keiffer Pear; Giant Argenteuil, Barr's, Conover's Colossal, or Palmetto Asparagus, or Strawberries (state kind and quantity).

Address Desk 24

Harrison's Nurseries
J.G. HARRISON & SONS PROPRIETORS
BETHESDA, MARYLAND



Three Special Offers for April to Lovers of "Gardens Beautiful"

The Rarest in Asters

White Mikado—Enormous flower, curled reflexed petals, pure white.

Pink Mikado—Same as white in form, but the color delicious rose.

Violet King—A gem! Large double flowers of the most brilliant violet hue imaginable.

Each Packet 10c., the 3 for 25c.



Our Catalogue for Spring 1910
Send for a Copy—it is FREE

The Rarest in Sweet Peas

Orchid flowering "**Spencer Types**," giant blossoms, petals waved and fluted, 3 and 4 to one stem.

White Spencer—The grandest snowy white. Packet 10c.

George Herbert—Deep crystal rosy carmine. Packet 10c.

Flora Norton Spencer—Richest lavender. Packet 10c.

GREATEST NOVELTY 1910—Picotee Spencer—Extra large flowers, white, beautifully edged carmine. Packet 15c.

Primrose Spencer—Magnificent primrose yellow. Packet 10c.

King Edward Spencer—Fiery scarlet. Packet 10c.

The 6 varieties for 50c. 1/2-packets, 6 varieties for only 25c.

Pansy Matchless Blooms of immense size and great substance. Colors range from golden yellow to richest gold, bronze and claret, beautifully edged with contrasting color. Surface of flowers is shaded with a rich silk velvety sheen. Plants are strong, sturdy—bloom almost continuously. Packet 10c.

The 3 pkts. Asters, 6 pkts. Sweet Peas and 1 pkt. Pansies for 75c.

Berger's Unrivalled

One Dollar Collection

Eight Hardy, Beautiful Lily Bulbs

1 Lil. Auratum—Golden Ray Lily of Japan, white with golden band center each petal. 15c.

1 Lil. Roseum—White with rosy crimson bands and spots. 15c.

1 Lil. Album—Purest glistening snow white, delicious fragrance. 15c.

1 Lil. Melpomene—Magnificent deep velvety crimson spots on white surface. Grand! 20c.

1 Lil. Elegans—Rich and abundant flowering; orange and scarlet upright chalice. 15c.

1 Lil. Superbum—A gorgeous lily of the Tiger Lily type, 4 to 5 ft. tall, bearing masses of orange dark spotted flowers. 15c.

1 Lil. Umbellatum—Very sturdy, strong bulb; all shades of buff, yellow to crimson. 15c.

1 Lil. Kramerii—The gem of the collection; exquisite soft rose trumpet flower. A beauty! 20c.

The eight strong, sound bulbs, which will flower first season—**delivery included** in price of \$1.00. With every collection we send "Full Printed Directions to Grow Lilies Successfully."



Lil. Auratum



Kudzu Vine

Japan Kudzu Vine, Hardy

The grandest, most rapid-growing vine in the World. It often grows two feet in 24 hours; covers arbors, trellises, unsightly objects in incredibly short time. Foliage a deep rich green, flowers strongly resemble the Wistaria in bloom, color a rosy lilac; faintly fragrant. We offer only potgrown, strong, healthy plants, as we found those the only safe ones to transplant into open ground. These we guarantee to flourish and grow on at once. Kudzu Vine is permanent, once planted.

Potgrown strong plants 25c., delivery paid.

Full description can be found of all above Seeds, Bulbs and Vines in our

1910 Spring Catalogue.

SEND FOR IT. IT IS FREE

Address H. H. BERGER & CO.

70 Warren Street,

New York

SATISFACTORY results in planting can be obtained by using only the best trees.

THE COTTAGE GARDENS NURSERIES

contain 100 acres of carefully grown specimens, ten acres of which are devoted to Hybrid Rhododendrons of the hardest and most desirable varieties.

90% of our stock sold last year was personally selected by our clients. Why not avail yourself of the same opportunity? We shall be pleased to give you the benefit of our time and experience in making your selection.

We devote all our attention to the production of high-class stock for discriminating buyers.

A visit to our NURSERIES will convince you.

Cottage Gardens Co., Inc.
Queens, L. I., N. Y.





**ROWE'S
GLOUCESTER
BED HAMMOCK**

**For Verandas, Porches, Lawns and Indoor Use
Combines Hammock,
Couch and Swing Settee**

The Perfect Couch for Out-door Sleeping

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, with or without national spring, thick mattress, with sanitary removable cover. Holds six persons. With or without windshield (see cut) which folds flat under mattress. Complete, with lines and hooks ready for hanging, delivery charges prepaid in United States, carefully packed.

WRITE FOR DESCRIPTIVE BOOKLET
and prices of different styles and sizes
Small silk name-label is on every Rowe Hammock

E. L. ROWE & SON, Inc., 462 Water Street, Gloucester, Mass.

**Planting Plans Without Charge
to Our Customers**



Haphazard planting is unsatisfactory. We can make a landscape design for you that will add distinctive beauty to your home.

We are growers of all kinds of Hardy Trees, Shrubs, Plants and Bulbs and can supply you with anything you may want. Catalog and particulars on request.

A. F. BOERNER, Nurseryman
26 North Street, CEDARBURG, WIS.

SWEET PEAS



**LIVINGSTON'S New Orchid-Flowered
Giant Sweet Peas are Unsurpassed.**

For 10c We will send 5 packets, each a distinct and beautiful color.

FREE Our superb seed and rose catalogue re-written and enlarged to 130 pages, lavishly illustrated with beautiful photo-engravings and colored plates. A complete catalogue of seeds, bulbs, roses, hardy shrubs, plants, small fruits, trees, etc. Send for it to-day.

THE LIVINGSTON SEED CO.
Famous for Tomatoes 59 High St., Columbus, Ohio.

Our Guarantee is just as big and broad as YOU choose to make it.

"SCALECIDE"

applied to your fruit trees will absolutely kill SAN JOSE SCALE and all Fungous troubles controllable in the dormant season. Five years of proofs.

Prices: In barrels and half-barrels, 50c. per gallon; 10 gal. cans, \$6.00; 5 gal. cans, \$3.25; 1 gal. cans, \$1.00. If you want cheap oils, our "CARBOLENE" at 30c. per gallon is the equal of ANYTHING ELSE. Send today for Free Booklet, "Orchard Insurance."

B. G. PRATT COMPANY, Mfg. Chemists, 50 CHURCH STREET, NEW YORK CITY

lightened our labor and made a heavier and more uniform yield. The struggle with weeds was not so great as the first year, for many years previous to our breaking sod a magnificent crop of shoulder-high weeds had flourished.

In the third season, 1909, the personnel of the partnership was changed, two having moved from the city, but two other friends took their places, with just as gratifying results. Contrary to the prophecy of the Editor our friendship has been cemented rather than broken by our cooperative digging, hoeing, watering and harvesting. [Congratulations! —ED.]

Illinois.

C. F.

What One Squash Vine Did

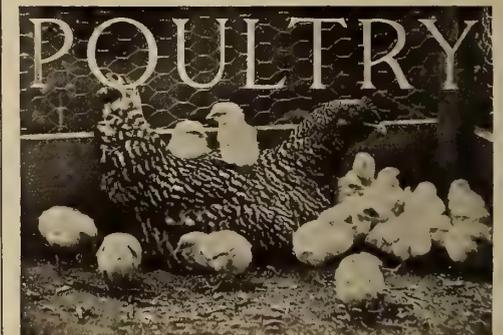
I AM convinced, both by observation and experience, that more, better and larger squashes may be grown if the vines are given more room. Ever notice how well a "volunteer" plant grows in the chipyard or other open spaces? Three plants to a hill have been considered about right. I believe two are better, and am not so sure that one isn't best.

A vacant corner in the garden was planted with three or four hills of Hubbard squash seed. For some reason, but one plant grew, and this was left to roam at its own sweet will. It branched and counterbranched, and filled all the space previously allowed for the three or four hills. It produced seven good squashes, weighing in all seventy pounds of first-class, fully matured squashes, all with hard shells and excellent quality. The last squashes were eaten the next April, and were as sound as when picked.

In growing the large squashes that are sometimes seen on exhibition, the number of fruits to a vine is limited, and the vine is given plenty of room. Such large size is not wanted in the squash for family use or market, but the extra room gives opportunity for better development and perfection of quality.

New Jersey.

F. H. VALENTINE.



Chickens in the Garden

BUT little extra space is required to raise a few chicks, and they may even be grown nearly to full size in a garden if proper plans be made. A movable coop to confine the hen, and a little wire netting to keep the chicks off forbidden ground solve the problem.

Plan the garden so as to bring all small, delicate vegetables in one plot, to be enclosed with wire netting. Such vegetables as potatoes, corn, beans, peas, tomatoes, etc., will suffer no damage at any stage of their growth from small chicks, and very little from them as they grow older. An asparagus bed furnishes an ideal run for chicks after the cutting is finished. The partial shade is just the thing for the chicks. A dense shade is not desirable for them.

Even though the chicks should do a little damage occasionally, this is more than offset by the injurious insects destroyed and the fertilizer contributed. When the chickens become old enough to damage the garden crops, the cockerels will be of a size to make broilers or small roasters, and the pullets may be put into the permanent quarters. This plan of raising chicks is far superior to that of trying to raise them with the adult birds. I would prefer the heavier breeds to the Leghorns, for this purpose, because they are more easily confined within the desired limits.

New Jersey.

F. H. VALENTINE.

Nitrate of Soda

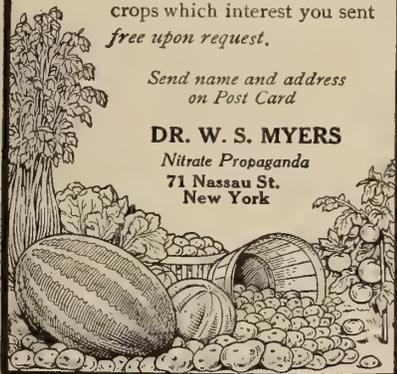
For Market Gardeners

is the cheapest high grade fertilizer and the most effective carrier of nitrogen.

Valuable books on the crops which interest you sent *free upon request.*

Send name and address on Post Card

DR. W. S. MYERS
Nitrate Propaganda
71 Nassau St.
New York



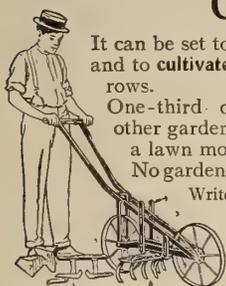
SUMMER FLOWERING BULBS AND PERENNIALS

From the Growers
Direct to the Planter

Send for list of prizes

FRANKEN BROTHERS
DEERFIELD ILLINOIS

The "Lou Dillon" Tandem Garden Cultivator



It can be set to stir the soil any depth desired and to cultivate astride the row or between the rows.

One-third quicker and easier than any other garden cultivator, easier to push than a lawn mower.

No gardener can afford to be without one.

Write for descriptive catalogue and testimonials. If your local dealer does not handle them, write to us for special introductory price.

Dept. D

THE SCHAIBLE MFG. CO. ELYRIA, OHIO

RATS KILLED BY SCIENCE

By the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz, of Pasteur Institute, Paris. Used with striking success for the past few years in England, France, 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. 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 or 5,000 sq. ft. floor space in buildings. Price: One tube, 75c; 3 tubes, \$1.75; 6 tubes, \$3.25; one dozen, \$6.00.

If you are troubled with roaches send us 25c. for a can of "SAL INSECTA," our new scientific bug exterminator.

INDEPENDENT CHEMICAL COMPANY
28 Old Slip, New York City



Attach One of Our Greenhouses to Your Garage

It is an arrangement that has many advantages. When planning your garage, you can arrange to divide off part of it as a work room for the greenhouse; or, if already built, you can attach the work room directly to the garage as in this case. Either way saves you space and money. Then there is the heating—the boiler for one will heat the other with but slight additional cost.

This house is about 33 feet long and 18 wide, and is divided in two compartments, so that plants requiring different temperatures can be grown successfully.

It is a small house, but large enough for this owner who likes to fuss around in it, enjoying quite as much its fun and healthfulness as the flowers it grows. However, it is surprising the number of things you can grow with even so small a house, and it's an easy enough matter to add to it any time, if built with our Sectional Iron Frame Construction.

It is a construction that has many advantages, not the least of which is its durability and consequent freedom from repairs. This point will at once appeal to you.

Another thing is that all parts of it are cut and fitted at our factory so that when the materials reach your ground they can at once be put up. This means no delays and your grounds are disturbed for an incredibly short time.

When you do build, do it right, otherwise your disappointments will be many, as right greenhouse building means an accurate knowledge of plant requirements, a knowledge only acquired by years of experience. We have had half a century of it.

Write to branch office nearest you for further information. One of our representatives will gladly come and talk it over if you are thinking of building.

Lord and Burnham Company

Irvington, N. Y.

New York
St. James Building

Boston
Tremont Building

Philadelphia
Heed Building

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A Perfect Lawn in Six Weeks

BY SOWING

"Henderson" Lawn Grass Seed

PRICES—

25c. per quart, \$1.50 per peck,
\$5.00 per bushel.

We prepay transportation charges if you mention this magazine.

For a plot 15x20, or 300 sq. ft.
1 quart is required for new, or
1 pint for renovating old lawns.

Our Catalogue "Everything for the Lawn," mailed free on application.

PETER HENDERSON & CO., 35 & 37 CORTLANDT ST., NEW YORK.



Plant Rhododendrons Now They Will Blossom in June

Beautiful in summer and winter, Rhododendrons are the most satisfactory of all flowering shrubs.

We would like to show you how you could make your grounds more attractive this Spring than they have ever been before by using a few plants here and there, or by banking them along a walk as in the above picture.

I have a splendid stock of Rhododendron Maximum collected from the best districts by my own men—selected hardy hybrids, all tried and known to be reliable in this climate.

WRITE FOR PRICES—AND FOR SUGGESTIONS



You Will Surely Want My Catalogue

if you expect to do any planting this Spring. It is very complete and distinctive and is compiled by an expert landscape gardener of thirty years' experience. This, you will agree, makes it a particularly valuable and reliable guide. Send for it—it is free.

J. H. TROY, Landscape Gardener,

Office of The Rosary Flower Co.
24 East 34th Street New York

Iron Railings, Wire Fences and Entrance
Gates of all designs and for all purposes.
Correspondence solicited: Catalogs furnished.

FENCE

Tennis Court Enclosures, Unclimbable Wire Mesh
and Spiral Netting (Chain Link) Fences for Estate
Boundaries and Industrial Properties—Lawn Furni-
ture—Stable Fittings.

F. E. CARPENTER CO., 253 Broadway
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A SUBSTITUTE
For Bordeaux Mixture

10-gal. keg making 1,500 gals. Spray; delivered at any
R. R. station in the United States for \$12.50. Prompt
shipments. Write to-day for full information.

B. G. PRATT CO., Manufacturing
Chemists,
50 CHURCH ST., NEW YORK CITY

Making a Cinder Drive

CINDERS used as a drive-way probably produce a more neutral and pleasing effect than any other material. Concrete contrasts too sharply with the lawn through which it seems to cut; the neutral brown of a good grade of cinders achieves a more gradual transition from the drive to the green of the grass. Moreover, a cinder drive can be made just as permanent as a concrete drive, with the advantage that every repair adds to its life and is in no wise merely a patch. Around a cottage or even a more pretentious structure where the lawn is of good size, a cinder drive will produce a more harmonious and informal effect than can be obtained by concrete, though concrete is better where the drive is short, the lawn small and the house large.

The construction of a cinder road, while not at all difficult, requires some care and patience. First of all the cinders must be screened. This part of the work is *very essential*. A screen with a half- or three-sixteenths-inch mesh is the best. After the cinders have been screened, the road-bed should be properly graded. Make it about three to four inches higher in the middle than along the sides. After this the road-bed is roughened with the aid of a pick-axe and left in a very lumpy condition, without seriously interfering with the grade. On this spread the coarse cinders, again carefully grade and then tamp. Over this spread, slowly, the screened or sifted cinders so that they will work in among the coarse layer beneath. The thickness of this surface layer will be largely determined by the amount of cinders on hand. Then the whole is to be most thoroughly watered, well tamped and, if possible, heavily rolled.

Thus will be produced a drive over which an automobile can pass without leaving a mark, nor will the heaviest coal-wagon leave any distinct wheel marks. Furthermore, all tracks or hoof prints



Make your driveways of cinders instead of concrete
and have them last longer

can be worked out easily, the more such a drive is used and repaired the firmer will it be packed and the more enduring will it become. Cinders afford a certain springiness that concrete completely lacks, nor does it ever become as slippery in rainy or snowy weather.

The summer before last I took up a cobblestone drive over which heavy coal-wagons passed daily. The stones had become covered with at least a three-inch layer of clay which had gradually formed, partly by the stones settling and partly by the deposit left by the wagon wheels. One would never have surmised, especially on a muddy day, that a bed of stones formed the foundation of the drive. It required a pick-axe to get at them. After the stones had been removed a six-inch layer of cinders was put in their place. These cinders were not screened; the larger cinders or clinkers were merely picked out with a shovel and were placed on the bottom with the finer cinders spread on top. A good heavy rolling was given. The road-bed soon became so compact that the heaviest load made no mark and the horses left but few hoof prints. A few minutes' work with a rake always leaves the drive as smooth as when it was first put down. During the rainiest weather the driveway is comparatively dry and free from mud. Concrete in this particular place would not only have been too slippery for the horses, but I feel sure that it would soon have cracked and worn out.



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In the drive-way shown in the picture I provided a brick gutter on each side, so that during a rain the water might not form its own channels and gully the drive-way. This gutter was formed by laying a double row of bricks lengthwise in the direction of the drive, one row laid down flat and butted against the sod of the terrace, while the other row was inclined slightly toward the first row so as to shed the water upon it. It is an easy matter to make such a gutter level where a bed of sand is used underneath, but the work is much more tedious without the sand, though it can be done fully as well. It took considerable work to give the proper fall and to terrace the lawn on either side down to this drive, for the lawn is fully three feet higher than the side walk.

North Dakota.

C. L. MELLER.



The Right Kind of Cat Guard

IF YOU wish to attract birds to your garden, whether for their value as insect destroyers or for their songs and beauty, it is important to provide cat guards for every bird house that you build. Otherwise, the fledgelings are likely to be clawed and devoured by a cat, the worst foe of song birds.

The right and wrong methods of making a cat guard are both illustrated in the accompanying photograph. A cat might be able to leap or reach past the cylindrical piece of tin, but the flared piece of tin will surely turn him back.

New York.

W. M.



Every bird house should have a cat guard. Make one like the upper one

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pumped from stream, pond or spring without expense for power, and without trouble to you. Water raised to any height in any quantity. For your country home, dairy, garden or lawn. Our
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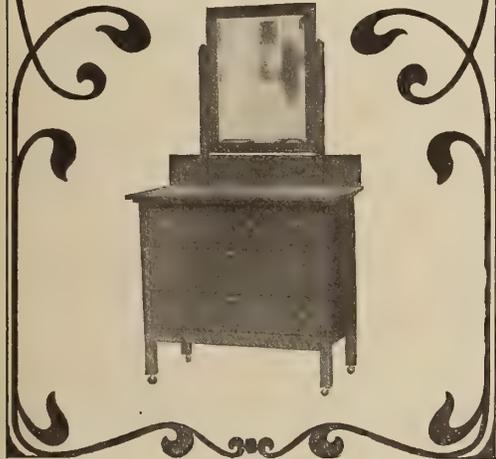
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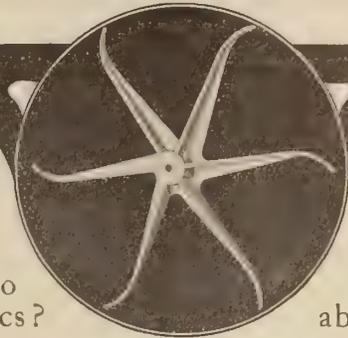
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This Oddly Shaped Fan

is the answer to these common-sense questions about Vacuum Cleaners.

These questions should decide your buying just as they decided our designing.

It is easy to make a vacuum cleaner that will work splendidly for only a few months. But it is not good sense for you to buy it or for us to make it.

Our experience in making air-driving apparatus exceeds that of all other firms combined. It covers such problems as ventilating mines, forced-draft for battleships, sucking wheat from the holds of ships, conveying shavings and kindling wood. This experience taught that the right vacuum-cleaning principle was the revolving fan.

A fan suffers little wear, cannot leak, has no valves, gives a continuous instead of an

intermittent suction, makes no clatter or groaning, and does not lose efficiency. That is why a fan is better and lasts longer than a pump, bellows or diaphragm.

Besides articles shown in the picture, we include another length of hose for blowing and a clothes-cleaning tool. The cleaner takes its power from an electric-light socket, and has a working radius of 32 feet. Easily rolled about.

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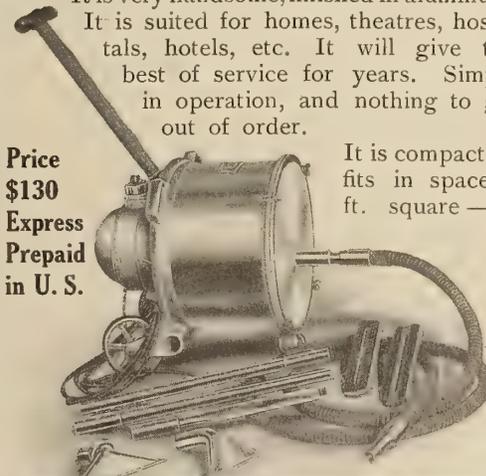
It has an unusually large dust-screen. Small screens clog and so cut down the current of air.

It is very handsome, finished in aluminum.

It is suited for homes, theatres, hospitals, hotels, etc. It will give the best of service for years. Simple in operation, and nothing to get out of order.

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Plant my dahlia roots in your garden this summer; the great, splendid flowers will delight you—will show you what perfect dahlias really are.

Your success this year, however, depends on getting started early—ordering your roots at once. Send for my Catalogue TODAY—true descriptions, special offers, directions for planting etc.—the handsomest edition I have ever issued. DON'T DELAY!

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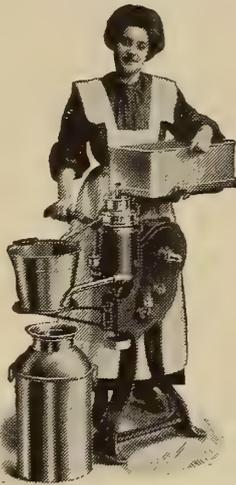
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Gold Medal, California State Fair.
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Herbaceous Perennials
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\$5 California Privets 100
2-3 feet
Will make an everlasting fence for your lot. Leaflet how to grow it, free with order.
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to plant a good-sized garden—one that will yield beautiful flowers the whole summer long. We want you to know our Roses; they are strong and hardy, with vigorous roots—do not suffer from transplanting.

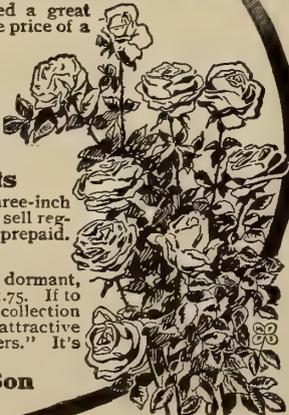
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Joseph Bancroft & Son
Box 16, Cedar Falls, Iowa



WHEN WISTARIA BLOOMS

What is the blooming age for *Wistaria sinensis*? Maryland. R. H.
—It takes from five to seven years for wistaria to bloom if the plants have been raised from seed. In pruning the wistaria wait until after the flowering season; then cut away any superfluous growth. Under this treatment the vines will blossom freely the following year.

MAKING MAGNOLIAS BLOOM

How should I treat two six-year-old *Magnolia grandiflora* plants which have never bloomed? North Carolina. B. C.
—There is a great difference in regard to the blooming of magnolia trees. Some of them never bloom well. The best thing to do is to let the trees remain where they are; fertilize them well with well-rotted manure and give the ground around them good cultivation.

GROWING AMPELOPSIS VEITCHII

When and how should the seeds of *Ampelopsis Veitchii* be planted? South Carolina. T. G. R.
—The best way to grow Boston Ivy from seed is to plant the seed in boxes in ordinary light soil and when the plants are large enough transplant them. Many prefer to plant two-year-old, pot-grown plants, setting them six to eight feet apart. Growth is very rapid; any ordinary wall should be covered by the vine in two or three years.

CARE OF A YOUNG ORCHARD

What can be done to a young orchard, seeded down to clover and timothy, to bring the trees quickly to bearing? Iowa. G. T. W.
—Orchard land should be given clean cultivation. It is not considered good practice to grow corn in orchards as the corn takes up too much of the fertility of the soil. A mixture of crimson clover and timothy can be grown on this land and turned under in the fall for the purpose of giving a green manure crop. Rye is sometimes grown in the orchard when the trees are growing too fast.

PRUNING GRAPE VINES

I have some old grape-vines, about wrist-thick, which have never borne a satisfactory crop, the fruit falling off before ripening. Can they be made into bearing vines, or be cut down and new vines started? New York. E. L. C.

—In pruning old grape-vines the first thing to do is to cut away all the old wood, leaving only the number of new canes required for the system of training desired. Any vigorous vine will form enough new canes to fill up the trellis or side of a building and will often produce as much and of a better quality after pruning as if it were not pruned at all. In case the vine is not vigorous and has but few or no new canes the whole top may be cut off and only a small number of new canes be allowed to grow during the following summer. But after that a large crop of fruit may be expected. In both cases keep all laterals pinched off. A very good way to locate the canes on an old vine is to start near the ground and mark them with blue or red chalk at frequent intervals and then cut out all that are marked. Read Mr. Burroughs' article in the March GARDEN MAGAZINE.



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Blind and Awning Combined

THE most practical and useful form of Venetian yet devised; they combine beauty, utility and durability to a degree that no other blind of any kind can equal; suitable alike for town and country houses. Slats can be opened and closed and blinds raised or lowered from inside without opening window. When blind is pulled up entire frame is folded out of sight, making a very neat appearance. Mention "Garden Magazine" for free booklet. Orders should be placed now for early summer
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blood-leaved and golden. Bushy plants with firm ball snugly wrapped up 12-15 inches. \$1.00 each, per six \$5.00.
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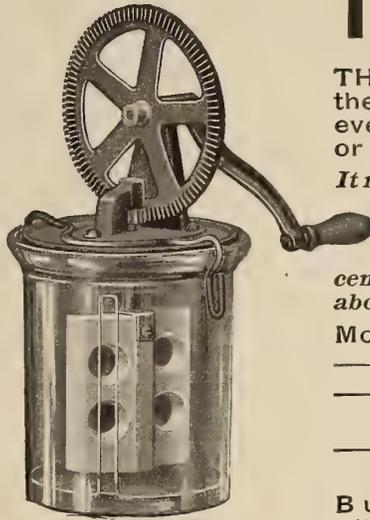


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Moreover, you can have
—whipped cream in 20 seconds;
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upon a new principle—of solid removable parts that can be thoroughly cleansed. The only sanitary churn. The porcelain dasher and the rib inside the jar are only two of the many valuable features which distinguish it from any other churn on the market. They give the one-minute speed.

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Shrubs and Trees for blooming or ornamental effects.
Bulbs for planting in spring, and will bloom during summer.
Lawns—the best seed, *Suburban Lawn Seed*. Spraying implements and insecticides.

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Will Save You Time, Labor and Money if You Own One or More Cows

Those who keep one or more cows, either for profit or to supply 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.

To begin with, the Centrifugal Separator secures every last bit of cream in the milk, whereas one-third to one-half is lost by any other method of skimming.

Then the separating can be done as soon as the cow is milked, which means that the cream is always perfectly sweet and free from taint or odor, while it is of fine even texture and may be run any desired thickness. It is in the best possible condition for use as cream or for churning into perfect butter.



Likewise the skimmilk is fresh, sweet and warm from the cow; worth a dozen times more for stock feeding or human consumption than the skimmilk from any gravity setting or dilution system of skimming. Incidentally both cream and skimmilk are thoroughly clarified of all dirt and impure matter, which is never inconsiderable.

The separator does away with the setting and handling of the milk, with ice and water, and all the trouble, work and nuisance which the old way involves for everyone. It reduces the dairy work to almost nothing and makes pleasure rather than drudgery of it.

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SAN FRANCISCO

30,000 DISTRICT AND LOCAL AGENCIES

IMPROVING THE FRUIT TREES

The apples from my trees are small and wormy, and they drop off before ripening. How can I get a good crop of fruit and what is the green scale that is covering the trunks of the trees?

Connecticut.

C. F. V. E.

—The apple trees probably need thorough cultivation. By this we mean spraying for both insects and fungus by using Paris green and Bordeaux Mixture, and giving the trees food in the shape of fertilizer. If by the green scale you mean moss growing on the trunks of the trees, the remedy is scraping the trunks and letting light and air into the trees. Probably the whole orchard needs a thorough overhauling and renovation.

TREE SURGERY

I have an English walnut tree, in the trunk of which there is a large hole which resulted from a limb having been broken off. How can I save the tree?

Virginia.

A. E. C.

—Scrape out all the decaying surface matter, cutting away until live tissue is reached; then either paint or burn out the inside or the cavity may be washed with iron or copper sulphate. Cement used for filling a cavity must not extend over the live edge of the bark; if it does, the growth of the bark will generally push out the filling, leaving room for disease to enter. Have the cement surface just low enough for the bark to grow over it. Be sure that the cement is wet enough so that it will thoroughly fill all spaces up to the line of the inner bark.

HOW TO GRAFT APPLES

How are apples grafted?

New Jersey.

J. T. W.

—Take cions for grafting apples or pear stock before the growing season commences. Store in moist sand and in a cold cellar, and just after the stock has commenced to grow the grafting can be done. Grafting should always be done after growth has commenced, but the cions should be dormant when the operation is performed.

GROWING ICELAND POPPIES

Is there any particular "kink" in the cultivation of Iceland poppies?

New Jersey.

J. T.

—Plant seeds as early in the spring as the ground can be worked. Cover very lightly, for if planted deep the seed does not germinate. Make the bed smooth and fine, scatter the seed thinly, then rake gently, and firm the soil well with a board, or with the back of a hoe. When the plants are up two or three inches, thin to six inches apart for the weaker growing varieties. Pick all the pods as soon as the petals drop, unless one desires to save seed. This treatment lengthens the blooming season. It is well to grow new plants every second year, as in the colder parts of the country old plants often winter-kill. The Iceland poppy does best in a moderately rich and light loam and needs full exposure to the sun.

FERTILIZING WITH CRIMSON CLOVER

Of what value is crimson clover as a fertilizer?

Connecticut.

D. C. J.

—Crimson clover improves the fertility of the land 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 holds 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, and the one that is most easily washed out of the soils when applied in mineral form, and it is the basis of all systems of fertilization. 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 summer, so that the stand may be had all winter, and plow under as early as possible in the spring. This is the better way, as it does not occupy the ground to the exclusion of other crops.

New York.

L. B.

Good Milk Needs No Straining



Note the strainer cloth on which the milk strikes. Note the dirt shelf which catches the dirt falling from the udder. The projecting top shields the strainer cloth from falling dirt. It is easy to use, because the opening is of ample width. It does not spatter.

After dirt once gets into milk, that milk is *tainted* with bacteria, and no strainer can remove them.

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270 B 9.—The cane seat in this chair is slightly rounded in front, contributing to the attractive appearance as well as to its general comfort-giving qualities. Price \$12.

270 B 10.—This Exceedingly Restful Arm Chair has exceptionally graceful lines. It is, moreover, solidly built and will give satisfactory service. Soft cretonne cushions on seat and back, held in place on back with cords and tassels. Not only attractive in appearance but sufficiently roomy to be thoroughly comfortable. Price \$12.

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270 B 12.—The cushions on back and seat are adjusted so as to give the utmost comfort, like the other furniture shown here. It is strongly made and will give you satisfactory service. Price \$21.

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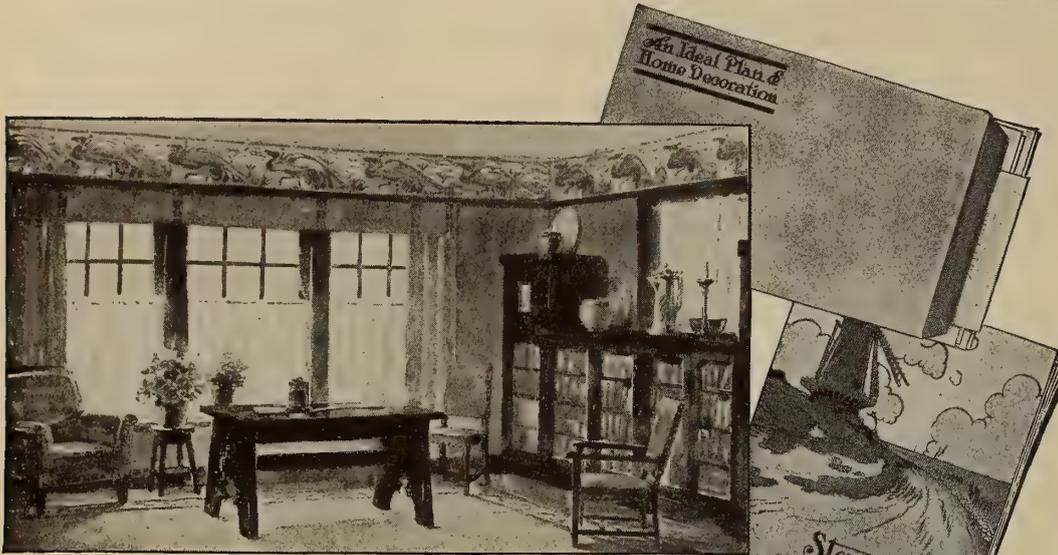
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BROWNING THE LEAVES

The ends of the leaves on my palm, also buds on a chinese lily, turn brown and dry up. What is this caused by?

New York. C. B. W.
 —The reason that palm leaves turn brown and dry up may be due to several causes, such as extreme changes of temperature and an extreme range of moisture in the atmosphere. If, at any time, the temperature becomes high and the air is dry at the same time, the roots will be unable to supply the leaves with moisture as rapidly as it is needed. Insufficient or improper watering, or improper aeration of the soil or the presence of illuminating gas or the fumes of coal gas will produce the same effect. The same reasons will also cause the buds of the Chinese lily to dry up. It may also be the result of exposing the plant to heat too soon so that the upper part of the plant develops more quickly than the roots can supply nourishment.

A DEFENSIVE HEDGE

What can I grow as a defensive hedge six to eight feet high?

New York. F. M. S.
 —The height a hedge will grow is merely a question of the kind of plant and age. The buckthorn is liable to scale, but a hedge can be sprayed the same as trees. The most ornamental hedge is the hemlock, but it grows slowly and is expensive. The beech is excellent, it retains its foliage very late, and is therefore almost an evergreen. Both the honey locust and osage orange make fine hedges, but they need a great deal of attention in order to keep them within bounds. The locust is absolutely tight and a quick grower. A good time for planting hedge plants is the spring and the general rule is that the plants should be from eighteen inches to two feet high, and from nine to eighteen inches apart, depending upon the nature of the hedge itself.

MAKING A LAWN

How can I proceed to get a first class lawn established by next fall? The soil is now of the poorest kind, no fertility.

Connecticut H. B. W.
 —You can get grass established in this plot next fall, but it will be a very expensive operation. You will have to cart in large quantities of good top soil as well as large quantities of stable manure. Put the stable manure on the land first, and plow it in deeply so as to break up the subsoil. On top of this put a thick layer of good top soil on which the seed should be made. The really practical way to get ground in good condition is to plow it up this spring and harrow thoroughly, sow to cow peas and plow them under deeply as soon as the crop is well developed; then give a dressing of manure and lime. If you do not wish to go to this expense, sow cow peas again; turn them under late in the fall and seed down to grass in the fall so as to get the grass growing the following spring. Read "Lawns and How to Make Them," by Leonard Barron.

ORRIS ROOT

How is orris root obtained?
 Alabama. H. B. B.
 —Orris or iris root is made from the rootstocks of *Iris Germanica*, *I. pallida*, and *I. Florentina*, the first of these being our common garden iris, with deep blue flowers, the second a paler-flowered species, the third having white flowers. When cultivated the iris is generally propagated by root divisions, the cuttings being placed for the first year in a nursery, afterward set in rows a foot apart. It is grown in stony dry soils, on hillsides or mountains. The crop is gathered once in two or three years. The outside is scraped from the root, which is dried in the sun and stored in a dry place for two or three years for the development of its fragrance, which is lacking in the fresh root. When distilled the root yields "orris butter" but it is more largely used in the form of an alcoholic tincture or ground up for sachets. There is no reason why orris root should not be grown in many sections of this country, but the returns at present are not large. As to whether it could be grown profitably, the question is one of cost of labor and probably that is prohibitive.

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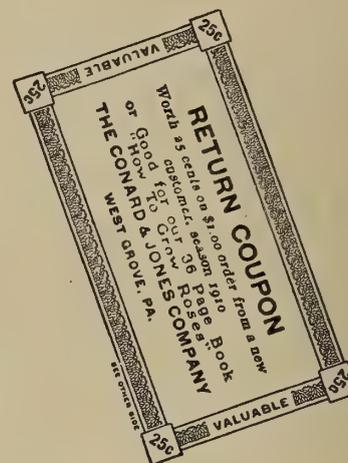
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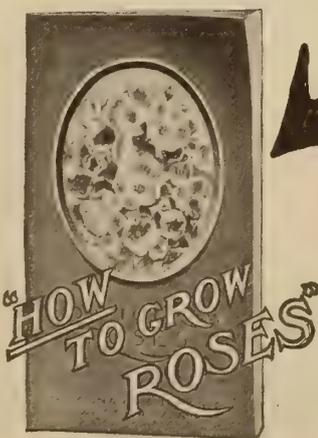
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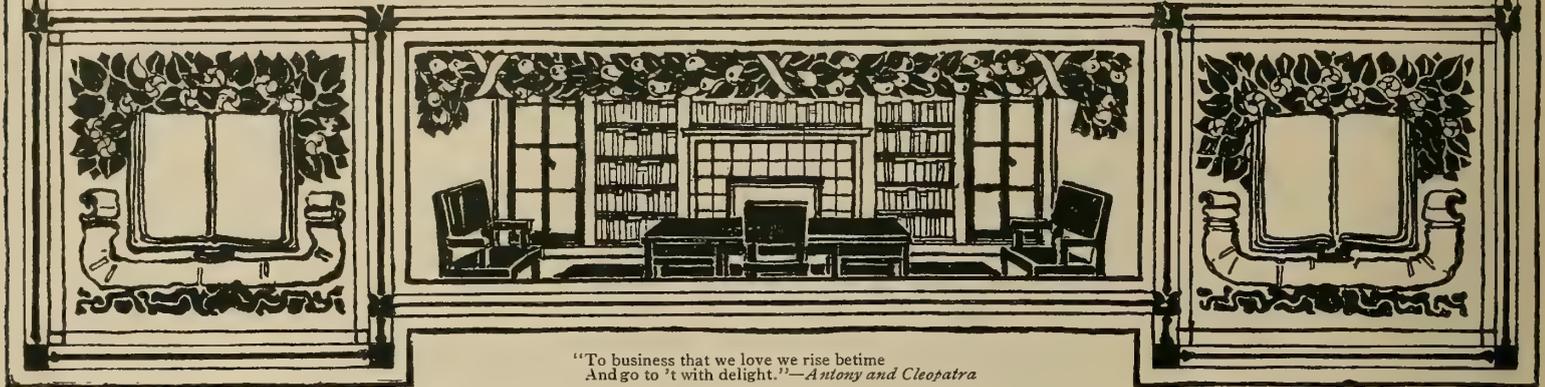
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THE TALK OF THE OFFICE



"To business that we love we rise betime
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Possibly because of the great space devoted to our new building plans in Garden City, Long Island, in this department last month, the impression may be given that this project is absorbing and dominating our interest these days; but this is not the fact. What is foremost in our minds is to make better books and magazines, and to let the world know about them, and the winter of 1909-1910 has shown a satisfactory advance in this respect.

GARDEN CITY NEWS

At the risk of making these paragraphs bear close resemblance to the country weekly, we shall cover under this head, from month to month, the story of progress made in what we have decided to call *The Country Life Press*.

In the first place, the plan of the building has, we think, been much improved since the sketch was published, and in the June or July issue we shall print a revised drawing which we believe will interest our readers. The new plan gives us 35,000 more feet of floor space, it breaks the hard, long building line of the front by moving forward the garden court from the middle of the building (which concealed it from the street) to the centre of the front, so that the visitor passes through the garden itself in entering the building—but of this, more next month.

Meantime, ground has actually been broken at Garden City, about twenty or twenty-five houses now on the property are being torn down or moved, and by the time this page is in the hands of the reader we are sure great progress will have been made.



TEARING DOWN BUILDINGS AT GARDEN CITY, L. I.,
WHERE NEW PLANT WILL BE

Mr. Gage E. Tarbell, who conducted the negotiations with the Garden City Company,

when we bought the property, is arranging for the immediate construction of about one hundred or more very attractive cement houses, which will be within 5 minutes' walk of the Press. These, it is planned, will be finished when we move. Members of the Doubleday, Page & Company staff can buy, or rent, or board, as suits them; or they may also live in a dozen towns within a dozen miles of Garden City, or get from homes in Jamaica and Brooklyn in from fifteen to twenty minutes, or from New York in thirty minutes.

Mr. Walter S. Timmis, our consulting engineer, is completing the plans for the mechanical plant, including the lighting and heating which, because the building is practically a house of glass, requires boilers of about 300-horse power. Our own well is being driven, our gardener is on the grounds starting his work, and we can report substantial and satisfying activity.

BELINDA AND HER PERSONAL CONDUCT

Perhaps 100,000 people read about Nancy and her *Misdemeanors*, a sprightly novel by Eleanor Hoyt Brainerd. This was several years ago. Now Mrs. Brainerd has given us a new novel, "*The Personal Conduct of Belinda*." Like Nancy, Belinda is a nice girl, as good as she is nice, and with a most effervescent sense of humor. In undertaking the personal conductorship of a party of American travelers who had planned to go under the guidance of a lady of more advanced years, Belinda finds her hands full.

An amusing, wholesome, and interesting book, and your bookseller will be glad to show it to you.

AMERICA HAS DISCOVERED LORD LOVELAND

Mr. and Mrs. Williamson's new book, "*Lord Loveland Discovers America*," has been discovered by readers in great numbers, and bids fair to sell well up with "*The Lightning Conductor*," although it is not a motor story. Lord Loveland came to America with the idea that the American young girl would stand in reverence and sue for his hand. He suffers a rude shock, and because of a series of misadventures has to become a hard-working man. A wholesome experience which does his character a vast amount of good.

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The evident purpose of her novel is to bring into strong comparison the comfortable and

conservative life of the best class of English people with the rugged life of the pioneer in a new and rough country. "*Lady Merton, Colonist*," is a most striking book and as a story it is absorbing, and the end is as it should be. Mr. Albert E. Sterner has made the drawing for the photogravure frontispiece.

WILD ANIMAL PHOTOGRAPHS BY A. R. DUGMORE

It is a great pleasure to all of us that our old associate, Mr. A. Radclyffe Dugmore, a member of our staff for about ten years, is making such a success with his lectures and book, "*Camera Adventures in the African Wilds*."



It is much more dangerous and difficult to photograph a wild animal than to shoot him, as Mr. Schillings found out several years ago. Mr. Dugmore succeeded beyond the greatest expectations of his friends; his pictures are really very remarkable: as Mr. Osborne said in introducing Mr. Dugmore in his lecture at Carnegie Hall, they are the most remarkable series of photographs of this sort ever made, and will be preserved as a most valuable record after these great animals have gone down before civilization and perished from the earth.

ABOUT GARDEN BOOKS

May we recommend these:

"*The American Flower Garden*," by Neltje Blanchan; net \$5.00 (postage, 35 cents).

"*How to Make a Fruit Garden*," by S. W. Fletcher; net \$2.00 (postage, 20 cents).

"*How to Make a Vegetable Garden*," by E. L. Fullerton; net \$2.00 (postage, 20 cents).

"*How to Make a Flower Garden*," by many experts; net \$1.60 (postage, 20 cents).

"*The Garden Week by Week*," (imported), by W. P. Wright; net \$2.00 (postage, 20 cents).

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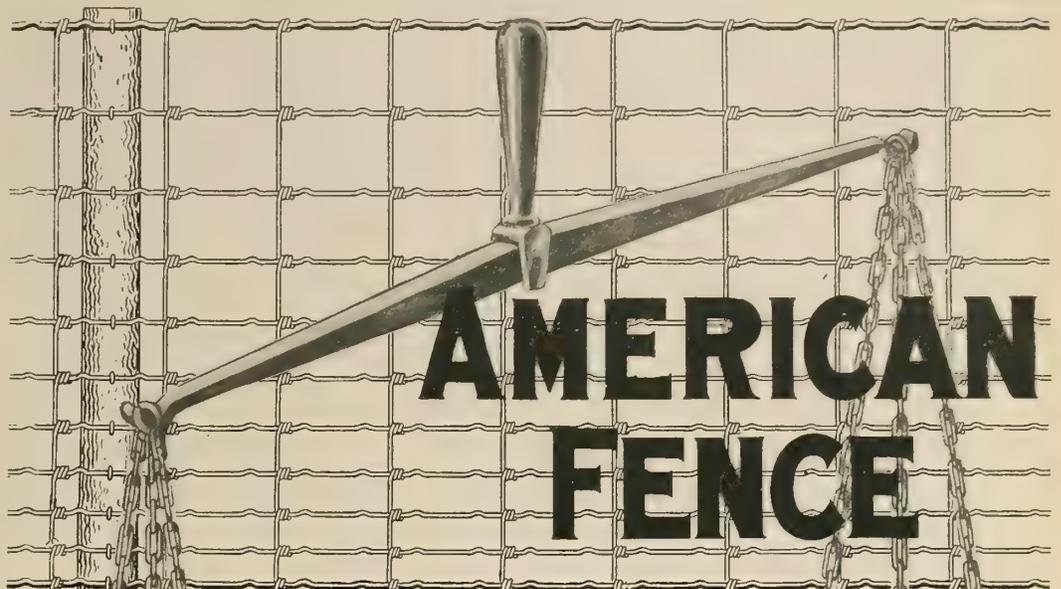
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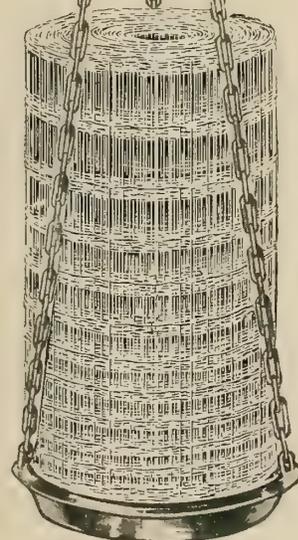
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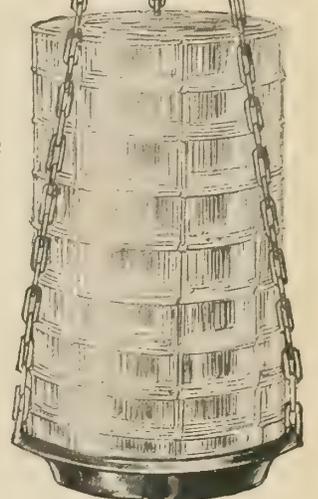
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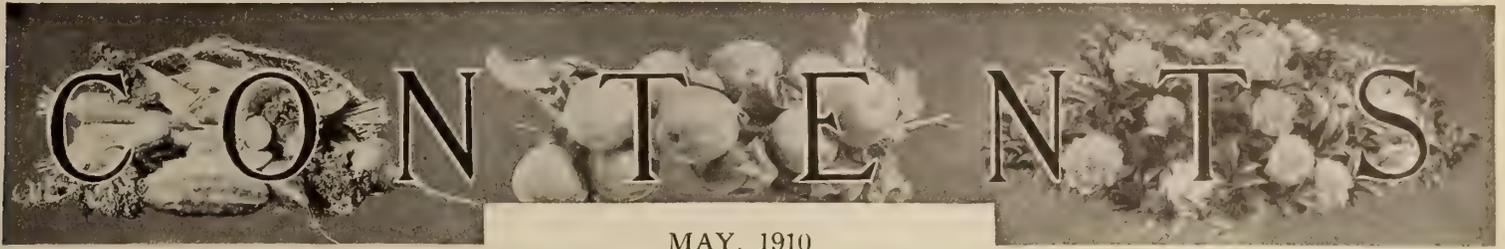
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MAY, 1910

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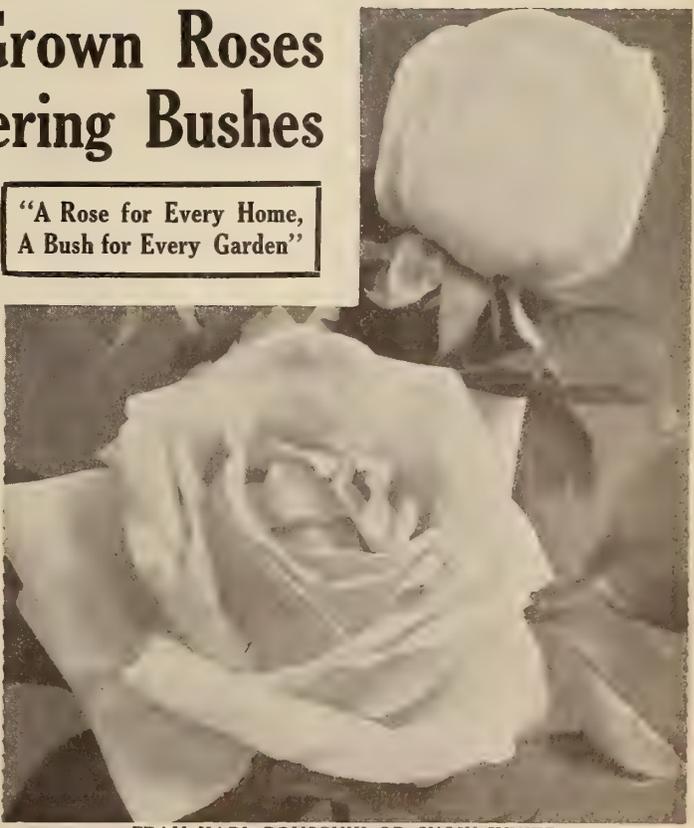
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The Garden Magazine

VOL. XI—No. 4
PUBLISHED MONTHLY

MAY, 1910

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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 Last Call for Early Sowing

BEFORE the first of May, sow seeds for first crop of all hardy vegetables, selecting the early varieties. A list of these was given in the Reminder for April. During May the most important thing for the vegetable gardener to see to is sowing for succession, and also the transplanting of tender plants—tomatoes, egg plants, etc.—which have been started indoors. Details for handling these things will be found in Mr. McCollom's article on page 246.

During this month sow seeds of French or globe artichoke. Plants will winter with slight protection, and will yield most next year. Seeds may be sown in the open at this time, as also kale, broccoli, Brussels sprouts, all kinds of cabbage, cardoon, cauliflower, celeriac, celery, egg plants, endive kohlrabi, leek, onion, pepper and tomato.

During the month you will make two sowings of bush beans, sweet corn, lettuce, okra, peas, and be liberal in the quantity used. It is better to have too much than too little, and if crops overlap, no great harm is done.

For sowing in the open ground, where they are to stand without transplanting, are Jerusalem or tuberous artichoke, beets, carrots, chicory, field corn, pop corn, corn salad, cress, cucumber, mangel wurzel, melon, mustard, nasturtium, parsnip, parsley, pumpkin, sea kale, spinach and squash. Also plant potatoes at the earliest opportunity.

Sea kale is an almost unknown but high quality winter vegetable, which you can have in perfection next winter by sowing seed now, if you will read the article in *THE GARDEN MAGAZINE* for March, 1908, which tells how to get the crop in nine months. The old idea was that you had to wait from two to four years.

Radishes may be sown every few days, "little and often" being the rule. Quick,

succulent growth is the secret of good radishes. Do not sow on dry, hot soil.

If you have an abundance of water or a running, shallow stream, try water cress. Whether as a salad or as a garnish, it is always useful. New beds may be made by transplanting pieces of established plants that will make roots at their node. But it is very easy to grow from seed, in a sheltered bed on the north side of the house or wherever the soil can be kept really moist. Try some in pots indoors, keeping plenty of moisture in the saucer. Do it, and tell us about it.

If your peas and beans have not grown as well as other things in the garden, the soil may lack bacteria. Think it over and look into the subject.

In the Flower Garden

THIS is the busiest month of the year. During the first part of the month sow all kinds of annuals in the open ground. Make the soil fine, keep it moist and shade from intense sun. A cheesecloth roof will accomplish wonders. Plants started in flats indoors or in frames must be gradually hardened off. This means expose them to the open air gradually, giving protection from the mid-day sun.

Sow in the open ground, without transplanting, all hardy annuals, such as arctotis, bartonia, coreopsis, gillia, gomphrena, marigold, wall flower, etc. Also, half-hardy annuals may now be sown, such as: canary vine, balloon vine, gaillardia, schizanthus; also mignonette where it is to stand, it does not transplant well. Morning glory: soak the seeds in warm water to aid germination. Nasturtium: the vine kinds are particularly adapted to waste places. Plant petunia and all members of the poppy family; see *THE GARDEN MAGAZINE* for March, 1909. Also plant snapdragons, zinnias and sweet peas; the last named as early in the month as possible. It is getting late.

Tender annuals, (which includes amaranthus, castor bean, colosia, hop, ice plant and ornamental gourds), may be sown in the hotbed in pots to be hardened off and subsequently taken out for planting when the ground is thoroughly warm.

Salvia may be treated as an annual in this group, and will give more burning hot flowers in late summer than any other plant.

When all danger of frost is past (usually not until the last week in the month) plant out all kinds of bedding plants other than tropical. This includes asters, begonias, coleus, abutilon, etc. Also all summer tender bulbs like gladiolus and cannas. Cannas are best started in heat, however, early in the month.

Dahlias may be put out toward the end of the month, but there is no need to hurry. They will do just as well any time next month—probably better. Read Mr. Fuld's articles in *THE GARDEN MAGAZINE* for April and May, 1909. A border of herbaceous plants may be planted during this month just as well as in the fall. Study Mr. Cameron's striking photographs on pages 232 and 233 of this number, and decide upon the kinds and effects you wish for.

All kinds of perennial plants that need dividing should be given attention this month.

Dig Dutch bulbs as soon as the flower stalks fade, and replant lightly in some shady place to mature; fill in their places with annuals.

Bring house plants into the open air; they will be all the better for having the pots plunged in the ground.

On the Lawn

GET the lawn mower to work as soon as the grass is two inches high, and keep it going whenever necessary during the summer. Do not allow newly made lawns to run to seed. Remember this, however: if your soil or if the season is abnormally dry, do not cut the grass too close. You can do better cutting with a well-sharpened and well-oiled machine—the other kind tears. Leave the clippings where they fall; they will mulch the ground.

Easter lilies that have done blooming may be plunged outdoors, and the bulbs grown on to bloom another year.

Plant peonies and lilies if you did not get them in during the fall.

A note for Christmas: Sow seed of Chinese primula before the 15th of this month.

Look over the tools. Hurry up with an adequate spraying outfit; see page 236 of this month's number.

In the Fruit Garden

DO not delay pruning apple trees any longer. Remove dead branches and interfering limbs. Remove suckers from around the trunks.

Prune blackberries after the fruit buds can be determined, because some varieties fruit on the main stem and others on the laterals. Trim up the currant bushes and plant new ones.

Provide for the spraying campaign. Get arsenate of lead, Bordeaux mixture, etc., on hand. Also sulphide of potassium for gooseberry mildew.

Look over newly set strawberries and pinch off all flower buds. Mulch the ground.



Fancy a whole city where boundary hedges between lots, and even the roadside plantings along the curb, are ever-blooming roses!

Where Roses Run Riot—By Frederick V. Holman, ^{Ore-}gon

A CORNER OF THE AMERICAN CONTINENT WHICH IS IDEAL FOR ALL KINDS OF ROSES, AND WHERE THEY EXCEL IN BEAUTY ANYTHING SEEN IN THE OLD WORLD

[EDITOR'S NOTE.—The writer of this article has for twenty-five years made a special hobby of growing roses in Portland, and has been largely instrumental in popularizing their cultivation. It was he, indeed, who gave this, the "Rose City," its popular title.]

IT IS probably not known to many residents of the Eastern States that Portland, Ore., in the same latitude as Montreal, Canada, is a place where roses grow as well as, if not better than, in any other part of the world!

That roses grow so perfectly there is due largely to the soil and the climate. The soil is a rich, heavy, yellowish clay, one of the best soils for roses; the climate is soft, moist, mild and even. Roses ask no more as natural conditions. Soil may be imported, climate is as nature gives it. The annual precipitation for the past twenty years is about forty inches, about the same as at Louisville, Ky., Washington, D. C., Boston, Mass., and Buffalo and the City of New York. But Portland does not have the cold winters nor the hot summers of these other cities. In the winter the variation is rarely more than ten degrees in twenty-four hours; often it is less than five degrees. This gives the roses the best conditions to lie dormant, and to awaken strong and vigorous for their next spring and summer blooming. Occasionally there is a short time of freezing weather in the winter, but the thermometer rarely goes lower than ten degrees above zero; most winters it does not fall more than six or seven degrees below freezing point. In the last winter of 1909-1910, which has been so cold and disagreeable in the Eastern States, the lowest temperature in Portland was 23 degrees above zero—figures which I obtained from the United States Weather Bureau at Portland. As the ground was warm, very few roses were hurt below the surface of the manure covering on the ground, even the most delicate roses, such as Niphetos, which grows and blooms to

perfection in the open. I am writing of roses which had no protection of boughs, nor straw. Such protection is rarely used because it is unnecessary.

In May and June, which are the months of the perfection of rose blooming in Portland, the climate is ideal for roses. It is not alone that these are the months when roses bloom in the latitude of the Northern States, but it is the even and mild temperature, with the other favorable atmospheric conditions, which might well be called



Owing to the mild climate a wonderfully sturdy growth is made, and that means large flowers

nature's greenhouse conditions in the open. They are just right for the bushes, as well as the flowers. This applies to all varieties from the most tender teas to the hardiest hybrid perpetuals. Roses dislike extremes of temperature, of dryness and of moisture, in the soil as well as in the air. They revel in moderations of all these things.

The evenness of the climate in Portland in summer, as well as in winter, is due largely to the mild south winds from the tropics moisture-laden. In the summer the mild northwest winds from the Pacific ocean also have their part in cooling any tendency to excessive heat. Its climate is similar to that of the most favored parts of southern England. While Portland is in the latitude of Montreal, it is also in the latitude of Bordeaux, France.

In September, in October, and into November the roses have another blooming season. Not all varieties, but many are more beautiful than in May and June—such varieties as Maman Cochet, White Maman Cochet, Prince de Bulgarie, Souvenir de Pierre Notting, Papa Gontier, and other varieties not so well known. But many other varieties are as good, or nearly as good, as in the spring and summer blooming.

The cold fogs near the coast and the hot, dry winds, and the arid conditions of the interior (as in the southern part of California) in the rose-blooming season, preclude it from producing roses such as may be grown all over western Oregon.

In Portland there are roses everywhere in the residence districts. You may see them in the front yards of the humblest cottage, of the pretentious and costly houses,



Madame Alfred Carrière rose (Hybrid noisette, bluish white) is uninjured by winter, and flowers profusely

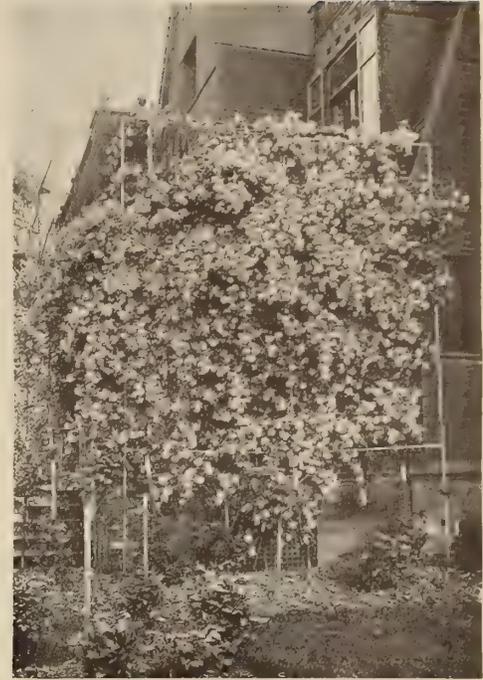
of the flats and of the apartment houses. It is not so much a question of pride with its people, as that it would be a disgrace not to have roses in the yards as well as in the gardens. The public sentiment demands roses to be planted and cared for. It comes of the feeling that Portland shall be a city beautiful.

Its people have a pride in the varieties of roses they cultivate. That a bush is a rose is not sufficient. It must have a name, a reputation and beauty. From the thousands of named varieties they make their choice. The greatest favorite is Caroline Testout. There are tens of thousands of this variety. In the aggregate there are thousands of feet of hedges of this continuous blooming, lovely rose. Last year the world's trade supply of bushes of this variety was exhausted by Portland people. Probably La France comes next in numbers, for it is an old variety, although Frau Karl Druschki rivals it in popularity. Ulrich Brunner has a host of friends. But I cannot, in this article, go into an enumeration of its popular varieties of roses. There is a great desire for the new roses of each year. The professional local florists have responded to the

demand. The new European and American varieties are offered as soon as they can be had. I have now growing in my garden, and which bloomed last year, several bushes of each of the following choice new varieties: Lyon-Rose, Rhea Reid, Jean Noté, George C. Waud, Molly Sharman-Crawford, Avoca, Chateau de Clos Vougeot, Harry Kirk, Kronprinzessin Cecile, La Galissure, Laurent Carle, Mme. P. Euler, Mme. Segond-Weber, Queen of Spain, Marquise de Sinety, Souv. du Rosieriste L. Rose Vilin, Yvonne Vacherot, and other of the new varieties which have made good, such as Charles J. Grahame, Dean Hole, Etoile de France, Florence Pemberton, General McArthur, Hugh Dickson, Joseph Hill, Mme. Melanie Soupert, J. B. Clark, Mrs. Myles Kennedy, Mrs. Kavid McKee, Mrs. Theodore Roosevelt, William Shean and many others, as the school-boys write in their alleged compositions, "too numerous to mention."

Climbing roses grow luxuriantly and bloom wonderfully. The mild and even weather in winter does not injure the ends of the shoots, and thus enables them to grow in length the succeeding season. I have growing on supports against my residence one Mme. Alfred Carrière thirty-five feet high, and another forty feet. I have had for a number of years a Fortune's Yellow more than twenty-five feet in height. This is the rose more commonly called in this country Beauty of Glazenwood, and in California Gold of Ophir and San Rafael Rose. It was introduced into England in 1845, by Robert Fortune, the collector.

These two climbing varieties in my garden have become somewhat noted. England may be the land of roses, but I feel that we outdo the English here, as witness a letter,



Fortune's Yellow (Hybrid noisette) showers its coppery tinged flowers in lavish wreaths on the author's home

dated April 23, 1909, from Edward Mawley, the Honourary Secretary of the National Rose Society of England. Referring to the picture of my Fortune's Yellow bush in full bloom, he wrote: "It is a grand rose and one we long to grow here, but only now and then is it seen doing well out of doors."

All climbing roses do well in Portland, including Gainsborough (a climbing sport of Viscountess Folkestone), Ard's Pillar, Climbing Caroline Testout, Climbing Kaiserin Augusta Victoria, Mme. Jules Gravereaux, Mme. Berard, Maréchal Niel, and William Allen Richardson, all of which I have growing in my garden. By careful cultivation I have made into pillar roses or semi-climbers, ten or twelve feet high, Gruss an Tepplitz, Gloire de Margottin, J. B. Clark, and Mdlle. Germaine Trochon.

As Portland is a Rose City, it occurred to some of its public-spirited citizens that it would be well to devote a week each year, early in June, to holding a rose festival. For several years it had had successful rose shows. The first successful rose festival was in 1908.



Quite naturally, in a climate like Portland, roses are the chief garden plants

A Simplified Chart for Your Vegetable Garden—By Louis G. Beers, New Jersey

A RECORD AND PLAN ON A UNIT BASIS THAT CAN BE IMMEDIATELY ADAPTED TO FIT ANY PLOT, AND BY WHICH A RECORD OF THE YEAR'S WORK CAN BE KEPT

WHEN I first turned my attention to the garden around my newly built home—that was four years ago—I had only a vague impression as to what was involved in the planning and care of a garden, and concluded to employ an experienced gardener to plant the seeds and then let the boy who mows the lawn “do the rest.” I was to take no personal interest in the work except to pay the bills and enjoy the fresh vegetables that came to the table.

Accordingly the first year I employed a man, to whom I gave a list of such vegetables as we wanted, and relied on his judgment to select the varieties and allot the space for each kind. He promptly carried out my instructions and when he was through the entire garden was planted—all at one time.

As only a few kinds were labeled, I had to wait till the plants appeared before I could determine what to expect. I then discovered that too much of some things had been planted and no space had been left for a succession.

I recall now that string beans were his specialty, as about one-third of the space had been planted with that vegetable, and if all had been allowed to mature a dozen families could have been abundantly supplied.

I relate the foregoing, after having conferred with others, who have met with a similar experience, and to show that only by personal attention can one expect the best results in a small suburban garden.

At this point I realized that I must make a study of gardening and do a certain amount of the work myself. I bought several books and subscribed to THE GARDEN MAGAZINE, in one number of which was suggested the advisability of making a plan in advance; and the next season I started early to obtain my seeds and lay out a definite chart and table. I measured my garden and located in a rough drawing permanent things, asparagus bed, berry bushes, etc. Then I obtained paper with faint blue lines (eight to an inch), ruled at right angles, so as to form small squares. (This paper can usually be ob-

tained from dealers in drawing material.) I allotted a square to each square foot of the garden, and numbered the lines to correspond with the number of feet of the garden. I then made a list of the kinds of vegetables I desired to plant, grouping those that matured early so that the space could be utilized for a late crop. I located the tall ones, such as corn, where their shade would not retard the growth of some lower kind. Other reasons will suggest themselves for grouping.

I next made a chart. A heavy line was drawn over a blue line to indicate where each row was to be planted. I then proceeded to make a planting table on a sheet of paper ruled as shown in the accompanying cut. The spaces under the headings except “Planted” were filled in advance, that, and another (not shown on the sketch) allowed for “Notes” were left to record the date when the seed was planted and any memorandum as indicated. I prefer pencils, red for lines and black for writing, as ink is

LEFT OF WALK

LOC.	NAME	FROM	PLANT	APART	DEEP	THIN	PLANTED
6	LONG ISLAND SQUASH	R	MAY 15	HILLS	2 IN	4 HILL	MAY 22
10	MIGNONETTE LETTUCE	R	A	CLOSE	1/4 IN		A
11	ROMAINE "	R	A	"	1/4 IN		A
12	EARLY SCARLET RADISHES	S	B	1/2 IN	1/2 IN	1 IN	B
13	LONG " "	S		1/2 IN	1/2 IN	1 IN	B
14	YELLOW ONION SETS	S	APR 1	2 IN	2 IN		APR 10
15	" " "	S					
14	(2ND) SAVORY SPINACH	S	JUL 15	1 IN	1/2 IN		JUL 24
15	(2ND) RUTABAGA TURNIPS	P	JUL 15	1/2 IN	1/2 IN	2 IN	JUL 24
16	EGYPTIAN BEETS	S	APR 1	1/2 IN	1 IN	3 IN	APR 10
16	2ND RUTABAGA TURNIPS	P	JUL 15	1/2 IN	1/2 IN	2 IN	JUL 24
17	SAVORY SPINACH	S	APR 1	1 IN	1/2 IN		APR 10
17	2ND EGYPTIAN BEETS	S	JUL 15	1/2 IN	1 IN	3 IN	JUL 24
19	DANVERS ONIONS	R	APR 15	1/4 IN	1/4 IN	2 IN	APR 29
20	" "	R	"	"	"	"	"
21	" "	R	"	"	"	"	"
23	HOLLOW CROWN PARSNIPS	R	APR 15	1 IN	1/2 IN	4 IN	MAY 15
24	" " "	R	"	"	"	"	"
25	SCARLET HORN CARROTS	R	APR 15	1/2 IN	1/2 IN	6 IN	MAY 15
26	EMERALD PARSLEY	S	APR 15	1/2 IN	1/2 IN		MAY 5
50	NEW ZEALAND SPINACH	S	APR 15	1 IN	1 IN	12 IN	MAY 5
55	EARLY CLUSTER CUCUMBERS	R	C	HILLS 4 F	1 IN	4 HILL	C
59	LONG GREEN CUCUMBERS	R	C	HILLS 4 F	1 IN	4 HILL	C

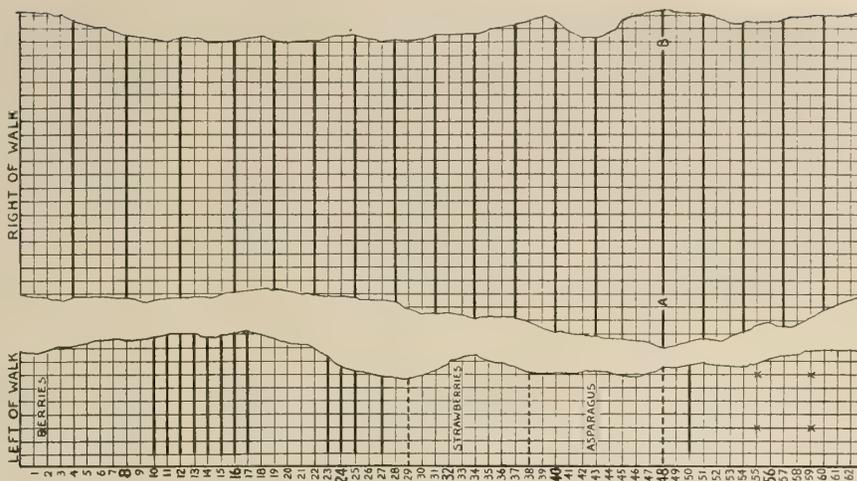
RIGHT OF WALK

LOC.	NAME	FROM	PLANT	APART	DEEP	THIN	PLANTED
4	EVERGREEN CORN	R	JUN 10		2 IN		JUN 5
8	" "		MAY 15	HILLS	2 IN		MAY 19
12	" "		MAY 5	3 FT	1 IN		MAY 5
16	METROPOLITAN CORN	R	MAY 5		1 IN		MAY 5
19							
22	IRISH COBLER POTATOES	S	APR 1	15 IN	3 IN		MAR 27
25	LITTLE GEM PEAS	S	APR 1	1 IN	1-2 IN	2 IN	APR 3
28	PROSPERITY PEAS	S	APR 1	1 "	1-2 "	2 "	" 3
31	" "		APR 15	1 "	1-2 "	2 "	APR 17
34	CHAMPION OF ENG. PEAS	R	APR 15	1 "	1-2 "	2 "	" 17
37	GIANT BUSH LIMA BEANS	R	MAY 15	12 IN	2 IN		MAY 15
40	" " " "	R					C
43	VALENTINE BUSH BEANS	S	A	1 IN		4 IN	A
45	" " " "	S		1 "		"	
48A	EGG PLANTS	S	MAY 15	30 IN			MAY 13
48B	SWEET MTN. PEPPERS	S	" 15	30 "			" 13
51A	EARLIANA TOMATOES	S	MAY 15	3 FT.			MAY 15
51B	PONDEROSA "	S	" 15	3 FT			" 15
54	JERSEY WAKEFIELD CABBAGE	S	MAY 15	18 IN			MAY 15
57	SNOWBALL CAULIFLOWER	S	MAY 15	18 IN			MAY 15
60	DWARF BRUSSELS SPROUTS	S	MAY 15	18 IN			MAY 15
	2ND CROP						
21	WHITE PLUME CELERY	S	JUL 20	6 IN			JUL 24
	3 ROWS 6 IN APART						
30	SHUMACHER CELERY	S	AUG 1	8 IN			JUL 31
	3 ROWS 6 IN APART						

This record is drawn on faint quadrille ruled paper, each square representing a square foot of ground. The exact location of each crop is shown by the chart on the next page. In the author's own records an extra space for "Notes" is extended on the right of each form

liable to blot in case it is wet. Once I found it necessary to copy my work as a result of a few drops of rain.

The novelty in my method is found in the use of the ruled paper and thus making a definite working plan with only a rule and pencils for instruments. This can be taken out to the garden and followed minutely without confusion or the loss of time when it is important to make every minute count. Also a plan in advance enables one to utilize every foot of space to the best advantage. I have also found it worth while to keep a record of the dates when seeds are planted and from whom they were bought; also, I



Each foot of this garden is numbered in this plan and a heavy line ruled over the faint line to mark the crop's place

presume, a record showing when crops matured would be useful.

I fasten my chart and table to the leaves

idea is practicable, and by its use I have obtained much more from the garden by continuously utilizing the ground.

on opposite pages of an everyday file made by one of the well-known concerns, with strips of gummed cloth tape. In this way I preserve the records for several years, together with similar plans, and charts for our flower gardens. This year I shall drive small stakes into the ground eight feet apart; each one will be marked to show the distance from the fence so I can locate each row with a four-foot rule.

I have used the system described for three years, and while some minor changes have been made, I am convinced the general

A Crop Worth \$10,000 an Acre—By L. C. Corbett, Horticulturist Dept. of Agriculture

THE most noteworthy illustration of the application of science to commercial horticulture is, I believe, to be found in the work of breeding hybrid double petunias. There is an annual demand for a small quantity of a superb strain of double petunia seed. This strain of seed is the work of a quarter of a century of painstaking selection and crossbreeding.



High grade double petunia seed is the product of most careful selection and cross breeding by hand

The methods by which this superb seed is produced are worthy of special mention, for I believe it is the only case of a standard commercial article being annually produced by the application of the principles of scientific plant breeding. This seed is all produced by hand pollination of emasculated flowers. The mother plants are carefully selected both for color and form of the flowers according to the character of the pollen to be placed upon them. The pollen-bearing plants are relied upon to carry both form and color to a large extent, although both parents are the result of careful line breeding based on both form and color. The utmost care is exercised in combining the colors. Lavenders must exist in both parents if this color scheme is to be preserved. No reds, pinks or purples are ever allowed to come into these crosses. The mother plant of the most highly colored reds, carmines, maroons and purples are either pure white or with only a suggestion of pink. Dominant colors are not desired in the pistillate plant. In form, too, the pistillate plant is simple; the pollen bearer being relied upon to give both form and color to the resulting hybrid. The color scheme followed has been worked out through generation after generation until the law of their combination is thoroughly understood and can be used with precision.

In this industry we find the practical application of the laws of form and color. And in the offspring which is a first-genera-

tion hybrid we have a demonstration of the value of a form that plant breeders are just beginning to consider as possessing qualities of merit. The first-generation hybrid has always been the stumbling block of the plant breeders. It is not now understood or appreciated. The fact that "breaking up," the result of hybridization does not come until the second generation was not recognized until within the last decade, and since that one fact has been known greater advances in hybridization have been made than were made from the time of Thomas Andrew Knight up to that time. But the value of the fixity in the first-generation hybrid is yet almost as much of an enigma

as ever. We have just begun to learn its value. Someone has suggested that first-generation hybrid corn might be of value because it has been proven more vigorous and productive than line-bred corn. This theory of corn breeding so far as commercial corn culture is concerned is yet unknown. The vigor of the first-generation hybrid was markedly shown in Oliver's lettuce hybrids, but it remained for the breeder of these superb double petunias to discover the value of this form and make a commercial application of it. Mr. Gould has been making use of this form for many years with marked success. As high as 85 per cent. of these hybrids are known to follow the form and color scheme of the dominant parent and to possess a more robust habit than line-bred plants. In this work we have a manifestation of the value of the "know how." This industry consists of about 1 per cent. of material equipment and 99 per cent. of skill.

There is still another attractive feature of this industry. The product resulting from this application of skill and knowledge is probably the most valuable horticultural commodity produced in America, being worth about five times its weight in gold. While the possible product is extremely limited, as is also the market, it represents one of the most if not the most intensive horticultural industry annually carried on. The largest annual crop ever produced by a single individual is reported as five ounces, yet this was produced on an area of less than one-twentieth of an acre. The return from this industry is at the rate of \$10,000 per acre, which sets a new high mark for the return from an annual crop.

Such achievements as these suggest the question—What is possible on an acre of land?

Hardy Flowers All the Year—By Robert Cameron, Harvard Botanic Gardens

[EDITOR'S NOTE.—In THE GARDEN MAGAZINE for October, 1909, Mr. Cameron told how to plant and what to use in a hardy border that would be full of flowers all the year. We now present a series of photographs of a border planted as suggested, and taken from almost the same position about the 20th day of each month from April to October.]

THESE seven photographs speak for themselves, telling their own story of the constant succession of bloom that may be had in a border of hardy herbaceous plants, relying upon the bulbs for the very earliest effects, and replacing these in a few instances for the flowers that bloom in September. Apart from this the whole border is a permanent one, and the names of the various plants are given herewith. The reader may make a selection and plant

now, if he so chooses, but there is no time to be lost.

The principal plants in the April border are: Rock cress (*Arabis albida*); spring adonis (*Adonis vernalis*); glory of the snow (*Chionodoxa Lucillaë*); crocuses in variety; winter aconite (*Eranthis hyemalis*); dog-tooth violets (*Erythronium spp.*); Crown imperial (*Fritillaria imperialis*); checkered lily (*Fritillaria Meleagris*); snowdrop (*Galanthus nivalis* and *Elwesii*); snowflake

(*Leucojum vernum*); grape hyacinth (*Muscari botryoides*); early tulips in many varieties; and daffodils in larger number. *Iris pumila* is also in bloom.

In May we have a wealth of hardy plants in bloom: Golden tuft (*Alyssum saxatile*); columbine (*Aquilegia cærulea*, *chrysantha* and their hybrids); astilbe (*Astilbe Chinensis* and *Japonica*); purple rock cress (*Aubretia deltoidea*); thrift (*Armeria maritima*); evergreen candytuft (*Iberis sempervirens*); lily-of-the-valley (*Convallaria majalis*); maiden pink (*Dianthus deltoides*); dwarf crested iris (*Iris cristata*); Chinese peony (*Pæonia albiflora*); bleeding heart (*Dicentra spectabilis*); moss pink (*Phlox subulata* and *procumbens*); rock speedwell (*Veronica rupestris*); Greek valerian (*Polemonium reptans*); forget-me-not (*Myosotis sylvatica*); daisy (*Bellis perennis*); aster (*Aster alpinus*); orris root (*Iris Florentina*); spring bitter veitch (*Orobis vernus*); poppy (*Papaver alpinum* and *nudicaule*); horned violet (*Viola cornuta*); Japanese globe flowers; late Cottage tulips and Darwin tulips.

In June we have the double sneeze wort (*Achillea Ptarmica*, var. The Pearl); bell-flowers in variety (*Campanula Carpatica*, var. *alba*, *persicifolia*, var. *alba*, *persicifolia*, var. *Moerheimi*, *rotundifolia*); mountain knapweed (*Centaurea montana*); herbaceous Virgin's bower (*Clematis recta*); Madonna lily (*Lilium candidum*); foxglove (*Digitalis purpurea*); lupine (*Lupinus polyphyllus*); mullen pink (*Lychnis coronaria*); Oriental poppy (*Papaver orientale*); beard fringe (*Pentstemon lævigatus*, var. *Digitalis pubescens*, *spectabilis*, *diffusus*); Jacob's ladder (*Polemonium cæruleum*); Caucasian scabious (*Scabiosa Caucasica*); goat's beard (*Spiræa Aruncus*); large-flowered tickseed (*Coreopsis grandiflora*); sneeze weed (*Helenium Hoopsii*); lemon lily (*Hemerocallis flava*); common garden pink (*Dianthus plumarius*); larkspur (*Delphinium formosum*); sweet William (*Dianthus barbatus*); great-flowered gaillardia (*Gaillardia grandiflora*); alum root (*Heuchera sanguinea*); Queen of the Prairie (*Spiræa palmata*); German iris in many varieties (*Iris Germanica*); Siberian iris (*Iris Sibirica*).

The flowers which make the borders in July bright and gay are hollyhocks, phloxes and monkshood; large whiteweed (*Chrysanthemum maximum*); baby's breath (*Gypsophila paniculata*); sweet rocket (*Hesperis matronalis*); Maltese cross (*Lychnis Chalcedonicum*); Japanese iris (*Iris lævigata*); lance-leaved tickseed (*Coreopsis lanceolata*); hairy sunflower (*Helianthus mollis*); Thunberg's yellow day lily (*Hemerocallis Thunbergii*); showy lily (*Lilium elegans*); tiger lily (*Lilium tigrinum*); evening primrose (*Oenothera fruticosa*); showy corn-flower (*Rudbeckia speciosa*); Carolina thermopsis (*Thermopsis Caroliniana*); pur-



April—Early tulips and other bulbs give the character now, with rock cress in the foreground



May—Late cottage and Darwin tulips with many alpine flowers and rock plants are dominant



June—A number of larger herbaceous plants appear



July—The maximum of growth is reached and great masses of color show in phlox

ple cone flower (*Echinacea purpurea*); bearded pentstemon (*Pentstemon barbatus*, var. *Torreyi*); sea lavender (*Statice latifolia*); bee larkspur (*Delphinium elatum*); and hybrid larkspur; globe thistle (*Echinops ritro*); butterfly weed (*Asclepias tuberosa*); heliopsis (*Heliopsis laevis*, var. *Pitcheriana*); gay feather (*Liatris spicata*).

August brings in many fall flowers and many of them are of a yellow color: False chamomile (*Boltonia asteroides*); giant daisy (*Chrysanthemum uliginosum*); large-flowered plantain lily (*Funkia subcordata*, var. *grandiflora*); showy stone crop (*Sedum spectabile*); Culver's root (*Veronica Virginica*); yellow wolfsbane (*Aconitum Lycoctonum*); showy knapweed (*Centaurea macrocephala*); sneeze weed (*Helenium autumnale*); cone flower (*Rudbeckia triloba*); turtle head (*Chelone*

Lyoni); lilies (*Lilium bulbiferum*, *Browni*, *Henryi* and *superbum*); cardinal flower (*Lobelia cardinalis*); subsessil speedwell (*Veronica longifolia*, var. *subsessilis*); willow gentian (*Gentiana asclepidæa*); Stokes' aster (*Stokesia cyanea*); asters in variety (*Aster ptarmicoides*, *Nova-Angliae*, *laevis*).

September has this display: Anemone (*Anemone Japonica* and varieties); white snake root (*Eupatorium ageratoides*); sweet cone flower (*Rudbeckia subtomentosa*); Chinese lantern plant (*Physalis Franchetti*); *Lilium speciosum* and *auratum*; Siebold's stone crop (*Sedum Sieboldi*); prairie aster (*Aster tubinellus*); meadow saffron (*Colchicum autumnale* and *speciosum*); autumn crocus (*Crocus speciosus*); bush clover (*Lespedeza bicolor* and *Sieboldii*); blazing star (*Liatris pycnostachya*);

blue-flowered leadwort (*Ceratostigma plum-baginoides*); heracleum leaved clematis (*Clematis heracleifolia* with vars. *Stans* and *Davidiana*); mist flower (*Conoclinium caelestinum*); Pitcher's sage (*Salvia azurea*, var. *grandiflora*); hardy chrysanthemums. Annuals such as marigolds, cosmos, *Salvia splendens*, zinnias make a fine showing; they were planted in June and July where the bulbs left vacant spaces.

October has many composite flowers and if the frost stays away, all the September flowers will continue blossoming in October. *Aster Shorti* and *Aster Tataricus* and *Tricyrtis hirta* are the last of the perennials to bloom in the border. You can see that the October photograph of the border is as showy as any. The zinnias in the foreground are very bright at this time.



August—The yellows are dominant, chiefly composites



September—The transition is slow, yellows hang over



October—Until frost comes asters and zinnias bloom constantly

The Evolution of American Fruit-Growing, II.—By Wilhelm Miller, ^{New York}

TWO CENTURIES AND MANY THOUSAND DOLLARS WASTED ON A FALSE START—THE GOAL WE NOW AIM AT—HOW TO SAVE HEART-BREAKING DISAPPOINTMENT AND ADD MILLIONS TO THE NATIONAL WEALTH

IN my first article in the March issue, I showed that European fruits are, as a rule, ill-adapted to our climate. All our small fruits, save the currant, have been evolved from American species. So far it looks as if progress lay along the line of developing American species and throwing overboard the European as fast as we safely can do so.

THE GOOSEBERRY AND CURRANT

It is hard for Americans to understand that in England the most important fruit, commercially, is the plum, and that next to it ranks the gooseberry. There is a gooseberry society which has published bound annual reports for over fifty years. The gooseberry of Europe is much larger than ours and it is commonly allowed to ripen, when it is eaten out of hand. It failed as a market fruit here because of an American mildew.

The most important of our numerous species of gooseberry is *Ribes Cynosbati*, which has given rise to the Downing, the favorite market variety. European gooseberries are remarkably prickly, and these prickles are a nuisance. Cultivation reduces them and the evolution of the American gooseberry has been characterized chiefly by the effort to get rid of them entirely. Our best gooseberries are still too tart for a dessert fruit, but eventually we will eat them fresh.

It is now practical for skilled amateurs to grow English gooseberries in parts of the United States where the summers are cool, because we have fungicides that are effective against the mildew.

The currant is the only total exception to the climatic rule above laid down. True, the Crandall is derived from a native species, but it is of small importance. The European currant (*Ribes rubrum*), or a species very like it, grows wild in America, and our form of it has never been developed. What percentage of modern currants are of American origin I do not know.

EVOLUTION OF THE TREE FRUITS

When we look at the tree fruits, they seem to bristle with contradictions to the

rule already set forth, since we have no native pears, peaches, apricots, or quinces, and our native apples do not amount to much. Nevertheless, if the reader will patiently and candidly examine the following evidence, he will be forced to the conclusion that the same climatic law holds and that Americanization has really taken place.

EVOLUTION OF THE APPLE

I must frankly admit that our native apples are all crabs, and at present fit only for preserves. True, they are of considerable importance on the prairies and in the cold Northwest, where Eastern apples will not grow; and their blood will con-

By 1892 it had risen to 88 per cent., and probably more, for there are always many varieties of unknown origin and three-fourths of these are presumably American. In 1897, Bailey estimated that 77 per cent. of the European varieties had been lost to cultivation, and only 33 per cent. of the American.

Moreover, the American varieties have shown so great an improvement in quality that in 1888 when T. T. Lyon made his famous catalogue of fruits the following ranked 9 or 10 in a scale of 10:

	American	out of	Total
Dessert apples . . .	33	out of . . .	38
Market apples . . .	16	out of . . .	19
Crab apples . . .	8	out of . . .	9

I admit that such figures are neither accurate nor absolutely convincing. But from the nature of the case, there is no simple or accurate measure of adaptation to climate and other conditions, and we must fall back upon the general opinion of pomologists.

EVOLUTION OF THE PEAR

The pear is the most plausible exception to our rule, because we have no native pears and this fruit is, undoubtedly, less Americanized than any other of importance. For example, of the varieties cultivated in 1817 only 4 per cent. were American, and

by 1872 only 26 per cent. But consider these facts: Of the sixty-five varieties recommended in 1817, only four survived as late as 1892, and all these were American. Again, of the high-quality pears in 1888, seven out of twenty-one dessert pears were American, and four out of twelve market pears were American.

Moreover, the Kieffer, bad as it is, seems destined to become the dominant type of pear, and all the virtues of this variety are due to its Chinese blood, for it is a hybrid of the sand pear (*Pyrus Sinensis*), which comes from the one climate in the world that resembles most closely that of the eastern United States. And while the big, showy Kieffers of the fruit stands are about as edible as rocks, the important fact remains that they are good when canned—



Downing, the leading American gooseberry. Our gooseberries eventually will be ripened and eaten out of hand, like English gooseberries

tribute hardiness and productiveness to a new Western race of apples. But, meanwhile, they are too acid for a dessert fruit. All the best apples are descended from *Pyrus Malus*, a native of Europe and Asia.

However, the Old World apple has been strongly Americanized. As early as 1806, 66 per cent. of the varieties recommended by the foremost pomologist were of American origin. There was an apparent drop in 1845, for only 52 per cent. of those described in Downing's first edition were American, but we must remember that this was the era of wholesale introduction of European fruits, the total number of apples having increased from 45 to 190. By 1872, this total had swelled to the vast number of 1,856, yet the American percentage had risen to 59.



Kieffer, the first American pear; of great productiveness and reasonable degree of immunity from pear blight. It owes its vigor to the sand pear, which comes from China, climate comparable to ours.

so good, indeed, that most of the canned pears passing as Bartletts are said to be Kieffers.

The American evolution of the pear has been determined chiefly by the pear blight, an American disease for which there is no cure. Preventive measures help somewhat, but no variety is immune. The Kieffer comes nearest, and doubtless owes its superior hardiness and immense productivity to its Chinese blood. It came in after the Civil War, and made possible pear culture in the South.

In the North the dominant pear is a European variety, the Bartlett, which has survived since 1770, because it is the most adaptable of all high-quality pears. But the standard of quality in pears is Seckel, an American variety.

All things considered, the pear is Americanized to a greater degree than appears on the surface.

EVOLUTION OF THE PEACH

The peach is popularly supposed to be a native of Europe, but it reached there via Persia, for which reason it was called *Prunus Persica*. Moreover, the probability is that it came originally from China, and, therefore, from a climate like our own. It may seem that the peach is very ill-adapted to America, considering its long list of troubles, of which yellows is the worst. But should we not think of the peach as essentially a short-lived tree, even in China? If so, this weakness is offset from Nature's point of view, by the fact that the peach comes into bearing sooner than other fruit trees. Moreover, in spite of all its misfortunes, we have been able to grow it well enough to give the poor a chance to eat it, whereas in Europe it is a luxury. Since July, 1889, when the first big crop of Southern peaches was marketed in the North, America has enjoyed peaches for a longer season every year than any other country.

I believe the peach has been considerably Americanized because, as long ago as 1888, 93 per cent. of the dessert and market varieties were of American origin, and only one foreigner was at all prominent. Moreover, the Southern peaches are not such a misfit since the direct importations from China of several races that were unknown to Europe.

The peach is all one species, but there are five races, as follows:

1. The Persian race, oldest of all, and comprising the favorite varieties of Europe and the northern United States. Crawford, an American variety, is dominant.

2. The Indian or Spanish race, which is erroneously called the "native" peach in the South. The early Spaniards brought it to America, and it ran wild. Here belong very late varieties, e.g., Cabler, Columbia, Galveston.

3. The North China race, mostly cling and semi-cling fruits, including Elberta, now the great market peach of the Middle South.

4. The South China race, with oval, long-pointed fruits and a deep suture. Here belongs Honey, the great market peach of the far South.

5. The Peento race, a flat fruit for Florida and the far South. Examples, Peento, Angel, Waldo.

EVOLUTION OF PLUMS

The plums are, to some extent, a real exception to the rule that European species are not happy in the Eastern United States. It is not surprising that they should thrive better on the Pacific Coast, but it is surprising that the European plums should be so well adapted to Nova Scotia, Central New England, New York, southern Ontario and Michigan. But outside of these limits they are a flat failure and inside of these limits they come into sharp competition with the Japanese plums, which come from a climate closely comparable to ours.

Moreover, even these plums of the European type have been Americanized, for of the 283 varieties cultivated in 1872, 39 per cent. were of American origin, and by 1891 nearly one-half the varieties recommended by the American Pomological Society were American.

But the greatest marvel of Pomology is the amazing development of our truly native plums, over two hundred varieties of which have been introduced within forty years. In the great continental basin they are the only plums that Nature has fitted to battle with the black knot, leaf blight, and curculio. The story of the plums is too long and technical for a magazine article, but you can find it in Waugh's book. To show the modernness of these plums I will merely say that as late as 1872 Downing described only three native plums—the Miner, Wild Goose, and Newman.

SUMMARY

By this time my readers must be forced to these conclu-



The Elberta, an American variety of peach, which extended our peach season about a month, the first big Southern crop being marketed in 1889

sions which Bailey reached in "The Survival of the Unlike."

1. American fruits constantly tend to diverge from the foreign types which were their parents, and they are, as a rule, better adapted to our environments than foreign varieties are.

2. The horticulture of eastern and central North America must constantly tend to differentiate itself from that of all countries.

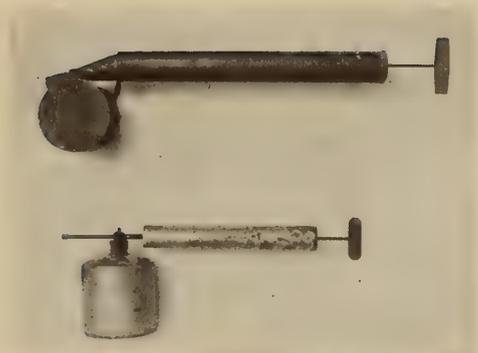
3. At the expiration of another century we should stand upon a basis which is nearly, if not wholly, American.

Please do not jump to the conclusion that we advise our readers altogether against fruits of European origin. European varieties are often so much superior in flavor that amateurs are often willing to take the trouble, expense and risk of growing them. I do not even think it worth while for most amateurs to inquire into the nativity of every fruit they plant. But I do advise every one to ask the United States Department of Agriculture for Farmers' Bulletin No. 208, and to study that faithfully before buying fruit plants of any kind.

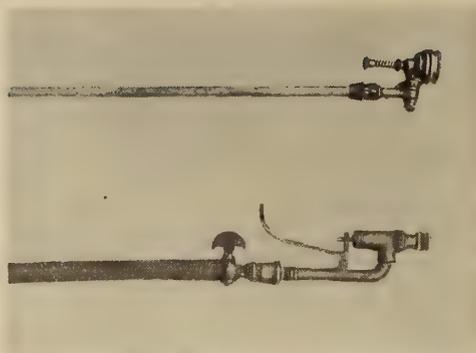
In conclusion, I can claim no credit for the figures or ideas here presented. I have drawn very freely from Bailey's "Evolution of Our Native Fruits," and "Survival of the Unlike," using many phrases without quotation marks. So, if any reader detects errors herein he should blame me, and if he has been entertained, he should thank Professor Bailey.



The Spy apple, an American variety noted for its adaptation to American conditions, being remarkably hardy and resistant to insects and diseases



The simplest type of sprayer, serviceable in quite small gardens and on low-growing plants



Two efficient nozzles for fine sprays. The upper one is adjusted to any angle by a mere turn



Sprayers that work by compressed air and give a continuous spray are desirable for extended work

Complete Insurance Against Garden Pests—By J. Lukens Kayan, ^{Pennsylvania}

SAVE YOUR FRUIT AND SHADE TREES BY HAVING A PROPER OUTFIT—THIS ARTICLE WILL HELP YOU TO DECIDE UPON THE EXACT APPLIANCE FOR YOUR NEEDS

SPRAYING, and therefore the use of spraying devices, has become a necessity. The half dozen or so fruit trees that furnish a supply of fruit to the dweller on the village lot, or to the suburbanite, are threatened with extinction unless the owners are awakened to the fact that the pests that are destroying their trees can be held in check; the orchardist already knows it.

In these days, with state inspectors and instructors, and any quantity of literature dealing with the destruction and prevention of the arch foe of our fruit trees (San Jose scale), the majority of people passively watch the destruction of fine fruit and ornamental trees which could be saved by a slight effort, by spraying.

The necessary ingredients for the remedy can be purchased in every community, or a first-class article can be had ready-made, only requiring dilution with water for use.

The apparatus is within reach of all and can be purchased in a variety of sizes suited to the amount of spraying to be done. Each outfit, of no matter what size, will pay interest on the money invested.

Do not buy a "cheap" sprayer. The best equipment for the average home garden, I think, is a compressed-air sprayer, all brass, costing about \$8, including a two-foot pipe extension and a Mistry nozzle.

This is cheaper than a barrel pump, and will do for all spraying except large trees.

Do not apply poison sprays to foliage which is to serve as food. A proprietary article supposed to contain ground oyster shells has proved effective for destroying all leaf-eating insects and, in the quantities used, is harmless to human beings.

For applying powders the best device is a can with screw top, thickly perforated with holes no larger than a pin point. The powder will sift through these fine holes in the condition of dust, which is just as effective as a heavy coating, while it adheres better to the foliage, and is not wasteful. Powder bellows cost from 75 cents to \$2.00.

Do not wait until the plants are killed by

blight or defoliated by insects. The only sure way is to spray all plants that are known to be subject to attacks before the damage appears, and always keep a visible coating on each plant until all danger has passed. Use Bordeaux mixture for fungus diseases, and arsenate of lead for leaf-eating insects. This poison will not burn the foliage even if an overdose is given, but Paris green may. The best way is to combine the two sprays for blights and insects at the same time.

Have your spray mixture always ready every day the year round. Keep concentrated solutions of sulphate of copper and lime in separate receptacles. Two four- or five-gallon earthenware crocks will hold stock solutions that will make fifty gallons of Bordeaux. Put five pounds of sulphate of copper in one crock, and six pounds of stone lime, slacked and strained, in the other. Keep closely covered to exclude dust and dirt, dilute and mix as required. Dilute the two solutions before mixing as they combine better. Kept separate, they can be used as wanted at short notice, and will not deteriorate from standing. Add arsenate of lead at the rate of about two ounces to three gallons, or two pounds to fifty gallons of Bordeaux.

The simplest form of hand sprayer consists of a reservoir holding one to two quarts of liquid, to which is attached a small pump for creating air pressure to force the liquid out in a fine mist or spray. This is made in both tin and brass, but the purchase of a tin or iron one is a waste of money. All metal parts that come in contact with the spraying solution should be made of brass, whether the machine be of one quart or fifty gallons capacity.

The reservoir and pump of the bottom sprayer are made of tin and the rust spots show in the photograph; the top one is made of brass. While slightly different in construction, both are similar in use, the bottom one being the better of the two. For the spraying of potted plants, a very few outside plants or small bushes, this form

will prove effective; but in continued use becomes very tiresome.

Aside from the small syringe-like devices, the knapsack sprayer, slung on the back, is the oldest form of portable sprayer. The lever and handle to operate the pump can be attached to the tank, on either the right or left side, and the spray is continuous. Pump and spray cylinder are fastened to a plate clasped to the tank with thumb-screws and the whole can be easily removed for use on a bucket if wanted. The tank has a capacity of four gallons. For spraying a mechanical mixture of kerosene and water a special attachment is supplied. The type of sprayer that has the pump inside the tank, which is sealed airtight after filling, is very easy to use. The enclosed pump produces an air pressure which gives a continuous spray for some time. Generally two, and at most three pumpings will exhaust the supply of solution. The tank has a capacity of four gallons, three gallons of solution and one for air space.

Even the best form of portable sprayer now on the market (so far as I can find) has some petty annoyances accompanying its use that could very easily be overcome. The sealing ring is made of galvanized iron even in the so-called "all-brass" ones; this ring needs careful examination to make sure it is smooth, many are rough and cause no end of trouble in securing an air-tight joint. After some use, these rough places cause dents in the rubber gaskets and unless the pump is so placed in the tank that the high places on this ring and the dents in the gasket coincide, it is almost impossible to seal it.

By the use of ladder and extra pipe extensions this type of apparatus becomes serviceable for trees of moderate size. For large trees a tank or barrel outfit will prove the most efficient. Such outfits require two persons successfully to handle them, one to operate the pump and the other to direct the spray.

There are a number of different makes of

such outfits, and a variety of sizes, each with its special advantages. To make a selection, the best way is to get the printed literature of the manufacturers and become acquainted with the merits claimed by each and when the time comes to purchase you will be able intelligently to select the style suited to your needs.

THE NOZZLE

Quite as important as the pump itself is the nozzle—indeed, the efficiency of the “spray” rests here. A good spray nozzle should produce a fine mist-like spray and be equipped with a disgorger that will do its work. There are a number of such nozzles. There is also the misnamed Bordeaux, a very poor makeshift, of very little use for spraying that mixture.

The Mistry nozzle has several good points to recommend it. The spray issues through a thin metal plate; the volume can be regulated by having several plates with different sized holes in them, using the one suited to the work in hand. This change can be quickly made, as every adjustment is easily effected with the fingers only. No tools are required. It can be set to spray straight ahead, or given a one-eighth or one-quarter turn; saving an extra bend. With this nozzle attached to a two-foot pipe extension, both sides of the row and the underside of the foliage can be sprayed at one passage.

POWDER-BELLOWS AND SIFTERS

Powder forms of both insecticides and fungicides are often used and have proved effective for some purposes. The ordinary method of applying powder—through holes punched in the bottom of a tin can—is very

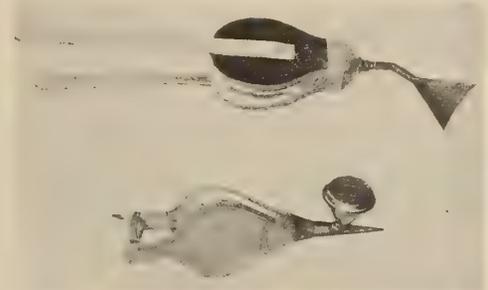
wasteful, but can be made very efficient by using a screw-top can, perforated with very fine holes; so that it is necessary to strike the can to cause the powder to sift through these perforations; this forces the powder through in a fine dust which settles on the plant. There are some very good powder guns on the market, but they are better adapted to the large grower than to the home gardener, because of their price and the small amount of work suited to them, and the price prohibits their use by the latter class. For home use either of the powder bellows is better. The long-



This trap will kill moles, but you must study the animal's habits

handled one with the funnel-shaped nozzle, known as the Acme powder bellows, is very low in price, and does all that the makers claim. The funnel-shaped nozzle has a small funnel attached to the inside by a wire spring, this spreads the powder dust and can be removed when not needed. The funnel can be removed or set straight, although in the form shown it has been the easiest to use. The nozzle is unscrewed and one-quarter of a pound of powder, no more, is poured directly into the bellows. It is operated by quick pressure on the handles, the quicker the strokes the greater the blast of powder. If done when no wind is blowing, this dust settles all over the plant in a very thin layer, yet heavy enough to be effective.

The Woodason bellows is a high-grade article. Powder placed in the funnel-shaped receptacle attached to the nozzle is expelled with each action of the bellows, a small quantity falling into the nozzle between each



For dusting on dry powders use some form of bellows. Useful on cabbages and currant bushes

stroke. A spreader may be attached to the nozzle and there are other attachments for the use of sulphur for subduing mildew, and for the spraying of liquids. Powder guns or bellows must be kept in a dry place.

TREE-SCRAPERS

The rough, loose and peeling portions of the bark on the trunk of the tree, which serve as breeding places for all manner of insects, must be scraped off before applying a spray mixture or wash to this portion of the tree.

There are two forms of scraper: the small one sold as a short-handle tree scraper, by seedsmen, and as a box scraper (at one-third less price) by hardware dealers, is an excellent tool for one-handed close work. The triangular blade is convex, sets at an angle to the handle, is held in place with a nut, and may be removed for changing its position or for grinding. The long-handled one (twenty inches) can be used with both hands for hard scraping, or for reaching large lower branches. The blade is also triangular, but flat and larger than in the short-handled tool. It is also held in place by a nut.

MOLE TRAPS—CATCHING A MOLE

Moles always have been and most likely always will be, a source of disfigurement of the lawns and the destruction by uprooting of both flowering and vegetable plants is quite serious. Various remedies have been suggested, but the surest and quickest way, in my experience, is the use of a mole trap.



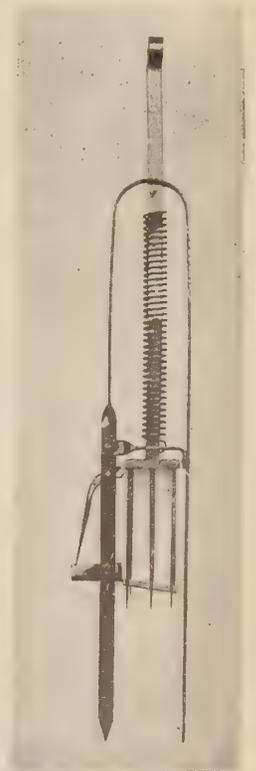
Help the spray to work by scraping off loose bark from the trunks of trees

There are a number of different makes, but only two distinct types of mole traps. One of low construction works somewhat similarly to a steel trap, and is intended for use in soft, mellow soils, as in green houses, hot-beds, etc.; the other is tall and with sharp prongs that are driven down on the mole by a strong spring. This latter is the better one for outdoor use.

To make the use of a mole trap effective you must know something of the animal's habits. He works early in the morning and late in the evening; you cannot catch a mole during the day. I have watched him at work and then killed him by plunging a trowel or other sharp tool down through the surface of the soil.

If you will examine the network of mounds raised by the mole, you will note that there are a number of side branches of varying length that lead off from what might be called the main runs. Many of these short runs the mole will never use again. A small amount of attentive study of the mole's work, combined with the determination to catch him, will soon enable you instinctively to select the proper run and so be able to catch the mole nearly every time.

When setting the trap, first press down the soil of the burrow and then place the trap, forcing the sharp prongs down into the soil several times before setting; this to make sure they will enter the soil when the trap is sprung; otherwise the prongs will strike the hard soil suddenly and, instead of penetrating, will only lift the trap and the mole escapes.



The trap set; on being sprung the prongs strike downward into the mole

Quality in Peanuts—By T. J. Steed, ^{Geor-}_{gia}

A CROP THAT IS OF GREAT IMPORTANCE TO THE SOUTH—THE NINE KINDS THAT ARE REALLY WORTH GROWING AND THEIR PARTICULAR MERITS FOR SPECIAL PURPOSES—WHAT TO GROW IN THE HOME GARDEN



Bunch type; Vir-
ginia

bushels of corn, or one-third of a bale of cotton per acre, will usually produce from thirty-five to fifty bushels of peanuts per acre of bush varieties grown close together; the yield of the running varieties is not quite as high. The usual price paid for peanuts in this section is from \$1 to \$1.50 per bushel.

Peanuts will succeed on any soil, even a very thin one without fertilizer; but I would not advise planting anywhere without a little fertilizer. A moderately rich friable clay loam, which is never packed very hard by heavy rains is probably the best; stiff clay also produces heavy well-filled pods, but a lesser quantity because the spikes or peduncles which carry the pods cannot push themselves into stiff soil very well. And remember, those that don't get into the soil don't make pods: Very light sandy soil may be put in fairly good shape for making heavy well-filled pods, by spreading from a thousand to fifteen hundred pounds of lime per acre over the soil in the early spring when plowing up the soil.

A rich nitrogenous fertilizer is not only not necessary, but injurious

unless the crop is grown for hay only. Use a commercial fertilizer containing from 6 to 8 per cent. of phosphoric acid, 6 to 10 per cent. of potash and from 1 to 3 per cent. of nitrogen. The poorest soil requires the most nitrogen, of course. Apply the fertilizer at the rate of from four hundred to a thousand pounds per acre, and in the drill rather than broadcast.

will pro-
duce
twenty

peanuts are more desirable than the bought kind and cost practically nothing. They can be raised successfully all through the South and up to New York. The Southern farmer can grow peanuts for stock feed much cheaper than he can grow corn for the same purpose and they are equally as good for stock, and better for hogs on account of the oil they contain. The yield of peanuts is about double that of corn, land that

During the early spring the soil should be plowed, broadcast, at least a foot deep, so the long main root can penetrate the soil freely and deep. Mark out or lay off the rows with an eight-inch shovel plow, from eighteen inches to three and a half feet, for the bush varieties, and from three to five feet for the running varieties, distance to be judged according to the grade of the soil and variety planted. The fertilizer should be

drilled in the furrows thus marked out, and covered with a five- or six-inch shovel or any small plow that will not ridge up the rows above the level of the soil. When using more than eight hundred pounds of fertilizer per acre, mix it with the soil by running a small plow through the furrow containing it. This should be done a week or ten days before planting.

Plant any time from April to June here in the South, but those planted during the first part of April usually give the best result. In the North plant as early as possible. The seed germinates quicker and better when shelled, although those with thin hull, such as Spanish, Sure Crop, North Carolina and Virginia germinate satisfactorily when not shelled. Unshelled seed must be planted thicker to insure a

good stand; if too thick plants can be easily thinned. From six to eighteen inches is the proper distance in drill for bush peanuts, and from sixteen to thirty-six inches for the running varieties.

One to three bushels of unshelled peanuts will plant an acre, and from four to six ounces of unshelled peanuts will sow a hundred feet of row. The seed is best covered about an inch and a half or less. Planting may be done by special machines. And certain types of corn and cotton planters can be easily converted into peanut planters.

Just as soon as the plants are large enough, begin cultivation. For the first plowing use a small shovel and scraper, or a small sweep that will run shallow and not throw too much soil to the plants. Level ploughing is essential for the running varieties, but for bush kinds, deep ploughing which banks the soil up to the bushes is needed. Continue cultivation until the plants have made sufficient growth to prevent the weeds and grass from making headway. I usually give bush peanuts three to four ploughings, and I use a larger plough at each succeeding cultivation.

Harvest before any frost, so that the vines can be



Typical pods and peas: 1, Sure Crop. 2, North Carolina. 3, Tennessee. 4, Spanish. 5, Jumbo. 6, Virginia. 7, Improved Valencia. 8, Improved North Carolina

used for stock feed. The grower can judge just when is the best time for digging his peas better than I can tell here. They are usually ripe when the vines turn a little yellowish and begin dropping their leaves. The large Jumbo sort should not be dug until just a few days before the usual time for frost, as they will continue to mature nuts, and the earlier matured ones are not likely to germinate on account of the thick, strong hulls which protect them. The earliest matured nuts on the thin-hulled kinds will often begin germination, especially during a wet season.

Bush peanuts grown in small quantities for home use may be easily pulled up by hand, if the soil is loose and there is no grass to trouble, or they may be ploughed up with a turning plough or a small potato digger. Running varieties may also be dug the same way, or they may be dug with fork or spade. Where peanuts are grown in large quantities for commercial purposes they are harvested by a machine which digs, shakes the soil off the vines, and piles them at one operation; it does the work of seven hands and does it better.

Peanuts should be allowed to remain in little piles until they are dry, for which they require from two to four days, after drying they may be stacked, but I have always preferred storing them in a house, as both vines and pods are kept in better condition, unless they are to be picked in a few days.

The usual price for picking peanuts by hand is twenty to thirty-five cents per bushel. This is a rather expensive and slow method, the most economical is by the machine pickers, which pick from two to five hundred bushels per day.

The best time for selecting seed is picking time. Select seed from well matured vines with the largest quantity of well filled pods. Selection improves both quality and quantity. This is one of the cheapest and easiest ways of increasing the yield of peanuts.

There are four distinct types of peanut now grown, two in the bunch and two in the running sorts. The bunch varieties are the best for home use on account of their upright growth, which permits their being grown closer together, and their cultivation and harvesting is easier.

The smallest peanut in existence is the Spanish, which represents one type, and the only variety in this type. The Spanish peanut is very early, prolific and of a compact upright growth, with the pods close to the main root. Pods fill out extra well with two peas to a pod, and mature a crop from 95 to 120 days from planting. Color of peas, a light brown.

In the other type of bush peanut there are four or five varieties, of which the Virginia Bush is the most popular. The growth is very upright, and dwarf; pods produced close to the main roots, usually two peas to a pod, sometimes three; color, light brown. Plant very prolific, same size pod as the Virginia (running) and of the same good quality. Matures a crop in from 120 to 140 days.

Tennessee, or Georgia Red, makes a



Peanuts are great nitrogen gatherers. Note the nodules on the roots; they are bacteria colonies

rather tall growth, with pods clustered, near the main root; as prolific and as early as the Spanish. Pods contain from three to four seeds of a dull red color.

The improved North Carolina is very similar in every way to the Tennessee red, and I am not sure it is a different variety, although the pods are considerably larger.

The improved Valencia, was introduced about three years ago. It is very similar in growth to the old Spanish, but the pods are much larger and longer, and contain from three to five peas each, packed very closely in the pods, like the clubby potato lima beans. Peas are a dull red color, vines very prolific; growth tall. As early as the Spanish.

Sure Crop originated in Georgia about

two years ago, as the result of a cross between the Spanish and one of the large varieties. It makes a very compact upright growth and is very prolific. The pods are close to the main root, and usually contain two peas, sometimes three. Both pods and peas are very much larger than the Spanish. Color of peas, a dull red. A few days later than the Spanish.

Of the running peanuts we have only three distinct varieties, divided into two types, of which the Jumbo, or Dixie Giant is one, and the only variety in its type. These Jumbo peanuts are sold under several different names, such as New Orleans Special, Giant of the Mississippi Valley, and Mammoth Bush. The vines make a mammoth growth (sometimes a single plant will cover a space of more than six feet in diameter) and are very prolific. The pods and peas are extra large; pods are more than twice as large as in the Virginia; the peas are a light brown color, of a fine sweet flavor, much better than other sorts. They will mature a crop in from 130 to 150 days from planting.

The second vine type, exemplified by Virginia, makes a very rank growth, and the crop matures earlier. The pods contain two peas each, sometimes three, the peas light brown, hulls very thin.

The North Carolina, of the same type, has much smaller pods, and peas of a dull brown color. The vines are not quite as large as the Virginia, but they are more prolific. This variety is most popular in some sections of the South for growing between rows of corn for hogs' pasture, because they contain a much greater amount of oil than the other running sorts. They mature a crop from one to two weeks earlier than the Virginia.

I am aware of only one disease, "rust," that has ever damaged the peanuts. It will happen from insufficient potash in the soil, too damp a soil, and ploughing when too wet.

Wood lice are the only insect that has given trouble.



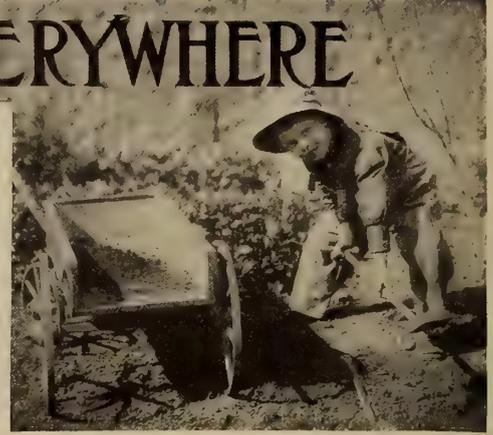
The Jumbo type is famous for the great development of the plant

CHILDREN'S GARDENS EVERYWHERE



IN EAGERNESS TO PLANT, THE FROSTS MAY CATCH YOU IF YOU DON'T WATCH OUT. SO BE PATIENT! NOTHING IS GAINED BY TOO EARLY PLANTINGS. HAVE EVERYTHING READY FOR PLANTING, BUT WAIT UNTIL THE GROUND IS WARM

Conducted by
ELLEN EDDY SHAW
New York



I MUST garden better than they garden at home, if I wish the respect of the parents in my community." This is a statement made by one teacher about his school garden work.

What is the trouble with our school garden work? The matter is we play at it. Children often are taught absolutely wrong. They go to the garden in the most trifling sort of mood. Most school-garden teaching fosters this sort of thing. The garden lessons should be as sound and serious as those of any other subject which is well taught.

For example you intend to teach the class how to make furrows. There is a right and simple way. There is a wrong and awkward way. A child need not stand humped up like a kangaroo for this furrow-making process. His tool should be a skilful instrument in his hand. Look on page 177 of the April GARDEN MAGAZINE and see just how the hoe should be held. Have the boys and girls study these pictures and prepare for their lesson just as they would prepare for a history lesson.

Good gardening is an art and a science. Look through these magazine pages carefully and you will get practical help. Ask us concerning the points that bother you. Get a local gardener to help. Do not be afraid about asking questions to learn how. Be more afraid of this poor play sort of gardening. That kind is not worth the time spent on it. School gardening should be carried on for actual knowledge and not for weak sentimentality.

You insult a child by putting into his hands the poor sort of tools which most people buy for children. Have you had sent to your school spading forks, the prongs of which any twelve-year-old boy could easily bend with his fingers? I have. Refuse to take such tools. They are a waste of good money. They are mere playthings, and ludicrous ones at that. Buy only strong, firmly made tools. Rakes and hoes that rattle in their sockets, trowels that bend, these are the tools often put into the hands of children. Wouldn't you refuse a pencil that broke short off on first using? Give the children real tools, real lessons, good seed and proper conditions for working.

Most of the children's garden pictures sent in are worthless. Why? There are several reasons. Often times the camera itself is poor. Again, too much is attempted

in one small picture. If you wish to take a picture of furrow-making, take a picture of furrow-making, not of a big garden spot, many children and incidentally a boy or girl making a furrow. This means that the one thing you wish to illustrate becomes a mere incident in the picture. Get right down to business. Take for your own sake pictures which tell real stories. We'll be glad of such pictures. They become a credit to your teaching and your methods of work.

Talking of pictures, turn to the cover of this magazine. I'm proud to say this was sent in to us during our 1909 competition. Notice it shows something. That something is fine mass effect. It is a part of the work done by the Tracy School children in their improvement of the school grounds. It's a bit of artistic American school planting. We are proud of it.

So this month let us get our inspiration



This hole is being made larger so that the roots will not be cramped



Press good soil about roots. Note extent of hole. One man is standing in it

from this work of the Tracy School. When you set out to improve your school grounds plan to make them just as lovely as possible. Mind you, not as expensive as possible, but as charming as possible.

Tree Planting for Arbor Day

FIRST get your tree. If you go to the woods to choose one, select a tree from a rather open spot. The smaller the tree, in season, the better for transplanting purposes. When you dig up the tree measure how deep it sets below the surface of the ground. If any of the rootlets are bruised cut these off. If left on, the entire root may die.

Just a few simple directions for planting if carefully followed are sufficient:

(1) Dig a hole large enough and deep enough to accommodate the roots without cramping. Allow so that the tree will sit one inch lower than it did before.

(2) Place the top soil on one side of the hole; on the other the poorer subsoil. If the top soil is very poor, get some good, rich, black soil.

(3) Place good soil in the bottom of the hole.

(4) Put the tree on this layer, spreading the roots out carefully.

(5) Shovel over the roots rich soil. See that it goes in between the roots. Don't be afraid to use your fingers for this work.

(6) The poorer soil goes in on top.

(7) Tramp the soil down with your feet, making firm about the tree trunk.

(8) If the planting comes late in the warm weather make the soil into a soft mud with plenty of water, in this form washing it in between and about the roots, so all roots and rootlets come in direct contact with the mud.

(9) Last of all cut the tree back, shortening the larger branches about one-quarter their length.

There are a few good reasons why transplanted trees die. Bruised and cramped roots, soil loosely put in and not packed about the roots, insecure and careless planting, too little pruning, these are the usual causes of disaster.

If directions are carefully followed, the trees will do well. Trees satisfactory for school purposes are: maple, poplar, oak and plane trees. There are others, to be sure. These are suggested because of good results obtained by children.

A Vacant Lot Made to Blossom

LAST spring the boys of the Wallach School started a garden. A real estate agent gave them the use of a lot 18 x 125 feet, a lot not altogether desirable. As it is located between two houses, the southern side is in shadow almost the entire day. Then, as it is the only unimproved lot in the neighborhood it had been used as a dumping ground. The weeds and trash were removed at much expense.

There are two sixth grades in the Wallach School, and in order to benefit as many as possible both classes were assigned gardens here. Two boys were put to each plot, thus giving each individual about forty square feet, entirely too small a space for a twelve-year-old boy. A path four feet wide divided the two schools. One class of twenty boys worked once a week from nine to half-past ten; the other class of twenty-three from half-past ten until twelve. The planting was uniform, a row of nasturtiums bordering the path, a row of radishes and parsley sown together, two rows of string beans, five tomato plants—the dwarf Stone, and last a row of lima beans trained on the houses and the fences in the rear. All of the staking of plots was done by the boys and the measuring of lines for the rows. Each boy was furnished with a rake and a Dutch hoe. These were kept in a tool box at the rear of the yard.

When vacation came the work was volunteer work. Where there had been two boys to a plot there was now one who volunteered to continue during the summer. The crop returns show a total of: tomatoes, 13 pecks; string beans, 14½ pecks; radishes, 146 bunches; lima beans, 32 quarts; nasturtiums in abundance.

The market value of these crops is probably about one-third of the expense of preparing the land. But the benefit to the boys cannot be measured commercially.

Washington, D. C. SUSAN SIPE,
Supervisor of Gardens.



In the Wallach garden observe lima beans trained to side of house

OUTDOOR PLANTING TABLE

Name	Depth to Plant	Distance Apart of	
		A. Seeds	B. Furrows
Beans (bush)	2 in.	12-20 in.	3 ft.
Beets . . .	1½ in.	4-9 in.	12-15 in.
Cabbage . . .	½ in.	20-24 in.	3 ft.
Corn . . .	1½ in.	3 ft.	3-4 ft. (hills)
Lettuce . . .	½ in.	6-8 in.	12-18 in.
Muskmelon.	1 in.	4-6 ft.	4-6 ft. (hills)
Onion . . .	½ in.	4-12 in.	10-12 in.
Parsley . . .	½ in.	6 in.	1 ft.
Pepper . . .	½ in.	18 in.	2 ft.
Potato . . .	5 in.	12-18 in.	24-36 in. (hills)
Pumpkin . . .	1½ in.	8-10 ft.	8-10 ft. (hills)
Radish . . .	½ in.	3 in.	6-8 in.
Tomato . . .	½-1 in.	3 ft.	3 ft. (hills)
Turnip . . .	½ in.	6 in.	12 in.

the plow. Spade down to the limit of the fork's prongs, working into the soil barn-yard manure. Break up all lumps and rake the ground until perfectly fine and smooth. Chemical fertilizer in the form of phosphates acts on soil as a tonic does on the appetite. The barn-yard dressing does not act as quickly on the plants but has more lasting value. So it is good to use both kinds of fertilizer on the school garden.

If you have no way to provide for summer care then why not plant radish and lettuce at school? You will get results from these before the vacation. Then you can leave the school garden all cleaned up after having obtained one crop. Throw the rest of the work into the children's own back yards.

One way to have great masses of brilliant and not very harmonious color in one garden is to break these clashing colors with masses of white or green. The white might be white asters, or, if low-border plants will do, then use sweet alyssum or candy-tuft. Mignonette, being so nearly all green, gives at a distance an all-green effect, and so may well be used to break up unpleasing color combinations. Wide paths between garden spots also help. Although at a distance the paths lose outline and seem almost to disappear.

The country school problem is usually that of improvement of grounds. Clean up your property, plant trees, fix the streets and gutters. If there are unsightly outbuildings, cover these with vines. Morning glories and climbing nasturtiums grow fast.

Suggestions for the Older Boys and Girls

IT IS a good plan to take a strip of land at home and see what you can make out of it. One can estimate the value of his crop without necessarily selling his products. For example, take a piece of land and plant to potatoes. See just how much money your actual yield would bring at market prices. Or, see who can raise the finest, most perfect corn.

Here is a good experiment. Take two pieces of land the same size, but not so near together that rains will wash the soil of one plot on to the other. Send to your nearest experiment station for inoculated soil. Spread it evenly over the top of one of the plots. Do not inoculate the other. Plant the same number of beans on each plot. See from which plot you get the most and best beans. Or get the bacteria and inoculate the seeds yourself.

Did you ever try raising flax, cotton or other fibre plants?

If you think the soil of the garden plot is acid, make a chemical test. This is done in the following manner. Get some blue litmus paper at the drug store. Ten cents' worth is enough for many tests. Touch a piece of it with vinegar. Notice that acid turns blue litmus red. Get a small sample of earth from your garden plot. Wet a piece of litmus and bury in this soil. Leave for a time. If when you take it out the paper has turned red, you know the soil is acid. Sweeten the garden plot with that soil sweetener, lime.

CONTEST BULLETIN.—Let us hear of your results in bulb-growing even if you are not entirely satisfied and dropped out of the contest. It is not a bit too early to register for the 1910 Garden Contest. Write and find out full particulars concerning the conditions of the contest and the prizes offered.

Things to be Attended To at Once

READ over not only the following reminder, but the one on the first page of the magazine.

- (1) Be sure the soil of the seed bed is fine, free from all lumps before any planting.
- (2) Sow seeds of hardy flowers.
- (3) Transplant from the frame those vegetables, like cabbage, which can stand frost, if hardened to it.
- (4) Cannas may be planted.
- (5) Watch the hot beds and cold frames carefully on account of sudden changes in the weather.
- (6) Cover the pea seedlings with chicken wire if the sparrows bother.
- (7) Do not plant too soon. When the ground is cold and damp nothing is gained. But the garden itself should be already for planting.
- (8) Be ready for the Arbor Day tree planting.
- (9) Pick out shrubs from the table in last month's magazine. This table gives you help so that color effect may be worked out. If you wish color in the winter choose *Berberis vulgaris* or the common barberry. If you wish color in the early spring *Forsythia suspensa*. Weigela is the shrub which flowers best under trees. The shrub table will give you all the information you need.
- (10) Consult this planting table. Know it!

Suggestions for Schools

IF YOU have a north corner why not start a wild-flower garden. Have the boys bring black soil from the woods. Transplant ferns into this. Pick out the wild flowers you wish and transplant after their blossoming time into this garden. Plants which will give a continuous round of blossoms throughout the season are hepatica, violet, saxifrage, columbine, anemone, false Solomon's seal, wake robin, bell flower, bluet, meadow rue and aster. There are many others. Work up your own wild-flower garden. If the soil is rich and black from the woods you should have no trouble.

Plant dwarf nasturtium on strips of land close to the building. Where soil is poor you can grow cornflowers. They stand all sorts of soil adversity.

If your building is of brick break the monotony of its walls with the ampelopsis vine.

The California privet is the fastest-growing hedge plant. If you prefer a break of fast-growing trees use the poplar.

The children should be quite familiar with their garden spaces, the seeds they are to plant and the method of planting before they go into the real garden. This offers good live work along lines of arithmetic, language and spelling.

For turning over of soil in small gardens, the spading fork is tool sufficient. The large garden needs



The proposed garden spot must be cleaned of all rubbish before plowing or spading



String off the seed bed and rake it fine, breaking up all lumps



Measure off carefully the place for each row, drive in stakes, and string across



(EDITOR'S NOTE.—We want to know how successful workers do things—in order to put actual experiences before our thousands of readers in all parts of the country. Every reader is invited to contribute a short note on some interesting experience. Just state the facts about some ingenious idea that you have actually worked out yourself or have seen.)

I have noticed that a number of my neighbors put their parsley bed some distance from their kitchens. I think parsley ought to be right by, or very near, the kitchen, so that whenever the cook needs it she can easily go out and pick as much as she needs.—W. J. Y.

Two years ago I had two strong snapdragon plants that I was very loath to lose when autumn came. One I potted and treated as a house plant, keeping it in an unheated attic room in a sunny south window, and it bloomed for me there in the spring. The other I left in the ground, tied it up in straw when I did my rosebushes early in December, and then covered it with a large flower pot. It stood the winter, and in the summer grew to a large and unusually handsome plant, filled with bloom. I tried to carry it over a second winter the same way, but failed. My conclusion is that snapdragons may be made biennials, but probably not perennials in this climate, by giving them winter protection. Hereafter I shall try to have each year one lot of second-year plants—larger and more full of bloom than first-year plants.—B. M. F.

The perennial gaillardia (*Gaillardia aristata*) is a Texas plant. The crown nearly always winter-kills in this region, and I presume it does in all cold, wet soils. Under fairly favorable conditions, however, young plants will come up from the live parts of the roots some little distance from the crown; but as these show themselves later than shoots from any sound crown would, people imagine the plants are dead and dig them up. If left alone for a longer time, however, they would have furnished the season's bloom. Plants taken up in the fall and heeled in or potted, and kept from severe frost until brought into heat in February, furnish root cuttings, which will produce plants for summer bloom. Cuttings made in the fall also make good plants, and seed sown in heat in February will produce plants that will bloom the same year.—W. C. E.

A mass of English primroses (*Primula vulgaris*) in my hardy border is edged with bird-foot violets (*Viola pedata*), transplanted from the wild. The combination was accidental, but most successful. The blending of the pale yellow and the delicate blue is charming.—F. B. C.

Have other women who love to work in their gardens discovered that chamois gloves are the perfect solution to the glove problem? They don't get as stiff as kid ones, and when soiled can be washed with soap and lukewarm water. Don't rinse the soap out, as it keeps them soft and nice.—L. M.

Nearly all my neighbors use a hose with which to water their gardens. I think in most instances this is a very poor policy, for I believe the cold water chills the plants and injures them, to a certain extent. I buy, each season, five or six molasses barrels which I paint both inside and out to make them last. Every morning I fill the barrels with water from my hose, and take the water from the barrels in the afternoon as I need it for the garden.—W. J. Y.

Planting a large circular or oval bed with tulips is at times vexatious. You have your ground all prepared—a nice soft bed whereon to set the bulbs—but the centre is not within reach from the edge. To avoid trampling down the soil use a stout board, thick enough so as not to bend under the weight of a man, and long enough to reach across the bed. The middle of very large beds may thus be reached without pressing the soil in the least. Two two-by-fours placed side by side will answer.—C. L. M.

I planted my vegetable garden in rows, putting a pinch of Shirley poppy seeds among the beets and carrots. They opened in every shade from faintest pink to almost black, the beet and carrot leaves making just the right background. When putting in the peas and early corn a scattering of carnation seed went down those lines. By the time the peas were in blossom the poppies were in bloom. The single ones looked like satin and the double were great pom-poms, many as large as teacups. Picking off the seed pods kept the plants blooming over a month. The seeds can be planted any time after a rain.—J. S. S.

Owing to a stress of garden work my beets and carrots were not thinned out last summer, and from one sowing of each early in the spring, we had young beets until the autumn, and all winter have been eating young carrots, pulled and stored just before frost. Of course, we kept using the largest vegetables all summer, and the roots were sweet and tender long after there were no more in the markets. Sometimes they got ahead of me, and crowded up out of the ground, but neither split nor dried out. At first we boiled the "beet tops and bottoms" together; but as soon as the roots were large enough, used them separately, as two vegetables.—H. M. O'C.

This year my hyacinth bulbs growing in water would not root freely. The white ones came first, but bloomed in a half-hearted way—short and stumpy. I experimented with the others, and have them blooming to the height of nine inches. The blossom stems grow an inch a day, by actual measurement, and with almost no roots at all. This is accomplished by placing a tumbler over the bulb as soon as the flowering spikes are well developed. The bulb is kept in a dark closet until it has developed sufficiently for the buds to show color, and when brought into the light is placed on the floor by a radiator. The moisture forms inside the glass, hence the quick growth. As the stem grows I change the tumbler to a pint jar, and finally to a quart jar—Mrs. H. S. L.

It is strange that so little credit is given to the common bayberry for its decorative qualities. In Bergen County, N. J., we have *Myrica cerifera* (Carolinensis) in great abundance, growing usually in the most abandoned places, such as railroad swamps or the sandy slopes of hills. In the fall it bears its close clusters of small white balls, and holds them well through the winter. Branches brought into the house, if not shaken too violently, will retain them till summer; and they have a delightful odor. If the branches are put into water, the buds



Try forcing some bayberry branches in water this spring. The blossoms appear before the leaves

on the tips sprout into tender green leaflets. Either people do not care for things that are common, or else have no perception of decorative possibilities, for those around here pay no attention whatever to the bayberries as long as they are outdoors. We have been much surprised to read in THE GARDEN MAGAZINE that other people grow the bayberry bushes entirely for their bronzing foliage. One writer remarked that the berries were insignificant, but that it did not matter anyway, as the plants were dioecious, and were valuable for their leaves, not their fruit. This, I am sure, is understating the qualities of a wonderful winter-cheer-giver. And what is to prevent planting both kinds of bushes?—J. D. W.

ORCHARD & FRUIT GARDEN

"More and Better Fruit"

Where to Plant the Stone Fruits

WHILE the apples and pears are the best tree fruits for the Northern States, we would not wish to do without the stone fruits. The trees bearing the stone fruits, as compared with the apple and pear trees, are shorter-lived, and the fruit more quickly perishes after ripening, but the trees come into bearing sooner and require less land, so that they are therefore better adapted to garden culture than the standard apples and pears.

Do not make the mistake of planting foreign varieties, habituated to a warm region, in our cold climate. If I had taken the advice of experienced and conservative fruit growers, it would have kept me from making costly errors. A New York nurseryman recommended Japan plums for general planting in New York State. I bought a lot of trees, and planted them on rather low rich ground, where some European plums were doing fairly well. The trees grew rapidly for four or five years, and were entirely satisfactory, then began to gradually die, and two years later every one was dead. I also lost some sweet cherries and peach trees which the nurseryman told me I could grow.

CHERRIES

From personal experience it is perfectly safe to plant sour cherries anywhere in New York, and in most of the Northern States. I know of no stone fruit I would plant with more confidence than the Early Richmond and Montmorency cherries.



Turn the chickens into the plum orchard. They will help destroy the curculio

The English Morello generally thrives well, but the Montmorency cherry may be placed at the head of all sour cherries. It makes a very symmetrical and handsome tree.

A block of sour cherries on our farm is the most profitable fruit of many kinds grown. These trees were planted on a slope. The soil was loamy red sandstone, had grown corn and clover, and was only moderately rich. The trees were planted twenty feet apart each way, and cultivated crops



Plant Japanese plums on high ground. The trees bear large crops if early blossoms are not killed by the frost

were grown between them for two or three years, after which the ground was seeded to clover and other grasses.

The proper way to grow a cherry tree is to clip the end of the branches each year to aid nature a little in keeping the correct form, and an occasional slight thinning of the branches to let in sunshine. This is all the pruning the cherry tree needs. Grow in moderately rich soil. The cherry tree is more hardy and longer-lived when planted on an elevation, in well-drained soil that is not too rich in nitrogen. A slow but steady growth makes the best tree.

It is my experience that the sweet cherries are too tender to live many years, outside of the peach belt, unless given special culture. In the peach belt Black Tartarian, Windsor and Bing are good varieties of black cherries, and Yellow Spanish and Napoleon of yellow cherries. These will thrive in about the same conditions as does the peach.

CONCERNING PLUMS

For a plum tree that will give fruit when the foreign varieties are all dead, plant the American or native plums of the Wild Goose type. Few nurserymen catalogue the native plums because as yet there is no demand for them and because it is easier to grow the European and Japanese trees. However if you live in the peach belt and want an abundance of plums of rather inferior quality but which are very good for canning, plant the Japan varieties.

In Southeastern New York (which is outside the peach belt) where the temperature sometimes falls to 20 degrees below zero, I plant the Japan plums on high land, and not in very rich soil and the trees do not winter-kill. A number of the Japan plum trees I have mentioned, that finally winter-killed on low rich soil, were entirely hardy in the same locality when planted on high ground; but they have blossomed so early in the season that the fruit has been killed, and the trees have produced a crop only about every third year. I think if I wanted Japan plums I would plant the Burbank, with a few trees of Abundance and Red June.

The European plums can be grown fairly well in all parts of New York, and in latitudes not colder, but remember the principle that a tree or plant is made hardy or tender by its environment, and so plant them on an elevation, when possible, and in not over-rich soil. On the farm the best place for all fruit trees, and especially the stone fruits, is on an exposed hillside, or on elevations and knolls, where there is natural drainage. Do not force the growth of the trees with nitrogen; exposure and slow growth, I maintain, will make a tree hardy and long-lived.

The most of the European plums will live a few years and bear fine fruit when planted on low ground in the alluvial soils that are rich in humus, and are worth planting under

such conditions if one can do no better.

European plums are subject to the curculio and black knot, which invest these more than the Japanese



This shows the right height and form of orchard trees. The fruit is within reach

and natives. Some people plant plums in the chicken yard or the chicken coops near the trees, in order that the chickens may eat the curculio, which fall off when the trees are slightly shaken. Curculio catchers are used in large plum orchards. The black knot on plum and cherry trees is best controlled by cutting out and burning well such branches on which it first appears.

In my opinion the best European plums for planting in New York are Reine Claude, Bradshaw, Shropshire Damson and Fellenburg.

PEACH AND APRICOT

The best dessert stone fruits are the peach and apricot. The peach family is semi-hardy, and its general culture is restricted to certain conditions of climate; sections in our country having such conditions are known as "peach belts."

One method which is most certain to give satisfactory results to growers who live outside of the peach belts is winter protection by covering. The trees may be headed low and trained to trellises or to the side of buildings, in a similar way to the grape vine, then covered with straw and burlap during winter. Another plan which I know has worked well, where the temperature seldom goes lower than 20 or 25 degrees below zero, is to harden the trees by planting them in rather poor soil, in the same way I have described for plums. Amongst the Japanese plums I have mentioned that were tender on low land and hardy on high land were some peach trees. These all died on the low land, but were hardy on the high land.

For the family garden or orchard, the Champion is about the best peach we now have, as it is both hardy and of high quality. Greensboro and Hill's Chili are also good. The apricot is a little more tender than most varieties of peaches, but is given the same culture. It is not grown in New York, except under the most favorable conditions.

In the latitude of New York, I advise spring planting of all fruits, and the planting may be continued up to the time they begin to leaf out. If trees are wanted for immediate planting, buy two or three year old trees from the nearest reputable nursery, although if one can afford to wait, it is better to buy one year old trees, and plant them in nursery rows, letting them grow one or two years to get acclimated to local conditions. Trees freshly dug on one's own place all live and grow with little check.

Therefore, plant stone fruits on well-drained land that was cultivated last year, and put the trees from fifteen to twenty feet apart in the orchard and somewhat less in the garden. A row of trees can be planted along one side of the vegetable garden, division fences, driveways, etc.

The trees should be cultivated during the first two or three years and the best way is to grow hoed crops between them. Make the soil just rich enough so that the trees will make a rather slow, thrifty growth. Head back to one or two feet for the garden, and two or three for the orchard. Prune to get the vase form after the tree is started right, do not prune too closely, as the leaves are the feeding organs of the tree, and the larger the leaf surface, the greater its growth.

New York.

W. H. JENKINS.

The Best Fruit Districts

IN THE December issue of THE GARDEN MAGAZINE, page 252, reply is made to F. R. S. that the best table grapes come from the north central and northwestern parts of the State of New York.

This leads me to suggest that the most intensive part of the Chautauqua grape belt is in the State of Pennsylvania, more grapes being shipped from the little town of Northeast, Pennsylvania, than from any other town in the world.

This section, in reality, is an extension of the Chautauqua belt of Western New York into Erie County, Pennsylvania, along the southern shore of Lake Erie.

The region of next most importance is the Keuka district in the so-called "Finger Lakes" district in the west-central part of the State.

Virginia and Pennsylvania feel, too, and with justice, that Western New York does not surpass them in the production of the finest apples, though she does in the quantity of product. Considering this, and also the rapid extension of orchards in

these States, should they not also be included in the sections of the Eastern United States from whence the finest apples come?

Washington, D. C.

H. J. WILDER.

Bagging Grapes

THE accompanying photograph is a much more powerful sermon on the advantages to be obtained from bagging grapes than one composed of words alone.

I read in a bulletin received from the United States Department of Agriculture that both the quantity and quality of grapes could be improved



Bagged and unbagged grapes. Bag yours when the blossoms are fully matured and outwit their enemies

by enclosing each bunch in a common paper bag at the time when the blossoms are fully matured, but just before the grapes begin to form. I decided to experiment.

The vine selected was a strong, healthy Moore's Early, which had been pruned by the Kniffen system. Some twelve or fifteen bunches were selected at random, and carefully enclosed in common yellow paper bags, size number five. The result is very apparent in the photograph. The bunch on the right was not bagged, that on the left side was. The photograph simply reproduces the conditions as they were, neither of the bunches illustrated being selected because it exaggerated the results one way or the other.

The method is simple. Simply slip the bag over the bunch, tie the neck tightly around the stem, and with a knife make a small hole in the lowest corner to let out the water.

Illinois.

ROYDEN E. TULL.

Planting the Plum Trees

THOSE who have studied Japanese plums, in relation to self-fertility, have come to the conclusion that most of them are self-fertile. Certainly if three or four varieties are grown in the same orchard, and if the planting is not on such a scale as to make large blocks of each variety, there should be no question about cross-pollination. As a rule, however, the domestica plums, such as Lombard and the prunes, do not cross readily with the Japanese varieties.

In this cross-pollination question, it is fair to say that there are a great deal of misstatement and misconception. As a general principle, plum orchards bear better when varieties are intermingled. The same does not hold true so strongly in the case of apples or cherries, but it is a pretty good principle to keep in mind in the planting of all fruits. Some of the sweet cherries seem to fail on account of self-sterility, but I imagine that other causes enter in, and many plant fruit only to be destroyed by the curculio or brown rot. Sometimes this failure is charged to self-sterility.

New York

JOHN CRAIG.

Brown Rot of Peaches

BROWN rot has long been recognized as a most destructive disease of stone fruits, particularly the peach. It is a fungous disease. Spraying with diluted Bordeaux mixture has been most commonly recommended, but it must be applied during the growing season and it then injures the foliage.

A cheap and simple remedy for this disease has been found in the self-boiled lime-sulphur wash, which can be applied throughout the growing season with but little danger of injury to the fruit or foliage. By mixing arsenate of lead with the fungicide, curculio can be destroyed at the same time.

Write to the United States Department of Agriculture and ask for their recently issued bulletin describing the preparation and use of the wash.

Heading off the Kieffer Pears

IN the spring of 1908 we planted, in a corner of our orchard, a block of small two-year Kieffer pear trees. The land was thin, and had been cleared of timber early that same spring. Holes were dug and the trees set without breaking up the land. The hill-top soil is mostly clay with a little sand and gravel.

The trees were neglected the first season, the few inches of growth being almost wholly cut back the following spring. At that time we used a mattock to thoroughly loosen up the soil to a distance of three feet all around each tree. Later, one or two hoeings were given. One forkful of well rotted manure was scattered around each tree.

The trees shot upward. Late in June the terminal buds were all pinched and the branches stopped lengthening for a while, gaining strength and thickness. But you can't keep a pear tree down if you keep cultivation up. Last year one tree had made a growth of sixty-six inches by September 24th, notwithstanding the pinching back it got in mid-summer. Other trees made, proportionately, the same growth. This spring the half of last year's growth will be cut off.

West Virginia.

WILL W. STEVENS.



From the paper below to the hat above marks the season's growth of sixty-six inches on the Kieffer pear



Planting Tomatoes for Late Crop

THE tomato is very sensitive to cold, and yet it is one of the few vegetables that may be kept till almost midwinter without any elaborate methods of storage. Tomatoes in one home garden have yielded a sufficient supply so that the first can was ordered from the grocer on November 25th. Another season the last tomato was used on December 25th. A still better record was made by vines in the cellar that supplied tomatoes from October 6th to January 6th.

A patch in the garden must be purposely planted for late bearing. Sow the seed in a coldframe the middle of April. It is not necessary to plant thickly, for if the young plants stand five inches high and far enough apart to be easily transplanted when the time comes, the results will be better than from crowded and spindling specimens. At night the frame is covered either with glass or other material commonly used for forcing beds, but by day the covering is taken off to make the plants stocky. As the time approaches for transplanting, the frames are opened day and night to harden the plants. If they have overgrown the 5-inch limit, the root may be placed a little deeper, when transplanting to the open garden, leaving about five inches of plant above the surface. After a rain is the best time to transfer them from the frame to the garden.

For a still later supply seed can be sown in the open ground the first week in May. When a few inches high, thin out so that the plants stand six inches apart and later set a yard or more apart. This will save the trouble of starting the seed indoors and the vines will begin bearing early in September.

To save future handling, it is well to grade the tomatoes as they are brought in, all ripe and half-ripe ones being placed where they can be easily examined for soft spots. The finest and fairest of the green ones might be individually wrapped for better protection. Medium-sized ones will be useful for frying; small and poorly shaped fruits will make excellent pickle.

There is a choice in varieties, as some are more suitable for late bearing than others. Improved Stone and Trucker's Favorite are good sorts for this purpose. Ponderosa is one of the best keepers, therefore an excellent kind to plant for storing. It is not uncommon for this variety to yield fruits that weigh a pound and a half. Ponderosa is also a good canning tomato.

Another so-called member of the tomato family is also an excellent keeper—the husk tomato or strawberry tomato. This self-sows and gives little trouble. If the husks are not removed the fruit will keep till January in a cool place. Preserves made from this variety are good eating; it is also good for pies and dried to use in cake, like figs.

New York.

I. M. ANGELL.

A Barberry Hedge from Cuttings

LATE in the spring two years ago, my brother, knowing how anxious I was to have a hedge of Japanese barberry, sent me from Massachusetts about two hundred trimmings taken from his hedge just as it was coming out into leaf. These trimmings were about eight inches long.

Mr. John Dunbar said in the October, 1906, GARDEN MAGAZINE: "None of the barberries, to my knowledge, will strike from hardwood cuttings." In the April, 1907, number of the magazine, H. T. says he rooted barberry cuttings very successfully

in a propagating house with a temperature of 54 degrees. But I had no greenhouse, so as an experiment I dug a trench in the coolest, dampest spot in the garden, against one side of which I put a layer of cuttings as close together as possible, at an angle of 45 degrees. I filled the trench half full of sand and the remainder with original soil, making sure to tread the cuttings in very firmly and to sufficiently round up the soil so as to keep water from settling on the surface.

About three-fourths of the cuttings came out strong, healthy plants. They were left just as they were for one year, and the following spring were transplanted to their permanent place in the garden. Practically every transplanted one lived and we now have a hedge which cost us nothing, and of which we are justly proud.

New Jersey.

FRED GARDNER.

[EDITOR'S NOTE.—Notwithstanding Mr. Gardner's success, and the ease with which it was achieved, raising from seed is undoubtedly the most convenient method of propagation. The Japanese barberry is very easily grown from seed, and germinates practically 100 per cent.]

Professor Sargent's Azalea Show

THE accompanying picture gives some idea of the glories of the informal azalea show which Professor Sargent gives every spring for the pleasure of his friends on the terrace of his home at Brookline, Mass. The tent protects the flowers from dashing rains and other inclement weather.

The picture shows an almost solid mass of flowers. These must be arranged with great skill for the azalea has a wide range of colors and those bordering on magenta make trouble unless they are kept by themselves and at a distance from reds or yellows.

Hardy azaleas are very accommodating plants. You can have a fine show of them under the windows of your house every spring, without the trouble and expense of potting them, by the following plan: In some retired part of the grounds prepare a good nursery bed for them. In early spring move them to a bed in front of the house, or wherever you wish a blaze of color. This can be done without sacrificing either quantity of bloom or brilliancy of color. After the azalea show is over the bushes go back to their nursery, while the show place may be filled with summer bedding plants or other material of a decorative character. This process can be repeated for many years.

Connecticut.

HENRY MAXWELL.

Planting for June Peas

MOST persons admit that fresh green peas are the choicest of the early vegetables, but will not try to raise them in their own small gardens on account of the space required. Yet by a little planning peas can be arranged for with some economy of space. And more often than not a poor crop is due to too late planting, and with late varieties to their not being buried deep enough.

In my experience there are always some warm days about the last part of March, and I have everything in readiness so as to take advantage of this time; the sunniest part of the garden dug up and well manured. The extra early peas are soon planted. One year I finished my work in a sleet storm with no bad results.

Cover the peas with about two inches of soil, more earth being drawn up around the plants as they grow.

If the weather is favorable, put in an early variety like Nott's Excelsior about a week later, and cover to the same depth. A week or ten days later, a medium early and a late, tall kind should be planted the same day. The late varieties take enough longer to mature to make up the difference in time between the usual week apart sowings.

Lastly, by the end of April or the first days of May, put in the Telephone pea. Cover these three kinds with about four inches of soil. A trench six inches deep, with the last two inches filled in after the plants show, is best for late peas. The hot weather of July around New York dries up the vines very quickly if they have been sowed too near the surface.

Space in a small garden may be economized by planting double rows (six inches between them) twenty inches apart, care being taken to alternate early and late sorts. With such close arrangement, however, support must be furnished the vines between the double rows, even to the dwarf kinds. Chicken wire from one to three feet in width is best. If staked neatly, and carefully stored when not in use, it will last for several years. The scheme of alternating the different varieties allows time for the early ones to bear and be removed before the late ones commence to yield.

I have had the best results from growing Bridgman's Extra Early, Nott's Excelsior, McClean's Advancer, English Champion or Marrowfat and Telephone. One pint of each kind suffices to plant a double row thirty-eight feet in length. Peas sowed in March begin to bear from June 8th to 12th, according to the weather.

New Jersey.

LAURA B. CARPENTER.



An azalea show is given every year on the grounds of Prof. Sargent's home in Brookline, Mass. A tent is erected to protect the flowers from inclement weather.



The Secret of Sweet Corn

KEEP right on sowing seeds this month. One of the main crops for May sowing is sweet corn. No vegetable is more affected by poor ground. You have noticed poor scrawny looking ears not filled to the ends and again others that were all right in appearance, but lacking in quality. The cause in each case is lack of proper nourishment to the plant, and by that I mean manure. Most folks use fertilizers instead, which is all wrong for sweet corn. With field corn you use the dried ear and you don't care whether it is milky or not, but the case is reversed with sweet corn. It must grow quickly and manure is necessary, especially during dry summers. Give the ground a coating about 4 to 6 inches thick and plough or dig it under, it need not be deep, as corn is a rather shallow rooter. I prefer to plant corn in rows because all kinds do not grow the same size, and so do not require the same spacing. This is easily regulated by thinning when the corn is planted in rows.

Plant Golden Bantam for first crop; it is not only a very early corn but one of the best flavored, and don't forget Stowells Evergreen and Country Gentleman, which are the best of the late corns.

MELONS AND LIMA BEANS

If melons have not been sown as suggested last month, see to it at once and always put plenty of seed in each hill, as it is very poor economy to be saving of seed. Put at least 12 seeds in each hill, as the plants are easily thinned out at the proper time, when only 3 plants should be left in hills if 8 feet apart; but if they are 10 or 12 feet apart 4 plants may be left.

Sow lima beans if the weather seems settled and there is a little warmth to the ground; you don't gain anything by planting limas before. A few cool nights after the plants are above ground will cause them to turn yellow and the result is a season of very slow stunted growth. May 10th is quite early enough for this locality.

If rain occurs within 48 hours of the time of sowing, the seed will rot and the work must be done over. In heavy soils, 96 hours is not too long a limit to place. Examine your seeds after a rainfall and see if they are rotting or not. Making a circle around the pole about two inches deep, filling this with sand, and sowing the seeds in the sand may save sowing the seeds a second time, as the sand dries very quickly after a rain.

Bush limas are best sown in rows, but as the seed is smaller and considerably harder than the pole kinds it is not often necessary to plant them in sand. If you were troubled with poor germination, however, try it!

About May 1st you can prepare hills for cucumbers, squash, pumpkins and water melons. Make them moderately rich. Dig holes about 3 feet wide and about 2 feet deep and add about one-half wheelbarrow load of manure to each hill, and in measuring the manure don't take the wheelbarrow that your boy plays with around the garden. I mean a regular sized garden barrow.

All these vegetables are heat lovers and will surely feel the effects of a late nor'wester, so about the tenth of the month will be time enough for sowing. Water melons can be sown earlier if you have frames for them. Allow 10 feet between the hills if you can. If you are short of space, sow pumpkins, squash and water melons in the early corn patch, and when the corn crop is finished the stalks can be cut down to give the other vegetables a chance.

New Zealand spinach is a continuous grower from the sprouting of the seed until cut down by frost, and is a welcome summer green. Some folks dislike this vegetable simply because they never gave it a fair opportunity. It is of a succulent nature and demands plenty of manure. It must have it to be sweet and tender; also remember to cut it even if you can't use it all and have to feed it to the chickens.

Sow okra any time after the 10th of the month in single rows, and thin the plants out to about 8 inches apart. This is also an all-seasons' crop and demands good deep soil. I always make a second sowing around the 20th of the month, later selecting the better one and destroying the other.

SOWING FOR SUCCESSION

Sowing for succession must never be lost sight of, because if the sowing is neglected the chain is broken and the continuity of crops is lost. This becomes more important as the season advances, as the time of maturity of the crops is also lessening. To illustrate: peas sown April 1st and 15th will have an interval between maturity twice as long as the time elapsing between two sowings made on the 1st and 15th of May. At the end of the year the process works in the opposite way.

Make four sowings of peas in May about one week apart. The three best varieties for May sowing are Gradus, perhaps the best of all peas



Corn sown in rows instead of in hills is easily spaced

when you consider quality; Telephone, also a good pea, and an excellent cropper; Champion of England. I plant these two last alternately with Gradus; they give heavier crops.

Sow spinach and radish every week during May, for at this season spinach runs quickly to seed and radishes get very strong. If the former is well watered, it will not run to seed so quickly. Make two sowings of carrots and beets during the month, and also sow turnips twice.

Lettuce must be sown often during May, as the crop will mature during the warm weather and no matter how much care we use a certain percentage is sure to run to seed; this can only be reduced to a minimum by frequent sowings, say about one week apart.

I sow string beans about every three weeks for succession. I usually sow in single rows, but I don't see any great objection to the double row — neither can I see any advantage.

Plant corn about every two weeks. A good plan is to sow your early variety first, say about May 7th, then on the 14th sow one row of early, and one row of a late variety; about the 28th sow two rows of late. This method will certainly insure one crop following the other very closely.

A very simple yet convenient method for keeping succession crops moving in the proper rotation is to make a sowing when the previous one is just above ground.

TRANSPLANTING STARTED PLANTS

If you haven't already done as advised in last month's GARDEN MAGAZINE in planting out from the coldframe some of the more hardy of the vegetable plants, such as cabbage, cauliflower and Brussels sprouts, do it as soon as possible. If any grow too large in the frame or get root-bound they will be greatly damaged.

After the 20th of the month it will be safe to set out tomatoes. I always stake the young plants when I set them out, as they are very tender and liable to get broken by the wind. You can also set out peppers and egg plants, but if there is any indication of cool nights it will be wiser to wait a day or two, as they suffer very quickly.

Set out sweet potatoes the latter part of May. Good sweet potatoes can be grown in this locality by securing young plants from any seedsman. Plant them in rows which have been slightly raised and well fertilized, about one and one-half feet apart and three feet between the rows.

SOWING FOR FALL

The latter part of May is the proper time to sow fall crops of cabbage, cauliflower, broccoli, kale, also winter celery. Most people sow these vegetables in beds, then transplant later to rows in the garden, which is all right when you are short of space. It is also the proper method for celery. But where the ground is available I urge the sowing of cabbage, cauliflower, broccoli and kale right in the drills where they are to remain. This is by far the best method for the amateur, as the planting out necessary by the other method is always troublesome, and must be attended to just at the proper time, and for this very reason is neglected. Sow very thinly in rows three feet apart, and when large enough thin out to the proper distance between the plants.

FEEDING STRAWBERRIES

Strawberries will grow fast and push forward the fruiting crown. It is the critical moment, for if fertilizers are lacking in the soil the crop will be a disappointment. There is no use waiting until the berries are well advanced to apply it. I usually apply a good dose of nitrate of soda just before the flowers open, followed by an application of liquid manure and again with the soda at intervals of a few days.

THE ASPARAGUS BED

Give two applications of salt during May (I use 500 lbs. on a plot 60 x 180 ft.); this will keep down the growth of weeds and the asparagus is benefited. Apply this just before or during a rain, run the cultivator over the bed two or three times during the month, and exercise a little caution in cutting and your bed will keep a-going. In cutting don't jab a knife through the crown, as that splits it into small pieces and causes the shoots to become smaller.

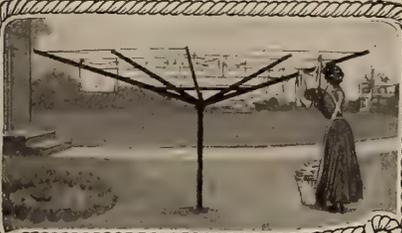
If rhubarb is thin or stringy it needs attention. Seed pods persistently appearing is also an equal assurance that next fall the plants should be divided and reset. Cut off the seed pods as soon as they appear; but don't cut the shoots, or rather leaves — pull them off with a downward jerk.

TO HILL OR NOT TO HILL?

There are several reasons for hilling vegetables. In some cases to keep plants from blowing over; it also tends to get the roots deeper, where they are not so liable to be affected by dry weather; with other vegetables it is done to blanch the stalks, the better to fit them for table use. But



Early celery set in rows. Note the depth at which it is planted



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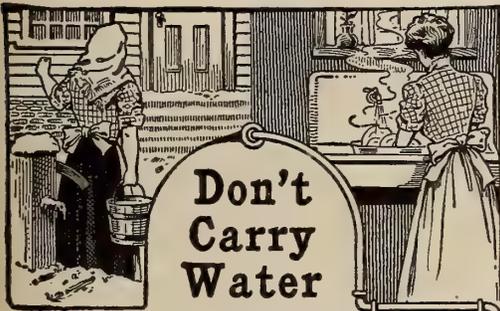
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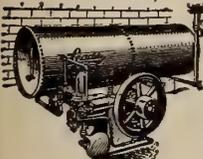
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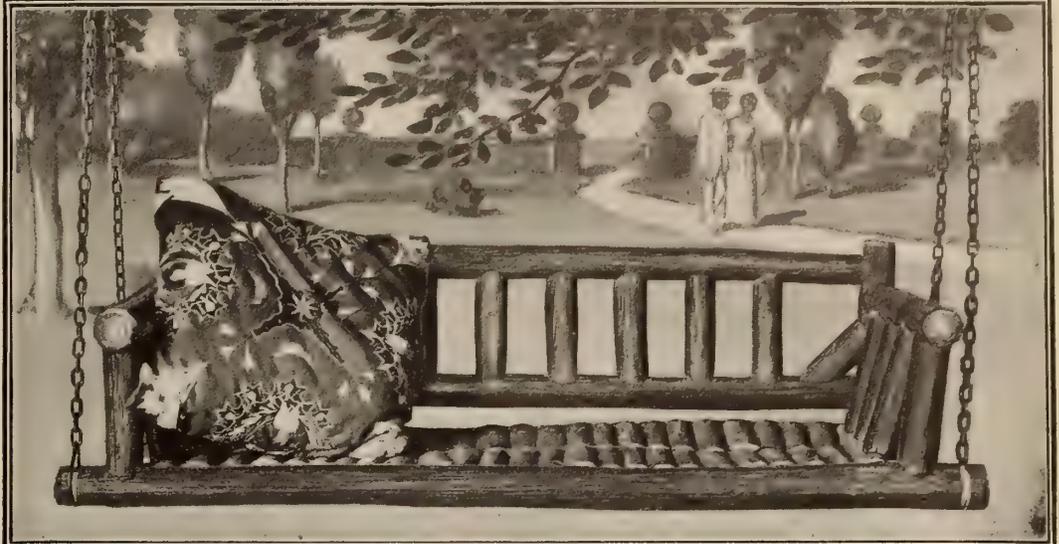


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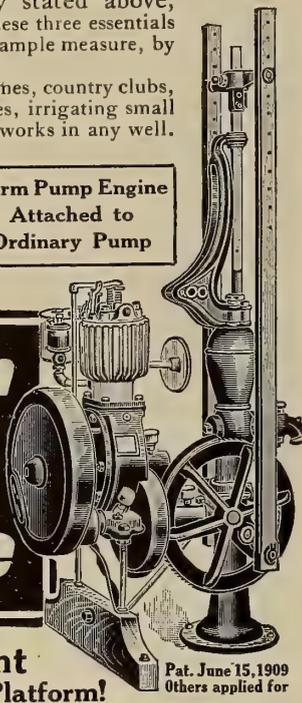
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The Farm Pump Engine meets the widespread demand for cheap Portable Power for running light machinery used on farms or country estates. Takes the place of **muscle-power.** Saves three men's wages every day it runs! Operates fanning mills, cream separators, churns, washing machines, feed grinders, jig saws, drag saws, small lathes, grindstones, clipping machines, small printing presses, polishing wheels, etc.

Fuller & Johnson High-Powered Double-Efficiency Engines—We build seven sizes of Horizontal Engines—Self-Contained, Stationary and Portable. Our "F. & J. System" of Open Water Jacket construction is a revolutionary improvement that places water-cooled gasoline engines in the first rank as cheap power-producers. Catalog of larger engines on request.

Send for Free Engine Books—Write for "The Story of a Great Little Engine," giving full details regarding design, construction and uses of this wonderful engine. You can't afford to be without a Farm Pump Engine. Let us tell you what delighted owners say of its efficiency, its adaptability to a wide range of practical purposes.
Sold by Leading Dealers—Ask for name of nearest dealer who has our engines. We invite correspondence from dealers in territory where we are not represented.

FULLER & JOHNSON MFG. CO.
 Established 1840

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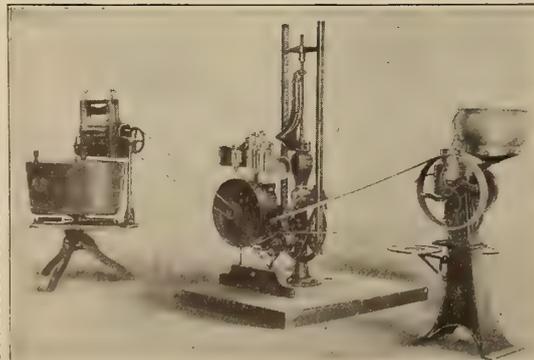
Please send book checked below:

- Farm Pump Engine Catalog.
- High-Powered Engine Catalog.

Name _____

Address _____

(98)



Engine Pumping and Running Washer and Separator

don't hill too deeply. Judgment is necessary, as no hard rule can be fixed, the depth varying with the season, and kind of vegetable. Beans, peas, and corn are usually hilled about the same height, four inches; this should be done early as it prevents them from blowing over. Leek and celery should be hilled as they grow. I usually hill okra, as it is brittle and breaks very easily. Potatoes should not be hilled too early, the proper time is when the flowers appear. I advise hilling cauli-



Plant lettuce in a shaded place, such as the north side of a hedge

flower and cabbage up to the bottom leaves, if they were not planted in drills as suggested last month. This is not because there is any danger of them blowing over, but to keep the roots farther from the heat and drought.

Some of the early sown peas must now be brushed, but never do this until after they have been hilled; and in placing the brush be sure to always slant it. This gives the vines a better chance to get a good hold as they can climb on several sticks in place of one.

THINNING OUT

The thinning out of crops such as beets, carrots, etc., must be done when the plants are very small. Go over a row, and pull out the plants between



A result of good cultivation. Lima beans planted in hills four feet apart

the two points which are to be covered. If you happen to leave two or three in a clump it will not matter very much as they can be thinned again later on in the season.

Approved distances for thinning the plants are as follows:

- | | |
|-------------------------------|---------------------------|
| Beans, 6 inches apart. | Lettuce, 1 foot apart. |
| Beets, 3 inches apart. | Okra, 8 inches apart. |
| Corn, 3 inches apart, by hill | Onions, 3 inches apart. |
| 8 inches in row. | Parsnips, 6 inches apart. |
| Carrot, 3 inches apart. | Salsify, 6 inches apart. |
| Kohlrabi, 6 inches apart. | Turnip, 6 inches apart. |
| Leek, 6 inches apart. | |
| New York. | W. C. McCOLLOM. |

[EDITOR'S NOTE:—Next month's article will be devoted to further successional sowings, planting out and thinning, cultivating and gathering of the crops.]

Six Thousand Boxes of Apples Not One Box Wormy

From the apple district of Colorado comes this tribute to the effectiveness of
Swift's Arsenate of Lead

Paonia, Colo.

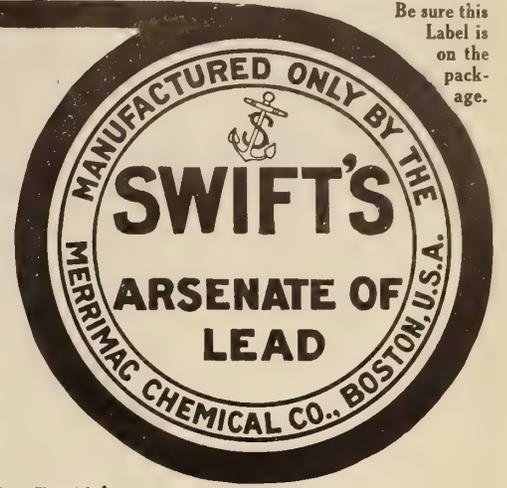
"I commenced using Swift's Arsenate of Lead some years ago and it gives me pleasure to recommend it. Although I took the best care of my orchard in previous years, and was conceded to have one of the cleanest orchards in this locality, I never had less than 15 to 20 per cent. of wormy fruit.

Now my apples are practically free from worms. Out of nearly 6,000 boxes of apples, if there was one single box of wormy apples, I did not know it."
(Signed) J. F. WAKEFIELD.

This is but one of hundreds of testimonials from fruit and vegetable growers, many of which are contained in our book on "Leaf-Eating Pests."

There is nothing to compare with Swift's Arsenate of Lead as a spray because—it is absolutely fatal to all leaf-eating insects. Yet it will not scorch or burn the most delicate foliage.

It sticks to the leaves through all but the most violent downpours of rain, one spraying outlasting from two to four sprayings with other materials.



Be sure this Label is on the package.

It increases the quality as well as the quantity of the yield and has cut down the loss to all who have used it fully 90 per cent.

It mixes readily with water, remains in solution without constant stirring and does not clog the pump.

Spray your fruit and vegetables with Swift's Arsenate of Lead if you want to get full profit from your crops.

Write for our valuable book on leaf-eating insects. Give your dealer's name.

MERRIMAC CHEMICAL COMPANY, 59 Broad Street, BOSTON, MASS.



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*

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Jackson Mushroom Farm

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The hose that stands hard use

OF course garden-hose ought to have kind use and tender care—but it doesn't get it.

"HAMILTON-MADE" Hose is made to stand a long life of rough use and hard wear. We know it will be puddle-soaked and then sun-baked, dragged over rough stones and around sharp corners. Wagons and wheelbarrows and ash-barrels will grind and crush it.

"HAMILTON-MADE" Hose is prepared for the worst. It is TOUGH.

Here are some of the leading grades of Hamilton-Made Garden Hose. Note that Every label bears the words HAMILTON-MADE



HAMILTON-MADE Hose is made by our OLD, SLOW PROCESS, which produces such stiff, springy, long-lasting hose. An inner tube of pure "live" rubber is tightly wrapped with layer after layer of close-woven duck, all vulcanized tight together, with an outside cover of tough rubber to take the wear. After seasoning, every foot is TESTED under tremendous hydraulic pressure, to discover the slightest defect. This enables us to GUARANTEE our hose to stand enormous pressures. Most makers will not do this.

There's a HAMILTON-MADE Hose for every different use and pressure, each grade made BETTER THAN IS NECESSARY to meet the requirements for that use, at prices from 10 to 25 cents a foot. Whatever grade of hose you need, ask the dealer for HAMILTON-MADE, and you will be certain of getting the BEST HOSE OF THAT GRADE that is made.

SOLD BY DEALERS EVERYWHERE

If your dealer has not HAMILTON-MADE HOSE on hand, we will deliver to you anywhere in the United States, FREIGHT PREPAID, 50-foot lengths of our highest grade hose, complete with standard brass couplings, for the regular price, \$12.50 each length. This splendid hose stands a pressure of 750 POUNDS TO THE SQUARE INCH, and while it is our highest-priced garden hose, it lasts so long that it is in reality probably the CHEAPEST hose made.

If you want hose of a different grade, write us for samples and the names of dealers near you.

Hamilton Rubber Manufacturing Co.
Trenton, New Jersey

An Experience with Asparagus from Seed

CONTRARY to all garden tradition, I have found asparagus to be one of the easiest and least expensive vegetables to raise. I started a new bed last spring. The part of the garden I selected had been laid off in beds sixty feet long by about four wide, with walks between. It slopes to the west, so was naturally well drained.

I ordered one ounce of Eclipse asparagus seed and two packets of Great Emperor, at a total cost of fifty cents. Then, in one of the aforementioned beds, I dug three trenches — one in the middle and one about six inches from each edge of the bed — six to eight inches deep. I soaked the seed in warm water for a few hours before planting. The ounce of Eclipse filled two of the trenches, the seeds being placed about an inch apart. One package of the Great Emperor filled the third trench, and I hastily dug a fourth, in which I almost broadcast what I had left. Of course, these seeds were much too thick, and the plants never were as fine as those from the thinly planted seeds. I covered the seed with about an inch of earth and sprinkled a little bit of bone meal in each trench.

The seeds were planted the first week in April, and took a full month to appear above ground. But what a forest I had when they did come! The necessity of immediate thinning was obvious, and as I always hate to throw away nice little plants, I determined to transplant them, even if they were only two inches tall above ground and two inches long below. I transplanted hundreds of these seedlings during the first part of June, and most of them grew. The plants in the original trenches were left about a foot apart, and as they grew the earth was drawn back into the trench, until it was level. Then I scattered several bushels of manure from the chicken coops on the surface between the rows, and weeded several times during the summer. By the middle of September, many of the plants had from four to six stalks, eighteen inches to two feet high, and an eighth of an inch or more in diameter. The transplanted plants, of course, were not so fine, but they have had practically no care, no fertilizer and no water except, a few showers. They were not so deeply planted either.

The total cost of this asparagus was fifty cents spent for seed. The bone meal was a "left over," too small to count, the manure a by-product of the poultry yard, and I did all the work myself.

New Jersey. A. C. BROWN.

A Shrub for a Shady Place

THE mountain currant (*Ribes alpinum*), a native of the mountains of Europe and the Orient, is admirably adapted to growing under the shade and drip of trees, even in quite dry situations.

It is hardy without question, growing about three feet high and bearing in profusion, during the summer, currants much resembling the garden variety but tasteless. It is well clothed with foliage and gives, at all times, a pleasing effect.

Two years ago my neighbor wanted his place fixed up. A walk came in from the corner of a street and ran diagonally to his house. It was bordered for some twenty feet by an old shrubbery and tree belt; all undergrowth was killed on account of the dense shade. The bare ground displeased my neighbor. I dug up the soil as best I could and planted it largely to *Ribes alpinum*. I also tried some of the common snowberry, sometimes recommended for such situations. They only did fairly well, but the *Ribes* is doing splendidly and gives a fine green carpet. The following fall I planted, in between the plants, various spring-flowering bulbs.

All of this came from noticing a few *Ribes* on my own grounds. The building of a cottage some six or eight years ago, after they had been planted, in connection with the growth of adjoining shrubs and trees, had so shut them in that they were in dense shade, but they flourished and still seem to be happy. I do not know of any other shrub, suitable for growing in this climate, which would live under such conditions.

Illinois. W. C. EGAN.

HENCH'S 20TH CENTURY Steel Ball Coupling Pivot Axle Cultivator with Double Row Corn Planter and Fertilizer Attachment complete in One Machine.



Awarded GOLD MEDAL at World's Fair, St. Louis. A wonderful improvement in cultivators, combining every possible movement of gangs and wheels required. Easily changed to different styles. Thousands in use. Manufacturers of all kinds of Agricultural Implementations. Agents wanted; write for circular.

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A Mess of fresh 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.

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For Market Gardeners

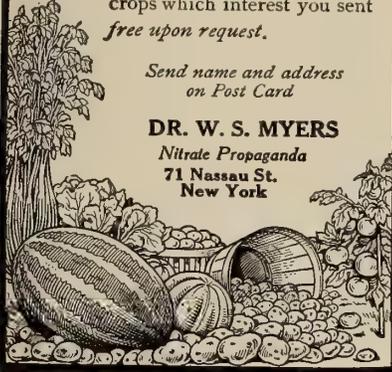
is the cheapest high grade fertilizer and the most effective carrier of nitrogen.

Valuable books on the crops which interest you sent *free upon request.*

Send name and address on Post Card

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By VIRGINIA E. VERPLANCK

ILLUSTRATED

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selected by us as the right roses for your locality. All different.

17 roses all carefully labeled, packed and delivered for \$1.

We grow the best roses in America.

The United States Government buys many of these best roses from us. As do many of the most expert rose growers in America—amateur and otherwise.

Many of the largest estates in the Berkshire Hills—in Westchester County, in Tuxedo, at Newport and Bar Harbor—obtain from us these rare and beautiful growths that we alone have on hand.

We grow roses in the best way—so that they will grow and bloom when you plant them—this we absolutely guarantee.

Your Rose Garden for One Dollar

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The offer is as you read it above—the 17 varieties of roses guaranteed to bloom are enumerated. This is an exceptional opportunity. It means a beautiful rose garden for you this summer, size 12 feet long by 3 feet wide, or 24 feet in length, and 2 climbing roses besides—17 in all—for one dollar.



"How to Grow Roses"—one of the most instructive rose manuals published—we send you a copy of this complimentary with your order.

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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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Not only your back, but time and money besides, by using O. Ames shovels. Perfectly made on scientific principles to minimize time and labor. Quality-made from knowledge gained by over 100 years' experience.

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FIELD CROPS

The Right Kind of an Onion Soil

THERE is no reason why onions should not be grown as a money crop in many districts in New England, New York and Pennsylvania where they are not produced to any extent at the present time. It should be realized that if the conditions are right it does not require a very large tract to produce a large quantity of onions. The fact is that there are many small soil areas or fields, outside the limits of the present well-developed onion districts upon which onions may be grown with profit, and in time, when the conditions necessary are more fully realized, advantage will undoubtedly be taken of this fact.

One of the essential points is the selection of a suitable soil. In the Connecticut Valley, in the States of Connecticut and Massachusetts, where onions and wrapper leaf tobacco are the leading money crops, the former are grown principally on fine sandy loams, and heavy silt loams. In New York, Ohio and Michigan muck and mucky loams are used most extensively, though in Michigan a black, mucky, fine, sandy loam has given very good results in some instances.

The character of the soil has so much to do with the quality of onion produced that the buyer can readily distinguish the differences, and unconsciously grades the price he is willing to pay accordingly. So the grower should have clearly in mind the type of onion he wishes to produce, or, in other words, the class of market to which he wishes to cater. Restricting our comparisons to the Danvers Yellow onion, the best quality of bulb is produced on a rich, fine, sandy loam; in fact, all soils must be rich or highly fertilized if the crop is to be profitable.

The ideal onion from the marketing point of view is medium in size and very firm and hard—so hard that extreme pressure between the thumb and fingers can produce no dent. If dropped on a floor the sound is the same as that produced by a ball of wood of the same size. This quality of onion is never secured unless the neck cures down thoroughly, the dried neck being extremely small and thin. Such an onion may be produced on ordinary, well-drained, sandy soils, but with the danger that the bulb will be too small to be marketable. A finer soil holding a somewhat better moisture content, when well enriched will greatly reduce this danger, yet not bring a growth so strong as to injure materially the quality of the onion. It is this very balancing of conditions which makes the fine sandy loams so effective in producing not only good yields, but bulbs of the best possible quality for storage purposes.



Onions grown on heavy muck soil and on rich, sandy loam. Note the coarse neck in the former

MURRAY & LANMAN'S

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A Perfume for the Most Refined Taste

A leader amongst leaders. After being in use for Nearly a Century is just as popular as ever

BECAUSE:

IT is a Floral Extract of absolute purity and enduring fragrance; it refreshes and revives as does no other Perfume; it is delightful in the Bath and the finest thing after Shaving: because it is, in fact, the most reliable and satisfactory Toilet Perfume made :: ::



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ACCEPT NO SUBSTITUTE!

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In Illinois Self-Watering Flower Boxes

Roots of plant kept moist and made strong and healthy by patented reservoir in bottom of box. Fill once in two weeks. Plants take care of themselves. Heavy galvanized iron boxes, beautifully enameled. Will not LEAK, RUST, ROT. GUARANTEED 5 YEARS. Window Boxes, Flower Pots, Hanging Baskets, Jardiniere Pans, etc.—7 styles and prices. Others made to order. Sold on 30 days' FREE TRIAL. Our new complete catalog and treatise on "The Care of Plants," by a national authority, sent Free for the asking. Write today.

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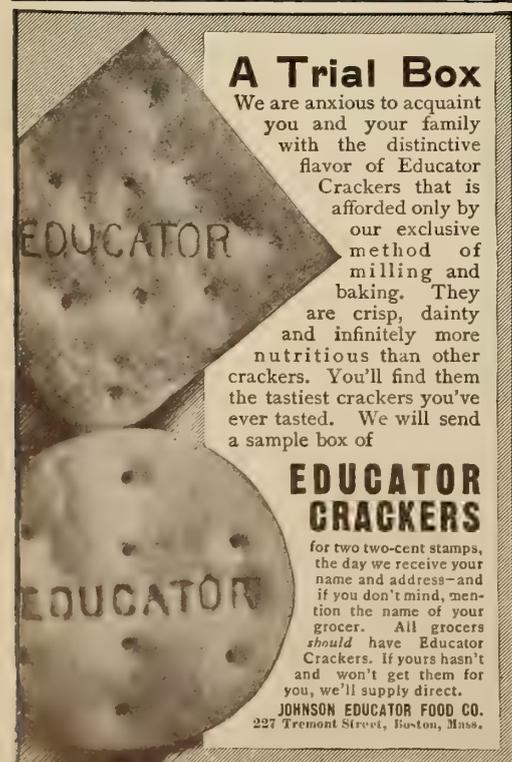
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It kills all leaf-eating insects, caterpillars, etc., prevents unsightly blemishes; also improves color of apples, pears, peaches, etc. It increases yield of potatoes and vegetables. Enough to make 50 gals. solution \$1.75. Booklet free. No experiment. Introduced 1898.

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Also Specialties for Scale Insects, etc. Bring all your outdoor "Bug" troubles to us.

Paint Plays An Important Part in Decoration



FAMILIAR as everyone is with colors, the actual choice of tints for decorating the interior or exterior of the home often proves a difficult task.

But with the aid of our "Dutch Boy Paint Adviser No. 95," correct decision becomes merely a matter of selecting the particular arrangement you prefer from a group of color plates showing many different color schemes. It is free. Send for it.

Having chosen the color scheme with care, choose your paint still more carefully; otherwise, the beautiful color-scheme may vanish in a few months. Insist that the paint be mixed for the job, using pure white lead ("Dutch Boy Painter" trade mark) and pure linseed oil. Then, and then only, will the color plan be carried out both durably and economically.

Our Pure White Lead ("Dutch Boy Painter" trade mark) is now packed in steel kegs, dark gun-metal finish, instead of in oak kegs as heretofore. Ask your dealer.

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No More Covering and Uncovering of Sash

A 5/8-inch blanket of still air, between two layers of glass, keeps out the cold, keeps in the heat, lets in warm sunshine, gives the plants all the light and heat—makes them harder, stronger.

Send for catalogue for full details

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Emerson and the Kewanee System of Water Supply

"If a man can write a better book, preach a better sermon, or build a better mouse-trap than his neighbor, even though he build his house in the wilderness, the world will make a beaten track to his doorway."
 —Ralph Waldo Emerson.

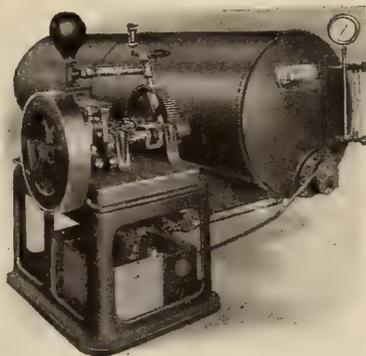
Emerson was right. Many are the paths which the world has made to the doors of people who do better things in the fields of letters, science, art and manufacture.

And a path has been beaten to our door, because we originated a **better system of water supply**—the first improvement in water supply systems since the days of Adam. Our water supply system—the

Kewanee System of Water Supply

has revolutionized the possibilities of private water supply service.

First, we originated a **better tank** in which to store the water. Not an elevated or attic tank to leak, freeze, overflow or collapse. The Kewanee Tank is located in the cellar or in the ground and it delivers the water by **air pressure**.



Then we found that the **pumping machinery** the market afforded was wholly inadequate for the requirements of air pressure service. So we built **better pumping machinery**. Not just a little better, but so much better that it is in a class by itself.

Kewanee Water Supply Company, Kewanee, Illinois.

1566 Hudson-Terminal Bldg., 50 Church St., New York City.
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And we planned the best methods of **assembling** the tanks, pumping outfits and connections, to complete more desirable water systems than had ever been known before.

We were **technically trained and experienced engineers** with an ideal, not manufacturers trying to dispose of a product. We attained our ideal—The Kewanee System, but only became manufacturers when existing manufacturers could not satisfy our requirements, and hence could not meet the needs of our clients.

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Muck soils and mucky loams are easy to tend and the yield under favorable conditions is very high. The grade of onion grown, however, is always inferior to that from the fine sandy loams or fine sandy and silty loams, and in wet seasons the difference is even more marked. Onions grown on muck soils are not only coarse in texture but lack firmness and are often relatively soft, rendering them much less desirable for storage purposes as well as for table use.

BRAIDED TOPS

In the Connecticut Valley a somewhat different effect is seen on a mellow silty loam soil. While it produces a quality about midway between the muck soils and the most desirable fine sandy loams, it should also bring a satisfactory yield. And so it does, but the necks are too "fat" to cure down as well as they should. This tendency is more marked in wet seasons when there are liable to be many "braided" tops. The "braided" top is a stem that is thick for an inch above the bulb caused by the outer layers of the latter extending upward and enveloping the lower part of the stem or top until late in the season. In mid-season this would be a normal condition, but at harvesting time all of the true stem part must have dried down thoroughly. And on the heavy fine sandy loams or light mellow loams this stage will have been reached. If this tendency toward the "braided"



A field of onions growing on a muck soil

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All Over America

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top, or fat stem, becomes more pronounced scallions (small bulbs upon which the tops are unduly large and do not die down) are produced, the waste from this source decreasing the yield.

The most money will be made in the long run by the man who gets the largest yield consistent with good quality. Fortunately this is a balance which may be attained without too great a sacrifice of yield. The general tendency has been in the past, outside of the Connecticut Valley, to choose mucky or heavy soils from the viewpoint of yield only. Results show, however, that with especial care yields on soils producing highest quality may equal those from soils yielding a much poorer quality of onion.

As the crop requires very frequent weeding by hand, the soil must be mellow and free from coarse gritty particles and stones, or else the fingers and knees may become very sore. While there are many devices to assist hand weeding and quicken the process, the fact remains that the cheapest and most effective way to weed onions is for a boy or young man to straddle a row and manipulate his fingers so rapidly in the extraction of weeds and in loosening the soil around the tiny onion plants that he is in continuous movement crawling on his knees, and has no time to rest the weight of his body on the elbows. In this work skill must be developed, for not only is rapid work necessary, but the onion plants must be left behind the weeder in an upright position, with soil stirred yet firmed again, and with all weeds removed. Often considered a bugbear, this work is not so tedious as it would seem after one becomes accustomed to it, and the knees get toughened.

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I said eight years ago that the American public was tired of being exploited on cigarets. I was tired of it, and had been for quite a while, and I am just a good average person, with enough human nature in me to be very much like eighty millions of my neighbors.

Have enough faith in my neighbors, too, to believe they are mostly natural-born connoisseurs—once they are given a chance to discriminate. And I've proven it.

No other people on earth are as keen for the best of everything as the Americans—and no other country has been so consistently given the worst of it on a lot of things.

I am a cigaret manufacturer only because I was first a cigaret smoker and I got tired of smoking the stuff that was offered to intelligent smokers in this country. I wanted a cigaret that I could smoke all day if I felt like it, without developing a "craving," or inducing the nervousness or depression that follows the use of ordinary cigarets. I found such cigarets in Russia, where everybody smokes cigarets all the time, and in the other Continental countries, where everybody smokes Russian cigarets. I imported them for a long time, but it was difficult to keep enough on hand to supply myself and my friends—and my friends multiplied pretty rapidly through these cigarets.)

I acquired the knowledge, the right, and the workmen, to duplicate these cigarets in America, and I am duplicating them. absolutely.

The reason for the difference between these cigarets and others lies mostly in a difference in the manufacturer's point of view.

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Pure tobacco won't hurt you. You may not be used to it, and you may not like the first Makaroff, but you'll like the second one better, and you'll stick to Makaroffs forever if you once give them a fair chance. We have built this business on quality in the goods and intelligence in the smoker—a combination that simply can't lose. We waited quite a while, but it has won in our case and won big. The result is, that

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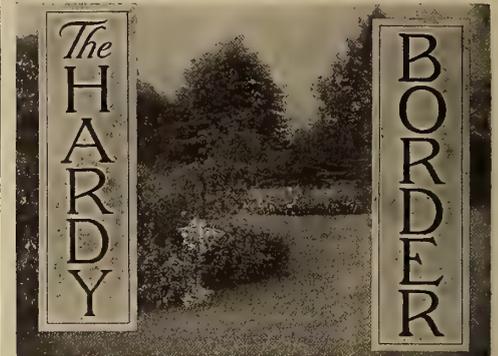
Caterpillars or tussockmoths can't crawl under it, and won't crawl over it. Better than burlap, cotton or fly paper. Does not disfigure the tree. Does not dry up and stick to bark as do the smeared-on tar preparations. Strookum is entirely harmless. Endorsed by the leading horticulturists and tree experts.

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Continuous Bloom for the Middle West from Native Plants

THOSE who live in that vast area west of the great lakes and east of the Missouri can obtain continuous bloom throughout the season with the following native material, which in most instances will be found surprisingly near at hand. This is not the description of a mere possibility, but the result of actual experience; knowledge gained a-kneeling on the forest floor with hands in the leaf-mould.

Begin in spring—irrespective of date—when that vague desire to dig in the dirt bestirs you and go afield to see what you can find there. Like as not the first flower you meet is the bloodroot a-laughing at you from the fence corners or the sunny spots in the woodland. You may readily recognize it by its bleeding root of the thickness of your little finger. Its large, broad solitary leaf, growing close to the ground, is about the size of your palm and will never be forgotten after once you learn to know it. Dig up this little plant whenever you find it, whether in flower or not. To carry a long distance it is best to remove some dirt with the root, though I have never found this necessary. In your garden place it to the fore of your flower border or shrubbery group.

Another easily domesticated wild flower that is more or less plentiful throughout all this region, almost as thick as the dandelions here in the Red River Valley, is the native blue violet. Its blossoms appear just a little before the bloodroot ceases to bloom and continue for fully three weeks. No plant could well bear transplanting better and while it will do well in shade, I have grown it with fair success in sunbaked clay. Personally I do not like the yellow or the white, but the blue violet certainly makes a splendid garden flower. People in passing by a border of these flowers have stopped and asked me where they might obtain such beautiful large violets, and would scarcely believe that they came from the fields nearby. It is a grateful plant, responding lavishly with bloom in rich, well-drained soil, but with plenty of moisture. Place these a little to the rear of the bloodroot. You may cut off all the leaves two or three times during the summer and up they will come more vigorously than ever. To the side of the violet I would have the columbine, for it carries the flower display a little farther into the season. It is considerably higher than the violet, defective for garden purposes in one particular whereof the violet and the bloodroot are free: its herbage after the plant is out of bloom becomes somewhat of an eyesore.

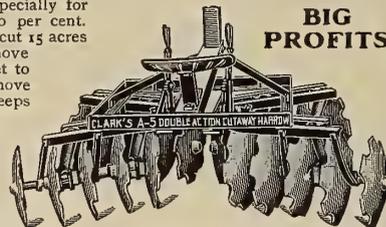
Our next flowers will be provided by a number of woodland shrubs, among which the viburnums are preëminent for the home grounds. The common name for the two that concern us are the black haw and the highbush cranberry. The latter has a little the advantage over the former and is a shrub as ornamental as any that are listed in the catalogues. It resembles the garden snowball, in its leaf, though its habit is less compact. When once established it is a profuse bloomer, its flowers being borne in flat beads. The bush grows to an average height of ten to fifteen feet and though in the forest thicket it is compelled to carry its leaves on the outermost tips of its branches, in the garden, where it finds plenty of room, it throws up shoots freely and carries its foliage well down to the ground. But not only are its flowers ornamental, the large clusters of bright red berries make a brave showing as well, and hold on throughout the winter. They



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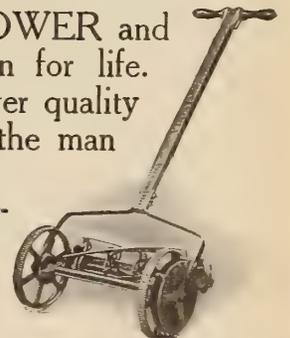
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make an excellent substitute for cranberries. The leaf of the highbush cranberry approximates the maple leaf outline, while the black haw, whose foliage is considerably darker, has leaves that resemble somewhat those of the cherry. The fruit of the black haw, a dark red berry, is not palatable to me and cannot compare with that of the highbush cranberry as an ornament. I have found the black haw much more plentiful in the woodlands than the highbush cranberry.

Procure a specimen or two of the wild plum, well worth having because of its short, showy, fragrant flowers. Nor let us neglect the choke cherry which likewise is worth while for symmetry of growth and fragrance of flower. Both are small trees whose period of bloom is very short compared with the foregoing shrubs, and personally I do not like the wild plum very much because of its irregular habit of growth and suckering propensities. The choke cherry, however, can be made to fit well into a shrubbery group. The bloom of both these trees is earlier than that of the viburnums. I have found that the black haw and the highbush cranberry transplant readily even as late as the middle of June, but that the wild plum and the choke cherry do not.

To continue our floral display, and incidentally have an abundance of fragrance, we must go to the rose, not the low growing prairie rose that dies down to the ground each year, but its taller cousin, the woodrose, that flourishes in the forest thickets and along the roadsides that border the woodlands. It is very abundant, and transplants easily, even in June, when all its leaves are out and it is ready to bloom. When it is necessary to move this rose as late as June, and but little earth can be taken with the roots, I have found it a good plan to strip all the leaves and cut the canes back one-half. In this manner nearly all the material transplanted will grow and leaf out that same summer. A well established rose bush attains a height of six feet, carries its foliage well down to the ground and will be literally one mass of bloom for fully two weeks during the latter half of June; extending even into July in the latitude of Fargo, N. D. As far as I have been able to determine the life of an individual flower from bursting bud to the dropping of its petals is about four days. The rose hips in fall also have value as an ornament, though not quite as much as in the rugosa roses.

For summer bloom we turn to native herbaceous perennials: the heliopsis and the willow-leaved spirea or meadow-sweet. Here in the northwest this spirea is distinctly a summer bloomer, bearing its flowers in July and August. The meadow-sweet is scentless, though you will find yourself bringing the flower to your nose involuntarily, for it does seem as if such a delicate thing must have fragrance. This is practically an herbaceous perennial with us, as the severe winters kill it back to the ground quite frequently. The willow-leaved spirea can be moved successfully even while in bloom, if but a fair amount of soil be taken up with the roots.

The heliopsis affords excellent planting material because of its clean and abundant herbage, which grows to a height of almost four feet. Its leaves are a trifle coarse perhaps, but by no means ragged in appearance, while its persistent yellow flowers, which often measure two inches across, greatly resemble small sunflowers. The flowers are devoid of fragrance, but long stemmed and are excellent for decorative purposes within doors. All through July and August the plants are one mass of bloom, and the more the flowers are cut the more profusely the plants bloom.

A pretty little purple aster that grows wild almost everywhere makes quite a brave showing in the fall. Transplant it in fall when in blossom, for by its flowers it is most easily known. It will bloom freely the next fall. Then to close the season fittingly, use the goldenrod.

A plot of only fifteen feet square will serve for such a garden as we have talked of. I do not call such a planting a "wild" garden, for I would not have it wild, but kept well within restraint, neat and trim as ever a small garden may be. There are many native flowers of which I made no mention, simply because the foregoing have proven themselves to be best adapted to a small plot of ground.

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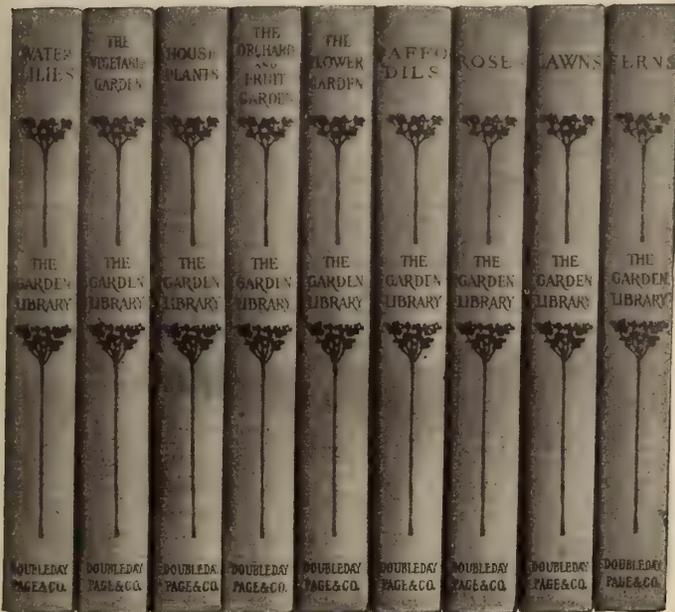
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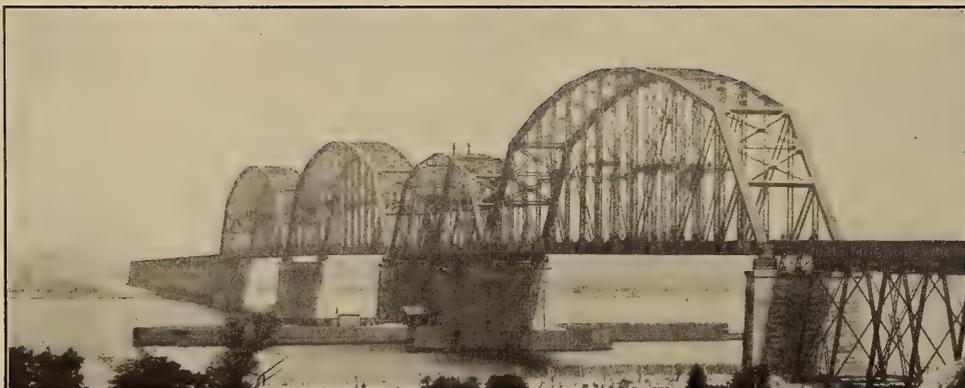
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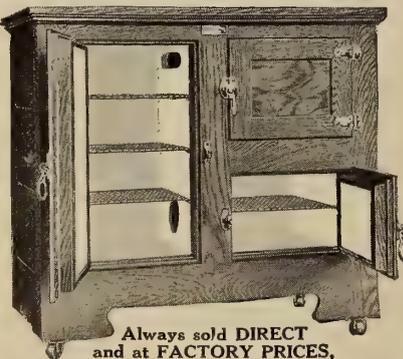
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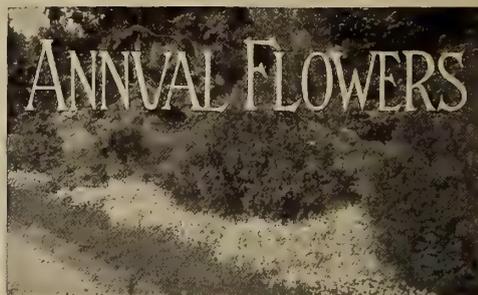
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Cornflowers are delightful as cut flowers, and keep well in water or damp sand. They are ragged and graceful in shape and the flowers become



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larger and more beautiful in form after being cut. Some, measuring four or five inches in circumference when picked, attain a size of nearly six inches round after being four days in water.

The colors become more various each successive season, as the flowers cross. In addition to the plain colors—white, blue in different shades, light and dark pink, lavender, dark red, etc.—later seasons will show an increasing number of striped, ringed, blotched and shaded varieties, all beautiful and delicate in coloring.

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flowers give the best effect when planted in masses, such as a long border a yard wide, but are insignificant when set out singly among other plants. Do not set the plants too close; very disappointing results come from crowding. Single plants (or small clumps of two or three) must not be planted closer than half a yard. They will soon fill the gap and the effect in bloom will be a solid mass. Do not hesitate about transplanting. Do the work when the ground is well dampened by a recent rain and do not attempt to set out plants that have too much foliage.

An attractive color combination is poppies and cornflowers growing in the same row, as their height and blooming season are the same. The brilliant contrast of color makes a very decorative border in the vegetable garden. Poppies can be sown in September and wintered over with protection of some sort, to bloom in May. They self-sow freely but do not transplant well. A bed of the two sorts combined could be started in the fall to be ready for bloom the next season, weeks ahead of spring-sown seed.

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I WISH I could persuade the owner of every pond in the South to plant at least a few varieties of water lilies. They can be grown very easily and cheaply from either seeds or plants, and after they have become established, require no care. Now is the time to plant them.

After the strawberries have finished bearing, commence cultivation and keep the runners cut off the vines.

Sow cow peas in the watermelon patch at the last plowing. The vines will shade the melons and enrich the soil.

Sow watermelon seed for succession the last of the month.

Make frames for tomato vines or stake them. Use strips of cloth one or two inches wide with which to tie the vines to the stakes so as to avoid cutting or bruising the stems.

Dahlias will also require staking now, and should be pruned and disbudded if large flowers are wanted.

Use a large plow for cultivating sweet potatoes, so as to keep the soil banked up to them.

After cabbages have started heading, give shallow cultivation.



Put pine needles or oat straw around egg plants to hold the moisture in the soil and keep the fruit from getting sandy



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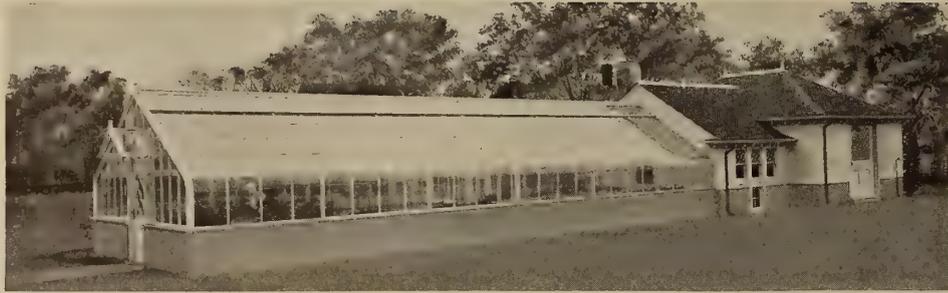
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Some Greenhouse Facts You Ought To Know

THE more light you have in your greenhouse, the better your plants will grow, and the more blooms you will get. That's easy enough to see. To secure the greatest amount of light, your house must be made the lightest possible, safety considered. Also easy to see.

These things admitted, then the first thing for you to do, is make sure of a greenhouse construction that is not only the lightest but the most enduring.

Perhaps you don't know that the alternate moisture and dryness that exists in a greenhouse plays the very hob with the construction if not carefully planned to insure its endurance.

Then there is glass breakage, another point not only of annoyance but expense.

The heating must also be considered, and as it is so radically different from any other method used to heat any other kind of building, it too must be handled just right or your coal bill will run away up, or your house be too cold inside, when it's cold outside.

The truth is, if you want a greenhouse—a

successful, satisfactory, pleasure giving greenhouse—the only way to be sure of getting it, is to go to greenhouse builders of long experience and let them build, ventilate and heat it. Then you will get what you want.

After building greenhouses for considerably over half a century, we have come to the conclusion that our Sectional Iron Frame Construction makes the ideal house. The frame is entirely of iron, there is no more glass breakage than in your residence; the repairs are practically nil—a coat of paint every two years or so, and that's about all there is to it. By all odds it is the house for you to build.

As for the size, design and plan of it, if you could let us know something about what you have in mind, we will either send you a catalog or some photographs that will help you in making a selection.

If you are in dead earnest, it will pay you to have one of our representatives come and talk it all over with you. But don't keep putting it off, for now is a particularly good time to build.

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Get a lawn weeder and keep the weeds pulled out of the lawns.

Make provisions now for later spraying so as to keep down all insects. See **THE GARDEN MAGAZINE** for May, 1909.

This is one of the busiest months with the farmers. Cotton and corn will now require frequent cultivation.

Harvest oats, wheat and rye the last of the month. Sow seed of all fodder plants now, such as millet sorghum cane and Kaffir corn.

Sow soja and velvet beans for hay; plant chufas and peanuts now for hog food.

During the latter part of the month sow seed of



Tie up the tomato vines with strips of cloth so as not to bruise the stems

sugar beets for stock food in the fall. Plant them in rich soil for good results.

Fruits will begin to ripen during the month and provision should now be made for canning those not used.

Very early in the month sow seed of onions for onion sets.

Place pine leaves or oat straw around the egg plants to hold the moisture in the soil and keep the fruits from getting sandy.

Georgia. **THOMAS J. STEED.**

Improving the Potato

THE Colorado Station is undertaking, with very liberal appropriations therefore, some forward steps in potato breeding. They can give potatoes their natural conditions in the higher mountains in the State, and are undertaking to develop, by centgener methods, improved strains of standard American varieties of potatoes; also, by other means, to secure new varieties which may be better than those we have. One of the necessary steps to this needed public service is a full history, so far as can be obtained, of the origin of present varieties. This information is necessary in order to know the inheritance that lies behind any particular strain of potatoes.

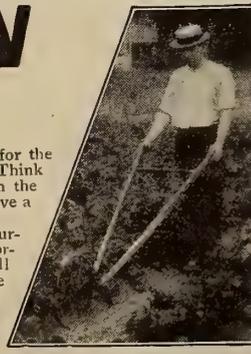
It has never been proven that hill selection by centgener methods will preserve our varieties of potatoes. On the other hand, it has never been proven that potatoes need run out if so handled. The station would be very glad to get into communication with potato growers who know the history of present varieties—men who have been interested in potatoes all of their lives and can, from memory, tell what they know about old varieties of potatoes. It is hoped that eventually these histories may be published, possibly with cuts or even with colored photographs. All correspondence should be addressed to C. L. Fitch, Fort Collins, Col., and should state with what varieties the correspondent is familiar.

SUBURBAN GARDENERS

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.

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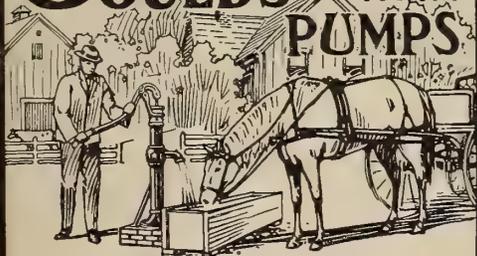
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SEATTLE

A Color Scheme from the Coast

IN AN article in the February **GARDEN MAGAZINE** the editor asked for a suggestion in a blue and white border. I offer the following:

Last spring, we decided to make a long border of old-fashioned flowers to be started with material on hand, and added to as we grew to know the different flowers, their habits, seasons of bloom, etc. Here on the Pacific Coast flowers sometimes bloom out of all allotted time, as per catalogue!

In a part of the border we had planted a fifteen-foot row of white phlox. Directly in front of this were about two dozen three-year-old roots of blue delphinium. A little to the east and running irregularly in front of a part of them was a two-foot-wide band of white garden pinks. A little further on was a long uneven row of purple and white foxgloves. We meant to have just the white foxgloves, but had not the heart to pull up the purple ones, after they had started bloom.

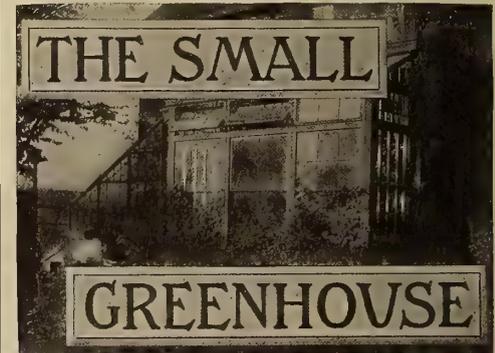
The pinks bloomed first and were a solid mass of deliciously fragrant white, when the larkspurs opened their buds. For four weeks that part of the border was a very great delight.

Though we had read of cutting back larkspurs after the first bloom, we never before had the courage to do it; but this year the phlox seemed in such fine condition, and we wanted so much to see the two flowers bloom together, that we risked it. They threw up a second crop of flowers, which, though not quite as tall as the first, bore as many blooms. Blue, by itself, is rather a shy, retreating color in the garden, but with white it is glorious. Indeed, were I to have ever so tiny a garden, blue and white at least there must be.

English laurel is a very fine shrub for a hedge here, very hardy and fast growing. Blue forget-me-nots in company with white tulips give my early spring effect. White perennial gypsophila is inexpressively lovely, blooms faithfully and makes a most delightful addition to a bouquet. Then there are the tall Shasta daisies and later the lovely white cactus dahlias. The stately madonna lilies and hollyhocks are worthy additions, as are also peonies and iris. In the latter, there are beautiful blues.

Seattle, Wash.

ANNA M. B. NASH.



How to Build a Rose House

ROSE houses for winter flowering are better running east and west than north and south. The reason for this is that in midwinter an east and west house gets a great deal more sunlight than a north and south house. At that time of the year the sun rises in the extreme southeast and sets in the extreme southwest, and at meridian is very low, so that the sash-bars of a house running north and south obstruct half the sun's rays. This is now a well accepted fact. In building rose or other flowering houses, it is preferable to build them either three-quarters or three-fifths span, about three-fifths to the south and two-fifths to the north. A house with a three-fifths span is considered a much better house than an even-span house, because in the latter the ridge obstructs the sun's rays on the back of the house during late fall and early winter. It is usual now to make the back of the house the same height as the front; it used to be a practice to make the back considerably higher, but in the most modern houses there is no difference, the eave plates being about seven feet six inches from the ground.

Snowballs in Full Bloom

Will remind you this spring of the glorious old-time gardens. As you admire them on the lawns of others, why not determine to have a few blooming in your own yard another year? Don't expect to have shrubs in bloom next spring, however, unless you plant now and plant big well-matured specimens. We sell no other kind and Snowballs you buy of us will bloom freely another year.

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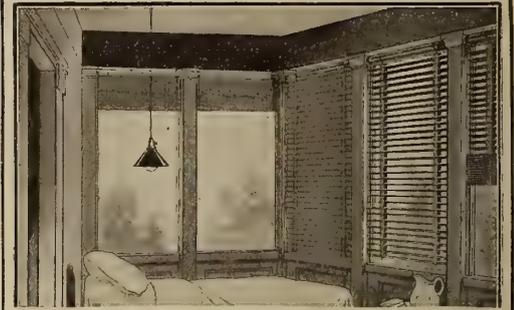
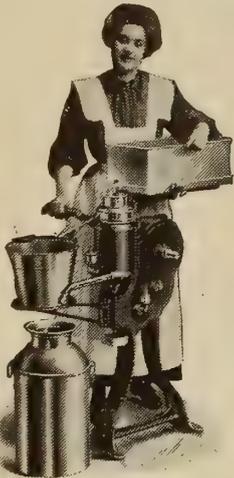
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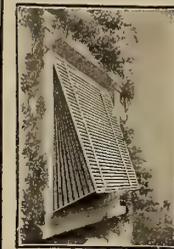


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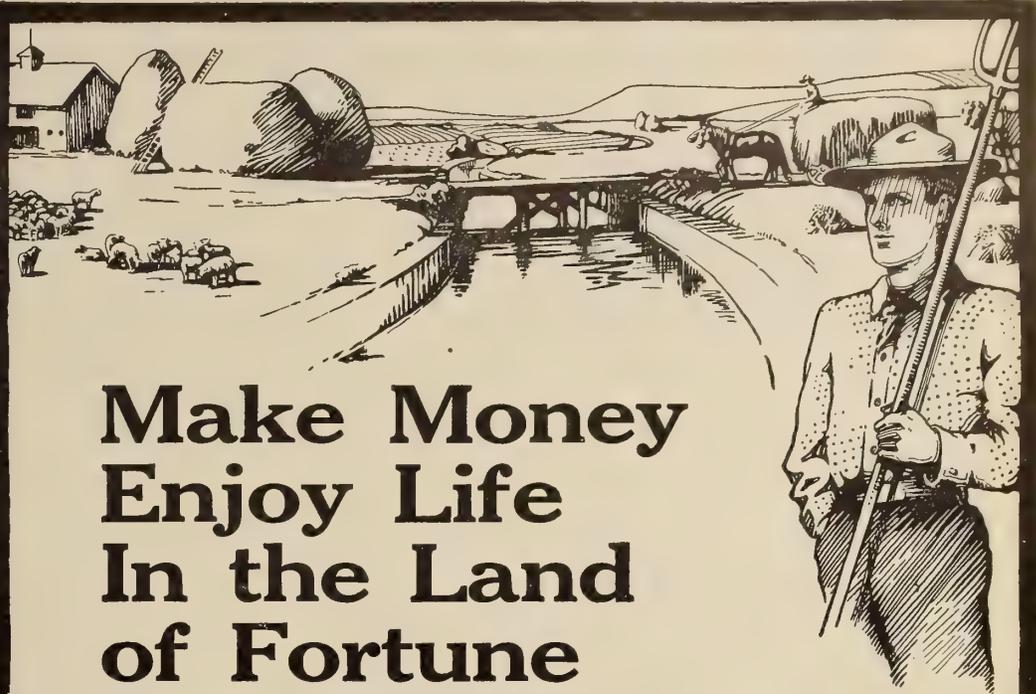
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¶ The prize-winning fruits nowadays almost invariably come from orchards in the Northwest. An Idaho man gave his family a vacation at the seashore on the season's proceeds from 11 peach trees!

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Pole Beans Till October

FROM one planting of seed, we have found that we can have plenty of pole beans until frost. The secret is to keep the ground always moist, and to pick the pods as soon as they are large enough to cook. The vines shown in the photograph, which was taken October 15th, are green and thrifty, and full of blossoms and beans. The beans were planted May 20th.

The variety grown is the Golden Butter Pole, and is more prolific than any other pole bean I have



These pole beans were planted May 20th. In October the vines were still full of blossoms and giving a good crop of beans

ever heard of. Side by side with four other varieties it has excelled all in quantity and quality. The Kentucky Wonder did not do well, while Improved Kentucky Wonder was a flat failure.

Massachusetts.

ELLA M. BEALS.

A Lucky Hazard in Asters

THE soil in our garden has seemed for years to have a grudge against china asters. Each year we have hoped for success, but the plants whose tops escaped the ravages of the blister beetle succumbed to the treacherous red ants and green aphids at their roots. A vigorous, full budded plant in the morning would be discovered withered in the evening and its roots covered with the clinging, malodorous green bugs. Every corner and bed in the garden was tried, until last season by a fortunate chance success was attained.

We realized then that asters need shade; in the cool planting-out days of May one forgets the burning heat of the August sun, when even irrigation trenches filled at night won't save the plants if the glare has been pitiless and scorching all day long. But the plants need sun in their early growth for full development.

Last year some potted plants of Truffaut's Peony



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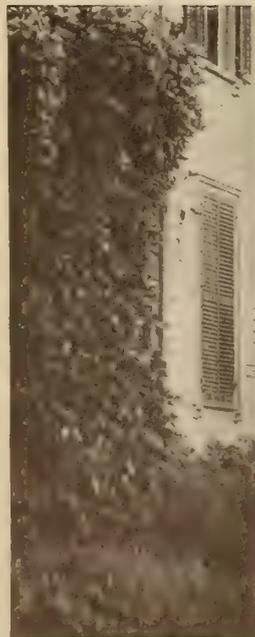
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Perfection were overlooked in the rush of setting-out time, and were quite eight or ten inches high when discovered in the coldframe about June 1st. All the beds and corners were then full, so they were put in the anemone bed against the east side of the house—a cool, white wall at their backs and the lusty Japanese anemone making a brave show in front. The sun shone there only until half past ten o'clock in the morning and doubts were felt, but the experiment (which was also a trick on the beetles who never thought of looking there for asters) was justified. The plants grew and thrived, their blossoms were as large and as perfect as the professional florists' and lasted for weeks. The other plants in rows in the garden, from pots and from seedbeds, with wood ashes under their feet, mulchings of grass on top and irrigation at night, did well, but the beetles and aphids continued their attacks.

This year a quantity of seedlings will be kept in pots and placed in a bulb bed on the same east side of the house but against a privet hedge. They will have a northeast exposure and we hope that we can again elude the bugs!

Pennsylvania.

F. E. McILVAINE.

Raising Your Own Celery Plants

YOUNG celery plants are exceedingly tender and must have favorable conditions in order to reach the stage for transplanting. For several years I have tried raising them in seed beds in the garden and in boxes, with results in favor of the boxes. They are more easily protected from rain, wind and sand storms and the moisture from sprinkling the soil can easily be retained by covering with a light cloth until the plants peep through the ground.

I use shallow boxes, nearly filling them with loose, rich soil—leaf mold, when it can be obtained—thoroughly mixed with half as much good garden soil. The tiny seeds are then sprinkled carefully over the surface and lightly patted in with the hand. A light sprinkle given daily brings many plants to light. The covering is then removed that they may have sunlight and plenty of air. The plants are then left to grow. An occasional watering when the soil looks dry, and a board covering when driving rains or hard winds occur, gives them a fair start. In four or five weeks from the time of their appearance I have strong, healthy plants, which grow to be fine bunches of celery.

Missouri.

MRS. H. F. G.

Early Planting of Dahlias

LA TE planting of dahlias (end of June) is recommended, to avoid the blasting of the buds early in the season.

For the past twelve years, however, I have planted both early and late-flowering dahlias on May 1st. Last year I had my first blooms on July 4th, and all season had a continuous supply of good flowers. Some of the varieties I have grown for years and they have always done well. I cannot see that they have lost any of their vitality by early planting, although I have discovered that some varieties blast more easily than others.

During the dry, hot summer, when there is but little, if any, dew at night, I water the plants thoroughly with the hose three times a week. If any buds seem inclined to blast, I put the plants next season in a partially shaded location away from the excessive heat, and have no further trouble. For two years I planted J. H. Jackson, a cactus variety, in the full sunlight; the buds blasted and I got but few flowers at any part of the season. Last spring I planted the Jackson in a partially shaded place, and all through the latter part of July and August it produced beautiful flowers. Then it rested for a while, and in September it commenced blooming again. During the last week in September I picked a fine specimen bloom, leaving plenty of buds on the bush. I permit my plants to bloom when they get ready, bloom all summer if they want to, and they always seem ready to do it again next year!

Rhode Island.

F. S. B.

[EDITOR'S NOTE:—Everything depends on local conditions; and Rhode Island seems to be peculiarly suited to the dahlia; yet, in Newport, many of the best gardeners prefer late planting.]

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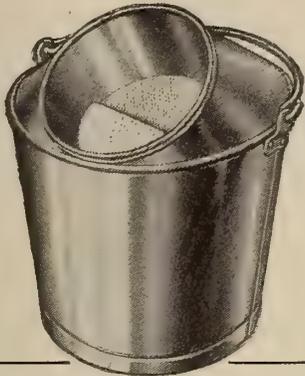
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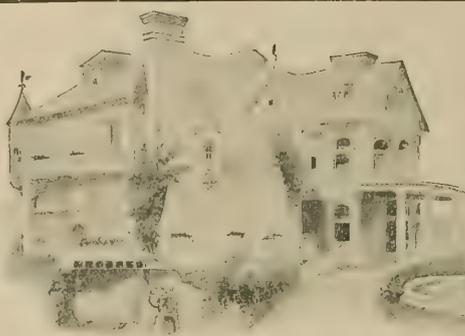
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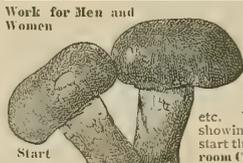
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A Fertilizer for Bulbs

FOR several years my narcissus and tulips have been a disappointment to me. I carefully applied manure every fall, but the blossoms were small and sickly. Early last spring I applied a fertilizer that I had found very satisfactory the year before on my flower beds—a combination of slaked lime, hen-manure and wood ashes. My



Enormous narcissus and tulips, with stems averaging twenty inches. Grown with a combination fertilizer

narcissus last year were three inches across, with strong and stocky stems, from twenty to twenty-five inches in length. Many of the narcissus had two blossoms to a stem.

My tulips were gorgeous and simply enormous, nearly every one from six to eight inches wide with stems from eighteen to twenty-two inches. The combination of fertilizer acted in a marvelous manner on my soil.

New York. HERBERT PEMBROKE.

Is Gunnera Hardy?

IN THE GARDEN MAGAZINE for November, 1909, you speak of the gunnera as not being hardy north of Philadelphia. In 1905 I purchased *Gunnera scabra* from nurserymen in northern New Jersey. Not knowing it to be a waterside plant and supposing it to be perfectly hardy, I set it on a high point, in a heavy clay, limestone soil. The first winter it was well protected; since then, it has had a handful of leaves or straw thrown over it and no more attention paid to it. In that condition it has stood 15 degrees below zero, and two severe droughts. If there is a more trying climate for shrubs and flowers than central Illinois, I have yet to hear of it.

It is true the leaves of my gunnera have never attained the dimensions quoted in the catalogues, thirty inches being about the maximum diameter. With this experience, do you think it might safely be classed with the hardy perennials?

Illinois. MRS. W. G. R.

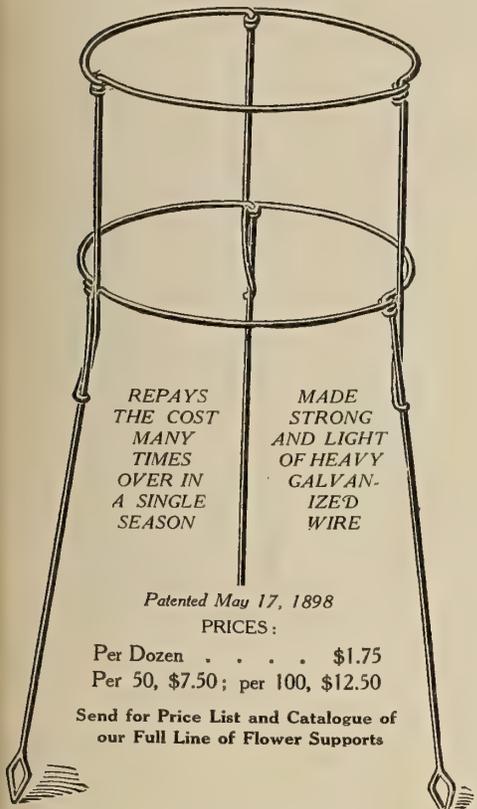
[Technically yes, but practically no. There is little point in having a gunnera, unless it develops leaves five or six feet across. Unless a plant will do what it is famous for, why grow it? Our business is to save people disappointment. Gunnera may be hardy in the North, but it is not hardy enough to be satisfactory. — EDITOR.]

Feeding the Lawn

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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Send with order names of two flower-growing friends and we will add FREE sample of our delicious Mexican Cactus Candy. FREE CATALOGUE, "Cacti, and How to Grow Them." Write for it today.
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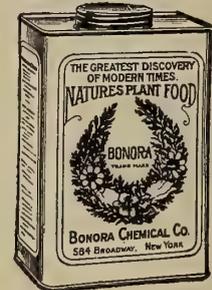
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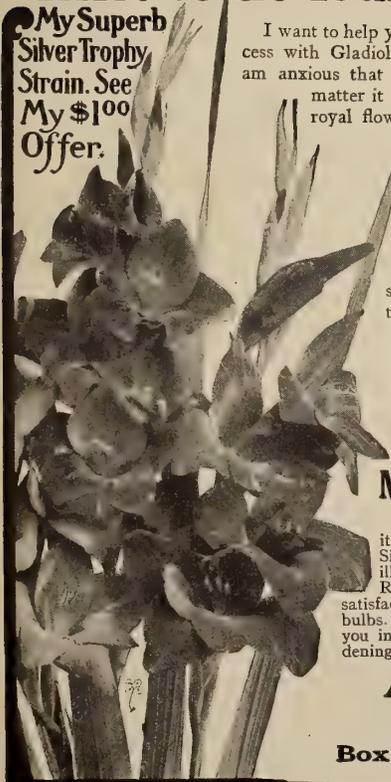
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GIANT RADISH FROM JAPAN

Sa-kura-jima

Grows to Weight of 10 to 40 Pounds



FROM PHOTOGRAPH, SHOWING SIZE COMPARED WITH WATER BUCKET.

Has Been Grown 1½ feet Long and 10 in. Diameter

This Giant Radish is a distinct novelty, in fact the greatest novelty of its kind ever introduced in America. The Fruit-Grower could hardly believe the stories told about this wonderful radish, so we sent out seeds for testing to our subscribers last year. We are "from Missouri," but we were certainly "shown" by our readers, for they grew radishes weighing all the way from 10 to 42 pounds. The story of the growing of these Giants is told in February, our Gardening Number. Sample copies sent on request.

What do you think of a radish which grows to weigh 10 to 42 pounds, which is often a foot and a half long and 10 inches through; which is as tender and sweet during hottest July weather as earliest spring radishes; meat crystal white, solid, texture like a fine apple, and never becomes hot or pithy; which can be eaten raw like an apple, cooked like turnips, and pulled late in the fall, keeps all winter as sweet and crisp as when pulled. The tops, which grow 2 to 3 feet long, cooked as "greens," are to be preferred to spinach and mustard.

This describes the Giant Radish from Japan, "Sa-

kurajima," introduced in America several years ago by the U. S. Dept. of Agriculture, and has proved of great value here. Among the first places tested was at the Long Island Experiment Station, and The Fruit-Grower received a "tip" as to its value from Director Fullerton.

Planted late, it will extend the radish season through the entire summer, being at its best in hottest weather. Seeds planted to mature in late autumn will keep nearly all winter, almost until radishes come again.

Hon. Wm. J. Bryan, hearing we had this seed, wrote: "I saw the giant radish during my tour of Japan and have been intending to send there for seed. The flavor is good. I will buy seeds of you or subscribe for your paper—in fact, you can trade with me on your own terms."

Mr. Bryan is a Fruit-Grower subscriber.

Director Fullerton writes that during 1909 he grew one of these radishes which weighed forty-two pounds, and that he expects during the present season to break all records by growing one which will weigh 50 lbs. Read his article in The Fruit-Grower.

SEEDS FREE with a Trial Subscription to The Fruit-Grower

Appreciating the great value of this new radish, The Fruit-Grower has purchased practically all of the seeds of this variety in the United States to be distributed free to new subscribers. We canvassed the entire country, and it would not be possible to secure more seeds, even from Japan.

The seed is not for sale at any price, but we will mail a trial packet free to every one who sends 50c. coin or stamps, for a year's trial subscription to The Fruit-Grower. Regular rate \$1.00, but we offer it to you at half price, to get you interested, and convince you that we have the best paper of the kind in existence.

Send for a free copy of February, annual Gardening

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issue, handsomely illustrated, 84 pages, and read how our folks grew the big radishes; leading fruit paper of America. Many of our 100,000 readers write that a single number is worth the price of a whole year's subscription. Ask the editor of this paper about The Fruit-Grower. He will recommend it, and he knows that we could not afford to make this offer unless The Fruit-Grower would "make good," and that Sakurajima Radish had been fully tested and all we claim for it. Liberal cash prizes for largest radishes grown. Send 50c. our risk for a year's trial subscription, and seeds will be sent by return mail, FREE. Write at once, before supply is exhausted.

FLOWERING SHRUBS FOR A SHADED WALL

What rather tall, flowering shrub can be grown directly against the north wall of the house? Connecticut. J. C. D.

—The only flowering shrubs that might be satisfactorily grown by the north wall of a house, are honeysuckle for summer flower and forsythia for spring flower. Both of these can be nailed to the wall.

GROWING HOLLY FROM SEED

Is it possible to start American holly from seeds, and how?

Missouri. P. E. L.
—It is possible to start holly from seeds; but they often do not germinate the same season as sown, on account of their hard outer covering. If the seeds are sown as soon as they are ripe, in very sandy soil, and kept from drying out during the summer months, they will undoubtedly germinate the following spring. Sow the seeds rather deeply and cover the bed with a winter mulch, which can be easily removed when freezing weather has passed.

EXTERMINATING ANTS

We are troubled with ants in the house during summer. How can we get rid of them?

Kentucky. G. C. T.
—Watch the ants and ascertain where it is that most of them enter the house. Squirt kerosene frequently into the cracks through which the ants make their appearance, and pack the cracks with cotton cloth, driving it in tightly with a knife. Another way of catching ants in houses is by soaking small sponges in sweetened water and placing them where the ants will find them. Immerse these sponges at intervals in hot water to destroy the ants which have collected.

GROWING KAFFIR CORN

How can I grow Kaffir corn? Maryland. J. F. P.

—Kaffir corn is adapted to all soils, but makes its best development on rich corn lands. As a rule it should not be planted until after corn, the same cultivation being given to both crops. The seed-bed for Kaffir corn is prepared exactly as that for corn, and the soil should be pulverized just before planting in order to kill all the weeds. The best results have been obtained when the seeds were drilled in three to five inches apart in rows three feet apart. It is better to seed too thickly than not to use enough. It should be drilled in to about the same depth as wheat; from six to seven pounds of seed is sufficient to plant an acre.

A HEDGE OF HONEYSUCKLE

Which honeysuckle will be most satisfactory as a screen to separate front and back yards? Illinois. G. V. A.

—For a hedge or screen plant Hall's honeysuckle is ideal. It has smooth, glossy, dark green foliage and fragrant flowers. Another species that would well suit your purpose is the Chinese fragrant bush honeysuckle (*Lonicera fragrantissima*), a vigorous grower of rather straggling habit. The pinkish white flowers, borne in early spring, are very fragrant and its dark green foliage is retained late in the winter, in sheltered locations sometimes all winter. The plant is not particular as to soil or situation, and is absolutely hardy.

KILLING PLUM CURCULIO

What is the remedy for plum curculio? New York. M. E. W.

—Spread a blanket or screen of some sort under the plum tree infested by the curculio, and jar or shake the tree. The beetle will lose its hold, fall into the blanket, and can then be easily killed. There is a curculio catcher on the market in the form of an inverted umbrella mounted on a frame resembling a wheelbarrow. This is wheeled under the tree, the branches are jarred by a padded stick or mallet, and the insects are caught in a tin can in the centre of the umbrella. This is a positive remedy if it is commenced early in the season and done every day for two or three weeks. Undoubtedly, the cheapest remedy is Paris green mixed with Bordeaux; use arsenate of lead with the Bordeaux upon Japan and American varieties of plums.

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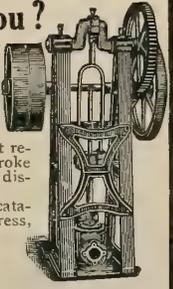
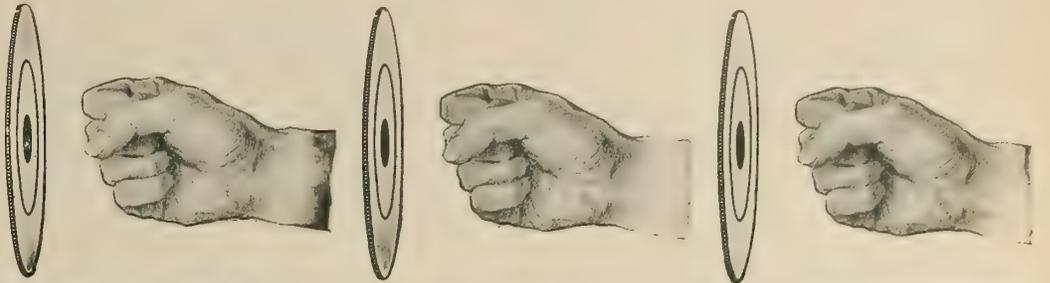
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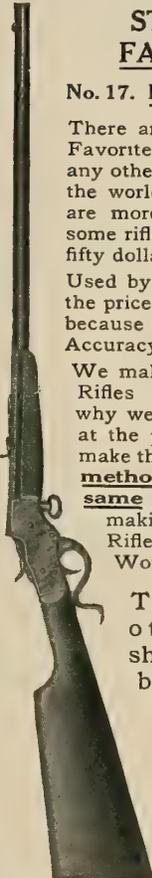
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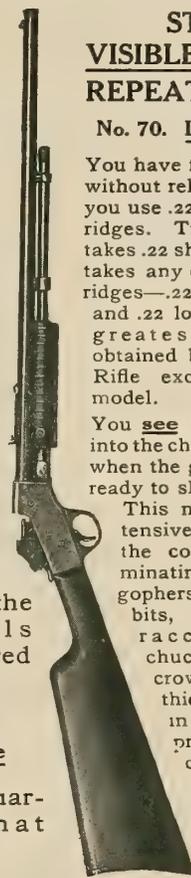
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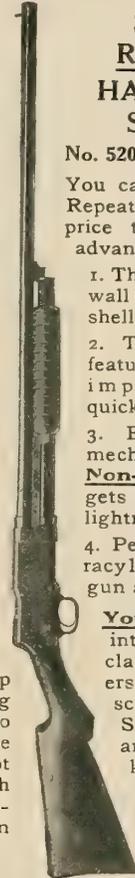
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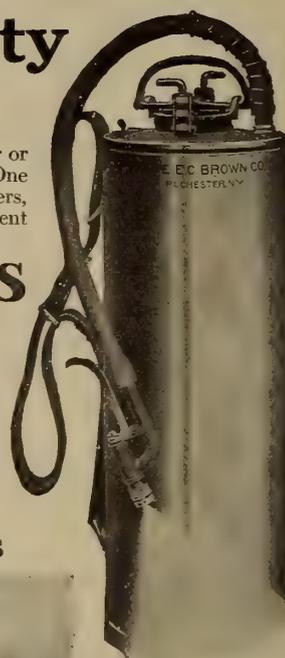
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will show you just what has been done by the use of concrete in building attractive homes. It contains both pictures and floor plans, and will be a helpful and intelligent inspiration to every prospective home builder.

If your present or prospective home has any grounds whatever, even a small back-yard, you will need at once a copy of our book, **“Concrete Construction about the Home and on the Farm,”** which is sent free. It will suggest many useful and beautiful things that you can make yourself of concrete for outdoor use.

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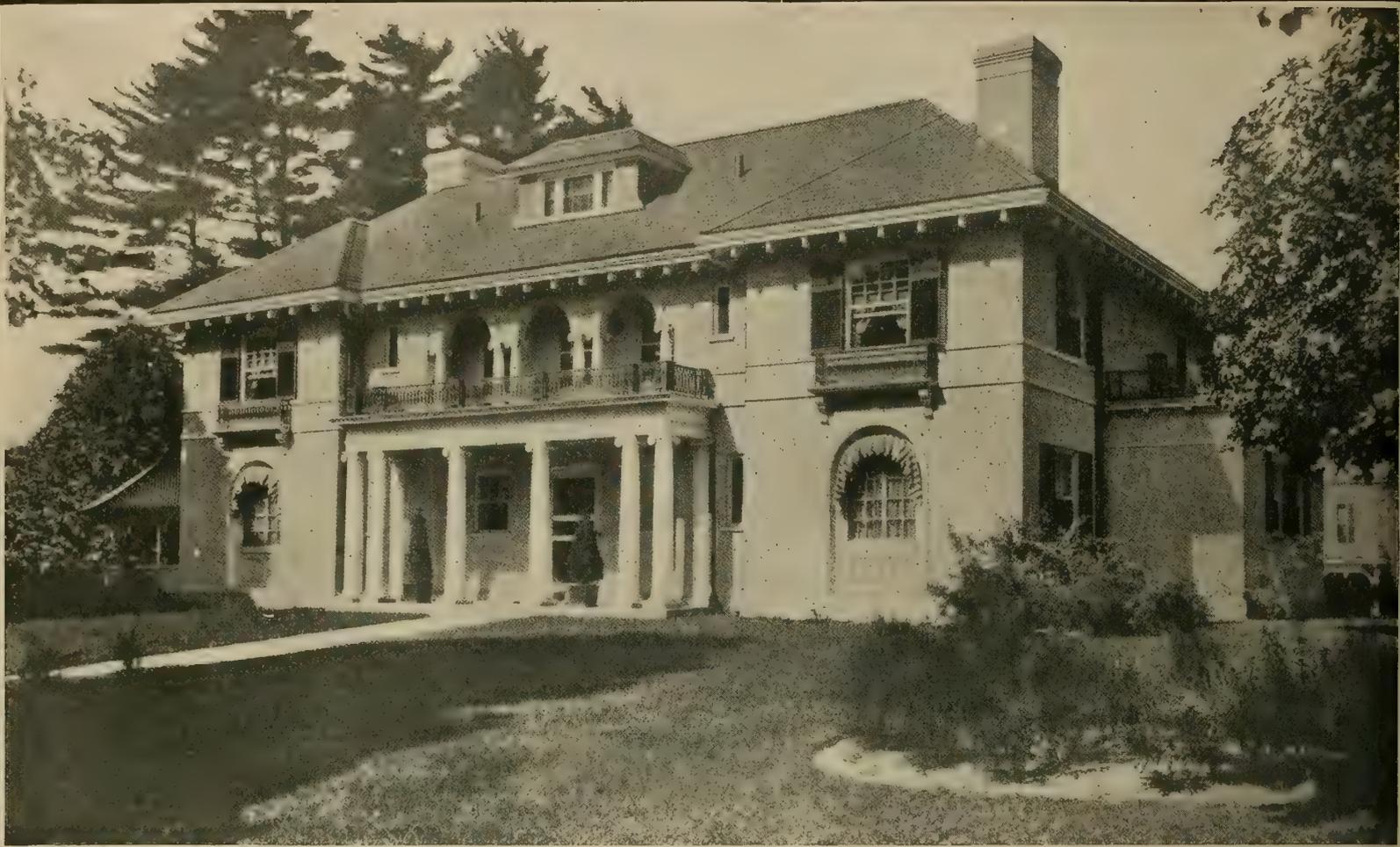
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THE GARDEN MAGAZINE



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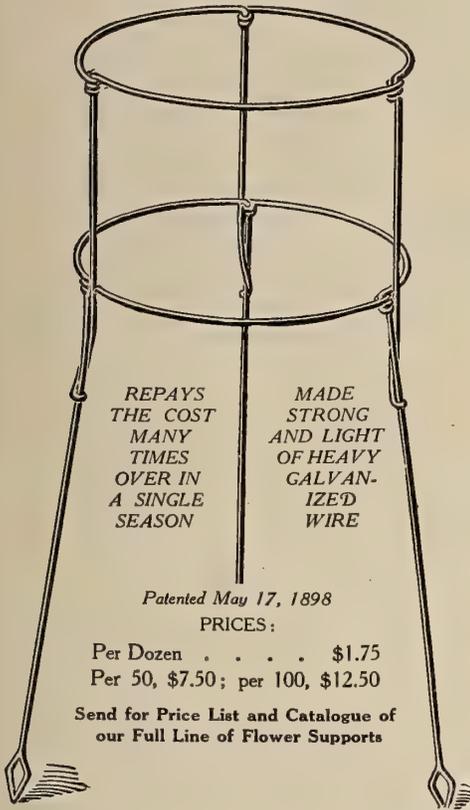
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Now let's get down to *business*. I've got a cigaret that will make good—or I couldn't afford to buy this space or make any such offer.

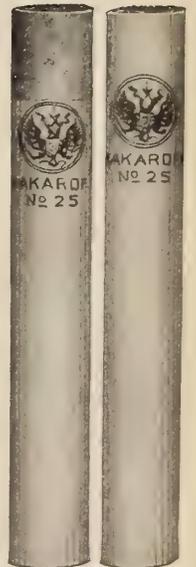
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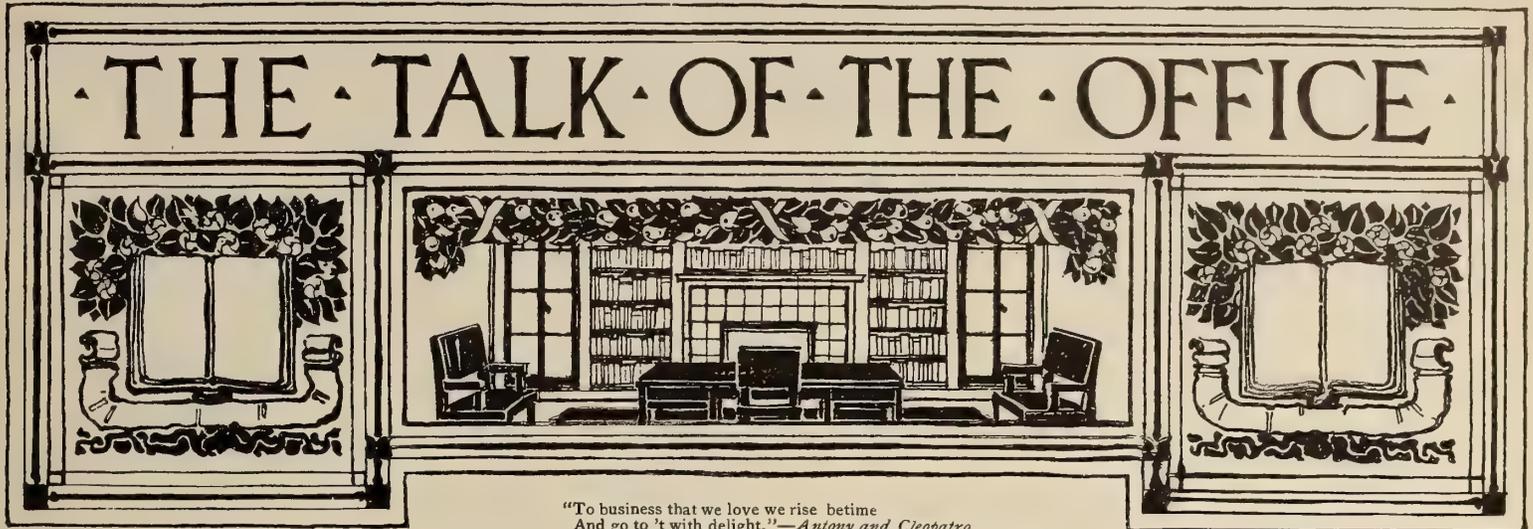
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THE VALUE OF BOUND VOLUMES

It is a curious thing that a bound volume of this magazine should become desirable and popular apparently in exact proportion as it becomes scarcer.

We have printed in this space for many months statements about the bound volumes of *The Garden Magazine* and urging readers to bind their numbers because at small expense a real encyclopedia of garden information can

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VI. August 1907 to January 1908 . . .	30	\$3.00
VII. February 1908 to July 1908 . . .	20	2.00
VIII. August 1908 to January 1909 . . .	27	2.00
IX. February 1909 to July 1909 . . .	108	2.00
X. August 1909 to January 1910 . . .	207	1.35

and if you are interested in the subject, or likely to be, we advise you to buy now.

AT GARDEN CITY, LONG ISLAND

As these notes are written nearly a month before they are finally printed it is hard to give a real notion of what the rate of progress is at our new place in Garden City. At present there is a large hole in the ground, a spur track crowded with material and a desolation and chaos that promises little in the way of beauty. But things are really moving. The Recreation Ground, with its ball field and tennis grounds, has been plowed, harrowed, levelled and smoothed. A nursery of several thousand young evergreens has just been begun; our own gardener is on the place. The building has been revised, and we think much improved, the new drawings made, details worked out, and rapid progress is assured.

This little cut made from a rough sketch of the revised building does not show the Garden Court as it will be planted, but it does show, we think, a building much more attractive than the one printed in the April issue, and it has the added merit of containing about 45,000 more feet of floor space and avoids the long unbroken lines shown in our first architectural plan.

A PROFITABLE BUSINESS

There are many thousand women at work upon plans based on the idea of the "Pin Money Pickles," a hard and difficult task. There are a good many other women who know and use *The Garden Magazine* who can make money easier, we contend, than through cookery, by introducing this magazine among their neighbors. The Circulation Department of this magazine can tell you of instances where men and women have made little businesses of their own with no great labor and a steady profit. Write and ask for this information.

COUNTRY LIFE IN AMERICA FOR JUNE
VACATION NUMBER

If readers of *The Garden Magazine* do not see *Country Life in America* regularly they are missing an inspiring pleasure which all country lovers need. If the city walls appeal to you strongly "Country Life" is not for you, but if the spring air stirs your blood and all the out-door interests waken in you, a dose of *Country Life in America* will be a tonic of joyousness.

The June issue of *Country Life in America* is the annual vacation and outing number. Fishing, camping, outdoor photography, horseback riding, automobiling and golf are some of the topics discussed. The keynote of the number is found in the article "Vacation Trips for Everybody," which is a general round-up of the where-to-go problem.



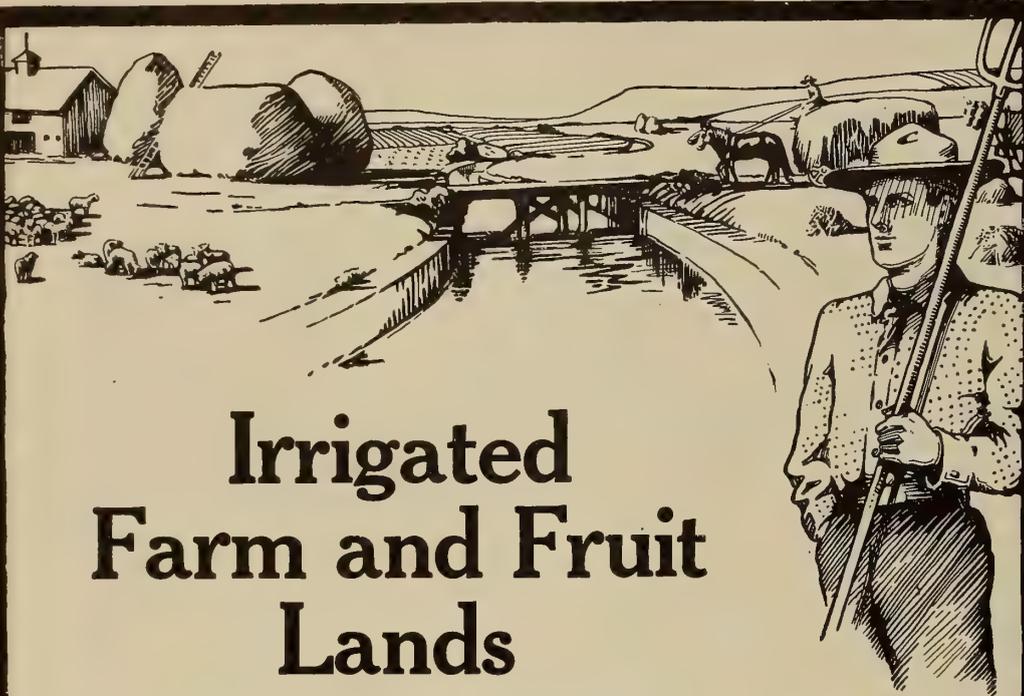
be placed in your library, and we are able to urge this with a good conscience as we are glad to supply bound volumes, cases for binding, or bind the reader's own numbers at practically cost—it is not a matter of profit. Yet constantly we find that the demand comes so late that we are not able to supply it.

Here is a statement of what stock we have of *The Garden Magazine* in the shape of bound volumes:

Volume	Copies	Each
I. February 1905 to July 1905 . . .	4	\$4.00
II. August 1905 to January 1906 . . .	12	4.00
III. February 1906 to July 1906 . . .	9	4.00
IV. August 1906 to January 1907 . . .	3	4.00
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Rough sketch of new building



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If you want to know more about the possibilities of making your efforts bring you greater returns, write for information about these irrigated lands. Maybe the "dry-farming" territory will interest you. Write tonight and state what section you are most interested in. Don't delay. The information will cost you nothing and will pay you well. Low round-trip Homeseekers' fares effective twice each month, also round-trip Summer Tourist tickets on sale daily June 1 to September 30. Long limits and stop-overs.

The Scenic Highway Through the Land of Fortune

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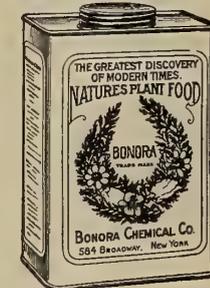
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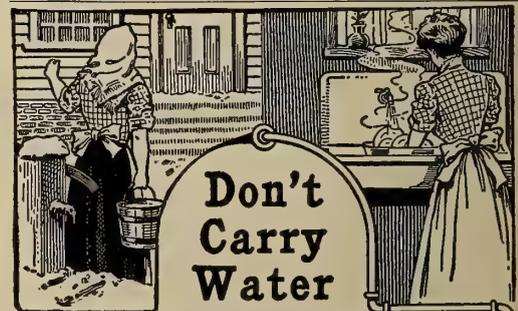
grape vines, fruit and shade trees, etc., etc. No other fertilizer can compare with it. Order from your seedsman or direct. Put up in dry form in all-size packages as follows:

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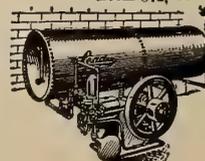


You need never carry another pail of water or even go out of the house on stormy days. Put running water in your home—in the kitchen—bathroom—toilet—and have an adequate supply in the barn for watering stock—washing carriages, harness—for the lawn—garden—or for protection against fire—besides. A

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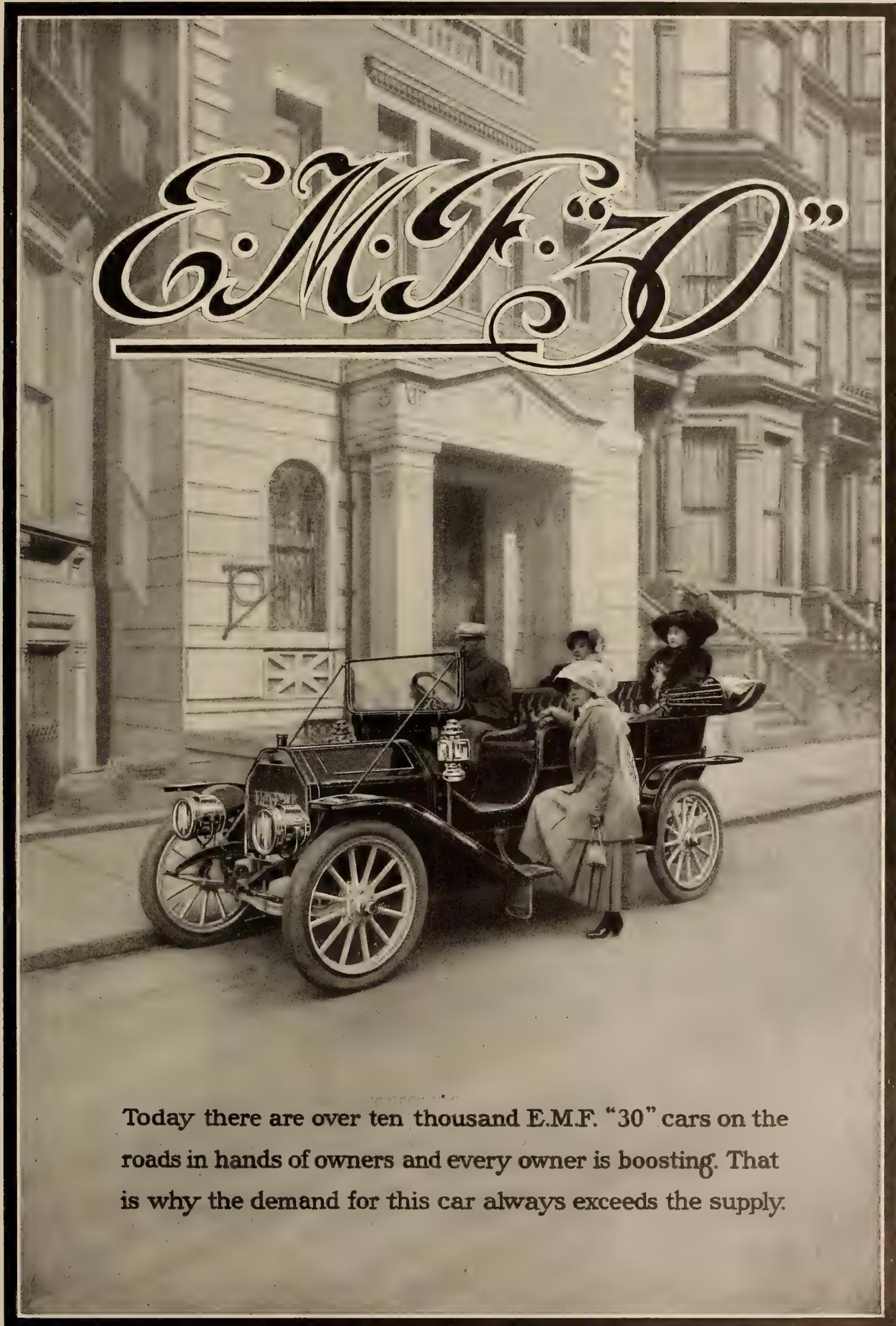
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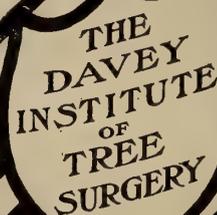
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The Garden Magazine

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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 Busy Month of June

BEFORE the first of June it is usually safe to put out all the tender plants for summer bedding, but do not be in a hurry to get them out because May is drawing to a close. They suffer from cold, and even if they are not killed their growth is checked. And remember this: A checked plant never fully recovers that same year.

One thing you must do before June is to plant hardy chrysanthemums for fall flower. These will give you bloom and garden color when everything else has succumbed to frost. Plant a mixed border and water freely all summer.

With the first returns from the vegetable garden, which you will be enjoying this month, do not allow your enthusiasm to obscure the necessity for succession sowings. Small sowings and frequent will give a continuous supply of really succulent fresh vegetables throughout the year. That is far better than sowing the garden once for all and having the crop in perfection of quality once only. Study the planting table in the April GARDEN MAGAZINE and figure out the quantities you want.

The best aid to exact figuring that has ever been published is Mr. Kayan's table in THE GARDEN MAGAZINE for March, 1908.

Another important thing is to look after the strawberry beds and arrange for new ones. It is better to plough up a bed that has already borne two crops. Use the ground this season for late cabbage, celery. A bed that has just borne its first crop must be encouraged to make new plants by keeping the rows to the prescribed width. Do not allow the runners to get ahead of them.

Rigorously weed out all beds and rows throughout the season. The bed newly set this spring which has not been allowed to fruit needs just as much attention. If neces-

sary, you can set your bed next month from runners made now. Plants that are making runners and matting need attention to see that the new runner plants are properly spaced. Some hints on successful strawberry culture will be found on page 297.

Look out for the white grub at the roots of the strawberries. When a plant shows signs of attack, pour a tablespoonful of carbon bisulphide into the ground. Do not handle this liquid, however, near an open flame. It is explosive.

If you want the best quality tomatoes, earliest and latest, train your plants to single stems tied to stakes, cutting off all laterals. Your crop per plant will be smaller, perhaps, but more plants can be accommodated to a given area and their fruit is perfect.

Let the chickens run into the gardens wherever practicable to help control insect pests.

Health for the Roses

Roses are the most important flower of the month, and if you would have good roses always, attend now to keeping the plants healthy. The most successful rose amateur near New York follows this spraying calendar:

May 17. Potassium sulphide, one ounce to two gallons of water.

May 21. Whale oil soap, one pound to eight gallons of water.

May 24. Potassium sulphide.

June 1. Potassium sulphide.

June 7. Lead arsenate, one pound to ten gallons of water.

June 14. Arsenate of lead.

June 21. Whale oil soap.

June 28. Arsenate of lead.

Watch for the rose bug. You cannot absolutely control it, especially on sandy soils. But lessen next year's number by poisoning as many as possible this year; therefore, spray with lead arsenate. The only immediate palliative is to hand-pick and throw the bugs into kerosene.

Keeping the foliage healthy now will ensure a good crop of blooms on the Hybrid Teas in September.

Spraying Made Easy

Do not forget to spray, especially in the fruit garden and the vegetable garden. The cost is comparatively slight and the gain, especially in seasons when insect pests are at all troublesome, is out of all proportion to the cost. Perhaps one very good reason why the home garden is not persistently sprayed is the idea that spraying material is bothersome to handle. We have tried to simplify this for our readers and in this number will be found an article in which the

most approved spraying formulas are reduced to terms of kitchen utensils. The best spraying calendar which will tell you how to recognize the cause of the trouble is Dr. Felt's in THE GARDEN MAGAZINE for April, 1909.

Now is the time to prune shrubs. Buy a pair of good pruning shears, look over the shrubbery and remember the rule: Prune after flowering. Cut out the old wood so as to induce new growth which will bear flowers for next year.

Plant *Clematis paniculata* now for flowers in August.

Sow annuals for late flowering.

Mow the lawn once a week.

Mulch all small fruits.

Disbud grape vines.

If weeds are troublesome along the walks and drives try some of the special liquid weed-killers. They save backache.

For indoor flower later on buy Bermuda lilies (*L. Harrisii*) freesias, amaryllis and other bulbs. Azaleas that have done flowering indoors should be plunged outdoors in a shaded place and watered all summer.

Finish budding roses in the greenhouse benches. Pot all poinsettias for winter flower.

Plant violets in the greenhouse, but keep everything as cool as possible.

Dig up and dry all hardy bulbs that have done flowering. Spread them out thinly in a dry, shaded place and finally clean up and pack away for replanting in the fall.

The characteristic gardening effects of this month are roses, lilacs, azaleas, peonies, German irises, rhododendrons and strawberries.

Arrange to visit collections in parks and nurseries with a view to selecting the best specimens for later planting.

Trim hedges for the first time in the early part of the month, cutting back one-half of the new growth.

If you would enjoy cut flowers longest, do not wait until they are fully expanded in the garden but cut them just before maturity and twenty-four hours before you really need to use them. Plunge the entire stem into water immediately after cutting and put the container and all in a cool room or cellar. The flowers will absorb an enormous amount of water. Flowers for shipping should under no circumstances be packed before they are thus treated.

We should like to hear of readers' individual experiences and short notes on observation of anything that is not mere routine work. Lots of things will be happening in rapid succession from now on. Make note of them and let us hear of them. Our Readers' Experience Club is a medium of exchange for amateurs' own ideas.



Four boiling water on tobacco stems packed tight, and allow it to stand for several hours. Then pour off the brown liquid and dilute this four times for use on house plants.



The gardener's standby for fungous diseases, Bordeaux. One tablespoonful copper sulphate, 1 1-2 tablespoonfuls quicklime, four quarts water. One tablespoonful of the copper salt equals one ounce



Put a tablespoonful of fresh pyrethrum powder to two quarts of water for insect pests indoors. Allow it to stand for a while before using. If the powder is stale it will be of no value

Spray Formulas in Terms of Kitchen Utensils—By W. C. O'Kane, New Hampshire

A GUIDE FOR THE HOME GARDENER WHO WANTS TO USE STANDARD REMEDIES, BUT ONLY NEEDS TO MAKE A GALLON OR SO AT A TIME

DID you ever watch a patch of promising muskmelons in your home garden shrivel away to a brown desolation in three days' work of the downy mildew? They have done it in mine, more than once. Through May, June and July the vines thrive, and the young melons grew stouter and fuller of promise. But with each August the little patch came to nothing, or at best matured a scanty crop of doubtful quality.

It was easy to tell when the mildew started. It would have been easy to check it. Bordeaux mixture promptly applied would have turned the trick. Furthermore, there was a small sprayer available, and the ingredients for making up the mixture were at hand.

But there was the difficulty of measuring out and mixing up *the small amounts of material needed*. A gallon of Bordeaux would have been ample for my whole garden, and my neighbor's, similarly troubled. But how go about it to make up such a foolishly small quantity?

Now, expert advice on spraying is easily to be had by any of us. Your state experiment station publishes complete and reliable bulletins that are yours for the asking. The United States Department of Agriculture, Bureau of Entomology, issues many valuable publications.

But state stations and the United States Department are maintained for the benefit of farmers. Their formulas are based on wholesale operations. The standard of measurement is usually the barrel—fifty gallons. That's a small amount for the man with a thousand trees. But it's overwhelming for the man with half-a-dozen melon vines: like hauling out a fire-hose to water a potted geranium.

Just use, you say, the proper fractional part of the amounts called for in the formula. Well, how would you go about it to

measure out one-fiftieth of four pounds of copper sulphate? Not having a set of chemist's balances handy, would you guess it for a teaspoonful or a cupful? The regular, standard formulas are here given in the quantities that you and I are apt to need in our home garden. The amounts are expressed throughout in terms of every household—the teaspoon, the tablespoon and the mason jar. You will need nothing to measure with or to mix with.

If possible, in measuring and mixing your spray materials use old utensils and keep them apart for this use. Put them in a safe place. You may use good silver and glassware, and afterward wash it clean, but wash it very thoroughly, in hot water. Arsenate of lead, especially, sticks tight. It is this fact that makes it particularly valuable as an insecticide: rain does not

wash it off readily. Bear this fact in mind when you measure out this arsenate.

BORDEAUX MIXTURE

This is undoubtedly the best known and most widely used combination for the control of fungous diseases. Among the fungicides it occupies a position like that formerly held by paris green among the insecticides, before the introduction of lead arsenate.

In your garden you'll need it for anthracnose of the bean and cucumber, for leaf spot of the beet and currant, for early and late blight of the potato, and a dozen other ills. Don't forget that any fungicide is a preventive rather than a cure. It must be applied early, before the disease has made a good start.

Standard Formula. The regular formula now in general use calls for four pounds of copper sulphate, four to six pounds of quicklime, and water to make fifty gallons.

To Make One Gallon. Take one heaping tablespoonful of copper sulphate; one and a half rounding tablespoonfuls of quicklime.

This is the equivalent of one ounce of the copper sulphate and one and a quarter ounces of the quicklime. If your copper sulphate is in large crystals, break them up with a hammer until there are no pieces larger than one-fourth to one-half inch. The lime must be fresh, not air-slaked. It should be pounded up fine with a hammer, unless you buy it already ground up.

Dissolve the copper sulphate in one quart of warm water. Place the lime in a separate vessel, and slake it slowly with a little water. After it stops bubbling add enough water to make one quart in this vessel.

Now pour your quart of copper sulphate solution and your quart of lime solution together into a bucket—but do it this way: pour a little from each into the bucket and then stir, then a little more from each and



The standard remedy for sucking insects—kerosene emulsion. Cube of soap one inch square, one-half pint of water, one pint kerosene; mix with egg-beater

again stir, and so on. When you've done this, you'll have two quarts of bluish-white mixture in the bucket.

Add to this two quarts of water, making four quarts in all of your mixture. This is now ready to spray. It should be shaken or stirred frequently while being sprayed; and it should be made up fresh each time you spray.

AMMONIACAL COPPER CARBONATE

It may be used on ripening fruit, instead of Bordeaux, without leaving visible sign, whereas Bordeaux will persist in more or less conspicuous spots.

Standard Formula. In making up a full barrel of this fungicide, take six ounces of copper carbonate, three pints of ammonia, and water to make fifty gallons.

To Make Two Gallons. Take two barely level teaspoonfuls of copper carbonate; and two fluid ounces of ammonia.

This amount of copper carbonate is the equivalent of one-fourth ounce. It may be secured at any drug store, and should be about as coarse as granulated sugar. You can measure out two fluid ounces of ammonia by taking one-fourth of a half-pint bottle. Or you will probably find somewhere around the house a two-ounce or a four-ounce bottle. The illustration shows the comparative size of a two-ounce bottle. If you are in doubt, determine the matter by filling a pint mason jar with the bottle you are to use. There are sixteen fluid ounces to the pint.

Place your copper carbonate in an empty quart jar, and pour your ammonia over it. Use just enough ammonia to dissolve it. It may take a little more or less to do this, because ammonia varies in strength. Fill up the jar with water and allow any sediment to settle. Pour the clear, blue liquid into your spray-bucket, and add seven quarts of water, making eight quarts of the spray mixture in all.

Like Bordeaux, this fungicide deteriorates on standing, and should be made up fresh each time you want to spray.

FORMALIN

Where potatoes are scabby, or where onions are infested with smut, experience has shown that the trouble may largely be averted by treatment with a solution of formalin. Other materials are sometimes



A cube of soap one inch square dissolved in four quarts of water will control aphids and soft scales on house plants

used, such as quicklime or potassium sulfid. But the formalin treatment is effective and handy.

For Small Lots. Take two fluid ounces of formalin (this is the same as one-eighth of a pint) to four gallons of water. Immerse the uncut potatoes in this and let them remain for two hours. Then remove them, dry them a little, and plant in scab-free soil.

For onion smut use two fluid ounces of formalin to four gallons of water. Sow your seed, but leave uncovered in the drill. Then sprinkle the seed lying in the drill with the formalin solution, thus moistening the ground slightly just adjacent to the seed.

For grain smut use two fluid ounces of formalin to six gallons of water. Pour out your seed in a pile on the floor. Sprinkle it with the formalin solution enough to moisten all the grains. Let stand for three or four hours. Then spread out and dry before planting.

LIME-SULPHUR

Properly, lime-sulphur mixture may be considered both as a fungicide and as an insecticide, for its use as a winter wash for scale on fruit trees is usually followed by reduced injury from fungous diseases as well.

However its principal use is for the control of San José scale. The strength ordinarily used is suitable for winter applications

only; never when the trees or shrubs are in leaf.

The process of making this is both tedious and disagreeable and it must be done out of doors. I do not advise home preparation on a small scale.

There are reliable brands of concentrated lime-sulphur on the market which you can purchase in fairly small quantities. If you are in doubt as to what brands are trustworthy, write your state experiment station. Some stations test out these preparations each year. If yours has not done so, it can tell you of some station that has.

Standard formula. Experimenters have pretty well settled on the following proportions: fifteen pounds of flowers of sulphur, fifteen to twenty pounds of quicklime, water to make fifty gallons.

To Make Two Gallons. Take a pint mason jar and fill it three-fourths full of flowers of sulphur. Similarly, measure out two-fifths of a pint of quicklime, pounded fine.

This will give you three-fifths of a pound of sulphur and just a trifle over three-fifths of a pound of quicklime. Be sure that the lime has not been air-slaked.

Now, place your lime in an iron vessel that will hold three or four quarts. Slake it slowly with hot water. While it is bubbling, place your sulphur in a separate vessel, and add enough water to it to make a thick paste. Pour this paste into your bubbling lime, stirring thoroughly. Add enough water to make two quarts. Now boil the mixture hard for an hour or more, adding hot water from time to time as the mixture boils away. When it is done the color will change from a yellow to a clear brown, and there will probably be particles of lime floating around in it. Remove from the fire, and add enough water to make two gallons, all told.

This should be sprayed while still hot. The composition changes on cooling, and much of the strength is lost.

PARIS GREEN

The old standby for leaf-eating insects is Paris green. Time was when London purple was much used, but its composition is variable, and considerable amounts of free arsenic were often present, causing burning of the foliage. To-day arsenate of lead, which is considered in the next section, is replacing Paris green.



To prevent scale on shrubs spray with lime-sulphur wash. Two-fifths pint quicklime, three-fourths pint flowers of sulphur, two gallons water

Poisoned bran mash to which the cutworm succumbs. One quart bran, one tablespoonful molasses, one teaspoonful Paris green.

Prevent scabby potatoes by using formalin: two ounces to four gallons water. This may also be used for smut on onions and grain

Standard Formula. Paris green may be used simply stirred up in water; or it may be added to Bordeaux mixture. The proportions used are one pound of Paris green to one hundred and fifty or two hundred gallons of water or Bordeaux. When used in water, two or three pounds of lime are added.

In Small Quantities. Take a heaping teaspoonful of Paris green to three gallons of water or three gallons of Bordeaux mixture. This is the equivalent of one-fourth of an ounce.

If you use it in Bordeaux, no lime need be added. If you use it in water, add three heaping teaspoonfuls of lime.

ARSENATE OF LEAD

About the only difficulty with old-fashioned Paris green is the fact that it washes off readily. In the case of some vegetables, such as cabbages, this may be no disadvantage. We prefer to have the poison come off before the heads are marketed. As a rule, however, it is a distinct advantage to have a poison that will adhere through showers. Arsenate of lead will do this.

Standard Formula. Arsenate of lead is used at strengths varying all the way from three pounds to the hundred gallons up to twenty pounds to the hundred gallons. It depends on the power of resistance of the species of insect for which the spray is applied. There is no danger of burning the foliage.

In Small Quantities. This chemical comes in the form of a thick, sticky paste. For ordinary use take one tablespoonful, just slightly rounded, to one gallon of water or Bordeaux mixture.

This is the equivalent of one ounce of the paste. You may use double this amount if desired in the case of resistant insects, such as the potato beetle.

KEROSENE EMULSION

For most sucking insects, especially the soft-bodied ones, such as plant-lice or aphids, a satisfactory spray is to be found in kerosene emulsion. It is not a poison, and is of no avail against such insects as the potato beetle; nor is a poison spray like arsenate of



Ammoniacal copper carbonate may be used on ripening fruit instead of Bordeaux. Two teaspoonfuls copper carbonate, two ounces ammonia, eight quarts water



A spray which sticks in spite of summer showers—lead arsenate. One tablespoonful (equal to one ounce) arsenate in four quarts water.

lead of any use against the sucking insects for which kerosene emulsion is adapted. The distinction should be clearly understood. Kerosene emulsion is a contact remedy. Paris green or lead arsenate are stomach poisons.

Standard Formula. In making up this spray mixture on a large scale the proportions call for one-half pound of hard soap, one gallon of water, and two gallons of kerosene. The soap is dissolved in the hot water, the kerosene is added, and the spray-pump is used to churn the mixture violently.

In Making Small Amounts. Cut from a cake of common, hard soap a cube about one inch square. Take one-half pint of soft water; one pint of common kerosene, or coal-oil.

Pour the half-pint of water into any convenient vessel holding a quart or more in which you can boil it. Shave the soap up fine and drop it into the water. Place the vessel on the fire, and bring the water to a boil, stirring to see that the soap is all dissolved.

Remove the vessel from the fire and, while the soapy water is still hot, add the pint of kerosene. At once churn the mixture violently. For this purpose you may use a common egg-beater. It won't hurt the egg-beater in the least: you can easily wash it clean afterward with soap and hot water. Keep on churning the mixture for several minutes until you have a creamy mass of even consistency throughout.

This is your stock solution. For ordinary summer use you will take one part of this and add to it fifteen or twenty parts of water.

TOBACCO WATER

Concentrated extracts of tobacco are now on the market and are handy and effective against soft-bodied insects, such as the common plant-lice. They are prepared for use by simple dilution with water.

If waste tobacco stems are available, as they are apt to be in any town or city where the manufacture of cigars or stogies is carried on, you can make your own tobacco extract as follows:

Take any convenient vessel and pack the stems down in it moderately firm. Pour over them boiling hot water, just enough to cover them. Let this stand several hours. Then pour off the brown liquor, and dilute

this as follows: one part of the brown extract to four parts of water.

SOAP SOLUTION

Most plants kept indoors develop sooner or later a crop of aphids, or some of the softer scales.

A satisfactory and handy spray or wash for these may be made by dissolving a block of ordinary toilet soap in water, and applying the solution with a small sprayer or simply by washing the plants with a rag or sponge.

To make the soap solution take a cube of white soap about an inch square or a trifle larger, shave it up fine, and dissolve in one gallon of warm soft water.

PYRETHRUM IN WATER

Ordinary pyrethrum or "insect powder," if fresh, is of considerable value as a spray or wash for plants indoors. If stale, it is of practically no value whatever.

The strength generally used is at the rate of one ounce of the powder to two or three gallons of water.

For Small Quantities. Take one heaping teaspoonful of the pyrethrum and add it to two quarts of warm water. Allow it to stand for a while before use.

POISONED BRAN MASH

There is no garden pest more exasperating than the cutworm. Somehow, we can stand it to have the edge of a leaf chewed, but when the offender cuts the whole plant off even with the ground, leaving it there for our observation next morning, we draw the line.

Cutworms may be poisoned readily, if we give them a prepared bran mash to feed on just before we set out our plants.

Standard Formula. In large quantities the mash is made by taking fifty pounds of bran or middlings, two quarts of molasses and one pound of Paris green.

To Make One Quart. Take one quart of wheat bran or middlings. Mix with this one teaspoonful of Paris green, seeing to it that the poison is thoroughly distributed through the dry meal. Now, take half a cupful of water, and add to it one tablespoonful of molasses, or the equivalent in any other sweet. With this water moisten the bran slowly. Use more water if necessary until the bran is rather damp, but not wet.

This should be distributed in teaspoonful doses every two or three feet over the ground to be protected.

COMBINED MIXTURES

Combining two different poisons so as to make a double-headed application at one time is often a labor-saving device for the amateur. Thus, Bordeaux mixture can be used in place of water in the preparation of Paris green, and in this way we can get one spray that will kill fungous diseases and chewing insects at the same time. Similarly, lime-sulphur can be used in combination with arsenate of lead (but a mixture of Paris green and lime-sulphur is injurious to the foliage.)

Taking Care of the Strawberry Patch—By W. W. Garrison, New Jersey

AS SOON AS THE FRUITING SEASON IS OVER IS THE TIME TO BEGIN LOOKING TO PLANT MAKING FOR THE NEW PLOTS—WHAT A MARKET GROWER DOES FOR MONEY CROPS

WHEN digging plants for setting I am always very careful to use nothing but heavily rooted plants taken right out of the row, throwing away all growth that is small and in any way inferior. I am a firm believer in the good results of plant selection.

The more roots a plant has the sooner it will start to grow; which anyone can readily prove by taking up a plant after it has been planted for, say, twenty-four hours. You will find that every root has produced several fibers, and the more roots a plant has the more fibers it produces, resulting in a much quicker and more vigorous growth. Taking plants from the middle of the bed and saving the row plants for fruit, is simply a case of "robbing Peter to pay Paul."

This kind of continued impoverishment of the vigor results in the "running out" of a variety. An instance: the old Gandy when first introduced produced a most satisfactory crop of berries. Today, however, one is not generally likely to get more than two or three pickings from this old favorite; yet I find no trouble in producing a good crop, and I attribute it to proper selection of the strongest plants for new beds. All strawberry plants are not necessarily good fruiters and Gandy makes more barren plants probably than any other variety in existence. You can improve the productiveness of any variety that has fallen away from the normal by cutting out all barren plants when clipping the blossom from the new bed. Let me cite an actual case:

Some years ago I came into possession of the variety Superior, which I found to be really good on all points except size. A heavy yielder of finely flavored and colored berries, a good bed-maker, a firmer berry I had never seen—but it was much too small. I tried to remedy this by careful selection for eight years, choosing only the largest and best plants that matured each year in forming new beds, cutting off the surplus runners after a reasonable number of first-made plants were well rooted.

By this method, I improved the size of the berries so materially that several of my neighbors plowed up their beds of this same variety grown on in the ordinary way, replanting with plants from my field. In 1908 from one acre of these plants I made returns that in comparison with crops in other fields showed over \$187 advantage. The ground was manured with stable manure broadcast before planting and 100 pounds of nitrate of soda on March 29th. The first picking from this plot was made on May 23rd, and sold at the flat rate of 13c. per quart; the last picking on June 11th, sold at 7c. per quart. The total

crop picked amounted to 5,124 quarts, which sold in New York and Brooklyn markets, at wholesale, at an average of 7½c. and 8c. per quart.

Received from commission merchants	\$396.91
Freight, cartage and commission	106.08

Net proceeds	\$290.83
Picking deducted at \$.01½ per quart	76.86

Actual profits \$213.97

As a companion to show what a difference there may be in returns from strawberries according to the variety, look at the figures for an acre of Stevens Late Champion, an exactly similar grower and treated the same. First picking made June 2nd, sold at 9c. per quart; last picking made June 12th, sold at 4c. per quart. Total number of quarts picked was 2,600 sold at an average of 6½c. per quart.

Received from commission merchants	\$164.67
Freight cartage and commission	49.56

Net proceeds	\$115.11
Picking deducted at \$.01½ per quart	39.00

Actual profits \$ 76.11

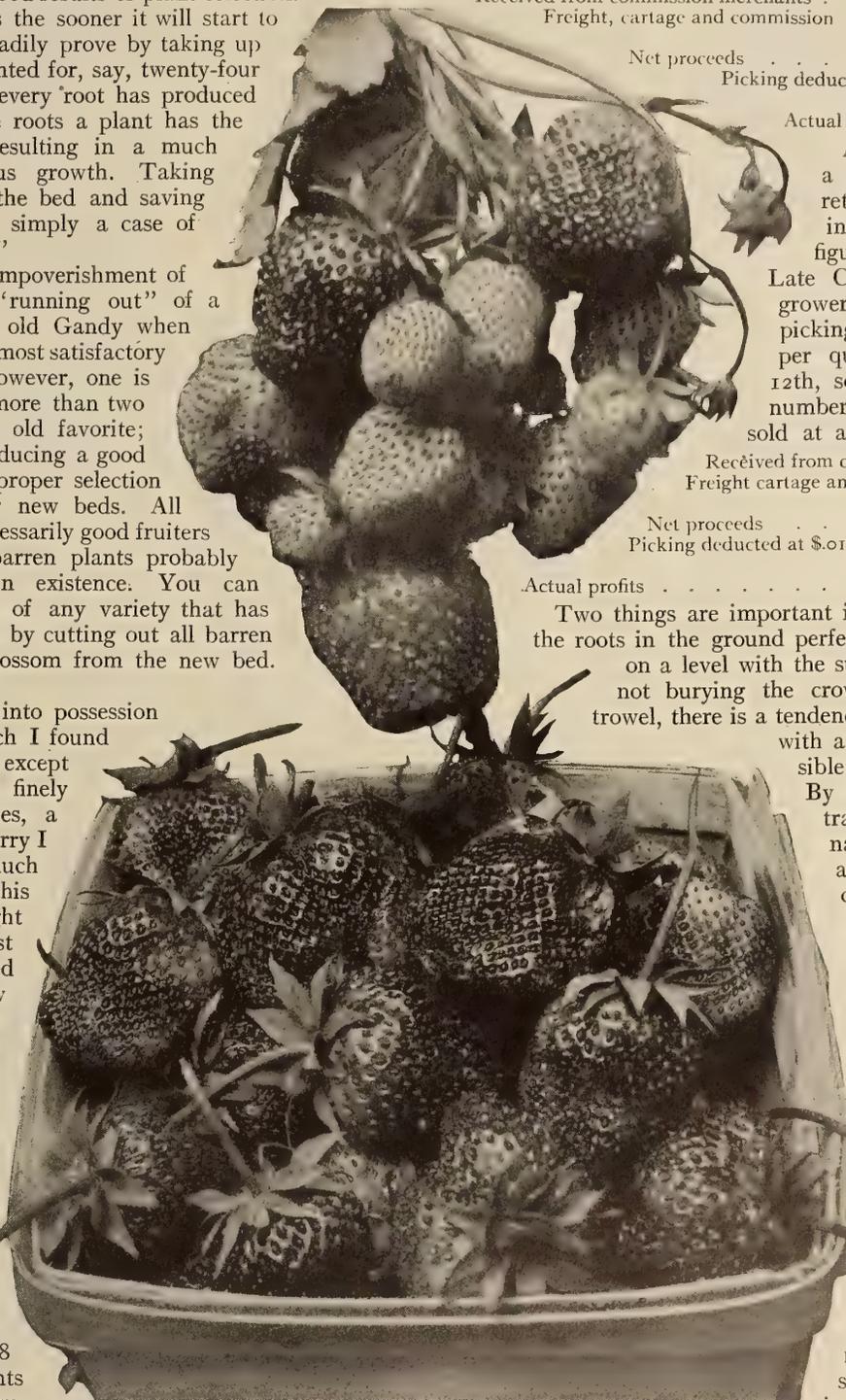
Two things are important in setting out: (1) Getting all the roots in the ground perfectly straight, with the crown on a level with the surface of the ground, and (2) not burying the crown. In using the common trowel, there is a tendency to push it into the ground with a slant, thus making it impossible properly to insert the plant.

By the use of a specially made transplanter both the points named are cared for automatically. This tool enables the operator to get every plant in perfectly straight and neither too deep nor too shallow, he standing erect all the while. The foot is free to press soil to the crown of plant. I like the rows as nearly level as possible for in case of drought the plants will be nearer the moisture, and the strawberry requires abundance of moisture.

If the variety being planted is imperfect, or pistillate, at least every third row should be a staminate one. Planting must be done as early in the season as possible—that is just as soon as the frost is out of the ground—as the nearer the plants are to a dormant condition the easier they are to

move. As soon as growth commences the foliage is drawn upon to produce new roots and blossoms; it is not practical to take up plants that have started new roots.

Many amateurs prefer the hill system of planting, setting the



To have strawberries in perfection, they must be home-grown, allowed to ripen thoroughly on the plant and eaten while still fresh and firm. Pick with hull and stalk to avoid bruising. Some varieties color before they are ripe



Help growth by cultivating around the newly-set plant, but be careful not to cover the crown, which must be exactly on the level

plants as closely together as they will stand in the row (say nine inches apart), and after a very few new plants have been made (say four or five to each plant), cutting off the balance. This produces several crowns to each plant and berries of remarkable size. It is a good method for the home garden.

I find it more profitable, however, when growing for distant markets to use the matted row system, planting about $2\frac{1}{2} \times 4$ ft. and allowing a profusion of plants to set from runners; then, by the use of the revolving disks on the front of the cultivator, cut off the balance, making a completely open thoroughfare between the rows that may be cultivated as long as possible.

Mulching with stable manure, or meadow grass, immediately after the first freezing

weather, is essential on land that is spongy. If possible, plant new beds after some such crop as potatoes or tomatoes, but never after corn, using a liberal amount of bone and potash prior to planting — about six hundred pounds of bone and two to three hundred pounds of muriate of potash to the acre.

About three to four weeks after planting top dress with some good commercial fertilizer analyzing about 4 per cent. ammonia, 7 per cent. phosphoric acid and 7 per cent. potash, using about two hundred and fifty pounds to the acre. Repeat in about two months with three hundred and fifty pounds of the same brand, covering more of the surface than the actual width of plants already made. My objection to stable manure before planting, or even for mulching, is that it seeds the ground with weeds, often to such an extent that the patch is unfit to keep the second year.

If the variety grown is naturally a firm-fruited one I would use one hundred and fifty pounds of nitrate of soda to the acre, applying just before the bloom or buds open,



Mulching is good for the plant, and it also helps to keep the berries clean if put on while the plants are in flower



No backache about this way of setting out plants

but remember it has a tendency to soften the berry and cannot always be used. It will produce an abundance of foliage, however. Apply when the foliage is perfectly dry.

The selection of varieties is of paramount importance: for a beginner the safest course is to plant varieties that are recommended by other near-by growers. Or failing such aid, select varieties that are well tested and have a reputation of doing well everywhere. The strawberry has its great fascination to the gardener, however, because of its extremely sensitive nature in adaptation. Nobody can do your testing for you, as in no two cases are the conditions the same, and with changed conditions comes changed results. Therefore, try a few new kinds each year, but do not plant largely without a reliable test.

Some Hints for the Flower Garden

EVERY June some hostess gets "an inspiration" about using foxgloves in big jardinières for party decorations and is "heart-broken" when the blossoms fall. A drop of gum Arabic in spirits will hold each flower in place so that every spire will be perfect. The trick is well known in England, where every seedsman keeps a preparation for the purpose.

Watch your chrysanthemums for black plant lice. Sprinkle them with tobacco dust.

Don't be tempted to sow calceolaria seed before August anywhere south of New England. The seeds will sprout poorly and the seedlings die.

Raise hydrangeas for tubs or bedding by

making cuttings now. Get big trusses by feeding the plants heavily from now on and soaking the soil every day with water.

Put your house plants outdoors as soon as hot weather comes and plunge the pots to the rim, so as to save watering. Put ashes below the pots to keep roots from going through the bottom hole.

Among the favorite flowers for June weddings, aside from roses, are peonies, sweet peas, centaureas, lily-of-the-valley, and that exquisitely fragrant, waxy, white-flowered vine, the stephanotis.

How the nurserymen of fifty years ago would have stared at the idea of bargain sales of plants at the end of the spring

rush! Have you ever seen any of the postal-card offers or leaflets that seedsmen and nurserymen now send their best customers only in June? If not, it might be amusing to write for some. Of course, some of these offers are not of much value, but anyone who can act quickly may often snap up some good things at prices that last only five or ten days.

In case of a June drought your shrubs will begin to suffer before you notice it. Draw the soil away from each bush so as to make a large saucer round it. Let the hose run several minutes and when the water has soaked away, push back the dry surface soil.

Companion Crops in the Flower Garden—By Louisa Y. King, ^{Michigan}

IT WILL be as well to say at the outset that my tastes are as far as possible removed from those popularly understood to be Japanese. I almost never regard a flower alone. I can admire a perfect Frau Karl Druschki rose, a fine spray of Countess Spencer sweet pea, but never without thinking of the added beauty sure to be its part if a little sea-lavender were placed next the sweet pea, or if more of the delicious roses were together. Wherefore it will be seen that my mind is bent wholly on grouping or masses, and growing companion crops of flowers to that end.

Mention is made only of those flower crops actually in bloom at the same time in the garden illustrated. From this garden, of thirty-two beds separated by turf walks, and with two central cross-walks and an oblong pool for watering purposes, practically all yellow flowers have been eliminated, and all scarlet as well. The early columbine (*Aquilegia chrysantha*) and the pale yellow *Thermopsis Caroliniana* are the only yellows now permitted, and these only to make blues or purples finer by juxtaposition. All yellow, orange and scarlet flowers are now relegated to the shrubbery borders; therefore, in speaking of companion crops in this garden, it will be understood that some of the greatest glories of July, August and September are omitted.

As far as I know, no one has ever suggested the growing of various varieties of gladiolus among the lower ornamental grasses. This, if practicable, culturally, should give many delightful effects. A yellow gladiolus, such as Eldorado, among the yellow-green grasses; the deep violet, Baron Hulot, or salmon pinks, among the bluish-green. Stems of gladiolus must ever

be concealed. This would do it gracefully and well.

The two companion crops of spring flowers shown in Fig. 1 are the early forget-me-not (*Myosotis dissitiflora*), which presses close against the dark red brick of the low post, while the Heavenly Blue grape hyacinth (*Muscari botryoides*, var.) a rich purplish blue, blooms next it. *Tulipa reticulata* is seen in the foreground, and the buds of *Scilla campanulata*, var. Excelsior, when the photograph was taken were about to open. After one day's sun the various bulbs and the forget-me-nots made a most ravishing effect with their clear tones of blue, lavender and lemon-yellow.

I never tire of singing the praises of *Tulipa reticulata*; it is among my great favorites in tulips. And this leads to the mention of that tulip, to me, the best of all for color, known under three names—Hobbema, Le Rêve, and Sara Bernhardt. No other tulip has the wonderful and unique color of this. If you possess a room with walls in delicate creamy tones, furnished with a little old mahogany, and are happy enough to be able on some fine May morning to place there two or three bowls full of this tulip, you will understand my enthusiasm. The color may be described as one of those warm yet faded rose-pinks of old tapestry or other antique stuff; a color to make an artist's heart leap up. This is far from the subject, but these digressions must occasionally be excused.

In small note-books—tiny calendars sent each year by a seed-house to its customers, and in which it is my habit to set down on each Sunday the names of plants in flower—I find the following as blooming on a day in May: *Tulipa retroflexa*,



Fig. 1. Early forget-me-not and grape hyacinth with *Tulipa reticulata* make rich harmonies with the dark red brick



Fig. 2. A spring bouquet of white rock cress and Cottage Maid tulip

early forget-me-not, *Muscari botryoides*, var. Heavenly Blue; *Scilla campanulata*, var. Excelsior; tulip Rose à Merveille, Campernelle jonquil, *Narcissus Barri*, var. Flora Wilson; *Narcissus Poetaz*, var. Louisa, *Tulipa Greigi*, *Iris cyanea*, var. *pumila* (a lovely variety, the blue of the sky), *Phlox divaricata*, var. *Canadensis* (the new variety of this, *Laphami*, is said to be both larger and finer), so beautiful back of masses of *Alyssum saxatile*, or rock cress, both single and double, and *Iberis Gibraltarica*.

On the Sunday one week earlier, there were in full bloom last spring, tulips Chrysolora, Count of Leicester (the best double in tawny yellows), Couleur Cardinal, Thomas Moore, Leonardo da Vinci, narcissus Queen of Spain, and Flora Wilson, Louisa, poet's narcissus, *Iris pumila* (the common purple), and tulips Vermilion Brilliant, Queen of Holland, Clusiana, Greigi, Brunhilde, Cerise Gris de Lin (another of the faded pinks, in this case, however, so extreme that many gardeners would reject it), Gris de Lin, an enchanting if cold pink, Jaune à platie, violas and arabis, a bank of Munstead primroses (certainly the apotheosis of the English primrose if so imposing a word may be used for so shy a flower). The arabis appears in Fig. 2, with Campernelle jonquils thick in the near part, the darling tulip Cottage Maid, blooming brightly among the arabis and making the loveliest imaginable spring bouquet. The single arabis I have now foresworn in favor of the new double variety which is far more effective—like a tiny white stock without the stock's stiffness of habit—and quite as easy to grow and maintain.

In the blossomy photograph, Fig. 3, may be found four or five companion crops of flowers, though that was a peculiar season in which this picture was made, when syringas bloomed with Canterbury bells! Here peonies and Canterbury bells make up



Fig. 3. Peonies with Canterbury bells are the features of this flowery scene



Fig. 4. Mid-June chiefly blue and white with foamy baby breath in profusion

the bulk of bloom; some young syringa bushes showing white back of them, and sweet briar covered with fragrant pink, to the right. Sweet Williams and pinks may be found in the foreground with rich rose pyrethrum, the sweet Williams of a dark rose-red, in perfect harmony with all the paler pinks near and beyond them. I may say here that, like most amateurs, I have a favorite color in flowers—the pink of Drummond phlox, Chamois Rose, or, in deeper tones, of Sweet William Sutton's Pink Beauty, or the rosy-stock-flowered larkspur. When I say that such and such a flower is of a good warm pink, it is to the tones of one or the other of these that I would refer.

On the date on which this picture of peonies was made there were to be found in bloom in my garden these: larkspur, *Thermopsis Caroliniana* (which I grow near groups of tall pale blue delphinium, and which makes a lovely color effect, adding lemon-colored spikes to the blue), sweet Williams, Canterbury bells, peonies, *Aquilegia chrysantha*, *Achillea ptarmica*, hardy campanula, pinks both annual and hardy, fox-gloves, roses, annual gypsophila, common daisies. The latter are valuable for masses of early white. I cut them to the ground as soon as bloom is over, when their low leaf-clumps are quickly covered by overhanging later flowers.

The midsummer flower crops are, by all odds, the greatest in variety as they are in luxuriance. Some idea of the appearance of this garden in mid-July may be had by a glance at Fig. 4, when the flowers fully open are almost all either blue or white, except toward the centre of the garden where delicate pink tones prevail, and the fine purple hardy phlox, Lord Rayleigh blooms, giving richness to the picture and forming a combination of colors, blue and rich purple, which is especially to my taste.

The abundance of *Gyp-*

sophila paniculata, var. *elegans*, will be noted throughout the garden, and just here may be recalled that delightful and suggestive article by Mr. Wilhelm Miller in THE GARDEN MAGAZINE for last September advocating the use of flowers with delicate foliage and tiny blossoms as aids to lightness of garden effects, not to mention the new varieties of such flowers mentioned in the article, *Crambe orientalis*, *Rodgersia*, and various unfamiliar spireas.

There are both a whiter gypsophila and a grayer. The former is the variety *flore pleno*, the latter the ordinary *paniculata*. They are both tremendous acquisitions to the garden, as their cloud-like masses of bloom give a wonderfully soft look to any body of flowers, beside making charming settings for flowers of larger and more distinct form, as in Fig. 6, where Shasta daisy Alaska is grown against the double gypsophila. *Lilium longiflorum* is a companion crop of gypsophila, and I am much given to planting this low-growing lily below and among the gray softness of the other. In bloom at the time when Fig. 5 was taken were these: or possibly, it would be fairer to say "Among those present" were: Delphinium, both the tall *Belladonna* and one of a lovely blue, *Cantab* by name, best of all larkspurs; *Delphinium Chinensis*,

var. *grandiflora* in palest blues and whites; quantities of achillea, valuable but too aggressive as to roots to be altogether welcome in a small garden; *Heuchera sanguinea*, var. *Rosamund*; heliotrope of a deep purple in the four central beds of the garden nearest the pool, in the centre of each heliotrope bed a clump of the medium tall and early perennial phlox, Lord Rayleigh, warm purple (this was an experiment of my own which is most satisfactory in its result), baby rambler roses (*Annchen Mueller*), and climbing roses (the garden gate at the right is covered with *Lady Gay*). The arch between upper and lower gardens has young plants of *Lady Gay* also started against its sides.

To continue with companion crops: perennial phlox *Eugene Danzanvilliers*, masses of palest lavender; *Physostegia Virginica*, var. *alba*, the lovely lavender-blue *Stokesia cyanea*, *Scabiosa japonica*, sea-lavender (*Statice incana*, var. *Silver Cloud*), stocks in whites and deep purples, the annual phloxes *Chamois rose* and *lutea*—the latter so nice a tone of old-fashioned buff that it is useful as a sort of horticultural hyphen—and a charming double warm pink poppy, nameless, which raises its fluffy head above its blue green leaves from July till frost, and brings warmth and beauty to the garden.

Time was when I preferred to see the chamomile or anthemis, spread its pale yellow masses below the blue delphinium spikes; but I now prefer whites, or better still, rich purples or pale lavenders near, a closer harmony of color.

One of the most successful plantings for boldness of effect is the one beyond the low hedge of the privet *ibota*, a detail of which is seen in Fig. 8. This is of lemon and white hollyhocks with thick, irregular groups of *Lilium candidum*, upspringing before them. Sufficient room is left between the hedge and the lilies to cultivate and to trim the hedge



Fig. 5. A blaze of color in midsummer with larkspur, phlox and climbing roses



From early spring till late fall this garden is a constant show of flowers in changing harmonies of color

which is but two feet high. And when these tall pale flowers open the, alas, rusty growth of leaves at the base of the hollyhock stalks, and the yellowing leaves of the lily stems hidden by the trim dark hedge, the effect from the garden itself is surprisingly good. Numberless combinations of all these flowers, which bloom at the same time, suggest themselves, an infinite variety. Three plants which bloom in mid-July are the necessary and beautiful pink verbena, Beauty of Oxford, and the snapdragons in the fine new tones called pink, carmine pink and coral red; also that exquisite flower, *Clarkia elegans*, in the variety known as Sutton's double salmon, one of the most graceful and remarkably

pretty annuals which has ever come beneath my eye. Love-in-the-mist blooms now, and the best variety, Miss Jekyll, is exceedingly pretty and valuable.

A list of companion crops for August most naturally begins with perennial phloxes; in my case, Pantheon, used very freely; Aurore Boreale, Fernando Cortez (wonderful brilliant coppery-pink) a very little Coquelicot, used in conjunction with sea-holly, white phloxes Van Lassburg and Fiancée, zinnia in light flesh tones, the good lavender-pink physostegia (*Virginica rosea*), sea-holly, stocks, and dianthus of the variety Salmon Queen.

There is hardly space left in which to mention the flower crops which enrich September with color. But no list of the flowers of that month should begin with the name of anything less lovely than the tall, exquisite pale-blue *Salvia patens*. Called a tender perennial, I have found it entirely hardy; and the sudden blooming of a pale blue flower spike in early autumn is as welcome as it is surprising. Second to this I place the hardy aster or Michaelmas Daisy, now to be had in many-named varieties and forming, with the salvia just named, a rare combination of light colors. My hardy asters thus far have been practically two, Pulcherrima and Coombe Fishacre, two weeks later; this gives me four weeks of lavender bloom in September and October. The accommodating gladiolus which, as everyone knows, will bloom whenever one plans to have it, is a treasure now. America,

which has so much lavender in its pink, is exceeding fair in combination with either of these hardy asters; and when spikes of the salvia are added to a mass of these two flowers of which I have just spoken, you have one of the loveliest imaginable companion crops of flowers.

A prospective combination not yet tried but which I am counting upon this season is blue lyme grass (*Elymus arenarius*) with Chamois Rose Phlox Drummondii below it and back of it gladiolus William Falconer. The lyme grass has much blue in its leaves, and so has the gladiolus; so there should be excellent harmonies of both foliage and flower.



Fig. 6. Shasta daisy and double baby-breath support each other in a gray-white harmony



Fig. 7. Madonna lilies with lemon-yellow and white hollyhocks

A Garden Made in Fifteen Months—By Emily Rhodes, ^{Pennsyl-}vania

A PRACTICAL DEMONSTRATION OF WHAT ANY AMATEUR CAN DO TO IMPROVE THE HOME GROUNDS AND HAVE A SUCCESSION OF BRIGHT FLOWERS FROM SPRING TILL FROST



Lilies are the feature of the borders along the grass walk leading to the road

I THINK the accompanying photographs abundantly prove that a garden need not long be a bare spot and an eyesore.

In May, 1908, we came into our present place; the house had just been built, the grass had just been planted and the rest was bare — no flowers, no vines! The first

thing was to prepare a place for my plants. It took the form of a border dug around the outer edge. First well-rotted stable manure was spread thickly over the grass and then dug in deeply, burying the grass as well as the manure. The ground was then thoroughly raked over, and then the removal of



All the plants in this mixed border were moved here in the spring

the plants to the new home began. All were of proven hardiness, for they had lived out five winters without any protection beyond a few dry leaves and some stable litter in a few cases. I had only four weeks in which to move my plants, and did the work myself with the help of an odd man. Each day some were dug up, taken to the new place and at once planted. Plenty of earth was also taken and in this way the roots did not have time to dry out. I did not lose one plant; they all went on growing, and bloomed that year as if they had never been moved.

Roses and different kinds of vines were put on the wire fence. These included the Farquhar rose, a *Clematis paniculata*, Crimson Rambler rose, English ivy, then other roses. I am fond of vines and so put more on the front of the house: wistarias and Gardenia roses on each side of the front door, *Clematis paniculata* and *Jackmanni* on the north end of the house, and Farquhar rose on the end of the porch. The wistaria and Gardenia rose (which is yellow in bud, changing to cream white as it opens) bloom together in June and make a delightful harmony. The Farquhar rose blooms two weeks later, and the two kinds of clematis bloom one in July and one in August, so I always have something in bloom on the front of my house.

I chose Gardenia rose because it retains its leaves until nearly Christmas, and the foliage is beautiful after the flowers have gone. Moreover, it is a vigorous grower and climbs along for at least twenty feet in one season. The Farquhar rose also grew over twenty feet in one season, and its leaves are glossy and pretty until the snow comes. The flowers are a lovely pink and last over a week in the house in water.

The border was planted in the conventional style of "the tallest-growing plants to the back." These in many cases were such as hollyhocks, *Physostegia Virginica*, plume poppy, *Boltonia asteroides* and *latiscuama*, *Helianthus multiflorus*, and Soleil d'Or and several kinds of meadow rue in many colors — white, purple, yellow and pink. Bright spots were lent by groups of *Lychnis Chalcedonica*, four or six plants together. In the foreground are the lower-growing plants such as *Funkia subcordata*, low and spreading. At intervals I put peonies and irises, of sorts — German, Japanese and Spanish. About every four feet is placed a plant of a large-flowering, hardy chrysanthemum, so that in the fall, when all else is done, my border is as bright as in summer, for these plants do not begin to bloom until October. *Gaillardia grandiflora*, *Delphinium belladonna*, columbines in a variety of colors, and foxgloves, each blooming in their turn, keep a continued change of

color in the border which is very interesting to watch.

On the edge as a fringe are groups of various bulbs, daffodils, tulips, etc., then *Phlox subulata* and *divaricata*, *Viola cornuta* and *Arabis albida*. The violas bloom all summer so the edge of the border always shows some bloom, and a veritable mass in April, May and June. Immediately in front of the house is a grass walk leading to the road, the four-foot wide borders on each side being devoted to lilies which furnish fragrant blooms all through the summer. I grow all the most popular hardy species. For earliest color here I have daffodils, which are followed by iris and *Viola cornuta*.

Quite near the house elevation is given by a hardy orange tree and clumps of peony. One of the most beautiful light-blue flowers that bloom all summer is *Delphinium belladonna*, and it harmonizes well with the lilies. So as to be sure of bloom in September and October, chrysanthemums are set in here every three feet. In another border to the south I have a hedge of hardy chrysanthemums and in back of them a row of *Lilium Canadense*. In another border a hedge of iris, all yellow or yellow and brown, and on each side of them the light blue delphinium. In all the borders a few annual flowers are sown each spring, or narrow borders of sweet alyssum, Tom Thumb, or of some low-growing flower, such as nasturtiums or *Lobelia heterophylla*, var. *major*.

Roses are at the back of the house — I like to mass the families — and the roses are trained to the posts of a pergola extending over another grass walk. The posts are connected by galvanized chains over which clamber the roses already named and the white-flowered *Wichuraiana*. In June of last year, just one year from the time of planting, the chains were garlands of bloom.

The oft-lamented bareness of the June flowering rose bed, when the roses are not in flower, has led me to experiment on a suitable ground cover and companion crop. Again my favorite horned violet comes to the rescue, and with it and various sedums the ground is almost hidden. They make a thick, green carpet and some are always in flower. They also form a compact mass over the ground in winter, and protect the roots of the roses from the cold, so that I do not need to mulch with manure as a winter protection. In a bed of hardy ever-blooming hybrid teas, I have planted the viola and snapdragons in an effort to keep the weeds down.

Roses need helping out with preceding or succeeding crops; in the beds on each side of the front door where the *Gardenia* rose is planted, I have bright yellow crocus which comes up the very first of spring flowers, making a mass of yellow, and is followed by the globe flower (*Trollius*), which looks like an enormous double buttercup, blooms in June and then dies down. For late effect I then plant begonias or an annual plant that has small roots, so as not to injure the crocus bulbs or the *trollius* roots.



The climbing roses and hollyhocks were all planted here early in the same year

My personal preference inclines to effects in pink, and in one corner of the garden I have indulged myself in planting only those flowers I love best: *Lilium candidum*, *Lilium speciosum*, var. *roseum*, Japanese iris in white and purple, white and pink phlox. Among these are large-flowering chrysanthemums, light pink and white, and as a border the low-growing evergreen pink garland flower (*Daphne Cneorum*), blooming

at intervals through the summer. The flowers smell so sweet that a small bunch will scent the whole room where it is placed.

On a lot just back of my house is my "nursery," and when a plant dies down in any of the borders, or if the colors clash, I can always find substitutes. The only way to keep a hardy border in good order is to tend it constantly, not of necessity laboriously, and prevent overcrowding.



Trailing vines contribute much to the "furnished" effect

How I Made My Pergola—By Elizabeth Tyree Metcalfe

CONCRETE CONSTRUCTION AS AN AVOCATION FOR WOMEN WHO WORK THEIR OWN GARDENS—MAKING POSTS AND PERGOLAS, WITH FULL WORKING DETAILS

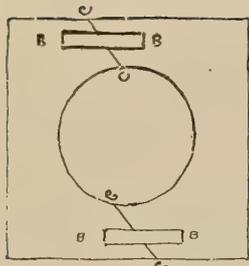


Fig. 1. Plan for supporting pieces: B B, cleats for fastening; C C, diagonal cuts for separation

I AM writing this entirely for the benefit of those people who love work for its own sake. They, when the task is done, can look at it with the joy of a creation. They can pat it with affection as I pat my flower beds when the seeds are all in,

and hug my unyielding concrete columns because they are all my own work—that is, nearly all.

I had an ideal situation for a pergola, a level stretch of a hundred feet with an offset on the south side of fifteen feet straight down a stone wall into a natural sunken garden. Up this stone wall clambered woodbine, honeysuckle and grape vines, still clambering for greater heights to climb. Along this edge I desired to put the columns. So I went to a country carpenter and had him construct a hollow form, seven feet high and eighteen inches in diameter (Fig. 3).

It can be built as follows: First take three pieces of board twenty-six inches square and not less than two inches thick; cut a perfect circle in each, twenty inches in diameter; cut each board exactly in half, as per diagram, Fig. 1, by diagonal cuts, as shown by the lines C C. This will give you three pieces for each half of the form, one for each end and one for the middle. Place the pieces three and one-half feet apart and nail on the inside of the semicircle strips of strong wood one inch thick and two inches wide, nailing them as close together as possible. Now stand the halves on each end and put them together. This makes the form.

The greatest precaution must be taken in making the two halves, to see that the semicircular boards are each placed exactly opposite its mate, and when the two halves are put together they must be adjusted on a perfect level. When the form is in position, secure each half-board to its mate with slats of oak or chestnut. (Fig. 1, B B.) Each slat should be nailed at one end and fastened with screws at the other. Removing the screws permits the two halves of the form to be separated when it is removed from the molded column. Such a form will make a hundred columns if handled carefully.

My first task was to make eight columns which was done in as many days. I hired a team for half a day and had hauled ten loads of sand which contained all the gravel that was needed. I hired an Italian laborer at twenty-five cents an hour and as I worked with him we made great progress. While

the Italian screened the sand I made a frame for the concrete foundation block. (See Fig. 2, D D.) I used six-inch boards and made the frame twenty-six inches square, inside measurement.

The other half of the day was spent in making the foundation for the first column. We made excavations two and a half feet deep and three feet square. In digging these holes we were careful to pick the stones from each shovel of dirt and lay them in a heap close to the hole. These I put back, placing the largest stones in the bottom of the hole. I did this myself while the laborer prepared the concrete mixture. When the hole was completely filled with stones to within ten inches of the surface, I placed in the centre a piece of two-inch

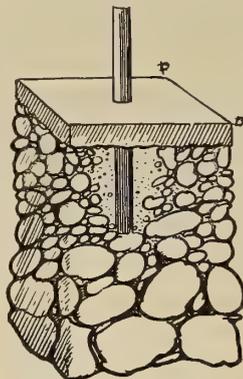


Fig. 2. How the concrete foundation was made. The firmly set iron rod assures stability

iron pipe two feet long, so that it projected above the foundation about fourteen inches (Fig. 2.) I secured it firmly with stones and continued filling the hole on the outer edges, as the diagram shows, so that later on concrete would fill in to the depth of the pipe. I filled the hole to within six inches of the surface. I then placed the frame for the concrete block that

my column was to rest upon. I secured the frame firmly in the exact place and adjusted it so that it was perfectly level. This is a most important feature in building the columns. The surface of the foundation block must be a perfect level, otherwise the column will look like a miniature tower of Pisa.

The concrete mixture was made of one part Portland cement, three parts coarse clean sand and five parts gravel and larger stones, none larger than a man's fist, in the proportion of three of gravel and two of stone. The whole secret of good concrete lies in mixing. Mix the cement and sand very thoroughly before the water is put in. Now add the water; it is difficult to say what quantity, but the mixture is of the right consistency when it is a batter that will drop, not pour, from the shovel. Next pour in the gravel and mix thoroughly again. Leave out the large stones and drop them in later on, as directed.

We found it convenient to use a mixing board four feet square with a four-inch board rim. It was also easier to mix one bag of cement at a time, using an ordinary

garden hoe to mix with and a sprinkling can for the water. For measuring we used an old galvanized iron pail. When the foundation is filled with stones and the form adjusted, pour in the concrete so that it settles about the pipe. (See Fig. 2.) Keep tamping it so that it will run into the crevices of the stones. Place small stones at the top of the hole so that the concrete will not be wasted, for it is not necessary that the concrete should fill in more than to the depth of the pipe in the centre.

Before the concrete is poured in, place large stones outside the frame to hold it in position. The next morning the concrete of the foundation will have set and you will take away the stones in order to remove the foundation frame.

Now you are ready to mold the columns. Place the form on the foundation, taking care that the bottom board of the form exactly covers the square foundation. I used a spirit level eighteen inches long to adjust my form so that it was perfectly level and perpendicular. Sometimes I had put a shingle under the bottom edge of one side of the form but that was because my concrete foundation was not a perfect level. The next important step is to brace the form on all sides firmly as there is great danger, the concrete being very heavy and poured in from the top, of interfering with the adjustment of the form. I used the method indicated in Fig. 3, using supporting strips A A. These strips are nailed to the middle circular board at one end and the other is secured by stakes driven in the ground.

It is expedient to use a wooden bucket for

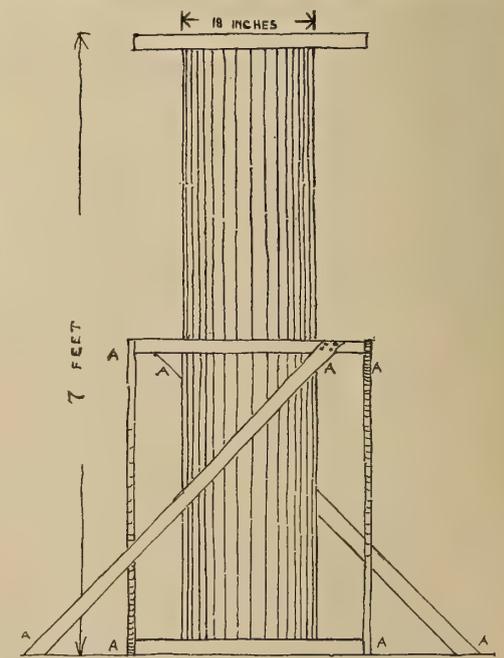


Fig. 3. Section showing construction of the form and the supporting strips A A

pouring in the concrete, as it is light and the concrete does not adhere as it would to metal. When the form has been filled to a depth of ten inches, drop in, one at a time, one pailful of stones the size of a man's fist. This is repeated at intervals of ten or twelve inches, and means a great saving of mixture. It is also advisable to tamp the mixture well every two or three bucketfuls. For this purpose I used an old rake handle with a small block of wood nailed on the end.



These concrete columns in the garden of Mrs. James Metcalfe at Bedford Station, N. Y., were made by the method described in the article

I also saved in cement, and reinforced my columns, by placing in the centre of each, when I had filled to the top of the iron pipe, five feet of old eight-inch stove pipe. To prevent the mixture getting inside the stove pipe I covered the top of it with an empty tin lard pail. The lard pail is left and becomes part of the column, being covered with several inches of concrete. It is best to have two six-foot step ladders, as the tamping is done while the concrete is being carried and poured in. After the final bucket of mixture was poured in I tamped and leveled with a trowel and found that in about ten minutes a little more concrete was needed to bring the mixture to the top level of the form. It takes but four hours to make such a column—that is, with a laborer to mix and pour in the concrete.

Each day's work was begun by removing the form from the column which had been molded the day before. This was easily done by taking out the screws in the cleats

(BB in Fig. 1). Then a gentle tap with the hammer, the form sprang apart and there stood the column, made overnight like Jack's bean stalk, but with this difference—the column would last for centuries. If there were little ridges made by the indentations of the slats or by the concrete oozing into the crevices of the form, I found them easily removed by a heavy chisel or hatchet, but it must be done as soon as the form is taken off.

The capitals or blocks for the top of the columns were made one each day. They were twenty inches square and four inches thick. The mixture was the same as for the columns except that we used three parts of gravel, instead of five, and no stones larger than a hen's egg. The block was not moved for six or seven days, giving it plenty of time to set. The frame was removed by knocking one side gently so as not to disturb the blocks. In making frames that are to be removed and used repeatedly it is best to use screws instead of

nails. So that they will be easy to remove, it is well not to screw them tightly into the board.

Opportunities for little economies will occur here and there. I saved in the expense of my columns by knocking apart packing cases and utilizing the boards for the frames and other construction. It is advisable to visit an old-iron scrap yard before building a number of columns. Old stove pipe and iron pipe can be bought for almost nothing. It takes four bags of cement per column and one-half bag for

the foundation and capital of each. This puts the cost of eight columns as follows:

Laborer, \$2 a day, 8 days	\$16.00
36 bags of cement, 50 cents a bag	18.00
8 pieces 2-inch iron pipe, 15 cents each	1.20
8 pieces stove pipe, 25 cents each	2.00
Hauling sand and gravel	2.50
Cost of form	5.00
	<hr/>
	\$44.70
Credit for 36 cement bags, 8 cents a bag	2.88
	<hr/>
	\$41.82

Except for hauling I have made no charge for cost of sand and gravel, as I had it on the premises. However, it can usually be had for thirty-five cents a load or one cubic yard. I should think that three loads would be ample for each column. At that rate each column could be made at a cost of six dollars. I confess the building of such columns is not easy work but it was a revelation and delight and I am repaid a hundred fold. As a healthful exercise for a woman I would recommend it against any medical treatment or gymnastic anti-fat cure.

Raspberries for the Home Garden—By Charles E. Chapman, ^{Connecticut}

MODERN METHODS OF GROWING RED RASPBERRIES AND BLACKCAPS WITHOUT TRELLISES AND BY THE RENEWAL SYSTEM—A CROP THAT IS ESPECIALLY SUITABLE TO THE HOME GARDEN

EVER notice how in passing through the garden you always pluck a few raspberries and eat out-of-hand? It seems strange that a fruit so easy to grow, so much appreciated in the home and one of the most profitable to raise for market should be slighted. But there is the fact! Very few families have as many raspberries as they feel they really need, and it is essentially a fruit for home production—unless you have enjoyed freshly gathered raspberries that have been allowed to ripen fully on the canes, you have missed something.

There are two quite distinct types of the

raspberry. The one most commonly grown is the red raspberry; the other is the black-fruited, or blackcap. They differ from each other in their adaptability to different soils and in their habits of growth.

If your soil is heavy plant the black kinds, but on the light soil the red-fruited kinds will do the best. Red raspberries sucker freely, and a row of plants left to themselves will spread naturally and every season cover a large extent of ground. They make plants very easily, but this tendency must be restricted in the garden where fruit is the chief object. If you merely wish to

grow plants, they can be left to develop in their own way. Black raspberries root from the tips of the canes, and new plants will be made wherever a cane touches the ground, and this becomes the fruiting plant of the following year.

I started to grow raspberries for family use by setting out fifty plants of blackcaps, knowing nothing about their culture, and I am now growing both the reds and blacks by the hundreds of bushels. The profits from each are about the same and range from two to three hundred dollars an acre.

Some writers advise the use of stakes and



Keep the ground stirred around the roots and pull out weeds regularly

wires or trellises in growing raspberries, but I find such adjuncts unnecessary and they certainly are a considerable expense. As a practical grower I will not use any such contrivances; and the amateur need not either, if he follows the methods of cultivation described below.

THE RED RASPBERRIES

Whether for home consumption in the garden or for market in the field, I follow the same method. Though a sandy loam is best, red raspberries may be successfully grown on a variety of soils. The rows are marked four feet apart with a line and a good furrow turned. The plants are set about eight inches apart in the rows. Plant in the spring, wetting the roots before setting out. Fall planting is also possible. If you have a number of roots to put out, make all the furrows ready and taking a bunch of plants on your left arm and standing with one foot on each side of the row, place a plant in the bottom of the furrow, bringing the soil up on each side with the foot, covering it about two or three inches. The rest of the furrow is to be filled up with the cultivator.

Allow only two plants to grow from each root. When the new plants are a foot high nip off an inch or two of the tip, and side branches will grow by fall. You will then develop a strong stocky bush capable of producing a large amount of fruit the following year.

Constant thorough cultivation all the first year, hoeing and pulling out the surplus plants, is the sum total of the subsequent care needed as long as the patch is kept. Usually it is not profitable to run the patch more than three years, so in the meantime a new patch should be prepared to take the place of the old one and keep up the supply of fruit. Some gardeners will keep the old plants year after year, giving a modified yield, but why not get the best by exercising a little forethought and planning ahead for a new bed?

As to varieties, my selections are Cuthbert and King. King is the earliest red raspberry that I have ever fruited and the most prolific. It has the hardest cane and the berry is good size and of good quality. Its faults are that it makes altogether too many canes which means a large amount of work

in keeping them down so as to get fruit instead of wood. It also drops quickly from the bush when ripe. Cuthbert is a late berry and the standard for large size and fine quality. It does not have the vigor that it was formerly noted for, and the canes seem to rust, especially in New England; but there are some places where it seems to grow vigorously now and the fruit is nice.

THE BLACKCAPS

Prepare the soil exactly as you would for any other hoed crop — potatoes or corn, and preferably give a dressing of some established brand of fertilizer to ensure richness. Black raspberries want a heavy, clay loam; but in the home garden where a small quantity only is grown any soil may be made to answer, as the surface can be mulched during the fruiting season if the land is dry.

Plant in the spring as soon as the ground can be worked easily; never in the fall. If in the garden, set them in holes about five inches deep, covering the sprout about two



Prune the canes early in the year. Thin out the shoots of red berries. Cut back the ends of blackcaps

or three inches, leaving the levelling up to be done at subsequent hoeings. If setting in the field, furrow the rows with a horse and plow, going twice in a row and making them six feet apart; in the garden four feet apart will do for the rows. In either case set the plants about two feet apart. The one thing to aim for now is the production of a well branched plant to fruit the following year. When the plants have reached a height of fifteen to eighteen inches, nip off with the thumb and finger an inch or two of the tip. This will cause laterals or side branches to start out and these laterals will be the fruiting wood of the next year.

The plants need no other attention until the canes have reached the ground, the ends are beginning to curl slightly, and take on a purplish look. This will be in August. The canes will root at these tips, and these should be pressed down to encourage rooting to secure new plants for next year's fruiting. The sooner this is done after they are ready the stronger the plants that you will get. Use a trowel or hoe and make a

hole two or three inches deep and insert the end of the branch into the hole and press the soil firmly around it. In a short time this tip will send out roots and by the next spring the plant will be well rooted.

I advise fruiting the black raspberry once only and then digging up, setting a new patch each year. It is the only way to be sure of getting nice berries every year. Therefore, be sure to "tip" as many canes as you wish plants to set out the next spring.

The next spring after setting (which will be the fruiting year) prune the canes early in the spring, cutting off the ends of the branches, but leaving all the fruiting wood possible. Of the branches that are rooted cut them so that there will be about a foot of the old cane left to handle them by when you dig and set them out in the new bed.

As to the productiveness of the blackcaps: I have gathered at one picking from 100 canes set the previous year over fifty quarts, but this is unusual. I generally average from eighty to one hundred bushels per acre, which makes them a profitable crop to grow commercially, and for the home garden there is no question but what everyone who likes them, as they need but little care, should grow them.

The best known and most popular varieties are the Kansas, Cumberland, and Plum Farmer. I have grown them all, and am now growing the last named exclusively.

Kansas is an early round berry, quite vigorous and healthy; the quality is good and the berries are large at the first pickings. But it does not hold its own in size at the end of the season. It is a dependable variety and is much grown, both for market and home use. Cumberland is from a week to ten days later. Somewhat elongated in form and larger than Kansas, but it will not yield as much fruit as the Kansas, nor is the cane as hardy. A very attractive berry and the quality all that can be desired.

The Plum Farmer is of the Kansas type but a much more vigorous grower and the fruit is larger and thicker meated. Most productive. It has no faults that I have discovered as yet. The quality is about the same as Kansas. Anyone will get good results from either of the above varieties.



Pick raspberries when fully ripe, handling carefully and only while they are dry



(EDITOR'S NOTE.—Every reader is invited to contribute a short note on some interesting experience. Just state the facts about some ingenious idea that you have actually worked out yourself or have seen. We want to know how successful workers do things—in order to put actual experiences before our thousands of readers in all parts of the country.)

Mr. Baldwin's "Real Planting Table for Vegetables" is so much the best thing in its line, that I am buying another copy of the April GARDEN MAGAZINE in order to have it mounted on three separate sheets of cardboard for permanent use—and reference—and modification for my own gardens. It does indeed bring order out of chaos! — H. M. O'C.

For forty years I have grown our only native yew (*Taxus Canadensis*) on Long Island, as a member of a choice shrubbery border. When grown in good soil and encouraged by good care, it tends to change its creeping habit, and gradually lifts itself from a trailer into a fairly shapely (though never compact) bush. Its berries, while never abundant, are of a rich red. It is absolutely hardy and impervious to cold, drought or flood.— J. W. B.

In New Orleans, La., on March 10th of this year, we had a heavy rain preceded by a north wind. Just before and during the rain it became very dark. The weather men of New Orleans ascribed it to certain causes, and one said that the wind had been southerly for a few days and had brought volcano dust. The real cause was this: The weather had been warm, dry and calm. A breeze from the north sprang up and the pine trees by the millions shed their pollen. Everything was covered with it, just like the leaves enclosed! — H. W. S.

My heliotropes I brought in as usual in the fall, and carried them over the winter in a sunny south window. They did well, and one of them bloomed in midwinter; but in spring they became infested with aphides, and in spite of spraying all the leaves dropped off and the plants were so forlorn that I debated whether they were worth planting out. However, I cut them back severely, and planted them in the garden at the end of a row of young heliotropes. The following September they were fine strong plants, full of flowers.—M. F. B.

Gloves are always awkward things when it comes to actually getting down and digging in the garden with the hands. In some of the more delicate work, such as transplanting very tiny seedlings, gloves are out of the question. When the hands must get "good and dirty," scrape all five fingernails at once across a cake of soap that is somewhat softened on the surface, repeating the operation with the other hand. The soap will stay under the edge of the nails and the worst damage that contact with the soil will do will be avoided.— H. S. A.

On June 24, 1909, I planted a Shirley poppy row 50 feet long in the lettuce bed, putting the seeds in hills eight to ten inches apart. Fifty-eight plants were left when I thinned them out July 15th; they bloomed August 5th. By September 1st, when a carpet of crimson clover had succeeded the lettuce, a perfect hedge 3 feet high and 3 feet wide was covered with more than five hundred blossoms. The blossoms were cut daily. Not a vestige of decay showed in the poppy hedge when the first heavy frost came on October 14th and I had blossoms until November 1st. More than 25,000 blossoms were picked from the fifty-eight plants.— A. L. W.

There is nothing dearer in garden work than a cheap trowel. It will bend on the slightest provocation and the very time that you want it most is the very time that the breaking point will come. Pay half a dollar for a good one of solid steel. At the same time buy one of the very narrow ones; it is invaluable for transplanting seedlings. Never leave it over night in the garden; never put it away for the day without rubbing the dirt off; and also have one place for keeping it. Did you ever stop to think how often people can't find the trowel at the first clip? — A.

It seemed impossible for us to get anything to grow in a small bed, in an angle between two walks deeply shaded by a large chestnut. So we resorted to the woods. Laurel (*Kalmia latifolia*) and wild azalea (*Azalea nudiflora*) were brought in and planted thickly, a few native rhododendrons being secured from a nursery to form a background. In time the ground was carpeted with every wood-flower we could find — hepatica, bloodroot, anemone, spring beauty, saxifrage, Jack-in-the-pulpit, the native columbine (*Aquilegia Canadensis*), and also some *Aquilegia chrysantha* which we raised from seed. Any uncovered spaces were filled with ferns. Every fall the bed is mulched with cow-manure, which is never removed. The plants have not only flourished but improved, showing both larger plants and larger blossoms.— F. B. C.

The statement often made that it is never best to plant sweet peas in the same place two years in succession may be, I think, misleading. For twelve years I have planted them in the same trench, with chicken wire to climb on, and have had the most

beautiful blooms. Every fall I spade up the ground, putting in a large amount of well-rotted manure. As early the following spring as it is possible to work the ground two rows of seed are sown four inches deep, one row on each side of the wire (which runs north and south). When the plants are up, two more inches of soil is added. The vines are mulched when six inches tall with grass cuttings. Of course they are well watered. I know of one man who has had sweet peas in the same place for many more years than I have, and he is noted for his success in producing beautiful blooms — J. W. T.

Let the owners of damp, shady spots take courage! We were told by everybody that we could not raise cucumbers and squashes at the lower end of our garden, which is moist and shaded by trees fifty feet high. We made the ground ready, however, and put in the seed in June, planting in holes about eight inches deep. We had a heavy rain about a week later which completely filled the seed holes. As quickly as the water was bailed out of these it ran in again, so we gave up and waited for results. As no growth was apparent after a reasonable length of time, we dug out the holes and seeded again, this time putting in a layer of sand. The second sowing came up finely and gave a good crop. We put clean, dry hay under each "fruit" so as to keep it off the damp ground, and cut off every leaf possible to let in the sun (which reached the bed early in the morning only). — F. F. G.

Perhaps the same surprise is in store for you as came to me last summer. I had planted seeds of the double or chrysanthemum sunflowers and when the flowers began to appear I found that the type broke or retrograded to the single form, though not to the same extent in every plant, so that all the intermediate stages from the



Various forms of the double sunflowers which came from the same seed; nearly every plant different!

single to the double, or filled sunflowers were to be found on the different plants. No one plant, however, bore flowers of different forms. The photograph will convey some idea of the various types. A perfectly filled specimen of the large chrysanthemum sunflower I did not obtain, though late in the fall some of the smaller flowers (that is, those borne lower down on the stalks) showed rather good form. It certainly was interesting. I found that the blossoming period may be hastened by starting the seed in a hotbed or within doors. The plants transplant easily — they should be set at least three feet apart each way — and respond quickly to well-rotted manure and watering. — C. L. M.

CHILDREN'S GARDENS EVERYWHERE



OUTDOOR PLANTING IS NOW IN ORDER. DO NOT FEEL RUSHED; THERE IS ALWAYS TIME FOR GOOD, CAREFUL WORK. HURRIED PLANTING OFTEN MEANS REPLANTING

Conducted by
ELLEN EDDY SHAW
New York



WE HAVE promised more than once to show a picture of rather unusual school garden work. This month we give a half page to just such a picture. It shows the garden work done by The Rittenhouse School, Jordan Harbour, Ontario, Canada. It is worth looking at carefully not only by school people but by home gardeners as well.

The first impression of this garden is one of unity, good taste, and beauty. The second is that the garden, while of the ornamental type, is also most practical.

Let your thoughts run riot. Imagine what can be taught from such a garden! Look at the trees of various kinds, the shrubs, the vines, the wealth of flowers, the vegetable garden, the greensward, and the landscape gardening. Consider for a moment the amount of Nature material in such a garden. Another thing to note is the balance of free space in relation to planted space. See at the back of the garden the lawn effect with a shrub or two. This is typical of what might exist in many a home yard.

The garden, the lawn, the walks, the trees, the shrubs are all planned for in this school work. All sorts of practical and simple lessons in arboriculture and floriculture could be given in such a garden as this.

How differently we interpret the garden. Most of us think of a school garden or community garden as a piece of land cut up into numbers of little individual plots. These plots have in them a certain collection of vegetables. Each plot is like every other plot.

This sort of garden gives a feeling of individual ownership. But so may that feeling be worked out in the ornamental garden. A child may have a certain section of a row of flowers for instance. This has been a method employed successfully in some of our American school gardens.

Perhaps, also, we lack originality in our work. A system of gardening is worked out. It proves successful. We garden after this pattern year after year. Would it not be better to march on a bit in our knowledge? Are we afraid of upsetting our system? If a child has learned to raise good lettuce, radish and beets, why not try something else? If we are really teaching them we should not stop at a little knowledge but should wish to equip our children so that

they would constantly have the desire and opportunity to learn more.

We are restricted somewhat in community gardens in that the children are a shifting body. And thus we are limited of necessity in what we can do. But do we teach fully and well? Or do we work over and over a few thoroughly known little facts?

The small plot has another disadvantage in that it is after all a place for furrow planting. Its very limitations of space make the planting of such hill crops as beans, corn, melons, etc., well nigh impossible.

To be sure corn, especially, is often planted in the individual plot. The reason for this is placed upon the ground of individual ownership. A child has right within his own little farm his own stalk of corn. He plants, cares for, and watches it. His interest is augmented by ownership. On the other hand one or two isolated little stalks of corn surrounded by beets, radish, lettuce, parsley, etc., is after all quite wrong from the gardener's point of view. The corn does not get the space it should. The solution for this in the community or school garden is to set apart a place of some size for those vegetables needing hill treatment. All the children may work here, each may have a portion for his own. In many gardens this is done. Such plots are called observation or community plots. This latter seems the better method of treatment, the rather more practical.

To return to the garden on the next page, why not try a similar plan this year? Wouldn't it be refreshing? Think of a child not only really knowing how to raise lettuce and nasturtiums, but knowing how to plant a tree, a shrub, to care for a lawn,



Notice in this children's garden a space set apart for corn to demonstrate hill culture

to prune, to make cuttings, and — well — let us leave a little to the individual to work out.

If but a small place is available for you at your home then, either plant it entirely to corn or beans or melons; or raise the furrow vegetables only. If this small space is a school problem do this: use this space for lesson giving. Teach how to make furrows, to plant, to transplant, to make hills, to place seed in hills and all those simple operations which, well taught, make it possible for a child to go back to his home and work independently.

But some may say that such a garden as The Rittenhouse presupposes more knowledge of horticulture than most people have. The task then is to find out where one can get help. It is a time when many avenues are open.

We had a request recently to help a school select suitable plants and shrubs for its grounds. The school is a rural one having but sixteen pupils. They have one hundred dollars to spend. They wish to do something along the line of this Canadian school. We were glad to help.

Mr. Bauskett of Washington in the following statement points out another avenue of help: "Agriculture is being taught in the public schools; this is a new departure. The general government is taking a hand in the movement to the extent of making the bureau of experiment stations of the Department of Agriculture a sort of clearing house through which to gather and disseminate this information among the communities that need it. The Department of Agriculture is of the opinion that it is certainly just as important to teach the pupils why Jenks Williams is getting better crops than his neighbors, as it is to teach them the names of capes and mountains in countries that they probably will never see."

Local florists, gardeners and the park board will help, too. Make the most of the opportunities offered in your community. The gardening work is a part of an uplift movement all along the line.

We are starting a campaign of better tools for children, good sound garden lessons, and gardening which is beautiful as well as practical. A list of school and children's garden books will be furnished on application to us. This list includes books for teachers and children.

Things to be Attended to at Once

READ over the reminders. They are for home and school gardens and gardeners.

(1) Look out for cut worms. If you find a plant stalk neatly cut off, the cut worm did it. Bend a piece of tin about the plant 2-inches from the stalk. Paper may be used. In this case put a paper collar about the plant. Firm it down into the earth and let it stand up about an inch above the ground level.

(2) The slugs and striped beetles may feed on the tender leaves of the melon and squash or other vegetables too. In this case make a ring about the plant some 4 inches from the stalk. Sprinkle hellebore powder in the ring. Do this for three or four evenings and the slugs and beetles will disappear.

(3) Sow some seed of self planting annuals. Try cornflower and larkspur this year. Next year they will appear again.

(4) When you plant remember to keep in mind the fall appearance of your garden. All the autumn long you should have a blaze of color. There are no more satisfactory flowers for constant and late blooming than zinnia, aster, marigold, sweet alyssum, poppy, mignonette and cornflower.

(5) For borders use ageratum, dwarf nasturtiums or candytuft.

(6) In sandy soils nasturtiums, zinnias and poppies grow. In heavy soils plant sweet alyssum, marigold and petunia. In rocky places sow candytuft, nasturtiums, phlox.

(7) The old straggly geraniums may be slipped right into window boxes and left all summer outside in a shady, sheltered place. Occasional watering keeps them in condition for the schoolroom. They will blossom early next winter.

(8) It is usually a waste of time and energy to plant in the window boxes and place these on the outside of the school building for summer blooming. This is all right for the home. The box receives too little care to make this practical for vacation time.

(9) After the outdoor bulbs are through blossoming and the blossom has withered, the top may be cut down close to the ground. The bulbs may be left in the ground and seed planting done in the bed. Or the bulbs may be taken up, dried out, and stored.

(10) A barrel of liquid manure is worth having right on the garden spot. Put horse manure or barnyard dressing into a barrel and add water. Keep the barrel covered to prevent escape of odors. The plants watered with this get an extra food supply. Do not put this on too strong. It should look like weak tea. Dilute to this color. This is the cleanest way of keeping liquid manure. Some boys sink barrels into the ground beneath the water tap. This is convenient but messy. The barrel cannot be covered completely because of the water drip.

(11) When planting hill vegetables place six or seven kernels to the hill. Afterward thin to three plants.

(12) Label the planted rows in your garden. Then you can easily keep track of the young seedlings.

(13) Keep constantly stirring the soil. This is one way of watering. When you use the watering pot, do not water the foliage of your plants but the ground itself.

(14) Many of you keep garden diaries. This year make note of your failures in order to find out the reason why. Also observe the work of others who are having greater success than you are. Ask questions and take notes for next year. You will find this most helpful.

Children's Correspondence

I PLANTED some lettuce early last spring. It was coming up nicely. When it was almost ready to eat, we found the sparrows one day had eaten what we were going to eat. We were disappointed. But we covered the lettuce up with chicken wire. I found that the sparrows would not touch it because the sun shone on the wire and was reflected in their eyes. Another way to frighten off the sparrows is to tie pieces of tin on a string. Then hang them in a tree where the sun will shine on them and the wind will blow them. This frightens the sparrows.

New Paltz, N. Y.

ELOISE SHAFER.

I PUT some sand over my melon hills so as to keep off the insects. When the plants came up and began to spread over the hill, I sprinkled more sand at the ends of the vines. Then if insects do get on I pick them off and kill them.

New Brunswick, N. J. WILLIAM ROWLAND.

I WANT to tell you how I set out tomato plants. First I dug up the place that I wanted and got some wood ashes and sifted it. Then I put a little rich dirt from the hen yard in with it and mixed all together. Next I put a little of the rich dirt in each hill, and put the tomato plants in.

New Brunswick, N. J.

DICK NELSON.

CONTEST BULLETIN — If you have not received one of the 1910 garden prize contest announcements, write for one. This contest is open to boys and girls; to school and community gardens as well. The prizes are similar to those of last year. The Nature and Garden Libraries will be presented for group work. Books and subscriptions to THE GARDEN MAGAZINE are the prizes for individual work.



Civic pride is an unforced lesson from such a school garden as The Rittenhouse, Jordan Harbour, Ontario, Canada. Besides serving its purpose as an actual garden for the pupils, it conveys many landscape lessons and the whole thing is a pictorial unit

ORCHARD & FRUIT GARDEN

"More and Better Fruit"

Keeping Up Fertility

BY JUNE we have finished planting, and have commenced cultivation. Weeds can be easily prevented or destroyed by cultivating just before they appear, or just when they are breaking through the surface of the soil. Another good reason for thorough cultivation early in the summer is the frequent aëration of the soil which prevents fermentation and cleanses the soil from waste material. Old gardens, however heavily manured, become less fertile year after year because of the fermentation that takes place. Ferments prevent plant nutrition; they are comparable to an excess of worn-out or waste material in the animal body. Rather than correct this condition by the application of lime we now use lime for plant food when it is needed, and sweeten and cleanse the soil by aëration and cultivation. Early in the summer when the soil is so dry that it crumbles in the hand, cultivate deeply around newly set plants and trees so that the soil is finely pulverized. This lets air and moisture all through the soil.

Another reason for thorough cultivation is to get the fullest benefit from the soil moisture. When the soil is pulverized in fine particles by cultivation, water does not rise continuously to the surface to be lost by evaporation.

We now have implements so effective and which work so easily that the work of cultivation can be made almost a recreation. When one owns or can conveniently get the use of a horse, it is well to own a horse wheel cultivator. I find a tool like the 12-tooth garden cultivator to be just what I need. There are twelve small teeth, and the cultivator is quickly narrowed to twelve inches for narrow rows, or widened to four or five feet where it can be used as a harrow. The pulverizer is attached to the rear, as can also be the furrowing plow.

Another one-horse tool I have used with much satisfaction for years is the one-horse Acme cultivator and pulverizer, that can be bought five to six feet wide. This follows shallow plowing between cane and bush fruits, where the rows are six to eight feet apart, and pulverizes sods and lumps without turning them over. There are several good hand wheel cultivators, furnished with different attachments that are all useful. Early in the season I use these handwheel hoes mostly after the horse cultivators. When strawberries are planted in check rows, eighteen inches each way for hill culture, one can cultivate each way with the horse wheel cultivator, then run the hand wheel cultivators so close to the plants that there is little space left uncultivated. For working very close to small plants I have used the narrow-forked onion hoes. With the above-named implements, a small one-horse plow, and with various hoes and weeders, the owner of the small place has a very good equipment for cultivating the fruit garden and small family orchard.

PRUNING SMALL FRUITS

All the runners should be clipped on the newly set strawberry plants up to July first. I often use a sharp hoe for cutting runners, as I can work standing up straight. The disc cutter on the tooth cultivator will cut most of the runners, but it is generally used only on large plantations of strawberries. The last of May and early in June, the sucker plants that are coming up in the rows of raspberries and blackberries should be thinned, so that the stronger plants of hardy varieties that do not need to be layered and covered in winter

will stand at an average of one foot apart in the rows. The finest fruit is obtained by pinching these back at four feet high, and training them to the tree form. These canes will need to be supported by wires on either side. Tender varieties should not be so vigorously thinned, and the canes not pruned, as they can be bent over and covered. The blackcap raspberries and all "tip" varieties need less thinning and pruning than sucker varieties.

THE GRAPE ARBOR

Grapes require some attention in June, such as tying up the trellis or supports, and pinching back the new growth where it is too close together to admit sunlight sufficiently to develop fully and ripen the fruit. Grapes that were well pruned in late fall or early winter (which is the proper time to do the work) will require less thinning of the vines



Cultivate thoroughly all summer to keep moisture in the soil and to let air into the roots

in summer. When grapes, currants and gooseberries are pruned late in the fall, much of the wood cut off can be saved for propagating new plants. Trees that have not been sufficiently pruned should be pruned before the summer spraying. Pruning often saves thinning of the fruit. •

SPRAYING BEGINS

With the coming of the warm weather, insects, pests and fungus commence to be active, and we should be ready with our remedies for spraying either before or after the blossoming of the fruit, or both. For the fruit garden and orchard on the small place I have used a copper knapsack sprayer, costing \$10 or \$12. This can be carried on the back, or placed on a wheelbarrow or cart, or on a step ladder or wagon for the taller trees. I try to keep ready-made stock solutions for making Bordeaux mixture, which is the remedy for fungus diseases. Lime-sulphur wash is now largely used in place of Bordeaux mixture for some diseases.

Spray strawberries to prevent rust or leaf blight which may develop before the berries are all matured. The varieties which are of the highest quality are most susceptible to blight. Strawberries should be sprayed with Bordeaux mixture just before the buds open, the leaves being thoroughly covered, and the propagating bed should be kept sprayed all summer. One can buy stock for making up nearly all spraying solutions, and this is a good way where only small quantities are used in the garden, and especially with the lime sulphur wash. Information about spraying solutions can be obtained from your own state institution free of cost; but first consult the article on spraying on page 294.

As soon as the blossoms fall, spray for codling moths with one pound of Paris green or four pounds of arsenate of lead mixed with one hundred gallons of water. Repeat the operation ten days later. This solution is sometimes combined with Bordeaux mixture for apple scab and leaf-blight.

Currants and gooseberries should be sprayed twice with the same solution of Paris green or arsenate of lead, as is used for codling moth. Do this soon after the leaves are out, and again later when the green worms appear. The only means of controlling black knot is to watch close for the infection, cut off all diseased parts and burn them.

Encourage the birds to build nests by providing plenty of trees and hedges on your place. The birds destroy insect pests better and cheaper than you can do with insecticides. Have also a few hives of bees to aid better pollenization of fruits.

In June the fruit grower begins to enjoy some of the rewards of his labor. He can have better strawberries than money will often buy—those of the highest quality as Marshall, Wm. Belt, etc., that have been left on the plants until they are fully ripe, and are sweet and luscious. If the strawberry plants have not been well mulched, place green grass or lawn clippings between the rows, using litter that will keep the berries clean and retain moisture. Later in the month the cherries begin to ripen; it is cheaper to feed the birds on mulberries than on cherries, so plant a few mulberry trees in the cherry orchard. If the birds will only come and stay with us we can afford to plant sufficient fruit for both them and ourselves.

New York.

W. H. JENKINS.

Utilizing Old Fruit Boxes

WE used to throw away our empty berry boxes and peach baskets, but we save them now, for we find them very useful in the garden in the spring.

Some of the smaller boxes are used to plant cucumber seed in, allowing one plant to a box. These are kept in a sunny window until the weather is warm enough to put them out, when they are set in the ground, box and all. Thus one may have "cukes" three weeks earlier than if the seeds had been planted out-of-doors.

I cut the bottoms out of some of the boxes, put the bottomless box over tender seedlings, cover each box with a piece of glass, and thereby have a miniature coldframe. The bottomless boxes are also set over small plants that might otherwise be injured by too much sunlight or late frosts. They may be quickly covered with papers, or a cloth, and the plants will not be crushed. These boxes are especially good to put around dahlias, for the tender sprouts are very easily broken off.

Tomato plants are often transplanted into berry boxes, and planted in the ground in the box, which soon rots. The plant is thus saved the shock of transplanting.

The peach basket is usually of the greatest value during May, when we have very high winds. We just turn them over the tomato plants and tell the wind to "blow, if it wants to!" Last spring my plants were uninjured by a three days' gale, while those in my neighbor's garden were ruined. The baskets kept off the wind and cold from my plants yet let in sufficient light and air.

Massachusetts.

ELLA M. BEALS.



How to Gather Early Crops

MOST people let their vegetables get too old! But there is a proper time to gather vegetables and there is also an improper time; there is a proper way to gather them and there is also an improper way. If we gather vegetables too soon we injure the crop in most cases; if we leave them too long, they deteriorate in quality. Sometimes a single day, one way or the other, makes all the difference.

Do not gather peas until the pod is nicely filled, but not hard; and under no circumstances delay picking until it develops a yellowish tinge, the sign of age. Never pull your peas, but pluck them. Take the pod in the hand and break the pod from the vine with the thumb and first finger. Some pull them with an upward jerk, but this is likely to tear the vine loose from the support and often breaks or loosens it at the root, spoiling the remainder of the crop on that particular stem.

Spinach should be cut close to the ground. If you pull it up by the roots you gather also a lot of dirt, which, when thoroughly shaken in among the leaves, is hard to wash out. Cutting also induces a second growth.

Radishes are best when about the size of a marble; permitted to grow large, they become hollow and often have a very strong flavor.

Cabbage can be used as soon as it is well headed. Always select the hardest heads for cutting; this will save you from losing a quantity later on by splitting.

Watch cauliflower carefully when it starts to head; if left too long it gets rough. No particular size can be specified as the proper one for cutting, as it will vary according to season, soil and cultivation; but I never allow the heads to get any larger than six inches across. When looking over the cauliflowers, break a leaf or two over any that have started to head up; this will prevent the sun from browning.

Pick beans when about two inches long. Don't wait for them to develop strings or beans inside the pods. All the preparation necessary for cooking is to pinch off the ends, and the beans should be in such a condition that this can be easily done with the thumb and first finger.

Beets develop white lines or rings and lose their flavor when cooked, if they are allowed to get tough and woody. They should be used when about one inch in diameter. Be careful not to break the small root when gathering, as that will cause bleeding.

Carrots should also be used when small; they are usually ready for use when about one-half inch in diameter at the top. If larger than that, they will have developed a core and have lost the deep yellow color.

Swiss chard should be cut. Take the head in one hand and cut it off clean, but be careful not to cut low enough to injure the crown.

Start gathering onions now from the sets. Select the largest, so as to keep them from running to seed.

Kohlrabi and turnip should now be ready for use. They get strong in flavor with age.

When selecting lettuce for cutting, look over the bed carefully and select the hardest and largest heads, as they are the best eating and will also be the first to run to seed.

Toward the end of the month look over the early potatoes, for some may be ready for digging. Don't dig them when very small; they should be the size of hen eggs.

Be careful when cutting the asparagus. Commence to ease up on the bed a little by letting an occasional shoot grow instead of cutting it off. Discontinue cutting entirely after the middle of

June. I usually stop when peas come into bearing. By cutting later than this, you surely shorten the life of the bed.

Pay strict attention to ventilating the melons, and just as soon as the vines fill the box they are in, they must be gradually hardened off, so that the boxes can be removed. Start by leaving about one-half inch of air on the frame all night, and keep increasing this amount for about a week, when the sash can be entirely removed, also the boxes. Spread the plants out evenly, being careful not to crack any of the stems; pin each vine in place with a twig bent V shaped, but don't jam these down hard on the vines. Simply stick them into the ground far enough to hold the vines in position. Dig over the space in between the hills, adding some lime if the ground is sour. Look over the vines every week and keep them placed so that they will cover the bed evenly and not grow in one big bunch.

If you haven't sown Lima beans, do so at once, for it is not yet too late to get a good crop. In fact, they can be sown as late as the middle of June, but, of course, it is better to do it earlier.

If you have sown seeds of late cabbage, cauliflower, etc., in bed form, they must now be transplanted either to the row in the garden where they are to remain or to a prepared bed from which they can later be transplanted into the garden. The only advantage in this latter method is that you are sometimes short of space, and planting in a bed and then transplanting gives an opportunity to get rid of an early crop.

Egg plants and peppers can now be set out. If there are any cold nights after, place an inverted flower pot over each plant. When planting out lettuce from the seed bed select a place that is not too sunny, such as the north side of a hedge or between two rows of sweet peas. If such places are not available, build a rack about fifteen inches above the plants and cover it with cheese cloth, leaving the sides open. This will prevent the lettuce from running to seed.

Make two sowings of beans this month, also of peas, carrots, corn and cucumber. Sow lettuce and radishes every week. Discontinue sowing peas and spinach, as they will not grow during midsummer. After the first fruits have set on your strawberries, place some hay around the base of the plants under-



The carrot on the left is too large; those in the centre show the effect of poor soil or dry weather. The correct size for gathering is shown on the right

neath the berries. This prevents them from getting full of sand.

A tomato trellis will last for years, and is a great asset to the garden. Build it of shingle lath four feet wide at the bottom and three and a half feet high. Train the plants to either side. If you planted the tomatoes three feet apart, make the trellis three feet at the bottom and four feet high.

LOOKING OUT FOR INSECTS

No good garden can be run without the use of a good spray pump. Watch for blight, insects and pests of all kinds and spray all the vegetables that are subject to blight with Bordeaux mixture twice during June. If the weather is either very dry or excessively wet, spray every week. Do not wait for the blight to show itself, as in most cases it is then too late. For eating insects of all kinds, poison must be used. I always mix the poison with the Bordeaux, which helps it to stick to the plant. Be careful when using this; do not spray it on well-advanced vegetables, such as cabbage which has headed. If cabbage worms are troublesome after the heads have attained any size, I usually pick them off by hand. For aphid, use any of the tobacco preparations as a spray; but above all, keep the Bordeaux going, as it is the greatest of all garden savers. Or you may use paris green, about half a pound to fifty gallons of water, first mixing it into a paste. Arsenate of lead can be used in the same manner. For quick work, white hellebore powder dusted on the plants is effective.

If you applied soot to the asparagus bed in March or April, you will probably not be troubled with the asparagus beetle; but if you did not do it and the beetle is present, put a few chickens into the asparagus bed and leave them there for a few days. For cabbage worm use white hellebore powder.

If any leaf eater gets after the melons, cucumbers or squash, use the Paris green or arsenate of lead. Use one of these poisons for the potato bug, always mixing it with the Bordeaux in place of water. Watch the beans, celery, cucumbers, melons, potatoes, and tomatoes, and do not let them be attacked by blight. Bordeaux is the preventive. For aphid on peas, use tobacco or kerosene emulsion.

WATER AND FERTILIZER

Water the garden constantly if the weather is dry, and don't merely sprinkle. Wet the ground thoroughly, then cultivate as soon as possible to retain the moisture. I use sprinklers in my garden, letting them run night and day, changing their positions every few hours and selecting an especially dry spot to let them run all night. If you haven't running water in your garden, don't use pump water direct from the pump, as it is too cold at this time of the year. Pump a couple of barrels full and let the water stand for an hour or two before using.

Give an application of nitrate of soda to all crops that are to stand throughout the season, such as Lima beans, parsnips, etc. This encourages root action and renews growth. Keep the cultivator working. It is not only the best protection against dry weather, but also keeps the weeds in check.

New York. W. C. MCCOLLOM.



This is big enough for any cauliflower if you want real quality

[EDITOR'S NOTE.—Next month's article will take up the general care of the garden during summer, the care of various vegetables, such as celery, lima beans, parsnips, and preparing new strawberry beds.]



Growing Tomatoes in a Small Garden

MY GARDEN plot is very small, being only 15 x 20 ft., but last year I grew in it a sufficient quantity of tomatoes to last me a full twelve months. We planted the seed in a flat box about March 15th, and, when the seedlings were two inches high, transferred them to three and a half-inch paper pots. The more vigorous plants were later shifted to four- and five-inch earthen pots, and all of them were kept out of doors on sunny days and given plenty of water. As our potting soil was not rich and our facilities of the crudest, the plants made no great showing; but even so, they were of quicker growth when set out than the flat-grown plants sold by gardeners.

On May 20th, we began to set the larger plants in the garden, covering them at night with the pots, for none of them was over four inches high. To support the vines we used four rows of wire netting 20 feet long, 3½ feet apart, fastened to cedar spots 5 inches in diameter and 7 feet long, set 2½ feet in the ground. The netting was 3 feet wide, of 2-inch mesh, and the upper edge was stretched even with the top of the posts. Three intermediate, lighter posts were driven on each line, and the netting fastened to them after being stretched tightly between the end posts.

Twenty-five plants were set along each row of netting; twelve on one side, thirteen on the other, eighteen inches apart, and about four inches from the centre line—that is, the line of the netting. The two rows of plants were, therefore, eight inches apart, with the plants alternating. One double row consisted of Chalk's Early Jewel; the other three of Ponderosa.

No manure was available, but cultivation was thorough, and we applied fifty pounds of Canadian hard-wood ashes. We set the plants deep, first

removing the two lower branches, mixed a pint of wood ashes with the surrounding soil, and pressed it down with the foot. For protection against insects we kept them covered with tobacco dust until they began to grow rapidly. When the vines were eighteen inches high, the main stem was tied loosely to the netting; and thereafter, once a week, the vines were pruned and supported from the netting by jute twine or cotton strips. No attempt was made to confine the vines to a single stem; they were allowed to branch moderately and fill the space of eighteen inches allotted to each plant. In height they grew about one foot above the top of the netting, as shown in the photograph, and then were stopped by pruning.

Thus the vine, which, at maturity, usually covers a considerable circular area on the ground with the fruit underneath, was compelled to grow vertically and flat. As the rows were placed north and south and all leaves shading the fruit were removed weekly, the sun had full play. About one-half the foliage was cut away and, allowed to lie where it fell, served as a mulch.

After the plants began to grow vigorously cultivation was discontinued for fear of disturbing the roots, which travel far; we have traced them four feet from the stem, and but three inches underneath the surface. After the last cultivation we covered the ground between the rows with grass cuttings, and laid boards to walk on to prevent compressing the soil. In times of drouth we soaked in a gallon of water to each plant, weekly, wetting as little as possible of the surface. Watering pots have no place in a vegetable garden.

Our crop was so large that besides having a surplus over daily consumption, we canned ninety-five quart jars, and had a generous provision of sweet pickle for winter use. We counted eight hundred fruits, which averaged one-half pound each. The largest weighed eighteen ounces. The most convenient size for canning is twelve ounces; for the table six ounces, and they should be served whole, and peeled without scalding. It may be of interest to state that in canning forty-two ounces of unpeeled tomatoes are required to fill a quart jar.

To secure the best results with canned tomatoes, use fruit before it is dead ripe, while it is still partly green around the stem, and *the day it is gathered*. Boil slowly thirty minutes. Fill heated jars to overflowing, using a fruit-jar funnel. Use rubber bands of the best procurable quality (those sold with the jars are the poorest, and risk is taken in using them), and screw on the caps *while hot*. Store in a *dark*, dry, cool place. If the caps are old, make sure they are in sound condition. If the rubber band is cut in screwing on the cap, file away the sharp film in the thread which causes it.

To open a jar which has been securely sealed, place it, inverted, in a saucepan containing one inch of hot water, on a hot stove, for ten or fifteen minutes. The jar should stand on a thin strip of wood, and not directly on the bottom of the pan.

Peekskill, N. Y.

C. W. DURHAM.

Rose Lessons from English Gardens

I HAVE perused with much interest and enjoyment the twelve articles by Mr. Wilhelm Miller which have appeared in THE GARDEN MAGAZINE under the above heading. The conclusions he arrives at in the December number are so much at variance with what I believe to be the facts that I have wondered whether there are not two, and perhaps a dozen, ways of looking at this gardening question.

If Mr. Miller's conclusions are correct it looks as if a damper would be thrown on many efforts at gardening along English lines among the thousands of readers of your magazines, both in the United



Roses like these, measuring three to four inches in diameter, were picked in a Toronto garden all summer and until frost came

States and in Canada, and this tempts me to make a somewhat feeble protest against some of the conclusions that, to me, are incorrect in the December article.

Among the statements which Mr. Miller makes are the following:

1. "There seems almost nothing about the English cottage gardens which I should care to see my countrymen copy."

I lean to the opinion that we might, with great benefit, to our gardens copy from 75 per cent. to 90 per cent. of the ideas and effects which the English gardeners, after several hundred years' experimenting, have adopted. I feel like my friend from Missouri—"show me" something better to aim for than the English cottage garden effects in flowers, and you may then tell us to aim for the substitute; but do not take away our cherished ideals and leave us "up in the air" groping aimlessly for something to strive for and emulate.

2. "Every cottage is built of permanent material and every cottage is surrounded by fruits, flowers and other forms of living beauty which is enough to explain five-tenths of the American tourists' enthusiasm."

The illustrations accompanying that statement showed a wooden pergola and four brick houses with shingled roofs, which are not more permanent than can be seen by thousands in Philadelphia, Boston, Toronto and dozens of other cities on this Continent, where people have the tendency to own their own homes. If the owners of these homes had had dozens of examples of good gardening to copy from right in their vicinity, as every English cottager has, we would see a marked improvement in their garden effects. So few of the people on this side of the water who can afford to experiment and make beautiful gardens have the leisure, or rather *the desire* to do so, that the American cottager has few examples, that he can see daily, to stimulate his enterprise to go and do likewise. England and the Continent are full of such lovely examples that the poorest in the land gets his gardening lessons daily at first hand through his eyes; instead of which his American cousin has to scan the pages of his seed catalogue for *his* ideas, provided his ideas have progressed sufficiently along the garden road to possess the aforementioned seed catalogue.



A crop of 800 tomatoes averaging one-half pound each was gathered from this backyard garden 15x20 ft.

A FEW OF THE MANY VERY PROMINENT MORE THAN ONE MILLION USERS OF DE LAVAL CREAM SEPARATORS

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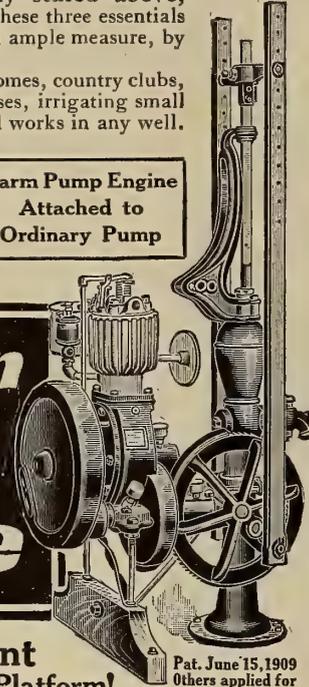
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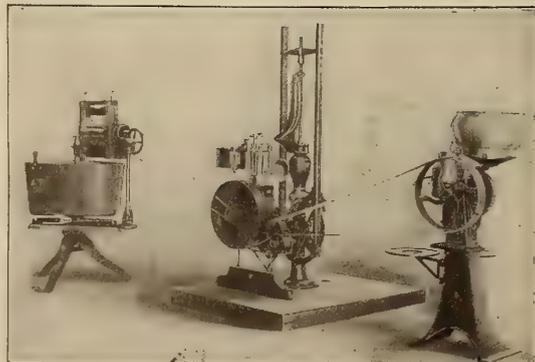
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3. "About four-tenths of the charm of English cottage gardens is due to the cottages themselves, and these do not fit our present mode of life at all."

I won't quarrel with the number of tenths given to the charm possessed by the cottages, but I will say that I believe modern cottages on English lines can be so designed that they will lose little, if any, of the charm, and possess all of the modern conveniences.

4. "Picturesqueness is almost invariably associated with dirt and dirt breeds disease. . . . It hurts me to say so, but picturesqueness always means increased cost, both for construction and maintenance, and it usually means unsanitary conditions."

The few cottages that I have seen in England were as scrupulously clean inside as they were picturesque outside. My experience is that picturesqueness means more in knowledge, forethought and good taste, than it means expense. The average American and Canadian builder, who is usually his own architect, knows little about beauty of line, proportion and design, and the builder's creations (speaking generally) in the cottage line shows his knowledge in all its imperfections.

On the other hand, many of the finest types of English cottages were designed for large estates by the best architects England and the Continent have produced for centuries past, and these are the examples that have been copied by the English builders.

It is my firm belief that cottages can be designed on this side of the "big pond" which will be quite as picturesque as those in England, just as con-



These roses were gathered from a Canadian garden on November 17

venient to work in, no more expensive to construct because of their picturesqueness, and which will be sanitary; but they will have to be designed by architects who have spent a lifetime in learning the principles of design, etc.

Again I feel like my Missouri friend: "Show me" a cottage that will surpass the best English cottages, which are sanitary, and which are clean, and I will believe my eyesight, but until then do not belittle the English cottages, as they can be made just as comfortable for our hot summers and cold winters, just as mosquito- and fly-proof, just as light and convenient, without losing the general picturesqueness that gives them so much charm.

5. "It is sufficient if my readers are persuaded that to make exact copies of English gardens is foolish, and we shall never have charming cottage gardens in America until we have charming cottages in an American style."

That may be a long time to wait! Why should we not try to improve our cottage gardens along English lines, in lieu of something better, and let the cottage improvement follow? Decorate what we have, be it ugly as sin; we can surely improve its looks by placing a few climbing roses about it to hide some of its ugly lines. I cannot see anything foolish in trying to make exact copies of English gardens, as everyone puts his own individuality into his gardening and he would not get exactly what he aimed for, though the effort would be more pleasing for trying to copy a good thing,

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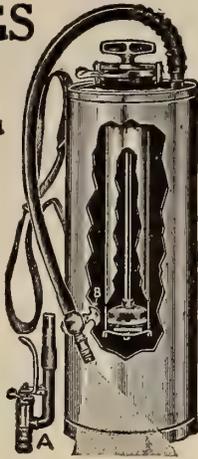
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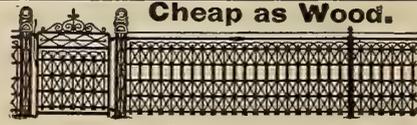
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The "Monroe"

Most other refrigerators have cracks and corners which cannot be cleaned. Here particles of food collect and breed germs by the million. These germs get into your food and make it poison, and the family suffers—from no traceable cause.

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than if he did not copy at all but blundered along without anything to work to.

6. "The easiest way to prove that we cannot copy English cottage gardens, is to show that the material is too different. . . . Rose tree is the same as tree rose, we cannot grow standards. . . . Roses are the most precious of all flowers. The English laboring man gets large double fragrant roses from June to October with a minimum of effort. He does not have to contend with the rose chafer or 'rose bug,' as we call it. In America roses do not bloom all summer save on the Pacific Coast. Climbing roses do not reach to the third story of a big house. We find roses require more care and cause more loss and disappointment in America than any other flower."

If the beginning of this quotation from Mr. Miller's article is a fair sample of the facts upon which he bases his conclusions, that we cannot copy English gardens, I feel that I should be forgiven for objecting to the same because I have "the roses" to prove that he is in error.

The fact that roses are not seen in America like they are in English cottage gardens is because we do not know how to grow them like our English cousins. It is not that roses will not grow out of doors and bloom from June to October, or that we cannot grow standards, because they will and we can do so, provided we do as the English gardener does, i. e., select the kinds that bloom from June to October and grow them with the same care and we will have the same average result that he has.

My rose beds planted in November, 1908, with Hybrid Tea roses from England, Ireland, and the United States, have successfully withstood our severe Canadian winter, the temperature having dropped to as low as 18 degrees below zero.

If Mr. Miller knows any Englishman, laboring or otherwise, who gets larger or more fragrant roses with any less trouble from June to October, than my photos show, I would like to make his acquaintance to learn how he grows them, so I may do likewise. I had several Mildred Grants propagated by an Irish firm, the blooms from which have measured between five and six inches in diameter. There are dozens, perhaps hundreds of people, whose outdoor roses do as well and perhaps better in the United States, than mine do here.

It was news to me to learn from the above quotation that the English gardener does not have to contend with the rose bug, as he certainly does, and in the book published by the National Rose Society of England, entitled "The Enemies of the Rose," they give about fifteen other varieties of bugs and insects which seem to be troublesome with them, but they do not seem to have reached Canada yet. Roses will thrive and bloom with as little care in America as in England, and yet repay for all the extra work you can put on them if one selects the best Hybrid Teas and grows them well.

It is true our climbers have not reached the third story of our house because it has no third story, but we have climbers three years old eighteen feet high, which is "going some," and I have seen them twenty-seven feet high in Ottawa, Canada, where thirty degrees below zero is not unknown.

Toronto, Canada. W. G. MACKENDRICK.

A Rhode Island Garden

ABOUT the middle of last June the pink Canterbury bells in my garden began to bloom for the first time. I had about thirty-five plants which had outlived the previous winter, the seeds having been sown in the house the spring before. With the exception of a friend to whom I had given some seedlings, no amateur in town had grown any of the beautiful flowers. Single plants were to be had at the florist's at \$1.50 and \$2.00 each. A month later the stocks Princess Alice and Cut-and-come-again, were blooming well, many of the flowers measuring an inch and a half in diameter, white as snow, and very double. Some of the plants had single flowers which were exceedingly pretty for bouquets when kept in a mass by themselves or used profusely with other flowers.

Verbenas, among which is the may flower, have done well, and the may flower combined with single pink dahlias makes a beautiful table decoration.

Rhode Island. JAMES BENNETT.

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Garden Hose conforms to the high standards set by American home owners.

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TREES AND SHRUBS

To Make Ragged Evergreens Dense and Symmetrical

THE great object in the culture of evergreens during their "juvenile period," which may last thirty years, is to keep them dense and symmetrical. After that, a conifer naturally becomes ragged because it enters the "transition period" during which it loses many branches, and finally it attains the "picturesque stage" when there is a tuft of foliage at the top and the whole tree looks like a battle-scarred veteran.

Why is density so important? Partly because its opposite (thinness or scragginess) suggests poverty and unhappiness. But the beauty of an evergreen is greatly heightened by density or compactness because the outline of the tree is then a perfect cone or pyramid and because this crowding together of the branches produces a lovelier texture—softer, more feathery.

There is only one way of transforming open evergreens into dense ones, viz, by summer pruning. The degree to which this should be done will be debated until the crack of doom, for some people like a high degree of formality, while others cannot endure it. They say that Charles A. Dana used to spend many hours on a step ladder in his famous collection of evergreens trimming the trees until they were as stiff as soldiers. The condition in which I found the Dana trees a few years ago suits my taste to perfection, for they had all the elegance that comes from perfect density without the artificiality and stiffness that comes from perfect outline.



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VINES** Both
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THE BEST THAT GROWS
GET CATALOGUE BEFORE PLACING ORDER

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NEW HAVEN, CONNECTICUT

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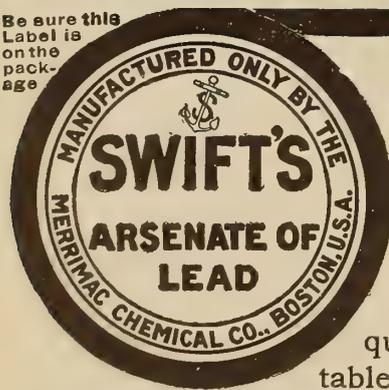
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You are standing in your own light if you don't take advantage of this wonderful insecticide. One spraying with Swift's outlasts two to four sprayings with other materials because it takes a torrential rain to wash it off. It can't burn or scorch. It doesn't clog the pump. It mixes readily with water and stays in suspension. It is fatal to *every* leaf-eating pest.

Send for valuable book on leaf-eating insects. Give your dealer's name.

Merrimac Chemical Co., 59 Broad Street, Boston, Mass.



Summer-prune your evergreens and have dense compact specimens



For Verandas, Porches, Lawns and Indoor Use
Combines Hammock, Couch and Swing Settee
 The Perfect Couch for Out-door Sleeping

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, with or without national spring, thick mattress, with sanitary removable cover. Holds six persons. With or without windshield (see cut), which folds flat under mattress. Complete, with lines and hooks ready for hanging, delivery charges prepaid in United States, carefully packed.

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GROW CACTI Easiest of all flowers to grow, indoors or out; very hardy. In immense variety of forms and species. Exquisite flowers, 1 to 5 in. wide and yellow, scarlet, purple, etc. We are in heart of cactus country and ship healthiest plants only. Note these Special Introductory Offers

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Will clear your drives and walks of all vegetation quickly, more efficiently and enduringly than by any other way. U. S. Government uses SQUIER'S. Avoid substitutes. Send for circulars to

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Sold by the Grower Direct to the Planter

We are the only dealers in the United States owning and working nurseries in the Sassenheim district of Holland.

As growers of the stock we sell we are bound to maintain its good repute. Purchasers from us pay no commissions to brokers or middlemen.

Orders taken during June will be filled direct from our nurseries and healthy, first-class, true-to-name bulbs guaranteed.

SEND FOR OUR CATALOGUE.

FRANKEN BROS., Deerfield, Ill.

"HAMILTON-MADE" GARDEN HOSE

Slow to make, slow to wear out.

WHY do we stick to the old slow process of making hose?

Because by that process we get hose that is slow to wear out.

We know that the new, fast sausage-machine process is cheaper — but hose that lasts twice as long is better, even if it does take longer to make, and cost a cent a foot more.

That's HAMILTON-MADE HOSE.

Here are some of the leading grades of Hamilton-Made Garden Hose. Note that Every label bears the words HAMILTON-MADE



HAMILTON-MADE Hose is made by our OLD, SLOW PROCESS, which produces such stiff, springy, long-lasting hose. An inner tube of pure "live" rubber is tightly wrapped with layer after layer of close-woven duck, all vulcanized tight together, with an outside cover of tough rubber to take the wear. After seasoning, every foot is TESTED under tremendous hydraulic pressure, to discover the slightest defect. This enables us to GUARANTEE our hose to stand enormous pressures. Most makers will not do this.

There's a HAMILTON-MADE Hose for every different use and pressure, each grade made BETTER THAN IS NECESSARY to meet the requirements for that use, at prices from 10 to 25 cents a foot. Whatever grade of hose you need, ask the dealer for HAMILTON-MADE, and you will be certain of getting the BEST HOSE OF THAT GRADE that is made.

SOLD BY DEALERS EVERYWHERE

If your dealer has not HAMILTON-MADE HOSE on hand, we will deliver to you anywhere in the United States, FREIGHT PREPAID, 50-foot lengths of our highest grade hose, complete with standard brass couplings, for the regular price, \$12.50 each length. This splendid hose stands a pressure of 750 POUNDS TO THE SQUARE INCH, and while it is our highest-priced garden hose, it lasts so long that it is in reality probably the CHEAPEST hose made.

If you want hose of a different grade, write us for samples and the names of dealers near you.

Hamilton Rubber Manufacturing Co.
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Complete Home Study Courses in Agriculture, Horticulture, Floriculture, Landscape Gardening, Forestry, Poultry Culture, and Veterinary Science under Prof. Brooks of the Mass. Agricultural College, Prof. Craig of Cornell University and other eminent teachers. Over one hundred Home Study Courses under able professors in leading colleges.

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Kills Weeds—Makes Grass Grow

Applied as a light top dressing to Lawns it kills all flat-leaved weeds, such as Dandelions, Daisy, Plantain, Sorrel, Chickweed, Moss, etc., and produces a wonderful luxuriant rich green growth of Lawn Grasses which is distinctly noticeable fifty feet away.

Prices: 2 lbs. 25c; 5 lbs. 50c; 25 lbs. \$2.00; 50 lbs. \$3.50; 100 lbs. \$6.00.

Quantities: If very weedy 1 lb. to 40 sq. ft.; 25 lbs. to 1,000 sq. ft. (20 x 50). Half amount if moderately weedy. Delivered in all large cities. Descriptive circular Mailed Free.

Absolutely guaranteed effective in 48 hours or money refunded.

SUPERIOR CHEMICAL CO., Incorporated Mfrs., LOUISVILLE, KENTUCKY

**Exact Tints
From Pure
White Lead
Paint**



ONLY by mixing paint to order can all gradations of tint be obtained.

One advantage of using pure white lead and linseed oil, and tinting the paint at the time of making, lies in the fact that the most minute variations of color may be secured. Another advantage is the permanency of these tints. They will not fade or wash out.

Furthermore, any kind of finish may be secured with pure white lead paint by changing the liquid constituents (oil, turpentine or varnish), giving dull, glossy or enamel surfaces.

For all painting, interior or exterior, specify pure white lead ("Dutch Boy Painter" trade mark). The "Dutch Boy Painter" is the guaranty of white lead purity and reliability.

Send for our "Dutch Boy Paint Adviser No. 95" and learn why pure white lead paint, mixed fresh with pure linseed oil at the time of painting, is the most satisfactory and most economical paint to use. Booklets on home decoration and landscape gardening included. All free.

Our Pure White Lead ("Dutch Boy Painter" trade mark) is now packed in steel kegs, dark gun-metal finish, instead of in oak kegs as heretofore.

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The oldest established manufacturers, the largest line of drilling machines and tools, and 41 years of successful operation in nearly every country in the world, make

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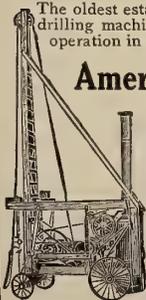
For every possible condition of earth and rock drilling and mineral prospecting we make a drill especially designed for the requirement.

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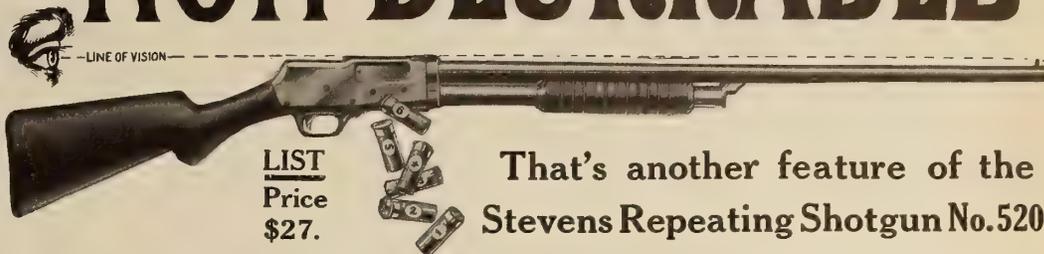
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NON-BLURRABLE



LIST
Price
\$27.

That's another feature of the
Stevens Repeating Shotgun No. 520.

The front of the receiver is milled with a short, matted surface, far enough away from the eye to give a clear, unblurred sight. There is no projection behind the breech to distract the mind or blur the eye. This is the Stevens Natural Sighting Method. It gives clean cut natural lines, with a perfected and natural balance that makes this No. 520 a Natural Pointer.

The Stevens is the fastest Repeater in the world, because the Repeating Action is the easiest to operate and because the mechanism cannot be clogged when you do work it fast.

THUMB & FINGER

Are enough to operate the pump action of this model. So easy working, such simple and accurate parts that after pushing the safety catch, a one-armed man can reload the Stevens Repeater by giving the gun a forward "yank." Put the Stevens Repeater in the hands of an ordinary shooter and he can get in 6 shots while his double-barreled camp-mate is ejecting his second shell.

But all this unusual speed would be useless in a gun unless it is absolutely

NON-BALKABLE

That's what the Stevens is. 6 Lightning shots with never a chance for a clog or balk. The best experts in the country have tried to balk this gun and failed. The reason is that the empty and the loaded shells travel by 2 separate routes and both start at once. They cannot meet—they cannot balk the gun. The repeating speed is ahead of the human hand. Knowing that the gun can't clog increases your speed. Knowing that it's a Natural Pointer increases your accuracy and cuts down the misses. Knowing that there is a wall of solid steel between you and the primer gives you confidence. No gas or parts of the gun can blow back.

Safety—close, hard hitting—top speed—natural pointing—non-balking—perfect balance—are these the things you want in a gun? Clinch what we say by seeing the gun for yourself. Throw a Stevens Repeater to your shoulder in any Sporting Goods store. Get the feel of it and know for yourself just what we mean when we call it the Natural Pointer.

Act now and you will thank us every field day of your life. Every trap day too.

If your dealer hasn't this gun in stock we will send express prepaid on receipt of LIST Price, \$27. This gun is also made as No. 522 with 30-inch barrel, fancy stock; straight grip; checked grip and forearm slide, stock 14 inches in length, drop 2 1/4 inches at heel; 1 1/2 inches at comb; weight 7 3/4 pounds; no deviations. LIST Price, \$40. Also made to order as No. 525, with straight or pistol grip, any length of barrel and reasonable options. LIST Price, \$50.00.

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But it's to our advantage that present and future users of Stevens rifles and shotguns become expert shots. We employ some of the world's crack shots. They know all the little kinks—fine points that get them big scores.

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Hardy Ferns and Flowers
For Dark, Shady Places**

Send for my descriptive catalogue of over 50 pages, which tells about this class of plants. It's free.
EDWARD GILLET, BOX C SOUTHWICK, MASS.

HARDY NORTHERN GROWN NURSERY STOCK

WE GROW EVERYTHING FOR PLANTING THE HOME GROUNDS

A GENERAL ASSORTMENT OF

Trees, Shrubs, Vines, Roses and Herbaceous Perennials, Etc., Etc.

Our Illustrated and descriptive Catalogue for the asking

THE BAY STATE NURSERIES

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Modern Sleeping Porch fitted with Wilson's Blinds.

Wilson's Venetians

Blind and Awning Combined

for outside and inside of town and country houses: very durable, convenient and artistic.



Special Outside Venetians for porches and windows, exclude the sun; admit the breeze.

Mention GARDEN MAGAZINE for descriptive pamphlet.

Orders should be placed now for early summer

JAS. G. WILSON MFG. CO.

3 and 5 West 29th St., New York
Inside Venetians, Porch Venetians, Rolling Partitions, Rolling Steel Shutters, Burglar and Fireproof Steel Curtains.



BARTON'S LAWN TRIMMER

TAKES THE PLACE OF SICKLE AND SHEARS—NO STOOPIING DOWN

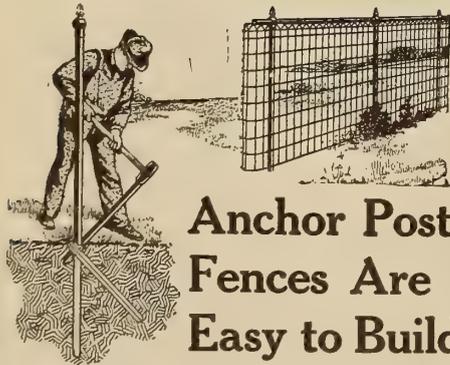
SAVES 90% OF TEDIOUS LABOR

Cuts where lawn mower will not, up in corners, along stone-walls, fences, shrubbery, tomb-stones, etc.

It is simple in construction and made to endure. Makes a cut 7 inches wide.

Price only \$3.75 each. Send Money Order to

E. BARTON, Ivyland, Pa.



Anchor Post Fences Are Easy to Build

because the post and its anchors are driven into the solid ground. No digging is required.

This means a great saving of time and labor, but, above all, it means a fence that stays in true line, does not get out of order, and that will always look well.

This anchorage is the unique feature of all our fences. Then, too, the posts are galvanized. They will not rust off, either above ground or below.

Our fences are made in all heights and in a great variety of styles for—

Lawns, Gardens, Poultry Runs, Tennis Courts, Back Stops, Etc.

We also manufacture and erect Railings, (plain and ornamental) and Entrance Gates.

Write for Catalog.

Anchor Post Iron Works

11 Cortlandt Street (11th Floor) New York City

Good News for Bulb Fanciers

THE changed duty on bulbs, according to the new tariff law, is of great interest to the amateur. Instead of the old 25 per cent. *ad valorem*, we now have specific duties on various classes of bulbs. Lily-of-the-valley pips, tulip, narcissus, begonia and gloxinia bulbs will now pay one dollar per thousand, and this means that it will cost the same one-tenth of a cent each for the newest and best bulbs as for the cheap things that have been grown for years. The former arrangement penalized the progressive amateur; to-day he has the satisfaction of spending all his money for the bulb itself. Clumps of lily-of-the-valley, hyacinth, astilbe and dielytra (as the law, with commendable accuracy, calls the old bleeding-heart) will pay a quarter of a cent each. The fancy hyacinths, for instance, will cost only their price plus that quarter cent, instead of a quarter of their price additional. Lily and calla bulbs will pay a half a cent each, as well as peony, *Iris Kämpferi* and *Germanica*, calla, dahlia, and amaryllis bulbs. Why the rather plain and not very popular *I. Germanica* should have been picked out for special mention while all the rest of the iris are included in the "all other bulbs, bulbous roots or corms, which are cultivated for their flowers or foliage," which come in at five cents per hundred, is one of the mysteries of the new law. It is possible that they will try to class *Iris amœna*, *neglecta*, etc., as *I. Germanica*, but as the exact botanical status is being insisted on in the case of the little Muscari, which are indeed hyacinths, there is a good chance that these iris will be imported for what they are.

That last clause, "fifty cents per thousand for all other bulbs," is the finest thing yet for the discriminating bulb lover. Now we will have a chance to find out what some of the rare South African and South American bulbs look like in bloom and we may plan "Cape pits," as they call them in England, although the chances are that with a little care these will bloom as well for us in the open as does the gladiolus. This, too, is one of the "all others" and we will now find out promptly what the newest French sorts amount to at practically their price abroad.

No great drop in the catalogue prices of bulbs can be expected, however. Partly on account of the former high duty and partly on account of the lack of general interest in them, very few dealers list many of the fancy sorts. In the case of the cheaper kinds the specific duties are the same or even slightly more than the *ad valorem* duties calculated on the wholesale price. We cannot expect dealers to invest money in expensive stock on the possible chance of someone wanting it.

The way to take advantage of the lower prices is to think ahead. Do not wait to figure on your bulb order until the little blue crocuses rise through the grass of your lawn to warn you of the coming snow, but get at your lists now. Go to your dealer and get from him some of the foreign lists, unless you have already written abroad for them. All the dealers will gladly accept a definite order for bulbs to be imported and, since they are not asked to run the risk of loss, the prices will be correspondingly low.

Another practical way to get a few bulbs of special sorts is to order direct from the foreign dealer and have the package sent by parcels post. Allowance must be made for the cost of postage, and payment can easily be made by international money-order; but here again you cannot wait till the last moment—you must take the matter up two months before you want the bulbs, in order to get the price list, find the weight of the parcel, allow for the slower steamers on which they are likely to come, and then pay at the post-office whatever duty is charged according to the invoice which will come on the package. So it is now time to plan for the bulbs to plant next fall; many of them, rarely seen here, are perfect jewels of color and form and are well worth the trouble of getting and caring for. And then there are the summer bulbs too; some of which are wonderfully pretty.

The changes in the duties on nursery stock will not greatly affect amateurs. For the most part the rate remains at 25 per cent. *ad valorem*, while garden, farm and flower seeds are free, as they have been for years.

New York.

F. D. C.

Brenlin Window Shades



Look right and wear

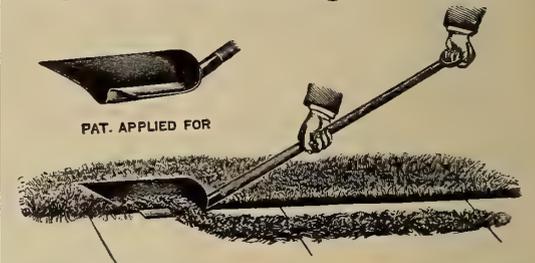
Made entirely without the "filling" used in ordinary shades. This difference in material makes the difference in wear, makes Brenlin actually the cheapest shade material you can put up.

Don't accept anything else. Write us for book of samples and names of dealers in your city. Get shades that wear.

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Look for **BRENLIN** along the edge.

Imperial Lawn Edge Trimmer



The most practical, durable and efficient device of the kind ever made. Trims rough, straggling, overhanging grass along edges of walk, leaving a sharp, clean U shaped trench (see illustration). Cuttings are deposited on sidewalk and easily removed. Complicated lawns easily trimmed in a few minutes' time. Every home with a lawn needs the Imperial Lawn Edge Trimmer. Soon pays for itself. Price only \$1.25 prepaid in U. S. and Canada. If your dealer will not supply you we ship direct on receipt of price. Order today.

Imperial Bit & Snap Co., Dept. A, Racine, Wis.

"SCALECIDE"

will positively kill San Jose Scale and all soft-bodied sucking insects.

Send for Booklet "Orchard Insurance"
B. G. PRATT CO., 50 Church Street, New York City

Tower's Fish Brand Slicker

Is Famous for its Sureness

OF DOING ITS DAY'S WORK—AND THAT DAY'S WORK IS TO KEEP YOU DRY AND COMFORTABLE WHEN IT RAINS.

\$3.00 Everywhere

GUARANTEED WATERPROOF

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29 Years in Service,
Without Repairs, is
the Record of this
"PENNSYLVANIA"
LAWN MOWER



This is not the *only* "Pennsylvania" with such a record; there are thousands of others like it.

A "Pennsylvania" Lawn Mower lasts because the blades are made of the highest grade *crucible tool steel*—hardened and tempered in oil. It's the *only* mower in which all blades are of crucible tool steel. They're self sharpening, *always* in the best cutting condition. Castings are *ground true*.

If you want the "final word" on lawns and mowers, send for a copy **free** of our book—"THE LAWN—ITS MAKING AND CARE." It's from the pen of a well-known authority.



SUPPLEE HARDWARE COMPANY
Box 1575, PHILADELPHIA

Strokum Stops Caterpillars
Anyone Can Put It On

SIMPLY band it around your trees. No need to cut the bark down smooth before applying, as Strokum fills up the bark chinks, and the caterpillars or tussock moths can't crawl under it and won't crawl over it.

The second crop will soon be going up the trunks, **now is the time to put on Strokum.** It lasts an entire season, but does not stick to the bark all winter as do the unsightly smeared-on tar preparations.



Does not dry up as does fly paper. Is not carried off by the birds as is cotton.

Strokum is a purely vegetable product that we guarantee to be perfectly harmless.

Send \$3.00 at once for a sample package of fifteen pounds, which is enough to band fifteen trees three feet around. Express paid East of the Mississippi; 50 cents extra West of it.

Send for our illustrated booklet

George Stratford Oakum Co.

161 Cornelison Avenue, Jersey City, N. J.

Sharpen Your Lawn Mower
20 times for 35c.

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, 35c., or sent prepaid on receipt of 40c., 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.

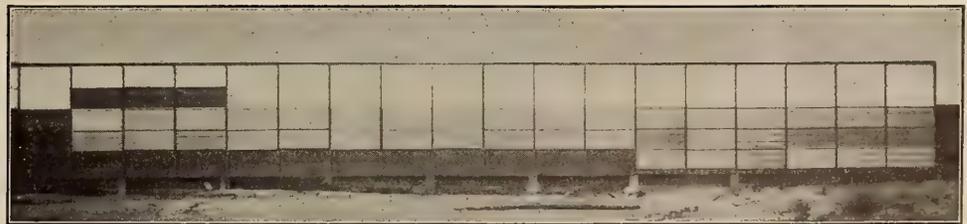
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Tennis Court Enclosures, Unclimbable Wire Mesh and Spiral Netting (Chain Link) Fences for Estate Boundaries and Industrial Properties—Lawn Furniture—Stable Fittings.

F. E. CARPENTER CO., 253 Broadway New York City

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THE PAINT TEST FENCES

At Atlantic City, Pittsburgh and Fargo were erected to test the durability of all kinds of paint.

In every case the most durable paints have been those containing OXIDE OF ZINC.

Does your paint contain Oxide of Zinc?

Oxide of Zinc is unalterable even under the blowpipe

The New Jersey Zinc Co.

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We do not grind Zinc in oil. A list of manufacturers of Oxide of Zinc Paints mailed free on request.

All the plates used in

THE GARDEN
MAGAZINE

are made by

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140 Fifth Avenue New York

Preparing the Soil for Planting

THE work of breaking up the rough soil will now have to be commenced. If the soil is not very hard or stony the greater part of the digging can be done with spades; but mattocks are much more effective if the ground is stony or matted with roots of trees. All stones and other rubbish brought to the surface must be wheeled away, and the soil dug as deeply as possible without bringing clay or hardpan to the surface.

Many of the artificial fertilizers on the market are excellent in their way, containing as they do everything required for the nourishment of plants; but some soils, because of their stiff nature, are greatly benefited by a liberal application of well-rotted barnyard manure. Work it well into the soil with digging forks or plow it in; and then, if bone meal or some other equally good fertilizer is applied at the rate of about one ton to an acre and thoroughly incorporated with the soil, the ground is ready for final grading with wooden or iron rakes.

INSTALLING DRAINS

If roughly cleared ground is wet or sour, it will need to be thoroughly drained, because very few trees or plants will thrive in such soils. The simplest and best way to do this is to take accurate measurements of the land and work out, on paper, the plan for drainage, which will save time while the actual work is under way and will also be of use should there be occasion to disturb the pipes in any way. Drains are permanent improvements and for that reason, as well as for the good of the land, the work should be done thoroughly in the beginning. Make single or lateral drains about thirty feet apart and at a depth of at least two and one-half feet. Make the trenches wide enough for a man to work in them. The top soil should, in most cases, be easily and quickly removed with spades, a mark for each side having previously been made with a garden line for a guide. The hard subsoil will have to be loosened by picks and then removed with long-handled shovels.

In order that the water run freely through the pipes, a continuous fall must be allowed from the highest point to the main drain into which all the laterals carry the water. This main drain pipe should be large enough to carry away all the water drained out of the soil by the two and one-half inch tile pipes in the laterals. The disposition of the drainage water as it emerges from the main drain pipes will have to be provided for as the locality and conditions will best permit. When the tile pipes are laid in the drains a few broken stone should be placed along both sides and on top of the pipes, and a light covering of loose straw or excelsior put over these in order to prevent loose soil falling into and causing an obstruction in the pipes. All the soil needed to fill in the drains can be quickly shoveled in from both sides after the pipes have been placed in position.

New York. DAVID McINTOSH.

Using Straw Matting in the Garden

AFTER every "spring cleaning" we usually have left over a roll of old, worn-out straw matting, which we take out into the garden. We cut it up into convenient widths and lay it between the rows in the strawberry bed and between the currant and raspberry bushes—in fact, wherever it is desirable to keep down the weeds and maintain moisture in the ground, and wherever a mulch is desirable.

A thousand and one similar uses can be made of this cast-off material. If cut into strips about half its full width and rolled into cylinders about the diameter of a barrel, it makes excellent shields for transplanted tomato vines. A few old barrel-hoops serve to maintain the shape.

Narrow strips, say about six inches wide, can be rolled into small cylinders and filled with earth. Plant early vegetables in these. When these have gotten a good start the whole thing can be put out in the garden without disturbing the roots. A wad of stiff paper in the bottom will prevent the earth from falling through and the roots will readily penetrate this when it is planted out.

Massachusetts. WALTER H. SEARS.

Try This "RICHMOND" Suds-Maker Free

You simply turn the faucet and The RICHMOND Suds-Maker delivers thick, hot suds. It does not in any way interfere with the hot water faucet and can be easily attached to it. It gives you instead, two faucets—one for clean, hot water—the other for thick, hot suds.



Think of the dozens of ways this ingenious device will cut down the work in the kitchen! Learn what it means to save hundreds of steps every day—to always have thick creamy soap suds on tap. The "Richmond" Suds-Maker gives you any quantity of soap and water thoroughly mixed in scientific proportion—it is always ready to meet your instant needs. It puts an end to the drudgery of dishwashing—simply place dishes, silver, glassware under its creamy suds for an instant, then just rinse and wipe. It puts an instant automatic end to waste, to unsightly soap dishes, to the nuisance of using up the odds and ends of soap. Use any kind of soap.

Just send your name and address together with the name and address of your local plumber and

we will forward by express prepaid one RICHMOND Suds-Maker. Use it ten days—then if you think you can spare it, return it at our expense. This is your chance to learn about the greatest convenience, money and time saver you can install in your kitchen. Write today.

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IT is far from our intention to create the impression that our stock is high priced. It is, however, exclusive in design, and it is also true that we have had the patronage of the most discriminating and particular people in all parts of the country.

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Our cottage furniture is especially adapted for both Shore or Country houses where a simple, harmonious and artistic effect is desired, conforming with the surroundings, and yet not sacrificing one's comfort.

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Send for complete set No. 7, of over 200 illustrations.

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The best designs in antique and modern styles carefully executed in a strong, durable material capable of withstanding the severest climatic conditions.

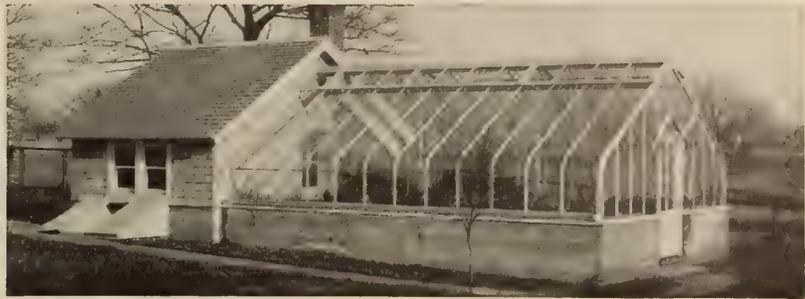
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Here Is This Little Greenhouse Again

We have already shown it to you, but somehow it seems like just the thing for a good many of you readers.

It is twenty-five feet long and has a center and two side benches. The proportionate cost of a small house may seem high, if you figure the potting room in, but if you already have a suitable building to which the greenhouse may be attached, you are that much better off. You see this greenhouse is of the curved eave, U-Bar construction, which insures you highest growing conditions and great durability. Because of its attractiveness, it can be placed just a step from your dwelling, with an assured pleasing effect.

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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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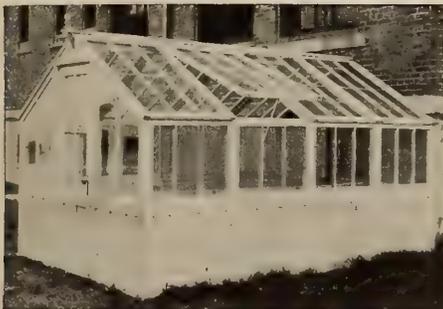
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Is ideal for a conservatory or sun room. Shipped knocked down, glass in, all ready for immediate erection. Anyone can put it up—no foundations needed. Price includes benches, radiating pipes and boiler—no extras. Send for booklet.

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Universal service as typified by the Bell System today is the result of thirty years of unceasing endeavor.

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*Twenty million connections made daily
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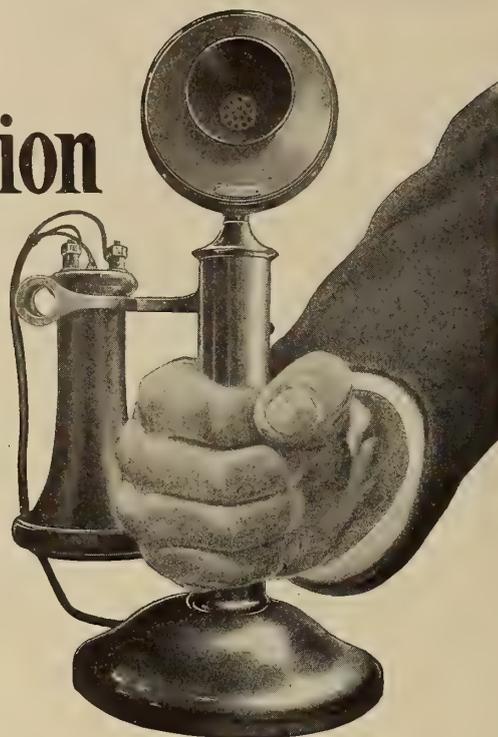
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The Bell System was so wisely planned and soundly constructed that it has kept pace with the constantly increasing demands of a Nation.



Seed to be Sown Now

PLANT tomatoes at once for transplanting next month. Sow the seed in small paper pots, one to each pot, and there will be no danger of the hot sun injuring the plants after they have been transplanted. Sow seeds of egg plant and pepper in the same way.

Continue to plant out gladioli, oxalis, montbretias and zephyranthes bulbs, dahlias and canna roots, violets and chrysanthemum plants. Keep them shaded for a week after setting out. Violets require lots of water during the summer; be sure to keep the soil thoroughly moist.

Sow seed of winter squash and pumpkin during the month.

Sow seed of celery now for transplanting the last of August. Keep the bed well moistened and shaded from the midday sun.

Sow seed of collards, Brussels sprouts and Savoy cabbage now. This cabbage stands the hot, dry weather of the South better than other sorts.

Sow candytuft, primula, poppies, early cosmos, cockscomb, heliotrope and other annuals to keep up a continuous supply of flowers all through the summer.

Mulch plants during hot weather. It helps wonderfully in keeping them growing and flowering.

Sow cow peas after oats, wheat and rye. They will not only give a good crop of hay but will also enrich the soil with nitrogen, one of the most costly plant foods.

Very early planted peanuts should not be cultivated later than the last of this month. Get them entirely free from weeds and grass and stop cultivation.

Keep strawberries free from weeds by frequent shallow cultivation. Cut off the runners as fast as they appear.

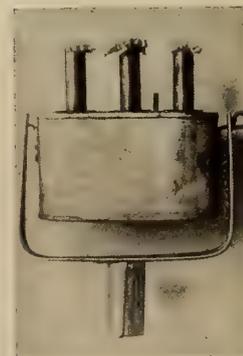
Continue to set out sweet potato plants or cuttings until the first of July in the upper South and until the first of August in the lower South.

Georgia.

THOMAS J. STEED.

Torches for the Tent Caterpillar

THOUGH spraying with arsenates early in the season is a preventive of the tent worm, the next best thing is to destroy both the caterpillars and their nests with fire, just as soon as they appear. A bunch of



straw or a rag saturated with kerosene and attached to the end of a pole will destroy them if it does not burn out before the task is completed; but it must be prepared anew each time. The advantage of a kerosene torch is that it is always ready for use and needs but to have the match applied. This often means that the time to burn out these nests can be spared when they are first noticed, as no

time need be spent in preparation. A common tin torch will answer, but the three-burner torch made for this purpose will do the work more quickly, and once purchased will last for years.

Pennsylvania.

J. L. K.

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The comforts and products of a country home are increased by employing a competent gardener; if you want to engage one write to us. Please give particulars regarding place and say whether married or single man is wanted. We have been supplying them for years to the best people everywhere. No fee asked. PETER HENDERSON & CO., Seedsmen and Florists, 35 and 37 Cortlandt Street, New York City.

Bedding Geraniums VICK QUALITY

The most striking plants for color-massing. Will grow and bloom almost anywhere. All colors, from pure white to brilliant scarlet. Single and double blooms. \$1 a doz. plants, by express at expense of purchaser. Just think of what a dozen would do for your garden.

JAMES VICK'S SONS,
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BE EQUIPPED FOR NEXT FALL

Order Sunlight Double Glass Sash in time to bed violets and pansies for winter. Also to supply lettuce and radishes.

Two layers of glass—a transparent blanket instead of boards or mats! Lets in the light; keeps out the cold.

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Equally Suitable for Men's or Women's Clothing

Moth Proof Red Cedar Chifforobe Sent on 15 Days' Approval

This beautiful Chifforobe has the best features of a Chiffonier and a Wardrobe. Is built of Southern RED CEDAR, the only absolutely moth-proof wood. Has air-tight doors. Is guaranteed moth, dust and damp-proof. No camphor or moth balls required. It eliminates cold storage expenses on furs, woolens, etc.

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Save four-fifths of your time on ironing day, do your ironing cheaper and better, by using **The Home Ironing Machine**
It irons all flat pieces beautifully without scorching. Shows a saving in time, labor, clothes, money. A light, simple, inexpensive machine for the home. Gas or gasoline heat costs 1c per hour. 30 Days' Free Trial. Booklet Free.
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In addition to affording perfect protection, are designed to conform to the architectural scheme of your home. They'll outwear two of the ordinary kind yet cost but a trifle more. The designs are exclusive and are executed in attractive colors. Send for particulars.
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Everything for Motor Boats and Yachts. Catalog No. 25 sent upon request

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Suitable for Roses, Gladioli, Lilies, Chrysanthemums, Pot and Herbaceous Plants, etc.

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Green colored, 2 ft.	.75	\$ 6.00
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7x8 ft. long 1-1/4 inch diameter dozen \$1.00 \$7.00

25 at 100 rate—250 at 1000 rate

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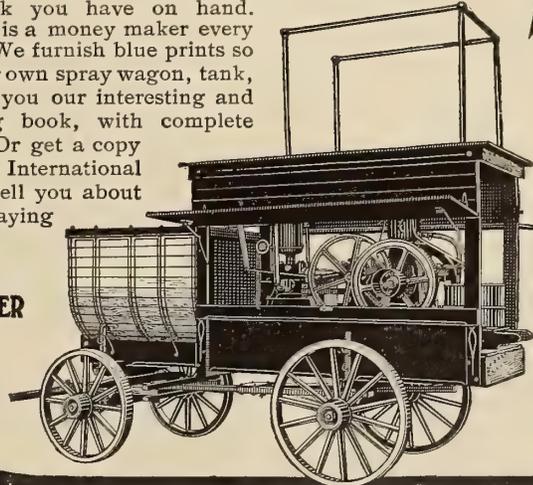
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YOU are entitled to full crops. Don't let insect pests and plant diseases eat away your profits. A Famous spraying outfit saves what you have been losing. It sprays all solutions more thoroughly, more rapidly—at less expense and with less labor than any other outfit you could buy. Thousands of farmers, fruit growers and gardeners depend on a Famous, for they know what is best. Many who have been discouraged with other outfits are having the greatest success with a Famous outfit. There is

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—no matter how little or how much spraying you will do—and you can easily detach the engine to use for any other power work you have on hand. Your IHC outfit is a money maker every day in the year. We furnish blue prints so you can build your own spray wagon, tank, etc. Let us send you our interesting and valuable spraying book, with complete spraying guide. Or get a copy from the local International dealer. Let him tell you about the Famous Spraying outfit you want.



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LOOK FOR THE I. H. C. TRADE MARK. IT IS A SEAL OF EXCELLENCE AND A GUARANTEE OF QUALITY

REECO WATER SYSTEM

(Water-supplies installed complete and ready for use)

We do the work, you turn the faucet. Our system relieves a customer of every detail. We install any kind of water-supply complete and ready for use. No matter where you live, if it be near a well, a spring, or running brook, and you feel that you could enjoy some of those comforts and conveniences which a bath and running water give in a home, but are in doubt as to the expense involved, write us and we will tell you exactly the cost, and in case you purchase, we will take complete charge of the work, relieving you of every detail of installation, thus giving you a water-supply all ready for the turning of the faucet. Our business life covers an experience of seventy years. During this period we have been able to adopt the best of such inventions and improvements as have from time to time become available, until our system of water-supply is the very best obtainable, being indorsed and in use of various departments of the U. S. Government and, to the number of over 40,000, is working in all countries throughout the world to-day. Our pumps are operated by electricity or hot air, as may best suit the location or convenience of the purchaser.



Showing pump in cellar connected with pneumatic pressure tank

Write to our nearest office for Catalogue U and let us tell you the cost of a water-supply all ready for use.

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50% below former prices. The list contains some 220 Vases of 34 different designs, Sun Dial Pedestals, Flower Boxes, Benches and Statuary. Many of these pieces are from our best designs; all of them equal to our best grade of workmanship.

The prices are actually 50% below former prices. This offer will not be made again. Send for our illustrated catalogue which contains some 600 designs of Garden and Hall Furniture.

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Erkins Studios

Carrara
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ROADSIDE
GARDENING

Exterminate Poison Ivy!

WHY not telephone two or three of your neighbors to come to your house some evening this week and figure out a plan for destroying all the poison ivy that lines the roadside from your respective homes to the railroad station?

You may be immune, but think about the people who are blinded for a week and suffer all that time!

You can hire a gang of workmen to root it out with a pick, mattock and the hands. People who work outdoors and perspire freely are not, as a rule, sensitive to ivy poisoning. But to make sure have an English-speaking foreman, who will watch them and as soon as he sees a man rubbing an itch, make him wash hands and face with warm water and soap. That will generally stop the trouble at once. This is the practice of a large nursery firm near Philadelphia which has employed gangs of twenty or more Italians in rooting out poison ivy from a hundred-acre tract of woods.

Let the foreman also have a bottle of sugar of lead dissolved in alcohol—half-a-dollar's worth. Any drug store knows how to make it. The chances are he will never have to use it. But this is a good thing to remember or paste in your hat, for you may get a case of ivy poisoning yourself. As soon as you feel the itching and see the pustules, hustle for the bottle and apply the stuff every five or ten minutes, for nothing can stop the course of the disease after the pustules are broken. If the lead irritates or reddens the skin, weaken the solution by putting in more alcohol.

Do you want the cheapest and sanest policy toward weeds on the roadway you use most? Don't, for the love of Heaven, let a gang of ignorant men mow everything down with a scythe once a year!

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New England Grown Means Quality

Our 1910 Catalog, mailed free, tells the whole story. Don't buy—don't plant, until you have seen it.

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Containing a mixture of the finest Grasses: Quart 25c, 2 quarts 45c 4 quarts 80c. Sent prepaid by mail to any address in the United States. Write for Catalogue.

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Is Your Milk Really Clean or Merely Clean Looking?

Strained milk all looks alike, it may be crowded with germs, or positively sanitary. Straining takes out the coarse dirt; *but if the dirt and milk once become mixed, the milk is tainted and cannot possibly be cleaned by straining.*

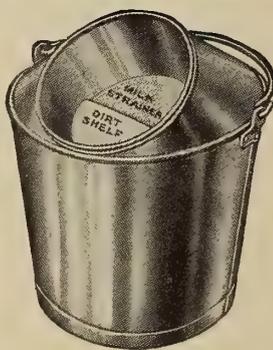
The **Sterilac** Pail assures really clean milk, because it keeps the milk and the dirt from ever coming into contact. It is the only effective *low-cost* device for producing pure milk. Furthermore, it is better made and will last longer than any pail that you ever owned. **Try it at our risk.**

Here is our offer: We will send a pail prepaid delivery. You try it for 10 days. If you are not satisfied, send it back at our expense. If you like it, send us \$2.50. Write us that you accept our offer, and we will ship the pail. Specify a seamless pail if you prefer it, at an increase in price of 50 cents.

STERILAC COMPANY

2 MERCHANTS ROW, BOSTON, MASS.

Modern sanitary Milk Apparatus of all kinds.



Note the strainer cloth on which the milk strikes.

Note the dirt-shelf which catches the dirt falling from the udder. The projecting top shields the strainer cloth from falling dirt.

It is easy to use, because the opening is of ample width. It does not spatter.



Poison ivy has three (not five) clustered leaves which are of a bright and shining green. It changes color early in the fall

That method will never control the worst weeds and merely destroys or impairs the beauty that is natural to the wayside, the glorious colonies of bouncing Bet, tansy, sumach, milkweed, yarrow, Joe Pye weed, sunflower, asters and goldenrod, none of which ever harmed a first-class farmer.

Goldenrod innocent? Yes. The real villain that causes hayfever is ragweed. And I don't mean any one of forty different things that people have in mind when they say "ragweed." I mean *Ambrosia artemisiifolia*, which doctors say is responsible for most of the hayfever. Look at its picture in

RAWSON'S ALL STAR OFFER

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Genasco Ready Roofing

Cross-section, Genasco Smooth-surface Roofing
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The Kant-leak Kleet makes seams absolutely water-tight without cement. Write for Genasco Book and samples.

THE BARBER ASPHALT PAVING COMPANY
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Place a sundial in your garden or on your lawn and it will return an hundred fold in quiet enjoyment. Write us for free booklet of

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If you want a copy of the "Leading American Seed Catalog," for 1910, address BURPEE, Philadelphia.



MEEHAN'S GARDEN BULLETIN

New, intensely practical garden paper for the interested owner of home grounds. Edited by the House of Meehan—56 years old.

Full of dependable articles by experienced horticulturists, experts—men who know of what they write.

Particularly dwells on landscape gardening, trees, shrubs, evergreens and hardy plants. The hints and suggestions are invaluable—no theories.

Send 10 cents for three trial numbers. One number is well worth the price.

THOMAS MEEHAN & SONS, Inc.
Box 17, Germantown, Philadelphia, Pa.



"Excelsior" Wire Fences

Are Rust Proof

WRIGHT WIRE CO.

Worcester, Mass.

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Lessens Wash Day Labor

The HILL DRYER saves half the time and work of hanging out the wash.

In use it is a neat, compact, revolving clothes line on which you can hang all the clothes without moving from one spot.

When not in use it folds up like an umbrella, leaving the lawn clear of unsightly spots and ropes.

HILL CLOTHES DRYER

is the modern clothes dryer—clean, compact, convenient. Saves all the wash and bother of putting up and taking down long lines and heavy poles, and the tiresome dragging of basketfuls of clothes in all kinds of weather. Keeps clothes up out of the dirt and dries them quickly. Costs very little.

THE HILL BALCONY DRYER

is just as great a convenience as the lawn dryer. Holds six times as many clothes as the dangerous pulley lines. Insist that your landlord provide one.

Write for Free Folder 12. Handsomely printed in colors and showing the Dryer in use.

HILL DRYER CO., 312 Park Ave., Worcester, Mass.

Socket
Centre Pole

Britton and Brown's *Illustrated Flora* and you will remember the old sinner.

What are the worst weeds of the roadside? There are only four: poison ivy and ragweed which cause diseases, nettles which sting folks, and brambles that tear flesh and clothing.

Any foreman will know these four plants. Let him destroy only those and leave everything else.

There's a policy for you! It may not be ideal, but is there any that is cheaper? And isn't it the most important? It must be, for health and comfort come before beauty.

Join the *Roadside Gardening Club* now. It has only one aim, viz, to make every foot of your daily walk or drive delightful the year round with little or no expense.

Write me what you are doing or wish to do to make your daily walk or drive more beautiful, and if I can help I will.

New Jersey.

THOMAS McADAM.



How to Apply Fertilizer

THE question of handling farm manures is a broad and important one. I am firmly convinced that on fairly fertile soils the use of stable manure in sufficient quantity will maintain high average yields of general crops indefinitely and to better advantage than the use of commercial fertilizers.

According to the generally accepted theory I am wrong, but the disagreement between theory and practice, in this case, is probably due to lack of understanding of the importance of the vegetable materials, and the bacterial influence furnished by manures and lacking in the chemicals.

A successful cotton grower in South Carolina has used for ten to fifteen years one thousand pounds per acre of high-grade home-mixed fertilizer on that crop. He has furnished annually more than five times the phosphoric acid removed by the crop. This excess should accumulate in the soil, an impervious clay subsoil, yet the owner cannot grow a successful crop without using his excess of phosphoric acid, and chemical analysis fails to show its accumulation in the soil. Therefore, it may be assumed the excess must exert some action we do not understand.

A farmer, seventy-two years of age, living on a farm in Pennsylvania, who asserts his father and grandfather owned and managed the same place in practically the same manner as he has done, uses only moderate amounts of manure and no fertilizer. He grows corn, wheat and grass in a four-year rotation, selling all the wheat and part of the other crops. According to the theorists, this should be a ruinous policy and rapidly deplete the phosphoric acid of the soil so that wheat would not make an average yield. On the contrary, his records covering many years show average yields of wheat ranging from twenty-five to forty-five bushels per acre. The soil is in fine tilth, and evidently above average fertility.

The happy medium is the best practice, but grain crops are grown at such a small margin of profit that heavy applications of commercial fertilizer on them seldom return their actual cost. The South Carolina man mentioned above averages seventy bushels of oats per acre, using only one hundred pounds of nitrate of soda as a top-dressing. We average fifty bushels in Western New York, and yet have never used any commercial fertilizer. The natural barnyard manure is far preferable to commercial fertilizer, if you can get it, well kept, for \$3 a ton.

New York.

F. E. B.

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.

YOUR HENS LAY BETTER

When housed in clean, sweet, well-whitewashed quarters. One of America's very noted poultrymen, who uses two, says that as the best money can buy every fancier should have a

Deming Spray Pump

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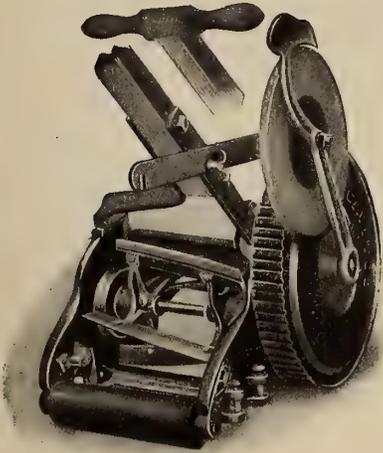
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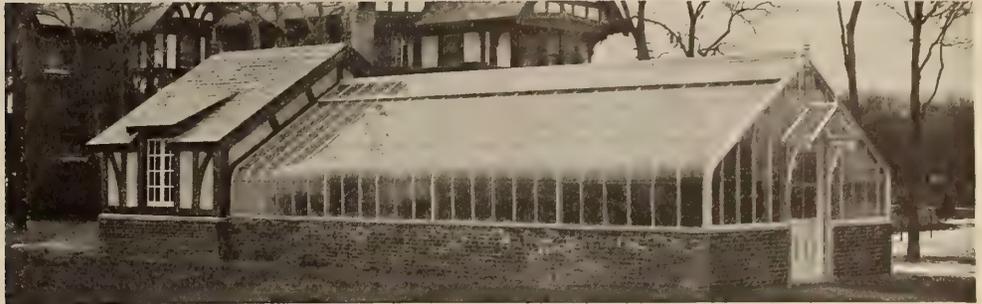
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Parts may be replaced at any time.

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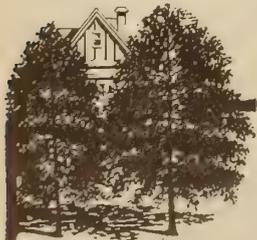
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E. J. G.

—First of all the physical texture of the soil needs to be changed. This can be done by adding sand, coal ashes, sawdust, charcoal—in fact, anything that can be thoroughly incorporated with the soil so as to make a more open texture. From six to eight inches of coal ashes and cinders has not been found any too much. After the plants have started, in order to stimulate growth, apply once a week one ounce of nitrate of soda dissolved in three gallons of water.

SOIL FOR CARROTS

What is the best kind of soil for carrots and the method of fertilization?

Maryland.

J. F. P.

—Carrots require a finely pulverized and porous, sandy, loam soil. Do not make the land too rich, as the crop will then run to top growth. Land that is in fairly good condition, and has been manured the previous year for summer crops, is usually rich enough. Do not use commercial fertilizer on a field crop of carrots unless the soil is very poor. If the land has lain fallow for a year, apply muriate of potash and nitrate of soda in alternation. Nitrate of soda alone would be apt to cause too luxuriant top growth.

PLANTING SMALL FRUITS

In starting a garden of small fruits (including rhubarb and asparagus) for a medium-sized family, how many plants of each kind should be planted?

Massachusetts.

C. A. F.

—One hundred strawberry plants may be figured on as giving an abundant supply of berries for a small family during the season. Plant Michel for an early variety; Brandywine, Nick Ohmer, Sharpless and Marshall for mid-season; Gandy for late. Plant about thirty raspberry bushes—Cuthbert, Golden Queen, Turner or Marlboro—one dozen currant bushes of Dutch, White Grape, Red Cross and Fay, and one dozen gooseberry bushes of the Downing or Industry varieties. One dozen plants of Linnaeus rhubarb ought to be enough; an asparagus bed 12 x 12 ft. after it is well established—that is after four or five years—should give more asparagus than the average family can use. Plant either Colossal or Palmetto.

THE WAY TO GROW CURRANTS

How are currants grown?

New Jersey.

L. R. D.

—Currants succeed best in a deep, moist loam. Give a heavy mulch in the fall of coarse stable manure or straw; unless this is removed in the spring before the roots have had a chance to make much growth, it will cause the roots to grow very near the surface, and the second winter the bushes are liable to be tipped over by strong winds. Shallow, level cultivation gives the best results. Keep the land rich with heavy dressings of stable manure or fertilizer each year, so as to produce strong new canes, for there is no fruit that runs small so quickly on old wood as the currant. Plant about four to six feet apart, either in the spring or fall. The currant comes into bearing the second or third year after planting. Remove the old wood after it is three or four years old, and allow only a limited number of new canes to grow.



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Unscrupulous agents pretend that complicated cream separators can be washed by "sousing" 40 to 60 disks as one piece. The "New York Produce Review," of April 13th, contains statements from prominent creamery men who condemn "sousing." The following extracts from these statements should make unscrupulous agents hide their heads:

"Wash machines every time they are used and not use the 'sousing' method advised by agents of complicated machines—this method being very injurious to cream."—**DAVID W. HODGES, New York.**

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"It has been demonstrated by tests that it does not pay to have the separator partly clogged with filth."—**L. C. SHEPARD, Ohio.**

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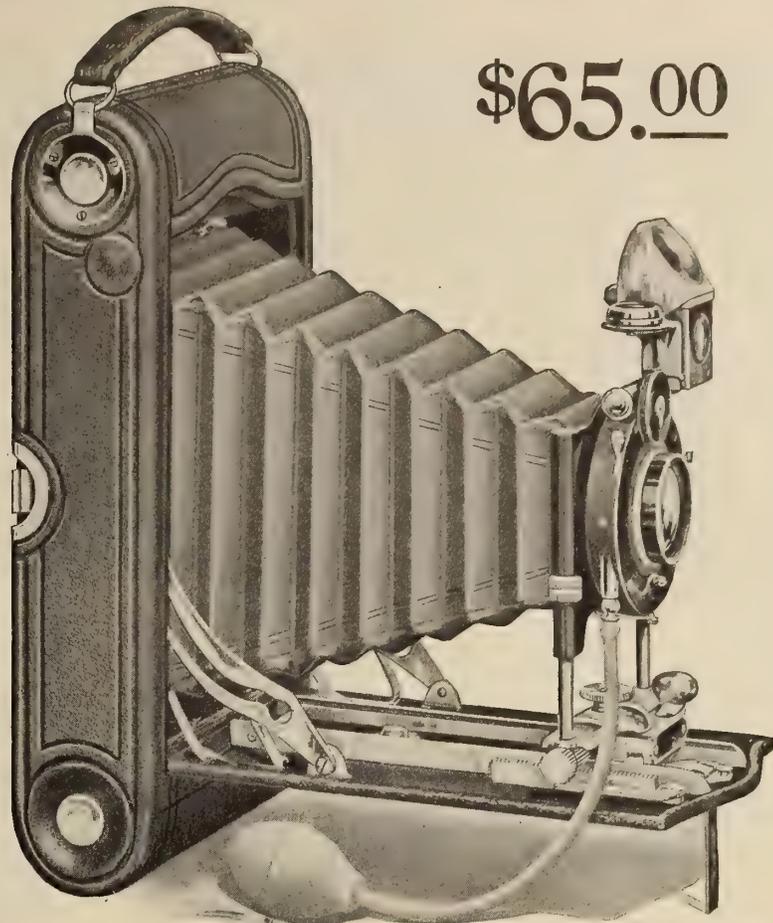
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Stencil No. 35



Stencil No. 59

Stenciling

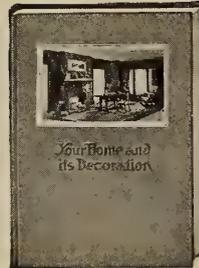
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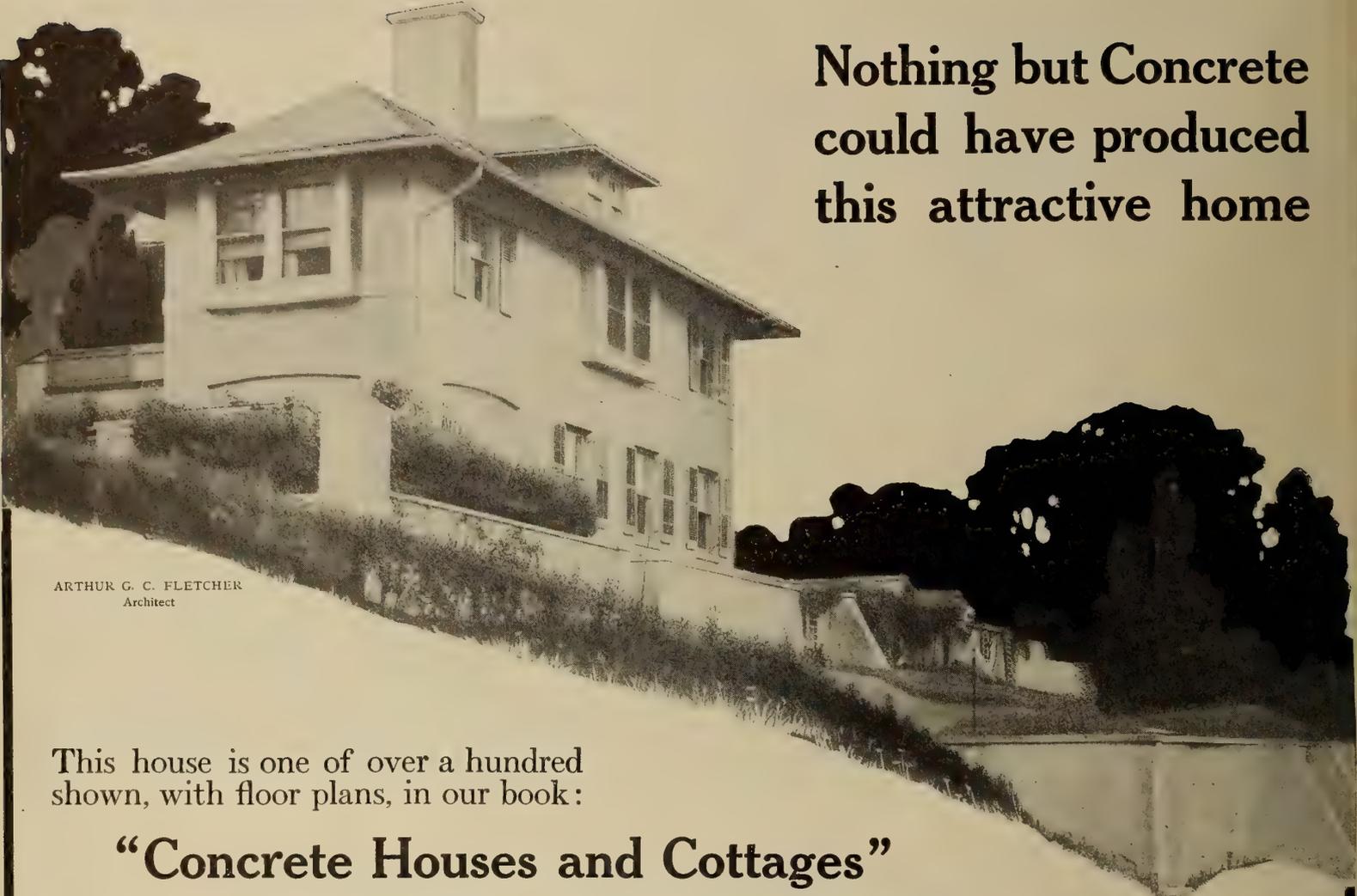
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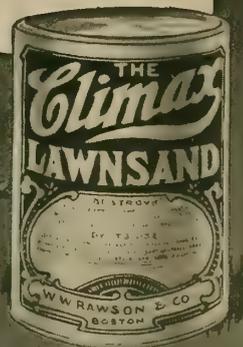
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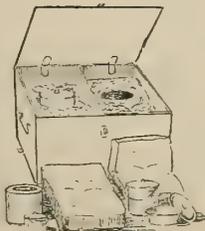
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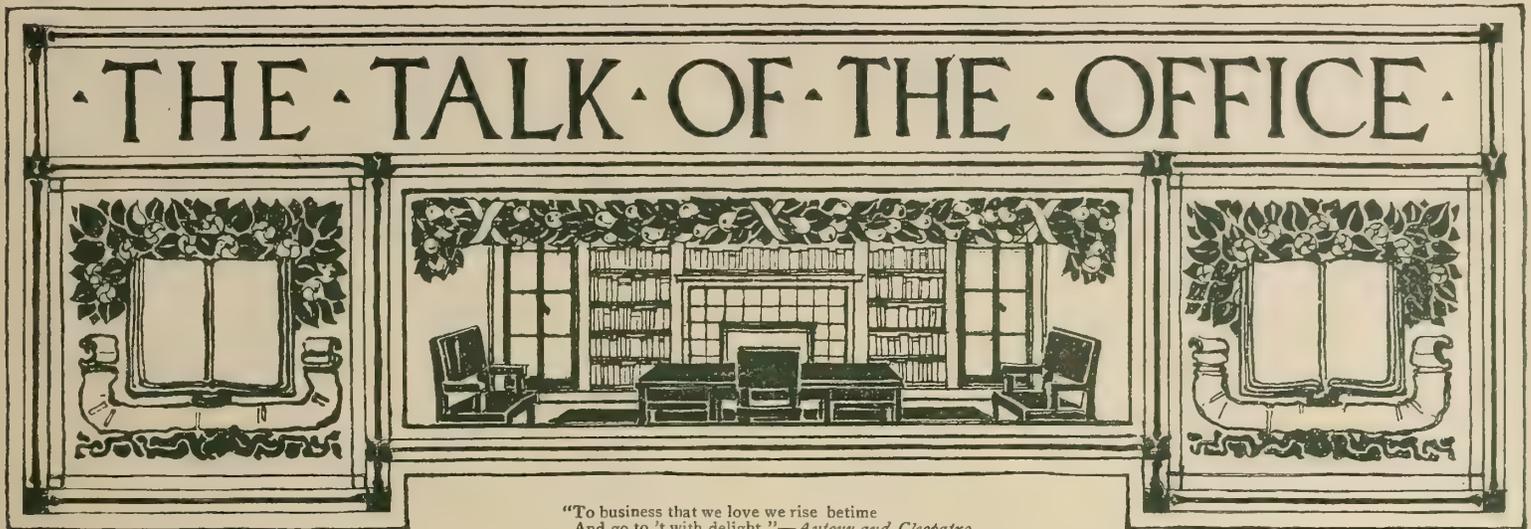
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PROGRESS AT GARDEN CITY

As this issue goes to press, the concrete foundations of our new building at Garden City, Long Island, are rapidly rising — to the accompaniment of a chorus of spring robins and orioles; a contractor is leveling off a baseball diamond; a thousand young trees have been put into the ground, and some thousands of others have been arranged for fall delivery; architects' drawings for decorative details are being passed; and there seems no doubt but that we shall be able to welcome our friends in our new country home on our tenth birthday. We have some ambitious plans for developing the Country Life Press into a permanent exhibit of real interest to everybody who cares for the things that *Country Life in America* stands for and we believe that the smell of the real soil will be much more noticeable in our outdoor publications when these plans have a chance to mature. Anyhow, we can now report some visible progress.

THE WAY TO HEALTH

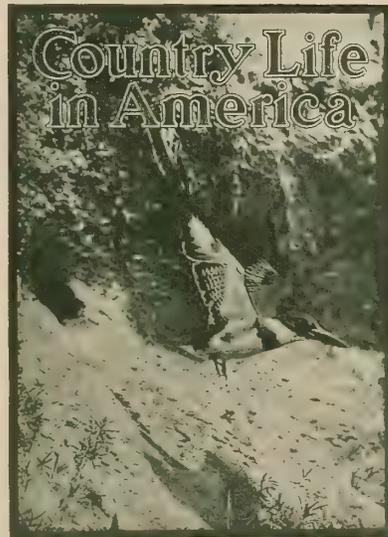
The whole nation has been waking up in the last few years to the significance of what the scientists have discovered regarding the terrible amount of unnecessary disease and premature deaths which have resulted from a disregard of the laws of health. *The World's Work* has for a long time been busy in an attempt to focus these new and old facts for the benefit of the ordinary every-day man — for not one out of ten gets as much out of life as he should, just because he is not physically as well as he might be.

In the October number was published an



Starting the foundations at Garden City

article on "How I Got Well" — written by the man who did it, and telling where he went, what he did, the mistakes he made, and telling his story in every-day language. Up to April the writer of the article had received more



July cover of "Country Life in America"

than two hundred letters asking for further information, and twenty of his correspondents had already gone for treatment in the region where he had been cured.

To give intelligent, helpful information to people with crippled lungs was well worth while, but that article was but one of many that *The World's Work* has arranged for. Since October the following have been published:

- "The Consumptive's Holy Grail" — December.
- "The Pace of Business Men" — January.
- "Should Doctors Tell the Truth?" — February.
- "Getting Well at Home" — April.
- "Quarantining the Home Against the Diseases of Summer" — May.
- "Curing Blindness Before It Happens" — May.
- "What Not to Do for a Headache" — June.
- "Gardening as a Cure for Mental Break-downs" — June.
- "The Drug Clerk a Poor Family Physician" — July.

And here are some of those which are yet to come:

"What a Man of Forty Should Look Out For" — the warning signals that flash at this period; how a man may detect grave trouble in time to avert it.

"Some Stomachs I Have Known" — a common-sense article by a specialist, written in language that everybody can understand.

"How I Got Rid of Rheumatism" — the personal experience of the man who did it.

"What to Keep in the Family Medicine-case" — a list of the best household remedies for the average family, and how to use them.

"What to Do Before the Doctor Comes" — some simple ways in which ordinary emergencies may be met while expert assistance is on the way.

"How to Keep Out of a Sanitarium" — how to know when you are on your way to that institution, and what to do to avoid it.

"The Increasing Army of Pill-Eaters" — the growing practice of taking widely advertised remedies that lead directly to the forming of drug-habits.

This July issue is the annual UPLIFT NUMBER: it makes inspiring reading for every right-minded, optimistic American.

And, by the way, Mr. William Bayard Hale, whose interviews with notable men have reached such a high level, has just returned with Mr. Roosevelt — so that you may shortly expect an article of extraordinary insight, following the impressive symposium on "the most interesting American" in the current issue.



An old wistaria on the Garden City site



JULY, 1910

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The Garden Magazine

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JULY, 1910

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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.]

It Is Not Too Late

ALTHOUGH it may be somewhat of a shock to some people, there is still time to make a garden. Just because you did not do anything to the ground before the first week in July is no good excuse for letting it remain idle any longer. Of course, this is contrary to all popular notions, but if THE GARDEN MAGAZINE has insisted on anything to the amateur gardeners, it has been the lesson of succession of crops and keeping up an interest in garden work all through the year. It is very poor gardening indeed to put all your plants and seeds into the ground during the first few days of spring, and then rest back contentedly because the garden "is made."

Did you ever stop to realize what you can do in planting vegetables in July? Probably not. And even if you made a beginning in April, it is high time to consider what is going to happen in winter. You can sow now for winter supplies vegetables of all kinds except the long-seasoned, tropical ones.

Plant all salads, including onions. These onions will not be very large, but they will be good just the same.

If you have facilities for watering, it is not too late for celery. It must be kept growing constantly. Here is a list of all the vegetables that you can sow:

Bush beans	Lettuce	Swiss chard
Bush limas	Onion	Corn salad
Brussels sprouts	Early potatoes	Water cress
Carrot	Rutabaga	Endive
Celery	Turnip	Kohlrabi
Corn	Pole beans	Mustard
Cress	Beets	Peas
Cucumber	Cabbage	Radish
Kale	Cauliflower	Spinach

Herbs of all sorts

The most important of these crops will be yielding from the end of August onward.

We do not advise transplanting any-

thing at this time of year, but if circumstances make it necessary it can be done by merely taking *very great pains*. Generally the smaller the plant the more easy it is to move at this time, because it can be moved with such a relatively large quantity of earth that its roots are never disturbed. Be sure to water thoroughly—very thoroughly—some few hours before moving anything that has to be taken up now, and water again when resetting.

In the Flower Garden

KEEP the faded flowers picked off as soon as the petals fall. This will prevent seed formation, which means more vigor to the plant and in the case of annuals induces a longer season of bloom. Keeping the garden cleaned up makes it much neater.

There is plenty of time to sow seeds for late flowers. The earlier sowings will usually complete their growth before the season ends. By sowing now for succession the common dreariness of the season's end could be avoided.

Sow pansy, mignonette, and such like. There is no more showy and more easily grown flower than the pansy, and the improved strains which are offered by the best seedsmen are well worth the extra cost. The flowers are larger, better formed, and come in a multitude of bright, rich colors.

Plant dahlia bulbs, putting in all that you may have left during the first week of July. Early planted bulbs which have made growth may need staking. Plant gladiolus bulbs for September flowers. Also sow freely all kinds of annuals where they are to bloom, selecting a cool and moist place.

Seeds of hardy perennials may be sown any time during July if they can be gathered.

If you want to have perennials flowering next year you must sow this year's "new crop" seed during July or August—the earlier the better. Do this preferably in coldframes. See the article "Perennials that Bloom the First Year from Seed," in March, 1907, GARDEN MAGAZINE.

Plants that have been plunged outdoors in pots can be repotted and established for winter flowers.

Now is the time to look out for geraniums that are to give flowers indoors during winter. Select young plants and see to it that they do not produce any flowers this summer. Pinch out all buds as soon as they are seen.

Other Routine Work

SEE that you have plenty of pots ready for use.

Layer strawberry runners into 2-inch pots for setting in the beds in late summer or fall. Watch all the fruit trees and rigorously thin out the set. A normal set should be reduced from one-half to two-thirds.

Look over the lawn, hoe out any mossy spots. Take note of the places and make a memorandum to underdrain them this fall.

The most important routine operation in the garden during summer time is keeping the plants supplied with moisture. Cultivation of the surface soil will accomplish a great deal, but succulent crops and fruits should have an abundance of water. Loss of water by surface evaporation can be prevented by cultivation and also, in the smaller, more succulent plants, by shading from the direct sun.

Perhaps your lettuce "bolted" last year. Try shading it a bit with cheesecloth, keeping it cool and constantly growing.



A hot-weather hint: shade lettuce and other "cool" plants with cheesecloth

The Right and Wrong Way to Plan a Garden—By W. Miller New York

YOU MUST NOT HAVE EVERYTHING YOU WANT, EVEN IF YOU CAN AFFORD IT—GET THE BEST ADVICE YOU CAN AND YIELD GRACEFULLY TO THE PERSON WHO KNOWS

I HAVE lately spent another month visiting in gardens. I have been motoring, driving, and walking, talking with owners, gardeners, and landscape designers, studying, browsing, and dreaming. I have seen hundreds of gardens with good features, dozens that were good as a whole, but oh! so few that completely satisfied the soul! I close my eyelids. Immediately there arise gorgeous visions of these perfect gardens. And a great flame of desire leaps up within me, a yearning to share with others the secret of these lovely gardens. I know I have it, but alas! I can never tell it. To me it is all summed up in one word—*fitness*. That means everything to me; it probably conveys very little to you.

But if you will conjure up all the delightful qualities that a garden may have, you will find that fitness includes them all—harmony, proportion, personality, privacy, peace, mellowness, neatness, brilliancy, charm. Of all the people who have lived,



The first consideration in planning a garden is comfort—not show. A garden seat at Mr. Beal's, Newburg, N. Y.

the Greeks, in my opinion, best understood the art of living. Their rule of life was fitness, and their motto was, "Nothing too much." Keep tight hold of this talisman. It will explain all the failures that we make and show how the perfect gardens are made.

1. *The perfect garden must fit the climate.* Most of our gardens are misfits. Many of us make a feeble imitation of the tropics by

depending too much on tender bedding plants, which leave the earth bare five-twelfths of the year. Instead, we should use hardy plants wherever possible. The wealthy squander fortunes on Italian gardens, but Italian marble crumbles in this climate and the broad-leaved evergreens of Italy—illex, bay, and olive—are not hardy in our Northern States. They would better lavish their wealth on flowers because our summer is better adapted to them than the Italian. Beginners plant chiefly European trees and shrubs, which, as a rule, are showier but short-lived. Experienced gardeners plant chiefly native material.

2. *The perfect garden must fit the soil.* It is fighting nature to have a rose garden on sandy soil. It is fighting nature to try to grow rhododendrons in limestone. Nature has adapted boxwood to lime and dozens of fine flowers to sandy soil. If you have rocky soil, do not blast out the rocks and make a lawn; have a rock garden. Real-estate dealers sweep off every native tree



The next consideration is how to use water to the best advantage. The Kneeland garden at Lenox, Mass.



A water feature in the garden of Mrs. F. N. Doubleday, Mill Neck, Long Island

and bush. Yet these very plants can tell you more about the texture of your soil, the plant food and moisture in it, and its possibilities than the analyses of chemist and physicist. Study the wild growth on your land, and make it a feature of your garden and grounds.

3. *The perfect garden must fit the laws of design.* The plan must be evident, but not too evident. There must be a sense of order, but not an overwhelming system. The garden should be connected with the house, not detached. There should be some symmetry, proportion, balance. The walks should be simple and direct, not intricate or inconvenient. These are not matters of private rights, taste, or fancy. They belong to the realm of law.

4. *The perfect garden must fit the personality of the owner.* Any rich man can hire a supreme artist and give him a free hand, but if a garden is merely a landscape architect's garden you can recognize it every time. The wrong way to put one's personality into a garden is to override the expert, for the laws of design cannot be violated. The right way is to give the landscape designer every chance to study your personality — to learn what flowers you like and dislike, your favorite amusements and your ideals. He ought to see as much of your home life as a portrait painter. His job is to know you better than you know yourself, to blend your conflicting desires, to discern what you will like best ten years from now.

5. *The perfect garden must fit the purse.* A good rule is to spend 10 per cent. of the total cost of a home on the outdoor features. But there must be many exceptions *e.g.*, a cottage costing \$1,000 may have an appropriate garden at a cost of thirty cents for flower seeds. People of moderate means are tempted to spend too little and their places for gardening are in danger of looking



Hunnewell garden, Wellesley, Mass. Japanese yew in the foreground, kalmia at a distance



This picture and the next illustrate the four things that age can give—size, shade, mellowness, associations. The first three can be gotten quickly. (Mr. Magarge, Philadelphia)



Ancient box and venerable crepe myrtle in the Wade Hampton garden

thin, poor, stingy, tasteless, or sporty. The wealthy are tempted to spend too much and their gardens are in danger of being ostentatious, unlivable, and soulless. A show garden for the present owner is not half so valuable as a garden that posterity will love. Aim to make a garden that your children will be able to preserve and will reverently cherish because it is full of your personality.

In other words, the right spirit in gardening is the spirit of *obedience* to the laws of nature and art. The wrong spirit is the

your own way and these things will *clash*; do what is fittest and these things will *blend*.

As Kipling says, every man should pray to be delivered from his heart's desire.

So far, I have been trying to illustrate the right and wrong spirit; now I shall try to illustrate the right and wrong methods. I wish I could tell you how to make a perfect garden, but I cannot. No magazine can tell you how to paint an exquisite picture. No book can teach you how to compose a musical masterpiece. The best I can

shade is to plant trees inside a garden; the right way is to have a pergola or summer-house.

2. *Use all the water you can—and with imagination.* If possible, put in tile drains and sub-irrigate, because then you will be insured against drought and floods. When other gardens have more bare ground than foliage, yours will be luxuriant; when others are poor in flowers, yours will be rich. Have a well to furnish drinking-water, to water the plants, attract birds and butterflies and



Rhododendrons are the most gorgeous of all garden plants—costly to buy and plant and slow to grow, but cheap to maintain and attractive the year round. Estate of Prof. Charles Sprague Sargent, Director of the Arnold Arboretum

domineering spirit. Has it ever occurred to you, my wealthy friend, that money cannot buy a perfect garden? You can have your own way about everything, but do you realize that the surest way to fail is to follow your heart's desire? Everything that you wish is opposed to something else that you wish. For instance, you "want lots of flowers," but you also want "grand old trees." If you have too many flowers, your garden will look new, "checker-boardy," trivial. If you have large trees in the garden they will rob the flowers. Have everything

do is to give a set of rules and these pictures. But neither can be taken literally. They merely illustrate the right and wrong spirit.

1. *Make your garden an outdoor living-room—not a place for show.* Do not fill it with cold, hard, marble benches. Have a comfortable seat with a back to it where you can rest in comfort, enjoy the shade, watch the flowers, read a book, listen to the rain, or think. If possible have a tea-house or place to eat outdoors or a screened veranda free from mosquitoes and the typhoid fly. The wrong way to secure

reflect the flowers. If possible, have running water for the charm of its motion and the soothing quality of its sound. If you can afford a fountain, think more of water than of marble. Let the fountain suggest the magic of water, its coolness, its rainbows, its mists, its purity, its inherent color rather than imposing statuary and a paltry dribble. Do not have fake-antique well-curbs without water, dry-throated dragons, concrete mermaids, dying gladiators, iron boys and girls under umbrellas, or any ready-made designs.



A wild garden that should be charming for hundreds of years — Gen. Weld's, Dedham. Pines, rhododendrons, euonymus. Beside a lake



A seaside garden where gardens were thought impossible. Mrs. Wyckoff's, Southampton, N. Y. The tall privet hedge is a famous windbreak

3. *Get the effect of age quickly, but not by means of quick-growing trees.* Shun Lombardy poplars, willows, silver maples, and all such trash, for they are short-lived. Instead, buy large specimens of red cedar, magnolia, and flowering dogwood — trees that are long-lived and will never grow too big. The precious things that age can give are grandeur, shade, mellowness, associations. The first three can be bought at a nursery or procured by the mover of big trees. Extra large boxwood or rhododendrons will give at once imposing size and mellowness. Extra large vines in pots will shade your pergola the first year.

If you live in the South, plant live-oaks,

and turn your back on the tempter who suggests water-oaks.

4. *Get an expert to make a general plan.* The wrong way to begin is to rush impulsively upon details. For example, it is wrong to begin with a catalogue and make a list of your favorite flowers. It is wrong to begin with statues, wall fountains, or any "junk." It is wrong to set one's heart on any one thing, *e.g.*, an Italian garden, a Japanese garden, or a collection of standard roses, for they may not fit the climate and soil. Get the very best help you can. Eschew ready-made plans. No first-class designer will make plans without seeing the property, because the perfect garden must grow right out of the soil.

5. *Make fitness the supreme consideration — not heart's desire.* The straight road to perfection is not through self-gratification, but through self-denial. Verily, it is easier for a camel to pass through a needle's eye than for a rich man to make a perfect garden. "Oh, if I had only known enough to yield gracefully to the expert," sigh the past masters of gardening (such as Mr. W. C. Egan and Mrs. Francis King), "I should have saved so much money, so many humiliating disappointments, and so many years of beauty!" Be warned! Garden design is a fine art, so get the best help you can. And if you cannot afford any, then study, study, study. And above all, see gardens, gardens, and still more gardens!



Miss Sarah B. Fay's rose garden at Woods Hole, famous for the new varieties that have originated there



A garden that has found itself — just a simple border of hardy flowers set off by healthy old evergreens

The Peculiar Merits of the Blackberry—By Chas. E. Chapman, Connecticut

THE LATEST AND THE LONGEST IN BEARING OF BERRY FRUITS—IMPROVED VARIETIES FOR THE HOME GARDEN THAT ARE LARGER AND MORE LUSCIOUS THAN THE WILD KIND

THE newest of the berry crops to be brought into cultivation, the blackberry, is the last of the season's small fruits. Did it ever occur to you how beautifully the berry fruits are distributed over so long a time? The strawberry comes first in the season, followed by the raspberries without any break and then the blackberries lengthen out the season till the orchard fruits are ready; and I think the blackberry is about the best of the berry fruits, making a longer season in full bearing, usually lasting from a month to six weeks when once established.

If we are to enjoy really good blackberries to-day, it is not safe to depend upon the wild berries; they do not seem to grow as they formerly did, as they have been too much sought after, and often there are scarcely any to be found.

An acre of blackberries will yield (the third year after planting, on an average), one hundred bushels, which sell on the market for from ten to twelve cents per quart, or even more in some localities. Commercially they are as profitable a crop to grow as raspberries, and for the home are certainly more so.

In its manner of growth the blackberry is similar in all respects to the red raspberry. There is a main root and from this horizontal roots grow in all directions. These horizontal roots have eyes from which suckers or new plants are sent up and a patch left to grow at will would soon become a thicket.

Propagation is either by these sucker plants that grow up spontaneously or by root cuttings which are procured by taking up the horizontal roots of the plants that have become established and cutting them in pieces of about three inches in length either in the fall or spring. If this is done in the fall the pieces are packed in boxes with a layer of sand in the bottom slightly moistened, and then another layer of cuttings, and so on until the box is full. The box is then put away in a cool cellar until spring, when the pieces of root are ready to plant out if they have wintered well. But sometimes if the temperature is too warm there will be considerable loss by the cuttings rooting.

I believe the better way is to wait until spring, and, when ready to plant the cuttings, take up the roots directly from the field and cut and plant them where they are to remain permanently. If desired, they may be planted in a furrow two or three inches apart. Let them grow one season and transplant the next spring, to where they are to remain permanently. Two inches is deep enough to cover them. If you are beginning the culture of the blackberry the best way is to procure your plants or cuttings of some reliable nurseryman.

The best ground for blackberries is a heavy clay loam, but they can be successfully grown on a variety of soils, and it does not

need to be so rich as for the other small fruits. Too much fertilizer will make an excess of cane growth instead of fruit. Land that is fertile enough to grow a good crop of corn will grow a good crop of blackberries. The land should be previously cultivated for at least one year, and two are better. While there is no danger of getting too much cane growth on the raspberry, there is on the blackberry. If you are setting for family use dig holes with a shovel or spade, setting the plants about as deep as they stood in the nursery row, and about two feet apart, with a distance of six feet between the rows, or for field culture seven feet apart.

Allow only two or three canes to grow from each one set; treat all others as weeds, and cut them out, unless you wish to have

more plants, when you can let some of them remain and they will be all right to set out the next spring. These sucker plants will do very well as a rule, but my preference is for the root cuttings, as I think the root system is better distributed and plants are apt to be stronger. It is a good plan in garden culture to mulch heavily between the rows and around the plants with marsh hay, leaves or any similar material, if it can be obtained; this will do away with cultivation in summer, and that means a good deal

to most of us. In field culture this is not practical. The ground may be fertilized with commercial fertilizers or stable manure, ashes or hen manure.

Plant as early in the spring as it is possible to work the ground, but any time up to the tenth of May will do; but early setting is better, as the plants are surer to grow. The spring following the setting the canes should be pruned or shortened in. This consists in simply cutting off the ends of the laterals. And this is best done after the blossom buds have begun to show and then you can leave on as many of these as you wish.

After the new canes have reached a height of eighteen inches nip off the tip with the thumb and finger, but if you have a large number it is better to use a pair of pruning shears as the work can be done very quickly, cutting off an inch or so of the tip of the cane. This causes laterals or side branches to form and the plant will grow in the form of a bush and be self-supporting, requiring no stakes or wires for support, whereas if the cane is not nipped it will grow up tall and spindling, and blow around and be in the way of cultivating. Some growers recommend delaying the nipping until the canes are three feet high, but then only a few laterals will grow up on the cane, the crop will not be as large, and the canes are more liable to be broken.

It is characteristic of some varieties to form most of the blossom



buds near the terminals of the laterals, with very few near the main cane, and in all varieties this tendency is sometimes noticed, so that if the pruning is done before the blossom buds form, you are liable to cut off nearly all the blossoms and will get but little fruit in consequence. It is a safe plan to cut off about one-third of the bearing wood and this can only be determined by waiting until the blossom buds show and then you will know where to cut. As soon as possible after fruiting, cut out the canes that have fruited and burn them. To do this work I have found nothing better than an old mowing-machine knife nailed on a piece of rake handle about four or five feet long. Have the knife ground sharp and the work may be done very easily, but you will need to wear gloves when doing this to protect the hands from the sharp spines on the canes. After this work is done all that is necessary to do is to keep the ground well cultivated and free from grass and weeds. The subsequent treatment is the same each year.

As to varieties, I select from the best these few, which I know by experience to be good:

Snyder, a strong grower and hardy; very productive; fruit of fair quality, but small.

Ancient Briton, a vigorous grower, very hardy and productive. The quality is better, and the fruit larger than in the Snyder.

Minnewaski, Erie and Lawton are all large-fruited varieties and very much alike. They are moderate producers of high quality fruit and when fully ripe have no core. Erie is the largest of all.

Eldorado is the most popular at the present time. I prefer it, if only one variety is set, to any of the others, either for home use or



Root-cutting plants can be depended upon to have a good root system and to transplant well

market. It covers a long season, the fruit is large and quality good and the sweetest of all.

The old Kittatinny is an extremely large berry and of exquisite quality, but it is little grown now on account of rust, which attacks the canes and spoils the crop.

Very like the real blackberry is the dewberry, or "low blackberry." Though many varieties have been cultivated from time to time, there is only one, the Lucretia, grown to any extent. While the blackberry grows similarly to the raspberry, on

an upright cane, the dewberry runs or trails on the ground and soon mats thickly unless restricted. It also differs from the blackberry in that it does not throw up suckers as do the blackberry and red raspberry, but propagates from the tips, taking root like the blackcap raspberry. Plants should be set any time in April or the first part of May in the Northern States, and earlier in the South. Set them about three inches deep, leaving on about a foot of the cane to handle them by. They do best in a sandy loam. Make the rows seven feet apart and put the plants five feet apart in the row for either garden or field culture.

For the first two years potatoes or any other low-growing crop may be planted between the rows. Keep the ground well cultivated and free from weeds, cultivating the same way to keep the vines straight in the row to a width of about two feet. In spring trim the canes to about four feet in length. Drive stakes two feet high in the row every fifteen feet. Staple a wire on top; then tie the bearing canes to wires. In this way the fruit is easily gathered and will be clean, leaving the ground clear for the new canes for next year's fruiting. The first year after planting you will get some fruit, the second year a fair yield, and the third year a full crop. The vines will continue to bear for eight or ten years before they begin to fail.

The fruit is jet black and of the finest quality, being without core when fully ripe, and fully as large as the largest blackberry grown. The plant is also very productive. In season it is from a week to ten days earlier than the earliest blackberry.



By proper pruning to keep the plants bushy, stakes can be done away with. Wait until the blossom buds show before pruning

What to Do with the Old Bulbs—By Luke J. Doogue, Massachusetts

DO NOT DIG UP AND THROW AWAY BULBS THAT WERE PLANTED LAST FALL, BUT CURE THEM FOR PLANTING IN OCTOBER — THE PROPER WAY TO HANDLE THEM AND ACTUALLY INCREASE YOUR STOCK YEAR BY YEAR

EASY as it is to keep the hardy Dutch bulbs—that is, tulips, hyacinths, and narcissus, and especially the two first named—from year to year, most amateurs saddle themselves with unnecessary expense by digging them up and throwing them away after they have done flowering, and then buying new ones to plant out the following October. If you want purely bedding effects, where every bulb should be of uniform size and quality and you are only dealing with small quantities, it will certainly be best to buy afresh each season, getting selected bulbs of first size. But for ordinary border planting you can keep them over from year to year and increase your stock by a very simple method.

The great secret of successful bulb culture is to leave them alone after flowering and let the foliage ripen fully. Do not be in a hurry to disturb them until the foliage has become distinctly yellowed and begins to shrivel. When the foliage shows these conditions, it is a sign that the bulb has ripened and growth has ceased for the season; it can now be lifted from the ground without suffering any damage. Indeed, by proper handling, it will be improved.

Some time, during the present month generally, it will be safe to lift tulips and hyacinth bulbs and spread them out in an airy, shaded place to dry. Do not place them in full sunshine, but outdoors under the shade of trees or in the shelter of a building. Let them ripen or cure here. When the foliage is entirely withered, curing will be complete. They can then be stored away in boxes in a cool place where there is plenty



After drying, store the bulbs, loosely packed, in shallow boxes put in a shaded place

of fresh air and free circulation. Everything depends on keeping them properly now. In a damp, badly ventilated place they will usually rot. In an overheated, excessively dry place, such as a furnace room, they will be completely shriveled. Keep them in a normal temperature and leave them until the fall.

In September, when garden work outdoors has generally ceased, will be time to attend to the bulbs. They can then be cleaned. The old stems will be perfectly dry and will crumble to dust as the bulbs are rubbed through the fingers. Clean them thoroughly and assort them into sizes, removing any little offsets, which may be treated separately by growing on for flowering size later. The cleaned, selected bulbs can be replanted in exactly the same way as the new stock imported from Holland. The small offsets should be planted in rows and treated exactly like the larger bulbs, and in time they will attain flowering size. Narcissus bulbs are best left alone for three or four years, and then, when they are disturbed, should be lifted in August and replanted as soon as

possible. They can be held out longer, but a great deal in vigor is gained by early planting.

Bulbs that are planted in the lawn can be lifted in exactly the same way for replanting, if it is thought that the foliage will become unsightly during the summer, or they may be allowed to remain where they are, provided the lawn is not cut over so that the foliage is removed before there are signs of ripening. It is perfectly practical, if the room is wanted earlier, to lift the bulbs soon after flowering, heeling them in

lightly to ripen in a shaded place in the garden. The one principle in bulb-growing and the only thing to be remembered is that the bulb cannot produce flowers next year unless it is allowed to grow naturally this season and mature its full growth before any attempt is made to dry it off and store it.

Forced bulbs that have been taken out from pots or flats and put into the garden border after flowering can be depended upon to recover if left alone, and the second year from forcing can be handled in exactly the same way as the other bulbs.

For storing, the best arrangement is to have the bulbs in shallow boxes or flats about two inches deep, with plenty of ventilation at the bottom, the boxes themselves being piled one on top of the other, but separated by supporting pieces so that the air can circulate freely at all times. In sorting out the bulbs for replanting, remember that the best bulbs are the heaviest in comparison to their size—not necessarily the largest. A healthy bulb can be recognized very quickly by the dry, clean, glowing appearance of the outer skin.



Look out for any diseased bulb and destroy it



When drying is complete, sort bulbs to sizes and clean off all dirt and rubbish and any little offsets



Put away each variety separately in an ordinary temperature

Planning Adjoining Lots as One—By C. L. Meller, North Dakota

NOT A COMMUNITY OR PARK IDEA, BUT A PRACTICAL SOLUTION OF TREATING SMALL LOTS THAT GIVES SCOPE FOR BROAD TREATMENT AND YET EACH PART RETAINS THE INDIVIDUALITY OF ITS OWNER

THE trouble with the regulation "city lot," from the garden amateur's point of view, is that it is too small, too much hemmed in and deprived of both air and sunshine. This may be obviated by treating all the yards as one park, but that too often fails to please because individuality is killed, and all places look alike.

But adjoining lots may be so planned and planted that the effect produced will be that of one larger unit, harmonious in all its details, and yet give the individual space to air his own ideas without either owner sacrificing to the other his personal gardening tastes. The chief factor in a scheme of this kind, of course, is the personal equation as far as that expresses itself in neighborliness. A few feet of ground must be given up and the planting modified to a slight extent so as to conform to the general scheme, but that is all required. Privacy is in no wise lost. The expense is not increased, for no greater outlay involves upon each than would be spent individually, while even a slight saving may result consequent upon the purchase of larger quantities.

The accompanying plan shows how such an idea was actually worked out. The garden here depicted is the result of odd hours snatched from a busy life and being still in the making, minor details therein may be changed, though the main features have already been developed and will remain. In the first place a drive was laid out extending from the street back to the full depth of the house where it widens into a circle, the centre of which is occupied by a large flower bed. Half of the width, about five feet, was contributed by each owner. The driveway was put in to obviate the necessity of driving over the grass in unloading fuel and to facilitate the removal of garbage, ashes and garden rubbish, for the property is without an alley. The drive affords ample turning space for the largest wagon. It is annually coated with ashes mixed with cinders. The drainage is very slight from the rear to the

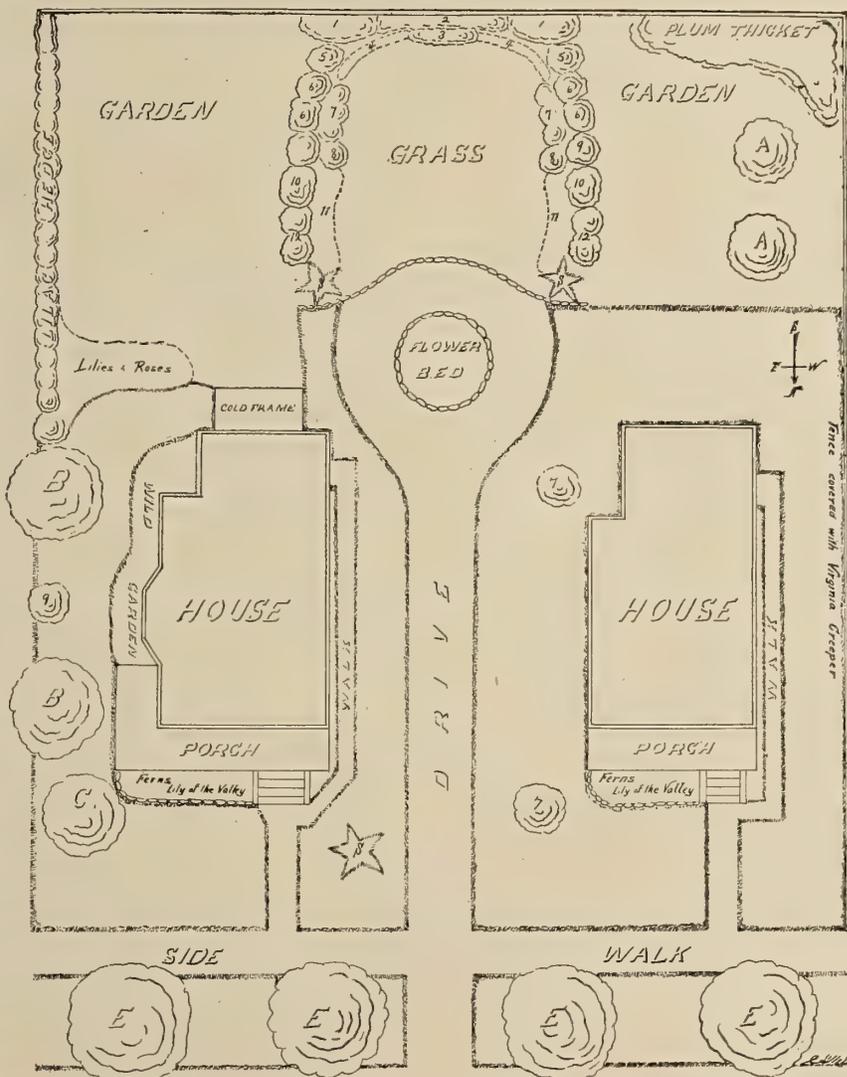
front and to both sides, yet a firm, comparatively dry surface is obtained during wet weather.

Back of the drive extends the main shrubbery border, encompassing in a semi-circular outline a grass plot just large enough for a croquet lawn. To this each party also contributed an equal share, and this is the full

been used for the most part, primarily to conform to the limitations of the climate. Furthermore, experience has shown, as regards berried shrubs for winter effect, that native material fruits more abundantly and holds its berries more persistently than exotics.

Naturally enough, as the gardener, who a few years ago was a complete novice in the art, grows more proficient he may wish to change some of the individual shrubs—and a pity it were if this desire did not arise—but the main features will not be altered thereby. Therefore, as far as our present purpose is concerned, a discussion of the effect to be produced will prove more interesting than an enumeration of the exact number and kind of shrubs used. Against the rear fence are planned native wood roses (*Rosa Carolina*) intermixed with a row of high bush cranberries, fronted by rugosa roses, which in turn are flanked by German iris. This arrangement, while affording a fair succession of color during the summer, produces an excellent winter effect. The highbush cranberry is followed in flower by the native roses, whose color, more pronounced and darker, is carried into September by the more solitary flowers of the rugosa roses. The irises, with their color play against the green background, afford a pleasing contrast. In winter, the warm red berries of both the roses, as well as the highbush cranberry, stand out against the snow. Unfortunately, however, the architect planned the houses years before the garden was thought of, so neither living room, dining room, nor kitchen window will ever frame this picture. Here is a lesson worth learning.

In front of each group of native roses a golden elder flaunts its yellow, perhaps a color somewhat too pronounced, but by no means a discordant element, as staghorn sumachs with their large, dark green foliage tone it down. Bordering the sumach a short row of Van Houtte's spirea bend their graceful sprays of white. Their foliage contrasts prettily, both in shade and outline, with that of the sumachs. Next to the sumachs



1. Wild-roses (*Rosa Carolina*)
2. Highbush cranberry (*Viburnum Opulus*)
3. Rugosa rose (*Rosa rugosa*)
4. German iris (*Iris Germanica*)
5. Golden elder (*Sambucus nigra*, var. *aurea*)
6. Sumach (*Rhus glabra*)
7. Spirea (*Spiraea Van Houttei*)
8. Hardy hydrangea (*Hydrangea paniculata*)
9. Mock orange (*Philadelphus coronarius*)

10. Native thorn (*Crataegus oxacantha*)
11. Peony (*Paeony albiflora*)
12. Honeysuckle (*Lonicera Tatarica*)
- A. Apple trees (*Pyrus Malus*)
- B. Boxelder (*Acer Negundo*)
- C. Cut-leaved birch (*Betula alba*, var. *laciniata*)
- E. Elm (*Ulmus Americana*)
- S. Blue spruce (*Picea glauca*)

These two lots are planned as one, yet are quite distinct, and each owner has opportunity to indulge his own fancy in plants

extent of the coöperation. The shrubbery not only screens the kitchen gardens to either side, but likewise affords an excellent background for the flower bed as seen from the sidewalk. The massing and locating of the shrubs at this part of the lots, moreover, adds a suggestion of depth not to be gained by other means. Native shrubs have

stands a mock orange. A native thorn could here be substituted advantageously as a better background to the hydrangea in front. That dark, lustrous green of our native hawthorns would act as an excellent foil to the large white masses of the hydrangea. Nor lacks the hawthorn a flower and a pretty red miniature apple-like berry. On the other hand, it does not possess the fragrance or the prolific white bloom of the mock orange. It must be further admitted that the flowers and the lighter foliage of a mock orange do not contrast badly with the sumach's darker, heavier green. Dogwood, Russian golden willow and Tartarian honeysuckle back a row of peonies. The dogwood and the willow, with their red and golden bark respectively, are for winter cheer. In front to either side stands a specimen blue spruce. Annuals and bulbs are further employed to bring variety and fragrance into the planting. In the matter of fragrance, the owner of the garden is especially fond of nicotiana, which he plants most everywhere.

Angular, granite stones of irregular size mark the end of the drive, encircle the flower

bed and border the fern beds in front of the houses. This free use of stone might not be as appropriate elsewhere, however; here in the Red River valley, an extensive area totally devoid of any kind of rock, stones have an interest they do not possess ordinarily.

The vegetable gardens to each side do not intrude, being for the most part so well screened that each owner can plant therein what he pleases without marring the general scheme. So we find the garden to the east devoted mainly to vegetables and strawberries, while the other garden is given over more to annuals and herbs, all the difference between a man's and a woman's garden. The lilac hedge which has been started to the east will eventually provide a cooling barrier, fragrance in spring and a background of green in fall, while other shrubs and trees are bare. The bed of roses and lilies adjoining the hedge not only helps to screen the garden, but likewise produces an attractive picture when viewed from the sidewalk. A passerby looking between the houses will perceive just enough of the garden to know that they are there, while the drive,

flower bed and shrubbery being dominant features, will produce the lasting impression. This is as it should be, the glimpse of the kitchen gardens adding a touch of intimacy.

Though the scheme as a whole is a unit, still there is individuality in the spacious lawns. Note how much more one is planted than the other. The cut-leaved birch and Colorado blue spruce bring in the personal element, and all things considered they are fairly well placed. The fence clad with Virginia creeper takes autumn into account, while during the summer it affords a good background for the row of dwarf nasturtiums that are sometimes planted along the front of it.

A small plot has also been set aside for a wild garden where one of the boys of the house has succeeded in establishing quite a number of the modest denizens of the woodlands. The lad has worked up an abiding enthusiasm, keeps his garden spot in excellent condition, and incidentally derives considerable instruction as well as pleasure from his pursuit and cultivation of wild flowers. His pastime may point the way to a life's work, for the lad loves and appreciates his plants.

Making the Most of Those Rocks—By H. S. Adams, New York

THE Englishman's joy in the rock garden is at last being more than faintly echoed in this country. It is a welcome note in the wholesome increase of interest in rural life, for the rock garden has quite as much of a charm of its own out of doors as a collection of miniatures has indoors; those who wax enthusiastic over alpine would say rather more. This movement is, however, not unfringed with the danger that the American amateur, ever seizing with avidity any fresh element of novelty in the broad field of gardening, may rush blindly down a pathway full of pitfalls. Unless one is in a position to give a *carte blanche* order to an expert in rock-gardening—and then one practically changes from an amateur to a professional by proxy—there is much reading to be done, much observing of the experience of those who have solved the problems, before it is safe to go ahead along lines other than the very simplest. And even then nature's own secret of the rock garden must be learned from the great volume that is always open to all who have eyes to see.

The simplest lines to proceed along in the initial venture into rock gardening being the utilization of the rocks on one's place, why not just take advantage of the opportunity that lies closest at hand? There are plenty of such opportunities, in all conscience. True not every one has rocks in his very dooryard, and the length and breadth of many a large place there is none at all; but no end of country land owners will allow that they have enough and to spare.

Now a bare rock is not necessarily unsightly; it is frequently quite the reverse. Yet, more especially if it be by a roadside, a rock, or a group of rocks, has, even in the

best of natural circumstances, a greater glory if to its gray or brown there be added a touch of some brighter hue. It may be only a clambering vine that adds a brief enchantment of red or yellow to a long enchantment of green, or it may be so little as one nestling plant of transient floral beauty; but it raises a smile on the bit of nature that you call your own.

Out on Long Island a rock that would have been somewhat difficult to move has been left by a newly-created wayside. As rocks go it is far from handsome, so a man who knew how to make the most of it planted close to it, on two sides, an irregular patch of the common pink creeping phlox, just as nature might do herself down Georgia or Kentucky way. Of a May day that bold bit of color is nothing short of refreshing when, from far down the road, it just comes into view. Were it the yellow of gold tuft, the blue of wild sweet William or the white of rock cress it would be none the less refreshing. Across the sound, on a rocky railroad bank, masses of the familiar wild pink have been made to carry out, by either accident or design, the same idea on a comparatively vast scale—to the delight of some of the commuters, who watch for it every spring.

For growing around the base of rocks, or in natural or artificial pockets on and between them, there is an embarrassment of riches to choose from. The white and lilac creeping phloxes are preferred by many to the pink, and the latter's color may be prolonged by planting *Phlox amœna* and *Phlox Ibota* as well. Then there are both the blue and the white bugle, silver chickweed, all the low growing veronicas, three or four kinds of stonecrop, the creeping

thyme, leadwort, hardy candytuft, alum root, dead nettle, several of the saxifrages, Carpathian harebell, periwinkle, coltsfoot, foam flower, soapwort, the creeping double buttercup, Greek valerian, rest harrow, stanwort and rock rose, to name only a part of the dwarf, or dwarfish, hardy plants that weave of themselves a carpet as they spread over the ground or rock.

Desirable, too, are such low plants and bulbs of different habit as the gorgeous *Lychnis Haageana*, the wild red and yellow columbine, harebell, adonis, hardy primrose, the wild bleeding heart, Dutchman's breeches, tulips, snowdrop, grape hyacinth and scilla. By, or near some large rocks one may always place some of the taller plants like iris, Oswego tea, leopard's bane, St. John's-wort, blackberry lily, foxglove, red pentstemon, rose loosestrife, coronilla and the several day lilies. Whatever, in short, is both hardy and tolerably robust, does not bear double flowers, and, finally, can be made to look as if it were growing naturally, is good material.

One kind of plant, or two or three with different periods of bloom, is best for an isolated rock. When there is a group of rocks an admirable opportunity for fine color contrasts is afforded. In either case the planting should be, for the most part, in colonies and in anything but orderly fashion. The soil should, of course, be made good where it is not so already and care taken that in shallow pockets the earth does not dry out. There ought to be no bare ground, which means that there will have to be frequent watch lest the grass encroach more than just far enough. Nor are all plants for all rocks; fully shaded rocks demand shade-loving plants.



A LARGE ROCK GIVES OPPORTUNITY FOR MANY CHARMING EFFECTS WITH WELL-DEFINED COLONIES OF VARIOUS FLOWERS
Pink and lilac phlox, silver chickweed, hardy candytuft, polyanthus, red avens and German iris are blooming, and the planting further includes *Euonymus radicans*, stachys, stonecrop and narcissus

Having a Garden in Alaska—By Carlyle Ellis, ^{New York}

MARKED EXTREMES OF TEMPERATURE, EXCESSIVE SUNSHINE IN SUMMER AND CONTRADICTORY CONDITIONS THAT UPSET EASTERN GARDEN IDEAS, AND YET PRODUCE WONDERFUL RESULTS IN RAPID DEVELOPMENT OF VEGETABLES

THERE are few parts of Alaska's 590,000 square miles so far entered by white men that will not produce some sort of garden. One must except, of course, the occasional glaciers and the frequent mountain tops, but in the valleys, from the southerly coast — where there is one set of conditions — to the great interior plateau — where there is another quite different — and even well beyond the arctic circle many of our common flowers and vegetables flourish.

The variations in climate are striking. All along the 3,000 miles of southern coast the rainfall is heavy — from 100 to 150 inches a year. The summers are pleasantly cool and the winter temperature seldom goes much below zero. In the interior the seasons are dry. Rainfall is from ten to thirty inches a year, the summer days warm and the winters so still and dry that the constant low temperature is not an inconvenience. The proportion of snowfall in these two areas is about one foot to six.

There are also local variations in each of these areas that are distinctly marked. In the great Tanana valley of the interior, which seems destined for a big agricultural future, there is one region warmed by subterranean hot springs where the vegetation is almost sub-tropical. Corn and melons easily mature here and bring enormous prices. One dollar apiece for muskmelons, as an instance, is the minimum.

The one growing factor common to all Alaska, and not found in any part of the United States, is the abundance of daylight

in summer. On the Coast from the middle of May till well into August there is no real darkness and in clear weather the sun shines twenty hours of the twenty-four. As one goes north this condition is still more marked. At Fairbanks, on the Tanana, an annual event is the midnight baseball game on June 21st. At Circle, where there are excellent gardens, the sun never quite disappears for three months.

This great gift of sunlight does magical things to the plants. The last frosts are over in the valleys by the first of June, and there follows a mad rush of the sap. The orderly succession of more placid climes is almost forgotten and there is a sort of pell-mell Marathon for maturity that is at first somewhat disconcerting to the newly arrived gardener. There is compensation, however, in the fact that a large majority of things go right on blooming till the frost comes, late in September.

Most travelers and a majority of the new settlers see only the gardens of the Coast belt, for it is on the coast that Alaska is making its most rapid progress. These gardens flourish amazingly with the combination of much moisture and daylight. I am especially fond of the gardens of Valdez. There is something about the black soil of Valdez, where it covers the lower end of the glacial moraine that slides flatly into the tides, which will not produce a lawn. Instead, it gets a deep, fuzzy covering of mare's tail, or of chickweed. So the Valdezians generally turn the entire yard into a productive

area, growing lettuce and poppies and cress and mignonette in the foreground, with cabbages, hardy chrysanthemums, potatoes and peonies in the back, with a border of nasturtiums and radishes down the side. There is something enchantingly naive, effective and sensible about the plan. Here is a people for whom utilitarianism and beauty go hand in hand — nay! are inseparably blended, unrecognizable as separate conditions.

Anyway, my favorite Alaskan garden is in Valdez. It covers half an acre with a tiny box of a cabin in the centre, quite a gem of a place, with a background of big cottonwoods and the sort of an interior that goes with a garden that blooms like magic. On one side of the walk was a hedge of deep crimson sweet peas, of sturdy four-foot growth, that seemed always to need picking. On the other a deep border of nearly black Oriental poppies, and beyond that a bed of the common poppy, of many hues. Flaming nasturtiums climbed up the unpainted corner of the house, roses bloomed by the step, and in many nooks and corners all about one found unexpectedly a score of old-time friends. The flowering tobacco (*Nicotiana glauca*) found congenial soil and air, and its great clusters of flowers shed their night-fragrance lavishly in the cool Alaskan half-dusk. The mignonette spikes were three inches long and the nasturtiums seemed too busy making flowers to leaf. Beside the poppies were experimental rows of lettuce, kohlrabi, cress and parsley, broken by a brilliant bed of asters in full bloom in August, though grown from seed outdoors. On the other side were the root crops and the peas in full bearing, bordered by a heavily bearing hedge of red currants — the wild red currants of Alaska transplanted and all crimson with fine-flavored fruit.

If I were going to have a garden in Alaska, I should give much space and special care to the cultivation of the native berries. At one time and in one small valley I picked ripe specimens of fifteen different sorts of edible wild berries. Combined, they made a unique and most excellent dish.

The problems met with in the development of this garden in Valdez are practically those of the entire coast. The characteristic soil is a black loam, often so rich in organic matter as to benefit greatly by heavy dressings of lime. Much of this soil requires no manuring for several years, but where the morainal gravels of localities like Seward are the basis considerable building up is required.

Potatoes are the staple crop of Valdez and elsewhere. The heavy rainfall makes it advisable to plant whole seed and it also makes it difficult to grow mealy tubers.

All the root crops do well in the North and their treatment there has no distinctive features. At Seward I saw flat Dutch turnips germinated outdoors the second



A typical home at Valdez, Alaska, where garden art seems to lead that of building



Twenty-five miles south of the Arctic Circle, at Circle City. Over \$4,000 worth of produce was sold from this garden in one season

week in June, now two months old, six inches in diameter, and of the very finest quality. Radishes grew several times their normal size without losing quality.

Cabbages and cauliflower must be started indoors fairly early for the Northern climate but they transplant readily without setback and mature at a great rate, very large and delicious heads, free from scars; for slugs and cabbage butterflies have not yet reached Alaska, nor has the potato beetle.

One of the surest and finest of Alaskan garden crops is green peas. They make an enormous growth and go on blossoming (if planted outdoors by the middle of May) from the first of August till frost. Beans, however, do not mature on the coast at all, though they are brought to blossom. This is one of the most puzzling things I have found about Alaskan gardens, but every coast report was the same. In the interior they grow all right.

It is customary for every Alaskan with a garden to make an annual try with tomatoes; but it is an event when they ripen on the coast. Corn is impossible, but there are a dozen other things that succeed — parsley, the cresses, kohlrabi, endive, spinach, rhubarb, onions, kale and lettuce. This last is always a wonderful crop. I saw heads in Valdez, the tender, solid hearts of which were ten inches across and the full heads twice that. Rhubarb, too, is a most prolific grower. In all these cases there seemed no unusual conditions to meet. Germination was not more uncertain than in New York, and, of course, there was never need of water, while the morainial subsoil offered good drainage everywhere.

There seems an added intensity to the colors of the garden flowers. This is true also of the Alaskan wild flowers. One finds great fields above the timber line of the hills in which the lavish mixture of color and forms, all furiously blooming at once, could not have been increased by thor-

oughly plowing and cultivating and broadcasting with a careful mixture of flower seeds. In whole acres there did not seem to be a single plant without conspicuous bloom. And the mixture of colors was not at all according to modern standards of taste. There was none of that ingenious massing of shades that nature so frequently accomplishes further south and sometimes in Alaska. In these fields there was no dominant color, unless it were the scarlet haze of the columbine that rose a foot above the general level. Alaskan flowers are notable, however, for the strength and variety of their blues. The dominant color of the territory is cool blue and its flowers for some mysterious reason follow this note with effective insistence. I have never seen such intensely blue forget-me-nots as grew abundantly over the mountainsides near Seward.

Yet one does not see any attempt at a wild garden anywhere in Alaska. These folks from home seem to want reminders of other lands than this, however much they like it, and one sees more old-fashioned New England gardens than Alaskan.

One of the most effective instances of massed color in nature that I have seen occurs on some of the great gray glacial moraines of Alaska. These moraines are often miles in extent, flat, barren wildernesses of whiteish boulders and gravel, scoured each year by the overflows. Yet out on them one sees islands of pure glowing scarlet. They are patches of the familiar fire-weed, the only plant that has the courage to grow in those soilless wastes. Once in a while our human gardeners do almost as well as this. One woman of Valdez solves the problem of a front lawn by broadcasting the orange-yellow California poppy over every foot of it. Her yard was one glow of sunlight for three months.

We think of Alaska as exclusively a man's country, which it is no longer. It is, for the most part, the women of Alaska who are the garden makers, as they are the homemakers.



A Valdez front yard with California poppies as substitute for a grass lawn



The front yards at Fairbanks are ablaze with color

A Pictorial Study of Garden Entrances

AN ANALYSIS OF THE FOUR PRINCIPAL TYPES AND THEIR VARIATIONS, WITH SUGGESTIVE SETTINGS FOR EACH—COMBINATIONS OF THE STYLES ARE OFTEN THE MOST EFFECTIVE

THE garden entrance serves two purposes: primarily it marks the passing from the outland to the more intimate enclosure about the house, and secondly it serves to extend the architectural features as a sort of advance guard. The appearance of both house and garden is improved. The types and their main subdivisions may be tabulated thus:

1. REGULAR GATE, IRON OR WOOD
 - A. Piers, wood
 - B. Piers, brick
 - C. Piers, concrete
 - D. Piers, stone
 - E. Piers, concealed in hedge
2. THE ARBOR OR ARCH
 - A. Iron
 - B. Rustic branches
 - C. Wood lattice
 - D. Growing plants
3. THE SUMMER-HOUSE
 - A. Rustic, usually wood
 - B. Formal, usually stone
4. FORMAL STRUCTURE
 - A. Piers
 - B. Steps



The formal iron gate with stone piers fits the city house



The wood gate is often used in conjunction with the arch



Formal treatment of steps accentuated by the columnar evergreens



The arch, but approaching the true summer-house. Much improved by vines



Informal treatment of steps flanked by wild planting. A picturesque style



The formal summer-house combined with steps. Effective for small open lawns, giving a positive viewpoint



The stone piers are the feature here and harmonize with the lines of the avenue beyond



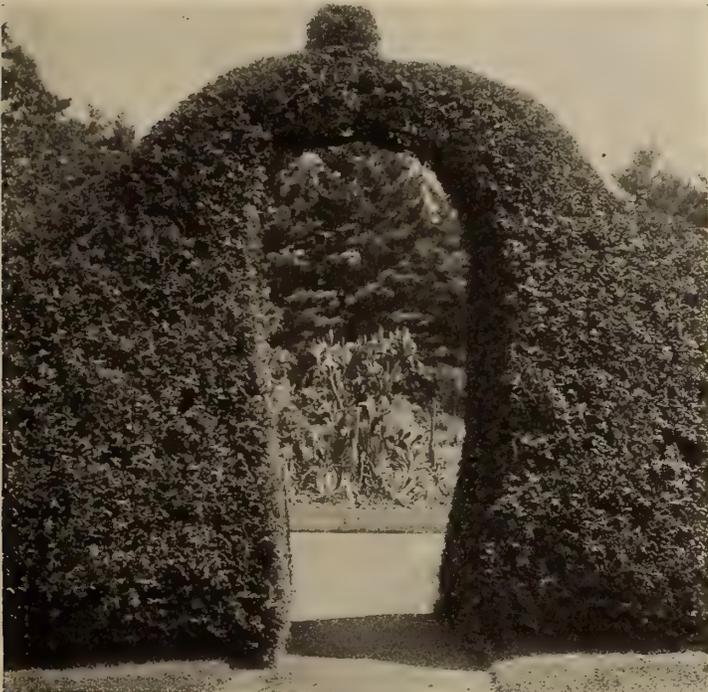
The simple masonry arch and wall, effectively framing the vista beyond



The summer-house of wood lattice is pretty, but needs constant repairs



Ornate masonry arch and gate, which seem to need more formal support than the hedge gives



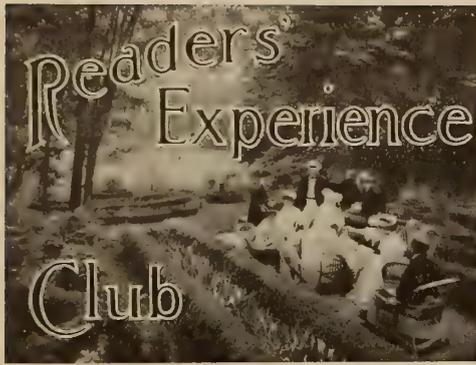
A live hedge may be trained into the arch form and is always in keeping with a garden



Rustic wood arches are the simplest forms of garden furniture. They are too often made grotesque, however



The simplest sort of entrance, where you merely enter. It is an adaptation of the hedge and gate (which is absent)



WHEN you take a tramp into the wild, and either don't want to be bothered with a basket or are not sure that you will have any plants to bring home, just fold a trowel inside of a newspaper and let it go at that. The package is then not troublesome going, and if you happen to have any plants to bring home, all you have to do is to wrap them, with the trowel, in the newspaper.—B. G.

During the past three years I have wasted much time and some money in buying and planting things which were either unfitted to the climate or to the location, soil, etc., in which they were placed. In order to avoid such mistakes beginners should read assiduously some good garden publication, and should also send to their state agricultural departments or colleges for bulletins. There are some plants and trees that will endure intense heat, bitter cold and even neglect, and there are others that will endure one or more of these drawbacks.—J. T. B.

There are, or there were ten years ago, a few good plants of Himalayan rhododendrons in Golden Gate Park, San Francisco. I gave them to the Park thirty years or so ago, and they prospered amazingly. I do not know of any others growing in the open ground in the United States, although it is probable they exist in other parts of California where I should think that they would do well. I am afraid that these rhododendrons will not prove successful out of doors in any part of Eastern North America, as they do not stand cold or limestone soil. It is a pity, for among these rhododendrons are some of the most beautiful of all garden shrubs and trees.—C. S. SARGENT, MASS.

I have found it is a mistake to buy plants, especially evergreens, from a nursery a long distance away. This spring I bought some young pines and cedars from one of the best houses in America, but instead of being three days on the road at the farthest, or two as they should have been, the express company did not deliver them for six days, and the roots had begun to dry. I have looked after those trees and given them as careful attention as could be expected by the heir apparent to the Russian throne, but I can see already that it is "love's labor's lost," and I had better have thrown them away and sent for more. So, if you have a good nursery near home you had better patronize it, and a small nursery may send you as good plants as a large one.—J. T. B.

When the last light snows came perhaps you noticed that there were spots on your grounds where the fall was either thin or left a bare patch. Perhaps it was the south side of a tree trunk. Keep those spots in mind when you plant crocus, snowdrops and scilla in the grass. It is hard lines when you want to get up to have to punch a hole in the bedclothes.—H. S. A.

In reading the May number of THE GARDEN MAGAZINE, I came across Mr. Royden E. Tull's note on bagging grapes, and feel that I can give him a few points. We have bagged ours for years, though we spray; yet without the bags the fruit is *not* a success. Last summer we bagged twenty-two hundred; we grow them for our own pleasure, and have some fine examples. We simply fold the bag and pin it. It is not necessary to tie it, nor to puncture it to enable water to escape—it will by evaporation—and spiders and various other insects are apt to discover the smallest opening; we pin ours as closely as possible, without pressure of the stem.—Mrs. J. D. Z.

I feel as though I had gained a point in naturalizing small bulbs (scilla, crocus, and snowdrop), which is worth telling. Lifting up a piece of sod and placing the bulbs underneath was never very satisfactory, and making a hole in the sod with a pointed stick seemed to compact the earth around it too much; so last fall I took an iron pipe with an inch bore and drove this into the sod to a depth a little below that at which the scilla, crocuses, or snowdrops were to be set. When the pipe was withdrawn with the soil contained in the bore an inch hole was left with the surrounding soil in its native condition. A small cushion of well-prepared compost was put into the bottom of the hole for the bulb to rest on and the hole was filled with more compost. The handle of the hammer with which the pipe was driven into the ground served as a means to push the dirt out of the bore whenever it became clogged—a frequent occurrence. A strong wooden mallet is best, for an iron hammer will split the top of the pipe.—C. L. M.

I am enclosing herewith a picture of an unusual sight in Iowa—tulips in bloom with the ground covered with snow. It snowed here in Burlington April 17th, and upon seeing the tulip bed I thought it might be interesting to others. The best part of the picture is that the tulips are not going to be hurt in the least by the snow.—F. E., JR.



Blooming tulips covered with snow on April 17

Nearly all the climbing roses in the vicinity of Chicago were winter-killed last winter, even those "strawed," etc. But mine were boxed and covered with dry leaves and survived in good condition. Beds of Conrad L. Meyer, in which the plants were several years old and unprotected, were killed to the ground. Young plants set out the previous spring came through all right. My climbing rose, Cumberland Belle, now over fifteen years old and never protected, was killed to the ground.—W. C. E.

Many people in this country, when they begin to beautify their home grounds, go to the woods and dig up the small pines and plant them. It is almost impossible to convince these people that the exposure of the roots to wind or sun will surely kill them. This I have learned from experience. Also, it is very hard to make people understand that a nursery tree which has been often transplanted has better roots and will grow better than one taken out of the woods. This, they say, is not natural, and it was only two or three years ago that I believed as they do.—J. T. B.

Always keep a garden notebook—the 3 x 5 loose-leaf, indexed kind is best, because most convenient. Devote one page exclusively to the plants and seeds that you want to buy the next spring—those that you forget this year, because you either didn't make a note of them or could not tell where you put the memorandum, as well as any that you may have taken note of as the season progressed. On another page—be sure that no page has two kinds of things on it—keep a list of the plants and seeds that you have promised to others in the fall or spring. On still another page keep a list of what has been promised you, and in each case state whether the thing is to be sent or called for. You will be astonished to see what a long memory a notebook has, come next spring.—SAMUEL GOODRICH.

Besides the purposes for which it is intended, a good sprayer can be used for many other purposes about the home. Try spraying the chicken house with insecticides, or whitewash properly strained and thinned. I have also found another use for the sprayer that will quickly pay for the price of the outfit. Wall paper needs continually replacing, and it is unsanitary to place a new paper on top of an old one. A sprayer is the finest thing for taking off old wall paper that I have ever seen. Fill the tank half full of hot water, then create enough air pressure to produce a fine misty spray. Apply this to the paper in two applications, the first one just enough to dampen the paper. The water will run too much if applied the first time and while the paper is dry; the second application will be quickly absorbed. The paper will then peel off so easily that you will be surprised and delighted. The money saved by removing the paper from two medium size rooms will pay for an auto-spray and a good nozzle, and a brass one at that!—J. L. K.

CHILDREN'S GARDENS EVERYWHERE



THIS IS THE MOST IMPORTANT TIME IN THE GARDEN. FUTURE SUCCESS DEPENDS UPON ONE KIND OF DIS-AGREEABLE WORK. THIS WORK IS WEEDING. ONE MUST WEED AND WEED—AND THEN WEED AGAIN!



Conducted by
ELLEN EDDY SHAW
New York

HOW is the garden to be cared for this summer? That is the question before us now! It is a serious question, too. No one of us can feel it is right to let run to waste this garden upon which so much care, money, energy and enthusiasm have been showered. And, after all, the school garden is quite a responsibility to place upon the children undirected, is it not?

All those who have solved this problem without a regular garden director would assist others by writing us their methods for publication.

After all, garden work which is left almost entirely to children to superintend often loses much of its value. Children cannot cope with all those little points constantly arising. Yet again a judicious throwing of responsibility upon the upper grade children is well.

Some schools appoint their best gardeners as summer assistants. The girl assistants go back three days a week and the garden is open for the girls. The boy assistants go back the other three days and the garden is open to the boys. Every so often a teacher or the principal appears to inspect the work.

By careful selection of assistants this has worked well. One of the New York City schools can testify to this plan as it was conceived in this school and worked out. There are many variations to the plan which have been tried in different places.

Another school had committees of older people from the town who took turns at supervising through the summer. This stands for public spirit and some sacrifice to the individuals. The drawback to this method is the lack of real garden knowledge among those volunteering for the work.

Some schools shut the garden to the children and pay the janitor for its summer care. The authorities state the case fairly and it is thus understood that it is the children's garden with

the summer work done by an adult. In this case the child is the loser.

Quite the most practical method for summer care would be the union of playground and garden under the direction of a playground man or woman in sympathy with and having knowledge of garden work. This should be a part of playground equipment for work. Pittsburg has tried this garden and playground union with success. It is a saving of money and energy.

Play and work together are normal. The spirit of play working off some of its energy on the garden seems, after all, quite like the sort of spirit which is balanced properly.

The garden and the playground do not fit together with benefit unless the playground

director has equal sympathy with the garden end of the combine.

Other schools refuse to make an issue of the summer problem. This issue is avoided in one of two ways. Either early maturing crops are planted or the garden work is thrown over the back fence into the children's own yards. In the first case garden work is over and properly finished when school closes. In the second case, gardening becomes a work under the parents' eyes all summer. So it is supervised, many times carefully, sometimes poorly. It all depends on the parents.

HOME GARDENING

It is not too late even now to start a home garden. It means that you children must garden pretty actively, but that is all the better.

You can put in lettuce, radish, beets, turnips, late corn—almost anything in fact.

Many of the flower seeds may still be planted with good success. It is far easier to plant in rows as you do lettuce and radish. Because, as the seedlings come up, the stick which marks the row guides you to a knowledge of your plants.

Scatter small and medium-sized seed along in these rows. This scattering should be done very carefully so as not to get too much seed in. Tear a hole, the size a mouse would nibble off, in the corner of the seed envelope. Shaking the envelope very carefully will send out a tiny stream of seed.

Large seed, like nasturtiums and zinnias, may be placed one by one at regular intervals in the furrow. Later, thin the seedlings out so the plants may stand at proper distances apart. For instance, put zinnia seeds a foot apart. When the seedlings are four inches high, take out every other one.

Some girl may exclaim: "Have zinnia plants stand two feet apart!" Surely, unless you are planting dwarf



Economize in watering by constant hoe cultivation

varieties; then place them six inches apart.

You may not realize that one of our chief dangers in a flower garden is a crowded condition. Plants will not do well unless they have plenty of room. Look in the reminder and see proper distances for some common flowers of the garden.

Do you recollect how sometimes in the gymnasium you all stretch out your arms to get proper spaces for active work between each one and his neighbor on right and left? In much the same way plants spread out as they grow, and must have "elbow room."

I wish some girl or boy who has a north corner to plant in would try godetia seed. These are flower seeds. They are supposed to develop plants which bloom freely. I'd like to know how they come on. Will you send some of the flowers into this department when blooming time comes?

The picture on this page shows the possibilities of beauty in a narrow strip of yard and a homely old fence. Look again in the reminder for vines to plant. Fences, out-buildings, walls and old stumps may be changed to beauty by vines.

To those who have discouraging backyards — shady ones, ones with poor soil and those in the midst of the poor air of the city — I would say try foxgloves. You may plant them outdoors any time now. They should preferably be planted in June.

Sow the seed as you would lettuce. When these seedlings are up to the regular four or six inches, thin out to one foot apart. Try the old north corner once again and plant foxglove. Remember that plants need room for growth. So thin out unsparingly exactly as directed. Then, with seed capsules prevented from forming by constant picking of blossoms, your garden will be a joy.



Eight cents' worth of seed, chiefly zinnia, nasturtium, and sunflower seed, planted these 10-ft. strips

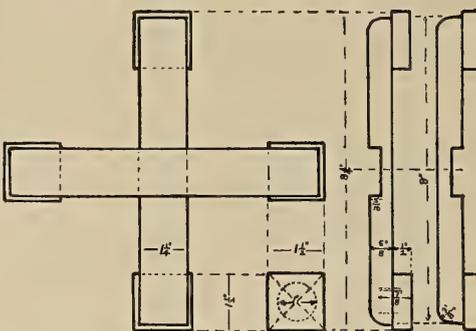
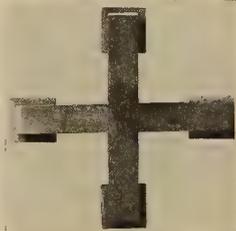
How to Make a Pot-rest or Jardiniere-stand

POTTED plants leave unsightly spots on the piazza rail or table. Why not make a simple sort of rest to keep the pot above the rail? Even if the pot is set in a saucer the moisture will penetrate through.

The following directions are easy enough to work out. Any boy or girl, who has had manual training at school, will have no difficulty. You may use almost any kind of wood. White wood, cherry or white oak are suitable.

You will need two pieces of wood 8 x 1/2 x 1 1/4 in. for the cross pieces. These should be planed. You will also need four little pieces as feet or pads. The dimensions of these should be 1 1/2 x 1 1/2 x 1/2 in.

To make this stand, draw a line across the two long pieces 4 inches from either end. Lay off two other lines parallel to this 3/8 inch to the right and left. Transfer these lines down



Working plan for the pot-rest shown above. The child should redraw this, actual size. The rest in use is shown below

the edges by the aid of the try square. Saw on the inside of these lines down one half the thickness, or 1/4 inch. Chisel out for a half-lap joint.

The sawing and chiseling should be done carefully. It is necessary to saw on the inside of the lines or a loose joint will be had. Doubling the passage of the saw through the wood will often make the difference of 1/8 inch.

After these are made to fit, the upper ends may be rounded down by chisel and compass, or beveled, using the plane.

Use 3/4-inch brads or finishing nails, four in each pad or foot to fasten pads to the arms. The pads should project 1/8 inch from ends and sides. To finish the work nicely so the rest will both look well and stand exposure, apply a suitable stain. Allow it to stand at least thirty minutes. Then rub down with a cloth to an even stain. It is better to allow the stain to stand a day or so. This gives time for the stain to set before applying the wax. Otherwise, some of the stain will be loosened and removed when waxing and a lighter shade of stain will result.

A final point to hold in mind is the size of pot which is to be placed on this rest. If the pot be an 8- or 10-inch one, this rest is quite right for it. But if the pot is smaller there is danger of the wood warping and bending. This is because the weight of the small pot is concentrated on the centre of the rest rather than on the feet. To overcome this trouble leave the feet off. At the same time make up for this by using heavier wood. Use twice the thickness that is suggested for this model.

CONTEST BULLETIN. — The bulb contest is closed. The first prize, a set of two books from our Nature Library, was won by the VII Grade A, No. 29 School, Rochester, N. Y. Two third prizes were given. This prize was a year's subscription to THE GARDEN MAGAZINE. Ruth Candis Washburn, of the Downing School, Worcester, Mass., and Esther Henschell, of No. 29 School, Rochester, N. Y., were the prize winners.

The garden contest is now on. It is well to register early. If you have not received an announcement send directly to us for one. The announcement is in the form of a poster, which may be put right up in the school building. It gives information as to classes, conditions, and prizes.

Things to be Attended to this Month

AMONG the following suggestions some will apply to your garden. This is a month when the first one is most important.

(1) Get busy with the hoe and keep all weeds out of the garden.

(2) To keep cats, dogs and birds off the gardens place chicken wire or brush over it. Do this until the plants are well up.

(3) Do not begin to water the garden unless it is absolutely necessary. After watering is begun it must be continued regularly until the next rain. Water the roots of plants and not the foliage.

(4) After the young plants are up four inches begin to thin out. Thin so that they stand at the proper distances apart. Always choose to keep the sturdiest of the young plants.

(5) Note the following distances for thinning some of the most common garden flowers: Alyssum, 6 to 12 inches; asters, 1 foot; canna, 2 to 6 feet; marigolds (African variety), 15 inches; French marigolds, 10 inches; and dwarf, 6 inches; zinnia, 2 feet; poppy, 9 to 18 inches.

(6) Distances to thin common vegetables are as follows: Bush beans, 5 to 8 feet; beets, 6 inches to 1 foot; carrot, 8 inches; corn, 3 feet; lettuce, 6 inches; and onions, 8 inches.

(7) These vines are excellent for covering unsightly spots: Hop, gourd, wild cucumber, ampe-lopis, climbing nasturtium and morning glory.

(8) Try a hedge of castor oil plants.

(9) If lettuce is transplanted twice the heading will be more perfect. The first transplanting should be done when the second pair of true leaves appear. When the plant becomes four inches high transplant a second time.

(10) Follow these directions for transplanting lettuce. First choose a cloudy day or wait until the sun goes down. Take up with the trowel a number of little lettuce plants with plenty of earth with them. In the place where you wish to plant make a furrow or a hole with the dibble. Pour a little water in first. Then gently separate from the others a little plant with some of its own earth. Place this carefully in the hole. Firm earth over the roots and fill in the hole or furrow.

If the next day is hot place strawberry baskets over the little plants. Keep them moist until they are used to new quarters.

(11) Be sure to keep garden tools clean. Rub them over occasionally with a kerosened rag. But always put the tool away free from all earth particles.



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ORCHARD & FRUIT GARDEN

"More and Better Fruit"

Timely Hints

IF THE more strenuous work of spring and early summer has been well done, work will be light in the fruit garden during July and the other hot months. Late strawberries (such as the Gandy), currants and gooseberries, and late cherries extend their season until the earliest blackcaps are ripe. I think the strawberry season can be extended to nearly six weeks by growing the earliest and latest varieties, *i. e.*, beginning the season with Michel Early and ending with the Gandy. I value the early blackcaps mostly because they bridge over the gap between strawberries and the red and yellow raspberries, which are richer and of better flavor. Those who enjoy the flavor of the blackcap should plant Plum Farmer and Gregg. Raspberries do not have their true flavor unless they are left on the canes until almost ready to drop off. We grow the Cuthbert and Golden Queen varieties. Last summer a friend who ate them told us afterwards that she did not care for the berries offered in the markets.

When growing raspberries and other cane and bush fruits, it is very important to mulch heavily between the rows to prevent evaporation of moisture during the hot, dry periods in midsummer. The ideal way is to cultivate thoroughly between the rows during May and June, then place a mulch between the rows so thick that it will retain the moisture and keep down the weeds. The best material to use is coarse, strawy manure from horse stables; but if this is not easily obtained, use refuse matter such as weeds, pea vines, small brush pruned from the fruit trees, etc. Make a thick carpet of coal ashes around the bushes — a most important factor toward success. A mulch once applied saves considerable labor during the hot months.

During July decide whether to retain the strawberry bed, which has been fruited the past season, or plow it up. Generally I find it best to continue fruiting if the weeds have been kept out of the bed and there is a fairly good stand of plants in the rows,

especially if they are of the varieties that make large stools and tap roots, like the old Sharpless and the Marshall. Such varieties generally yield better crops the second and third years after planting than the first, and may do well for five or six years. If the strawberry bed is a mat of weeds, it is far better to plow it immediately after the berries are picked, and plant it to late cabbage or celery, or it may be seeded to clover or other grass seed. Buckwheat is a good crop with which to subdue an old, weedy strawberry bed.

If you decide to keep the strawberry bed another year, mow it as soon as the berries are picked. If you can burn it over, so much the better. I take a one-horse garden cultivator, narrow it to twelve inches for rows that were planted two feet apart (my method is practically "hill culture," and plants are set two feet by eighteen inches); clean out the paths between the rows and then dig out the weeds with the hoes. If the bed is kept clean up to the time of fruiting, this weeding is not tedious or difficult if it is done after a shower that thoroughly wets the ground. Mulch the bed early in the winter.

Many will consider the question of potting strawberry plants and of summer and fall planting. My advice to those living in a latitude of the northern part of New York is not to bother with summer and fall planting unless they have no berries and do not wish to wait another year. In the shorter and colder seasons plant the main bed of strawberries early in the spring; in Maryland and farther south, the best results sometimes follow fall setting. Potting strawberry plants is very simple. The first runners that grow in July are bedded in pots filled with rich soil, and sunk in the ground alongside of the row. The runners are placed over the pots at the nodes, and held in place by little hooks.

When the roots grow down in the pots, the runner is clipped from the main plant. When the roots fill the pots, the plants are removed and planted twelve inches apart, in rows twenty to twenty-four inches apart. The soil should be

rich and mellow. This planting may be done in July or August, after the removal of an early garden crop, such as early peas, potatoes, etc. Nearly as satisfactory results are obtained by bedding the earliest plants in rich soil and transplanting them with transplanters. One must not expect to get as large crops from summer planting as from early spring planting, but a fair crop of fine berries can be obtained the very next season! Summer and fall set plants require heavy mulching to insure their wintering safely. Three garden crops may thus be obtained in one year, early summer cultivation is saved, and, if one has no strawberries, a fruiting bed is more quickly established.

AN EXPERIENCE WITH DWARF FRUIT TREES

Ten years ago I planted fifty standard and fifty dwarf pear trees. They were planted in about the same soil and given the same care and culture. At this time more of the standard pears are living; they are now about three times as large as the dwarfs, have borne much more fruit, and come into bearing each season as soon as the dwarfs. This experience is sufficient evidence for me that it is better to plant standard trees if there is room for them to grow. As I know the dwarfs, it would require four or five to produce as much as one standard tree planted at the same time.

One row of the dwarf trees seemed to stand still for several years. I moved them to richer soil and cultivated them, and they have begun bearing. Dwarfs should be planted in rich garden soil, and as frequently cultivated and hoed as any plant in the garden. Plant about six feet apart each way. Put dwarf apples and pears in rows with the cane fruits and give them the same cultivation.

Keep a constant and close watch for blight, and when the leaves begin to turn yellow or droop on a twig or branch, cut off to the live, healthy wood at once, and disinfect the tool after each branch is cut. This is the only way known to control pear blight.

New York.

W. H. JENKINS.



Mr. Jenkins's fruit garden in July. Cane fruits on the right, grapes in the centre, and strawberries at the left



Watering and Succession

THE usual July condition in the vegetable garden is merely a survival of the fittest — the weather is both hot and dry. If possible, artificial watering must be done. Of course, there is nothing to equal a good natural rainfall, but rather than let the crops die, give them plenty of water at any or all times of the day, even though it be cold spring water. When you do give water, give freely. Plants are like animals; when they are dry and thirsty they want a real drink and not a mere spoonful; therefore, if the weather warrants it, keep the sprinklers going all the time. The heat-loving vegetables, such as egg plant, corn, etc., can get along with very little water; but celery, lettuce, cabbage, etc., must be watered abundantly, and not being heat-loving plants, will not be shocked in any way by cold water. Keeping the cultivator working incessantly will lessen the labor of watering by preserving the moisture already in the ground.

If any of these last-named vegetables were planted in the seedbed and later dibbled in a bed made for that purpose, they must now be transplanted to their permanent places in the garden. In shifting, always use plenty of water and thereby avoid club root. If the plants are seemingly a little large for transplanting, and there is any danger of their suffering from the shock, cut off the outer leaves, but do not cut the heart.

The one crop to be given most attention now, however, is celery, especially with the idea of succession for later use. Keep the early celery well watered, and cultivate frequently. An application of nitrate of soda (one ounce to three gallons of water) will keep it growing fast. Keep hilling as it grows, but be careful not to get the soil above the heart. Do not wait for blight to appear before you spray with Bordeaux mixture. Keep right on setting out late celery as fast as you can find room for it in the places left vacant by early vegetables.

Onions are not deep rooters and stand an abundance of water and feeding. Give them twice a week, using alternately, manure water and nitrate of soda or sulphate of ammonia in solution. If you use the chemically pure a 6-inch potful is sufficient for a barrel of water. In order to have big stringless parsnips never let the plants suffer for water. Give them a good shaking up occasionally with some soda.

Asparagus plants will now be building crowns for next season's growth, and the bed needs attention, because the better the crowns the better the cut next year. Give one application of salt during the month at the rate of one pound of salt to every twenty square feet, or 500 pounds to a 60 x 180 ft. bed. If the bed looks poor and hasn't a healthy dark green color give one application of nitrate of soda, using one pound to 100 square feet. Apply it during a rainfall so that it will dissolve at once. Look out for asparagus beetle; if it appears, dust the plants with hellebore powder, early in the morning when they are still wet with dew, or spray them with Paris green or arsenate of lead.

KEEPING THINGS GOING

Now is the critical stage in the growth of a melon vine, for the fruit is swelling fast. Use Bordeaux as a preventive against any possible blight and if dry weather is bothering the vines water the roots thoroughly. Do this in the morning after the sun gets strong. Toward the end of the month some of the melons should be ripening. Look over them carefully but never pull a muskmelon from the vine

—it will part easily from the stem when ripe. If you have a good place in which to ripen them, such as a hotbed or an empty greenhouse, pull the melons from the stem when they are just starting to crack where the stem joins the melon. Placing them in a dry heat of about 120 to 130 degrees for a few hours puts flavor into them and ripens them to the outer skin. In looking over your melons, always pick off any leaves that are diseased and, when the melons are about the size of baseballs, lift them and place them on boards so as to have them ripen evenly. Use a shingle cut in two. One good application of nitrate of soda when the fruit is swelling will help the plants considerably.

Watermelons require very little attention, as they are robust growers and very free from attacks of insects and diseases. If the vines show any signs of flagging give an application of manure water and follow with nitrate of soda, but do not do this until the fruit is set. If you do it will start growth anew and you will lose a couple of weeks.

Keep the tomato vines trimmed. Cut off the laterals except two on each stem if it is necessary to cover a trellis; but only one stem if you have planted them close together. Never let the plants get dry nor excessively wet at the roots, for either extreme will cause the tomatoes to decay in the centre and drop off.

Keep the potatoes growing by good cultivation and spray with Bordeaux. Use Paris green in case there are any bugs on the plants. Give the final hilling when they are in flower. I prefer flat cultivation until then. Look over the squash and pumpkins for leaf eaters and spray with poison.

Go over the sweet potatoes and keep the vines from rooting. Just lift the vines and pull up the roots that are forming. This should be done every week or ten days at this time of the year because if they are permitted to root the result will be a crop of very small tubers.

WHAT TO SOW

Early corn will now be ready for use. Look at Golden Bantam first and use care in selecting the



Give plenty of water during July. The parsnip on the right did not get water when it was young and growing and so was ruined



A practical way of growing strawberries. On the right the old patch with solid rows; on the left the newly set bed

ears. I can tell by feeling an ear whether it is ready for the table or not, while some determine it by the silk, which is not so sure a sign as the firmness of the ears, as some varieties ripen the silk earlier than others. Get acquainted with the other method. It is safe to sow corn as late as July 15th. Use two varieties, the early and second early; if one does not mature the other will. Sow the rows of the early variety about two feet apart and two and a half feet for the second early varieties. It will then be an easy matter to protect some from early frosts.

The spring crop of peas is almost gone, but toward the end of the month you can start sowing again, using early varieties. Remember that the secret of success with late peas is never to let them suffer for water.

Make the last sowing of cucumbers about July 15th. If you take care of these by spraying with Bordeaux mixture they will last until frost. Pick off any diseased or blighted leaves when you are going over the vines. Egg plants and peppers should now be ready for use. If the plants get tall and the garden is exposed to winds, stake them to prevent breakage.

Sow endive twice during the month. The best variety is the broad-leaved Batavian, which the French call escarolle. When the young seedlings are large enough plant out in rows the same as lettuce.

Keep the leeks hilled up as they grow and feed constantly with liquid manure and nitrates.

Make two sowings of bush beans during the month. Keep the early sowings well hilled and if the ground bakes to any extent, mulch. Keep the leading shoots of the lima beans tied to the poles until they start climbing of their own accord. Look over the bush limas for an early picking toward the end of the month, and do not let the beans get hard and dry. Lima beans should be green and not white when cooked.

Sow lettuce three times during July and keep the young seedlings well watered. In fact, all lettuce should be kept very moist to prevent them from running to seed too quickly. If you haven't planted them in a shaded place, build a cheesecloth frame over the plants that are beginning to head up and make a habit of spraying them night and morning during the warm weather. This is the secret of good crisp lettuce.

Make two sowings of beets and carrots during July. Keep all the sowings well thinned and see that this is done when the seedlings are small. Keep these two vegetables well watered, especially the beets.

Sow rutabagas for winter use during July. The early part of the month is the best, but if you are short of space it can safely go for a week or two.

SETTING OUT STRAWBERRIES

I strongly urge the use of pots for this purpose. The two-inch size is inexpensive, and they will last a number of years. Select the strongest runners, cut them from the old plant and pot them, using a fairly good soil. Place them where they can be shaded from the strong sun for a day or two until they start to make roots; after they are established

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place in the full sun. Keep them carefully watered, and in about two weeks from the time of potting they will be ready to set out. Dig the bed two feet deep, throwing the top soil to the bottom and adding plenty of manure. Set the plants in rows two feet apart and one foot in the row. Keep them this way until after they fruit the following season; then train the new runners to grow in a straight row, which will make a solid row in place of one planted every foot. I work my strawberries thus:

I set out a bed every year, and leave it for two years—the first year as individual plants from which I get quality, the second in solid rows, when I get quantity. In this way I always have two bearing beds. I would not advise anyone to propagate his own plants unless he has thoroughly up-to-date varieties, and even then it is advisable to change the stock occasionally, as strawberry plants can be bought too cheaply to take any chances with poor varieties or wornout stock. Do not forget to mix the pistillate and staminate flowering types.

New York.

W. C. McCOLLOM.

[EDITOR'S NOTE.—Next month we will discuss the sowing of fall crops, the necessity and method of building a manure pit, etc.]



Sowing for Fall Crops

THE fall vegetable garden may now be started. Sow the seed after a rain, but not until the soil has settled and partially dried out.

Lawns will suffer very much from now on from droughts, unless they are well watered. Get a lawn sprinkler and start it working every day about four or five o'clock in the afternoon.

Spread clippings from the lawn around chrysanthemum and dahlia plants to preserve the moisture in the soil. A layer of from one-half to one inch thick is sufficient.

Sow the seed of sweet peas and pansies in rich, well-prepared loam soil, sowing thickly in order to get a good stand. Spread a flannel cloth, or some other soft material, over the beds and keep the soil moist by frequent sprinkling. As soon as the seed germinates, remove the cloth. These plants should bloom the last of September or early in October.

Place a stake at each dahlia plant and tie the plant to it to keep it from being broken down during heavy winds. For large flowers prune so as to allow only one or two stalks to a plant.

Do not plant gladioli later than the middle of the month. Seed of annuals can be sown in rich soil until the last of the month.

Give very shallow cultivation now, as the feeding roots are close to the surface of the soil.

Continue to sow cow peas for hay until the last of the month. The clay Cow pea is the best variety, as it makes a large growth of vines.

When cultivating peanuts for the last time, use a large plow so as to throw plenty of soil upon them and to get them thoroughly free from grass.

Georgia.

THOMAS J. STEED.

This Month's Cover

THE giant daisy (*Chrysanthemum uliginosum*), the subject of this month's cover, is a most satisfactory summer flower for the hardy border. The plant grows four to five feet high and flowers profusely in full exposure to sun throughout August and September. Plants may be increased by division, cuttings or suckers. Give plenty of water in a rich, heavy loam. It will bloom the first year from seed.

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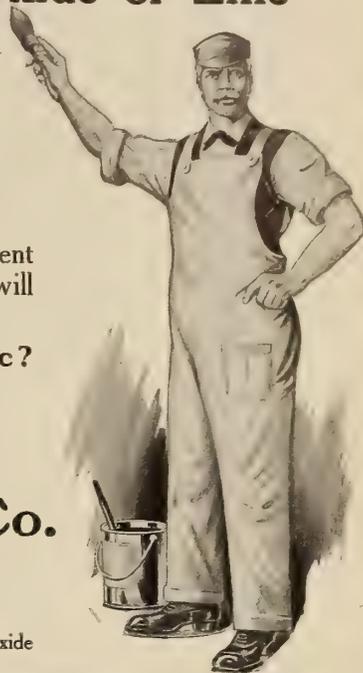
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IF there is any flower which can properly be called "startling," it is the torch lily, flame flower or redhot poker plant, known to gardeners as Tritoma. This plant suggests a sky-rocket, by reason of its pyramidal scape of blazing red flowers. It is a member of the lily family, but is a form as unique in its way as the kangaroo. It can be



North of Philadelphia roots of torch lilies have to be dug up in fall and stored indoors over winter

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Torch lilies are most appropriate for formal gardens because they bloom from July to frost

and put them in a box of dry earth for the winter. Some, however, prefer to leave them in the hardy border all winter and cover them with a box of leaves so as to keep the rain off.

It seems to us that the torch lily is best suited for bedding of the kind shown in the lower of the two pictures. We should prefer not to see it planted in front of shrubbery, as in the upper picture, for it is too striking a plant to harmonize with the northern landscape.

New York

W. M.



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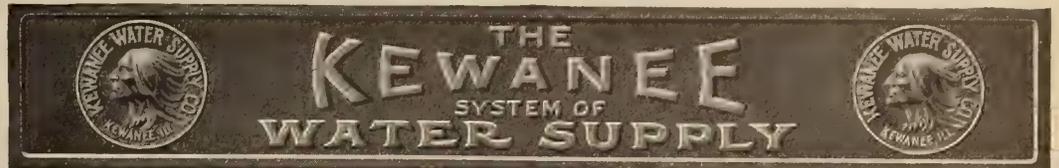
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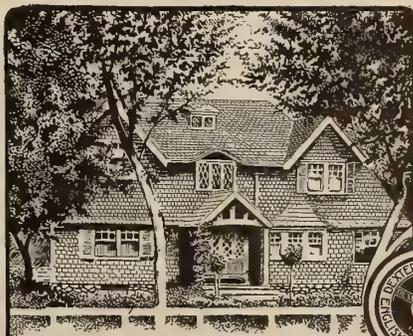
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The Splendor of Crinums

ANYONE who admires an amaryllis (and who does not?) may easily become enthusiastic about crinums, for they have the same grandeur of flower and gorgeousness of color. Indeed Crinum differs from Amaryllis chiefly in having green seeds instead of black—a mere technical character which has nothing to do with their human interest. In fact crinums have a charm of their own, for some of them have narrow petals (perianth segments) after the fashion of the spider lilies.

There are at least twenty-two species of crinum worth growing in a large greenhouse collection. Some have a few large flowers in an umbel, others have many flowers, and some are remarkably fragrant. There are three types of coloring among the crinums. Most of them have pure white flowers. Some have a red or purplish band down the centre of each of the six petals. Others are flushed with the same colors.

I need hardly say that the spidery crinums are not so popular as the symmetrical kinds with large trumpets and broad segments. The former may be more picturesque—even spectacular—but the latter are more beautiful and showy. Naturally the two greatest favorites are *Crinum longifolium* and *Moorei*, since these are the hardiest members of the genus. They live outdoors at St. Louis and even farther north. Moreover, they differ from all other crinums in blooming all summer instead of a short period. Both have glorious bell-shaped flowers four to six inches in length and from six to twelve of these noble flowers are often borne on a single stalk.

The long-leaved crinum is beautifully tinged with red on the back of the flower, while Moore's crinum is flushed with rose inside and out. A splendid hybrid between the two is *Crinum Powellii*, the variety here pictured. The flower is not quite so fine as that of Moore's crinum, but the plant is so much harder that Mr. J. N. Gerard has been able to grow it outdoors at Elizabeth, N. J., for a good many years with no protection for the bulb other than a small mound of ashes.

Powell's crinum can be had in rose, flesh color and white. The bulbs may seem a bit expensive, but they are so long-lived and the product so splendid that no one who can afford the price will hesitate for an instant. They are easy to grow, and will bloom in the greenhouse in winter or out of doors in summer. A good way is to put them in large pots or tubs and let them multiply for five years or more without shifting.

New Jersey.

THOMAS McADAM.



Powell's crinum, a glorious pink flower four to six inches long, with from six to twelve flowers on a stalk

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Notes and News

WOULD you give \$5 for a yellow peony? There is a new one said to produce flowers sometimes eight inches across! It is a hybrid of *Paonia lutea*, called L'Espérance, which was sent out in 1909 by the famous hybridizer, Lemoine. It is said to be a primrose yellow, with scarlet stamens and carmine rose spots at the base of the petals. It blooms at Nancy, France, from June 5th to 15th.

Does your house ever get filled with the odor of boiling cabbage or onions? Not the slightest need of it. Add salt and simmer in a covered pot. There will be less steam and little of it will escape. The odor is borne off by the steam. The color of the vegetables will be more attractive. Of course, the food value is diminished somewhat, because the salt helps to dissolve some of the elements. But who cares? If one ate nothing else the loss might be serious. If you want the scientific proof of all this, see the work of Miss M. N. Watson of the Ontario Agricultural College as abstracted in Farmer's Bulletin 342.

Whew! A net profit of \$2,000 an acre from Montreal melons! No wonder the Canadian growers have been keeping things quiet when they were getting \$8 to \$15 a dozen wholesale, and the demand greater than the supply. It is a very risky crop, requires infinite care, and can probably be grown only in the states bordering on Canada. Professor Stuart tells about this interesting industry in Bulletin 136 of the Vermont Experiment Station, published at Burlington. If you write, please mention THE GARDEN MAGAZINE, and if you can't get the bulletin, ask the United States Department of Agriculture at Washington, D. C., for Farmer's Bulletin 342.

There seems to be a small-sized craze for importing collections of perennial larkspurs from England—say fifty named varieties at a time. We should like to hear from anyone who has had such a collection for four years or more. Are the varieties true to name? Do they come up to your expectations? Has the larkspur disease killed most of the varieties? Can you keep your collection reasonably free from the bacterial spot by taking cuttings instead of propagating by division? Mr. Erwin F. Smith, of the United States Department of Agriculture, has named the delphinium disease bacterial spot of larkspur and says it is caused by *Bacillus delphini*.

How some nurserymen do murder plant names! Good nurserymen, too, who ought to know better. There is a famous collector of rare plants near San Francisco, whose catalogue contains literally hundreds of errors. We have before us an attractive catalogue from Illinois from a man who has maintained a good reputation for half a century. Yet on the front cover we find: "Berberis Thurnburgis," and on the back cover "Wiegelia rosea." Is there any excuse for this sort of thing? We think not. Anyone who is intelligent enough to run a large and decent business ought to have brains enough to hire a college student for \$25 to standardize his catalogue names with Bailey's Cyclopaedia of American Horticulture.

There is nothing sublime about cabbage. Few people take the subject seriously. Of course, market gardeners do, for their living may depend on it. But even the market gardeners lose thousands of dollars a year by not taking cabbage a little more seriously. For instance, they seem to think that Jersey Wakefield is Jersey Wakefield. Bless me, it means twenty-five different things! Mr. C. E. Myers tested twenty-five strains of Jersey Wakefield cabbage and found that while they were all true to name, they varied altogether too much. The profit in this crop depends largely upon (1) earliness; (2) yield; (3) form of head, and (4) solidity of head. The biggest heads weighed 2 lbs. 5 ozs., and came from a Minnesota seedsman. The smallest weighed 1 lb. 4 ozs., and came from a Kentucky seedsman. The earliest crop came from Detroit seed, 94 per cent. maturing the eleventh week. The slowest crop came from Illinois seed, which never matured a head! Moral for market gardeners: You might save hundreds of dollars by reading Bulletin 96 of the Pennsylvania Experiment Station. Moral for seedsmen: Brace up!

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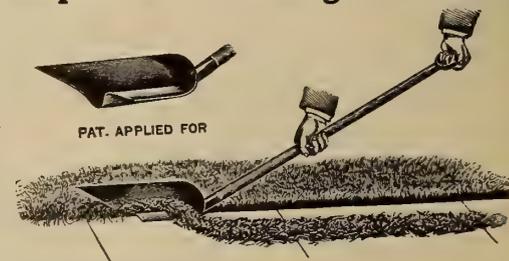
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Other states are passing similar laws. Makers or agents who advise "souusing" are willing to make a law breaker of you, to cause you the loss of your cream or make you liable to fine or imprisonment, in order to sell you a complicated machine. Wise dairymen let disk-filled and other complicated machines alone. They prefer simple, sanitary, easy to clean

Sharples Dairy Tubular Cream Separators

for Dairy Tubulars have neither disks nor other contraptions, yet produce twice the skimming force of common separators. The World's Best World's biggest separator works. Branch factories in Canada and Germany. Sales exceed most, if not all, others combined. Probably replace more common separators than any one maker of such machines sells. Write for Catalogue No. 215.



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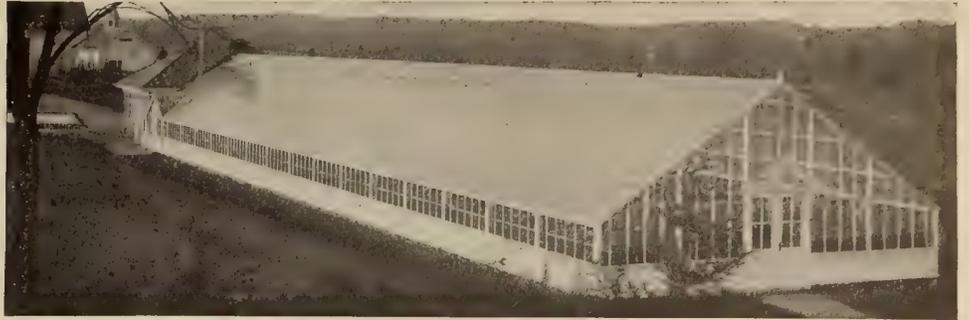
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Making Money With a Greenhouse

Set aside for the time being the fact that having a greenhouse is one of the most delightful, health giving hobbies, and let's get down to the question, can they be made to pay? Take so minor a question as tomato plants, for instance; wouldn't you be willing to pay a good price in the spring for stocky plants that never stopped growing for a minute after their transplanting in your garden? Of course, you would! Do you know where to get such plants? That one thing then you can do in a portion of your greenhouse in the early spring.

Same way with some of the difficult-to-grow second season blooming perennials, so much sought for nowadays by lovers of old-fashioned flowers; no one sells them and yet everybody wants them. You can grow them and sell every one you grow and guarantee blooms the first season.

Good head lettuce retails for 75c. to \$1.00 per dozen—cucumbers the first in the market often bring as high as \$3.00 per dozen with an average of 60 to 75c. the season through. Greenhouse grown tomatoes easily yield seven pounds to a plant, and when packed in splint baskets bring 40c. a pound.

So much for the things easily grown in the small house—but suppose it proved so interesting and paid so well that you wanted to devote all your time to it, and build larger; what are then your chances?

Well, take violets for instance: We can direct you to one person within twenty miles of New

York, who started a few years ago with a house less than 100 feet long, and year by year has added more until now there are three houses 30 feet wide and 125 feet long. Violets did it.

Carnations are not especially difficult to grow, are free bloomers and generally find a ready market, and can be followed in the spring by an early crop of tomatoes.

But the best part of this greenhouse question is the right down pleasure of such a business, and nothing could be more healthful.

Don't make the mistake, however, of thinking any local carpenter can build a satisfactory house for you. There are two distinctly important facts to consider—the first, that the builders should have an accurate knowledge of plant growth and its requirements—second, that the construction be one that will withstand the varying conditions of moisture and dampness. Otherwise you will be putting your profits into endless repairs.

Quite the best thing for you to do, is drop in at any of our offices and have a heart to heart talk with us. We will tell you frankly just what is practical and just what is likely to be only a bubble dream—we will do all we can to help you to success.

If you can't get away just now to come and see us, then drop us a line and we will give your question every care possible by correspondence, or, if advisable, go and see you.

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Landscape Gardening



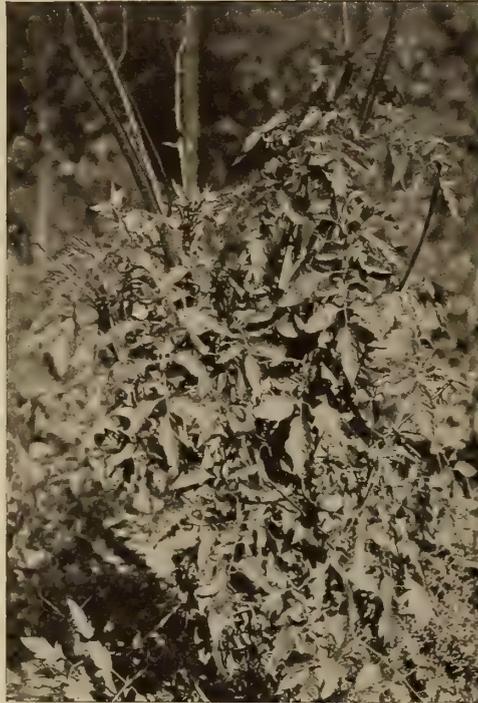
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When growing tomatoes on brush, tie the plants so that each fruit receives plenty of sunlight

Brush gives pole beans a better hold for climbing and spreading than do the stiff straight poles; the vines also have more air and sun, and are easier to pick.

Tomato vines may be spread and the separate branches tied to the brush in such a way that each fruit receives plenty of sunlight. Used in this way, it resembles a tomato "tree," and is both unique and ornamental.

Brush can be used for a number of other vine plants and vegetables, either to save the trouble of providing trellises or because it can be arranged in a greater variety of ways and shapes. After it has served its purpose it can be burned and the ashes kept dry for use in the garden the following season.

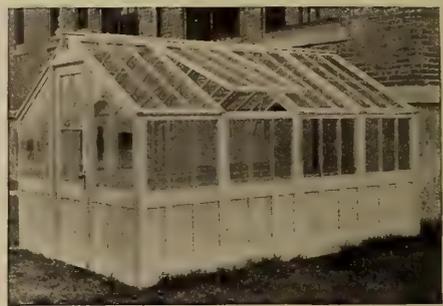
New York. I. M. ANGELL.

Planting the Window Boxes

THERE is nothing that makes a house more attractive in summer than window boxes, particularly if they are filled with plants having light-colored blooms.

Have the boxes nine inches deep and of about the same width. Cypress wood is undoubtedly the best wood to use, and although it may cost a little more in the beginning is cheaper in the end, as it will not have to be renewed every year. Before filling, paint the box the same color as the house or else a dark shade of green. Make several 3/4-inch holes in the bottom of each box for drainage and put broken flower pots over the holes in such a way as to keep the soil from falling out and yet afford proper drainage. The soil should be three-fifths rotted turf, one-fifth well-decomposed cow manure, and the remainder equal parts of sand and leaf mold. The smaller the box the richer the soil should be.

Vincas are the best vines, the varieties having the white-edged and light green leaves being most appropriate. They will make a growth of from four



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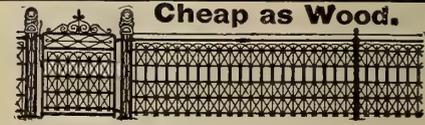
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Greenhouse Conclusions— A Word on Reaching Them

A greenhouse, in order to give you satisfactory returns for your money invested, must be constructed with two main points in view; light framing so all possible light can reach the plants—right construction so that your glass breakage will not be a costly nuisance, and so that the destructive conditions that exist in all greenhouses will not bring on repair bills in disheartening rapidity.

With these points in mind, compare the various constructions and while doing it, take into account the simplicity, the graceful beauty of lines in the Curved Eave U-Bar houses, and the fact that their greater productiveness and endurance are two of the strongest reasons in their favor. Ask any gardener. Let us give you the location of some nearby U-Bar houses, so you can go and see for yourself. In any case send for the new catalog.

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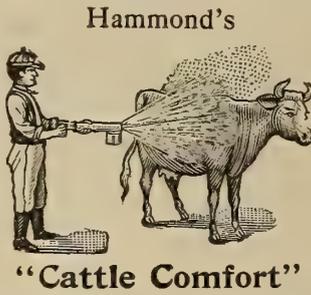


My Aster beds are along the railroad track of the Central New England. It has been my pleasure to have a grand show. The black beetle and the striped bug are very troublesome. These pests will skin the whole bunch if we let them alone, but we don't let them alone, for as soon as the plants are well grown I take 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.



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HENRY SAXTON ADAMS, Wellesley, Mass.

to eight feet in a season. Ivy (*Ampelopsis quinquefolia*) is also much used. Plant the vines in the front of the box.

For sunny situations use geraniums but do not plant more than one variety in a box. The best showing is made by the scarlet geraniums, although they look hot in summer. The coolest looking combination is formed by pink geraniums, marguerites and the white-edged vinca. Alyssum, English daisies and pansies are also good, and for an early spring box nothing is prettier than daffodils or hyacinths.

The best and at the same time the most popular plants for summer window boxes, besides the ones already named, are the common ivy-leaved geraniums, English and German ivy, petunias, heliotrope, snapdragon and ageratum.

G. S. J.
New York.



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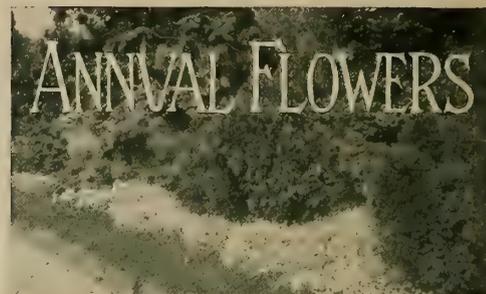
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The value of annuals as an edging for the shrubby border is happily illustrated in the picture, which shows petunia. This blooms from spring through fall; a double row of petunias, at a trifling cost, afforded color all summer.

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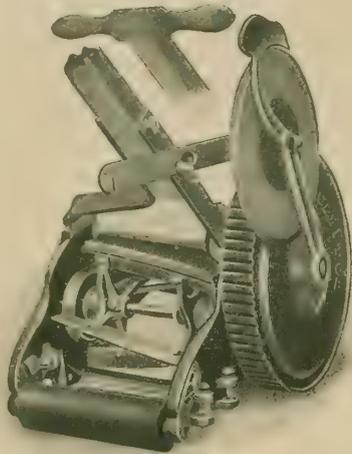
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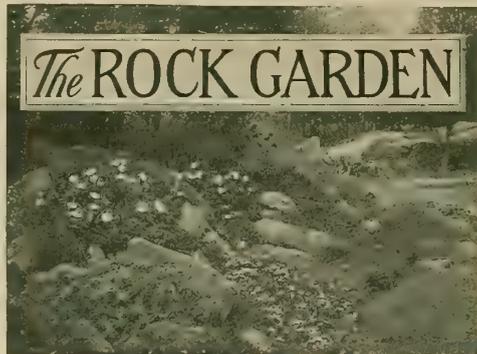
is a trifle too odd and striking to be used successfully in every situation. Where a short straight walk leads from the sidewalk to the house a very pretty picture can be achieved by planting a border of nasturtiums, about a foot and a half wide, consisting of three rows of plants along each side of the walk.

Petunias when pinched back sufficiently make a neat bed. They afford an excellent border for the aster bed, producing flowers while the asters are growing, then continuing to bloom with the latter until frost cuts down both.

A very showy round or oval bed can be had by bordering a centre of Nicotiana with annual phlox. Though a bit late in starting, the Nicotiana blooms well into frost. The fact that the flowers are closed until late in the afternoon is a slight drawback, but then the fragrance in a measure compensates for this. To insure continuous bloom from the phlox the flowers should be removed as soon as they wilt. In making such a bed I have found that it is better to avoid the white aster.

The cosmos, on account of its feathery foliage, bare stem and somewhat isolated flowers, is not a success as a bedder. Some of the other annuals can be used as bedding material, but from personal experience I can say that the above will, with little care and less expense, give a decidedly formal effect, under the right conditions, as good as that of coleus and geraniums. And will endure later. Indeed, as I write in early fall, the coleus have turned partly black from a slight frost, while all my annuals are still blooming joyously.

North Dakota. C. L. MELLER.



Start a Rock Garden Now

IT IS not yet too late to start a rock garden; the spring rush is over and one can attend leisurely to the sowing of seeds. It would bankrupt most of us to buy plants of every alpine species we desire, and besides, alpinas, as a class, do not transplant well from nursery to garden. The favorite plan is to sow seeds in flats in a cold-frame any time from June to August, carry the young plants over the winter in the frames and set them outdoors in their permanent quarters in spring; nearly all will bloom the year after sowing. It is astonishing how many species can be started in a little space. These frames supply the largest private alpine garden in America—Mrs. Higginson's.

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New Jersey.

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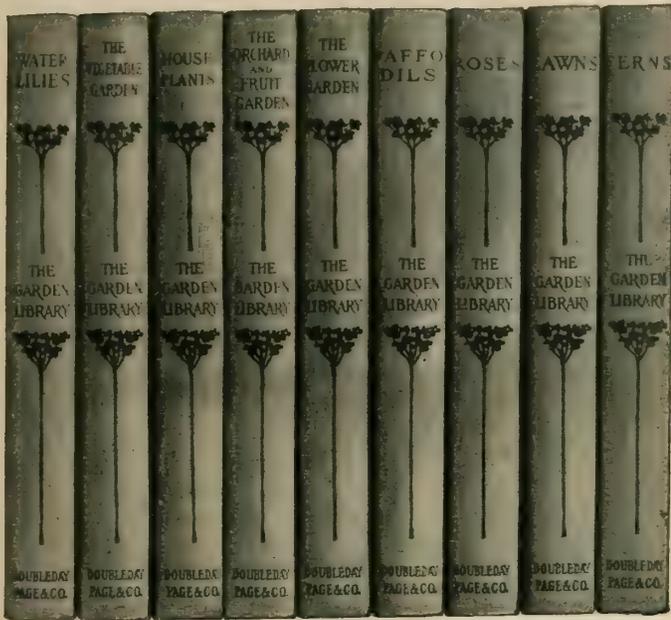
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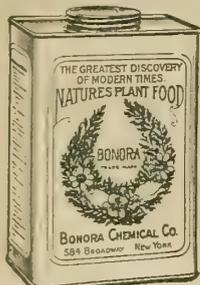
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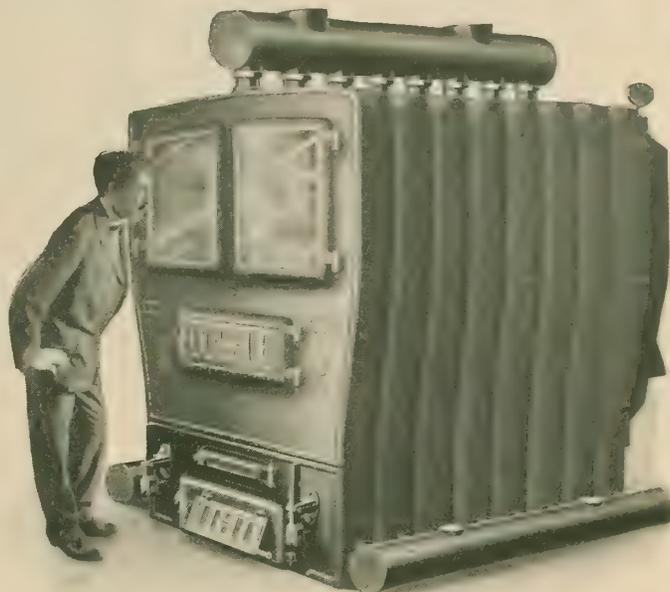
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So, to be beyond theory, beyond guesswork, we built a boiler with windows in it.

Through these windows we proved our experiments and perfected the new "RICHMOND" which, in actual practice, develops *double* the efficiency of ordinary boilers. And the day-after-day saving in coal will prove this to you, just as the windows proved it to us.



"RICHMOND"

Boilers

Radiators

By building a boiler with windows in it, we learned *certainly* about drafts, water circulation and fire travel which enabled us to perfect a heating system which doubles efficiency and halves the fuel bill.

We found, through the windows, that the flue is more important than other makers dream.

So, by patient experiment, we perfected a "diving flue" which costs us three to seven times as much as other makers spend for smoke connections and makes it that much more efficient.

The "RICHMOND" "diving flue" takes the gases and smoke which would ordinarily pass up the chimney and sends them back, mixed with fresh oxygen, to burn anew.

For every shovel of coal you put in the firebox this "diving flue" sends half a shovel back from the chimney.

The "Diving Flue"

The "diving flue" is our own invention. It is exclusive. It can be found on no boiler save the "RICHMOND".

The fuel economy it brings, more than repaid the experiment of the boiler we built with windows in it.

But the "diving flue" was not the only outcome of this experiment.

We learned more about drafts than had ever been written on paper.

We learned how to increase our heating efficiency from 90 square feet to 128 square feet, without adding to the size or cost of the boiler.

We learned how to build a cross circulation water way which does for the water circulation what the "diving flue" does for the fire travel.

We learned how to arrange doors and drafts and dampers so that tending the fire becomes a simple, easy, exact science, instead of a difficult, haphazard uncertainty.

Self Cleaning Surfaces

We learned how to make 90 per cent. of our surfaces self-cleaning—so more efficient.

And in countless ways, the boiler with windows enabled us to save half your coal, double ease, flexibility, satisfaction—*without increasing the first cost of the heating system to you.*

The "RICHMOND" heating system as perfected to-day represents the climax of inventive skill—a system that repays the pains we put into it every day you use it.

The "RICHMOND" system is small enough for a three-room bungalow. Big enough for a building that measures its floor space by the acre.

Write Us

If you contemplate installing a heating system, steam, or hot water—direct or indirect—in your home or building, large or small, write us. Ask for catalog 271. Be fair enough to yourself to learn of a system which, by inventive ingenuity, saves its own cost, pays its own maintenance.

Address in the West

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Western Distributors for

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THE McCRUM-HOWELL Co. 271 Terminal Building
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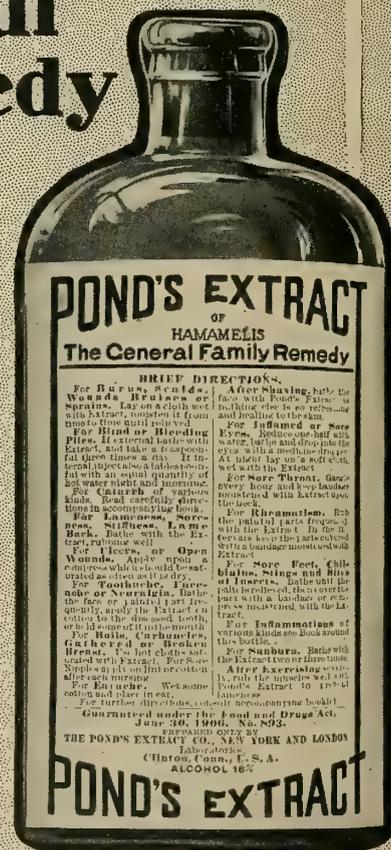
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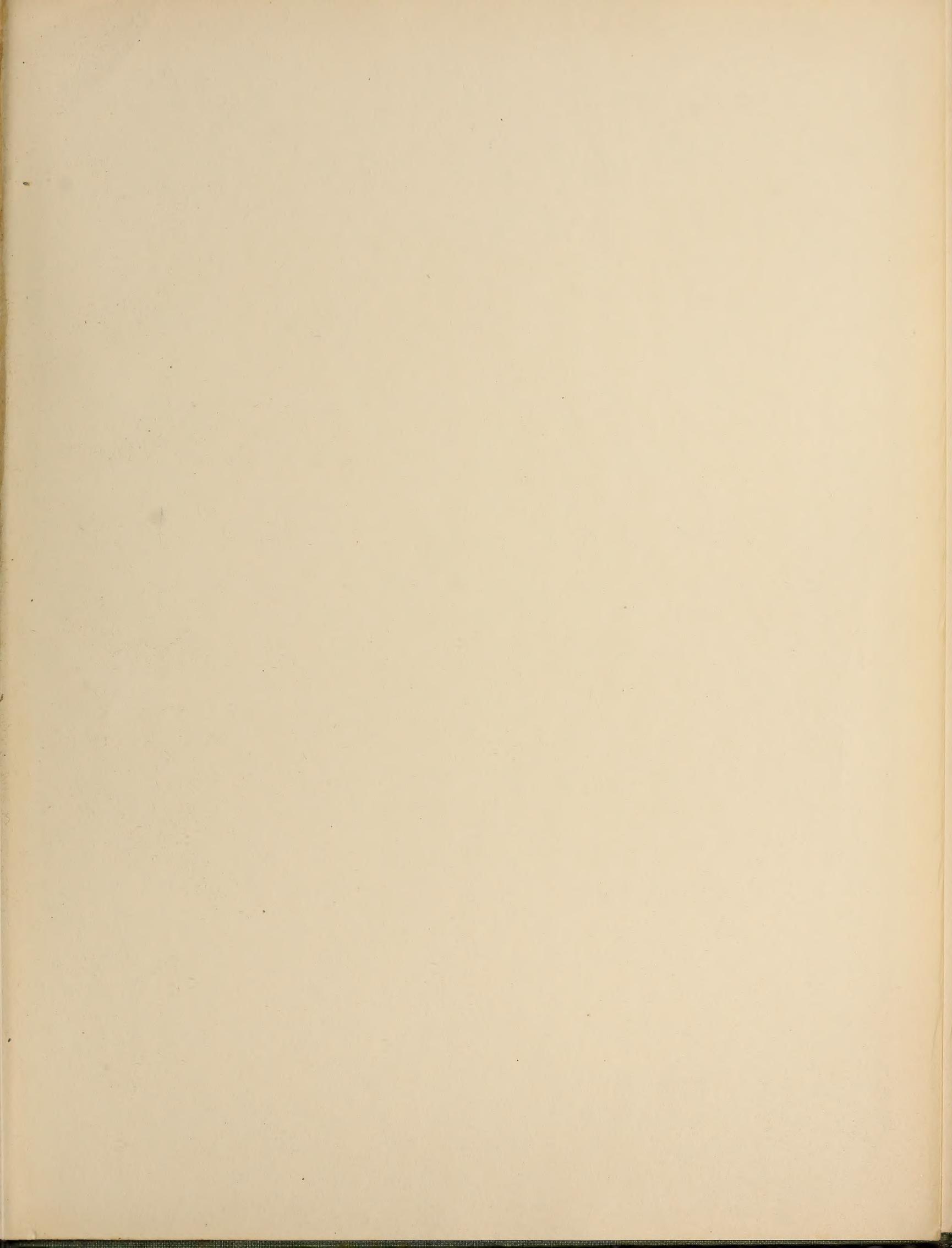
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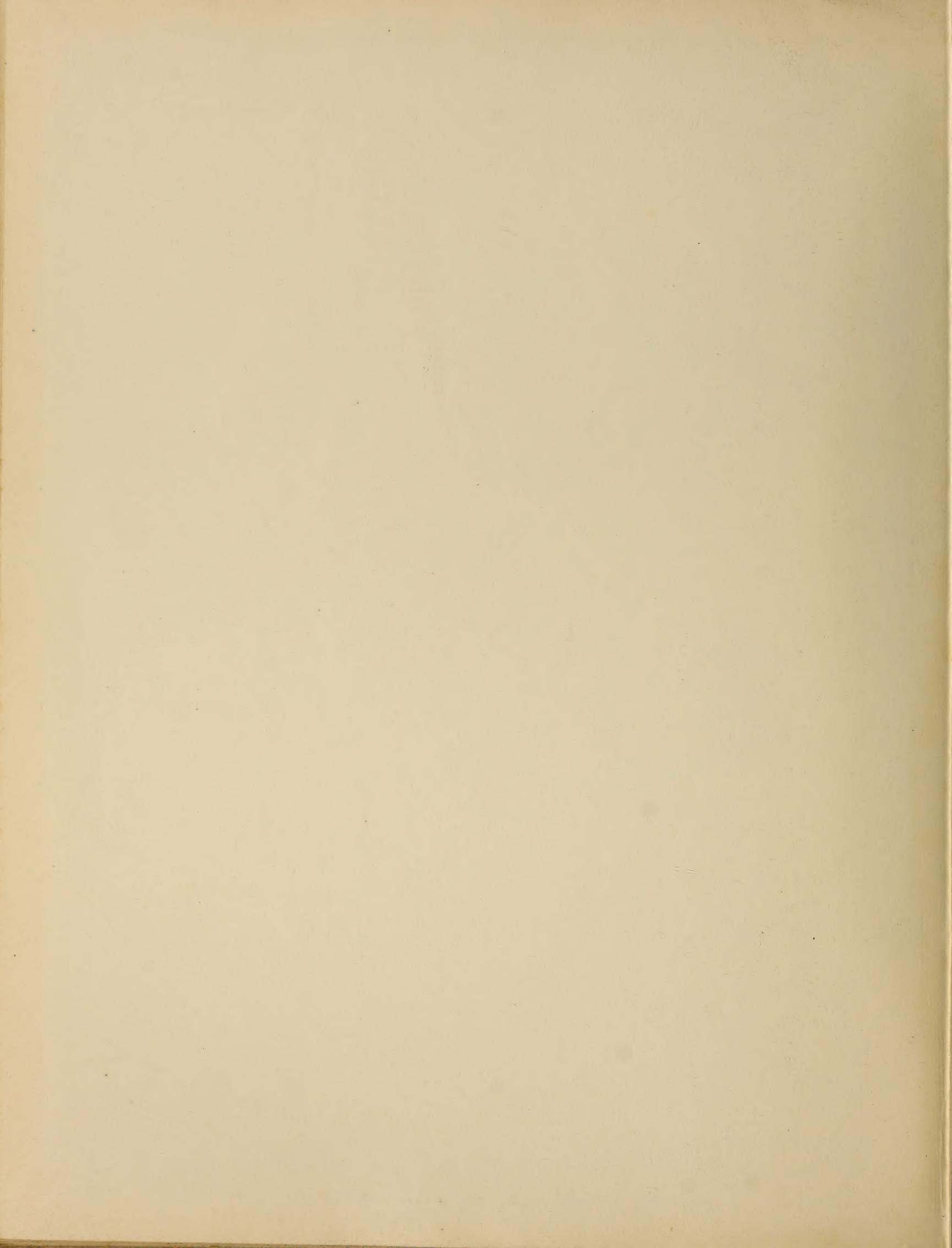
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