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Changes in grade are usually welcome factors in garden making, for terraces offer great variety in treatment, and each terrace, as shown by this picture of a New England garden, should have some individuality and distinctive interest. Prentice Sanger, landscape architect

House & Garden

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By the back fence were clumps of iris and peonies, a jungle beloved of the cats—and of small children, too

In Grandmother's Garden

BEING THE LAND THAT MANY OF US CANNOT GO BACK TO SEE—THE LAND WHERE THE CHILDREN PLAYED THAT WE USED TO BE, WHERE GREW THE FLOWERS THAT HAVE A PLACE IN THE HEART

FANNY SAGE STONE

Photographs by R. L. Warner

JUST the sight of a sweet briar rose brought it all back to me. My thoughts had been busy with shopping lists and plans for the day, as I rode into the city on the elevated train. At one of the stations I glanced up to see a dear, little old lady taking a seat near me, and on her coat was pinned a sweet briar rose. She loved it. I knew from the way she wore it and the tender look she gave it occasionally, and when she took off her coat, how carefully she folded it that the rose might have a safe place! Then I fell to wondering where the rose grew, and soon I forgot the little, old lady and her rose and I was a child again—happy and free in Grandmother's garden.

It was there where I first knew and loved the sweet briar rose: in Grandmother's garden, the place that was really paradise to us as children.

Fortunate, indeed, is the child who has such a start in life. For, ever after there comes to her a greater love and appreciation of nature and of all out-of-door things.

Every season was interesting in that old garden. Even at Christmas time one of the most fascinating spots was the one where we knelt and pushed away the snow to peep under the protecting branches and find the blossoms of the Christ-

mas rose. We loved these flowers that bloomed defiantly in the face of the frost king, and how like conquerors we felt as we carried them in from the ice and snow! Another joy was in finding the berries on a cold, winter's day, still clinging to the barberry bushes, the high-bush cranberries and the snow berries. No wonder the birds came often to the garden, even in winter, where they found such good things to eat.

When the March days came we watched for the first snowdrops. Brave little things! They pushed their way up through the frozen ground, each one covered with a little cap to protect it from the cold.

Then came the crocus blossoms, all in purple, white and gold; and soon, best of all, the lovely, blue scillas, with the real fragrance of spring, and the rock cress. Were ever bouquets prettier than those we made of these two flowers and took to school for our favorite teachers?

Grape hyacinths came next, and the dear little row of hepaticas that Grandmother had brought from the woods years ago sent up their sweet blossoms. They always nodded to us as we passed, and Grandmother had no rest after the first one blossomed, for then we felt the call of the woods and begged for the day when we could go and pick all we wished.

Spring was full of gladness in this garden, for there was always something coming into bloom, and we knew just where to look for the different things. Grandmother had taught us, and we grew to love the flowers almost as well as she did.

Sometimes we would go out with Grandmother in the early spring, and she would take a stick and poke carefully among the leaves to see if the different things had started to grow. Often we would find little buds just waiting for a warm day to help them burst into bloom, when they would come to us again with the same sweet frangrance and freshness.

"God does not send us strange flowers every year.
When the spring winds blow o'er the pleasant places,
The same dear things lift up the same fair faces.
The violet is here.

It all comes back; the odor, grace and hue,
Each sweet relation of its life repeated;
No blank is left, no looking for is cheated;
It is the thing we knew."

Down by the porch in the south sunshine grew the white violets. In April the ground was white with their blossoms and their fragrance greeted even the people who were passing on the street.

We were never so much interested in the front yard, where the more formal things grew, and Grandmother never encouraged our becoming intimate with that part of the garden. We peeped through the lattice at the snowball and barberry bushes, the bleeding heart and the crown imperial lily. Sometimes we did beg permission to step in through the lattice gate to pick a few of these forbidden flowers that would help us in some of our games or in our house-

The playhouse was out under the apple trees. Never was there more wonderful housekeeping nor more varied and original meals. The garden furnished everything, even to clothing and adornment

keeping plans. We found the most fascinating little rabbits in the blossoms of the bleeding heart when it was pulled apart, and the berries we just had to have for our salad, when we kept house under the apple trees. We had our favorite flowers, of course, and most of these grew in our yard—the one behind the lattice fence. Yes, the sweet briar rose grew there, and Grandmother loved it dearly. I suppose that was why it grew near the window where she always sat, with her sewing. The little, south wind bore its fragrance in to her, and perhaps a message from Grandfather, for he planted the bush there and was "partial to it," he used to say. On Sundays, when he went down the side steps on his way to church, he always stopped to pick a sprig of the sweet briar to take with him. As he fingered the leaves in church, I used to wonder if he were saying his prayers with them, as Martha did with the beads on her rosary.

Such beautiful things grew in the "back yard"! There were larkspurs in pink and lavender, the little, old-fashioned annual larkspur that to my mind is still more desirable than the tall, cultivated kinds. There were rows of stately hollyhocks, mullein pinks with flowers of such wonderful color; the Star of Bethlehem or Johnny-go-to-bed, as we sometimes called it; Canterbury bells and foxgloves, the dear, little Johnny-jump-ups, or ladies' delight, and the lilacs.

A great mountain ash tree grew here. Its berries strung together made lovely necklaces for us. The birds loved this tree, especially the cedar wax wings, tidy, polite, little things. Then, too, there were sunflowers, where the goldfinches feasted in the fall. A beautiful trumpet vine grew up over the side of the house. We often watched the humming birds as they came to the red trumpets on the vine and ate their fill, and we wondered, as the cuckoos flew to the bitternut tree, how they knew that the tent caterpillars were there doing harm.

A great syringa bush grew higher than the second-story windows of the house. This bush was a home for birds through all seasons. Grandmother used to say that most of the birds in migration time flew to its protecting branches, registered and rested and then went on their pilgrimages. The wood thrush and cuckoo would come to the bush and rest for hours, evidently tired and exhausted after long flights.

Two little, round beds in Grandmother's garden were our especial delight. They were made originally for Grandmother's own girls, but were claimed by us as we grew up. We planted and cared for them, and wonderful indeed were the results. Occasionally Grandmother would take a hand in managing them. I remember a beautiful border of June pinks that grew around one bed. The other had a row of love-in-the-mist. Grandmother called it Lady-in-green. Sweet William and wall flowers grew near; columbine and veronica; and, peeping through the fence, were the sturdy flowers of the bouncing Bet.

One of the garden paths led to the street; old-fashioned flowers fringed it; and there was a curve midway down that almost hid the gate from view

Every season was interesting in that old garden. Even in winter would be found the Christmas rose down by the shelter of the gate

Around the well grew the pretty, little, low flower-de-luce, the yellow buttons and the striped grass. I intuitively put my hands to my ears when I see the striped grass. Never shall I forget the dreadful squeaks and shrieks that were made with it.

We felt that the bitternut tree really belonged to us, for we spent many, many happy hours in its shade, and its fruit was a never-ending source of pleasure. I wonder if little girls nowadays know the fascination and charm of the pig-nut doll! When the nut was shelled the little, pointed end made such a lovely nose, and, with a pencil or nail, we easily made holes or marks for eyes and mouth. Then, with two sticks or matches for legs that were thrust into the head of the unfortunate doll, we had a wonderful result. Marvelous dresses were made and caps and bonnets such as never were seen or heard of. As I think of it now, it seems as if all of our good times were in this garden, and everything that grew or blossomed seemed to lend itself to

(*Continued on page* 301)

The Right Way to Grow Seed

CONDITIONS THAT ENHANCE GERMINATION—BAKING THE SOIL—THE DEPTH TO SOW—NURSING THE YOUNG AND DELICATE PLANTS—MODERN MECHANICS OF TRANSPLANTING

S. Leonard Bastin

MUCH of the success of the garden will depend upon giving the plant a good start in life. On this account the question of seed sowing is one which should receive a good deal more attention than is usually given. It will well repay any grower to study the conditions under which seeds most readily germinate and develop, and then to do his utmost to provide favorable surroundings.

There is, of course, a right and a wrong season for the sowing of every kind of seed, and such information is usually to be found on the packets. But of almost equal importance is the choosing of the right kind of weather. Dry weather, such as sooner or later comes with every spring, should be chosen for the business. No time will be gained and, in many cases, much will be lost by scattering the seeds when the soil is heavy with damp. Germination will be rapid in a light and comparatively dry soil, but it will be slow and may not take place at all on water-logged ground. Anything, like the addition of sand, which can be done to lighten the surface soil of the border will be very helpful in enabling a free growth of the little plants. Remember that the more freely the little roots can push about, the better chance will the plants have of establishing themselves. When sowing seed indoors in pots, pans or boxes, it is possible to prepare the soil very perfectly. Whatever is used as a base, a liberal allowance of sand is desirable, and the mixture should be passed through a fine sieve so that all lumps are made to disappear. A very important precaution is the sterilizing of the soil before use. Ordinary soil always contains the spores of mould, and may very well have a quantity of slugs' eggs as well. Under the shelter of a glass house these pests rapidly develop, and will play havoc with the baby plants. The danger may be prevented either by baking the soil in an iron tray over a furnace or pouring boiling water over it. In any case, the mould must be moist when it is used. Of course, in the case of pots and pans it is most important that the drainage should be in perfect order. Some gardeners half fill their pots with broken crocks before putting in the soil.

Small seedlings are washed out of the soil if watered in the ordinary way. Try standing the pot in a bowl of water

The seeds in flats should be properly labeled and arranged in an orderly fashion. Keeping the kinds together simplifies work

Nearly all gardeners sow their seeds too thickly. An idea seems to be abroad that it is necessary to sow a great quantity of seed, on the supposition that a large number will not germinate at all. This might have been the case a generation ago, when there was a great deal of bad, and even dead, seed about. Nowadays the merchants of high standing all sell seeds which show a considerable measure of vitality; indeed, every effort is made to ensure all the seeds being alive. Thus, to sow thickly is to secure a cluster of crowded plants which, from birth, jostle one another in an endeavor to get enough light. These specimens will always be weaklings. Thin sowing, on the other hand, will result in strong plants which can be relied upon to yield the very best results. Do not sow direct from the packet. Pour a little quantity of seed, if it is

Large seeds are best planted singly. They can be pushed into place with stick or lead-pencil

Loss of moisture can be checked by covering seedlings with a glass

Much of the success of raising plants from seed, especially annuals, depends upon thin sowing. Use a spoon as shown

fairly small, into a spoon and then gently shake over the soil. The large seeds, which can be picked up singly, should always be sown one at a time. Use a stick to push them down into the soil. The distance apart depends upon the size of the plants, but in any case you will be surprised at the sturdy specimens which come up after single planting.

The depth of sowing is a matter upon which there is a good deal of ignorance. Never forget that the seed is a living thing, and that if it is going to grow it must have air, as well as warmth and moisture. Thus, to bury a seed deeply is to suffocate it; countless millions of prospective plants are lost in this way. On the whole, a very good rule to observe is that seeds should be covered with soil to about their own depth. This will mean that very tiny seeds can be simply scattered on the prepared surface, and then gently raked in with a handfork. In such cases it is an excellent plan to cover the bed with a sheet of newspaper until the actual germination has taken place. This plan will always be followed with great advantage in the case of minute seeds, whether indoors or out. Quite apart from the protection, it will assist a speedy germination, for the awakening of the seed always goes forward more rapidly in the dark than in the full light. Out-of-doors sheets of glass propped up on stakes may be employed to protect seeds after sowing; bell glasses or cloches will do as well. These may be helpful later on when the little plants appear, should the weather be fickle. As far as the seed is concerned, the shelter will keep away rain or hailstorms which might cut up the ground. Where any close shade, such as a bell glass, is used, it is important to remember that germinating seeds must have air, and the confinement must not be too rigid.

The plants on the left were sown thin; those on the right, thick; showing graphically the results of the right and wrong way to grow seed

Plenty of light is necessary for seedlings, although allowance should be made for shading from bright sunshine indoors

Instead of soaking the hard seeds, such as canna or Indian shot, a quicker way is to file carefully through the outer skin

In the case of seeds of moderate or large size, germination will be very much hastened if these are soaked for twenty-four hours in water before sowing. This is sometimes a useful plan in a backward season when outdoor sowing has been delayed owing to continued wet weather. At the first sign of a dry spell the seeds are soaked, and then popped into the soil, when, if the conditions are at all genial, they will come up in an amazingly short time. Any seeds which are big enough to handle and seem to be very hard may always be soaked with advantage. Some kinds, such as those of the canna or Indian Shot, rarely germinate satisfactorily unless they are soaked for days. A quicker way is to get a file and carefully cut through the outer skin. This will ensure a speedy growth. Certain kinds of seeds naturally take a long while to come up; in other cases some of the seeds germinate, and some of the same sort sown at exactly the same time lag behind. This uneven germination is a feature of some plants, the most notable of which are certain kinds of primula. The writer remembers sowing a pan of the Chinese primula; about half the seeds came up within quite a short time, while the others spread their germination over two months. No one seems to know why this is the case, but the fact is mentioned to warn the grower against concluding that a lot of the seeds

(*Continued on page 291*)

Attack the rosebugs daily with arsenate of lead

THE GARDEN ENEMIES TO LOOK OUT FOR—SPRAYING FROM APRIL ON —FORMULAS FOR SPRAYING MIXTURES — THE MACHINES TO USE

GRACE TABOR

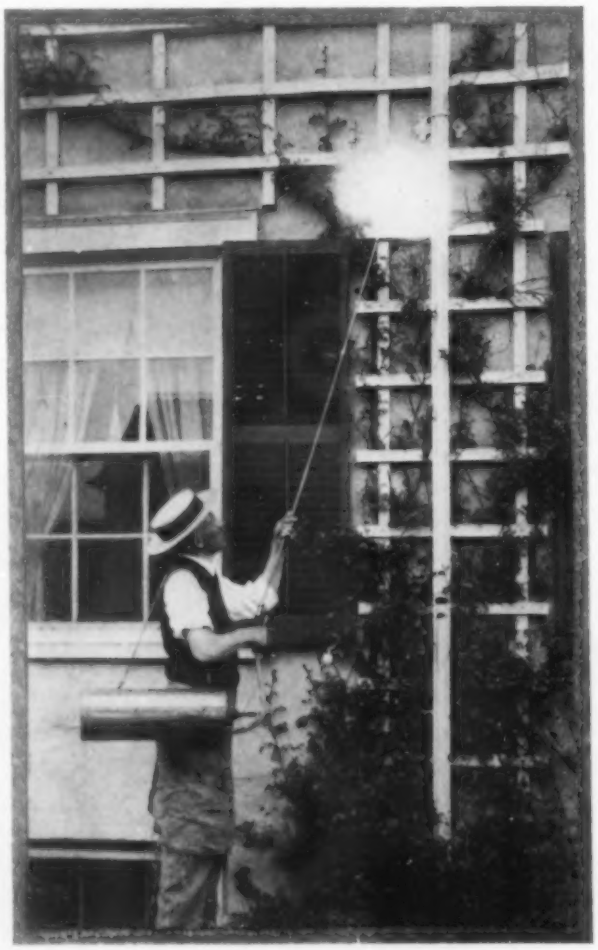
Photographs by the E. C. Brown Company

TWO months ago, in these pages, was considered the subject of winter spraying—taking the offensive against the outposts of the garden enemies. San José scale and the oyster scale were described then, and the work was mainly restricted to the spraying of fruit trees.

Arriving well into April, things begin to be complicated, and the spraying table must be consulted from now on. Against the apple, for instance, there is a second race of invaders due along with the hatching of the new San José scales, about the time the young leaves are unfolding. This is the codling moth—the common, unpleasant thing familiar to everybody in the "wormy" apple. Pears, quinces, prunes, plums, peaches and cherries are also its victims, but it is distinctly an apple feeder, if apples are plentiful.

In a sober and inconspicuous way this moth is really a very beautiful little creature. The spread of its wings is not more than three-quarters of an inch—usually less—and it has two pairs of wings. The forward pair look like brownish-gray watered silk, with a spot at their tips of brown inlaid with rich bronze and gold; the rear pair are sober grayish-brown, not ornamented at all, but very soft and delicate in texture and appearance.

About a week after the apple trees have opened their buds these moths emerge from the pupæ—which earlier in the spring have been developed from the larvæ, in which state the insects have passed the winter, wrapped in their silken cocoons and hidden in cracks and holes in the trees or in houses where apples have been stored. A few days after emergence the gray moths lay their eggs—on the leaves in the first generation or brood; on the fruit usually, in the second. In about eleven days the eggs are incubated—the time varying with the temperature—and the young larvæ or "worms" of the new generation come forth, seeking at once to find a home for themselves inside the fruit just setting. Sometimes these small worms eat off the leaves before reaching the fruit, but they lose no time in making straight for the heart of the apple or pear, or whatever it may be, through the calyx end or through some irregularity in the surface. A smooth surface they cannot seem to penetrate. Naturally, once they have gone to the inside of the fruit, no poison can reach them; so it is in this early period, just after hatching, that spraying for them must be done.



The knapsack sprayer, with an extension nozzle, is best for vines, necessitating the work of only one man

Along with the codling moth comes the curculio—a snout beetle—that it was thought at one time could only be fought by jarring from the trees. Spraying with the same sort of poison used against the codling moth, however, is generally favored now.

The injury done by the curculio is also effected by the worm form of the insect, but instead of this worm being hatched outside of the fruit and entering it subsequently, the egg is laid just under the skin of the newly formed plum or peach or apple, and the insect is already safe from destruction when it hatches. This complicates the work of the gardener; for, once hatched, it proceeds to eat and grow, all under cover, until it is a great, fat, whitish worm at the very heart of the fruit. The first broods come up from their winter quarters under rubbish or leaves or the dry grass of old, sod-covered orchards about the time the trees bloom; full-grown adults, ready to eat and mate and lay immediately. Direct poison applied to the tender buds and leaves and flowers on which they appease their spring appetite will destroy many of them. Some time in April the first application of Arsenate of Lead for these two enemies is made. Just when this is done depends entirely upon

local conditions of growth; so the gardener must simply watch his own trees, and as soon as the leaves are unfolded, get to work. It may not be until May; it may be early in April.

Waiting for the blossoms to open and mature and fall, he must note the date of the latter, and three days later make a second application. A third treatment to catch the larva of the codling moth as it is entering the newly set fruits at their bud end may be necessary when the fruit is set and careful observation reveals the presence of any more of the small worms hanging around, waiting for their chance to move in. This is usually two weeks to a month following the second use of Arsenate.

Later in the summer comes a second brood of the codling moth, resulting in much greater damage, if left to its natural devices, than the first. The spraying table gives the dates for getting after this. As the worms of this generation enter the fruits usually where they touch and rub together, impairing the skin, proper thinning of the fruit greatly

For the small orchard of dwarf fruit trees a portable machine handled by two men will be sufficient. Here again the extension nozzle is necessary

aids in the work against them.

Fungi are contested with the lime-sulphur spray of early February, which cannot be used after vegetation is in leaf—nor even after the sap has begun to run, preparatory to the spring awakening. But one's troubles are by no means at an end with this particularly insidious form of pest when the February dosage is administered; for increasing warmth and the rains of summer liberate continually and favor the germination of the infinitesimal spores by which all fungous diseases spread.

As a matter of fact, these diseases are more to be dreaded in a way than insects, for they are practically incurable, and their presence is never suspected until they have established themselves. The spores, which are quite as invisible as germs, enter the leaf or plant tissue and are there protected from anything which may be applied, so that treatment must be made literally before the trouble exists.

In addition to spraying with a direct poison for codling moth and curculio late

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GENERAL SPRAYING TABLE

NOTE.—There are hordes of insects not specifically mentioned here, but these are the commonest; and the spraying done against them and as a preventive measure against fungi will usually accomplish all that the well cultivated and tended garden needs.

TIME TO SPRAY	PEST TO BE DESTROYED	PLANTS ATTACKED	REMEDY TO BE USED
On or before Feb. 1, while vegetation is still absolutely dormant.	San Jose scale, full grown, fixed and armored.	All woody vegetation, both ornamental and useful.	Lime-sulphur Wash.
As soon as young leaves are opened.	San Jose scale, newly hatched, moving and unarmored. Old brood of Curculio. Possible early Codling Moth. Fungi.	All woody vegetation. All stone fruits. All pome fruits. All vegetation liable to attack.	Kerosene-soap emulsion ("a" and "b," as per note below.)* Arsenate of Lead. Arsenate of Lead } Mix and use as one Bordeaux } spray always
Three days after flower petals fall.	Codling Moth. Fungi.	All pome fruits. All vegetation generally.	Arsenate of Lead } Mix and use as one Bordeaux } spray always
One to three weeks later; watch for tiny worms on leaves or newly formed fruits. May, in addition to above, if these insects appear. Weekly throughout May.	Codling Moth. Aphids. Slugworm. Fungi.	All pome fruits. All kinds of vegetation. Pears, cherries, roses. All vegetation, leaves being now full.	Arsenate of Lead. Soapsuds. Soapsuds. Bordeaux, except on roses. Potassium sulphide on roses.
June. Semi-weekly. Weekly.	Rose bugs or beetles. Codling Moth; Curculio. Aphids; Slugworm. Fungi.	Roses, grapes, shrubbery and flowers Tree fruits generally General; pears, cherries, roses. Small fruits, vegetables, flowers.	Arsenate of Lead; hand picking. Arsenate of Lead. Soapsuds. Bordeaux, except on roses. Potassium sulphide on roses.
July, around the 25th, as observation shows the larva on maturing fruits. Semi-weekly. Weekly.	Codling Moth, second brood. Aphids. Fungi.	All pome fruits. All kinds of vegetation. Small fruits, etc., as above.	Arsenate of Lead. Soapsuds. Bordeaux. Potassium sulphide on roses.
August. Semi-weekly. Weekly.	Codling Moth, second brood. Aphids. Fungi.	All pome fruits Vegetation generally. Small fruits, etc, as above.	Arsenate of Lead. Soapsuds. Bordeaux. Potassium s. on roses.
September, semi-weekly if necessary. Weekly.	Aphids. Fungi.	Vegetation generally. Small fruits, etc	Soapsuds. Bordeaux. Potassium s. on roses.

* Solution "a" to be used on apple and pear; solution "b," on all other fruits and ornamental trees and shrubs.

My Suburban Garden

PLANTING FOR WORK WITH THE WHEEL-HOE—THE PROBLEM OF TOMATO TRELLISES—WEEDING VERSUS CALISTHENICS—A SECOND-YEAR SUCCESS

WARREN H. MILLER

The garden in February of the second year, showing young peach and cherries planted from the nursery the previous October

LATE in February I sneaked out into the country, attended a trap-shooting contest and planted lettuce, radishes, pansies, cosmos, hollyhocks, peppers and cabbages in the hotframe. When we opened up the house early in March they were up and getting along finely. Often, during the city visit, I had given an evening to the planning of this year's garden, and the seeds for it were already ordered. It was a combination of the wheel-hoe system and the old-fashioned bed system. I had not yet learned to appreciate the wheel-hoe as a weeder, and for a busy commuter weeds are the great problem—after the soil is in shape. Not having a gardener to fight weeds, nor much time to do it yourself, some method of destroying them wholesale must be provided for, or the weeds will not leave you a single vegetable that you can call your own!

The wheel-hoe is the only tool I know of that will take out weeds wholesale, but the rows of plants must be spaced to leave room for it to work in—at least 18″ apart. In other words, instead of a system of beds and paths, there is a sort of path between each row of vegetables spaced 18″, instead of 9″ or 12″, which is more wasteful of land than the old-fashioned bed system. Now, a commuter's garden is usually short on land, but unless it is going to be long on weeds also, the wheel-hoe system is the only sensible plan. But there are certain vegetables which can be sown so thick and grow so fast that the weeds never get a look-in, notably lettuce, radishes, carrots, beets and turnips, so I decided to experiment a little with beds, leaving the main garden on the wheel-hoe system.

On each side of the central garden path I laid out beds 4 x 12 feet in area, one radish, one lettuce, one carrot, and one salsify. They all succeeded except the last, which, being a narrow-bladed plant, soon got full of weeds. For the same reason, the beds of leeks, onions and onion sets did not yield anything, for the rows of sets were too close for the wheel-hoe, and the close-sown beds of leeks and little onions for table garnish got full of weeds before those little plants ever amounted to anything. The close-sown carrot bed was a wonder for yielding basketfuls of those little, tender carrots which the French use so much in soups and stews. For full-grown carrots for winter storage, such a bed will not do, as they require about 4″ in the rows and periodical visits of the wheel-hoe to discourage the weeds.

The twenty tomato vines in staggered rows of ten, three feet in the row, were well placed. These vines should always be set out in a group and in some regular formation that can be reached by a trellis system, never scattered about isolated locations unless you want to tend each one like a baby. Set them out about the fifteenth of May, never earlier, as they are very sensitive to frost, and a week later hoe up a hill around each high enough to reach the first pair of leaf stems. The stalk so covered will at once put out a quantity of little extra roots, and the plant will shoot up husky and stocky. But by July 1st you will have to build a trellis for them, for the heavy, green tomatoes will quickly break down the branches. The trellis should be of 1¼″ x 1¼″ yellow pine, two stringers high, run on posts eight feet apart along each side of a row of plants, with cross braces at each plant. Barrel-hoops and four stakes at each plant are good—*if* you have the hoops! I had not, nor any time to hunt some up, but I made that trellis in a single Saturday afternoon. The man who is not adept at making such a trellis can buy individual supports made of heavy wire built along the line of hoops, and these will give complete satisfaction and last forever.

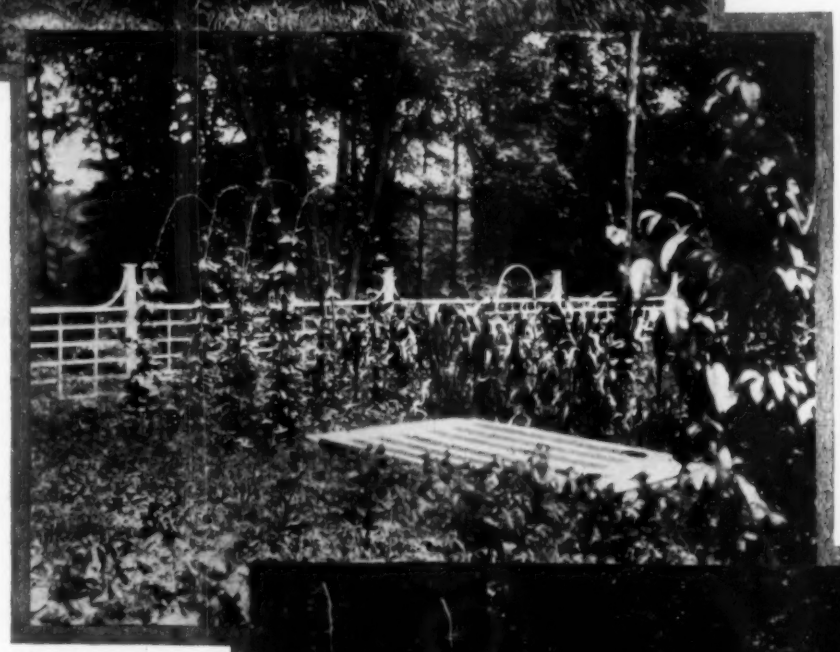
Early Spring: note the young trees shown above and the whole east garden in strawberries—400 plants in a plot 30 feet square, providing a family of six with enough to eat and preserve

The twenty tomato vines gave tomatoes enough for family use until late in October, but not enough for preserving and pickles, so the next year thirty-two plants were set out on the opposite

The garden in July showing the dahlia and phlox hedge between the fruit trees

side of the main garden path, the increase in the strawberries making it necessary to give up the whole East Garden to them.

By the middle of March the first peas were in, the early potatoes, the outside radishes, lettuce and spinach. The first two (American Early Round Top and Mignonette) were sown on top of two beds in the East Garden and pressed into the soil with the back of a rake. From that time on Spring came with a rush, and the garden likewise. Everything budded and everything lived and thrived. I put in nine rhubarb plants in some rich soil in front of the hotframe and built a lima bean yard of twelve hills behind it (not planted, of course, until the middle of May).

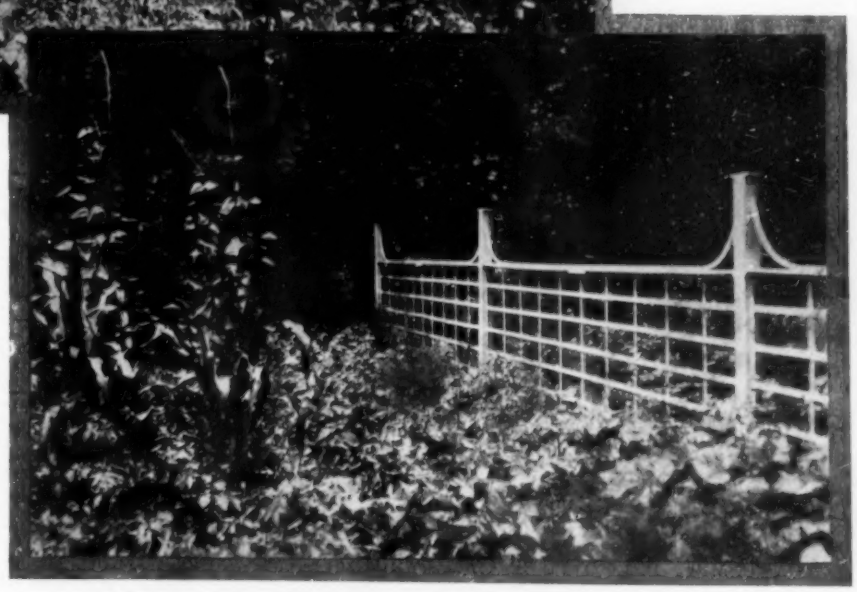


The first bean arches, later to become a bower

By April 1st all the peaches had little, pink flowers, quite a display for their first year. None of them set fruit or would have been allowed to. The quince was covered with pale pink flowers, looking like wild roses. It set one little quince, which the tree refused to feed, as it needed all its vitality in growing, and it soon dropped off. The pears and apples contented themselves with a heavy growth of leaves and wood; the Baldwin, which survived from the first year, growing to fourteen feet in height and two inches in trunk diameter. During April I was busy laying out and planting all the new beds. Onions, onion sets, carrots, oyster plant, second row of peas, turnips, beets and second spinach went in, row by row, as fast as the wheel-hoe could prepare the ground.

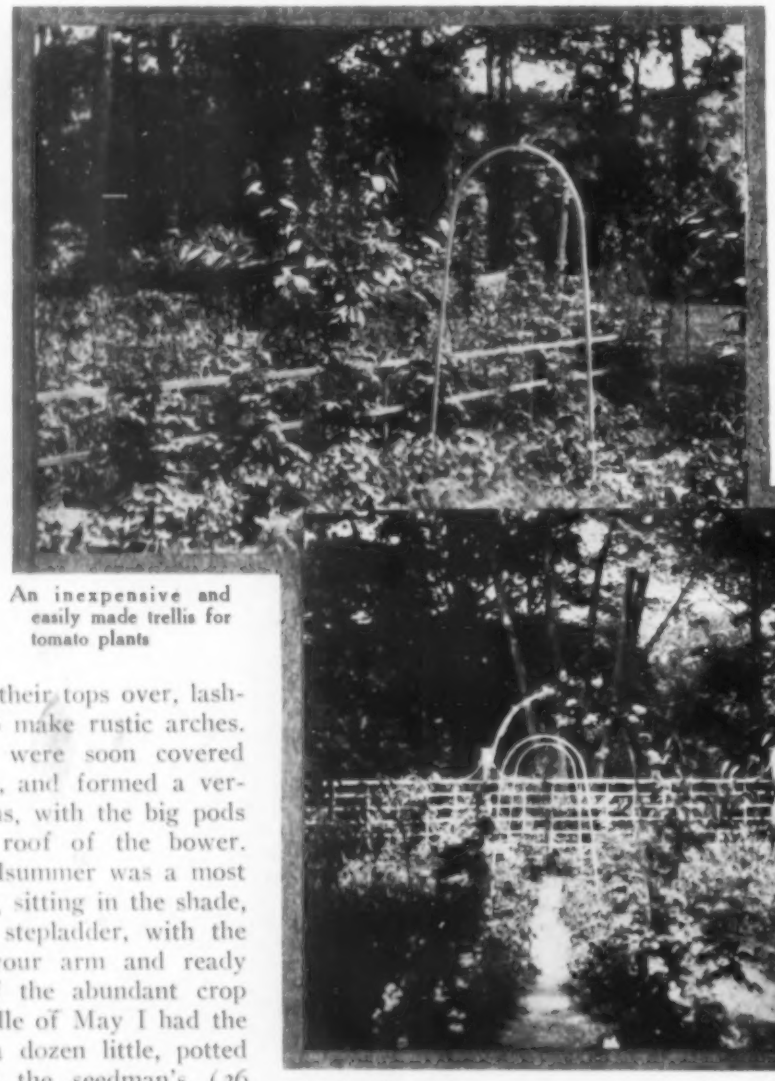
The April rains were even more continuous than the year before, but this time the garden was different. No longer were there muddy pools distributed about the garden after a heavy rain, though the surrounding woods were full of them. Raising the surface nearly a foot above the water table, as determined by the subsoil drains, had taken care of all that; the soil held no more than it would naturally, acting as a capillary sponge in dry weather, and later in the dry season my high-water table showed its advantages in the luxuriant growth of the plants when most neighboring gardens were drying up and needing a hose on them. My soil and drainage problems were over; it remained to be seen whether ten to four o'clock direct sunlight would be enough.

May was upon us before I actually realized



Along the rear-garden fence was planted a row of currants, with a rose at each post. An asparagus bed was put between it and the main traverse path

it, and all the tender vegetables had to go in without delay. On May 1st the corn went in, a shovelful of manure to each hill, Early Metropolitan, Country Gentleman and Golden Bantam being the sorts selected. A few days later the first three rows (75 feet) of string beans went in, and on May 7th I set out the tomato plants. Get a dozen little plants seeded in a grape basket, 25 cents a basket, and transplant direct to the hills, taking out with a narrow trowel with the earth still caked about the roots. Twenty of these filled the allotted tomato space, and the other four (from two baskets) I found space for in the rear border, where they grew and luxuriated and gave endless trouble, falling over on currants and asparagus plants. May 10th I planted the lima beans, with a shovelful of manure in each hill for good measure. They should be planted eight to a hill, eyes down. I used pole limas, because the yield is very much greater per foot of ground than with bush limas, and poles were easy to get in the surrounding forest. I left the saplings full length and bent their tops over, lashing them together to make rustic arches. These bean arches were soon covered with luxuriant vines, and formed a veritable bower of beans, with the big pods pendant inside the roof of the bower. Picking them in midsummer was a most Arcadian occupation, sitting in the shade, forsooth, on a low stepladder, with the market basket on your arm and ready scissors to snip off the abundant crop withal! By the middle of May I had the eggplants set out, a dozen little, potted seedlings bought at the seedman's (36 cents). They need the richest kind of soil, so I chose the site of one of the former manure piles, and set them out 2½ feet apart, 2½ feet in the row. They came up like balloons, and we had trouble enough in September trying to eat all the big, purple eggplant fruits as fast as they got ripe.



An inexpensive and easily made trellis for tomato plants

The hotbed population was now clamoring to be set out, so, "partner," who presides over our flowers and shrubbery, took her pansies, cosmos and hollyhocks away, and I set out 72 young lettuce plants for heading. To get crisp, tender lettuce you want a rich, mellow soil, for slow-growing lettuce is *always* tough, so I gave it a bed alongside the eggplant, where the proportion of manure to soil was very great.

It was now time for second sowings of stringless beans, third of peas and radishes, and we were already having our first radishes and lettuce. The weeds also began to be noticeable, so I manned the wheel-hoe, and in half an hour had weeded that whole garden, all but the beds, which took an hour each. All these hours (I might add in parentheses) were snatched here and there; mornings, evenings and Saturdays, before and after business hours. They represented my physical exercise, my concession to the needs of the Unexercised Middle Third, which too often among us Americans degenerates into an unearned increment around the waist line! So long as it isn't Undeserved Excruciation of the Backbone, I have no objection to gardening as exercise, and the wheel-hoe has emancipated us from those sore and aching backbones which always overtook the Man with the Hoe in the old-style weeding days. You put on one or both of the hoes and walk up and down the rows of vegetables, shoving the wheel-hoe ahead of you in a series of short pushes. Good for chest and arm muscle development. The keen, little hoe scrapes along, half an inch below the surface, cutting the root of every weed in its path. Its curved, inner face just grazes the line of vegetables, and a cast-iron pointer going on before lifts the vegetable leaves out of the way of the wheel. If your row was not planted to a line (by eye-guess, let us say), and is seeded crookedly, woe will be yours, for the wheel-hoe is no respecter of aristocratic vegetables, and cuts off plants and tares alike. If sown to a garden line, or, better still, by the seeding attachment of the wheel-hoe (if you can afford it, get one: it saves many a weary back), you will shear a straight line, passing within an inch of the vegetable stems, and you will have hardly a weed to pull out between the plants where the wheel-hoe cannot reach.

The Dorothy Perkins roses were trained up hair-pin arches over the main garden path, making a beautiful ornamentation

The strawberry bed now began to attract attention for miles around. It was not only a mass of big, dark-green leaves, but a veritable snow-bank of the white and yellow flowers. Our beets, spinach and turnips, which were sown very heavily, required immediate thinning, and by early June we began eating a supply of fresh "greens" from these thinnings that never seemed to give out. One day it would be beet tops, the next young spinach, the next little, fresh turnips, creamed. Counting in radishes and strawberries for breakfast, a head of lettuce a day, and a dish of greens and peas for dinner, the June yield of the garden figured at about 70 cents a day, which is $21.00 in a month, or $126 in six months, in return for a few loads of manure and some spare time—this for the benefit of that wiseacre who insists that gardening never pays in cold dollars and cents, even while he admits that the garden things are very nice and fresh, and all that. It does pay, at the prevailing cost of high living.

July saw the stringless beans, early turnips and second peas

(*Continued on page 276*)

The cactus dahlia has long rays, not cupped, but sometimes with recurved margins

Merry Widow, a brilliant scarlet single, with a very desirable velvety texture of petals

A modern show dahlia, Beauty of Kent, two or more colors, striped with light edges

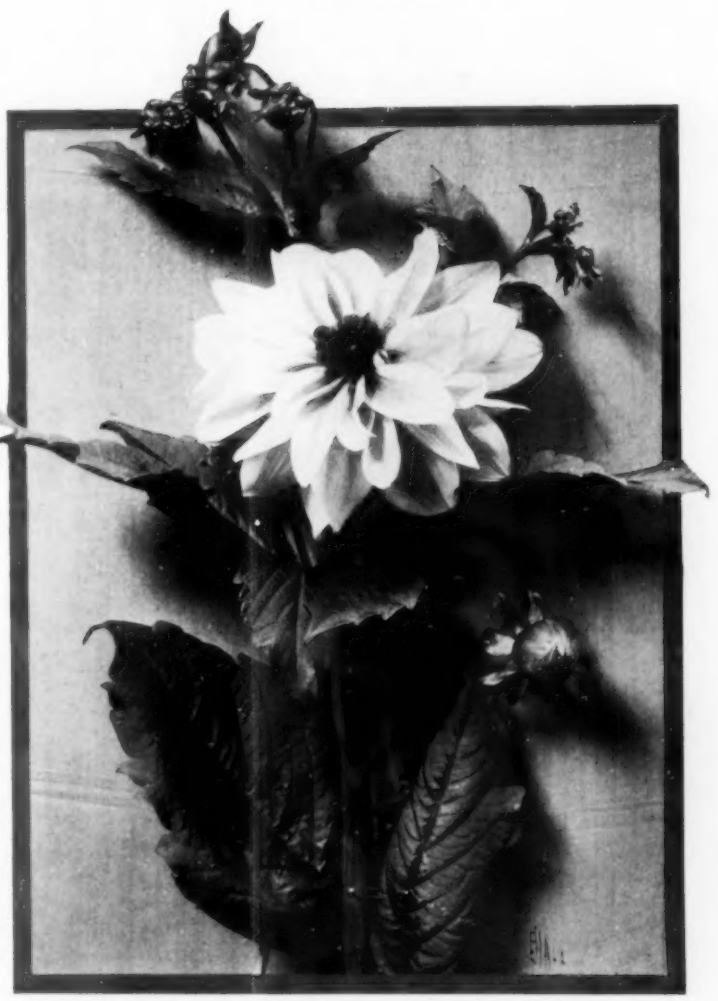
Dahlia—The Flower that Came Back

ITS CHECKERED CAREER—METHODS OF PROPAGATION—WHERE TO PLANT IN THE GARDEN—TILLAGE AND WATERING—WINTER CARE OF ROOTS

STEPHEN EDSALL

IF you doubt that there are fads in flowers, follow the course of the wavering popularity to which the dahlia has been subjected. Once an old favorite, it fell into disfavor for a few years because of its formal and artificial-looking flowers—round and hard and stiff as a ball. It was relegated to the company of those that are considered as having a place only in the rural districts, where its popularity would seem never to have waned. Since the coming of the loose-flowered forms—the cactus and semi-cactus types, which tend toward free, fluffy chrysanthemum-like flowers—it has gained front rank in popularity once more, coming just in advance of the chrysanthemum. And there is additional reason for this return to popularity, for few cultivated plants have such a wide range of color; few are more enlivening to the garden ensemble when placed in the proper positions and planted in the proper proportions.

Though the amateur gardener may not be able to avail himself of all the methods of dahlia propagation, it is wise for him to have a speaking acquaintance with the four processes: By cutting, which is an important commercial method; by division of roots, the best plan for amateurs; by grafting, which perpetuates the rare kinds; and by seeds, to produce new varieties.



The Queen Queen, a seedling dahlia, exhibiting great variety in form and color, and easily a favorite for the fall

The single varieties may be grown from seed, but the double sorts should be grown from cuttings of young stems or from division of the roots. If cuttings are to be made it will be necessary to start the roots early in either a hotbed or the house. When the growth has reached four or five inches they may be cut from the plant and rooted in sand, but just below the joint, as a cutting made between two joints will not form tubers. The most rapid method of propagation of named varieties is to grow in this way from cuttings.

In growing the plants from roots it is best to place the whole root in gentle heat and cover slightly. When the young growth has started, the roots may be taken up, divided, and planted three to four feet apart. This plan will assure a plant from each piece of root, whereas if the roots are divided while dormant there is danger in not having a bud at the end of each piece, in

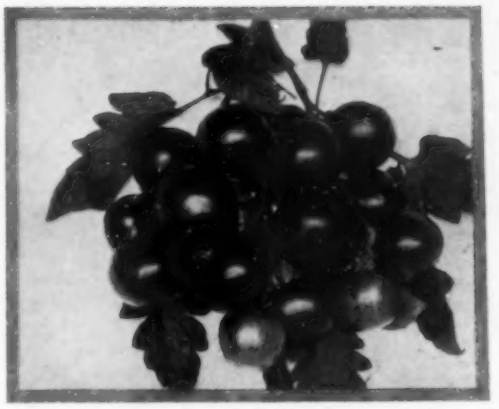
(*Continued on page 298*)

The egg-plant needs two transplantings and does not have to be set out until the tomatoes are in the ground

Your Saturday Afternoon Garden

THE FOUR MAJOR OPERATIONS OF THE MONTH—PREPARING THE SEED BED—SOWING SEED, TRANSPLANTING, MAKING THE SEED BORDER

D. R. Edson



Tomatoes will do well in almost any soil. If you would have them without blemish, support them above the ground

THERE is a world of difference between *making* a garden and "doing some gardening." In the former case you are master of the situation, and in the latter quite likely to be a slave to it. But the former course, although it may seem to involve more work at the start, is in reality much the easiest. It is largely a matter of thoroughness with the things you do in your garden during the first couple of months of the season.

There are some five or six "operations" which the gardener, large or small, must perform repeatedly for the first few weeks, on Saturday afternoons, in making the garden.

The first, after the initial handling of the soil, which was discussed in last month's issue, is:

Preparing the Seedbed.—"Rake a piece of ground smooth and plant"—that sounds easy enough, but it depends upon how you do it. If you do it right it is not an easy job or one quickly finished.

The importance of having the ground deeply and thoroughly dug and well broken up was discussed last month. On top of that must come thorough work with the iron rake, involving plenty of "elbow-grease," for which no satisfactory substitute has yet been discovered. When the seed leaves the packet and reaches its new home in the soil it will sprout—provided conditions are right. In Nature gardening, perhaps one seed out of a thousand may find the right conditions. But the gardener, who has voluntarily taken over Nature's job, becomes responsible. He cannot, of course, control the temperature, which is one of the factors, but he can withhold his seed until he thinks that the temperature is likely to be favorable for what he wants to grow. For the other condition, moisture, he must be, during the early stages of growth, quite responsible. And the soil to supply it must be made fine enough to pack up close and tight against the seed on all sides. A soil that is lumpy, and consequently full of small air spaces, will not do. Moreover, the soil must *remain* moist during the period of germination, which, for ordinary garden seeds, takes from six to twenty days. For this reason the soil, in addition to being fine, must be made compact enough to provide capillary action, by which water is drawn up to the surface from the depths below. Leaving the soil too loose, although it may have been thoroughly dug and raked fine on the surface, is one of the common causes of failure in the beginner's garden. It should seem firm beneath the foot when you tread on it.

VEGETABLES TO PLANT THIS MONTH

In a Medium-sized Garden. Four Plantings.

First Planting.—Cabbage, early; lettuce plants; onion sets; peas, smooth; radish; spinach; Swiss chard.

Second Planting.—Beets, plants; beets, early seed; carrots, early; cauliflower; leek, in seed border; onion, seed; radish; turnip.

Third Planting.—Cabbage, summer; cabbage, in seed border, for fall; lettuce, seed; parsnip; peas, wrinkled, two varieties; potatoes, early; salsify.

Fourth Planting.—Beets, summer; carrots, summer; kohl-rabi; lettuce, cos; onion, seedlings, Spanish varieties; peas, late; radish.

Seed Sowing.—Lay your garden line across the freshly raked surface and mark out with your hoe handle the first row. Be sure you have your seed drill adjusted just right—unless you have used it frequently enough before to be familiar with its operations—test it out on the smooth floor. Be sure of just exactly what you want to plant that day and how much of each thing before you begin, so that your work may be systematically laid out. The order of planting that is suggested herewith will give you an idea of just how to proceed in case the work is new to you.

In using the seed drill, here are a few things that you should see to—that the opening plow is set at just the right depth, and *kept tight*. Be sure that it is also free of weeds and rubbish—a small piece of sod or manure dragging along may catch the seed as it falls, so that it will all be

Sow seeds of cauliflower late this month—or later—letting it follow some early crop

For the home vegetable garden it is difficult to find any cabbage better than the Savoy

Preparing the seed-bed is one of those operations that must be done right; the work is simple enough—rake a piece of ground smooth and plant

dropped in one place. Be sure that the seed is dropping regularly, and clear to the ground. A lump of moist dirt at the end of the seed spout may clog it up. Do not attempt to plant when the soil is wet and sticky; very fine seed, such as lettuce or celery, may be picked up by the roller. Be careful to keep the front or drive wheel accurately on the mark at all times, even when you are looking to see how the seed is dropping.

Planting by hand does not require much attention from the gardener who owns a seed drill. But flower seeds, seeds sown in a short row for the seed border and such large things as peas and beans, especially lima beans, and the various vine crops, usually are put in by hand.

Small seeds can be sown from the packet, tearing off one corner. In sowing others, they can be carried in a small tin pail or dish. Take up only a small amount of seed at a time, and "feed" it out between the thumb and forefinger along the row or drill. After sowing, press the seed sown lightly but firmly into the soil, with a short piece of board or the back of a narrow hoe or the ball of the foot. This fills up the undesirable air spaces and packs the soil closely up against the seeds so that the latter are readily supplied with moisture. After covering the seeds with the hoe or wheel-hoe, tamp the soil along the top of it firmly, so as to restore the capillary action and to mark the row plainly. Make it a rule as each thing is planted, and before you put out anything else, to mark and put in its place a tag or a label—8″ garden labels can be bought for forty or fifty cents a hundred.

Transplanting.—Next to seed sowing, the most important of early garden tasks is setting out the plants. Transplanting may seem to the beginner a very simple job, but most beginners, and frequently even experienced gardeners, fail to do it properly. What has been said in regard to the thorough preparation of the soil in connection with sced sowing applies equally well to the setting out of plants. While plants can be set out on a lumpy, ill-prepared surface, to get the best results, just as much care should be taken in the preliminary work as though it were expected to sow the smallest seed. The soil must be fine in order to be packed around the minute root hairs, which form again after the plant has been set out. And the soil must be fine on top to form a dust mulch, a condition in which it cannot be easily put after the plants are set out.

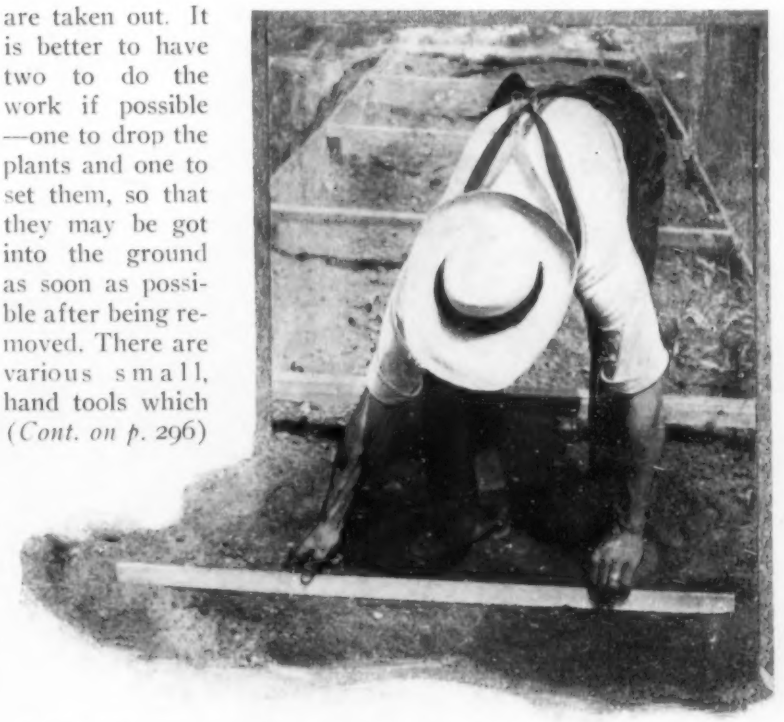
The plant to be set out will have been grown in flats, in pots, or directly in the soil in hotbed or cold-frame. In any case, they should be given a thorough watering at least some hours previous to the time they are set out. The flats, of course, can be loaded directly onto the wheelbarrow and taken out to the garden. The pots are not so easy to carry, and if there are any number of them, or if they have to be taken any distance, a good method is to knock the plants out of the pots and to pack them carefully into an empty flat. Wrap each ball of roots in newspaper. The plants should be sheltered as much as possible from wind and sun. For this reason a cloudy, quiet day is preferable, but in the home garden, where the number of plants to be set out is usually small, it can be done late on any Saturday afternoon. In taking plants from the flat or frame, it is best to cut them out with an old knife, as a much better ball of earth and roots can be had in this way. The rows should be marked out before any plants are taken out. It is better to have two to do the work if possible—one to drop the plants and one to set them, so that they may be got into the ground as soon as possible after being removed. There are various small, hand tools which

(*Cont. on p. 296*)

SKELETON PLAN FOR THIS MONTH'S PLANTING

Cabbage	2½ ft.	Plants to be followed by succession crops
Cauliflower	2½ ft.	
Beets	15 in.	
Lettuce	15 in.	
Lettuce	15 in.	Seeds to be followed by other crops
Beets	15 in.	
Carrots	15 in.	
Turnips	15 in.	
Kohlrabi	15 in.	
Spinach	15 in.	
Swiss chard	18 in.	Seeds, crops remaining until fall
Onion sets	12 in.	
Onions	12 in.	
Parsnip	18 in.	
Salsify	18 in.	Seed may be followed by late fall crop
Peas, dwarf	18 in.	
Peas, tall	4 ft.	
Potatoes, early	2½ ft.	

Using the above plan—which shows but *one row* *each* of the various early-planted vegetables—as a guide, make up your own planting plan, showing the number of rows of each thing, and the varieties that you want. (Onion sets and spinach are placed on either side the Swiss chard row, to leave plenty of room to cultivate and gather it after they are harvested. Radishes may be interplanted, or sown in the "seed-bed.")



After sowing, press the seed down into the drill with the edge of a board or the back of a narrow hoe

The hall is the first part of the interior seen by the stranger and gives the impression of the spirit of the household and the personality of its occupants. It should be a place to pass through conveniently and ought to be pleasant enough to invite one to linger on the way

The Inviting Hall

ITS PURPOSE AND PERSONALITY—THE THREE TYPES OF HALLS—THEIR ARCHITECTURAL AND DECORATIVE TREATMENT—MAKING THE UPSTAIRS HALL ATTRACTIVE

ABBOT McCLURE AND HAROLD DONALDSON EBERLEIN

THE hall should always be inviting. It is the first part of the interior seen by the stranger and gives the first impression of the spirit of the household and the personality of its occupants. Its function is to afford ingress and egress, privacy to the rooms from those entering, and protection from draughts. It is a place to pass through conveniently, and ought to be pleasant enough to invite one to linger on the way. Needless to say, it should have an aspect of breadth and space and give no suggestion of stuffiness.

In the long, narrow hall the less furniture the better. A table and one or two chairs are quite enough

There are three general types of halls, and upon the type depends the method of architectural and decorative treatment. The hall of the first type is a commodious passage and a connecting link between the rooms. It is of convenient dimensions, of agreeable aspect, and lends itself readily to numerous phases of treatment. It is the sort of hall we find in so many of the broad, old Georgian houses, almost as wide as a room, and oftentimes running the full depth of the house, with a garden doorway at the opposite end from the front door. The stairs may form a conspicuous

feature in the rear part of the hall or they may be in a small offset or room, so that the hall is, in effect, a long and narrow room. This spacious type of hall, usually with the stairs visible, has always been in favor since the Colonial period, and is still popular.

The hall of the second type is in reality a kind of living-room into which the house door opens directly, and is to be dealt with, for the most part, as a room. This type is especially suited to small and informal country houses or bungalows. A generous fireplace ought, if possible, to be a conspicuous feature.

The hall of the third type is merely an abbreviated and insignificant entry, or, if it is longer, a narrow rat-hole-like passageway of thoroughly unprepossessing character and not inviting as a problem to the professional or amateur decorator.

The hall of the first type is usually of such sensible and comfortable proportions and is so easily furnished that we need scarcely consider it from the architectural point of view with the object of alteration. The same thing may be said of the hall of the second type, but the hall of the third type presents serious difficulties that only heroic treatment can overcome satisfactorily. Such halls lack light and are ill-proportioned. The best thing to do is to eliminate such a hall by throwing it into an adjoining room, leaving merely such supports as may be necessary to sustain the floor joists above. No serious objection can be made to this alteration on the score of either privacy or protection from draughts. Privacy can be attained by the use of screens or by a draw curtain attached to rings sliding along a pole. When not needed the screen can be removed or the curtain drawn back, and then the hall becomes a part of the room.

The paneled hall, even if commodious, needs but little furniture. A fireplace is always an attractive addition. There should be plenty of light in such a hall

The stair is the next feature to claim attention. Allusion has been made to halls, in some of the old houses, where the stair is placed in an offset and does not figure in the central hall. Sometimes this offset is closed by a door and partition, an arrangement doubtless adopted to keep what heat there was downstairs in winter time from ascending to the floors above. It is far more usual, however, to have the stairs visible and constituting a prominent feature in the hall. Fortunately, when the stair is awkwardly built, it is usually susceptible of readjustment and improvement, and may oftentimes be made a distinctly decorative element, especially when the newel posts and banisters are of interesting workmanship.

It is always desirable to have a stair broken into several flights, and this arrangement is preferable because such a staircase is more comfortable to ascend and descend than one of an unbroken flight, and, moreover, is readily amenable to agreeable decorative treatment.

Whether in making alterations or building anew, it is most important that the staircase should be of generous breadth and of proportions to accord with the dignity of the rest of the house. More important still, from the practical point of view, the measurement of the treads and risers should be such that ascent is easy and made without conscious effort. It will be found that treads 12″ broad with risers 6¼″ high will make a delightfully comfortable stair, or the treads might be 12½″ broad and the risers 6″ high. Whatever measurement is decided upon, it is useful, as a rule of thumb, to remember that the dimensions of the breadth of the treads and the height of the risers ought to be multiples of 75.

It is not uncommon to find in farmhouses a boxed-in or closed stairway that is depressing in appearance and a menace to safety by its steep pitch. To solve this problem knock out a partition at one side of the stairs, leaving posts at necessary intervals to support the joist of the floor above, and changing the pitch of the stairs by bringing them down into the room with a turn, thus making two or three flights where there was but one before. At the same time the room will appear larger. When it is not possible to change the pitch of the stairs and incorporate them in a room, some improvement, at least, may be effected by knocking out a part of the partition and filling this space with turned balusters or spindles.

Second floor halls should be large enough to contain such pieces of furniture as highboys or chests of drawers that can serve both decorative and useful purposes

Passing from the physical aspects of the treatment of halls, we come to a consideration of the several ways in which floor, walls and ceilings may be dealt with. It is not advisable to carpet the hall over its whole surface. It is much better to have either rugs or runners that can be easily taken up and cleaned, for there will necessarily be more or less dirt brought in from outdoors. When the hall is not of the second or living-room type, the flooring may often appropriately be made of tile, concrete, or even stone. We have become so accustomed to using the wooden floors that we go on laying them from force of habit. The objection will be made, of course, that tile, concrete or stone flooring is cold, but it may be answered that halls not combined with living-rooms are not intended to sit in, and therefore their coldness is not a serious drawback. On the other hand, they are subjected to more or less hard wear, especially from water and mud brought in by wet umbrellas or miry boots, and a floor of one of the last-named materials is readily cleaned and does not show the marks of wear. Flooring of this sort has been used with the most satisfactory results in a number of recently-built houses, and it is a common practice to employ it in country houses in England. It is particularly suited for the long galleries, which are long halls, and have become a somewhat popular feature in recent American country houses. The most satisfactory and sanitary flooring of this type is made of large, red quarry tiles, but tiles of other descriptions may also be used, as well as brick, concrete or stone. A flooring, tiles of irregular surface with wide concrete joints between, or random-laid stones, are open to the objection of inconvenience and dust catching.

One of the first essentials for hall walls is that they should be of sufficiently neutral character not to clash or make violent and unpleasant contrasts with the schemes of the rooms opening therefrom. In the next place they should be light enough in tone to lighten the darkness of a dark hall and to brighten an area that, in any house, is rarely as well lighted as the rooms. The walls may suitably be paneled, painted, if the plaster be sufficiently good, papered with plain and unobtrusive paper or left with the plaster sand-finished rough, which may either be tinted or left its natural hue.

Although in this instance the stairs were built open, it suggests a possible treatment for stairs that have been boxed in, a change worth considering in remodeling an old house

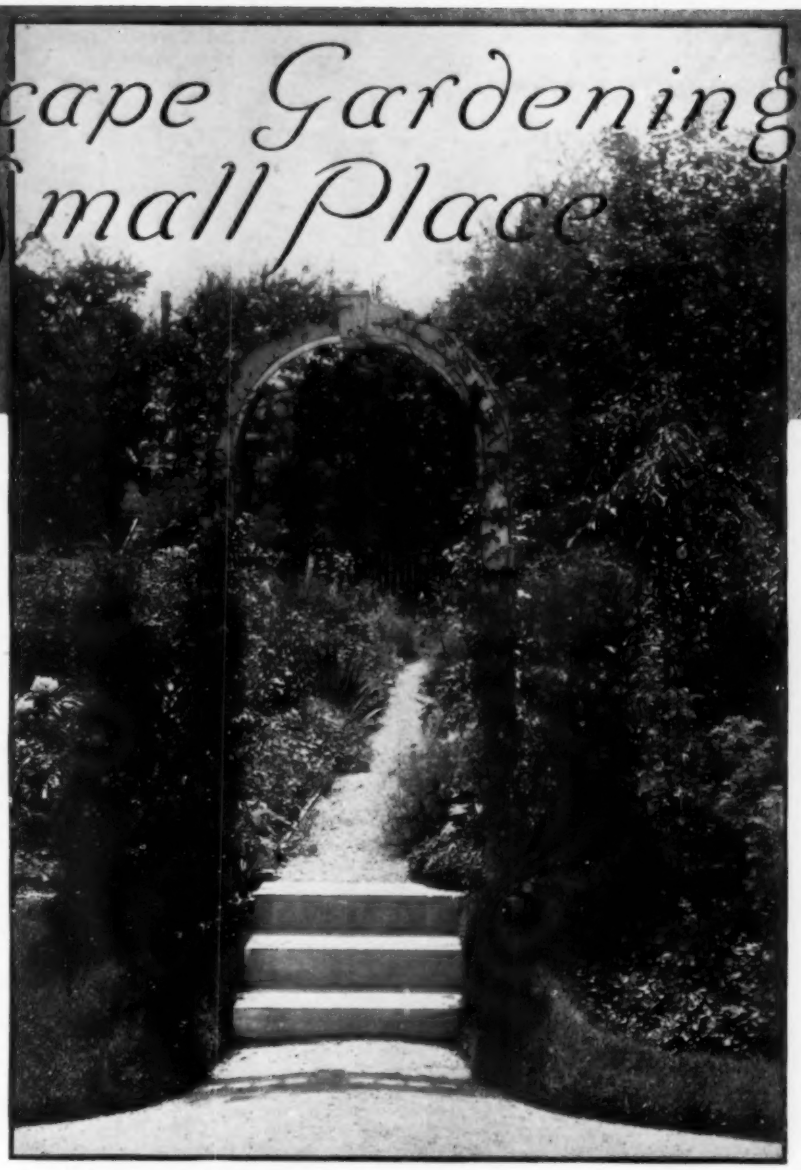
Whether painted, papered, paneled or sand-finished, color must be considered first. Colonial yellow, tan, fawn, light gray, light coffee color, or gray with an element of yellow in it, may be recommended. If there is enough warm light in the hall, even though narrow, other colors, such as sage green or old blue, might be used, but the first-mentioned hues will generally be found preferable. The woodwork in most cases should be white. With gray walls, however, gray woodwork is often desirable and pleasing in effect. Only in commodious halls where there is a good light will wood in natural finish be advisable or appear to the same advantage that the lighter woods display.

Tiles for flooring in a hall that also serves as living-room are a distinctly decorative asset. Rugs will dispell the chill in winter

For paneling that is to be painted—while some hard wood is desirable — well-seasoned poplar, pine or cypress may be satisfactorily employed. Plaster walls should not be painted unless the surface of the plaster is entirely free from crocks and hair lines, otherwise the appearance of the paint will soon be spoiled by its bad backing. Paint may be either left dull or finished with a gloss. In a case of bad plaster, the walls may be covered with canvas or burlap, tightly glued on and then painted. Plain felt papers of desirable color are easy to obtain. It is worth noting that some excellent paper is to be had resembling cut Caen stone. If a glazed surface is preferred, some excellent patterns are to be found in bright-hued, glazed paper of old-fashioned pattern. Sand finish, though slightly more troublesome to apply than the ordinary white

(*Continued on page* 312)

Landscape Gardening on a Small Place



A glimpse into the informal garden shows a bright tangle of color in old-fashioned plants and favorite flowers of odd tints and curious shapes

THE FORMAL AND INFORMAL GARDENS OF A PLYMOUTH PROPERTY—ELIZABETH LEONARD STRANG, LANDSCAPE ARCHITECT

ELSA REHMANN

IN the development of the small lot it is best to center all the attention upon one important feature. This feature should be in full sight of the house and have a close relationship to it. It should have individuality enough to perpetuate genuine pleasure in it. It should have elasticity enough to offer a chance for the expression of changing and growing interests. It should have a distinct originality which will grow in the hands of the ingenious designer directly out of some character peculiar to the site itself. These principles underlie the development of this property.

The unobtrusive, low shrubbery, still rather unconvincing in its newness, which is planted along the front of the house, conforms with the quiet character of the narrow Plymouth street overshadowed by old elm trees. The front of the house is simply good to look upon. There is nothing of particular interest or striking originality. This is left entirely to the development of the ground in back of the house. There the attention is focused upon the garden.

In the beginning it was only a deep, uninviting hollow. Now it is an oval flower garden. In May, 1913, it was an unsightly dump, an ugly hole in the ground. On the 20th of August of the same year there was a carefully arranged garden with abundant bloom and color. By July of the next year astonishing growth had sprung up. Later pictures will show still heavier growth, but these early pictures shown here convince one of the efficiency of a plan in which the work is carried on skillfully and rapidly without unnecessary readjustments of haphazard and disjointed ideas. The ordering of large-sized plants, the planting of heavy clumps for later thinning and the use of annuals for filling in bare spots gave in a few months a full-grown effect to the garden.

In May, 1913, this was an ugly hole; four months later by an almost magic transition had it been made a carefully designed, well ordered, formal garden

Its oval shape and symmetrical treatment fit naturally into its sunken position. Its full expanse is seen in a semi-bird's-eye view from the house. The path on the shorter axis of the oval, centering on the central doorway and terminating at the generous seat under the trees, binds house and garden together. A path cuts through the oval on the longer axis. These two paths dividing the oval into four equal parts meet at the center in a circle.

The main lines of the design have a simplicity of which one cannot tire. They have a strength which holds together all the minor elements. For convenience in caring for the flowers in the very wide borders a stepping-stone path describes an inner oval. In summer it is almost lost in the thickness of the foliage, but in spring it strikes a minor chord in the composition.

The flowers are arranged to carry out and emphasize the design. The four parts of the oval are so planted that at first glance they appear symmetrically correct.

The long path of the formal garden in phlox time, showing the relation between the two gardens and the transition from one to the other

In early spring this effect is gained by the careful distribution of early flowers. Daffodils skirt the outer edge of the oval, scillas and snowdrops, primulas and fritillarias are planted between the stepping stones, early pink and rose tulips and Mertensias circumscribe the circle with lavender Darwin tulips describing a wider circle around them.

A little later in the season the effect of symmetry is continued by dividing equally between the four parts masses of iris and peonies, phlox and Japanese anemones, asters and chrysanthemums. Planted in strong masses they give body to the borders. The monotony of absolute conformity is avoided, however, by subtle gradations of color made possible through the abundant use of many named varieties of each kind of plant. No exact symmetry is attempted in the placing of the many flowers, which, used in small quantities, fit in the borders to lighten the strong mass effect.

Without spoiling the apparent balance of the whole, an attempt is made, at least during part of the flowering season, to gain an effect of greater height in the farther segments than in the parts nearer the house. This is done to grade the flower planting harmoniously into the high, sheltering background of old trees. For this purpose, heavier masses of taller and darker larkspurs are used in the farther parts of the garden than in the nearer ones. On either side of the short path, but only in the farther segments, *Bossonia cordata*, with plume-like terminal panicles of white flowers raised high above the heavy foliage of handsome, large-lobed, heart-shaped leaves, give a strikingly picturesque accent in height.

In order to emphasize the short path, a balanced arrangement of flowers is quite rigidly adhered to in the borders on either side. Throughout its length English daisies and early tulips make a continuous border in early spring, to be followed by forget-me-nots. In back of them is a row of salmon-pink sweet William (*Dianthus barbatus* var. Newport pink), whose June flowers are replaced by the later bloom of heliotrope and pink stocks. The white and pink peonies in back of the sweet William in the nearer borders are replaced by the yellowish blush *Pæonia Canari* farther away.

Where the circle breaks the path in two, groups of purple Japanese iris make an emphatic end to the borders; pyramidal foxgloves make tall June accents at the beginning of the path, and day lilies (*Hemerocallis flava* and *H. thunbergii*, interplanted) terminate the other end.

A balanced effect is also felt in the arrangement of the flowers on either side of the longer path. Bordered by alyssum saxatile and Arabis, Adonis and white wild geranium, Carpathian harebells, statice and sedum, the edge is kept in continuous bloom. The varying greens and gray greens of the foliage add a special interest to these compact, matlike ground covers. In back of this edging of dwarf flowers the irises, Queen of May, pallida and Purple King range from soft lilac pink, through blue to deep purple.

At the circle the symmetry is most strictly carried out. This is done to focus all the attention upon this central point and bind together the many motives of the flower design.

The house is in keeping with the quiet character of a New England street, overshadowed by old trees. Note the vine covered panels of the wall

The back of the house is so arranged that the descent into the formal garden is gradual and gradually formal. The lattice screened laundry yard, which will eventually be covered with vines and hidden by arborvitæ, is an excellent development

Four terra-cotta pots with salmon-pink geraniums are placed in the circle. The planting in the borders is arranged in a series of inscribed circles. In the first tier the early-blooming Mertensias make a complete circle with blue flowers that fade into pink. These are replaced later on by deep-purple pansies var. Emperor William. During July this tier is made effective by eight *Oenothera Missouriensis* placed at the points where the paths converge into the circle. The large, bright yellow flowers make a brilliant color note especially striking in front of the deep purple of Japanese iris in an outer circle. In the second tier Iris Purple King continues the color effect of the purple pansies. In the third tier are peonies in a deep pink and rose circle. Each peony is encircled by a dozen pink tulips, whose early flowers have disappeared by the time the peony has opened its abundant foliage. In the fourth tier are the purple Japanese iris. With them the circular treatment fades into the masses of phlox, which help to develop the oval outlines of the garden.

Special attention has been given to color in this garden. Not a single jarring color note can be found in it. Only the clearest of yellows, the softest of pinks and rose, the quietest of lavender, blues and purples and harmonizing whites are used in this elusive pattern of color, and the result is satisfactory in the extreme.

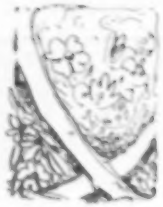
It is obvious that in such a formally arranged garden the succession of bloom is most carefully developed. Early tulips and daffodils; Darwin tulips and irises, peonies, foxgloves and sweet Williams, larkspurs and phloxes, Japanese anemones and asters, and chrysanthemum give continuous bloom. Coming into flower one after another with varying lengths to their periods of bloom they present a closely interwoven succession. Used in big masses, they form the major succession of bloom.

Complementing it is a minor succession. Bright-yellow *Alyssum saxatile,* pure white Arabis, blue Mertensia, pink bleeding heart, yellow Trollius make a spring medley of bright color. Columbine and yellow day lilies accompany the bloom of German iris; *dictamnum* and campanulas that of peonies. Purple *Viola cornuta,* creamy-white and pink spiraea, lavender Galium, snow-white Achillea. "The Pearl" and filmy *Gypsophila,* the baby's breath, accompany the flowering of the larkspurs. Yellow Anthemis, lavender *Sedum spectabilis,* blue statice, and purple veronicas are in flower, while the phlox is blooming. Pink snapdragons complement the delicacy of Japanese anemones, salmon-

(*Continued on page 279*)



Planting the Flower Garden


I.—For Bedding and Masses

Flower.	Class.	Height.	Season.	Color.	Space.
Asters	Any	18–30	July–Sept.	Various	12–18
Balsam	B, C	10–18	June–Sept.	Various	15–20
Begonias	A	12–18	June–Frost	Red, pink, white	10–15
Bellis (Daisies)	A	6–10	April–July	White, pink, red	6
California Poppy	C	12–15	July–Sept.	Orange, yellow	6–8
Chrysanthemum, annual	A, B	24–36	August–Frost	Various	12–18
Geraniums	A	12–18	June–Frost	White, red, pink	12–18
Hollyhocks (Ever-blooming)	A, B	3–7 ft.	Aug.–Sept.	Various	12–18
Larkspur, annual	C, A	18–36	June–July	Blue, white, pink	6–12
Marigold	Any	10–36	July–Frost	Yellow shades	6–18
Petunias	Any	12–24	July–Frost	White–Magenta	8–12
Phlox Drummondi	Any	12–36	July–Frost	Various	8–12
Poppy	C	6–10	July–Sept.	White, scarlet	4–6
Portulaca	B, C	6–10	July–Frost	White, yellow, red	4–6
Salvia	A	12–36	July–Frost	Scarlet shades	8–12
Verbena	Any	6–9	July–Frost	Blue, pink, white	12–18
Zinnia	Any	12–30	July–Frost	Various	8–12

II.—For Edging and Borders

Alyssum, Sweet	A, C	8–15	May–Frost	White, lilac	4–8
Bellis (Daisies)	A	6–10	April–July	White, pink, red	6
Candytuft	Any	6–18	June–Sept.	White-crimson	6–12
Celosia	A, B	12–36	June–Frost	Red, yellow, shades	12–18
Forget-me-not	A, C	6–12	April–July	White, blue	6–8
Geraniums, foliage	A	8–12	June–Frost	Variegated	8–12
Lobelia	Any	6–18	June–Sept.	Blue, white	4–8
Nasturtium, dwarf	C	8–15	July–Frost	Red, yellow	8–12
Pansy	A, C	6	May–June	Various	6–8

III.—For Cutting

Antirrhinum ("Snaps")	A, B	12–36	July–Frost	Various	10–15
Bachelor's Buttons	B, C	15–24	July–Sept.	Blue, white, pink	6–10
Calliopsis	B, C	12–18	June–Sept.	Yellow, orange, brown	8–10
Carnation, Marguerite	Any	12–20	June–Frost	Various	6–10
Cosmos	Any	2– 8ft.	Aug.–Frost	White, pink, red	18–24
Mignonette	Any	12–18	July–Sept.	Yellow, orange	6–10
Pinks (Dianthus)	Any	10–18	Aug.–Frost	White-rose	6–10
Stock	A, B	12–24	June–Sept.	Various	6–12
Wallflower	Any	12–30	July–Sept.	Red, yellow shades	6–12

IV.—For Shady Places

Anemone, Poppy	A, B	15–30	June–Sept.	Various	6–10
Antirrhinum	A, B	12–36	July–Frost	Various	10–15
Tuberous Begonias	A	12–24	June–Frost	Various	8–15
Bellis (Daisies)	A	6–10	April–July	White, pink, red	6
Delphinium (Larkspur)	A	3–4 ft.	July–Sept.	Blue shades	12–18
Digitalis (Foxglove)	A	18–36	June–July	Pink, white, lilac	10–12
Myosotis (Forget-me-not)	A, C	6–12	April–July	White, blue	6–8
Pansy	A, C	6	May–June	Various	6–8
Poppy, Hardy	A, B	12–36	June–Sept.	Various	8–18
Schizanthus	A, B	24	July–August	Yellow-lilac, mixed	8–10
Torenia	A, B	6–12	July–Sept.	White, blue	6–10

V.—Climbing Vines

Canary Bird Vine	C	10–15 ft.	July–Sept.	Yellow	
Cardinal Climber	A, C	20–30 ft.	July–Frost	Cardinal	
Cypress Vine	C	15	July-Frost	Scarlet, white	
Dolichos	C	10 ft.	July–Frost	White, purple	
Japanese Hop	A, C	20–30 ft.	Foliage	Green and variegated	
Moonflower	A, C	20–30 ft.	July-Frost	White–blue	
Morning Glories	C	15 ft.	July–Frost	Various and mixed	
Nasturtium	C	6–10 ft.	June–Frost	Yellow and red	
Sweet Peas	A, C	5–8 ft.	June–Frost	Various	

VI.—Bulbs and Tubers

Begonias, tuberous	A	12–24	June–Frost	Various	8–15
Caladium	A	2–5 ft.	June–Sept.	Variegated	2–3 ft.
Cannas	A, C	3–6 ft.	June–Frost	Red, Yellow, white shades	18–24
Dahlias	A, C	3–5 ft.	July–Frost	Various	18–24
Shellflowers	A, C	18–24	July–Oct.	Yellow, crimson, spotted	12–18
Gladioli	C	3–5 ft.	August–Frost	Various	8–12

Class A—To be had in plants from florist, greenhouse or frames.
Class B—To start in the seed-border or seed-bed, and transplant to permanent positions.
Class C—To plant where flowers are to mature, either in rows or broadcast.

NOTES AND REMARKS*

Asters—III.—Disbud and stake for finest flowers. Protect from black aster beetle.
Balsam.—Plant where individual flowers may be seen, as near paths or in foregrounds.
Begonias—II.—Free and constant flowering. Red sorts very showy.
Bellis—II.—Very free flowering and pretty. New sorts large flowering.
California Poppies.—Sow early. Cover lightly. Thin out before crowding.
Chrysanthemum, Annual—III.—Disbud for finest flowers. Watch for aphids
Geranium.—Most effective in single colors. Select young, healthy plants.
Hollyhocks—VI.—The new "annual" type blooms freely from seed the first year.
Larkspur, Annual—III.—One of the finest blue flowers for either garden or cutting.
Marigold.—Dwarf named varieties. Fine for edging.
Petunias.—For double sorts destroy the rankest-growing seedlings.
Phlox Drummondi.—Very free flowering. Good in solid masses or for medium-high hedges.
Poppy.—Thin out before the plants get large. Make second planting.
Portulaca.—Especially good for hot, dry situations on sandy soil.
Salvia—II, VI.—Most satisfactory of all red flowers for masses and long borders.
Verbena.—Very free flowering. Especially cheerful in the late fall garden until frost.
Zinnia.—Easily grown. Brilliant masses of color. Dwarf named sorts fine for edging.

FOR EDGING AND BORDERS

Alyssum, Sweet.—Most beautiful and graceful of all edging plants. Slightly spreading
Bellis.—Extremely attractive, little, low-growing English daisy. Very cheerful.
Candytuft.—Desirable for edging along walks where Alyssum is too spreading.
Celosia—Fine, new plume varieties. Especially desirable for long borders. Dwarf sorts good for edging.
Forget-me-not—IV.—Most dainty and beautiful of all edging plants. Fine, new variety.
Geraniums, Foliage, Madame Salerol.—Best edging for semi-formal bed.
Lobelia—IV.—Best for airy, graceful, low edges and masses. Large-flowered, new variety.
Nasturtium, Dwarf—III.—Free-flowering, brilliant colors, best for poor soil.
Pansy—IV.—For summer and fall bloom make spring sowing. Keep cool and moist as possible.

FOR CUTTING

Antirrhinum—I, II.—Should be in every garden. Fine, new sorts. Dwarf and tall.
Bachelor's Buttons—I, IV.—Old favorites. Especially blue varieties. Easily grown.
Calliopsis.—Very free-flowering and of quick growth.
Carnation—I.—Very free-flowering. Last well after cutting.
Cosmos.—Large-flowered, late variety should be started early under glass.
Mignonette.—Particularly valuable for its delicious fragrance.
Pinks (Dianthus).—Universal favorite. Great range of colors. One of the best.
Stock.—Both fragrant and beautiful. Should be in every garden.
Wallflower.—Fragrant. Flowers of unusual colors.

FOR SHADY PLACES

Anemone, Poppy.—Particularly free-flowering. Very beautiful. Great variety.
Antirrhinum.—The above, under "cutting."
Tuberous Begonias.—Best of all bedding plants for semi-shady places. Fine, new sorts.
Bellis (Daisies).—See above.
Delphinium.—Hardy. Best tall, blue flower. Very reliable.
Digitalis (Foxglove).—Old favorite. Very striking. Most reliable.
Myosotis (Forget-me-not).—See the above under "edging."
Pansy.—See the above under "edging."
Poppy, Hardy.—Iceland type, varied and beautiful. Oriental, very striking.
Schizanthus.—Very beautiful when other flowers are scarce.
Torenia.—Very unique and pretty. Good for vases and hanging baskets. Unusual, bird-like flowers. The newest and most striking annual climber.

CLIMBING VINES

Canary Bird Vine.—Unusual, bird-like flower.
Cardinal Climber.—The newest and most striking annual climber. File seeds slightly before planting.
Cypress Vine.—Fern-like foliage. Star-shaped flower. Soak seed before planting.
Dolichos.—New Japanese varieties, great improvement. Beautiful, good screen.
Japanese Hop.—The best "temporary ivy." Succeeds under adverse conditions. Soak seed.
Moonflower.—Set out good, strong plants after danger of frost. Free-flowering, fragrant. Soak seed.
Nasturtium.—Most reliable and satisfactory for exposed places and adverse conditions.
Sweet Peas.—Try some of wonderful, new-named sorts.

BULBS AND TUBERS

Begonias, Tuberous.—See the above.
Caladium.—Individual plants, groups of rows. Especially good for tropical effect. Very tender.
Cannas.—New orchid-flowered varieties; among the very best bedding plants. V, VI.
Dahlias—I, V, VI.—Take up and disbud for the finest flowers.
Shellflowers.—Tigridia. Large, lily-like, unique, beautiful blooms. Take up in fall, as with Gladioli.
Gladioli—I, III, VI.—Make several plantings for succession of bloom until frost. Last in June.

* Numerals refer to other groups in which plants may be classed.

Planting the Vegetable Garden

Vegetable.	Note.	Date.	Planting Data.				Days to Mature.
			Rows Apart.	Plants Apart.	Depth.	Seeds or Plants for 50-In. Row.	
PLANTS —EARLY							
Beet	E, S	April 1	12–15 in.	3–4 in.		150–200	40–60
Cabbage	E, F	April 1	2–3 ft.	1½ ft.		35	60–90
Cauliflower	E, F	April 15	2–3	1½ in.			50–90
Celery	F	May 15–July 15	2–4	6–12 in.		75–100	125–150
Endive	F	July	12–15 in.	12		50	40–60
Lettuce	E, S, F	April 1	12–15	8–12		50–75	40–60
Leek	F	June 15–July 15	15 in.	3–4 in.		150–200	60–90
Onions	E	April 15	12–15 in.	3–4 in.		150–200	60–90
Parsley	A	April 1	15–18 in.	4–6 in.		100–150	30
PLANTS—LATE							
Beans, pole	A	May 15	3–4 ft.	3–4 ft.		12–16 hills	40–60
Brussels Sprouts	F	July 1	2–3 ft.	1½ ft.		35	80–100
Cabbage, late	F	July 1–15	2–3 ft.	1½–2 ft.		25–35	60–90
Cauliflower, late	F	July–15	2–3 ft.	1½–2 ft.		25–35	60–90
Corn, early	E	May 15	2–3 ft.	3–4 ft.		25–35	60–80
Cucumbers	A	May 20	4 ft.	4–6 ft.		12 hills	40–60
Egg-plant	A	June 1	2½ ft.	2 ft.		25	40–60
Melons, Musk	A	May 20	4–6 ft.	4–6 ft.		8–12 hills	70–100
Peppers	A	June 1	2½ ft.	2 ft.		25	40–60
SEEDS—EARLY							
Beet	E, S	April 15–July 1	12–15 in.	2–4 in.	½–1½ in	1 oz.	60–120
Carrot	E, S	April 15–July 1	12–15 in.	2–3 in.	¼–½ in.	½ oz.	70–90
Endive	F	June, July	12–15 in.	12 in.	½ in.	½ oz.	75–100
Lettuce	E, S, F	May–August	12–15	8–12	½ in.	¼ oz.	75–100
Onion	A	April–1	12–14	2–4 in.	½ in.	½ oz.	120–175
Parsnip	A	April 1	15–18	3–5 in.	½–1 in.	¼ oz.	100–150
Peas, early	E, F	April 1–Aug. 1	2–4 ft.	2–4 in.	1–2 in.	1 pt.	50–75
Peas, main	E, S	April 15–June 15	2–4 ft.	2–4 in.	2–4 in.	1 pt.	60–90
Radish	S	April 1–Sept. 1	1 ft.	2–3 in.	½ in.	½ oz.	25–50
Salsify	A	April 1	15–18 in.	2–4 in.	¼ in.	¾ oz.	125–150
Swiss Chard	A	April 15	18 in.	8–12 in.	1 in.	¾ oz.	60–75
Turnip	S, E, F	April 1–Aug. 1	15–18 in.	3–6 in.	½ in.	½ oz.	60–75
SEEDS—LATE							
Beans	E, S	May 1–June 15	18–24 in.	3–6 in.	1–2 in.	1 pt.	45–90
Beans, pole	E, S	May 1–June 15	4 ft.	3–4 ft.	1–2 in.	¼ pt.	65–100
Melons, Musk	A	May	4–6 ft.	4–6 ft.	½–1 in.	¼ oz.	90–120
Melons, Water	A	May	6–8 ft.	6–8 ft.	½–1 in.	¼ oz.	100–125
Pumpkin	A	May	6–8 ft.	6–8 ft.	1 in.	¼ oz.	100–130
Squash, summer	A	May	4–6 ft.	3–6 ft.	1 in.	¼ oz.	60–75
Squash, winter	A	May	6–8 ft.	6–8 ft.	1 in.	½ oz.	100–125
ROOTS AND BULBS							
Asparagus	A	April	3–5 ft.	1–3 ft.	4 in.	15–25	2–3 ys.
Onion Sets	E	April	12–15 in.	3–4 in.	½–1 in.	150–200	50–75
Potato	E, A	April 15–Jun 15	2½–3 ft.	10–13 in.	2–4 in.	½ pk.	50–100
Rhubarb	A	April	3–4 ft.	2–3 ft.	3–4 in.	20–25	1–2 yrs.

NOTE. A—Plants remaining the whole season.
E—Plants maturing quickly enough to be followed by others.
F—Usually sown or planted late enough to follow some earlier crop.
S—Vegetables of which several sowings should be made during the season to maintain a table quality.

REMARKS

PLANTS—EARLY

Beet.—Mark out rows with single tooth on wheel-hoe; do not plant too deep.
Cabbage.—Use only a few of extra early sorts. Branmash for cut-worms.
Cauliflower.—Spray for green worm; tie leaves for blanching as heads form.
Celery.—Plant just to crowns; give plenty of water at all stages of growth.
Endive.—Blanch with boards or by tying when large enough to use.
Lettuce.—Set out two or three varieties for a succession. Sow in seed border for plants.
Leek.—Set in shallow trench; fill in and hill up as growth is made.
Onions.—Trim back tops and roots; do not set too deeply.

PLANTS—LATE

Beans, Pole.—Start in paper pots; thin to one or two plants; transplant while small.
Brussels Sprouts, Cabbage, Cauliflower.—Sow in seed bed in early June for late crop. Thin out to stand several inches apart. Cut back leaves once or twice during growth, to induce formation of good, stocky plants.
Corn.—For extra early crop start in paper pots; thin to three or four plants.
Cucumbers.—Start in paper pots; thin to one or two plants. Transplant while small.
Eggplant.—Watch daily to protect from potato beetles. Plenty of water or mulch.
Melons.—Same as cucumbers. Spray early for striped beetle and wilt. Keep clean.
Peppers.—Rich soil; start in hills. Use same for eggplant.

SEEDS—EARLY

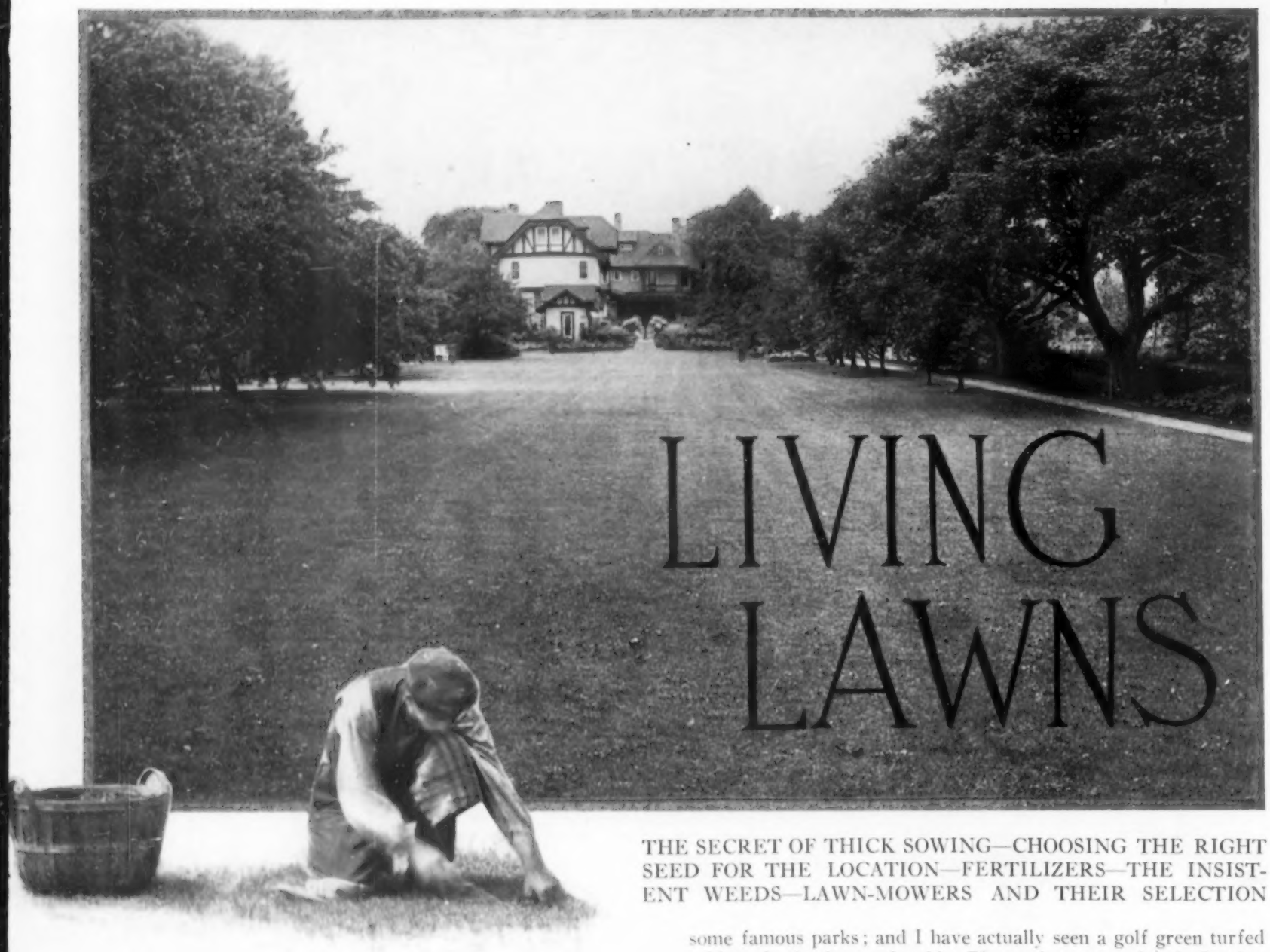
Beet.—Cover early planting shallow. Use thinnings for greens.
Carrots.—Make early plantings small. Thin before plants crowd.
Endive.—Sow when ground is moist. Thin out before plants crowd.
Lettuce.—Thin early. Sow in moist soil and shade to get stand in summer.
Onions.—Thin out at second weeding. Sow few radishes with them to mark rows.
Parsnips.—Thin out as soon as possible. Prepare soil deeply.
Peas, Early.—Smooth sorts can be planted a week or ten days earlier than wrinkled.
Peas, Main.—Sow two or three varieties at a time to make succession picking.
Radish.—Sow small quantity every week, for best table quality.
Salsify.—Prepare soil very deeply. Thin as soon as possible.
Swiss Chard.—Keep very carefully cultivated. Gather outside leaves for greens.
Turnips.—Sow thinly two varieties every four weeks, for best table quality.

SEEDS—LATE

Beans, Dwarf.—Make first planting in lightest and driest soil available.
Beans, Pole.—Plant limas, including dwarf sorts, eyes down. Plant when soil is not wet.
Melons, Musk.—In wet or heavy soil raise hill slightly above level. Sow 15 or 20 to hill.
Melons, Water.—As above, but fewer seeds to hill, and deeper. Scatter tobacco dust or fine ashes over hill.
Pumpkin, Squash (Summer), Squash (Winter).—Six to ten seeds, evenly spaced, in well-enriched, flat hills. Use tobacco dust or ashes freely on young plants. Hand-pick first large, black squash bugs. Thin to 2 or 3 plants a hill. Kill borers with wire or thin knife-blade.

ROOTS AND BULBS

Asparagus.—Trench rows deeply. Enrich well with manure. Do not quite fill at planting.
Onion Sets.—If of uneven size, separate before planting, using largest to be pulled green; smallest to develop new buds.
Potato—For earliest results, sprout before planting, giving full light when sprouts start.
Rhubarb.—Plant fairly deep in enriched soil. Old clumps separated to advantage.



There is no escaping weeds and the knife is the only weapon that wages an effective warfare on them

THE SECRET OF THICK SOWING—CHOOSING THE RIGHT SEED FOR THE LOCATION—FERTILIZERS—THE INSISTENT WEEDS—LAWN-MOWERS AND THEIR SELECTION

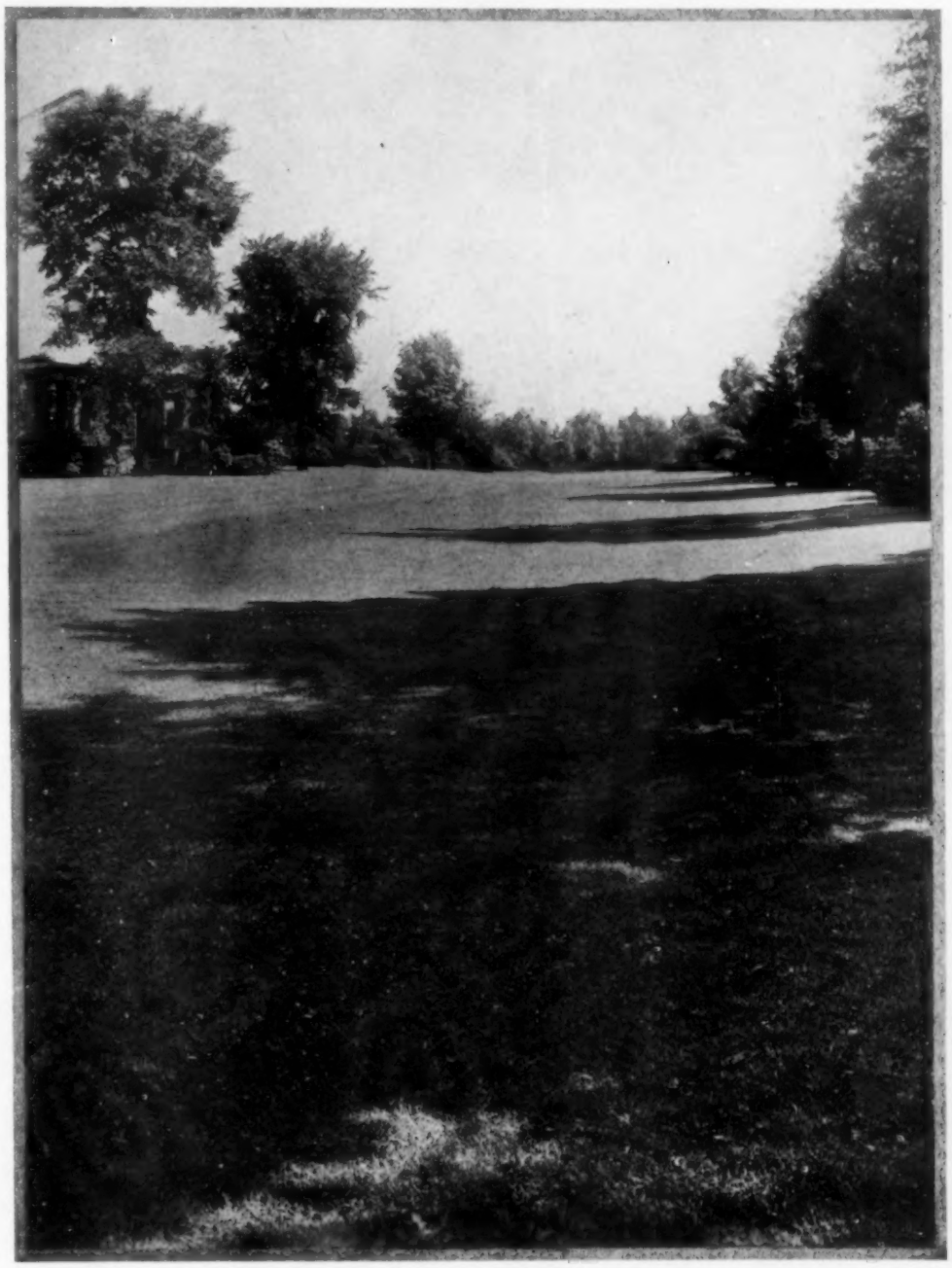
UNTIL a few years back it was recognized by all that a new lawn or green could not be made, if sown with grass seed, in less than three years, and this belief is still rigidly adhered to by many. But, why did it take at least three years to make a lawn? For the simple reason that the grass seed was sown so thinly (from three to four bushels per acre) that each plant had to grow to its full size before the ground was covered. This slow process suited its time, but now the strenuous life demands quicker results. By a series of experiments, not only have several new or improved varieties of grasses been found, which tiller out over the ground instead of growing in tufts, as the older varieties did, but by judiciously increasing the amount of seed sown per acre, according to the fineness of the mixture, the quality of the soil, and the time in which the turf is required for play, a lawn or green can be, and has been, made with a close, uniform and even turf, fit for play in from about nine to twelve months from the time the seed was sown. I have seen lawns, greens, and entire golf courses grown in eight months, and not only was the turf strong enough for regular play, but it had the appearance and bottom of a good, old turf, such as is found at the seaside and in some famous parks; and I have actually seen a golf green turfed with turf only six months old. The seed was sown late in October and the turf was cut and laid in the following April. This was in England.

The method which should be employed for procuring a turf in the shortest possible period of time is as follows: A good time to commence the operation of making a new lawn is as soon as possible after the break-up of the hot summer weather, with the intention of sowing, if possible, at the end of August, or during the early days of September. The soil is warm at the end of the summer, and an abundance of rain and dew may be expected, which is very beneficial to the growth of the young grass before the real cold weather sets in. As weeds are far more in evidence in the spring than they are in the autumn, it follows that the long start given to autumn-sown grass should make it better able to withstand the onslaughts of any weeds that may be lying dormant in the soil when they appear in the spring. For spring growing, prepare the ground as soon as the weather permits, and sow the seed as soon as weather permits.

It is good policy to allow as much time as possible to prepare the ground. A month or six weeks is not too much, as the surface will, to a certain extent, find its own level, which can be more easily corrected before than after the seed is sown. Work that is done in a hurry is generally badly done, as it gives no chance for the surface to consolidate, which is so essential for the welfare

of the young grass plants or for quick-growing weeds to show themselves and be destroyed before the grass seeds are sown. A lawn made and sown at the end of August or the beginning of September should be fit for play by the middle of the following summer; if sown in the spring it should be fit for play before the end of the summer. The making of a new lawn can be roughly divided into five operations, viz.: digging, manuring, preparing the seed-bed, seeding, and after treatment.

Dig to the depth of a spade, turn the soil well over, break up the large clods, pick out all large stones, weeds, roots, etc. Grass being a shallow-rooted plant, makes it quite unnecessary to work the soil to a greater depth, unless the old turf is to be buried; then the surface should be turned under to a depth of two spits. Work into the soil a generous quantity of manure. This is the most important operation in the making of a new lawn or green, and I cannot too strongly recommend it to be given very careful attention, because, no matter how good the soil may be, the results will be both better and quicker if it is well manured. The best general manures for digging in are fresh peat moss, stable manure, old, well-rotted short straw, and artificials. The peat moss and rotted straw manures should be spread over the surface at the rate of one load per 100 square yards, and forked or dug into the soil in such a way that the bulk of it remains within 2 ins. or 3 ins. of the surface. The artificials should be broadcasted over the surface at the rate of 2 ozs. per square yard and raked in.



The healthy, living lawn is the result of the careful seed selection, generous sowing, occasional fertilizing, a constant clipping and rolling—and years of growth

Some people maintain that manure, if used, should be buried at least 6 ins. deep, while others hold that it should not be used at all, otherwise the grass will grow coarse and rank. I have proved over and over again that the closer the manure is to the surface the better and quicker are the results, because the young grass can reach it quickly during the early period of its existence, whereas if it is buried deeply it will take months for the roots to reach it, and it often happens, especially during unfavorable seasons, when grass grows very slowly, that it perishes for want of manure, in spite of the fact that plenty has been put in the ground, but out of reach. The suggestion that manure makes grass grow coarse and rank is another fallacy. If a mixture of coarse grasses is sown, a coarse turf will be produced, but if a mixture of the finest grasses is sown a turf of the finest quality will be formed.

Prepare the surface by breaking up the clods, removing large stones and all weed roots with an iron-toothed rake; then roll, rake and tread the ground until the surface becomes quite firm, true, fine, and when walked on hardly shows the imprint of the foot. It will then be ready to receive the seed. Sow the seed on the raked surface at the rate of 1 oz. per square yard, choosing a calm, dry day for the work; otherwise much of the seed may be blown away and lost; or, should the soil be wet, it will stick to the operator's boots, and in this way the level may be seriously disturbed. Divide up the ground into strips about 3 ft. wide by means of pegs and string, and divide the seed into as many equal portions as there are strips or squares; this will be found to be an easy way to ensure an even distribution of the seed. Sow the seed by hand, with the back bent, taking care to spread it as evenly as possible over the surface. The seed must now be covered to a depth not exceeding ¼ in., otherwise much of it will be lost. The most simple way to do this is to lightly rake the surface in two directions, taking care not to bury the seed too deeply. The ground should then be rolled and cross-rolled with a light roller.

Under favorable conditions the young grass should appear above the ground in about five to ten days if autumn sown, and fourteen to twenty-one days if spring sown, according to the weather. When about 1 in. high it is greatly benefited by a dressing of fertilizing fiber, malt culms, rape dust, or prepared compost. These top-dressing materials are gentle in action; they

(*Continued on page 283*)

Give the pennies a chance in a hanging basket or a vase of this kind between the windows

Once children are interested in the care of plants and taught the rudiments of the work, they can be put in charge

Lift some mint from the bed, pot it and trim down, and a bright spot of green is produced

New Use for Old Plants

HOW TO USE HARDY PLANTS INDOORS—TREATMENT FOR SCRAGGLY GERANIUMS—MAKING THE WINDOW-BOX SERVE A DOUBLE PURPOSE—AN EXPERIMENT WORTH TRYING

LUKE J. DOOGUE

ANY suggestion that would open up possibilities of increasing the supply of flowers for the house during the early spring months should certainly be in order, and this suggestion is to use hardy plants in the house and outside of the house fully flowered, in the spring months before the frost had gone. For the inside, keep them in the window in the sun; for the outside put them in boxes, the window boxes that you use for the usual summer plants.

This is the plan. It can be carried out with a surprising degree of success. The idea of using hardy plants in the house seems so absurd to many of the admirers of these plants that they choke with indignation and reel off a thousand objections to such a proposition. Some of these same people are not aware of the fact that most of the large nurseries of the country, to meet an ever-increasing demand, are growing their hardy plants in pots so that the making of a hardy garden is not dependent on time or weather, as has been the case in the past. How often it has happened that an unlocked early spring with a burst of heat has suddenly brought everything into flower and leaf and suddenly terminated all planting operations? What tempers and plans were destroyed by such a happening! Happily, this is over. Surely, such treatment as potting hardy plants has resulted in a better demand for them, with no damage to their good qualities.

If there is no crime in potting these plants for use in the garden, surely the dispensation could be stretched to allow some of them to get inside the house if such an entrance will tend to brighten the dull days of spring.

There is as great a need of novelty in the manner of using plants as there is in handling any other commodity, and that element of novelty is always possible if a little serious consideration is given to the subject.

A bed of geraniums planted out as they usually are is always a bed of geraniums,

(*Continued on page* 281)

This trollius was dug up in full bud and in a short time had sixty blossoms. It was a glorious sight

This is the sort of plant that makes window decoration a joke. They are used all too frequently

Aquilegias in full bloom at the window. If properly cared for, these plants will last for several weeks

A House Made for Sunlight

Spanish Mission style adapted to the bungalow is a tempting form for architects, and in California it has been adapted successfully, as in this instance. Every possible means of letting the sun into the house has been provided—wide windows and generous patio

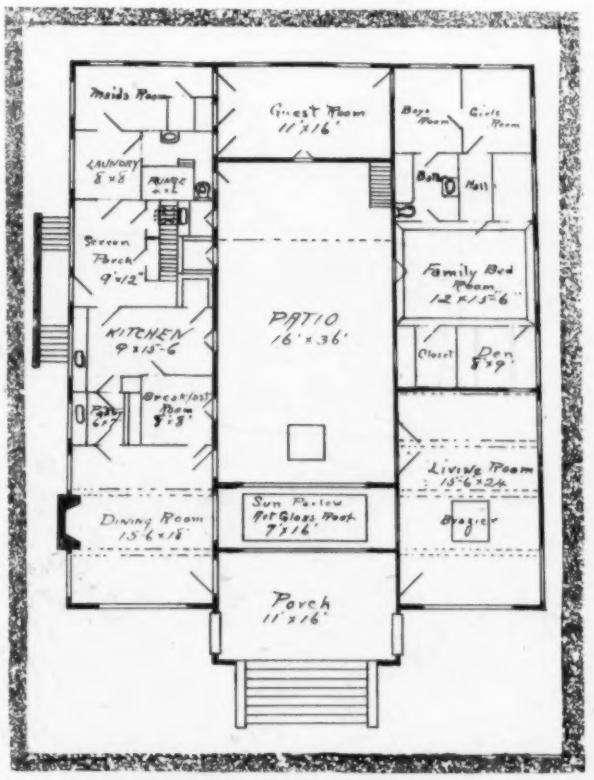
BEING A HOUSE BUILT OF MONOLITHIC REINFORCED CONCRETE, FIREPROOF AND TIME PROOF—THE CONCRETE INTERIOR FINISH—DEMOCRACY AND THE PATIO—A CENTRAL FIREPLACE AND ITS ADVANTAGES—THE POSSIBILITIES OF ADAPTING THIS STYLE OF BUILDING TO ANY LOCALITY

ALBERT MARPLE

IT is not always that one sees incorporated in a home features that are suitable for either the country or the city dwelling. True, a city type of home might be built in the country, but there would be something about it that would give it the appearance of being "placed" there and of not having "grown into its surroundings." The same would be true if the country residence were placed in the city. It would seem a little out of place. The home, then, which might, with equal propriety, be placed in either the city or the country, would be of a somewhat unusual character. Such a home is the subject of this sketch. It is owned by Ridley F. Taylor, of Long Beach, California, and is located in a semi-city district known as a suburb, and even in that locality it is right "at home."

This house is a one-story structure, built along the lines of the Spanish type of architecture. It contains fifteen rooms, sun parlor and two cement porches, and cost $20,000. It is built of monolithic reinforced concrete, which is, possibly, the most substantial form of building material known.

In many minds the mistaken idea that a concrete home is an expensive luxury still exists. The initial expenditure is a little more, but when it is considered that when the concrete home is erected it is there to stay, necessitating no continual repairing, that far less fuel is necessary in winter to keep the rooms at an even temperature, and a great deal less ice is used in summer for cooling purposes; that there is no need of an excessive paint bill every two or three years, etc., it will be clearly seen that in the long run a home made of concrete is far cheaper than is the frame dwelling.



Two advantages of such a plan are the ease of access to the rooms and yet the maintenance of their privacy. Every room opens on the patio—through a French door

The word "monolithic" is synonymous with "one piece," so it will seem that this home is a one-piece structure. To all intents and purposes it is, although naturally it will not be expected that this entire house was placed at the one time; that is, the walls, floor and roof made by the same set or forms. That would have been as nearly impossible as anything could be. This house was, however, erected so that now that it is completed it is practically as strong as one piece of concrete.

The initial work of construction was to build the forms up to the floor level. During the process of placing the concrete in these the horizontal reinforcing rods were installed, and just as soon as there was sufficient

Above the high wainscot of the dining-room is a frieze painted with scenes of California. The woodwork is oak, the floor terra cotta tile, set in a brown cement border

concrete in the forms to hold them the vertical rods were placed in position. After this concrete had set, the floor slab was poured. When the concrete already in place was sufficiently strong the wall forms were erected and the concrete and steel of the walls placed. The pouring of the roof slab was accomplished just as soon as the walls were strong enough to support it with safety. It will be seen that these different sections were so joined as to make practically one solid piece. The concrete brackets for the awnings over the windows were placed during the construction of the walls, having been made ten or twelve days previous. When the forms were removed the 2½-inch slabs beneath the red tiling of these awnings were set in position.

The outside walls of this home are six inches thick and of solid concrete, reinforced by ½- and ¾-inch twisted steel bars, being placed two feet on centers. The beams are reinforced by steel bars, while the roof and floor slabs are three inches in thickness and reinforced by electric welded fabric, this having Nos. 3 and 8 wires, the No. 3 wires running longitudinally of the house or the longest way of the slabs. All interior partitions are of Class A construction, built of ¾ Sharron iron channels, metal lath and plastered to a thickness of 2½ inches. It will be seen that there is nothing to decay or give way, everything being solid and substantial.

Concrete work was used even in the garden structure. The pergola is a permanent structure, and when covered with vines will prove of genuine decorative value

The home is of unique arrangement, the rooms being formed around a spacious, open-air patio. Fresh air and sunlight enter two sides of each of the principal rooms every sunshiny day. Double French doors connect the patio with the living-room, dining-room, breakfast room, kitchen, family bedroom, guest bedrooms, screen porch, plunge and dark room, making accessibility of one part of the home to another a very important feature. The patio has cement floor and walls, excepting the parts taken up by doors and windows, while the roof is of copper wire screen having ¼-inch mesh. It is drained to the center, at which point it drops through a pipe into a concrete box. The roof being of concrete, no especially prepared roofing is needed. This is used as a sun parlor and a playground for the children. It is drained to the four corners of the patio, at which points the waste water enters pipes that convey it to the box

A substantial post for the clothes dryer was made of concrete, to be later planted with honeysuckle

Utilitarian throughout, concrete was employed even in such a small detail as the making of a chicken coop, rat proof and easily kept clean

beneath the center of the patio, whence it is carried by a 4-inch cement pipe to the street in front of the house.

The living- and dining-rooms are finished in oak, each room having a floor of 6 x 6 terra-cotta tile, brown cement border, etc. The dining-room has a leather-effect paper to a height of five feet, above which is painted in a frieze showing scenes of California. It has beamed ceiling, which is tinted, cement fireplace, buffet, etc.

The living-room is in the natural finish of the cement, so that the grain of the wood which served as the forms is plainly seen.

Glassed in, the patio becomes a room itself, impervious to the weather, an avenue of access to the various rooms

Neither the walls nor ceilings have been decorated in any way. The brazier or fireplace in the living-room is a novel feature. Both the basin and the hood of this brazier are of hammered copper, while the screen is of copper wire. It is located a little in front of the center of the room. The occupants of the room may sit on all sides of this fireplace, the sides of the basin serving as foot-rests. An important point about this brazier is that after the fire has secured a good start the hood may be raised, the upper part of the "neck" disappearing into the ceiling, thereby permitting the occupants to see one another and talk across the fire.

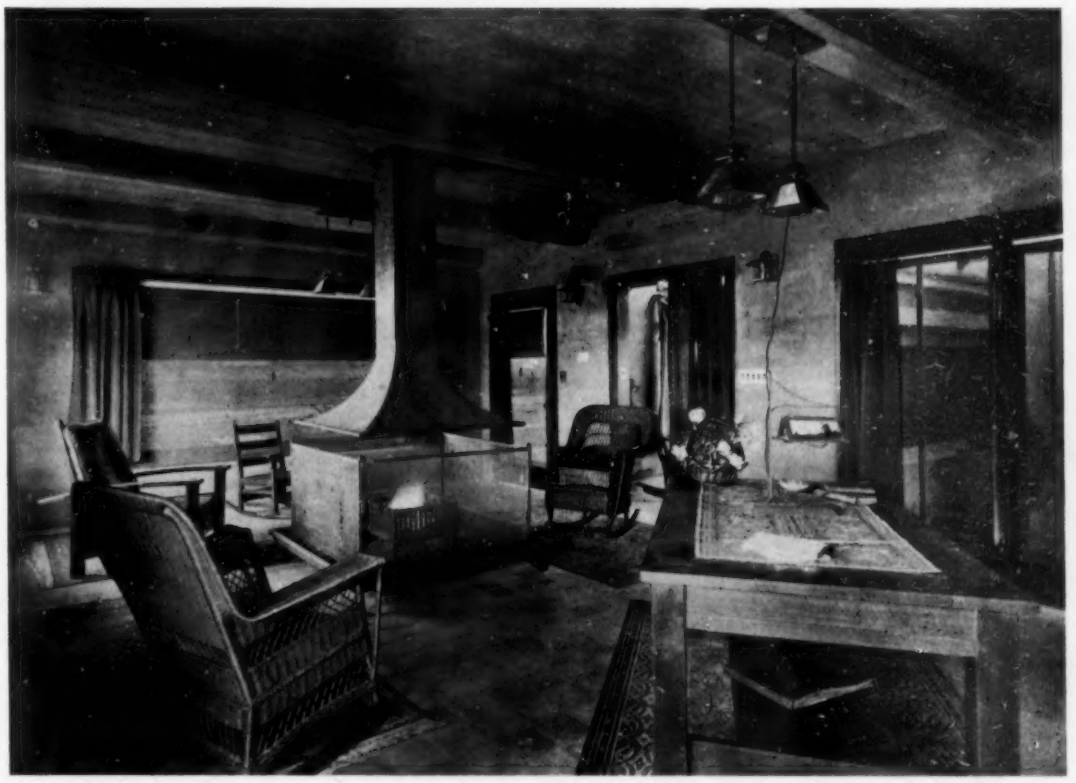
Both the living- and dining-rooms have 10-foot plate-glass windows, similar windows being located on either side of the sun parlor, one facing the street, the other the patio.

The family and guest bedrooms are finished in mahogany, with cut glass doorknobs and doors with full-length bevel mirrors. The family bedroom is equipped with a 5- x 5-foot cupola above the center of the room, this having chipped-glass lights at the sides. This is supported by a cove ceiling. The furniture in all rooms matches the woodwork.

The kitchen is a cabinet affair with 4- x 4-foot cooler having cement shelves, cement sinkboard, etc., while the breakfast room is finished with Oriental paper and handwork. The sun parlor has a 7- x 16-foot art-glass roof. Upon a background of light blue is a pergola in dark brown, interlaced upon which is a rose vine bearing dark-red and pink flowers. At the center of the sun-parlor floor is a panel of 6 x 6 tiling, this effect also being carried out on the front porch and the approach between the house and the sidewalk.

The doors of this house are all of the "slab" variety, being flush with the walls. In the planning of the house an effort was made to eliminate woodwork, and thus trim down the work for the housekeeper. There is no wood base, no picture moulding, no casing nor stool. Throughout the house 6-inch transoms cap the windows, and at points where there are two or three windows in a row, a single-light transom runs the entire width. Nearly all of the windows are of the casement variety. An idea original with the owner was to swing these windows outward, placing them outside the screen, thus protecting the screen from the weather. The curtains are fastened to the outside windows, coming between the glass windows and the screens and permitting the using of one long curtain across the entire width of the two or three lights. All the floors, except where otherwise stated, are of cement, and throughout the ceilings are tinted and are

(*Continued on page 282*)



The most attractive feature of this many-featured living-room is the brazier. The walls here are left rough finished, the floors laid as in the dining-room, and the woodwork being eliminated to simple door and window frames

Efficiency in the Flower Garden

If all the effectiveness of German iris would be had, they must be given a conspicuous place—and let alone. They are easily grown

Let a row of stately hollyhocks dominate the garden in July when droughts may have withered the other blossoms. They also are easily grown

F. F. Rockwell

THE PLACE OF HARDY PERENNIALS—HOW TO SELECT THEM—SPRING PLANTING AND SUMMER CARE

Photographs by N. R. Graves and Chas. Jones

NOT only the arrangement of the gardener's materials, but also their selection for the particular part they are to play in the completed landscape picture, must be given the gardener's most careful attention. A class of plants suitable for one purpose may be unsuitable for another, not because of their height, color or season of bloom, but on account of their character and habit of growth. The complete, satisfying garden—and satisfaction is the final test of efficiency in flower gardening—has an appeal aside from its mere esthetic beauty. It is right that one should not fill one's garden on the "collection" principle, striving to get "one each" of everything worth having. But it is quite possible to err in the opposite direction, and, in visioning the garden solely as a work of art, to forget the cheery, fragrant, lovable flowers themselves. There is something wrong with the gardener who is content to stand at the gate and look, through eyes half closed, after the fashion of an art critic, at the beauty of the picture presented, and who never risks soaking feet in the morning dew, or gets a hand dirty or a wrist scratched in rendering some little service, perhaps unnecessary, to the garden's inmates; who has no friendships such as one may have with a quiet but dependable companion, among the nodding faces along the well-worn walks.

No one class of flowers has all the desirable points. Some of the advantages and uses of annuals and annual-like flowers were discussed in last month's article. The paramount advantage of perennials, of course, is their longevity. Instead of having to be started afresh each year or carried over, like potted plants or tender bulbs, they are planted once and for all, and one is done with the job until overcrowding or starved soil may make it necessary to replant; a condition which will not be reached for several years, and, with some varieties,

BY SEASON OF BLOOM

Beginning to Bloom in	Season of Bloom	Height	Color
March			
Blood-root	Mch.-Apr.	6 ins.	White
Wind-flower	Mch.-May	6 ins.	Blue
April			
Rock-moss	Apr.-June	6 ins.	White, purple
Daisy	Apr.-July	4-6 ins.	Various
Hardy candytuft	Apr.-May	10 ins.	White
Myosotis, everblooming	Apr.-June	10 ins.	Light blue
Blue-bells	Apr.-May	12 ins.	Blue
Moss pink, phlox	Apr.-June	6-15 ins.	Pink
Trilliums	Apr.-May	12-15 ins.	White, red
May			
Alyssum, saxatile	May-June	12 ins.	Golden yellow
Aquilegia	May-June	2-3 ft.	Various
Lily-of-the-valley	May-June	12 ins.	White
German iris	May-June	1½ ft.	Various
Peony	May-June	2-3 ft.	Various
June			
Anemone	June-Sept.	18 ins.	White
Columbine	June-Aug.	2-3 ft.	Golden
Astible Japonica	June-July	2 ft.	White
Campanula, Harebell	June-Sept.	8 ins.	Blue
Canterbury Bell	June	2-3 ft.	Pink
Dianthus	June-July	10 ins.	Purple
Dictamus (Gas Plant)	June	3 ft.	Or'nge maroon
Japanese iris	June-July	2-3 ft.	Yellow
Iceland poppy	June-Oct.	12 ins.	Crimson
Oriental poppy	June	2-4 ft.	Scarlet
Phlox, hardy	June	2-3 ft.	White
Spirea	June-July	3 ft.	White
Yucca	June-July	4-5 ft.	White
July			
Hollyhock	July-Sept.	5-8 ft.	Various
Chamomile	July-Nov.	1-3 ft.	Yellow
Delphinium	July-Sept.	3-4 ft.	Various
Helianthas	July-Sept.	4 ft.	Golden
Campanula grandaflora	July-Sept.	3 ft	Blue
August			
Day Lily	Aug.-Sept.	3-4 ft.	Various
Cardinal flower	Aug.-Sept.	3-4 ft.	Cardinal red
Giant Daisy	Aug.-Oct.	3-5 ft.	White
Golden Glow (Rudbeckia)	Aug.-Sept.	5-6 ft.	Golden yellow
Golden Rod	Aug.-Oct.	3-5 ft.	Bright yellow

in heavy soil, is hardly ever reached. Another advantage is their great dependability. You can count on their being in the same spot and blooming at just about the same time year after year. They include, of course, some of the most beautiful of flowers and kinds which are valuable for practically every purpose—gorgeous shows in masses, bold and dainty landscape effects, cutting for bouquets, use around rock-work and naturalistic effects. But the very fact that perennials are long-lived and regular in their season of bloom makes it doubly necessary that the greatest care should be exercised in selecting them. The results of mistakes made are not for a few weeks or a season, but for years, unless one wishes to contemplate the job of *un*-making a perennial garden, which is much more of a job than making it.

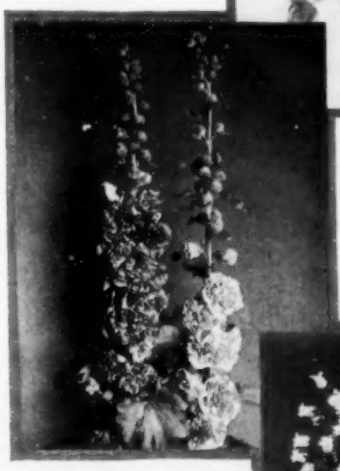
Beginning to bloom in June, anemone lasts well into September

April and May see the hardy candytuft in bloom

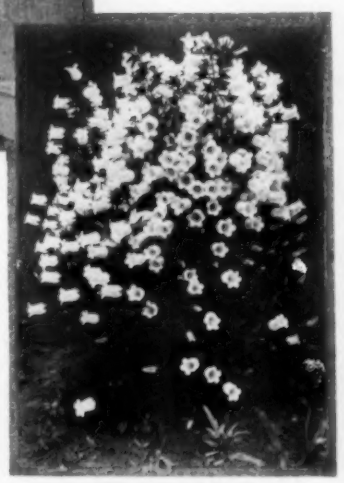
The easiest part of this rather difficult task of selecting your perennials is to find out everything there is to be found out about any particular plant. You can get this information from any good nursery catalogue or find it in more complete and convenient form in the numerous tables which have been made up, listing and classifying these data. A complete list of perennials, without going into varieties at all, would include many scores of plants of which there is not room for even a brief description here. Some of the most dependable and satisfactory are described in the accompanying table.

In selecting perennials, the first thing to decide is *when* you want them to bloom. If your hardy border is on a "summer place," to which you do not come until mid-June, there is no use in wasting good money and space on flowers that bloom in April and May; and if August must see you again packing up for the city, those glories of the late autumn garden, Japanese anemones and the hardy chrysanthemums, will not be for your enjoyment. On the other hand, if your garden is enjoyed during the Spring and Fall, but left to its own happy self-contemplation during a month or so while you are away at the seashore in mid-summer, you will miss the delphinium and campanulas in their glory. So, the first thing to decide in getting at your perennials is when you want them in bloom. Having settled this, you will find there is quite a list available. But there is another matter to settle in your own mind before you go any farther, and that is, how much *care* they are going to get after they are set out. This is a very important point. If you expect to set out your perennials and then let them take care of themselves, you will save time and disappointment in the first place by setting out only the hardiest and toughest, those capable of surviving in the struggle for existence which they will have to make. Among these are most of the native species, especially those which may be native to your own locality, and other particularly robust sorts.

Rudbeckia lightens up the garden in August and September



Through July and September you have the hollyhocks



The pink of the Canterbury Bell comes in June

A few of these are blood-root, trillium, aquilegia, lily-of-the-valley, iris, peony, dictimus, yuccas, Cardinal flower, golden glow, and, for one of the least appreciated varieties of all considering the many beautiful varieties now available—the hardy asters and the native hardy lilies. If your flowers must be left to shift for themselves, your nurseryman will be glad to suggest extra hardy sorts for the conditions your garden will have to meet. Such conditions should, however, always be taken into consideration. The plants that are most tenacious, like the lily-of-the-valley, for instance, under the conditions they require, may not prove dependable in an uncongenial environment. You should plan, however, to give your hardy plants, as well as your other plants, a reasonable amount of attention.

With these matters settled, you will still have a wide field to choose from. So far the process has been one of elimination. Now it will become one of selection. In solving this problem, you should first of all consider your general garden scheme. You must picture, in your mind—if you do not want to take the trouble to do it on paper, although that is the better way—the prominent points, the high lights and shadows, so to speak, of the general plan or scheme of your place. Upon your ability to pre-visualize thus a planting effect will depend to a very great extent the efficiency of your efforts to make a beautiful place.

Among the hardy perennials are to be found many of the most striking and effective things that can be used, and the hardy border itself, particularly on a small or medium-sized place, may be the dominant feature of the whole planting arrangement.

Another thing which must be carefully thought out at first is the arrangement of the plants in regard to each other. In the mixed bed or border the taller should be kept in the background, conflicting colors should be avoided, and harmonious colors planned, and such a distribution of species and varieties that no spot will look bare at any season of the year. For this reason, a number of different plants blooming at the same time should not be placed in proximity without interspersing others which will come into bloom before or after them.

From all this it becomes evident that about the last thing you do in planning your garden of perennials is to select your plants. This may seem at first paradoxical. You would think an architect very strange, when

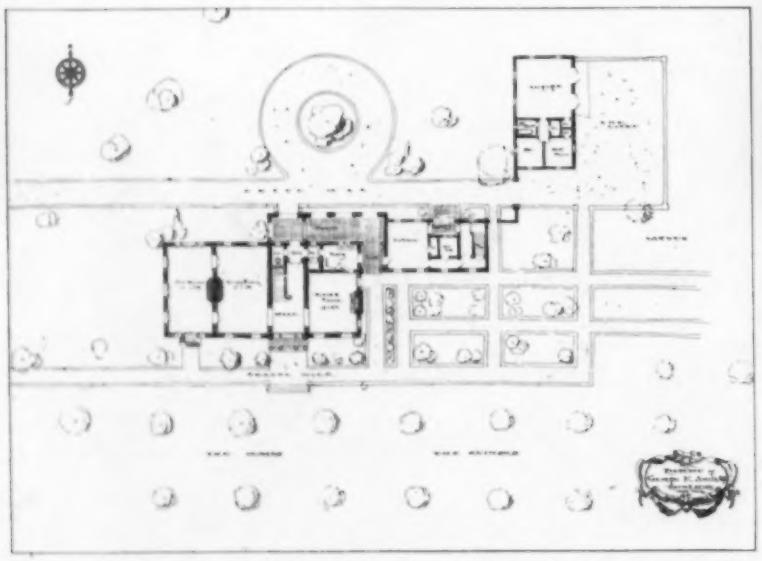
(*Continued on page* 304)

The house was set in an old orchard, with the trees forming a natural avenue up to the front door. Simplicity of line characterizes the building adapting it to its setting

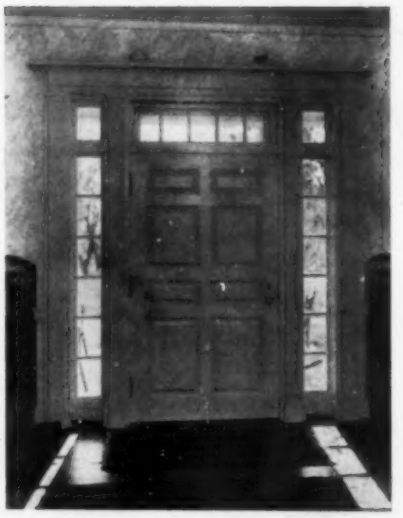
THE RESIDENCE OF GEORGE K. SMITH, AT ST. LOUIS MISSOURI

Roth & Stody, architects

A wide, paved terrace and an indented doorway give approach from the orchard to the house



Here are characteristics of the Colonial style—wide house-depth hallway, and the service department set in an ell by itself, leaving the living quarters a private entity



By using balanced lights around the door an old practice is put to an excellent modern use

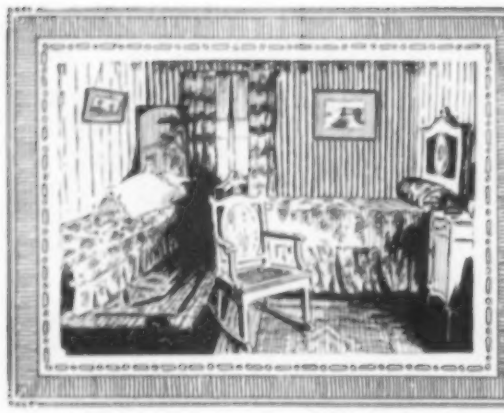
In the lower hallway the Colonial atmosphere is well expressed, the stairs being excellently proportioned

Full length glass doors between the living-room and the sun-room give to the first floor an airy atmosphere

In this house is well planned what in many others is often neglected—the upstairs hallways

With the alcove and wide spacing, there is ample room for a little work corner in the hall

The wall, shingled in like the house and garage, connects the two, tying the group into a pleasing, congruous whole, and carrying out the single direct lines to the best advantage. Note also the small bay in the angle and the roof treatment



INSIDE THE HOUSE

Timely Suggestions and Answers to Correspondents

Good Reproductions in Brass

FORTUNATE are we that somebody recognized the beauty and utility of brass and set about reviving its use. In the scheme of artistic possibilities for the house it has its value no less than silver and crystal, though its place is totally different. Brass candlesticks are out of key on a mahogany sideboard, where silver is at home, but they may give distinctive charm on the mantel or table of the living-room.

Many hand-wrought articles are faithful reproductions of old English pieces, just as we have the samovar copied from the Russian. The corn-poppers and chestnut roasters, which are illustrated, are hand-made copies of their English forebears. They show fidelity of workmanship in the minutest detail, which is noteworthy in this commercial age, when quick work is the rule. The designer shows his interest in ancient legend by the use of Mercury wings and the serpent to compose the handle of one of the roasters. One of the symbols also appears on the perforated cover of the roaster. There are few perforations in this cover, buf usually the cover is full of piercings like the sides and bottom.

The little triangular chestnut roasters are odd looking and interesting, but one rather imagines the large, round chestnut roaster or popper serving a merry party of youngsters who have just come in from a tramp in the sharp, spring air, and gathered about the blazing fire. Just before bedtime that same happy assembly will probably lift the lovely brass toaster from its hook and over the glowing embers there will be toasted marshmallows, done to a turn, just as they were at the erstwhile college feasts. These brass toasters are wonderfully charming, some that suggest the far Orient in the design of bowl and handle; others of remarkably simple, but none the less graceful, lines. And there are warming pans like them, too, which, like the toasters, are a joy whether in use or not, because they are so decorative.

Door porters, those silent sentinels that save our nerves from slamming doors, will be welcomed when warm days tempt one to stand every door wide open. One entirely new design is the Dolphin, handsome, massive and heavy, which is illustrated, and the very opposite of this is the Colonial style, plain, but with charm, as the true Colonial always is. Between these two, the one ornate, the other severely plain, there are many designs from which to select. One that is good is a claw-foot, evidently copied from the foot of an old davenport or highboy, out of which rises a twisted rod with handle at convenient height.

Some door-knockers that are the outcome of these tragic days are reminders of Rheims. One is a miniature façade of the Rheims Cathedral, and two others are copies of gargoyles from that historic church. They may be interesting, but they are not cheerful.

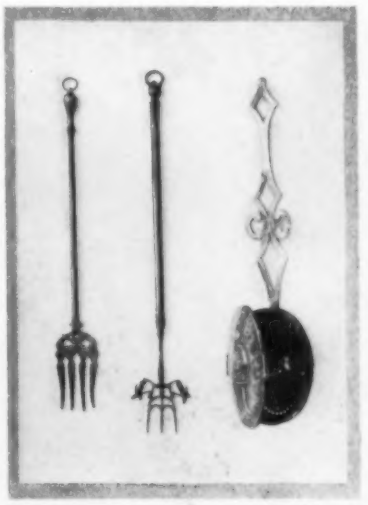
The "safety-first" slogan might have been responsible for the Cape Cod fire lighter, which recalls visions of Puritan New England. It reduces fire building to a feat of magic by its working, not to mention the quaint beauty of the device. There is a ball of absorbent stone clasped to a wire handle, and this stands in kerosene, which is held in the brass container. The kerosene-soaked stone is thrust under the coal or wood, the match applied, and a quick fire is the result. No kindling or paper is needed. It is a blessing to the man who builds the furnace fire in winter and to mountain campers, who often need fires on chill summer evenings.

Let not the thought of keeping one's brasses in order be a hindrance to their possession. Brass is more easily kept burnished and shining than silver, yet the care of silver deters no woman from owning as much sterling and fine plate as her means will allow. Our grandmothers were wont to keep their brass preserving kettles shining like virgin gold through a liberal use of vinegar and salt, which removed every particle of tarnish. Nowadays there are all sorts of metal polishes that do the work, but when none is convenient try rottenstone and oil. Any cottonseed oil product is good for this, and is inexpensive.

I admit a leaning to the use of rottenstone and oil for cleaning brass. It produces such a rich, deep golden yellow that I use it on my grandmother's brass kettle. No, I don't make preserves in dear grandmother's brass kettle in this day of porcelain and aluminum. But I hold such happy memories of scraping that jam ket-

The old chestnut roasters have been faithfully reproduced even to the crudities of workmanship

Nothing more than the utilitarian strainer, fashioned after the old pattern, with a semblance of artistry



Toasters and fire irons of rich old patterns are as serviceable as they are decorative

A product of "safety first"—a fire starter, with a stone torch to soak in oil

tle and licking up every morsel of sweetness, back in a far-distant childhood, that I greatly prize the old-time utensil.

When it came into my possession I pondered a long time before I decided how I could use it. Finally an idea came. I took the kettle to a worker in brass down in Allen street, had him remove the old handle and rivet a plain drop handle on each side. Then he mounted the kettle on three plain balls, which serve as feet, and I had a jardiniere of unusual design and lineage. When once you know its history you quickly see there's no disguise attempted. It's the old-fashioned kettle, transformed, it's true, now holding a date palm in the hallway instead of jam on the kitchen range.

Who has not had difficulty in getting a good arrangement of handsome flowers which have straight, stiff stems such as gorgeous tulips, lovely jonquils and narcissus? A low glass flower holder, a hemisphere in shape, solves the problem. By using it stiff flowers may be displayed in a mass for table or other decoration, with each blossom standing separate and distinct. This holder is on the same principle as the small ones which hold only one or two sprays. But the spherical shape, full of places for the stems, hold and at the same time give form to the mass of blossoms.

An Old Problem Solved

GRANDFATHER, descending the stairs on a cold winter morning, hurries to the living-room for a glimpse of the morning paper. But it is already in the hands of other members of the family. "I just wanted to know how cold it was last night," pipes grandmother, pouring over the weather column; "but it doesn't seem to tell here." "I wish one *could* tell what the temperature is at night," complains sister Mary, examining her bulbs in the window box. The small brother wonders if the pond is frozen so that he can skate on it—and the man of the house falls into an amiable dispute with his helpmeet as to the advisability of wearing rubbers, the question devolving upon the condition of the streets—whether frozen or not.

These domestic uncertainties would be impossible were this particular family the possessors of a regulating thermometer. For use indoors and out, its value far exceeds its price, in the mental satisfaction it gives in determining past and present temperatures. For this little instrument not only records the weather conditions (so far as the temperature goes) of the moment, but also the lowest and highest temperatures touched by the mercury in a previous given period. The mechanism of this "scientific toy" is so simple that the proverbial child can set it in action. In appearance it resembles the ordinary glass thermometer for use on a window. Instead of one tube, containing the mercury, it has two—one for registering the greatest degree of heat, the other for the greatest degree of cold. In each tube is a small bar of steel, placed above the mercury. Controlling this bar by means of a magnet (which is provided with the thermometer without extra charge) it can be moved up and down in the tube at will. For determining the lowest temperature during a cold night, for instance, one moves the steel bar—in the tube for recording cold—down to where the mercury is at that time. The thermometer is then placed outside the window, or in the conservatory, or wherever the test is to be made. As it grows colder the mercury rises (instead of dropping, as in ordinary instruments), pushing the steel upward as it does so, till the extreme point is reached. When temperature becomes warmer as morning approaches, the mercury falls, *leaving* the steel, however, at the point touched during the extreme cold. By a glance at the thermometer it is seen at once just exactly how cold the night has been, or, to be accurate, what has been the lowest temperature reached during the night. In the same way, one may ascertain the greatest heat of a summer day, when the mercury is supposed to make a marked rise, say in the middle of the day, when the sun is highest. This is recorded in the other tube, in which the mercury rises to the extreme of heat. The thermometer, at a moderate price, will be found indispensable to the average household, for use in the house, on the porch, or in the care of indoor plants.

Of the many door knockers being shown few are more genuinely artistic than this of the satyr and the crab. George L. Lober was the artist

Door porters are being made in a number of patterns that have an enhancing charm

Warming Facilities for the Kitchen

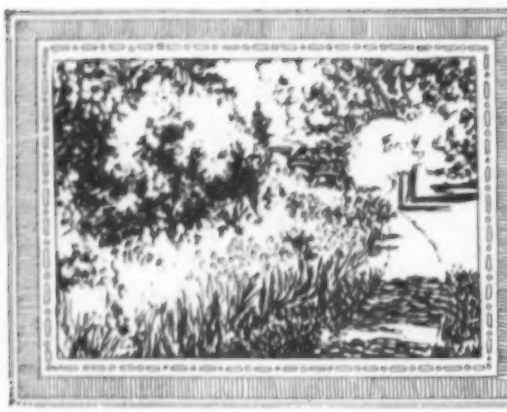
AN important problem in the kitchen is that of keeping food warm and warming dishes that are to be used on the table. This is a very simple matter in a coal kitchen. The best coal ranges are equipped with good warming shelves. Where the warming shelves are not provided, as in the case of a cheaper range, it is possible to have a tinsmith make a serviceable substitute of japanned iron, which can be placed above the stove at a convenient height. These iron shelves should have round holes cut through for ventilation, and may be supported against the wall by means of brackets.

In a gas kitchen this matter of warming-shelves presents much greater difficulty and requires more thought. With the gas stove we have no longer a constant radiation of warm air which can be utilized not only for the purposes named above, but for raising bread and drying the kitchen-ware. These needs must now be provided for in some other way.

The larger gas ranges have a warming oven above the elevated baking oven, which is kept hot by the oven burner when the latter is in use. At other times the

(*Continued on page 312*)

For a Colonial room come these porters of less elaborate and obtrusive design



GARDEN SUGGESTIONS *and* QUERIES

CONDUCTED BY F. F. ROCKWELL

April, 1915

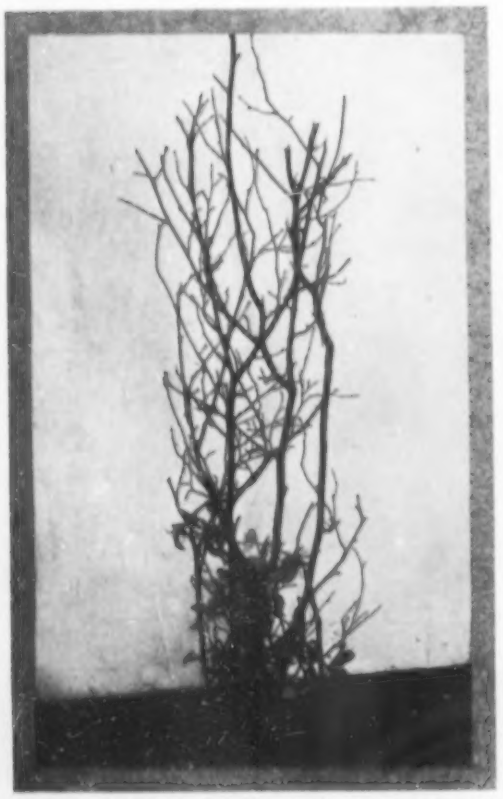
APRIL is the gardener's month of months. In it he can do almost everything in the way of planting. Or, to put it more correctly, he *may* do almost everything. What he can do is limited by his time. I doubt if there ever was a gardener who, on the first of May, could look back and feel that he had done everything he would have liked to do in April. On the other hand, the temptation to start too much proves fatal to many gardeners. For beginners it is a veritable mad moon. The beginner does not realize that with a modern seed-drill you can plant more in thirty minutes than you can take care of, when it comes to weeding, in a day. So, when you begin your planting, especially in the vegetable garden, be sure to figure up before you begin operations—if you have not already made a garden plan, as you should have done—exactly how many of this, that, and the other you think it will require to supply your table, and don't put in more.

The vegetables that can be planted out of doors this month are beets, carrots, corn salad, endive, kohlrabi, onions, parsnips, parsley, peas, potatoes, salsify, spinach, Swiss chard and turnips.

Plants that can be set out are cabbage, cauliflower, onions, lettuce, beets, sprouted potatoes.

Seeds to sow for plants to transplant later on: Cabbage, cauliflower, lettuce, celery, leek, endive; and asparagus, rhubarb, and sea-kale to make plants for setting in permanent beds next spring.

In the rush of your outside planting, however, do not overlook the frames in which the plants to be set out early next month are coming along. These should be repotted, and, for extra fine specimens, put into flower or paper pots. They should receive every attention in the way of watering and care. During this month, especially as the weather begins to get settled, they should be given full air and sunshine daily, the sash being removed altogether.

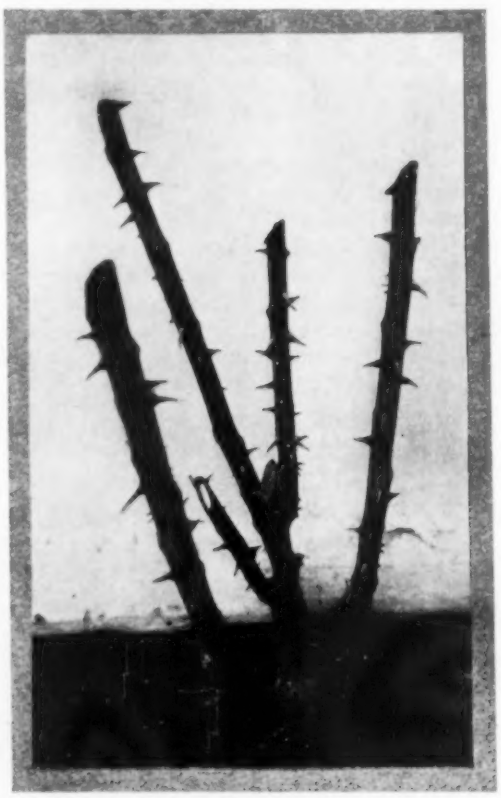


If flattened between boards, the brush for peas will go farther and make a neater garden

When roses have become scrawny, as has this dwarf rose, they should be cut back, as in the accompanying illustration

Work About the Grounds

Don't let your vegetable garden monopolize all of your time. In fact, during the earlier part of the month there will be many days when it will be comfortable to work outdoors, when conditions are not right for seed sowing. These should be utilized for continuing the work which was begun last month, and doing your regular spring cleaning, getting the place "licked into shape."



The cut should be made just above an outside bud, so that the growth will be outward

Carefully rake off the lawn, putting the refuse mulching away, if you do not need it in the vegetable garden, where it can be used later around gooseberries, currants, and other things benefited by a summer mulch. If there are bad spots in the lawn you can probably find a nice-looking piece of sod for patching. If not, there will probably be some florist or gardener doing work in your vicinity from whom you can get a wheelbarrow or two of sod. The small, bare spots should be raked with an iron-toothed rake and grass seed applied and patted down with the back of

the spade. Be sure, in any case, to get the winter mulch off before the grass begins to make any growth.

If roads and paths are inclined to get grassy or weedy, now is the time to give them a good scraping with the hoe or scuffle-hoe. Make use of the "edger" for trimming up the roads and walks, but don't overdo it—it is very easy to cut

Potatoes started in sand at this time have every chance to become strong, healthy plants

back too far into the sod, making an edge that will dry out quickly, and looks amateurish.

WORK FOR A COLD DAY

It is a good scheme to plan work as much as possible for cold days. One can be quite comfortable chopping pea brush or taking more or less violent exercise with hammer and saw on a day that would be decidedly uncomfortable for setting out plants, and vice versa. Get your pea brush early. If it is quite near at hand and you expect to carry it yourself you will find that a piece of rope fifteen feet long will furnish a better means of transportation than the wheel-barrow. You will find that the brush is of much neater appearance and handier to handle if you get it long before you want to use it and lay it in a long, narrow pile on the top of which a few heavy fence posts or plank are placed. These will press it out flat, with the result that you will have much neater-looking rows and your brush will go farther.

Roses and climbing vines trained against the house should always be supplied with trellises that will hold them out a foot or so from the wall. This is better for the plants and also for the house. Where the vine grows directly against the wall, unless it is of brick, it will at least disfigure it and possibly cause decay to set in by rotting and rubbing off the paint and by keeping out the anti-rotting influences of air and sunshine. The form of trellis will depend largely upon the vine which is to be grown. If it is a real climber, making use of tendrils or a twisting stem, the cross pieces on the trellis should not be very far apart, and the trellis should be comparatively broad and flat. For climbing roses and plants of similar habit of growth, all that is needed is a rugged support to which the strong-growing canes can be fastened in any desired position, or through which they may be trained. Frequently, especially for the annual climbing vines, strings are used as supports. This makes a cheap and easy method of vine training, but it usually breaks down before the season is over. If you must use strings, get a heavy, brown jute or hemp, or ordinary "binder twine," instead of the white, "store string" which one so often sees. It is much stronger and infinitely better looking.

If you haven't finished all your pruning and tree-repairing, that will make a good job for the colder days. One can get a good deal of exercise digging out old pruning wounds that have rotted back a foot or two into the limb or trunk. Clean out to firm, live wood, paint with creosote or tar, and, any time when there is no danger of a frosty night, fill with concrete.

A SPECIAL BED FOR SEEDLINGS AND RADISHES

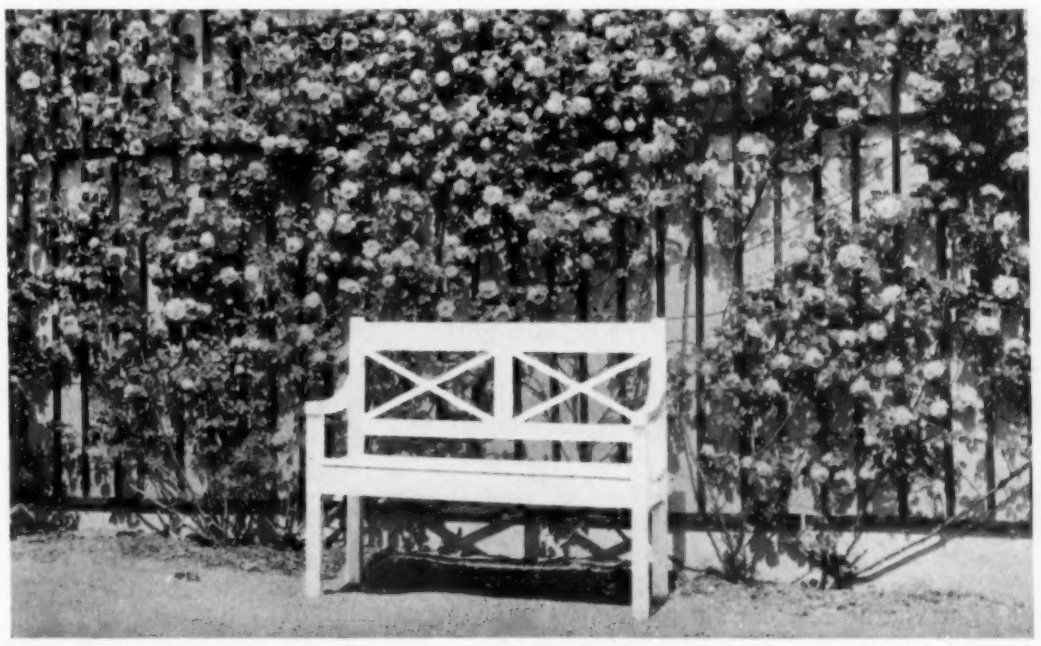
Beside the vegetables mentioned above, to be started now for plants to transplant later, a number of flower seeds give earlier and better results when handled in this way. Among these are asters, antirrhinum, carnations, dianthus, kochia, petunias, salpaglossis, stock, verbenas and zinnias. A small packet of each of these will furnish a supply of nice, stocky little plants to put in the garden, not as early as those you would have from a greenhouse, but ahead of seeds sown in the ordinary way in the garden.

Radishes sown in the usual way in the garden are almost always put in in too large quantities, and are not sown frequently enough. Besides this, the soil should be especially prepared for them. For all these reasons, it is a good plan to make a bed in some sheltered spot for starting these seedling plants and for growing your radishes, where the watering, the thinning, and so forth, can be regularly attended to. A couple of short rows may be put in regularly once a week—say every Saturday afternoon. To make such a bed, dig up a place some 6 feet wide and 10 feet long (the dimensions can be varied according to your requirements). Dig up the top soil for 4 to 6″ deep, put in a layer of rough cinders and put the soil back—a little bone dust or wood ashes may be put with it, but avoid manure—especially for the radishes. A row of brick around this bed, set on edge, will hold it in place and will give it a neat appearance. The end of the bed to be devoted to radishes should receive a very heavy dressing of lime. Cover the ground thick; use raw, ground limestone, unless it is some time in advance of planting, when other forms can be used.

SET OUT NEW BEDS OF ASPARAGUS, RHUBARB AND STRAWBERRIES

April is the month, and the earlier in April the better, to make your new plantings of rhubarb, asparagus and strawberries. There are a good many kinds of asparagus listed by the seedsmen, but the listing is about as far as the difference goes, except for two or three varieties—Palmetto, Barr's Mammoth and Giant Argentine. As the asparagus bed is made for a long time, fifteen or twenty years, if you take care of it, it pays to prepare it thoroughly in the beginning. The rows may be made 3 or 4 feet apart. After marking them out, dig out a trench along

(*Continued on page* 300)



The trellis should be permanent if roses are to be trained on it. Plain, straight bars of iron arranged in this fashion are simple and effective

EDITORIAL

OF GARDENERS

WE must acknowledge in the beginning that gardening is not for everyone. Although with each recurring spring there comes to all the desire to touch and handle and be one with the soil, not to all is vouchsafed the patience that watches the plant struggle up to fruition. In the heart of everyone, it would seem, the seed of garden love has been planted. We can never cease to love a garden, albeit we may have never loved gardening. The two differ, and have to do with different spheres. The love of a garden is akin to the appreciation of anything lovely—we may look upon a flower with the same rapture that we see a picture or listen to music. The love of gardening, on the other hand, is an expression of the love of life. The two may be co-ordinated, but the presence of the one does not necessarily connote the presence of the other, for the love of a garden is a condition of *being,* sired by heritage and reared by education; the love of gardening, a constant state of *becoming* that knows no parent nor instruction.

Because of this difference, the genus gardener is a type that runs through all sorts and conditions of men—a golden thread wound in and out the varied woof of humankind.

Could one visualize all the gardeners of the world foregathered, one would see such a motley as had never before been assembled: bankers and laborers, unlettered men and scholars, sinners and saints. Charney, the prisoner of Fenestrella, whose captivity was lightened by *la povera picciola,* would stand beside the poor, little man of Assisi, who so loved flowers that he preached to them. Walpole would be there, and Pope and Chaucer. Burns would come, and Bacon, and with them Browning, who sang "the soft, meandering Spanish name" of roses. There would be Nero and Sir Henry Wotton, Addison and Montesquieu, the Jesuit Attiret and the German Prince Pückler, Peré Huet and Dufresny, Canon Hole and Benedetto Croce and Richard Jeffries. And one would almost dare to think that Another Presence would attend ("and they all rise up as He passes by!")—He of whom it is said that He planted a garden eastward.

By many indications can you tell the gardener. He has a mellowness, an urbanity. He is a cosmopolite, though of cities other than those in which men dwell, and his acquaintance is with folk of an order different from mankind. He is usually a meek man, for his comrade in work is the worm that helps him plow the soil; he is usually an industrious man, for he labors in season and out of season with things that know no respite day or night. There are triumphs in his life: he can look upon a perfect flower. There are also defeats and sorrows, for wind and winter and drought and pest are leagued against him.

In whatever walk of life you find him, the gardener will prove a man in whom is active the vital forces of poetry. He *is* a poet, making rhythms of color and growth, planting for succession of bloom, just as a poet sings the refrains of his triolets.

He is, moreover, a radical, as have been all great poets. By intricate and secretive ways he strives to turn aside from the paths of the accepted varieties and eternally is he seeking out the new types that will set the old at naught, ever finding new methods of plant culture that will revolutionize the old. One can never say that his life is unromantic or commonplace, for each new bud may prove a new kind, and these inexplicable vagaries of Nature lead him into new worlds and set his feet upon paths that no man has ever trod.

Revolutionary, fickle, undependable Nature! Only a fool or a blind man would say that you obey your own laws or ever do a thing twice in the same fashion. Every rose is a new creation, unlike those that have gone before or will come after. Every plant is the beginning of a new history. Little wonder that he who works with you as guide leads a romantic life!

The good gardener may not be a profound philosopher, but one will have to travel a great distance before he finds a body of men and women who are more innately philosophic than gardeners. The reasons are obvious: they have ample time to think, and they consequently gather the fruits of solitude; they work with fundamental verities, such as the dust from which we are sprung. Moreover, being initiated into a life and a companionship different from that of the mercantile world, or even the world of books, they are led far afield by problems of which the average man knows little. The very fact that they can create new varieties leads them to speculate on the reasons why they can. And the deeper they delve into the universe of plant life, the more complex grow the problems. Perhaps it is awe that makes the gardener a silent man, even as that silence makes him a philosopher.

To be a questioner in the garden is no far cry from being a believer, and taken, man for man, there is more acute perception of the Divine in Nature among gardeners than in many another walk; there is more of that rich, unresting life which characterizes those to whom mystic sight and speech are as a native tongue. The Light does not shine uncomprehended in darkness when it shines in a garden. For it would seem that gardeners know the wisdom of Plato's observation, that "the true order of going is to use the beauties of Earth as steps along which one mounts upwards for the sake of that other Beauty."

Nature reveals little of her secret to those who only look and listen with the outward ear and eye, and the gardener, whom she takes into her confidence, soon learns that seeing and hearing in that world lie in a peculiar attitude of his whole personality, a self-forgetting attentiveness, a profound concentration, a self-merging which creates a real communion between the seer and the seen. Only under such conditions do the things of his world surrender their secrets, only under such does he enter into their lives. The true gardener, then, is a mystic. What the mystic calls the Real he finds in his garden where he perceives the Divine in Nature, where heart speaks to heart and in a tongue not understanded of men.

Such is some of the true inwardness of those men and women we see grubbing in the dirt of their gardens these days. Blind are we if we perceive not the gold in the dirt upon their hands, if in their taciturn methods we read not the speech of other worlds, if in their naïve words and simple pleasures we see not the light of mighty discovery and ineffable joy. Because the things of their lives are reflections of eternal things, gardening transcends wavering popularity. It is the expression of an ageless instinct. The gardener is at once a survival more ancient than the Pyramids and a creation as fresh as to-morrow's light.

My Suburban Garden

(*Continued from page 248*)

ripened for the table. The strawberries were something phenomenal, but there were only enough for picking three times a week. For a family of five, at least two hundred plants are needed, and three hundred is better for a surplus for winter preserving. The robins gave us a good deal of trouble and ate at least half of our berries. Either lines of rag scares or else some of those French garden windmills with looking-glass flashers on their arms are needed to scare off birds. We had a family of cats, but they did not seem to be on their job.

I had two canoes and a motor boat to paint and put into the lake, and a swim in the ocean to take every day, so that, aside from fighting weeds occasionally, garden operations in July were not very irksome. The hotframe glasses were stored away and the frame itself planted with young bush melon plants. With heat above and below, they throve mightily and set a lot of fruit, but neither here nor in the main garden did the melons do well. They rotted on the under side, while the whole fruit was still yet unripe. Next year I tried a patch of excelsior under each fruit, with good results.

July also brought a horde of plant lice on rose bushes, pear trees and grapes. These are a regular institution, as are black fleas and bugs on the potatoes, so we got after them with a brass sprayer loaded with kerosene emulsion and whale-oil soap. Also Bordeaux mixture for the fruit trees, following the regular spraying tables. It does not do to neglect these things nor to bewail your fate if the insects chew up your leaves, suck out the sap and create general havoc and desolation. A thorough spraying in a small garden like this one takes but an hour, and should be done every two weeks. The insects will tell you if it is not done often or thoroughly enough.

In August we had early corn, lima beans, plenty of little, tender carrots, young beets, turnips, stringless beans, peas and the last of the spinach. New plantings were always going on of lettuce, radishes, peas and stringless beans, of which I made a long, 75-foot border on the rear traverse path over the drain. This border yielded plenty of beans, but was a nuisance from the tendency of the bean plants to fall over into the path. It will not be repeated. Another border, of nasturtiums on each side of the main path, was a howling success. "Partner" put it in and drew from it an endless succession of nasturtium blooms until late December. Indeed, our floral display was beginning to attract notice. The wall of dahlias had done their duty right manfully, and were now filling the gaps betwen the peach trees, with a topping of wonderfully variegated blooms — scarlets, maroons, lavenders, whites, yellows—a sight to behold! The

front border of pansies had been another delight all through June, and still had blossoms until August, though in not such profusion.

We now had more time for the æsthetic features that every well-designed garden should have—rose arches, a back trellis, rose and grape trellisses. He who would be a gardener must also be somewhat of a carpenter, unless he is one of those unfortunate creatures who "have" things done for them by the mere act of waving a five-dollar bill about in the air. Such rob themselves of their rightful pleasures as much as if they hired an Italian to run their garden for them. Both double and single hairpin rose arches are easy to make. You need some ¾" x ⅞" yellow pine stock sixteen feet long, straight-grained and free from knots and checks, also "dressed four sides," a mill term, meaning planed smooth on all sides. Beginning at the middle of your stick, saw cuts for 2½ feet each way three-quarters through the wood, making a cut at every inch. The stick will now bend readily into an arch about three feet wide without requiring steaming. Put the feet about a foot into the ground and paint white or green, according to the color scheme of your garden. To make a double arch, plant two hairpins about a foot apart, side by side, and join with cross pieces at every foot around the arch and up both sides. These cross pieces ought to be about twenty inches long to give a pretty overlap, and must be screwed in place, as the arch will not stand much nailing. We put a double arch at the garden gate and single arches at ends of paths, etc., growing a pair of rambler roses over each arch and using both Dorothy Perkins and Crimson Rambler roses.

For rose and grape trellises on the walls of the house I used 1⅜" x 1⅜" yellow pine stock, making various forms of vertical and horizontal ladder trellises, uprights and horizontals being about two feet six inches apart. The whole east wall of the house is now covered with Dorothy Perkins (pink), Crimson (red), and Philadelphia (large red) ramblers, besides four Niagara white grape vines, which have grown twenty feet long since planting two years ago.

We used up a lot of this square stock in the tomato and grape trellises and for dahlia stakes. Starting with nine dahlia roots (a tuber like a sweet potato) the first year, we dug up a peach basket full of them at the end of the season, enough to fill, by dividing the clusters of tubers, the five 10-foot beds between the peach trees. At the end of the next season, in the Great December Dahlia Digging, we had over a bushel of them, and had to clear more land to find a place for the "dam-dahlias".

Now, every dahlia needs its own stake or it will tumble over and be a disgrace at the first severe thunderstorm, so, at ten cents a stake, as bought from the florist's, the increase in our dahlias bade fair to bankrupt the establishment. We took

refuge in stakes made from 1" mill stock, four feet long and driven into the tarth a foot.

My back fence cost $22 for five fifteen-foot bays, including posts and paint. It was, in effect, an open lattice, 8" x 18", with a 12" foot-board and a 4" top running-board. The posts were 4" x 4", 8 feet long, 1½ feet in the ground, and the lattice ¼" x 1¼", nailed to an interior frame 1" cove moulding. I wanted an ornamental background for the garden, something to grow roses on and set off my currant bushes, something to differentiate the garden from the wall of forest behind it. The photographs tell about how we succeeded. I fussed with it odd times during September and finished it in three afternoons' work, besides a number of morning hours before business.

The garden that had been a flat fizzle the year before turned out a screaming success this year, even with none of its fruit trees bearing, except a few raspberry stalks. The 10 to 4 o'clock sunlight was just right, indeed many people build a windbreak on the north and west sides of a garden to shut off north winds and afternoon sun, that scorching heat that wilts plants around 4 o'clock when the summer day is hottest. I had proved that my problem was a soil and drainage one; that I had plenty of sun, enough to grow anything; and a trip across the State in May and September showed that I was ahead of the average farm truck garden—few, indeed, could show corn eight feet high in mid-July! So I began to cast longing eyes at my remaining uncleared forest land, and smoked many pipes in the woods on the site of the future barn and chicken house, the green-house that I had promised myself for twenty years, and the pergolas which would flank it, covered with Delaware and Concord grapes.

The principal trouble with my garden for this season had been that there was not enough of anything. It had turned in about $130 worth of green groceries in six months, but we had put up nothing for the winter—no preserves, no winter vegetables, no green vegetables salted down in crocks in the good, old way. I wanted more land, and before leaving for my annual hunting trip in the West, late in September I engaged a laborer to take out all the blazed trees on a strip of forest to the west, and to grub up all the roots and bushes on it.

Editor's Note.—The reader who followed Mr. Miller's work in the March issue of HOUSE AND GARDEN, *and who has read this record of the second year, will learn a secret about gardening—that success is rarely attained the first season, especially by the amateur. A garden is a gilt-edge bond, but Nature doesn't pay a big dividend the first year, nor sometimes even the second, but when she pays, she pays well.*

Landscape Gardening on a Small Place

(*Continued from page 257*)

pink annual *phlox Drummondi* continues to bloom late into aster time, and calendulas are still fresh when the last chrysanthemum has faded.

Succession of bloom, color harmony and arrangement are subtly interwoven. Thus analyzed it illustrates the difficulties and pleasures in designing the perfect garden. It makes clear the reason for many failures, the source of many delights in garden making.

It is as easy to enumerate the flowers planted in the garden as it is hard to describe the elusive effects that are attained. It is as simple to explain the underlying principles of the garden's composition as it is difficult to analyze its charm.

A flower garden is a transitory, evanescent thing. Without constant, patient and intelligent care the whole charm of a garden like this one, dependent on so many interrelated details, is lost in a year's time. This garden has the monthly supervision of the designer. This means not only that she can see that it is kept up to the color scheme and arrangement as she devised it; that she can foretell and forewarn lapses of bloom, winter failures and seasonal mishaps, but that she can rearrange and complete, substitute and devise new color effects in minor details which will give new interest to the garden without disturbing its old vigor and its stable, constant arrangement.

The oval is box bordered, and then girt by a ten-foot wide strip of gravel. Although the plan of the entire layout had been carefully studied beforehand, we had been, throughout the long and minute inspection of the garden, altogether unconscious of the fact that this gravel strip was the turn-around. A turn-around is so much a matter for practical consideration, a flower garden is so much a striving for an ideal, that the two seem antagonistic. The harmonizing of these two opposing factors strikes not only a clever and original note in garden composition, but shows a serious understanding of garden art.

Laundry yards are even more incongruous to flower gardens. With only a little space available, the vine-clad lattice screen and groups of Arborvitæ trees hide the close proximity of drying linens which, no matter how fresh and clean, are not in harmony with flower gardens.

In developing the principal feature of a place there is often a possibility of combining with it a number of secluded scenes of a special character. Attached to the side of this wide, shallow lot is a narrow strip of sloping land which lends itself to such use. Subordinated to the main garden it must still be related to it. One of its long paths is a continuation of the longer axis of the main garden. The

rose arch, which acts as entrance to it, frames a long vista down the path.

This minor garden is as informal and unsymmetrical in design and planting as the other garden is formal and symmetrical. It is left to the lax attention of odd moments.

Japanese quinces and blush roses, old-fashioned sweet-scented shrub (*Calycanthus floridus*) and bush honeysuckles, fragrant mock oranges and weigelas are scattered through the ample beds to obstruct the view across them. Many flowers grow rampant in the borders and encroach upon the paths with their spreading foliage.

There are hepaticas, wind flowers, bloodroots and other spring wild flowers. There are snowdrops and lilies-of-the-valley, double buttercups and snow-in-summer. There are spring bulbs, narcissus and tulips, Spanish iris and *Fritillaria Meleagris,* the speckled Guinea-hen flower. There are summer bulbs, the gold-banded lilies, pure white Madonna lilies, nodding, Japanese lilies and brilliant tiger lilies. There are many-colored gladioli.

A few Oriental poppies blaze forth their scarlet all alone amid dark-green foliage. *Lychnis* and *Monarda; Heuchera,* the Coral bells, and *Lobelia,* the Cardinal flower; each has a special place where its color will not hurt more delicate shades or be hurt by them.

There are delicate flowers, like *Gypsophila, galium* and statice, tropical-looking plants like Yuccas, and heavy-leafed Funkias.

There are all kinds of campanulas, harebells, bell flowers and peach bells. There are all kinds of spiked flowers, pyramidal foxgloves, spires of larkspurs and monk's-hoods, old-fashioned hollyhocks and coarse-leafed *Physostegia,* with spikes of gaping flowers, some purple, some lilac, some white. There are sturdy, blue Anchusas, decorative Shasta daisies, yellow anthemis and luxuriant phlox. There are feathery plumes of *Thalictuum,* the meadow rue and the odd amethyst sea holly, with blue thistle-like globes on blue stems, with spiny, blue-green foliage.

There are summer wild flowers, orange milkweed from sandy roadsides, white *Eupatoriums* from the fields, strong, yellow mulleins from stony hillsides, and delicate evening primroses.

There are all kinds of annuals, *Ageratum* and *Scabiosa,* white *petunias* and blue *Nigella,* heliotrope and cosmos, purple pansies and brilliant orange zinnias, pink annual larkspur and salmon-pink annual phlox, lemon-yellow and orange marigolds and mignonette, snapdragons of delicate cream and pink rose and lovely scented stocks.

Large, white Boltonia asteroides, tall, reddish-purple New England asters, sturdy, yellow Heleniums make strong autumn bloom.

Pots of tender flowers, sweet-smelling lemon verbena and rose-leaved geranium are plunged in the ground.

It is a place for old-fashioned plants and favorites, flowers of odd colors and curious shapes. It is a medley of color, a spot full of fragrance. Little surprises are at every turn, unexpected flowers are found in hidden corners; there are little blind paths where steps have to be retraced through flower tangles. It has absorbed in a very short time the indescribable, old-fashioned quality of the Colonial gardens, of which it was to be a freely rendered replica.

New Use for Old Plants

(*Continued from page 262*)

and attracts the usual notice—or lack of notice—that such planting does. But if these same plants are grown so that they attain an unusual size and an increased number of flowers, then the element of novelty creeps in and the bed is something more than just a bed of geraniums.

There are dozens of hardy plants that can be used in the house. A few that might be suggested are *Aquilegea, Arabis, Asperula odorata, Trollius europeus, Cerastium tormentosum, phlox subulata.* These are both suitable for the inside and outside. The plants should be small. If you don't happen to have a stock, grow them from seed, sowing in the early part of July and potting when of good size, and winter them in a coldframe or pit. Take them out in the spring and start them into growth at your window. If you have a coldframe, give them their start there, since they will come along tougher than if brought into the house at once.

For larger plants, such as the *Campanulas calacanthema,* foxgloves, *Veronicas spicata,* anemone, Queen Charlotte, and the like, which can be used for veranda ornaments, go out into the border and dig the plants up early and put them in large pots and place them on your steps.

Large clumps of trollius, although about to come into flower, can be dug up and potted without any danger of losing them, provided a thorough soaking is given when first potted. The same is true of the campanula. They are easily grown from seed or the old plants can be dug up without trouble. A large tub of these flowers makes an attractive and unusual sight. They can be potted singly, but when massed they are more effective.

The use of hardy plants on the verandah is with the idea of succession, allowing one kind to remain while the flowers look fresh, and then substituting another and later flowering kind. By this process the season is materially lengthened.

Returning to the interior use, it would be a good idea to make a small window box about four by three deep and wide and the length of the window and plunge the different plants into these boxes. The *Aquilegea,* particularly, thrives under such treatment, and the plants send up masses of their wonderfully beautiful flowers, lasting for weeks.

It is not so much what you use, but the way you use it, that is important. Remember that sunlight is essential, and plenty of water must be given, for a severe drying-out will end the possibilities.

Trying out plants on this plan is a profitable operation, however viewed, for nothing is lost. Even should the inside show prove a failure, the stock can be put out in the garden, where it will flower the next season. Once the prejudice against using hardy plants in such a way is overcome and the real possibilities are appreciated, there is no limit to the decorative effects that may be achieved by using them.

A House Made for Sunlight

(*Continued from page 265*)

9 feet in height. Not satisfied in using concrete and cement within the home, this builder employed it in the construction of the surrounding features. The well-equipped garage and the driveway are of this material, as are the brooder and incubator houses, the chicken sheds, the standard of the clothes-drying rack and the fence which enclosed two rear sides of this property. The two pretty pergolas are also made entirely of concrete, these being so located as to "shut off" the view of the back yard from the streets. On the outside of these, rose vines are growing, while on the inside are grape vines.

The result of much and careful thought is this house. Planned right and built right, and, being on Spanish lines, it is bound to be in "style" for years to come, for that type of architecture will probably always be appropriate in Southern California.

The subject has often been discussed, and still is a moot point, whether or not this Spanish type of bungalow is adaptable to other localities. For it has even been hinted that from the Spanish will eventually be created the American style of architecture. From the point of feasibility, however, there is no doubt but that for California this type is the best, the atmosphere conspiring to enhance the appearances and the climate eliminating to a great extent the problems of heating. For the other sections of the country the Spanish bungalow can be adapted, even to the patio, and an all-year house made that, with proper heat radiation, would make living in it easy and comfortable. It is a democratic style, and hence peculiarly American.

But whatever the style of house, there is no doubt but that its construction of monolithic reinforced concrete is quite adaptable to any region, and should be given serious consideration by the prospective house builder. The material is plastic, capable of adornment and tinting, fireproof, timeproof and damp-proof, if properly treated. Moreover, if one combines with the use of concrete the use of steel door and window frames and sash set flush with the wall, there is still further eliminated the possibilities of fire, and

work is saved for those who have to keep clean and in order the insides of the house.

At all events, the reader can gain much from a close study of this "House Made for Sunlight," for here are features that can readily be adapted to houses anywhere, features that will prove their worth both in serviceableness and decorative value.

Living Lawns

(*Continued from page 261*)

do not burn the young grass, but they protect it from extremes of temperature and assist to conserve moisture. I cannot too strongly recommend the use of these top dressings, as they supply nitrogen to the young grass during the most critical period of its existence, and the effect that they have on its growth is extraordinary.

When the young grass is about 1½ inches high it should be rolled with a light roller, and when about 2 inches high it is ready to be cut, which may be done either with a freely running machine, set rather high, or with scythes. It is most important to regularly mow and roll the young grass from the very start, otherwise it will grow long and thin, instead of tillering out and covering the ground. Any thin or bare places should be repaired as soon as noticed by very carefully loosening the surface soil, sowing a handful of seed, covering, and rolling in the usual manner.

—W. R. Gilbert.

Much of the success with a lawn depends, of course, on the kind of seed used, for there is just as much individuality in a plant produced from a grass seed as in the choicest plant in a greenhouse. One kind of grass seed will produce a low-growing plant while another grows high; one wants a moist situation, another a dry one; some will germinate in the shade, others will not, and so on through the list.

Kentucky Blue Grass—Fine for lawns; grows slowly but vigorously almost everywhere but on acid soil.

Red Top—Shows results more quickly than blue grass; will thrive on a sandy soil; fine in combination with blue grass.

English Rye Grass—Grows quickly and shows almost immediate results; good to combine with the slow-growing blue grass.

Various-leaved Fescue—Good for shady and moist places.

Rhode Island Bent—Has a creeping habit; good for putting-greens, sandy soils.

Creeping Bent—Creeping habit; good for sandy places and to bind banks or sloping places. Combined with Rhode Island bent for putting-greens.

Crested Dog's-tail—Forms a low and compact sward; good for slopes and shady places.

Wood Meadow Grass—Good for shady places; is very hardy.

Red Fescue—Thrives on poor soils and gravelly banks.

White Clover—Good for slopes; not to be recommended for a lawn.

Sheep Fescue—Good for light, dry soils.

On banks and terraces it is preferable to use sods rather than seeding. The sods can be held in place with wooden pegs driven through them seven or eight inches into the bank. Over this work scatter some seed and give a light dressing of loam; then pound the whole to an even surface. When the bank is too steep to hold the sods pegged in this way, they should be piled upon each other horizontally, so that the ends will form the surface of the bank. This effects the double purpose of creating a permanent sward and also a depth of ten inches of loam upon which it can feed.

A lawn that has been properly made will not suffer if it is not given a yearly dressing, for it will have sufficient food supply in the ground to keep it going for years.

Strange as it may seem, many good lawns have been ruined by being given a heavy application of manure year after year. When a top dressing is necessary on soil that is good, Canada hardwood ashes and bone meal will supply all the nourishment; may be washed into the soil.

The Canada hardwood ashes, as usually found in the market, contain from 1 to 5 per cent of potash, but to get the results you are looking for, the ashes should contain from 7 to 9 per cent of potash. In purchasing this fertilizer in large quantities demand a guaranteed analysis, otherwise you are liable to get something little better than what you take out of your stove, and wholly useless for lawn purposes. There are good ashes on the market, and they can be had if one goes after them vigorously enough and gives some indication of a knowledge of what good ashes are.

When it is not possible to get what you are looking for, mix muriate of potash with finely sifted loam, and spread it broadcast over the grass. This treatment is always efficacious, as you are absolutely sure of getting what is necessary for the land.

Many prefer to use a top dressing of manure, regardless of conditions. It is sure to bring more or less weeds. If you decide to use it, however, get the thoroughly decomposed kind, as this means a minimum of weeds. When manure is used for a top dressing, do not get it on too thick, and do not leave it too long on the grass in the spring. Nothing is to be gained by either of these mistakes and much killing is apt to result.

If it is possible for you to get good sheep manure, use that by all means. It is efficient, cleanly, and produces very few weeds. It is best used at the rate of about a ton to the acre.

Nitrate of soda is a very vigorous stimulant and produces quick results. It is economical, requiring but small quantities to cover large areas. Spread broadcast,

about 175 pounds to the acre; or, dissolved, three pounds to every 100 gallons of water. The dry application should be made always before a rainstorm, otherwise much burning is apt to result to the grass. For an occasional application it is all right to use this, but for the year-in-and-year-out fertilizer it should be alternated with other things.

Humus is invaluable for use on lawns and golf courses as a top dressing and also when it is incorporated into the soil before the seeding is done. On clay soils, besides being valuable as a plant food, it helps greatly in surface drainage, which is, of course, absolutely necessary for the development of the short-rooted dwarf grasses desirable on golf courses. On sandy soils, which are usually deficient in plant food, it provides a very lasting food for the grasses.

Even if you paid a thousand dollars a bushel for your grass seed, and then spent as much more on the preparation of your land, you could not escape having weeds.

The thing to do when you have them is to get rid of them, and this is accomplished only by getting right after them with a persistence proportionate to the abundance of the weeds. The knife is the only real weapon for this. After digging out your weeds, sow in grass seed with the idea of making the grass grow so thick that there will be no place for the weeds to creep in. Dandelions and plantains are simple matters that can be handled easily, but where crab grass shows up there is work ahead to get the best of it. It is a destroyer of the first rank, an annual that seeds itself each year and kills out under the first frost, leaving great, bald spaces in the lawn to show where it has been. Even after it has been killed by the frost its baneful influence is not ended, for it has spread broadcast its seeds for the next year's crop.

When you find it, dig it out. This is the only way to conquer it. Set the blades of the mower low, and after dragging the grass up with a rake, run the machine over it; and this should be done early in the year, before July.

On newly-made lawns the weeds are easily removed, and they should be carefully watched so as not to allow them to get too far ahead. Chickweed is almost as bad as crab grass, and when you find the combination, crab grass and chickweed, the simplest solution is to spade or plow the place up in the fall and leave it exposed for the winter.

For the broad-leaved varieties of weeds there is a preparation of what is called sand on the market. Sprinkle it on the weeds, and within an hour afterwards they have shriveled and turned black.

Very often earthworms become disfiguring on a grass plot. Where there are many present it is an indication that the earth is in poor condition, compacted, and needing humus. An application of strong lime water will drive many to the surface, where they can be swept up; or a heavy

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rolling with a 1,500-pound roller will do much to discourage them.

It is surprising how much damage a colony of ants can do on a lawn. They should be looked after the first time they are noticed, for they work rapidly, and the longer neglected the more difficult it is to eradicate them.

There are many remedies recommended, but the best one lies in the use of bisulphide of carbon. This is very effective, but it has come into such common use that a word of caution should be given as to its handling. It is very volatile and, when near flame, powerfully explosive, and should be handled with great care. Pour it into the runways of the ants, and then throw over these a mat. The fumes will speedily kill all the ants. A better way, however, is to drive a stick into the ground in several places where the colony is located, and in these holes pour the carbon, afterwards plugging the holes up tightly.

Moles are frequently found on lawns, but they are not serious, because they can be easily controlled by heavily rolling or by traps made to catch them. Where there is a suspicion of the presence of moles, no time should be lost in getting after them. They sometimes work for a long time before their destructive borings are evident, and then it will take much labor to get ahead of them. Keep the heavy roller going as a preventive.—Luke J. Doogue.

The garden at the seashore is usually an afterthought, but often these afterthought gardens can be a success, as you will discover in the May HOUSE AND GARDEN.

COUNTRY HOUSES. By Aymar Embury II. Doubleday, Page & Co. $3.00.

Every man has in his heart the vision of the house that he will build some day. A few of us are able eventually to attain that vision and see our dream crystallized into permanent fabric; as for the remainder—a plausible majority—they buy picture books of houses and go on with the dream, which is true wisdom. Such a picture book is this volume showing the work of Aymar Embury II. Though holding firm to the best traditions of the Colonial and Dutch Colonial craftsman-builders, he has gone forward in the incorporation of exquisite detail and ingenious planning, so that his houses may be said to represent the best of American domestic architecture of the day. Of each house are shown the plans, and exterior and interior views. The costs range from modest structures of $5,000 or $6,000 to the more elaborate country home. Several of the pictures have been reproduced in HOUSE AND GARDEN, bringing from the readers a deserved measure of interest; others are new; but all are worth the seeing and the knowing, even if one belong to that plausible majority which never attains the real house, but has to content itself with looking at pictures.

The Lawn Mower—Its Proper Selection for Various Conditions

THE creation of the lawn mower was entirely due to an Englishman—Edward Budding—a native of Gloucestershire, England. He had considerable ability as a draughtsman, mechanic and inventor. It was while he was superintendent for a large woolen manufacturer in Dursley, England, that the cloth-clipping machine used in the manufacture of woolen goods suggested to him the possibility of inventing a machine for clipping grass. He successfully worked out his idea, and on October 25, 1830, was granted a patent on the first lawn mower.

A roller mower, with demountable cutter and steel-carrying wheels, adaptable to the small place

It was of a pattern now known as the "Roller" mower. A large roller is used instead of drive wheels; it operates a gear which causes the movable blades to revolve against the cutting knife and also helps to keep the lawn smooth and free from bumps.

Since that day, manufacturers have realized that different conditions required different machines, and as a result the buyer of the present time can obtain a machine peculiarly adapted to his requirements. For instance, all mowers are not suitable for terraces having an abrupt slope, and machines used on golf greens or tennis courts which are mowed daily would be unsatisfactory for the average lawn mowed weekly.

The small lawn or grass plot, so common to the private dwellings in most cities, where all that can be had are small patches of grass in the front and back yards, requires a small, light-weight mower of about 12″ cut, having direct-drive internal gears, 8″ wheels, four revolving blades and adjustable, split-bronze bearings. A medium-priced machine is all that is required, because it receives so little

wear that it will last for years, and the high-priced machines are too large and cumbersome for this purpose. If the plot is very small and enclosed, a lawn trimmer is more satisfactory than a regular mower, because on one side the driving wheel is omitted, allowing the blades to cut close to a wall or fence, eliminating all trimming with grass shears, which is a very tedious operation.

The suburban lawn not over 100 feet by 100 feet requires a high-grade mover having driving wheels 10″ or more in diameter, with four blades if mowed weekly or not so often; with five blades if mowed twice weekly or more often, in which case it is essential to have the lawn well rolled, eliminating all unevenness. For this size lawn a 16″ to 18″ cut should be used, even 20″ cut would be advisable where the lawn is perfectly smooth and free from bushes and flowers. Do not use a smaller machine unless the lawn is so encumbered with flower beds and bushes that a larger machine could not easily be steered around them.

The large country estate requires a high-grade motor mower, such as this used on the property of John D. Rockefeller

The plot over 100 feet by 100 feet requires a high-grade mower having driving wheels 10″ or more in diameter and a cut of 18″ to 20″ and four or five blades. On large lawns, roller mowers having 18″ or 20″ cut with driving rollers instead of wheels are very successful, and may be used on smooth lawns with six blades, which, owing to the great speed of the revolving cutter, leaves the lawn exceptionally smooth and velvety. The rollers keep the grass moderately rolled, keeping down ant hills, etc.

The large country-estate lawn or golf course requires high-grade motor or horse mowing machines, probably both if the estate is very large and a portion of it is too hilly for the motor. The best type large motor mower, weighing about 2,300 pounds, having demountable cutter unit, described later, and seat for operator, is the ideal machine, and should be used

wherever practicable. They are about 8 feet long by 5 feet wide over all, the driving rollers are 21″ in diameter, and the width of cut is 40″. The high speed of the revolving cutter and the heavy weight of the roller make it all that can be desired for the finest cutting and rolling of the lawn. The high-power motor enables it to cut successfully on hills not over 20 per cent grade. These machines will do the work of three horse mowers at little more than the cost of operating one.

If the size of the lawn be such as to not warrant the purchase of a large motor mower, a small mower weighing about 1,000 pounds will accomplish wonderful results with great speed, and is so far ahead of the horse machine (having a heavier roller and obviating hoof marks when ground is soft) that it is more than worth the difference in price. It has the same width of cut as the large motor and horse mowers, namely, 40″, and takes up no more room than the horse mower with the shafts removed. It cuts around shrubbery, trees, etc., with greater ease than any other mower, excepting a hand machine. This machine speeds up to about four miles an hour, and will operate successfully on 25 per cent grades. Demountable cutter units, described later, are a very important feature of this type of machine, as is also the lawn sweeper, which can be quickly substituted in place of the cutting mechanism and easily accomplish the work of seven men with rakes.

If for some reason a horse machine is preferred, one from 30″ to 40″ cut having four blades if for coarse grass on uneven ground, or six blades if for fine grass where ground is fairly even), should be used. In purchasing this type of machine, be sure to obtain one having a demountable cutter unit, as it avoids the necessity of shipping the entire machine to the factory should it require adjustment. Extra cutter units may be purchased and kept on hand to insure against the possibility of the machine being put out of commission in the height of the grass-cutting season. This feature is very important and should not be overlooked. If conditions require a narrower cut than 30″, a smaller horse mower commonly known as the "pony" type may be had, having a cut of 25″. These can also be procured with four or six blades for general use, or nine blades for putting or bowling greens. Boots should always be worn by horses doing this work.

The "pony" horse mower described above is one of the best mowers for putting and bowling greens and other greens where exceptionally fine cutting is required. The horse should be supplied with boots when using this machine. If a hand machine is desired, a roller mower having cut from 16″ to 20″ and demountable cutter unit, with six blades, should be used. The latest types of these machines

are supplied with two steel carrying wheels about 14″ in diameter, which are used to transport the mower easily from place to place and are only operative when the machine is turned upside down. The demountable cutter units are not only a convenience when it is necessary to have cutters sharpened or adjusted, but, being independent and a separate part of the machine, they are not affected by any twisting or straining to which the main frame may be subjected in passing over rough or uneven ground.

Roller mowers were recommended in the foregoing for use in the 18″ and 20″ sizes for large lawns. They can also be had in smaller sizes, and they are fine for mowing and trimming at the same time: however, the rollers on the smaller sizes are not weighty enough to be of material use as rollers, but are too heavy to be handled as easily as the mowers having the wheel drive, hence the smaller sizes are only advised in cases where no grades are encountered and no lifting necessary.

Lawn trimmers and edgers are great time and labor savers. They are fitted with a guard covering the revolving cutter, which protects the flowers when trimming around the flower beds. When trimming is completed, the machine is turned completely over and the revolving cutter edges the turf perfectly.

Adjustable bronze bearings require the least attention, but ball-bearings are very satisfactory in the highest grade machines. Do not use a ball-bearing machine unless of the highest quality, because in the cheaper machines the bearings are not properly protected and readily become clogged with grit, which wears the balls unevenly, causing the blades to vibrate as they revolve. Even the balls in high-grade machines will become rough if precaution is not used to keep them well lubricated at all times.

If the lawn is terraced, be sure to obtain a machine having a terrace attachment. This usually consists of an extra pair of lugs on which to attach the handle, or an extra pair of holes in handle irons, either arrangement allowing the handles to drop completely to the ground, so that the tipping up of the machine as it runs down the terrace will not cause the handles to be lifted out of the hands of the operator. If terrace is a gradual slope, either internal, direct-drive gearing or external, rear-drive gearing (train of gears) may be used, but if the slope is abrupt only an internal geared machine should be used, as the distance between the drive wheels and the roller of the external geared machine is so great that the blades, which are set back toward the roller, will clip off the top of the terrace as the machine starts to descend, and leave the grass "long" at the bottom of the terrace just as it starts to run along the lower level.

Unless the grass is cut every day or two, in which event the cuttings shrivel

up and bow away, grass catchers should always be used. Raking tends to injure the grass, and should be avoided unless used in the form of a lawn cleaner, which is a system of three rapidly revolving rakes that pick up all sorts of litter, leaves, etc., in addition to the grass clippings, leaving the grass standing upright and free from foreign matter. The suction created by the revolving rakes clean the lawn not unlike the vacuum cleaner does the carpet. It is easy to operate, and with one man will accomplish more and better work than four men with hand rakes.—M. B. McKibben.

The Right Way to Grow Seed

(*Continued from page* 243)

are dead if they do not all come up at once.

Out of doors it is impossible to control the weather conditions, although by means of shelter the seedbed may be protected. Indoors the question of watering arises. It is very important to avoid soaking the soil until germination is an actual fact. The best way of all is to have the soil nicely moist at the start, and then, in the event of a fairly quick germination, no further watering will be required. A good plan is to cover the boxes, pans or pots with sheets of glass, admitting air daily. This protection prevents the soil from drying too rapidly. If, on the germination of the seed, it seems that the sowing has been too thick, it is an excellent plan to thin out at once. Of course, the half-developed plants will have to be thrown away, but it is worth while making the sacrifice, seeing that those which are left behind will be much more sturdy than would be the case if they grew for a week or two in a crowded condition.

As soon as the little plants appear on the scene plenty of light is of supreme importance. Making allowance for the shading which may be needful indoors from bright sunshine, young plants cannot be in too light a position. Without light, the green leaf cannot carry out its wonderful business of extracting the carbon from the atmosphere, but in another way a strong illumination is needful. In dark or in shady places plants tend to grow up towadds a lighter position; thus they become lanky weaklings which would never yield good results. Light has a retarding effect on actual growth, and thus plants in a light position are sturdy, with strong stems and an abundance of leaves. This augurs well for the future of the plant, and all gardeners should follow the advice of the books, and put their seedlings on the top shelf of the greenhouse. Young and delicate plants will want close watching under glass, especially in the bright days of spring. The sun at these times is very powerful, and unless a certain amount of protection is given a great deal of damage will result. Sheets of paper cast over the pots or pans are the handiest, seeing that these may be ad-

justed in a moment as the need arises. As the sun gets still more powerful it is a good plan to make the paper damp.

Sooner or later, in most cases, a time comes when transplanting has to be arranged. Wherever possible, whether in bed or border, it is an excellent plan to sow the seed in the position where the plant is to be. Much stronger specimens, as a rule, result from this method. In a great many cases, however, this cannot well be managed, and one is faced with the necessity of making a shift. A few hints on this point may usefully conclude this article. In the first place, always try to remove as much soil as possible with the little plant. Almost every root tip which is exposed to the air, even for a few minutes, is likely to die, and this will mean a great tax on the energies of the little plant before it can settle down in its new home. So much do some gardeners realize the importance of this point that in the case of many large seeds they sow these singly in thumb pots, out of which they can be turned without serious root disturbance. A small, flat piece of wood is very useful for lifting up a little wedge of soil with the roots of the plant. It is best to do the transplanting when the soil is in rather a specially damp state, as then the earth is not so likely to fall away from the roots. Do not keep the little plants out of the soil longer than is absolutely necessary. After putting them into the fresh position press the soil gently around the stem. It is a good thing to plant rather deeply; that is, well up to the first pair of true leaves. This will encourage a stocky growth. Now and again spindly seedlings may be improved if they are put deeply down into the soil. The first few days after transplanting are always rather critical in the life of the seedlings. The chief danger is that the specimen loses moisture more rapidly through its leaves than it can make good by root absorption. At this early stage the roots are still suffering from the shock of the removal. Transpiration from foliage is checked by protecting the plants, wherever this is possible, with glass shades. Where this cannot be arranged, as might be the case out of doors, pieces of paper propped up with sticks could be employed to shield the plants from the hot sun. As soon as all signs of drooping are at an end the shelters must be discarded, as once the plant is established, the more light and air it has the better.

In many instances an even better plan than the use of individual thumb pots is to use one of the varieties of ingenious combination flat and paper pots that are being shown. This flat is of strong wood with an inside collapsible crating of stiff paper, dividing it into a number of square compartments, and the bottom is a sheet of galvanized steel that also serves as a carrier. When the plants are grown all one has to do is to put out the bottom sheet and each plant drops from its com-

partment with sufficient soil compact to its roots. With these potting can be done at a bench in standing position, instead of having to get on your knees in frames. Other flats have a side piece that can be removed and the whole block of compartments pushed out on the work table. Amateurs can make a convenient propagating frame by using one of these detachable side flats, and after planting the seed or small plants, put it in a sheltered spot in the garden. Covering it with a pane of glass of suitable size, you have a perfect little hotbed frame.

Repelling the Pest Invasion

(*Continued from page 245*)

in April, Bordeaux mixture must be used as a fungicide. This may be mixed with the arsenate of lead and the two applied as one spray. Indeed, it is not a bad idea always to add Bordeaux to any other spray, whatever the latter may be—save the lime-sulphur solution, which is a fungicide in itself without the addition of anything else.

May adds the plant lice or aphids, which are likely to attack anything that grows, to the armies of the invading hosts. Also, it presents for our tender consideration the pleasant, slimy slug-worm—the young of a small, inoffensive appearing saw-fly, The former are sucking insects, the same as the scales; the latter, eating or chewing insects, as all "worms" are. The life-history of each is interesting, but is perhaps not quite so important to the defender of the garden as in the cases already dealt with. Briefly, however, I may say that the aphids generally hatch in early spring, about as the buds are bursting, or a little later; these "stem-mothers," as they are called, bear young in prodigious numbers, their offspring, in turn, giving birth to succeeding generations, up to a ninth and even an eleventh, according to some observers; while others declare their belief that there are *twenty* generations in a year!

Fortunately, aphids are as easily killed as they are multiplied; yet be not deluded in the treatment of them, for it is necessary to reach an aphid, actually, to kill it. Spraying directed against them cannot be too thorough—and I think I may say that no one yet has ever succeeded in annihilating them from an infested plant with one or two applications of the soapsuds commonly used. If it hits them, it will shrivel up their soft bodies in short order; but there are so many to be hit, and they are in such difficult places—under the leaves invariably, with the leaves curled over and around them because of their extraction of the plant juice—that one or two are bound to escape. Watch for them vigilantly, everywhere—and count upon spraying roses and the tender things which they favor as a place of residence, twice a week all summer through—and perhaps a third time, if the season particularly favors them. Being of the sucking class, only a contact poison, such as the scale requires, will destroy them. Poisons applied to the

plant for them to eat never get to their insides at all, for their bills reach fairly deep down into the tissue and they draw the juices from well below the danger line.

Slugs, on the other hand, are poisonable, just as the coddling moth and the curculio. Slugs eat, instead of drink. Indeed, they eat so energetically that we may hear them if they are very abundant, as the second brood sometimes is, in July! If you doubt it, go out and listen some time. A little faint sound like fine rain falling on leaves will reward such investigation—*if* the slugs are numerous. And this is, indeed, the chewing of the many tiny mouths. Late in May the egg laying is at its height, from then on a little way into June. Earlier eggs are laid, but it is supposed these do not hatch to any great extent owing to unfavorable weather conditions. About two weeks is required for incubation; then out comes the larva, nearly white, with a yellow-brown head, if it is a pear slug, and free at first from slime. Immediately this exudes, however, from the pear slug—the rose slug is without it—and it is shortly well coated and truly a "slug," eating away at the upper surface of the leaf.

It is not necessary to poison these creatures, for they are so soft-bodied that the soapsuds used against the aphids will usually finish them off as well. Some recommend only a strong spray of water to be thrown against rose bushes, but this I have never found to be sufficient to insure success. Arsenate of lead kills them, poisoning their food; but one objection to using this on ornamental growth is that it shows as a milky deposit on foliage and is therefore unsightly until a rain washes the sprayed plants. My own plan is to use the soapsuds on roses and any ornamental thing that may be troubled, but to let the arsenate of lead take care of them when they are present on other than ornamental growth.

June brings nothing new save the rose-bug—and he is impossible! This we might just as well acknowledge right at the start. Tough and resistent both inside and out, poison that can be applied without injury to the plant, either its leaves or its bloom, will work so slowly that he will have done his damage before death overtakes him. Moreover, there are such endless hordes of him, and he travels so readily that a plant freed from him to-day may be as thickly covered to-morrow as ever it was, with new recruits. Daily applications of arsenate would be necessary, to feed and kill off the daily newcomers.

Hand-picking in the rose garden, rigorously followed up every morning, early, during the six weeks or so that these beetles are in evidence, will insure comparative freedom from damage to flowers. But it is tedious work, for they hide cleverly in the very depths of flower and bud, and are not discovered without careful search nor dislodged without vicious

clawing resistance. Proper methods of cultivation are practically the only adequate means of fighting them, where their depredations extend to grapes and fruit trees and bushes generally. They breed more freely in light soil than in heavy, consequently gardens in such soil are almost sure to be greatly troubled by them. Orchardists plan trap plants about to draw them, anything having a white or light flower being attractive to them. If it is possible to discover just where they are breeding in a given locality, the ground may be saturated with kerosene-soap emulsion with fairly satisfactory results; this, of course, chokes off the larva as it draws near the surface to pupate, and if done in May will destroy great numbers.

July and August it is the same old story carried on. Sprayings for the second brood of the coddling moth are made in each month, while the weekly precautionary treatment against fungi, and the bi-weekly soapsuds bath to overcome aphids must be kept up as long as real summer weather lasts. Last year I sprayed my roses until late in September; and to insure healthy, vigorous, blooming plants I believe it is decidedly advisable. It is not a difficult task, when one is provided with the proper equipment and the ready-to-use sprays so thoroughly furnished by our friends, the dealers in things for the garden. Without much trouble spraying mixtures can be made at home. Those to use from April on should be mixed in the following proportions:

Arsenate of Lead—Three ounces crystallized arsenate of soda, 7 ounces crystallized acetate of lead, 10 gallons of water. Dissolve the crystals, each kind separately, in a small amount of water. The lead will dissolve more readily if the water is warm. Unite these, and reduce by adding the remainder of the water. A milky mixture will be the result, but straining will not be necessary if the poisons have been thoroughly dissolved and thoroughly stirred with the water. When combining with Bordeaux, use the latter in place of water, instead of clear water.

Bordeaux—One pound copper sulphate (blue vitriol or blue stone) to 1 gallon of water is the proportion for the copper sulphate stock. As much may be made as desired, keeping to this. Prepare and keep in a wooden or porcelain vessel. When needed, add milk of lime made by slaking 2 pounds of lime in 17 gallons of water, to each gallon of the copper sulphate stock. The mixture must not be made till needed, as it loses strength if united and allowed to stand.

Potassium Sulphate—Three pounds potash, 3½ pounds sulphur (finely ground), 3 ounces salt, 1 gallon water. Mix the potash, sulphur and salt together in a porcelain vessel, with a part of the water. Chemical action will make the mixture boil. Add the remainder of the water. This is the stock, to be put away and kept carefully covered. When the

spraying is to be done, dilute 1 part of stock with 100 parts of water, and use. For prompt application, it is simpler to dissolve *potassium sulphide* (liver of sulphur from the chemists) in water, using ½ ounce to a gallon. This solution will not retain its strength, however, and must therefore only be prepared as needed.

Soapsuds—Two pounds whale-oil soap to 1 gallon water. Dissolve the soap in the water by heating to boiling point, and put away for stock. Dilute 1 part stock with 5 parts water for use against aphids, slugs, etc. Common laundry soap also makes an effective wash, ¼ cake to 4 gallons water, used hot, being the proportion.

All of the above, save the last, are obtainable from first-class dealers, in forms to be depended upon and with full directions for applying. It is quite unnecessary to make them, if one prefers to buy ready mixed.

Your Saturday Afternoon Garden

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may be made to help in the work—dibbles, transplanting trowels, the transplanting hoe, and so forth. The various kinds of plants are set at different distances, shown in any planting table (see planting table in this issue). If the plants are large and succulent the outside leaves should be cut back a third or more, so as to make them more convenient to handle and to keep them from wilting in the sun.

Unless the ground is very rich it is usually best to put a little manure or fertilizer in the "hill," or the place where the plant is to be set out. It may be quickly done either by marking off the rows both ways and digging a small hole with hoe or trowel at each intersection, adding the compost and covering it up, making a mark with the head of the hoe to show exactly where it is, or by furrowing out the rows one way with a hoe attachment on the wheel-hoe, cross-marking, dropping the compost and covering it again with the wheel-hoe. Where several hundred plants are to be set the latter method will usually save some time. In setting the plants, get them well down into the soil, but not deep enough to cover the crowns of such things as lettuce, beets, strawberries or celery. Get them in as firmly as possible. Some planters make a practice of walking back over each row and pressing the plants in still more firmly with the feet. If the plants have to be set out in hot, bright weather it is not a difficult matter to shade each plant with a sheet of newspaper, which can be left on for two or three days.

The Seed Border.—One of the tasks which should be attended to early in your garden making—the third or fourth Saturday afternoon of this month, if you are maintaining a Saturday afternoon garden—is to start seeds of things which you will want for transplanting. This will include such plants as cabbage and cauliflower for fall use, leek, summer lettuce, late celery, and so forth. Ordinarily, this

work, if it is not overlooked altogether, is done by planting the seeds of the several things here and there about the garden where space and opportunity offer. An easier way is to have a small plot devoted exclusively to this purpose, where the plants, being all in one place, can be more effectively watched. If the garden is near the house and convenient to the water supply, the seed-bed may be made up in one corner of it. An empty hotbed or cold-frame will make an ideal spot, or, if neither of these conditions is available, the seedbed may be made on the south side of a fence or wall or the side of a house or shed, which will protect it from the north, and where it can be handily managed. One of the essentials for it is good drainage; and, unless the soil is naturally dry and light enough, a few wheelbarrow loads of light loam should be added to the surface—after it is spaded up. A board set on edge along the front will hold it in place and make a neat-looking job. Such a seedbed can be managed about the same way as a frame, and the plants watched daily, protected from insects and thinned out as soon as they are large enough, and watered when necessary. By the time they are needed in the garden they will be strong, thrifty plants conveniently situated for taking out and transplanting. Very often when they are planted in the garden, and sometimes even when they are in a specially prepared seedbed, the plants are allowed to remain too close together, with the consequence that they crowd each other and grow up tall and spindling. The rows should be made from 6″ to 12″ apart, according to the size of the seed and the size you expect to have the plants, before shifting them to a permanent position. Another important job to be done late this month, some Saturday afternoon, about four to six weeks before it is safe to plant corn in your neighborhood, is to make use of paper pots or dirt bands to start early hills of cucumbers, melons, lima beans, and, if you wish the earliest sweet corn you ever had, some hills of this also. Dirt bands are simply paper pots without any bottoms. They may be packed into a flat which will furnish the bottoms or may be placed on newspapers. The former method has many advantages, as a number at a time may be handled and carried to the field without disturbing them. The 4″ or 5″ size should be used. Fill with light, rich compost, water thoroughly, and after they have been drained out enough to be friable again, plant in each pot a number of seeds (about half or two-thirds as many as you would put into a hill out of doors of the variety being planted). They should be given a suitable temperature in a frame—the corn, of course, will not require as much heat as others—and protected from insects. The beans and melons should be thinned out to two or three plants a hill when well up.

The Dahlia—A Flower That Came Back

(*Continued from page 249*)

which case no growth will start. All the single dahlias, too, are easily raised from seed sown in the hotbeds about March 1st, and when so started the period of bloom is greatly increased. By the early start thus obtained the dahlias raised from seed are particularly fine in form and color. Dormant tubers of double dahlias can be started about April 1st in a coldframe.

When the plant is dead, remove the root; and after drying it store in some cool place until time for the next planting

The chief use of seeds is the production of new varieties. Seeds are also used by those who chiefly desire a mass of color and are not particularly desirous of finely formed blooms. If planted early enough indoors and transplanted to the open as soon as safe, fine masses of color can be secured before frost, and the roots of the more desirable kinds can be saved, and will give even better results the next season.

The dahlia flourishes best in deep, rich, moist soil, although very good results can be had on sandy soil, provided plant food and moisture are furnished. Clay should be avoided. The soil is not so important except in its ability to hold moisture during severe draughts.

Dahlias are easily destroyed by high winds unless they are given a protected position. They need plenty of air and sunlight for best results. In shaded, close, airless quarters the growth is sappy and the flowers are poorly colored. Moreover, if the best effects are to be had, they should not be planted in clumps, as their brilliance of coloring can often prove a jarring note in the garden scheme.

It is always best to broadcast the manure and plow or spade it into the soil; if the manure is not well decomposed, thorough spading is necessary. On heavy clay or gravelly soils, loose, coarse manure may be used, but on light or sandy soils, manure should always be fine and well rotted. Commercial fertilizers are also largely used, and are valuable when used in connection with manure.

Although there is a diversity of opinion as to the proper time to plant dahlias, it is always best to plant early—about two weeks before danger of frost is over. If small roots or green plants are used, do

not set out until later. A good rule to follow would be to plant small roots and green plants as soon as the danger from frosts is passed, and large roots about three weeks earlier.

During its early stage of development, the dahlia grows very rapidly, and should be kept thoroughly tilled. But, while deep tillage is beneficial during the early stages of development, it is almost fatal to the production of flowers if practiced after the plants come into bloom. Therefore, when the plants commence to bloom, cease deep tillage and stir the soil to the depth of one to three inches only, but stir it often, and never allow the surface to become hard and baked. This will not only prevent excessive evaporation of moisture and keep the undersoil cool and moist, but will also prevent the destruction of immense quantities of feeding roots.

As long as the roots supply more nourishment than is needed to support the plant, both the plant and the flowers increase in size and beauty; but as the supply gradually becomes exhausted the plants cease growing and the flowers become much smaller. This condition is generally called "bloomed out," but it is really "starved out," and can easily be prevented if the proper attention is given to the plants. As soon as the flowers commence to grow smaller, broadcast around each plant a small handful of pure bone meal and nitrate of soda, in proportion four parts bone to one part soda, and carefully work it into the soil.

In planting the roots or tubers, place them on their sides with the eye as near the bottom as possible; cover only two to three inches deep. As soon as the shoots appear, remove all but the strongest one, and pinch out the center of that one as soon as two or three pairs of leaves have formed, thus forcing it to branch below the level of the ground. As the plants develop, the soil is filled in gradually by subsequent hoeings. By this method the entire strength of the root and the soil is concentrated on the one shoot, causing it to grow vigorously; while the pinching back not only causes it to branch below the surface of the soil, and thus brace it against all storms, but also removes all of those imperfect, short-stemmed flowers that appear on some varieties. If the plants are pinched back low, as described, there is no danger of the branches splitting down, as the soil around them will hold them securely in place.

As soon as the plants are killed by frost, lift the roots, and, after removing all the soil possible from them, allow them to dry in the air for a few days under cover, when they should be stored in the cellar or some other cool place secure from frost and yet not warm enough to start premature growth. This gives the tops chance to die down before they are cut off, while the clinging soil falls away readily. If the cellar is very dry or is not frost-proof, put the roots in a barrel or box

and cover completely with dry sand or some other suitable material, such as sawdust or tanbark, to prevent freezing or loss of vitality by drying or shriveling.

There is such an endless variety of fine dahlias that it is impossible to have one specimen of each in a small garden. My policy has been to plant two good roots of each of the chosen varieties, so as to be fairly sure of success.

Time to Set Out Asparagus, etc.

(*Continued from page 273*)

each a generous depth and width, and put in a good layer of manure, working this into the soil at the bottom and stamping it down. Fill in the soil to 4″ or so of the top, and set the roots on this surface, and cover them in. Where only a small bed is to be set out it may be made 5 or 6 feet wide, putting in three rows, one in the middle and one a foot or a foot and a half from each edge. The plants should be set a foot apart. Rhubarb roots should be set 2 or 3 feet apart each way. If you are transplanting clumps of your own or getting some from a neighbor, do not set the whole clump into one hole; cut it up into several pieces. You will get fewer stalks from a hill in this way, but they will be a great deal better. A few plants of sea-kale should be put in with the asparagus and rhubarb, as they are treated in much the same way—that is, they make their growth during the summer and store up plant food for a rapid growth early in the spring. The plants are heavily mulched in the spring, to blanch the immature leaf stalks, which are very delicious.

Dormant roses should also be set out early this month. These are usually budded or grafted plants. They should be planted deep enough so that the union between stock and scion comes at least three inches below the surface, otherwise the stock is likely to throw up a cane which will destroy the growth above it. Dormant roses should be pruned back very severely when planted. Leave only three or four buds or eyes to each branch. Be careful to cut just above an outside bud, so that the new growth will be made toward the outside of the plant. Above all, get them in solid. A dormant rose will stand tramping on with both feet, and while that method of treatment is not recommended, it is better than handling it as if it were glass, and gently covering the earth in about the roots with a gloved hand. Be careful not to expose the root to dry winds or bright sun while planting; it is an easy matter to carry them about in an old basket, covered at the roots with moss or damp burlap.

In Grandmother's Garden

(*Continued from page 241*)

our play. What does a city child do to-day without the charm of a garden? Even the "pin-a-poppy show" has passed away. One never hears of it now, but we who pasted the lovely bright flowers and leaves on paper and covered them with glass can still remember the thrill experienced when in response to the invitation "A pin, a pin, a poppy show—Give me a pin and I'll let you know" the wonderful show was uncovered. Then followed such gasps and expressions of admiration! No, the modern child knows nothing of the real pleasure of a garden.

Of course, we must have done damage to many things in Grandmother's garden, but if we did she was kind enough to overlook it all. She must have known that many of the morning glory buds failed to open. It was such fun to take firm hold of those pointed buds and pinch and hear them pop.

Our playhouse was out under the apple trees. Never was there more wonderful housekeeping nor more varied and original meals. The garden furnished everything, even much of our clothing and adornment when we really "dressed up" for dinner. The lilac leaves pinned together with their stout stems made charming caps, belts and aprons. The flowers of the lilac were equally useful. One blossom put into another and another and lo! a lovely chain was ours. We fashioned the same thing from the larkspur blossoms and from the dandelion stems. The latter were always popular, since the work of making a dandelion chain was more speedily accomplished. We loved the dandelion curls and hung them over our ears, and, with fuchsia blossoms, or, on rare occasions, peanuts (split at one end and pinched onto our ears) for ear rings, we felt that we were dressed for any swell occasion.

Grandfather always had corn in his garden—the blue, sweet corn. Whenever I see it I recall the day when Grandmother entertained a very stylish city friend. It was in the day of the bang, and when we children beheld this fashionably-dressed lady with a straight bang of blonde hair covering her forehead, we gazed in amazement at first, and then flew to Grandfather's cornfield. The corn was just right for it, the silk the exact shade. It did not take us long to arrange it on our heads in an up-to-date bang; and at dinner we appeared a little self-conscious, perhaps, but well satisfied with the style of our hair dressing.

On our table in the playhouse, spread with a cloth made for our use, we served most remarkable meals. We had few dishes; but what of that, when leaves made adorable plates and platters and even cups in an emergency! Jack-in-the-pulpit flowers served as pitchers; little thorns from the thorn apple trees made splendid forks, and such a lot of things we found to eat!

The leaves of the sorrel and nasturtium with berries of elder or barberry made our salad and our tea was either of mint, caraway or catnip. In cherry time a dish of the red cherries, piled high on a pie-plant leaf, served as centerpiece and dessert. The robins scolded us when we picked the cherries and the orioles were always in the tree when it was in flower as well as in fruit. Because we loved the birds and hesitated to disturb them we really did not get as many cherries as we longed for.

Another delicacy on our table was the cheese from the hollyhocks, and we found that nothing was more decorative than a pretty green leaf piled with berries from wahoo, bittersweet, elder, Tartarian honeysuckle, mountain ash, dogwood, snowberry and the little black seeds from the tiger lilies in the fall.

Do girls to-day know that hollyhocks make lovely dolls? Turn down some of the petals, tie them, and an elaborately attired lady is the result. The foxglove and trumpet flowers exactly fitted our fingers, and we wore them often as gloves.

When the Canterbury bells were in bloom we used to watch for the bee to crawl into the bell of the flower and then pinching the end; what a thrill went through us as we felt him buzz and beat and try to force his way through the bursting side! I remember doing this once too many times, and the bees were never again disturbed by my fingers.

The long needles of the pine made fine things to sew with, and were ever bags more adorable than those we made by pinching and blowing up the leaves of the live-for-ever? The queen of the meadow grew in this garden; marigolds were there and the mourning bride (the pincushion flower) and the garden heliotrope (valerian). The cats always liked to roll in this, and how they would scratch at the elder bushes!

We buried many a pet canary under the lilacs. Elaborate preparations were made for these burials, to which all of the girls were invited (not the boys, for they laughed at us). Into a pretty little thread-box, lined with ferny leaves, the bird was tenderly laid, and over and about it we tucked the sweetest flowers. Then the cover was put on and our choicest larkspur wreath was laid upon it; then the sad little procession; the digging of the grave and its covering, and we were ready for the song. Above us we heard the laughter of the martins, the glad note of the orioles and the happy flight song of the goldfinch. Wrens were chattering and the robins calling. In a way we resented all their songs of happiness. We loved best, that day, the little peewee and his plaintive call. We sang the same song at every burial. There was no partiality shown. Possibly the song was not at all appropriate, but these words came from sorrowing hearts:

"Brother, thou wert mild and lovely,
Gentle as a summer breeze;
Pleasant as the air of evening,
As it floats among the trees."

Not remembering the words of the other verses we sang the first one over and over until we felt that due respect had been given the little bird we mourned.

In the fall great golden balls hung from the porch—fruit of the gourd vine. Nothing could have made prettier balls for our games. When the evening primroses blossomed "with a silken burst of sound" we watched them in the twilight, listening ever for the sound that we hoped to hear as the yellow petals popped open. We never heard it, and neither were we able ever to light the gas on the seed pods of the Fraxinella. Both of these things, we decided, were fables gotten up by the older people to please children.

There was a witch hazel bush, however, that always delighted us. After all else had gone, out in the garden we would find the spidery little blossoms of this bush, and never was a fall complete until we had taken into the house some of its branches. It was not the flowers that fascinated us. The heat of the room made the seed pods expand, and how the hard little black seeds would snap and shoot around the room!

Grandfather once sat reading his paper when this cannonading was going on. He finally looked up from his reading and remarked that he supposed the house was old enough now so that its walls were entirely settled, but evidently not. We children knew what made the crackling noises, but we didn't tell.

Really, the sweetest part of Grandmother's garden was down by the Persian lilacs. She called it her "garden of sweetness." In it grew such fragrant blossoms. There were mignonette and violets, valley lilies, tuberoses, lemon verbena and lavender. Wall flowers bloomed there and heliotrope and sweet peas. A few plants of rose geranium were carefully tended, for Grandmother used the leaves in many ways. We often played near this garden, especially when the valley lilies were in bloom, for we loved their fragrance best of all.

Yes, a "garden is a lovesome thing, Got wot!" and the memory of such a garden in one's childhood is a blessed, comforting one. Many a time, when life has been hard and strenuous, when the journey has been dusty and tiresome, have I in memory slipped back to the cool, sweet shade in Grandmother's garden; to the rest and comfort and beauty of it all, and have blessed Grandmother for having brought us up in such sweet company.

Do you have trouble finding time for garden work? Possibly that's because you don't parcel out your time systematically. Glance over "How to Find Time for Garden Work," in next month's HOUSE AND GARDEN.

Efficiency in the Flower Garden

(Continued from page 267)

engaged to plan a house, if he should look through a lot of builders' catalogues and select ornamental doors, the newest wall papers, paint, lighting fixtures, plumbers' supplies, tiling, trim, finishing, and shingle stains, and having got his materials together, should then attempt to construct the houses. Of course, he goes at it the other way round. That is the attitude of mind you should try to get in garden planting.

But the contractor's job, however, is no less important than the architect's. After you have turned all these things over in your mind carefully and finally made your selection and sent in your order, it is just as important to know *how* to handle your plants to give them every chance of success. Many hardy perennials may be effectively used in small groups or clumps or even as individual plants, but far more often they are used in the mixed hardy border or bed. The success you may have in growing hardy plants will depend more than anything else upon the thoroughness with which the border for them is prepared. Most of them will grow, some of them will thrive, in ordinary, good, rich, garden soil. But to make sure of success, and to make sure of the best results, the border should be trenched to a generous depth its entire length. This is particularly necessary if the soil is at all wet or heavy or is poorly drained. There is but one way of doing it properly, and that is by getting right at it and making a man-sized job of it. An hour or two of puttering about with a spade or a fork, with your collar on, will accomplish little in this direction. The making of a border is a day's work for a couple of men used to handling pick and shovels—and in a very hard or stony soil, or for a generous-sized border, it may take them longer than that.

First of all, stake out the outlines of the proposed border. Then have it excavated to a depth of two or three feet, throwing all the sods and top-soil to one side and the stones and subsoil and roots to the other. Any stones or coarse gravel may be saved for drainage material. If there are not enough of these, as in most cases there will not be, coarse, cold cinders, or brick or mortar will do, and put in a layer several inches thick. Cover this with the sods removed from the surface, and replace them upside down. In place of sod a little strawey manure or leaves may be used—anything that will keep the dirt as it is thrown back in from packing down closely into the drainage layer. On top of this put a layer of compost a foot or more in depth, enough to come within six inches or so of the top of the trench. This compost may be made of garden soil, a good, heavy loam being preferable, and manure mixed about half and half with a generous sprinkling of bone through it. The top six inches or so of the trench

should be filled in with good, rich loam, rounded up well at the surface, but flat enough so that water will not run off to the edges. Allow for the setting of the soil, which will amount to two or three inches before the season is over. Both compost and soil, as they are put in the trench, should be made fairly firm with a good packing down, not hard enough to make the soil hard or lumpy.

Before you begin to set the plants, you should have a plan showing exactly where each should go. Then take a section and arrange the bed, and arrange these clumps in order ready to plant. It is better to do this rather than to begin planting one by one. Do not expose the plants to wind and sun any more than possible during the operation of plant setting. If the soil is at all dry, water may be used under each plant as it is set. But usually at this time of the year this will not be necessary. The various plants should be set slightly deeper than they have been growing before; or if they are from pots, an inch or so over above the ball of earth. Plants that have been kept wrapped up and boxed and kept from the light for several days should not be immediately exposed to the strong sunlight. If they show a tendency to wilt, shade for the time being with papers, plant them as the sun begins to weaken in the afternoon. If dry weather follows and the beds require subsequent watering, before the plants become established, use a fine spray and go over the bed several times until it finally becomes thoroughly saturated. The careless use of the hose on a newly set border may do considerable damage by washing and packing the soft soil. The plants should be set in as firm as you can possibly get them. If there seems to be danger of pushing them too far down, then the soil in the bed has been left too loose.

The border already established, and individual plants or clumps about the ground should come in for their share of attention in the general spring "cleaning up." Beds that are still in good condition should be forked up after the winter mulch has been taken off and a dressing of manure and bone meal worked into the ground around and between the plants as thoroughly as possible. This should be done quite early, before new root growth and activity begin. A root pruning, even though quite severe, while the plants are semi-dormant, will, with most things, do little or no injury. Around lilies, bulbs, iris and other things out of the ordinary root formation one must be reasonably careful.

Hardy plants that have begun to crowd, either in clumps by themselves or in the mixed border, can be taken up, divided and replanted and shifted to other positions. If you need more plants than you have, each clump or crown will usually make from three to six good plants. If your garden is already well supplied, take one or two of the best pieces or "crowns" from each plant and dispose of the others to your less fortunate friends.

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SOUTHERN GARDEN DEPARTMENT

Conducted by JULIA LESTER DILLON

Inquiries and problems for this department will receive prompt attention. Please enclose a self-addressed stamped envelope for reply

More Seed-Sowing

BY the time the March seed-sowing is over and one draws a long breath, April is here, and more seed must be planted whether one wishes to do so or not.

First come the asters. The tribe has so increased that it is most difficult to decide which of the lovely varieties one would rather have, since it is not possible for most of us to plant them as Wordsworth saw the daffodils and Mrs. Ely has the asters ten thousand to a summer.

Because mid-summer blossoms are rather scarce in the South, the early varieties are desirable, and, of these, the best are the "Queen of the Market" varieties in pink, white and lavender. The blossoming time of these is later in the South than in the North and East, where it is not so warm, but they may be counted on for August blossom. The Crego Giant Comet Asters furnish the handsomest blooms of all, and come in September, while the real fall blossoms of the Late-Branching kinds should by all means be planted. If space is limited, white for the early varieties, lavender for the mid-season, and pink for the late bloom, would give color variety as well as succession in bloom. They should be planted in the open where they are to flower, and thinned out, if necessary, later on.

Seed of white and blue *ageratum* sown now in the open will make masses of color from late summer until frost. They are largely planted in the gardens of those who leave their homes in summer and seem to welcome the owners on their return as heartily as if they had received unremitting care.

When there is room in the background, along walls or fences, or boundaries, for masses of tall flowers, Cosmos and Dahlias should be planted. The new varieties of Cosmos, early Large-flowering, Lady Lenox, and Mammoth Perfection, are offered by all reliable dealers, and should give fine results, both for flowers in quantity for cutting and for masses in the borders.

There are many varieties of Dahlias, in single and double, in fluted and quilled, mammoth and dwarf, which come to bloom in the fall from seed sown in the open this month. They are like the "prize-boxes" which allured in childhood days, you never know what you are to get until blossoming time. This is fatal to a color scheme, but flowers are usually growing fewer about the time the dahlias bloom, and among the brilliant green tones of the foliage they do make bright clouds of color among the more somber tones of autumn.

The most important seed-sowing of

April is that of the perennials, which germinate only while cool days and cooler nights are felt. The seed-bed should be prepared in a partially shaded situation in an unobtrusive part of the garden. The soil should be porous, rich and deep, and the seed sown in rows, clearly marked as to variety and color.

By the middle of August the plants may be transplanted into the places where they are to remain permanently, or else they may be removed to temporary quarters to wait for final transplanting after the summer flowers are cleaned out and the borders enriched for the winter bloom.

This sounds a little romantic, but, as I write this in mid-February, the Delphiniums are showing color in their buds, the Digitalis have flower spikes several feet tall, the Campanulas are beginning to send out their new leaf stalks, Platycodons are growing, Wallflowers are budding, and Aquilegias are strong and vigorous, getting ready for April bloom. From April seed-sowing to spring bloom of the next year seems a long time to wait, but these perennials bridge so beautifully the gap between the real winter flowers and the annuals, which cannot be counted on until late spring or early summer, that, if for this reason only, they should be in every garden. But they are in themselves so daintily exquisite, so pure in color, with heavenly blues rivaling richest orange, with golden yellow facing clear amethysts, with tall flower spikes in the border backgrounds and dainty masses of snow in the foreground, that they should be planted wherever there is a garden, a garden-caretaker and a garden-lover.

As to the varieties to be planted, there is not such a wide range of choice as in most of the annuals. Of the Aquilegias, the Caerulea, the Rocky Mountain Columbine, the Crysantha, golden-yellow, and the Nivea grandiflora are the most attractive and beautiful. The red tones are often not pure in color and do not mix well with the clear blues, and for this reason the above-mentioned ones are preferable. The Coerulea Hybrids are grown by many with satisfactory results.

The lovely Campanulas in both dark and light blues, in white, and a delicate rose, are so delightful in the garden, such a bright spot of color in the shadows of the garden picture that no one should fail to plant them. Both the Campanula Medium, the single Canterbury Bells and the Calycanthema, the Cup and Saucer variety, are to be had in the colors enumerated, and cannot fail to please. The *Campanula pyramidalis*, the Chimney Bellflower, in blue and white, can be used where a taller variety is needed.

The Gold Medal Hybrids are favorites among the Delphiniums. The Belladonna, Caelestinum and Formosum, Chinense and Chinense album, are wonderful in their tones of azure, that range from the pure white of the Chinense album to the deepest blues of the other varieties.

In writing to advertisers please mention HOUSE & GARDEN.

Warming Devices for the Kitchen

(Continued from page 271)

warming oven may be heated by lighting the pilot burner. In gas ranges having two baking ovens, one is always available for a warming oven by using the pilot burner. Even with these facilities it is a great advantage to have some kind of supplementary warming appliance. In kitchens heated by steam or hot water this is easily managed by purchasing flat-topped grills to fit over the kitchen radiator. These grills come in different sizes, and may be painted the color of the radiator. With these the heat of the radiator is always available to dry kitchen towels, pots and pans, and the like. Both dining-room and kitchen radiators may be thus equipped. The grills cost from $1.25 to $1.50, according to size. The dining-room radiator grill is very convenient for warming dishes that do not need to go to the kitchen at all.

In homes where it is possible to have special warming facilities in the pantry, the closet where the table service is kept may be warmed by having heated coils pass under the shelves. In other special cases special pantry radiators are manufactured which have two shelves made of coils heated from the furnace.

In even the simplest home, this need may be met by having a shelf built back of the three-burner Junior gas stove in the kitchen. In such a case the gas stove should be set out a little from the wall. The shelf may be made the same height and covered with zinc. A portable oven may be heated on a regular gas burner and then set back on this shelf to serve as a warming closet for the dishes. In such a case it is well to have, in addition, a two or four-shelf steamer, in which food may be placed in the serving dishes and kept hot until it is ready to be put on the table.

The Inviting Hall

(Continued from page 254)

coat, costs but little, if any more. For the hall of ordinary width the foregoing treatments will all be found satisfactory, but there is an additional latitude in the choice of papers. A light, gray paper, with a foliage pattern, or some of the revived Chinese patterns with a light ground, or even some of the old landscape block printed papers in patterns that have been recently revived may be recommended.

For halls that are virtually rooms, wood is the only fit flooring. As people will sit there, a tile, stone, or concrete floor would have to be heavily rugged or carpeted all the time, in which case it would not particularly matter what the floor was made of. With regard to color, these living-room halls may be treated exactly as any other room, but it will generally be found safe to stick to the principle of light walls and light woodwork, unless the architectural motif of the house obviously demands some other treatment.

In any case where the ceiling is unduly

high, do not try to bring it down by a border; carry the picture moulding, if there be one, all the way up to the cornice or angle between the ceiling and walls.

Floor coverings in any hall, of whatever type, should be quiet and neutral in tone. The furnishing of the hall is an exceedingly important matter. Let simplicity be the guiding principle in the choice and disposition of furniture and the adornment of the walls. In the long, narrow hall, the less furniture the better. It will be quite enough if there is a table (for a card salver) and candlesticks—the Victorian hat rack of whatever species should be absolutely taboo— and a chair against the wall at either end of the table. Above the table may be hung a mirror, a suitable picture or a bit of brocade or tapestry, flanked by sconces, which will give the necessary decorative distinction and will be quite enough to furnish the hall for all practical purposes. Put the card salver and and a couple of candlesticks or acceptable Oriental vases, mounted on teakwood stands, or some simple but elegant similar bit of bric-a-brac on the table. If a table is not placed against the wall, a chest may be used instead. In the well-lighted long gallery traversing the face or rear of the house, a sort of long hallway adopted from English models and now much in favor, one may appropriately range a great deal of furniture along both sides. In the hall of ordinary width, of course, there is a great deal of possibility to introduce other appropriate pieces of furniture, such as chests, chairs, lowboys or highboys, sofas, mirrors—in fact, any piece of furniture that stands against the wall and may add to the decorative attractiveness of the hallway. It is important, however, to see that not too many objects are placed in the hall, so that it will be crowded or lacking in the aspect of roominess. Hats, coats and umbrellas should always be kept out of sight and a place should be provided for them in a closet conveniently accessible.

Let the wall ornaments be exceedingly few but well chosen. Do not make the hallway a picture gallery or hang anything there that may detract from the air of elegant simplicity. It will be well to study effective groupings of furniture for a broad hall, such as a table with a pair of candlesticks, a table or lowboy with a pair of candlesticks and a china bowl upon it, and above it a mirror or girandole or hanging sconces. Such furniture grouping needs careful thought to make it thoroughly effective.

In living-room hallways there are almost always suitable opportunities for building in locker seats or settles and window seats. Oftentimes this arrangement can be effected in conjunction with the construction of bookcases. In halls of this description a great deal of paneling can be done in connection with the built-in furniture and the balusters of the stairway with excellent results.

The Water Supply for Suburban Homes

THE suburban dweller, or often the family living in the small cities and towns, is confronted with the problem of a water supply. The majority of cases are difficult to solve, because of the supply being hard water. Hard water of itself for many purposes is all that can be desired. But there are limitations to its use, and among the important uses to which it cannot be put are those of bathing, washing and cleansing. As these are important factors of daily living, and as they center about the sanitary and hygienic possibilities of the home, it becomes a topic of magnitude and one that should be solved wherever possible.

Water is hard for several reasons, primarily because of the presence of soluble and insoluble solids of lime, magnesia, iron and some forms of aluminum. These solids are divided into two distinct classes. The first is that which is soluble in water itself, and the second, that which is only soluble when carbon dioxide gas is present in the water. To make this clear, we find that the sulphates, chlorides of lime, magnesia, iron and aluminum are solids that are detrimental to the water, inasmuch as they constitute its hardness. Then, all but the latter minerals are held in solution as bicarbonates. These are present also where the carbon dioxide gas exists. Now, the condition of the water that we know as hardness is made possible from the fact that the water in passing from its source penetrates through these various formations, and by its very action takes up some portions of these minerals.

We all understand that with but few exceptions cistern (soft water) is not fit for drinking purposes. Even then there is a feeling that it is not pure, and there are many times more than an idle notion present to substantiate it. If we can make the cistern water pure by a simple process, and if we can also make the hard water soft, and also insure its purity, there is little left to be desired. Even if we have a supply of cistern water on hand we desire that it be clean and free from the impurities that could become a menace to our health. It is a fact that the body absorbs at least some portion of the impurities in the water where such are present to a marked degree, a danger not always apparent.

Even where the cisterns are cleaned out frequently there is danger from the use of this water. But many times this is not done and the danger is thereby increased. Stagnant water is full of germ life that is a health menace. There is a simple process now that insures pure and soft water. This cannot be done by the addition of powders or other means that have been in vogue for years. There must be a more powerful means for the removal of these elements.

To do this there have been devised plants that can be purchased and installed

REAL ESTATE—Continued

From these windows, facing the sunset, the view is enchanting

An Exceptional Country Home with a Wonderful Twenty-Mile View of River and Highland

SITUATED at Philipse Manor, Tarrytown, on the Hudson River, right on the water front and within perfect commuting distance of New York by electric trains, this house has every advantage of country life and city conveniences. A more beautiful location can hardly be conceived. Facing west it commands a splendid twenty-mile panorama of river and mountain. The property consists of 2/3 of an acre, and is situated in a restricted community where land is rapidly rising in value. Country clubs nearby, with golf, tennis and boating, fine wooded country, and an excellent bathing-beach offer every facility for outdoor life.

This modern house of the Italian villa type, designed by the associate architects of the new Grand Central Station, New York, has every known convenience. These include two sleeping-porches, a dining-porch, a linen-room, a billiard-room and an owner's private suite consisting of two rooms, sleeping-porch and private bath. The interior arrangement is unusually charming. Altogether there are 13 rooms, 4 bathrooms, hot-water heating, open fireplaces, electric light and gas. The house is flooded with light and air; the windows are all casements, and glass doors lead to the porches which are red-tiled. The main entrance to the house is under a vine-covered pergola.

This property is offered for sale at a price considerably below the actual cost. A lease might be considered. The house can be seen at any time.

For further information, address the owner, E. H. E., care of House & Garden, New York City.

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YOUR SUMMER HOME

How would you like, Mr. A——, to take a house near town for the summer? The very place you want can be found in "Where to Live"—see pages 6 to 11 of Vanity Fair's May number.

If you can't wait to secure this number, drop a line to "Where to Live" and we will put you on the track at once.

On the other hand, how would *you* like, Mr. B——, to get someone to rent or buy your new house in the suburbs? Put a notice in the next Vanity Fair—your broker knows all about it.

Whether you are looking for a house to live in, or have a house for someone else to live in, this department of Vanity Fair is equally at your service. Just send a line to

"WHERE TO LIVE"

Vanity Fair, 449 Fourth Ave., New York

at a reasonable figure. There are several of these systems, the varying price being due to the amount of water desired every twenty-four hours. There is a double tank that receives the water in its natural state, and after passing through the first, or receiving tank, is permitted to flow into the storage tank, ready for use.

The supply of soft water is drawn from the bottom of the tank, where there has been provided a quartz filter, thus insuring an added purification after the water has been softened. What is known as the precipitating tank is supplied with a funnel bottom containing a flush-out valve. The treated water passes through the center reaction tube of this tank and the residue is permitted to pass into a pan or any other outlet. One can see at a glance the mineral substances that have made the water both hard and impure. There is an automatic feed-box and a regulating mechanism that controls the supply of chemicals to be consumed in making the water ready for use.

WARFIELD WEBB.

Poultry Work for May

THE first of this month is not too late to buy day-old chicks, especially those of the smaller breeds, like the Leghorns and the Anconas. Even Plymouth Rocks and Rhode Island Reds may be brought into laying in November if they are grown rapidly. This is a good month to hatch bantams, which are much in favor among fanciers. It is hard to raise bantams in cold weather, but easy when the weather becomes settled and warm.

From now on turkey hens may be allowed to sit on their own eggs. Young turkeys must have shade on warm days and should be kept confined in the morning so long as the grass is wet.

Duck eggs run very fertile this month, and it is not too late to hatch Indian Runners, which will lay early the coming year. For a month or two previous to Easter duck eggs sell for from ten to fifteen cents more than hen eggs. When duck eggs are being set it should be remembered that twenty-eight days are required to incubate them.

Before the incubator is put away after the last hatch, it should be thoroughly cleaned and disinfected. It is a good plan to let it stand for a few hours where the sun can flood the egg chamber.

Fireless brooders can be used to advantage at this season. When outdoor brooders are used for very young chickens they should be set under trees or protected from the sun's rays by some artificial means. Otherwise it will be difficult to maintain an even temperature in the hover. If an electric current is available, the new electric brooders will be found exceedingly convenient, reducing the work of management to a minimum. Usually it is possible to get special rates on a heating basis.

It is useless to keep any male birds

around after the breeding season is over, unless, to be sure, they are good enough to carry over to the next season. It is advisable, also, to sell off whatever old hens may be left as fast as they stop laying, and sometimes it is just as well to get rid of the younger birds from now on when they become persistently broody.

Hawks, rats, skunks and marauding cats do a great amount of damage at this season. When the chickens are on range the hawks are likely to get many of them, and light-colored chickens are more often the victims than those which have darker feathers. It is a help to have piles of brush to which the chickens can flee when danger threatens, and if a few guinea hens are kept on the place they will be certain to give warning when hawks appear. When carefully shut up at night the chickens are safe from skunks and a brooder house may be made rat-proof by the use of cement, but in any event the rodents can be disposed of by the use of poison, if need be. Sometimes a dog will keep them away. Thieving cats are a great nuisance in many sections and hard to deal with. Usually the right kind of dog will secure immunity, but occasionally it is necessary to trap the cats.

If there is plenty of grass the chicks will need no other green ration early in the season, but after a time the grass will become too tough for them. Lettuce and other garden produce may be fed, but probably there is nothing better to grow, especially for the poultry, than dwarf Essex rape. It is ready in a few weeks from planting, and if only the leaves are broken off the plants will continually renew themselves. A spring planting and another in July will give green food all summer. Rape seed may be sown broadcast, but it is better to grow the plants in rows and to keep them cultivated. Tall Scotch kale planted now will give an abundance of greens in late fall, long after the frost has cut down everything else in the garden.

It is poor policy to keep chicks of different ages together or to let chickens and ducks run in the same yard. The big chickens will crowd their weaker brothers and sister and the ducks will foul the drinking water. Of course, it does not matter much if flocks are mixed when there is plenty of range, provided that the smaller and weaker birds are allowed to

obtain their share of the grain. This can be arranged for by making a coop with slatted sides, the slats being placed too close together to admit the larger members of the flock. If fed in this shelter the less robust youngsters will be able to eat in peace.

There is a distinct advantage in housing the chickens in small lots after they leave the brooders. They are sure to pile up in the corners, and if there are many birds, those at the bottom of the pile are pretty certain to suffer.

It is necessary to repeat previous warnings about the coming of the ubiquitous chicken louse. These pests multiply with astonishing rapidity. In the course of a few weeks one pair will have increased to thousands, unless something is done to keep them in check. Whitewash and kerosene and lice powder serve useful purposes, but nothing is so economical of time and labor or so effective as a good prepared lice paint used freely on perches and coops and in the nest boxes. Applied once a month it practically means freedom from the invasions of the red mites, which often appear at this season in countless numbers and which, if unchecked, spell sure disaster.

As eggs are plentiful and cheap at this season, it behooves the thrifty housewife to preserve a considerable number in anticipation of the lean days sure to come in early winter. Undoubtedly the best preservative is sodium silicate, commonly called water glass, and obtainable at any drug store. It should be used at the rate of one part to nine of water. Probably the best receptacle is a stone or earthenware crock, which should be set in a cool cellar. The eggs should not be over three or four days old, and it is desirable, although by no means necessary, to have them sterile. When they are in the crock those at the top should be about two inches under the surface. A gallon of water glass, costing 50 cents, will be sufficient for 60 or 70 dozen eggs, and will keep them remarkably fresh and good for six months or longer.

For the Intending Dog Buyer

IN buying a dog, the first point to be decided is, of course, the breed. Look about and pick up all information possible concerning the different standard types; learn the peculiarities of each and how they will or will not fit in with your particular tastes and requirements. When you have found a kind that you think will suit, get in touch with one or more reliable breeders (most of the best breeders advertise quite extensively, and so can be readily located), and see what they have to offer.

If possible, arrange to see the dog before definitely closing for him. Look him over for such possible defects as deafness, poor eyesight, canker of the ear, etc. He should (and will, if you go to a breeder

who has a reputation to maintain) be sound and in good health. Notice his disposition, too, for a dog should "fit" his owner as comfortably as if he were a pair of shoes or a hat.

If you cannot see the dog before buying, and consequently have to make the purchase by correspondence, write the breeder fully as to what you want. State the desired age, sex, approximate price and purpose. In regard to the last item, it will be well to remember that dogs may be divided roughly into three classes: working dogs, such as terriers, to be used for hunting, etc., bench-show dogs, and general companions.

The matter of age is deserving of considerable thought. Fully matured dogs are apt to be set in their ways and do not become as attached to a new home and master as do younger ones. Very young puppies, on the other hand, are subject to various minor disorders which often cause considerable worry and trouble. Where the purchaser is more or less experienced in raising young puppies, and has time and facilities for it, I might advise his getting a seven- or eight-weeks' old pup, because such a one will be less expensive and his character may be more readily molded along desired lines. For the average person, however, a pup of seven or eight months old will generally prove the most satisfactory investment.

When it comes to price, there is little to be said except that good, well-bred dogs cost real money and are worth it. "Blood tells," whether it flows in the veins of a man, horse or dog, and when a supposed-to-be good dog is offered you at a very low price, look out. It is better to pay twenty-five or thirty dollars for a sound, well-bred pup of eight months and know what you are getting than to pick up a misrepresented "bargain" for one-fifth as much.

In considering the question of the purpose to which your unbought dog will be put, we may pass over the "work" classes as being too obvious to need further explanation, and turn to the bench show and companion types. Oftentimes these two overlap to a considerable extent, for many a ribbon winner of some standard breed is as fine an all-round dog as could be desired. A pup that comes of show stock is usually more expensive than his shorter-pedigreed cousin, but providing the breeding points have not been carried so far as to impair his vitality or intellect, he is worth the extra money, even to the person who never expects to enter him for competition. There is a certain satisfaction in owning a dog whose appearance will pass muster in any company.

Avoid the stranger who offers you a handsome dog at a low figure. Five times out of ten the dog has been stolen, and the other five times he has some serious defect. The place to buy dogs is from the people who breed them for sale, for such persons must live up to their established reputations for square, honest dealings, and they are available in case your dog should prove unsatisfactory in any way. Buy from the dealer, by all means.

KENNEL DEPARTMENT

The purpose of this department is to give advice to those interested in dogs. The manager will gladly answer any troublesome questions. Address "Kennel Department" and enclose a self-addressed envelope.