



APRIL—1913

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WILLIAM A. VOLLMER
Managing Editor



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PLOWING THE GARDEN

When spring first appears upon the landscape, the gardener as well as the farmer must set about the preparation of the soil. Upon this important process rests much of the success of the final outcome



House & Garden

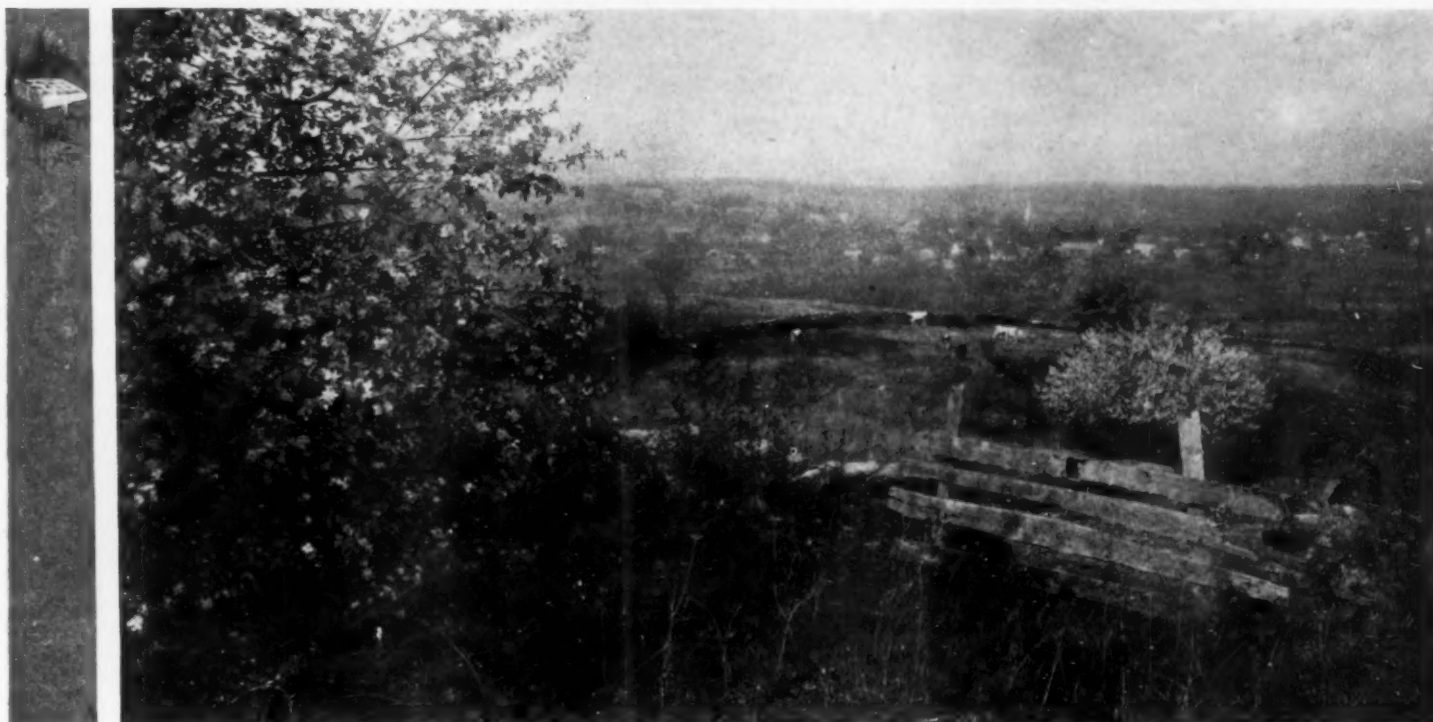
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VOLUME XXIII

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As the fitful warmth of April yields to the steadier sunshine of May the apple blossoms come out to dot the valley slopes with spots of pink-tinged white

Spring in the Garden

THE PROCESSION OF PLEASANT TASKS WHICH FOLLOWS THE WARM DAYS OF EARLY SPRING—APRIL ACTIVITIES AND THE REAL JOY WHICH COMES WITH THEM

BY WALTER PRICHARD EATON

Photographs by Ella M. Boulton

NO daffodils "take the winds of March with beauty" in our Berkshire gardens. What daffodils we have in that month of alternate slush and blizzard bloom in pots, indoors. But one sign of spring the gardens hold no less plain to read, even if some people may not regard it as so poetic—over across the late snow, close to the hotbed frames, a great pile of fresh stable manure is steaming like a miniature volcano. To the true gardener, that sight is thrilling, nay, lyric! I have always found that the measure of a man's (and more especially a woman's) garden love was to be found in his (or her) attitude toward the manure pile. For that reason I put the manure pile in the first paragraph of my praise of gardens in the spring.

That yellowish-brown, steaming volcano above the slushy snow of March promises so much! I will not offend sensitive garden owners who hire others to do their dirty work, by singing the joy of turning it over with a fork, once, twice, perhaps three times, till it is "working" evenly all through. Yet there is such joy, accentuated on the

second day by the fact that the thermometer has taken a sudden jump upwards, the snow is melting fast, and in the shrubs and evergreen hedge the song sparrows are singing, and the robins. Last year, I remember, I paused with the steaming pile half turned, first to roll up my sleeves and feel the warm sun on my arms—most delicious of early spring sensations—and then to listen to the love call of a chickadee, over and over the three notes, one long and two short a whole tone lower. I answered him, he replied, and we played our little game for two or three minutes, till he came close and detected the fraud. Then a bluebird flashed through the orchard, a jay screamed, as I bent to my toil again. Beside me were the hotbed frames, the glasses newly washed, the winter bedding of leaves removed, and behind them last year's contents rotted into rich loam. Another day or two, and they would be prepared for seeding—if I



only could bring myself to work hard enough until then!

How much hope goes into a hotbed in late March, or early, April! How much warmth the friendly manure down under the soil sends up by night to germinate the seeds, though the weather go back to winter outside—as it invariably does in our mountains! Last year, for example, we had snow on the ninth of April, and again on the twenty-third and twenty-ninth, while the year before, on the ninth, six inches fell. In the lowland regions gardening is easier, perhaps, but yet there is a certain joy in this fickle spring weather of ours, the joy of going out in the morning across a white garden and sweeping the snow from the hotbed mats, lifting the moist, steaming glass, and catching from within, strong against your face, the pungent warmth and aroma of the heated soil and the delicate fragrance of young seedlings. How fast the seeds come—some of them! Others come so slowly

that the amateur gardener is in despair, and angrily decides to try a new seed house next year. The vegetable frames are sown in rows—celery, tomatoes, cauliflowers, lettuce, radishes, peppers, coming up in tiny green ribbons, the radishes racing ahead. The flower frames, however, are sown in squares, each about a foot across, and each labeled and marked off with a thin strip of wood. These are the early plantings of the annuals, for we cannot sow out-of-doors till the first or even the second week in May in our climate. Sometimes, indeed, we do not dare to sow even in the frames till well into April. The asters are usually up first, racing the weeds. The little squares make, in a week or so, a green checkerboard, each promising its quota of color to the garden, and very soon the early cosmos, thinned to the strongest plants, has shot up like a miniature forest, towering over the lowlier seedlings, sometimes bumping its head against the glass before it can be transplanted to the

open ground in May. But most prolific, most promising, and most bothersome, are the squares labeled "antirrhinum," coral red, salmon pink, white, dark maroon, and so on; tiny seeds scattered on the ground and sprinkled with a little sand, they come up by the hundred, and each seedling has to go into a pot before it goes into the ground.

There is work for an April day! I sit on a board by the hotbed, cross-legged like a Turk, while the sun is warm on my neck and I feel my arms tanning, and removing a mass of the seedlings on a flat mason's trowel, I lift each strong plant between thumb and finger, its long, delicate white root dangling like a needle, and pot it in a small paper pot. When two score pots are

ready, I set them in a coldframe, sprinkle them, stretch the kink out of my back, listen to the wood thrush a moment (he came on the fourteenth and is evidently planning to nest in our pines), and then return to my job. Patience is required to pot four or five hundred snapdragons; but patience is required, after all, in most things that are rightly performed. I think as I work of the glory around my sundial in July, I arrange and rearrange the colors in my mind—and presently the job is done!

But the steaming manure pile is not the only sign of spring, nor the hotbeds the only things to be attended to. If they only were, how much easier gardening would be—and how much less exciting! There is always work to be done in the orchard, for instance, some pruning and scraping. I always go into the orchard on the first really warm, spring-like March day, with a common hoe, and scrape a little, not so much for the good of the

trees as the good of my soul. There is a curious, faintly putrid smell to old or bruised apple wood, which is stirred by my scraping, and that smell sweeps over me a wave of memories, memories of childhood in a great, yellow house that stood back from the road almost in its orchard, and boasted a cupola with panes of colored glass which made the familiar landscape strange; memories of youth in that same house, too, dim memories "of sweet, forgotten, wistful things." My early spring afternoons in the orchard are very precious to me now, and when the weather permits I always try to burn the rubbish and dead prunings on Good Friday, the incense of the apple wood floating across the brown garden like a prayer, the precious ashes sinking down to enrich the soil.

The bees, too, are always a welcome sign of the returning season, hardly less than the birds, though the advent of the white-throated sparrow (who delayed till April twenty-first last year) is

always a great event. He is first heard most often before breakfast, in an apple tree close to the sleeping porch, his flute-like triplets sweetly penetrating my dreams and bringing me gladly out of bed—something he alone can do, by the way, and not even he after the first morning! But the bees come long before. The earliest record I have is March thirty-first, but there must be dates before that which I have neglected to put down. Some house plant, a hyacinth possibly, is used as bait, and when the ground is thawing out beneath a warm spring sun we put the plant on the southern veranda and watch. Day after day nothing happens, then suddenly, some noon, it has scarcely been set on the ground when its blossoms stir, and it is murmurous with bees.



In the sheltered lowlands where the ground has frozen deep the snow still lingers in worn, dirt-stained patches, though the first spring flowers are in bloom



From the meadow comes the ceaseless, shrill chorus of the frogs, beating in waves upon the ear and making the air yet more warm and fragrant, the promise of spring more magical

Then we know that spring indeed has come, and we begin to rake the lawns, wherever the frost is out, wheeling great crate loads of leaves and rubbish upon the garden, and filling our neighbors' houses with pungent smoke!

There is a certain spot between the thumb and first finger which neither ax nor golf club nor saw handle seems to callous. The spring raking finds it out, and gleefully starts to raise a blister. My hands are perpetually those of a day laborer, yet I expect that blister every spring. Indeed, I am rather disappointed now if I don't get it, I feel as if I weren't doing my share of work. The work is worth the blister. I know of few sensations more delightful than that of seeing the lawn emerging green and clean beneath your rake, the damp mould baring itself under the shrubbery, the paths, freshly edged, nicely scarrowed with tooth marks; then of feeling the tug of the barrow handles in your shoulder sockets; and finally, as the sun is sending long shadows over the ground, of standing beside the rubbish pile with your rake as a poker and hearing the red flames crackle and roar through the heap, while great puffs of beautiful brown smoke go rolling away across the garden and the warmth is good to your tired body. Clearing up is such a delight, indeed, that I cannot now comprehend why I so intensely disliked to do it when I was half my present age. Perhaps it was because at that time clearing up was put to me in the light of a duty, not a pleasure!

There is, alas, too often a tempering of sadness in the joy of taking the covers off the garden. One removes them, especially after an open winter like this season of 1912-1913, with much the same anxious excitement that one opens a long-delayed letter from a dear friend who has been in danger. What signs of life will the peonies show under their four inches of rotted manure, and the Japanese irises by the pool, and the beds of Darwins, so confidently relied upon to ring the sundial in late May and early June, before the succeeding annuals are ready? How will the holly-

hocks, so stately in midsummer all down the garden wall, have withstood the alternate thaws and freezes which characterized our abominable January and February? Then there are those two long rows of foxgloves and Canterbury bells, across the rear of the vegetable garden, where they were set in the fall to make strong plants before being put in their permanent places—or rather their season's places, for these lovely flowers are perversely biennials, and at least seven times every spring I vow I will never bother with them again, and then make an even larger sowing when their stately stalks and sky blue bells are abloom in summer! Tenderly you lift the pine boughs from them on a balmy April day (it was not until almost mid-April last year), when snow still lingers, perhaps, in dirty patches on the north side of the evergreens. Will they show frozen, flabby, withered leaves, or will their centers be bright with new promise? It is a moment to try the soul of the gardener, and no joy is quite like that of finding them all alive, nor any sorrow like that of finding them dead. At first I used to give up gardening forever when the perennials and biennials were winter killed, just as a beginner at golf gives up the game forever each time he makes a vile score. Then I began to compromise on a garden of annuals. Now I have learned philosophy—and also better methods of winter protection. Likewise, I have learned that a good many of the perennials which were stone dead when the covers were removed have a trick of coming to life under the kiss of May, and struggling up to some sort of bloom, even if heroically spindly like lean soldiers after a hard campaign. The hollyhocks, especially, have a way of seeding themselves undetected, and presenting you in spring with a whole unsuspected family of children, some of whom wander far from the parent stem and suddenly begin to shoot up in the most unexpected places. An exquisite yellow hollyhock last summer sprouted unnoted beneath our dining-room window, and we

(Continued on page 324)

The Vital Functions of Light in the Home

BY F. LAURENT GODINEZ

EDITOR'S NOTE:—This is the fourth paper by Mr. Godinez in which he gives the results of experimental research in the matter of home lighting. Previous articles dealt with the subject of eye-strain, the avoidance of glare and types of satisfactory lighting. The present article explains ways of reproducing the suggestions previously given and offers practical hints to all persons who do not care to make radical changes in their lighting equipment.



ON occasions when the landlord objects to temporary replacement or radical modification of lighting fixtures, it is usually possible to modify the unsatisfactory equipment by slight changes.

Take the case of pendant globes or shades, on typical fixtures, such as are represented in figure 1. Here the ordinary cut glass, plentifully besprinkled with stars, the spotty or commonplace prismatic shade, may be replaced by glassware which at least is not a constant distraction to the eye. This fixture, illustrated in figure 1, is a combination for gas and electric light. That is, the electric bulbs are in a pendant position and inverted incandescent gas mantles can be used. The function

of shades and globes as secondary radiating surfaces in this relation is first of all to present a soothing and pleasing appearance to the eye. This necessitates opal glassware (available from all manufacturers) of such color as to modify the white, garish light. The light-radiating surfaces of the mantle, or filament, must never project below the rim of the shade, and the tip of the tungsten lamp and the mantle chimney should be frosted. When this is done, and the interior of the shade depolished, a most agreeable diffusion of light results, and, if the harsh, white quality is modified, the presence of such light sources in the visual field ceases to be annoying and dangerous. Of course, one's aesthetic ideals are somewhat restricted where glassware must be reconciled with the cheap, ugly fixtures found even in the most expensive apartments.

When the fixture is entirely lacking in proportion of line and symmetry, or else "embellished" with impossible ornate bows, festoons and flourishes, it is best to avoid adding insult to injury, by selecting globes expressing simplicity in contour and design.

Referring again to figure 1 the difference between the inverted gas and electric lamps is revealed by the characteristic—and incidentally unattractive burner mechanism of the gas lamp. Many persons are unaware of the fact that standard manufacturers of gas mantles have perfected a burner mechanism which exactly resembles the ordinary electric socket. This device enables one to use all the globes available for electric lamps—in either upright or pendant forms, with the standard three and one-half inch upright mantle, or the new Junior mantles, which compare in quality of light with the sixty Watt tungsten lamp.

There seems to be a general impression that when a portable gas or electric table lamp is used as a supplementary source, as described in our last article, it is necessary to eliminate one of the fixture lights to accommodate the flexible gas tube, or electric conductor. "Multiple" attachment plug sockets may be obtained for a few cents, which permit the necessary connection without detracting from the appearance of the fixture, and gas cocks with "by passes" perform the same function for gas lamps.

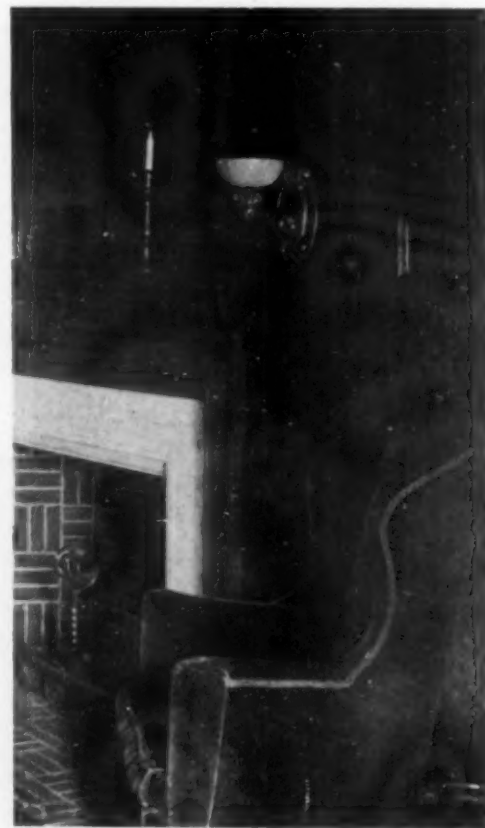
When fixtures are fitted with upright lamps, as in figure 2, modification is somewhat facilitated, that is, assuming the function of the center ceiling fixture to be a source of general illumination, in contrast to the localized effect of the table portable lamp, which as previously stated contributes to the pictorial aspect of an interior and supplies variety.

The fixture illustrated in figure 2, is typical of thousands. They are usually hung so low that the glare from these cheap, ground glass or ribbed shades blinds the eye, or so high that the useful, horizontal candle power of the illuminants is wasted on the upper side walls, causing annoying glare from picture glass, and leaving the lower portion of the room where light is needed, in a stratum of darkness.

Figure 3 indicates how such a fixture with upright lamps, may be converted into an indirect lighting unit. The reflectors furnished for this purpose by the manufacturers of indirect lighting equipment, are termed "adaptables" and are designed to slip over the electric socket without any re-construction, and while the reflectors illustrated in figure 3 are not artistic, they are serviceable to those who, as tenants, must obtain lighting improvement without removing or injuring the landlord's equipment.

Great attention has been attracted by what is known as the indirect method of illumination. This system advocates the entire concealment of source, the lamps being placed in glass reflectors coated with pure silver, which reflect all of the light on the ceiling, which in turn acting as a third redirecting surface, diffuses the light throughout the room. This method has found many partisans amongst ophthalmologists and oculists.

Dr. George M. Gould, Editor of "American Medicine," and author of many authoritative monographs on physiological problems, says in a



A dense opal hemisphere with light ceiling above gives a good indirect effect

chapter on the Physiology of Vision: "The millions of dollars spent each year in illumination are in great part wasted and mis-spent, and by the methods used all the harm is done to the eye that is possible. No room should be lit in such a manner that the individual lights are visible. Illumination should be by transmitted, dissipated and reflected light."

Light colors reflect the most light, because they absorb less, and diffuse more than others, but it is a mistake to use a dead white ceiling as a diffusing medium, since in effect such lighting suggests a mortuary.

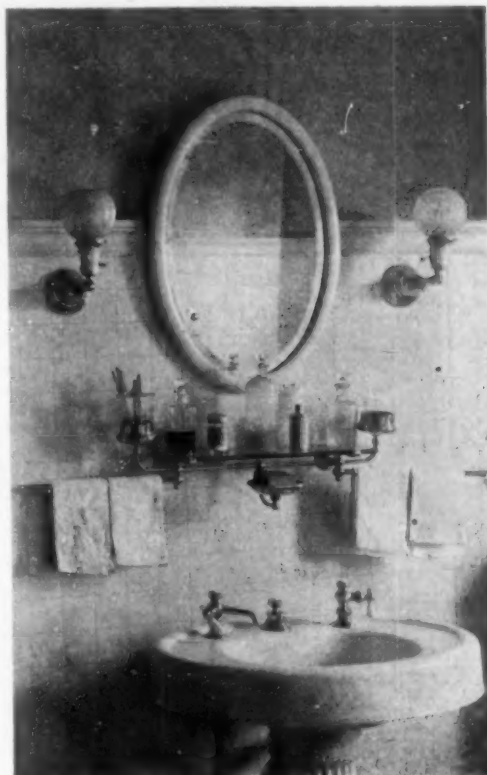
Here also, as in the case of direct lighting, color modification is necessary, and contributes immeasurably in suggesting an atmosphere of repose. Delicate cream and ivory ceiling tints are suitable. The important thing is to employ reflectors which re-direct every ray of light from the source to the ceiling. Pure silver, highly polished, reflects ninety-two per cent. of the incident light. The best reflectors for indirect lighting consist of fine glass, upon which pure metallic silver has been deposited. A series of spatulated, contiguous indentations on the inner surface, prevents the reflection of a multiplicity of lamp-filament images, or streaks on the ceiling. The permanency of this reflecting surface, depends only on its cleanliness. It is not chemically affected or disintegrated by light or heat rays from electric illuminants. On the contrary, ordinary mirror reflectors, glass upon the back of which quicksilver or some solution of nitrate of silver and chloral hydrate has been deposited become yellow and worthless as reflecting surfaces with comparatively short use.

Much may be said in favor of indirect lighting. Owing to the entire concealment of lamps and reflectors within, it is possible to express

character and individuality by an unlimited variety of exterior fixture designs. Hence, we may hide these ugly but efficient reflectors within floral baskets, massive urns, pedestals, or cornices, without even utilizing the tediously conventional ceiling outlet. There are now available portable lamps for table, or pedestal use, which combine both indirect and direct effects. Within an attractive silk shade a powerful reflector gives a soft general illumination throughout the entire room, or by a turn of the switch, the brightness fades and a soft twilight prevails. The versatility of such a lighting unit, with its portability, permits of both direct and localized, and indirect and general lighting, independent of regular fixtures or equipment.

The glass maker has produced in opal glass many attractive urns and bowls, which lend themselves gratefully to indirect lighting applications. In using these translucent forms, it is best to utilize inner reflectors, if any benefit is to be derived from ceiling diffusion, since the mere grouping of bare lamps, within one glass bowl is, at best, a miserable compromise betwixt direct and indirect lighting. This is because the inner surface of the glassware generally used, has a negligible reflecting or diffusing action, and in practically all instances the light sources, are stupidly placed so that their effective distribution, cannot be efficiently utilized in producing the desired effect. Again, Italian alabaster, for example, if too

brightly lighted from within, loses to a marked degree the charm of its delicate veinings and exquisite depth, owing to its excessive surface luminosity from transmitted light. Only surface ornamentation rendered in decided *bas relief*, is effective under such conditions. It is best, therefore, to allow just sufficient



A situation where white light is desirable, but it should be placed to shine on the face, not the mirror



The lines show the lighting arrangement inside the silk shade. The globe should be of dense depolished opal; the shade lowered as indicated. The upper arrow shows position of a small dimming device



Fig. 1. — Suggestive of the office or the store



Fig. 2. — Useless, but seen by thousands

transmitted light within the bowl to accentuate such elements of beauty as are inherently within the structure of the glass itself. This may be accomplished by utilizing the reflectors previously described, with secondary illuminants of low intensity, placed to diffuse, illuminate and express the character of the glassware.

It is to be regretted that electric illuminants may not be so conveniently regulated as gas. The satisfaction of turning a lamp up, or down, gradually, in perfect harmony with one's various wishes, is very great. True, there is an electrical attachment on the market which accomplishes this in a way, but the various gradations are too abruptly marked, and its application is limited. To those who appreciate the ability to control electric light in the home, with the same facility as gas, the use of "dimmers" such as are used in producing theatrical effects, are recommended. These are obtainable in various sizes, and may be placed on the wall near the point of control or switch. Very often they may be concealed at the side of a piano or behind a large picture frame. They consist of a resistance wire imbedded in fire-proof material and contact with the wall is prevented by projecting arms, which serve to hold them in place. Any intelligent electrician will know how to install them in accordance with the regulations of the Board of Fire Underwriters.

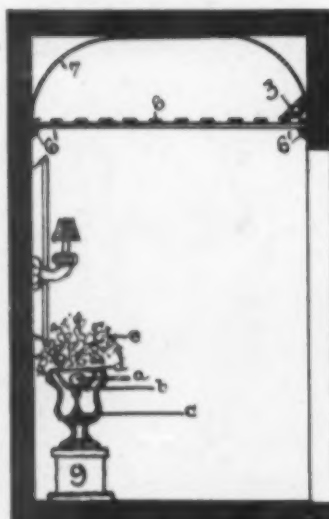
In decorative touches of light, the small electric lamps offer a ready means of attaining many pleasing effects. Perhaps the best way is to use what is known as a transformer, which cuts down the regular commercial voltage supplied at one hundred and ten volts to six or eight volts. This voltage involves no fire risk, consequently small silk-covered wires of the same color as the wall paper can be readily concealed and distributed without difficulty



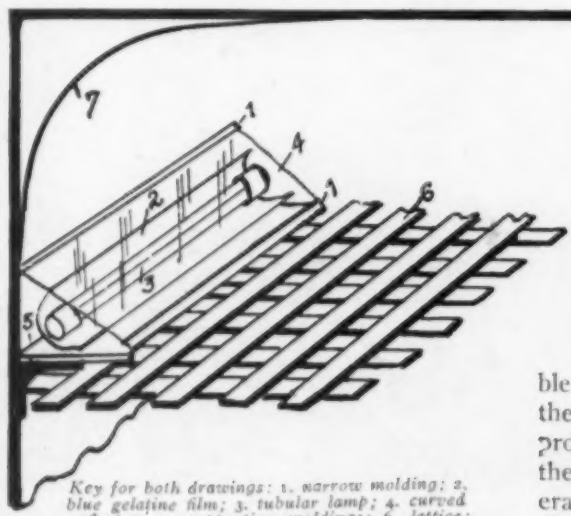
Fig. 3.—A possible indirect lighting unit



The glass bowl with a cluster of lights inside shows a faulty attempt at indirect lighting. A powerful reflector should be placed in the bowl throwing all the light on the ceiling. Small auxiliary lights beneath this would bring out the beauty of the glassware



A sectional diagram showing method of lighting a hallway for the moonlight effect spoken of in the last paper.



Key for both drawings: 1. narrow molding; 2. blue gelatine film; 3. tubular lamp; 4. curved reflector; 5. supporting moldings; 6. lattice; 7. artificial ceiling, deep blue; 8. supporting moldings; 9. urn and pedestal, with light to shine on flowers (c); a. lamp; b. reflector; c. support.

or expense. When the main switch is open, no electricity can pass through the transformer, and the lighting of the small lamps, of course, denotes that the switch is closed—hence they constitute their own danger signal. In concealing these small bulbs within vases, to give life to a sprig of blossoms therein, small reflectors of white asbestos, funnel-shaped, may be easily made.

Be sure that the light radiating portion of the lamp lies well within the reflector, else its re-directing powers will be nil. A touch of light on the dial of an old clock, the beautifying of a picture, as described in previous articles—the glow of an open hearth, and other and innumerable touches of light—used as an artist would apply his brush to a painting—are only limited by the imagination and artistic perception of the individual, which is measured, incidentally, by the finished appearance of his work.

And now, a word as to those who are not users of either public service supplied gas or electric light—and their name is legion, covering the independent systems which may be employed.

It need not be understood from what has been said in the foregoing articles that these methods of using light are only available in regions where gas or electricity are supplied by some public service corporation. The home in the distant rural district or the far away cottage at seashore or mountain may receive all the benefits of good lighting, for while there may not be the city supply, there may be substituted the independent system, installed and operated by the owner. It must not be thought that the private lighting plant is a heavy expense or a great annoyance to look after, or that it is responsible for fires, for so far has the progress of manufacture proceeded that there are upon the market a number of generators safe, moderate priced and practically automatic.

(Continued on page 342)

The Various Uses of Shrubs and Shrubbery

THE DISTINCTIVE QUALITIES OF SHRUBS—THEIR SPECIAL AND GENERAL APPLICATION—PLANS THAT WILL ENABLE YOU TO IMPROVE YOUR PLACE—DIRECTIONS FOR CHOICE PLANTING AND CARE

BY E. O. CALVENE

Photographs by Ella M. Boulton, E. J. Wallis and Nathan R. Graves



Philadelphus coronarius

SHRUBBERY in general has many—or at least several—distinct uses. That, I think, is pretty well understood and appreciated by most of us; but it takes a considerable degree of intimacy with the many kinds of shrubs that are available to bring a realization of their distinctly individual qualities and their special attributes. Collectively they are something like a roomful of people newly introduced—but gradually they step out one by one, as acquaintance ripens, and become significant units displaying each the charm and variation of its kind. Thus we come

to understand that there are general utility shrubs and others which Nature has evolved into “distinguished personalities,” and we learn to use them accordingly.

A good all-around shrub must be robust in habit, clean and wholesome in leaf and branch and the host of no insect, adapted to any ordinary soil, attractive if not showy in flower—and absolutely and unquestionably hardy. There are many which fulfil all these requirements; but when it comes to grouping shrubs into masses, other considerations enter in; and so only certain combinations from the list can be used effectively together. There must be variation in height, so that the mass may rise with an easy flowing line; there must be variation in time of bloom, so that there may be flowers somewhere in the mass over the longest possible period; and there must be variation in habit—that is, the form which the shrub takes in growing—so that the erect-growing kinds shall have lower, undulating mass before them to unite them with the lawn effectively, leaving no dividing line.

As a first-choice list of “all-around” shrubs, I would name these: *Syringa vulgaris*, 15 feet; *Viburnum opulus*, 12 feet; *Cornus paniculata*, 10 feet; *Philadelphus coronarius*, 10 feet; *Spiraea Van Houttei*, 8 feet; *Rhodotypos kerrioides*, 6 feet; *Diervilla florida*, hybrid, 6 feet; *Daphne Mezereum*, 4 feet. These eight may be reduced to five by eliminating the *Syringa*, the *Cornus* and the *Daphne*. The latter can be spared, for the six-foot-tall *Diervilla* is so arching as to branch and spreading in its habit that it makes a most excellent foreground shrub in spite of its size. With these five species a limitless planting is quite possible without monotony; and here is material for boundaries, screens and border groups of every size and shape.

In arranging these upon the ground, the tallest will naturally be placed farthest back; yet it is not good planting invariably to bring the mass down to the ground level by facing it down with low-growing specimens. For variety and a spirited effect, there should be places where certain tall shrubs rise abruptly; but these should be varieties which do not grow bare at their base as they mature. And, of course, the mass should not be reduced to a single row at any point; but always there must be enough to insure its density and to prevent the straggling appearance which



Viburnum Opulus is a shrub glorious in its fine leaf, flower and berries. It is adaptable to various uses



The lilac is a large shrub especially desirable for the delightful fragrance of its blossoms suggestive of old-fashioned gardens



The yellow blossoms of the forsythia precede almost all other spring bloom. However, place the shrub in the center of others

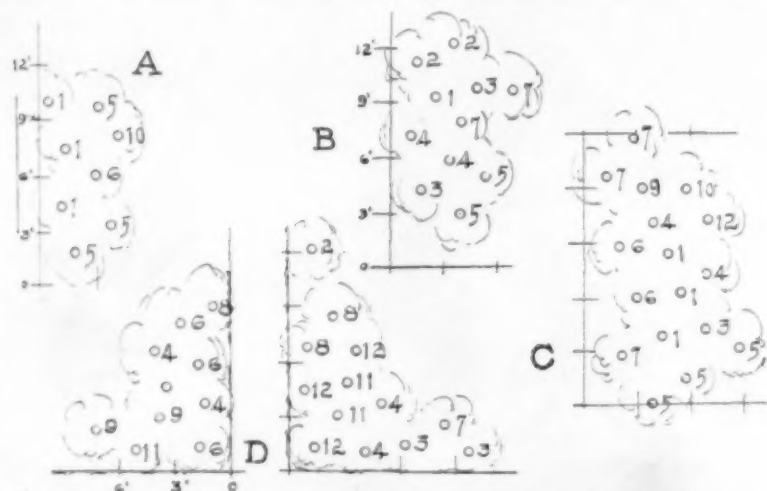
comes when the shrubs are not planted quite thickly enough.

These general utility shrubs are adapted to large places and small; and the little diagrams here given show units from which a planting scheme of almost any size may be built up, by repeating them as suggested. Naturally a large planting need not be limited to so few varieties as seven; so a "second choice" list is given to be combined with the first, thereby increasing the flower effect of the mass. Do not overlook the beauty of shrubby foliage, however, in the desire to have plenty of flowers; for the green of shrubs *en masse* may be quite as much a feature of the garden or of the landscape as the green of trees. And autumn brings color quite as much to the shrubby group as it does to the trees, when eyes are open to see.

The shrubs which are recommended in these two lists are not novelties by any means; indeed, a novelty in the shrubby world

is usually the thing to be avoided. The first named is just our old, well-known and well-loved purple lilac; the second—*Viburnum Opulus*—is the native highbush cranberry—a shrub which has not a peer in the world, to my mind. Everything about it is lovely, from its lobed leaves, suggestive of the maple a little bit, to its large cymes of white blossoms and the subsequent abundance of scarlet berries. Usually this is counted a shrub of special purpose, just for these berries. But I prefer to make use of it everywhere, as a general utility variety, and not limit it to winter effects. It is too valuable to be so limited.

The second is another native, a cornel—*Cornus paniculata*—which is almost if not quite as fine a specimen as the *viburnum*. The two species have much in common to the casual observer, but may always be known one from the other by the division of the flowers into four parts in the cornel, into five parts in the *viburnum*. The leaves of the former are always smooth at their outer



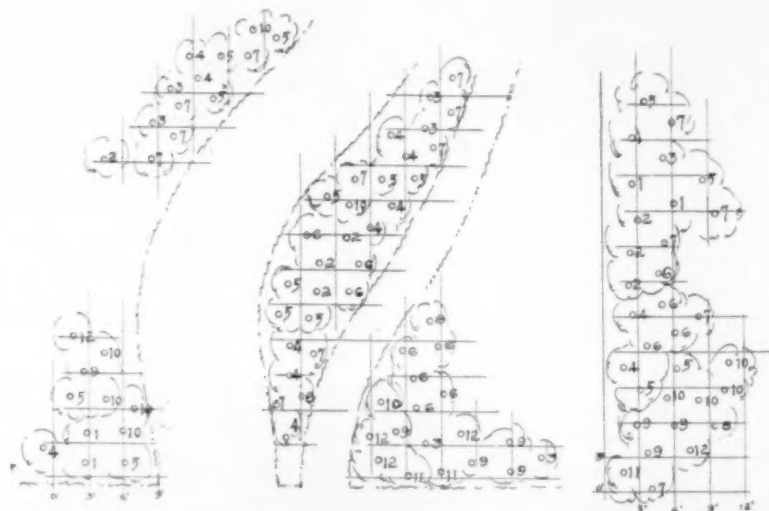
These measured plans may be adopted as units or combined. A and B are border plantings; C, a screen to be seen from both sides, and D a small entrance planting



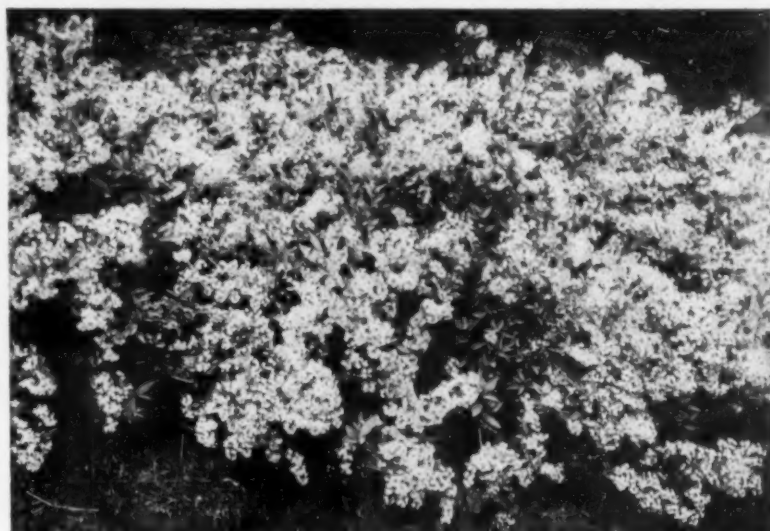
Shrubs should frame a lawn, not be scattered about it or have formal lines. This border shows a shrubby grouping in which *Spiraea Van Houttei* predominates. This plant with its arching branches smothered in fleecy white lasts well and is very showy

edges too, while the leaves of the viburnum are saw-toothed. This particular cornel has gray, satiny branches and is very attractive in flower; its fruits are white instead of scarlet, but they are borne on scarlet stems, which set them off beautifully.

The old-fashioned sweet—heavenly sweet!—syringa is number three (*Philadelphus coronarius*), and it is for its fragrance especially that this is included, although it is an attractive, fresh green and is free from bugs and blights. No fruits follow its waxy blossoms; but it takes its place midway between the background and the foreground as a very fresh and refreshing specimen nevertheless. The spiraea that is next named is growing so familiar to everyone that its description is hardly needed here. No shrub in the whole garden list is more showy than this when it is in blossom, and it lasts well, too. Literally a bank smothered in fleecy white, its arching branches make it suitable for the foremost position in the group, when one chooses to place it thus, for



The first two sections are an entrance driveway and a walk; at the right is a border in three sections. For key to plans see page 314



The common deutzias present an abundance of bloom. *Gracilis rosea* has pinkish flowers, while the white form is *Lemoinei*

it almost sweeps the ground with its tips, whatever its height may be. The foliage is fine and delicate, and the whole habit of the bush is dainty in the extreme, notwithstanding its really considerable size. For a short time after the blossoms have fallen, it goes through a period of untidy frowsiness owing to the persistence of the dead flower stems; but this is, after all, practically but a few days—less if there comes a good rain to beat them off—and its airy grace throughout the rest of the year more than compensates for these, even supposing its flowers did not.

Rhodotypos kerrioides is not so well known as it ought to be. It has great white, starry, solitary blossoms borne at the ends of the branches curiously so that they look straight out from the bush at one. Following these there are black fruits that are ornamental and persistent; but like the highbush cranberry, I feel

(Continued on page 310)



The desirable shrubbery grouping should have variety in height—the mass should rise in easy, flowing line and there should be variety in form. The mass should never edge a lawn in a single line. This shrubbery is selected for a variety of foliage color and appearance rather than blossom



Why You Should Grow Small Fruits

DELICIOUS STRAWBERRIES, CANE
FRUITS AND GRAPES ARE EASILY HAD
—HOW TO PLANT AND GROW THEM

BY D. R. EDSON

*Photo-
graphs by
Charles
Jones,
Nathan R.
Graves
and
Ella M. Boult*

I FIND in making my rounds of friends who are addicted to gardening, that the raising of fruits becomes one of the most virulent forms of this gentle vice. Those who have passed seemingly little injured or affected through the various stages of vegetable gardening, and have even proved themselves immune to such contagious epidemics as the poultry germ, very frequently succumb when they are exposed to the small fruit hobby.

After all, this is hardly to be wondered at—the fruits are the aristocracy of the garden, and protest our democracy as we may, who would not enthuse more over having produced a dishful of luscious, crimson, pungent, odorous strawberries or a bunch of sun-ripened purple grapes, bulging with juicy sweetness, than over the biggest cabbage or the most odoriferous onion that ever grew. Another great thing about berries and fruit is that those which one grows in his own garden always are the best. But I know a man who will leave perfectly good watermelons in his own patch—to go a mile out in the country and pillage the field of an old farmer, claiming that he can never grow such melons as those. While Jones will go two miles, to get one of this old farmer's melons, however, he will take me out into his own yard and make me feel that I have no right to retain my life insurance policy by eating a half ripe bunch of grapes or a green pear, simply so that he can explain to me how this old farmer who also grows pears and grapes doesn't know the first thing about the art.

That is the fact of the matter, and for several reasons. First of all to develop their full flavor they should be ripened just where they grow, up to the last minute. Further, berries and small fruits are about the least suitable things for shipping of anything that grows. They become bruised and squashy, so that you have your choice of getting them under-ripe or semi-marmaladed if you depend upon the market for your supplies. Furthermore, the man who grows for market is looking after a big yield and to shipping quality, while if you grow your own you can devote yourself to the really important point-quality.

There are two things of importance that must be taken up before giving definite directions as to just what to do now. The

first of these is that there is absolutely no reason why you should not grow your own fruits and every reason why you should. In the first place the outlay for a stock of plants is very small indeed, especially considering the fact that they will not have to be replaced for a great many years. Just to show how little the cost is, I have made out a sample order as you will see below. Secondly they require very little room and will thrive on almost any soil if well cared for. The fact that most small fruits will stand all sorts of abuse and struggle along somehow, producing a little undersized, poor-flavored fruit each season, leads many people absolutely to neglect them. Your fruits should receive just



You can hardly kill a currant bush firmly established, and beautiful white or black currants like these are won with little effort

as careful attention as anything else in the garden. They will not require as much as most other things, and in proportion to the work and time spent on them will give you probably more satisfactory returns than any other of the annuals which, as a matter of course, you grow every year. And there is no danger of your having too much. Modern berries of all sorts have been developed to a point where their yield is quite marvelous. Nevertheless, any surplus there may be is to be most readily disposed of. Kind friends will assist you in your hour of need.

The best time for setting out most of the small fruits is early in the spring, as early as the ground can be worked up to a nice condition for planting, so as soon as you finish reading this article you should look over your catalogue carefully and order what you will require. The one thing that keeps berries and small fruits out of every home garden is the fact that you have to wait one season before you begin to be rewarded for your forethought and energy in setting the plants out. If there is one thing above all others that the amateur gardener detests it is having to wait. He would rather dig up and devour a puny little radish at the end of four weeks than wait four months for the most delicious musk melon that ever melowed on the vine in the autumn sun. And when you try to get him to set out a strawberry patch or grape vine or a few raspberry bushes, from which he will be able to gather nothing until the following season, you have a hard job on your hands in spite of the fact that these things will last for years and give him an abundance of the most delicious and prized morsels that are to be had from the garden. Even this objection has been partly overcome by our plant breeders. The new, fall-bearing strawberries—such as Pan American and Autumn, will bear a fair crop of berries in the fall from plants set in the spring—the latter have the better berries but you must keep the runners pinched off, an easy task, to get good results the first season, only three or four months after planting! And raspberries, too, if you wish.

At the end of this article you will find a sample order for small fruits, and if you do not find in your catalogue all the varieties mentioned there, select others or send in the order as it is and ask your seedsman to substitute other good varieties which he may be able to recommend for any of those which he does not carry in stock.

Though the most difficult and the most important part of your work is done when you get your order mailed, nevertheless, there are a few



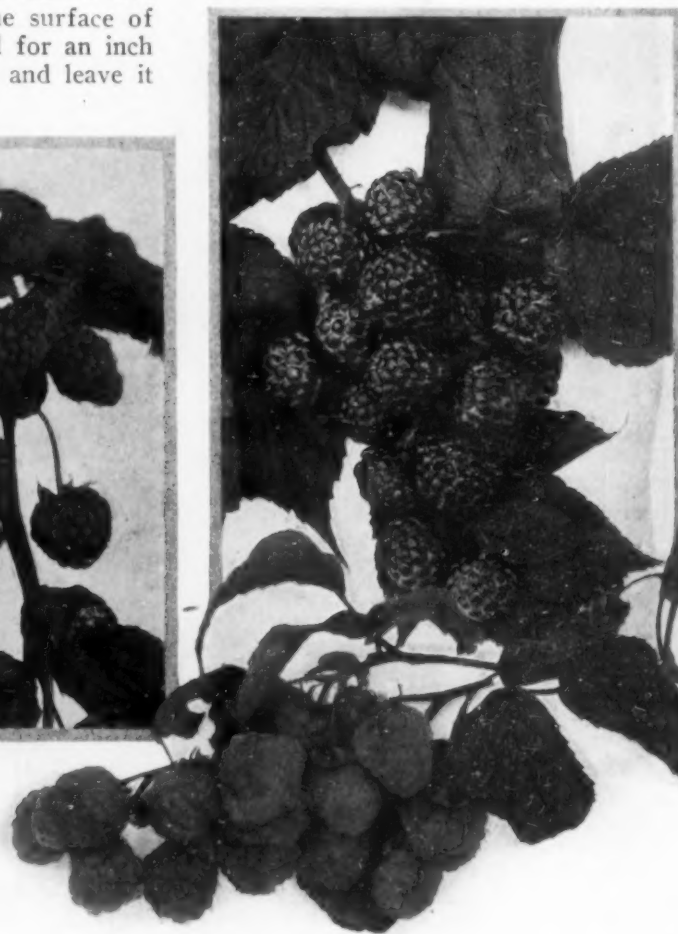
Gooseberries, like currants, need an open, airy position for their best development

other little details to be attended to and one of these, which you should attend to at once and not wait until you receive a notice from the seedsman that your plants have been shipped, is to prepare the place where you are going to plant them. Remember that they will occupy the same place for years and therefore you should pick out a spot where they will be least likely to be in the way and least likely to be disturbed or injured by the man who plows the garden or the auto truck that delivers your coal. It will be, by far, the best scheme to have the whole plot which they are to occupy plowed up and thoroughly harrowed or dug or spaded or forked. And, of course, where you are going to put the strawberry bed the ground must be prepared in this way. Grape vines, currants and gooseberries even the cane fruits—raspberries and blackberries—may be dug in individual spots, but in this case, a generous sized hole should be prepared, for eighteen inches or more in depth, thoroughly pulverising it and enriching it with a little old manure or a few handfuls of bone meal. A good plan is to make a border a few feet wide along the fence or hedge or walk—which usually is not utilized for any specific purpose, and use this for small fruits, keeping the entire surface of it well cultivated at all times. While your fruits will do well on any fair garden soil, one word of warning may be necessary—none of them will do well where the under drainage is poor. Wet feet and good fruit are never to be found on the same vine, bush or tree.

When the impatiently awaited package does finally arrive from the seedsman, set the plants out at once. If it is rainy weather so much the better. In planting, you should be especially careful of two things. First, not to let the roots of the plants become dried out by the wind or sun, and second, to put them into the ground so firmly that they will think they have been growing there six months. If you can't do this with your fingers and knuckles, don't hesitate to use your feet. After they are planted you can rake or fork over the surface of the soil for an inch or two and leave it



Red, black and white raspberries are easily grown, and moderate care will produce giants like these, of the most delicious flavor



fine and loose, but around the roots it should be packed as firmly as possible.

Without doubt strawberries are the most popular of the small fruits. Have the bed prepared so fine that you can set the plants easily by hand. If the roots are long and dried off at the ends, cut them back about a third. In any case, spread them out as much as possible and set them as deep as possible without getting any dirt over the crown. Where only a few plants are used, a hundred or so can usually be had by growing them in what is known as the L system culture—a single row, or a bed of three or four rows, with the plants set a foot apart each way and all runners kept cut off as soon as they appear so that the strength of the plant will be thrown into one crown. If it is very hot and bright, it will pay well to keep them shaded for two or three days with pieces of old newspapers or something similar.

As soon as the newly-cut plants "take hold," the ground should be worked about them quite deeply, three or four inches at first. This should be gradually reduced, however, until just the surface is stirred up enough to maintain a sufficient "drought mulch" as it is called, to save the moisture below in the soil about the roots. It will be very easy to keep the newly-set plants clean if cultivation is given frequently, every ten days or two weeks. Do not let the weeds get a start or your season's work on the strawberry patch will be doubled.

Two or three crops are usually taken before a new bed is needed. You do not have to buy new plants for this, however, as you will have plenty of your own. They may be rooted directly in the soil, but a much better method will be to secure a quantity of small pots, 2 or 2½ inches, and place these in the soil, filling them level full and in such a position that the runners about to root can be held in place over them with a clothespin or a small stone, so that the new roots which form will be confined in the pot. It is usually made after the fruiting season, so that the newly-made bed may be set out in August or September. A far better method, however, is to select a few plants from which to get your rooted runners earlier in the sea-

son, so that you will have them ready to set out in July or early August. If these are set in rich soil and well cultivated and all the runners picked off clean, they will give a full crop of berries

the following spring, thus saving a whole year's time. For with this method you can easily have a new bed every year, and if you want the largest and nicest strawberries you can grow, this is the way to handle them.

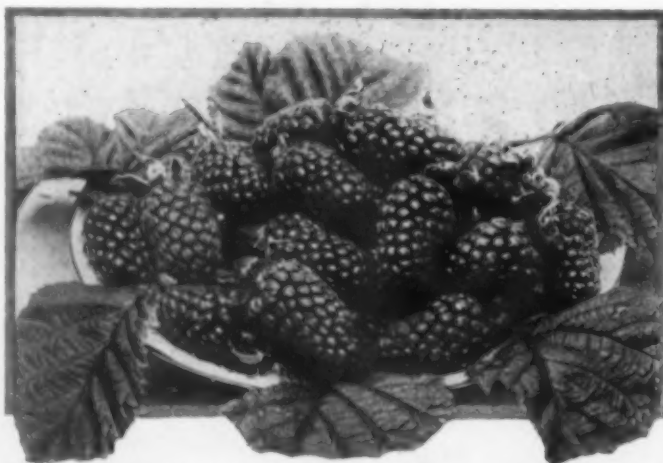
The mulching for the strawberry bed serves a double purpose. It protects the plants during the winter, keeps them up out of the soil, and guards them from being spattered every time it rains in the fruiting season. Clean, dry, autumn leaves, straw or bog hay may be used for this purpose, but the latter is the most convenient, as straw is more expensive and leaves are likely to blow around. Put it on after the ground freezes hard, but before very severe cold weather—November Fifteenth to December Fifteenth, depending upon the season. Cover the entire bed, soil, plants and all about three inches deep. In the spring when they have once begun to throw out new leaves and danger of frost is over, push this covering a little to one side over each plant to assist it in getting out of bed.



When raised with care, cane fruits have a decorative value that should not be disregarded



In taking up runner plants of strawberries care should be exercised and a ball of soil left adhering to the roots. In purchasing look for well-developed root fibres



The red Logan's dewberry of wild blackberry flavor is sometimes one-and-one-quarter inches long

The cane fruits—raspberries, blackberries and more humble and not sufficiently appreciated cousins, the dewberries, will grow with scarcely any care at all; but the better the attention you give them, the better will be the returns they give you. If there is any choice at all in the matter of soil, give them the heaviest and most clayey in the garden. Set the plants in the ground at about the same depth they have been growing in the nursery which you will be able to perceive by the discoloration at the base of the stem. The canes when you receive them will be quite long, but as soon as they are planted they should be cut back within about half a foot of the ground.

As the plants grow naturally, they are altogether too ambitious, growing up entirely too many canes, but they should be cut out until only four or five are left—and each year all those which have borne fruit should be cut out clean and removed as soon as possible thereafter.

(Continued on page 317)



Verbena

WAITING patiently in their neat packets in the seed basket to be given their chance—what should we do without annuals?

For, of course, nobody ever wants actually to finish the garden; to get it all done, like the historic old town down south where not a nail has been driven since the war. Just fancy what such a garden would be like! It is too dreadful to contemplate.

No indeed; variety is as desirable a condiment in gardening as in any other phase of life, even though the garden itself in its layout and general scheme is complete.

Too much variety, however, is as disconcerting as too little is dispiriting; so this year I made a resolution, when the first catalogue came in—and if it works out satisfactorily, it is going to be written down in the Book of Garden

Laws. Here it is: The garden shall have ten annuals, and only ten—as unlike each other as possible, and perhaps every one shall be different from any that the garden has ever entertained before. Certainly some of them shall; and one at least must be a new variety—or as new as the season offers.

This is really a broad, elastic resolution—one that does not hamper in the least and that provides pleasurable anticipation. Here is what I am using: For the season's novelty, which has been given space enough to try it well, there is the new Shirley poppy, "Celeste"—a lovely, pallid ghost, in gray, sky-blue and lavender tones. That I am a bit sceptical of this flower only makes the anticipation the more keen. In combination with gray nothing is as lovely as the purest, palest yellow; so, on the chance that the poppies may show this promised tone, they are backed with a row of the pure yellow snapdragon, Golden Queen. It will not be a bad combination even if the gray should turn out to be only lavender.

For the rest, there is the African daisy — *Arctotis grandis* — with its great, white, starry flowers, tinted with pale bluish mauve on their backs; the pretty *Clarkia* in a

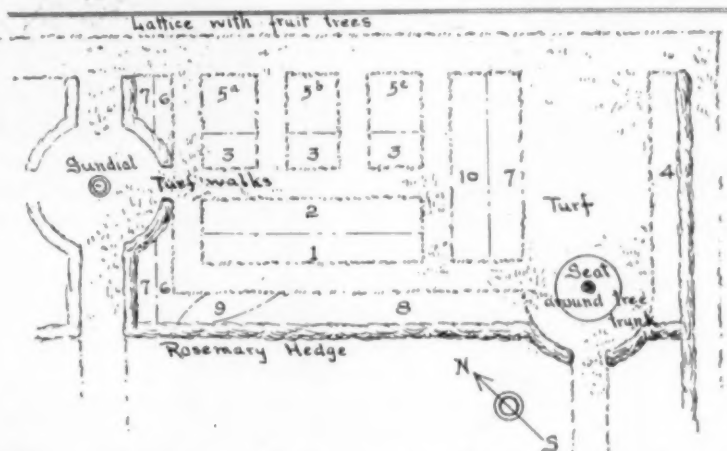
Ten Annuals for This Year's Garden

AN ATTRACTIVE PLAN FOR A GARDEN USING ONLY TEN VARIETIES—THE PLANTING AND CARE THAT MAKES FOR THE BEST RESULTS

BY GRACE TABOR

Photographs by Nathan R. Graves and Charles Jones

salmon pink form for a partly shady place; quantities of double pinks in three varieties—a pure white, a crimson and an almost black crimson that shows a white line around the edges, like rich velvet edged with ermine; California poppies in yellow shades only, ranged in front of a line of double stock-flowered annual larkspur; red and white lupines in another place that does not get the full sun; Xeranthemums in a group at one corner, and finally, a mass of verbena, a white and clear blue variety, making up the required number of ten. Enclosing the entire space where



- 1, *Papaver Celeste*; 2, *Antirrhinum*, giant yellow, snapdragon; 3, *Arctotis grandis*, African daisy; 4, *Clarkia*, Salmon queen; 5, *Dianthus* (annual), Snowball, Fireball and Morning Cloak; 6, *Eschscholtzia Californica*, California poppy; 7, *Delphinium* (annual), Sky Blue; 8, *Lupinus* (annual), rose and white; 9, *Xeranthemum annuum*, everlasting, and 10, *Verbena*, blue and white

the annuals grow there is always a trim little hedge of rosemary, sweet-flavored and useful—a paradise for the bees. This, of course, is in its accustomed place. All walks are turf and the beds are cut down about two inches below the surface.

Of course, nothing is to be expected of the garden of annuals much before the end of June; therefore it should not be located where its barren earth will be aggressively within sight during the preceding weeks. The edging of rosemary helps to minimize the barrenness, however, and in localities where this will endure,

I know of no more delightful treatment for garden beds than such a hedge, whether the walks are of grass or gravel. Common mint may be used in place of rosemary, where it is not hardy, and this furnishes a pleasant and effective substitute, if trimmed well and kept within bounds.

Annuals happily will grow practically



California poppies demand nearly the care of oriental sorts and are averse to transplanting. The seeds may be sown early. Golden West is a good variety for the garden



Snapdragon, though not really an annual, is treated as such. One of the best yellows is Golden Queen



The annual larkspur is a very beautiful substitute for the perennial sort, and its blue blossoms appear in July if seeds are sown late in April

anywhere and for almost anybody, however indifferent a gardener he may be. But even annuals appreciate a good home, and will respond to good culture. Therefore it is wiser to give them a little more consideration than they commonly receive—to make their beds with care, and tend them according to their needs, until the plants are big enough to look out for themselves, without further trouble on your part.

Each year the earth must be spaded thoroughly and worked over to a depth of eight inches or more. This insures a mellow soil for deep-reaching roots, and though it seems unnecessary, perhaps, after several seasons of culture, I always feel that it is better to make no exceptions to this rule. Wet or stiff soil will need deeper work than this, especially if it is newly broken up, but a foot is deep enough for all summer flowering annuals. Vegetables and sturdier things may need greater depth, but we are concerning ourselves only with the plants which will not. Well rotted and broken up stable manure should be worked in with this spading—and finally, the surface must be raked smooth and fine.

Ordinarily I do not feel that it is worth while to start annuals indoors in pots or flats—but perhaps that is because I always have so many other things which require the space which these would take up. As a matter of fact, however, there is not enough time actually gained to make up for the extra trouble; and for the inexperienced it is far easier to sow the seed where the plants are to grow and thin them out as they come up, than to undertake to transplant them when small and tender. Some will not submit to transplanting.

The poppy is one of these; the poppy has long tap roots. It must be sowed

I usually sprinkle the ground surface with a light sifting of earth after thus pressing them down, to prevent evaporation; but such a sifting must be very light and not touched after it is applied.



Clarkia, an old-fashioned beauty, should be revived. Salmon Queen grows early and in the shade

out of doors where it is to grow. Poppy seed are very small—consequently they must be covered lightly with earth; and when the seedlings begin to prick through the ground, you will find that you have several million more plants than seemingly there is room for anywhere on earth. They are quick to germinate and the time to pluck up the superabundance of them is as soon as they are above ground, leaving enough space so that they will stand about four inches apart all over the part of the garden reserved for them. Some find it easier to sow them by mixing the seeds with some finely sifted earth, but this is a matter of choice. The one thing essential is not to drop them in clumps, but to scatter them as evenly as possible, avoiding waste. One packet of seed will sow a large space, properly broadcast. Choose a cloudy day, just after a rain if possible rather than just before one, for a rainfall will be likely to wash the seeds about distressingly and leave spots perfectly bare. Press the seed into the ground after scattering them, using a flat strip or block of wood and patting the bed with it.

The snapdragons, *Antirrhinum majus*, hybrids, are really perennials or biennials, which, like so many of their kind, are treated as annuals. They will not be ready to blossom until the middle of summer if they are not started in the house, but from midsummer on they will give constant bloom, even though sown directly out of doors. The soil for them should be light; that is, well lightened if it is clay to start with, by mixing coal ashes through it as well as manure, and perhaps some lime. This should be applied some time before sowing the seeds, however, in order to give it a chance to leach through the earth and do its work. Whether you start them indoors or out, see that the plants are eight inches apart in the beds finally, and four inches back from the edge of them. The height of the variety named—"golden queen"—is about a foot and a half, this being one of the low-growing, dwarfish varieties.

African daisies will usually be in bloom on the First of July if the seeds are planted by the First of May. Wait until the ground is surely warm before putting them in though, for remember that this is a plant from a hot land. It germinates within a week—five days is the exact time usually—and the plants ought to stand a foot apart at least, as they grow to be anywhere from two to three feet high and are much branched. This will bring the foremost

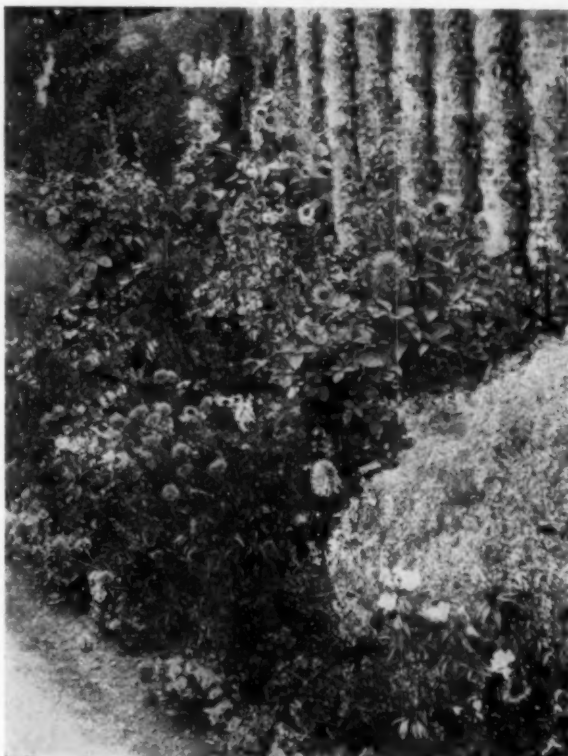
along a border about eight inches from the edge, to allow for the spread of the branches.

Clarkia elegans, Salmon Queen, is the variety which I am using in the partial shade cast by the locust tree; and this is as easily grown as the marigold. Plants should be ten to twelve inches apart or more; and the flowers should be cut as fast as they fade. For cut flowers indoors this is a particularly delightful species, as the blossoms will open in water after cutting, and last well.

Double pinks are almost as lovely as carnations—and they will grow in any soil providing they have full sunlight. For the white variety there is the snowball, for the red, the fireball, and for the nearly black, the mourning cloak—suggestive names which are easy to remember. Actually these are not annuals but biennials; but they are classed and treated as annuals practically everywhere. Sow them as soon as frost has departed for good, and let the plants be about five inches apart. They grow nearly a foot high, and will blossom all summer if the faded flowers are persistently cut away. It is possible to carry them through the winter with some protection, and they will bloom the second season. After this, however, new plants must be raised; and ordinarily it is not thought worth while to attempt to winter the old ones.

Treat the California poppy the same as the Shirley poppy, as far as sowing is concerned, for it also is averse to transplanting. The seeds may be sown very early as it is not susceptible to cold, blooming even after frost has come in the autumn. *Eschscholzia Californica* and *Eschscholzia*, Golden West, are the two varieties which combine best with the larkspur. In addition to being delightful in flower, this plant has foliage that is distinctly ornamental. The annual larkspur will blossom in July from seeds sown late in April, which is the usual time of sowing. And there is nothing in the garden finer to my mind than the lovely blues of this plant. To be sure it comes in pinks and lilacs that are good colors, but larkspur in anything but blue is somehow not what seems right or natural, whether it is an annual or perennial. So it is in blue only that I ever make use of it—and that usually in combination with some yellow flower such as the *Eschscholzia*. It is a color harmony that never palls.

Lupines in clear rose and white in a great mass where they can have things all to themselves, are as charming as anything that can be grown. Indeed, there are few flowers that have the still and quiet stateliness of these; they always



Annuals are generally considered the garden reinforcements and fill out perennial plantings, but their use separately in the garden is also desirable



Double pinks come in great variety and are almost as good as their relatives, the carnations



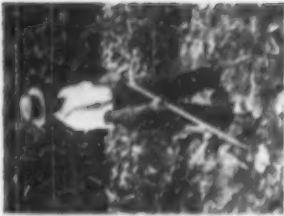
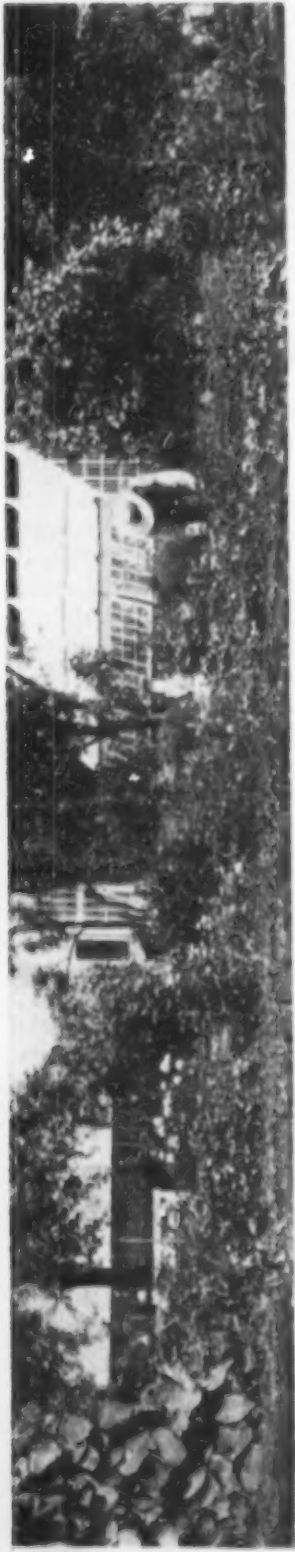
Plan for the early blooming, large, white starry flowers of the African daisy, *Arctotis grandis*

seem to be so perfectly balanced on one foot—and to be so aware of it. Preferring some shade, they are particularly adaptable to the small garden where a certain amount of it is almost inevitable. Sow them where they are to grow, for like the poppy they do not like to be moved.

Xeranthemums are everlastings—and without one of these no annual garden can ever be called complete. Purple, white and rose-colored flowers in mixture is the common fashion of raising them, and indeed pure colors are not offered, the seed being sold only in mixed packets. Not very much space is needed for these, as a few will go a long way; but with the plants a foot apart, half a dozen will not take up more space than any garden can very well spare. They are really very pretty flowers apart from their everlasting qualities—which are rather more against them than for them, through the long association with unused "front parlors" which distinguishes everlastings generally.

For years verbenas have been neglected, as far as my garden is concerned, but suddenly I found myself wanting them again. Along with nearly everything else in the line of annuals, they have been improved and developed and made over into something so splendid that I am sure they do not know themselves. These are supposed to be started indoors or in a hotbed; and they cannot be sown outdoors until May. So if flowers are wanted before the end of July, there is really no choice in the matter. A small flat will furnish space for a great many seedlings however; and instead of transplanting to flats or boxes of any sort, I personally would recommend the little paper pots to the small grower. It is possible to make these for oneself, out of a heavy wrapping paper such as any

(Continued on page 315)

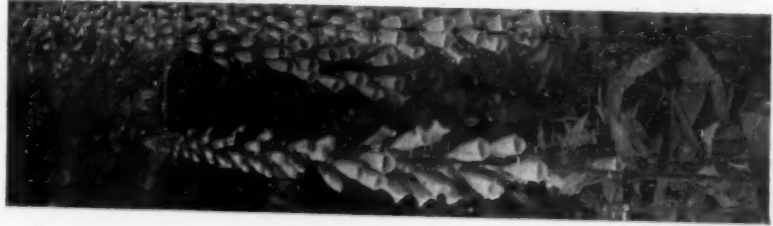


HOUSE & GARDEN'S GARDENING GUIDE-1913

VEGETABLES	VARIETIES	DISTANCE		SEEDS OR PLANTS FOR 50 FT. ROW	DEPTH (IN.)	NO. DAYS TO MATURE	REMARKS
		APART IN ROWS	ROWS APART				
EARLY HARDY CROPS.							
ASPARAGUS	Palmetto; Giant Argenteuil	1 ft.	3 ft.	50	4	1 yr.	Trench rows and cover in manure with four inches of soil before planting.
BEEF	Ey Model; Columbia; Crimson Globe; Dark Stinson	4-6 in.	12-15 in.	100-150	1	40-60	Similar to cauliflower, but hardier.
BROCCOLI	Ey White; French	1 1/2 ft.	2 ft.	35	1 1/2	50-90	Set out as soon as weather permits if well hardened off.
CABBAGE	Copenhagen Market; Alhead; Succession	1 1/2 ft.	2 ft.	35	1 1/2	70-100	Set out about ten days after early cabbage.
CAULIFLOWER	Snowball; Best Early; Dry Weather	1 1/2 ft.	2 ft.	35	1 1/2	50-80	Sow in as light, dry soil as possible; be sure not to cover deep.
CARROT	Short Horn; Chantenay; Coreless; Danvers	3-4 in.	12 in.	1/2 oz.	1 1/2	125-150	In seedbed for transplanting later; set out before plants get tall.
CELERY	Golden Self Blanching; Winter Queen	3-4 in.	12 in.	1/2 oz.	1 1/2	75-100	Thin out as soon as possible; use while young and tender, not over two inches in diameter.
ENDIVE	Giant Fringed	12 in.	12 in.	1/2 oz.	1 1/2	65-85	
KOHLRABI	White Vienna	12 in.	12 in.	1/2 oz.	1 1/2	60-100	Sow thinly in seed bed and transplant for best results.
LETTUCE (plant).	Mignonette; Grand Rapids; Wayhead; Iceberg; Big Boston	8-12 in.	12-15 in.	1/2 oz.	1 1/2	40-85	Sow in seed bed for best results.
LETTUCE (seed).	All-season; Brittle Ice; New York	12 in.	12-15 in.	1/2 oz.	1 1/2	120-150	
LEEK	American Flag; Giant Mussieberg	3-4 in.	15 in.	1/2 oz.	1	130-175	Sow as early as possible; do not thin out until well started.
ONION	White Queen; Frizetaker; Danvers; (3) Southampton	3-4 in.	12 in.	1/2 oz.	1	90-130	Cut back tops a third to a half, roots two-thirds when setting out.
ONION (seedling).	Alba Craig; Giant Gibraltar; Frizetaker	2-3 in.	12-15 in.	1/2 oz.	1 1/2	100-110	Soak seed in lukewarm water for a day before planting.
PARSNIP	Improved Hollow Crown; Offenham Market	4-6 in.	1 ft.	1/2 oz.	1 1/2	100-150	Sow quite thickly; if the soil is not mellow, trench deeply before planting.
PEAS (smooth)	Best Ext. Ey; Alaska; Clipper; Pilot	3-5 in.	15-18 in.	1/2 oz.	1-2	50-65	Sow few or none at all; the early wrinkled sorts are very much superior in quality.
PEAS (wrinkled)	Laxtonian; Blue Bantam (dwarfs); Gradus; Early Morn	2-4 in.	3 ft.	1 pt.	3-4	60-75	The first planting about two weeks after cabbage.
POTATO	Irish Cobbler; Bonnie Best; Eureka	13 in.	28 in.	1/2 pt.	3-4	60-90	Sprout four weeks in full sunlight before planting, cut to two eyes.
RADISH	Rapid Red; Crimson Globe; Icicle; Chantiers	2-3 in.	1 ft.	1/2 oz.	1 1/2	25-50	Sow little and often; top dress the soil with land plaster before sowing.
SALSIFY	Mammoth Sandwich Island	2-4 in.	15-18 in.	1/2 oz.	1-2	125-150	The soil must be deep and finely pulverized; treat as for parsnips.
SWISS CHARD	Lucullus	8-12 in.	15-18 in.	1/2 oz.	1-2	50-60	Sow about half as thick as beets; when gathering, cut three or four inches above crown.
TURNIP	White Milan; Petrowski; Amber Globe	4-6 in.	15 in.	1/2 oz.	1/2	60-75	Sow thinly as early as possible.
MAY 1ST TO JUNE 15TH.							
LATE OR TENDER CROPS.							
BEANS (early)	Stringless Green Pod; Bountiful Ey Red Valentine	3-4 in.	18 in.	1 pt.	1-2	45-75	Plant in lightest, driest soil available, covering only one inch or so deep for first planting.
BEANS (wax)	Rust-proof Golden Wax; Burpees Kidney Wax; White Wax	3-4 in.	15-24 in.	1 pt.	1-2	55-80	Plant about ten days later than above, or "risk" a planting at the same time.
Beans (lima)	Burpee Improved; Henderson's Bush; Drier's Bush	4-6 in.	18-24 in.	1 pt.	1-2	60-90	Plant only with several days fair weather in prospect; put eye down.
BEANS (pole)	Crozier Pole; Stringless Green-pod; Sunshine Wax; Worcester Pole	4 ft.	4 ft.	1/2 pt.	1-2	65-100	Put in poles when planting and thin out to three or four plants in hill when well started.
BEETS	Early Leviathan; Giant Poddie	4 ft.	4-5 ft.	1/2 pt.	1-2	70-90	Have rich light soil in hills; if necessary assist plants in taking hold of supports.
BROCCOLI	Crimson Globe; Columbia; Dark Stinson	4-6 in.	12-15 in.	1 oz.	1 1/2	75-90	If the soil is dry, soak seeds before planting and firm well in soil.
BRUSSELS SPTS	Early White French	2-3 ft.	2 ft.	35	1 1/2	100-140	In seed bed for early fall crops; about June 1st; cut back leaves when transplanting.
CABBAGE (late)	Dalkith; Danish Prize	1 1/2 ft.	2 ft.	1/2 oz.	1 1/2	120-180	Same as above. Transplant later part of July.
CARROT	Perfection Savoy; Danish Roundhead; Danish Red	1 1/2 ft.	2-3 ft.	25-35	1 1/2	60-90	Start same as above.
CAULIFLOWER	Chantenay; Coreless; St. Vallery; Danvers	2-4 in.	12-15 in.	1/2 oz.	1 1/2	100-140	Very fine seed bed; firm well; sow thinly so as to avoid too much thinning out.
CORN (early)	Snowball; Dry Weather	2 ft.	2-3 ft.	25	1 1/2	60-80	Start same as above. Must have plenty of water.
CORN (main crop)	Golden Bantam; Peep o' Day; Howling Mob; Early Crosby	3 ft.	3-4 ft.	1/2 pt.	3	80-100	Plant, if possible, in sheltered position where it is protected from northwest winds.
CUCUMBERS	White Evergreen; Country Gentleman; Seymour's Sweet Orange; Black Mexican	4 ft.	4 ft.	1/2 pt.	3-4	60-75	Sow two to four weeks after early; allow only three to four stalks to hill; cultivate frequently.
EGG PLANT	Davis Perfect; Vickery's Forcing; Fordhook Famous	4 ft.	4 ft.	1/2 oz.	1	40-60	If soil is damp raise hill slightly and mix with sand; thin to three or four plants.
LETTUCE	Black Beauty	2 1/2 ft.	2 1/2 ft.	1/2 oz.	1 1/2	70-90	Set in rich soil when warm, settled weather is assured; give water in drouth.
MELONS (musk)	Allesons; Salamander; Brittle Ice; New York	8-12 in.	12-15 in.	1/2 oz.	1 1/2	90-120	Transplant or thin to eight inches apart and remove alternate heads as they mature.
MELONS (water)	Emerald Gem; Nettle Gem; Henderson's Bush; Montreal; Spicy	4-6 ft.	4-6 ft.	1/2 oz.	1 1/2	100-125	Make hills rich with old manure and mix in wood ashes and sand if soil is heavy.
PEAS (late)	Coles' Early; Halbert Honey; Ice Cream; Baby Delight	6-8 ft.	6-8 ft.	1/2 oz.	1 1/2	70-80	Treat same as muskmelon; protect both from beetles when small.
PEPPERS	Boston Unrivaled; Royal Salute; British Wonder (Dwarf)	3-4 ft.	3-4 ft.	1 pt.	3-4	40-60	Sow in double rows about eight inches apart; put in brush before they begin to run.
PUMPKIN	Early Neapolitan; Ruby King; Chinese Giant; Sweet Upright	2 ft.	2 1/2 ft.	1/2 oz.	1	100-130	Treat same as egg-plant; secure potted plants of both to set if possible.
RADISH	Large Cheese; Quaker Pie	6-8 ft.	6-8 ft.	1/2 oz.	1 1/2	25-50	If space is limited plant where they can run over grass or on the fence.
SQUASH (summer)	Iceberg; Chantiers; White Strassberg	2-3 in.	1 ft.	1/2 oz.	1 1/2	60-75	Sow little, sow often; as a catch crop between beets, lettuce, etc.
SQUASH (winter)	Scalloped Bush; Fordhook Bush; Delicata	3-6 ft.	3-6 ft.	1/2 oz.	1 1/2	40-60	Enrich hills with old manure; set out two or three plants; protect from bugs.
TOMATO	Hubbard; Delicata; Delicious; Blue Hubbard	6-8 ft.	6-8 ft.	1/2 oz.	1	60-75	Thin to two or three plants in a hill; watch for borer; protect from bugs.
TURNIP	Bonnie Best (early); Dwarf Giant; Dwarf Stone; Matchless	3-4 ft.	4-5 ft.	1/2 oz.	1 1/2	40-60	Get a warm, sheltered position; keep well trained up and all suckers cut off.
	Amber Globe (yellow); White Egg	4-6 in.	15 in.	1/2 oz.	1/2	60-75	Sow thinly; firm well; thin out early.

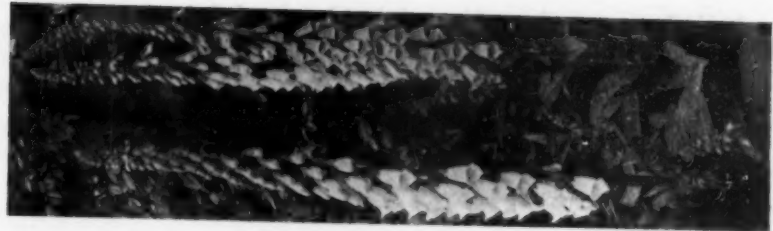
NOTE — C. Flowers especially good for cutting. S. Flowers thriving in partial shade. P. Flowers that should be started early under glass, or purchased from the florist.

ANNUALS — While most of these can be sown in the open ground in May or early June to flower the same year, quicker results will be had if they are started early in flats, in the hotbed or window, and transplanted. With some (marked "p" above) it is quite necessary to do this. With annuals especially it is important to keep the flowers cut off before ripening seed if a long season of bloom is wanted.



BIENNIALS — These should also be sown every year, that flowers for the year following may be provided. They may be started in May or June and transplanted later to their permanent places. Foxglove and other short-lived perennials, are best treated in the same way.

PERENNIALS — Many of these, if sown early under glass, will flower the first year—some, even from seed sown in the open. They should be grown to fair size in the seed-bed and then transplanted to permanent quarters. The border of hardy perennials should be one of the most beautiful spots in the garden.



FLOWER	DISTANCE TO PLANT	HEIGHT	COLOR	REMARKS
ANNUALS				
AFRICAN DAISY.....	6-10	12-15	Rich, various.....	New profuse flowering plants, good for beds and borders.
AGERATUM.....	6-12	12	Blue, white.....	Popular old-fashioned plants for edging. P.
ASTER.....	12-24	18-30	Various.....	Protect from aster beetle by hand picking and Paris Green. P.C.
BACHELOR'S BUTTON.....	16-10	15-24	Blue, white, pink.....	Old favorite for borders. S. C.
BALISAM.....	15-10	10-18	Various.....	Use in foreground, where individual flowers will show.
CALENDULA.....	18-18	18-24	Orange, yellow.....	Very free flowering; masses or borders. C.
CALLOPSIS.....	8-18	12-18	Yellow (orange-brown).....	Of very quick growth, and free flowering. C.
CALIFORNIA POPPY.....	6-8	12	Orange, yellow.....	Good for solid masses of color, especially white. C. S.
CANDYTUFT.....	4-12	6-18	Foliage.....	Very easily grown and very showy. C.
CASTOR BEAN.....	26-36	50-90	Foliage.....	Good for solid masses of color, especially white. C. S.
CHRYSANTHEMUM.....	8-10	12-36	White, rose, purple.....	Very rapid grower; screening and tropical effects. S.
CLARKIA.....	8-18	6-18	White, red, yellow, purple.....	Bright daisy-like flowers, pretty foliage. C.
COCKSCOMB (Celosia).....	8-12	13-40	White, blue, lilac.....	Greatly improved. One of the best blue flowers. C.
CORNFLOWER.....	24	2-8 ft.	White, pink, red.....	One of the most beautiful of annuals. Start early. P.C.
COSMOS.....	10-15	18	Pink.....	Also for borders and masses. C.
GLOBE AMARANTH.....	8-12	12-24	Red, white.....	Good for masses. C. S.
GODOLIA.....	12-24	5-15 ft.	Colored fruits.....	Climbers. Fruits of various shapes and colors.
GOURDS.....	6-15	18-24	White.....	Valuable for bouquets. Make several plantings. C.
GYPHOPHILA.....	6-12	18-30	White, blue, pink.....	Rich colors. Another of the best blue flowers. C.
LARKSPUR ANNUAL.....	8-12	3-6 ft.	Rose.....	Another good screening plant.
LAVATERA.....	4-8	3-5 ft.	Blue, white.....	Beautiful for low borders and edges; also in mass. S.
LOBELIA.....	10-15	12-24	Yellow to scarlet.....	Good for screens and masses. Will self-sow.
LOVE-LIES-BLEEDING.....	10-12	12-24	White-blue.....	Old favorite; good for borders.
LOVE-IN-A-MIST.....	4-8	12-24	White, blue, pink.....	New varieties; give a range of colors. C. S.
LUPINE.....	6-18	10-30	Pale gold to reddish yellow.....	Great variety. Dwarf sorts good for edging.
MARGOLD.....	6-18	15-30 ft.	White, blue.....	Prized for its delicious fragrance. Second planting in August. C.
MIGNONETTE.....	4-12	12-20	White, blue.....	Most beautiful annual climber. Start under glass. P.
MOONFLOWER.....	8-12	3-5 ft.	White, red.....	Flowering annual for quickly covering fences, etc. C. S.
MORNING GLORY.....	4-12	6	Various.....	Wonderful improvements, especially in the foliage. C. S.
NASTURTIUM.....	8-12	12-24	White to rose.....	Unique, pretty flowers with a jessamine-like fragrance.
PANSY.....	8-12	12-24	White to claret, mixed.....	Get young, small plants for best results. P. C.
PETUNIA.....	8-12	12-24	White to rose.....	Wonderfully free-flowering and showy. S.
PHLOX DRUMMONDII.....	8-12	12-36	White to rose.....	Splendid for solid beds, or medium height bright edges.
PINKS (Dianthus).....	4-6	10-18	White to rose.....	One of the most satisfactory of all summer annuals. C.
POPPY.....	4-6	6-10	White to rose.....	Will not transplant well. Most effective in mass beds.
PORTULACA.....	4-6	12-24	White, yellow, red shades.....	Cheerful, old-fashioned favorite; full sun, sandy soil.
SALVIGLOSSIS.....	6-12	12-36	Scarlet.....	Wonderful velvety texture and delicate pencillings. C.
SALVIA.....	6-12	12-36	Mixed—yellow to lilac.....	For mass effects when blossoms are scarce. P.
SCHIZANTHUS.....	6-12	12-36	Various.....	Good for masses when blossoms are scarce. P.
STOCK.....	6-12	12-36	Yellow.....	Beautifully formed; delicate shades; very fragrant. C.
SUNFLOWER.....	24-36	3-6 ft.	White.....	Very rapid growing; useful for screening fences, etc.
SWEET ALYSSUM.....	4-8	2-6 ft.	White.....	Still the most popular of edging plants. S.
SWEET PEA.....	4-10	3-8 ft.	White, yellow, orange.....	For best results start inside in pots, and set out in April. C.
THUNBERGIA.....	6-12	6-15	Blue, white.....	Good for low trellises and vases.
TORRENTIA.....	12-18	6-9	Various, brilliant.....	Unique; good for vases and hanging baskets.
VERBENA.....	8-12	12-24	Various, brilliant.....	One of the brightest, cheeriest and most free-flowering.
ZINNIA.....	8-12	12-24	Various, brilliant.....	Brilliant masses of color; dwarf, red sort splendid for borders.
BIENNIALS				
CAMPANULA.....	8-12	18-36	White, blue, pink.....	Still popular for both beds and borders.
FORGET-ME-NOT.....	6	6-12	Blue, white.....	The best blue edging plant; the most dainty. S.
FOXGLOVE.....	10	12-36	Pink, white, various.....	Very easily grown; old favorites for the border.
HOLLYHOCK.....	12-18	3-7 ft.	White, yellow, scarlet, rose.....	Especially valuable against high walls. Gorgeous colors.
SWEET WILLIAM.....	6-12	12-18	White, pink, red.....	Still one of the very best border plants. C.
WALL FLOWER.....	6	12-30	Brown, yellow.....	Fragrant. Early sorts may be treated as annuals. C.
PERENNIALS				
ALYSSUM (Saxatile).....	6-12	12	Golden yellow.....	Especially useful around rock-work, bases, etc.
AQUILEGIA.....	10	12-36	Various.....	Greatly improved. Very graceful. C.
ADONIS.....	6	12	Yellow.....	Good early flower for border.
ANEMONE.....	12	12-36	White to rose.....	Should have a place in every garden; extremely beautiful. C.
BELLIS.....	4-6	6-8	White, pink, red.....	Low-growing, beautiful little daisies, extremely attractive.
BLEEDING HEART.....	12-18	24-30	Purple, pink, white.....	Peculiar heart-shaped flowers in graceful sprays. S. C.
CANDYTUFT (Iberis).....	6	9	White.....	A hardy form of the annual above.
CHRYSANTHEMUM.....	12-15	24-36	Various yellow.....	If started early will flower first year. C.
COREOPSIS.....	12-15	24-36	Various yellow.....	Free-flowering; for the hardy border. C.
DAHLIA.....	24-30	2-4 ft.	Yellow, white, red.....	Midsummer; good for borders. C.
FOUR O'CLOCK.....	10-12	18-24	Yellow, white, red.....	If sown early will bloom first year. C.
GAILLARDIA.....	8-15	3-4 ft.	Yellow, crimson.....	The improved types are truly gorgeous. C.
HELIOPSIS.....	2-4 ft.	2-10 ft.	Yellow.....	Some of the shades beautiful as orchids. C.
IRIS.....	12-18	18-30	Various.....	Best blue flowers for the border.
LARKSPUR.....	12-18	3-4 ft.	Blue-white.....	Good for borders, but poisonous. P.
MONKSHOOD.....	10-15	3-6	Red, pink, white.....	Permanent and satisfactory border plants. P. C.
PHLOX (Hardy).....	12-18	12-36	Various.....	Beautiful colors; one of the best for cutting. C. C.
POPPY (Iceland).....	6-10	8-12	White, yellow, orange.....	Flowers on long, stiff stems. Continuous bloomers. C.
POPPY (Oriental).....	6	12-18	Crimson shades.....	Enormous, brilliant flowers; vigorous growth.
PRIMROSE.....	4-5	4-6	Yellow, pink.....	Pretty, early flowers for borders and edging.
PYRETHRUM.....	8-12	12-24	Yellow.....	Very attractive little edging plant.
RUBRICKIA.....	12-18	4-7 ft.	White, various, and blue.....	Good for screening and mass plantings. P. S.
SCABIOSA.....	8-12	15-30	White to rose, and blue.....	Fine light-blue flowers for cutting, blooming very freely. C.
SILENE.....	5-6	4-5	White to rose.....	Low-growing plant, good for masses and broad edgings.
SNAPDRAGON.....	8-12	24	Purple.....	One of the finest flowers for cutting. Hardy with protection. P. C.
VERONICA.....	8	24-30	Purple.....	Good for edging.

THE SPECIAL VALUE OF PERENNIALS

ALL other plants might disappear and the perennials would give the garden supreme loveliness, expressed in hundreds upon hundreds of individual forms. No one knows how many kinds are in cultivation; if any calculation were made it would be good for only a day, so rapidly are species emerging from the realm of botany to the garden and new varieties appearing on the scene. A glance at a British list of iris, primula or campanula species alone, is enough to stagger one.

The special value of perennials, however, lies not more in the marvelous variety of form and color than in the distribution of their blooming season through the greater part of the year. Without counting the bulbs, which it is the trade custom to catalogue under a separate head, the herbaceous perennials have a range of bloom that has not begun to be realized by amateurs—as the meager representation in the average garden in both spring and autumn demonstrates clearly enough. Without any coddling at all, they can be made to furnish an uninterrupted stretch of bloom for approximately nine months of the year, a thin showing at both ends, it is true, but neither quantity nor variety is everything in the flower garden. With coddling, it is possible to extend this stretch through December, January and February, making a complete circle of the year.

Perennials as a class bloom only once a year, and most varieties adhere to this rule with absolute rigidity. The exceptions usually are early spring flowers that a mild autumn causes to bloom sparsely a few months ahead of time, or summer flowers that have a second spurt, often because the first crop of seed has not been allowed to mature. The average period of perfection of bloom is not long; sometimes it is lamentably brief, and a perennial is rarely so prodigal as the plummy bleeding-heart, *Dicentra formosa*, which has blossoms from spring to autumn.

The actual time of bloom is fixed only so far as the place where the plant is native is concerned. Even then the season, especially an early or late spring, will shift normality a little one way or the other. In gardens a similar inexactitude of time, but more of it, is to be noted. Comparatively few perennials are cultivated in regions where they grow naturally. Not infrequently there is a marked change of altitude, with a corresponding



BY H. S. ADAMS

Photographs by Graves and Jones

change in the time for blossoming. For example, a primula native to the mountainous heights of Switzerland will bloom earlier in a New York garden, because there the snow disappears earlier. Again, climate differences are such that garden normality is by no means the same everywhere in spring and early summer; the German iris is likely to be in full bloom in northern Virginia in the last week in April, while in southern New England it is not to be looked for until May.

In the matter of hardiness—the withstanding of the winter's cold without artificial protection—there is no fixed rule once a perennial leaves its habitat. Perennials are wonderfully

adaptive in this respect, often enduring patiently more cold and more heat than at home, and quite as often giving no sign of minding at all a drop of a mile or more in altitude. But with a fairly large number—and these include, unfortunately, some of the most charming species—the slightest degree of hardiness positively prevents the grower of flowers from moving them. Such perennials must either have protection that amounts to coddling, or, perhaps, be taken up every year and stored all winter where they will not freeze. They are largely responsible for making certain features of hardy gardens of southern Britain the despair of northeastern America, where winters are colder and summers hotter and drier.

Where a plant's local hardiness has not been tested by cultivation, it is a good plan to look it up in an authoritative reference book before deciding about planting. First see how closely the native and the proposed conditions tally; then, if the book does not give the result of tests in the United States, ascertain whether the plant is catalogued by reputable American houses. The perennials that they offer are a

very much abridged list as compared with the British ones, and in general they are either reliably hardy as far north as Boston, or relative tenderness is plainly indicated.

All of these things should be clearly understood before any definite attempt to grow perennials is made. Such understanding is absolutely essential for determining the special value of perennials, not merely to the garden world, but narrowed down to the province of your particular garden. What you want to know above all, is the worth



Arabis in its early growth has decorative value, its feathery whiteness making an excellent color combination with red tulips

of perennials to you as working material. This enables the choice from the embarrassingly large list to be made with the intelligence that prevents useless waste of time and money in the endeavor to do what is not worth while in an individual case.

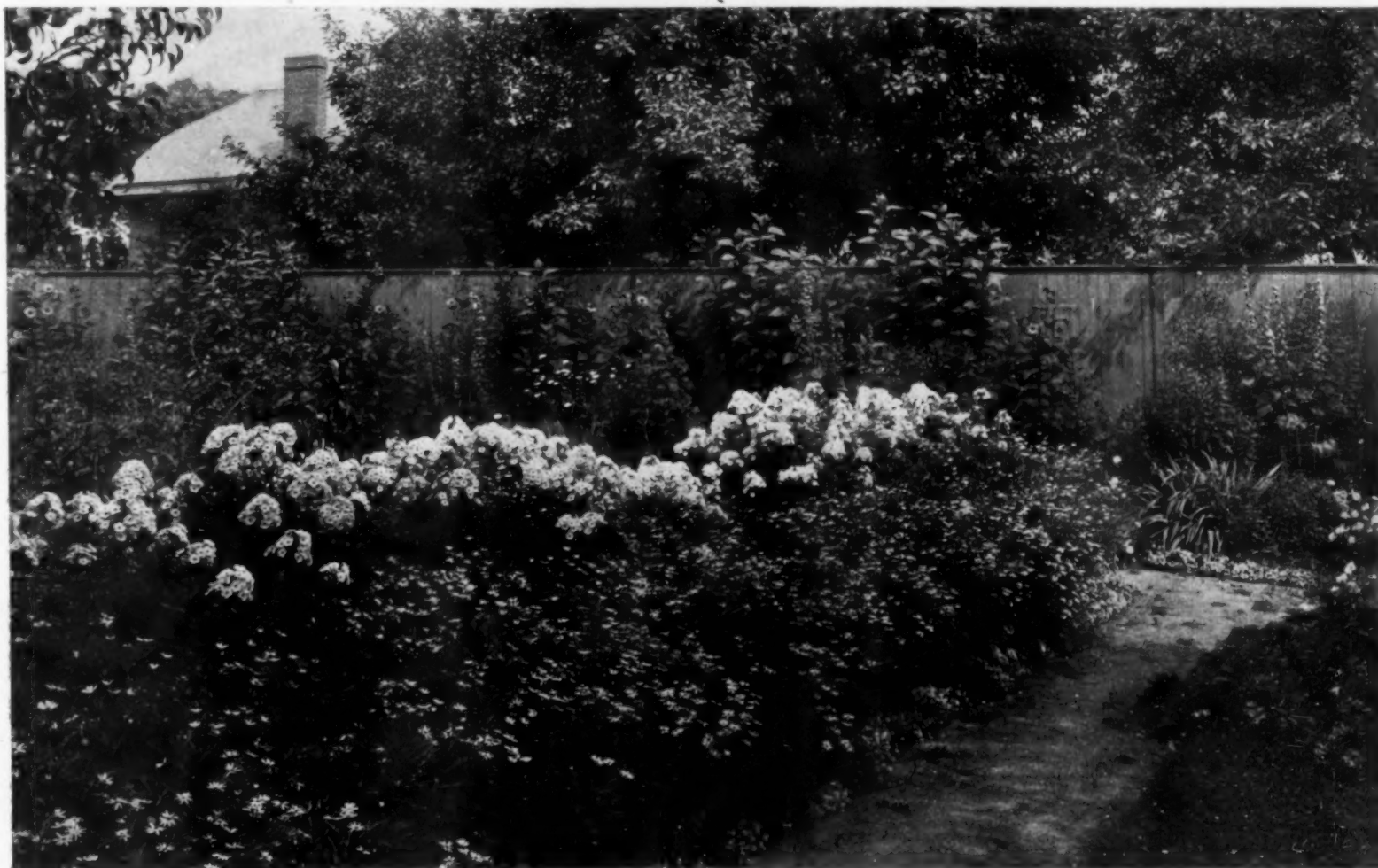
For the great pleasure in growing perennials is to devote time and money to those that are distinctly worth while in one's own case. There is a host of them available after the most ruthless process of rejection that any one of a thousand circumstances would necessitate. The sacrifice will never be so great that the true philosopher will not be able to find solace in the garden of a differently situated neighbor or friend, or a public collection of plants.

In making a list of availables for final choice, take, say, one or two hundred small cards, and from catalogues and garden books pick out the same number of plants of tested hardiness that seem best suited to the required purpose. Write at the top of each card

Next sort the cards according to season of bloom—going by the month, or, better still, by fortnights, which cover better the average period of perfection. Lay the resultant packs of cards chronologically, in a line on a table and see if there are any distinct breaks in the succession or any fortnights that do not admit of enough choice. Should these deficiencies exist, return to the catalogues and garden books for additional material before proceeding.

The last step is to take up each little pile of cards by itself and either subdivide, according to this or that feature of the memoranda, or at once choose for the planting. The selected cards will then answer as notes from which to make the garden or border plan.

Even with this preliminary study, it would be far better for every one who is growing perennials for the first time to plant most species in rows like so many vegetables, and to do this for a



The old type of phlox combines so many good qualities and comes in so many colors and varieties that it should be an essential part of every perennial garden. This garden is small, but shows what can be done with perennials in a restricted area

both the botanical and the common name. Then add, on separate lines, the time of blooming, as nearly as you can ascertain for your section of the country and its average duration; the height of foliage as well as bloom wherever possible, the general character of the plant, whether creeping, sprawling, bushy or markedly erect, and, finally, the color. It is best thus to segregate the color memorandum, because this should include not only the color, or range of colors of the blossoms, but like notes as to the foliage. Make a clear differentiation of the many foliage shades, and if the leaves are evergreen, say so. It is well to keep in mind, as to color, that the matter of blossoms and leaves being loose or compact may make a material difference in their use for garden pictures, and in the general decorative effect that you desire to obtain.

year or two. No matter how much one absorbs from books, it is only by watching a perennial grow a season or more that it is possible to sense its character in every particular, and if this is done in a little home nursery the acquired practical knowledge makes every definite step in the use of such plants as permanent garden material infinitely easier and more effective. No time is really lost and much working experience is gained.

A good reason for this preliminary planting is the difficulty of getting a clear idea of the foliage spread of a perennial without actual observation. The kinds are too numerous to permit of the spacing tables by which tulips, hyacinths, pansies and geraniums are set out; very few go into the ground excepting by what seems guess work, but what is really an actual though acquired instinct.



Doronicum is a little known but attractive perennial daisy



The plumy bleeding heart (*Dicentra formosa*) is an old-fashioned perennial, easily grown in places where it is difficult to attain bloom



The trollius is worth considering in this year's planting

The foliage spread is important to know before planning a hardy border or garden, in order that enough and not too many plants may be acquired and set out—thus saving money at the outset and time spent in unnecessary replanting later.

Suppose, to get away from the abstract, half a dozen Oriental poppies and as many plants of "baby's breath" (*Gypsophila paniculata*) are set out in a home nursery bed in parallel rows, about fifteen inches apart, the plants themselves nine inches apart in the rows. If the plants are of commercial size they may not seem too close together in the row the first year, but in the second year they will look crowded, and there will be every sign that thinning or complete replanting must be done earlier than ignorance had suspected would be the case.

Possibly ignorance, had the planting been done in a garden, would have taken it for granted that no change would be necessary for years. The second season it is noticed that an Oriental poppy is likely to have a spread two feet in diameter, while the

masses of "baby's breath" in the blooming season will perhaps be twice that distance across. Meanwhile this will have been discovered the first year and will be still plainer the second.

The poppy blooms early in summer, and soon the plant turns brown and dies down to the ground, while the later blooming "baby's breath" is spreading out toward it and gradually concealing its unsightliness. It is also seen that by the time the "baby's breath" is turning brown, a couple of vines of *Thunbergia alata*, from seed that happened to fall, are making their way over the drying masses—

By autumn another thing is noticed; the poppy has begun to make a considerable second growth of foliage and, lest this be too shaded, there is need of cutting away some of the branches of "baby's breath" or else diverting them to one side. Obviously the Oriental poppy and "baby's breath" form one of those dove-tailing, perennial combinations which is among the secrets of successful hardy gardens and borders. Here, then, are many facts, and not all at that, learned by the exercise of a little patience in the study of plant character, before attempting to bend that character to one's own use. And the observation of the plants was all the easier because they were in a row.

The only safe general rule for the planting of perennials is to allow a space of ground six inches square for each plant known to be of dwarf or fairly low habit, and a space a foot square for the taller ones. This is a good rule. Unless the plants are seedlings or small cuttings, and sometimes even then the ground will be nearly or quite concealed when the first summer is well along on its course. And there will be ample room for two, three or more seasons' growth, according to the plant's normal rate of increase and the way in which this is helped or hindered by weather conditions.

Whether the plants are set out in rows or in a more or less naturalistic fashion, the rule in question need occasion no complete replanting for a long time. This is avoided by removing alternate plants, or one here and

(Continued on page 306)



In the fall the large blossoms of the perennial anemone provide a variety of color



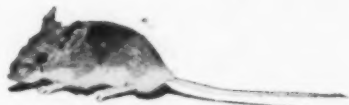
In the spring the yellow flowered *alyssum saxatile* keeps pace with the dandelion

Your Animal Neighbors

THE INTERESTING WILD LIFE WHICH MAY BE FOUND ABOUT THE COUNTRY PLACE—
HABITS AND TRAITS OF ANIMALS WHOSE VERY PRESENCE IS OFTEN UNSUSPECTED

BY ERNEST HAROLD BAYNES

Photographs by the Author



IN order to get the greatest amount of enjoyment out of a home in the country, we must have some wild neighbors, and we must be more or less in touch with them. It is by no means necessary to this enjoyment that our wild neighbors be in evidence all the time, but we must know that they exist and that there is always at least the possibility of seeing them. For example, a wood in which deer are known to live, but in which we may not actually see one more than once in five years, has for us a charm which is never possessed by a wood where there is no possibility of seeing a deer.

The very uncertainty of the movements of our wild neighbors adds to our interest in them. A thousand times a year they give us bits of unexpected pleasure which we should not get at all if they conformed to "the best usages" of human society. One of my own wild neighbors at the present time is a white weasel or ermine. Long ago he appointed himself Head Rat-catcher to our family, and made our home his headquarters, and there is always a saucer of evaporated milk waiting for him as evidence of our hospitality. Sometimes we do not see him for several days, when suddenly some evening we are thrilled to observe him perched on top of the bookcase, watching us in silence, his eyes glowing like opals in the subdued light. Presently he will come down, nose rapidly about until he finds his milk, and we see him lapping it just as a kitten might do. We look away for a moment, and when we look for him again he has gone, silently as he came, the empty saucer being the sole assurance that our eyes have not been playing tricks on us.

Even the humblest of these wild neighbors—even those which are supposed by most country people to have not one redeeming feature, are intensely interesting when we become really acquainted with them. There is an old woodchuck neighbor of mine with whom I am on quite intimate terms. To be sure, we have a

mutual understanding about the vegetable garden—that is sacred ground, and he knows about as well as I do that the climate there is unhealthy for woodchucks. Therefore we live at peace, and I in a neighborly way protect him from some of his enemies—the dog, the shotgun and the steel trap. All summer I see him sunning himself on my wall, or standing bolt upright and looking very much like a stump, in the middle of my clover field. In the fall, fat as a well-fed pig, he retires to his underground chamber, where in a bed of leaves and grass he curls himself up and waits for the spring to bring the clover back. Once I called on him in March, and as he did not come to the door, I walked right in, with the aid of a pick and shovel. I found my neighbor in bed, as dead to the world as the "Sleeping Beauty." I proceeded to wake him, not with a kiss, but gently, and he acted much better, on the whole, than a human neighbor would have done under similar circumstances. Instead of saying unprintable things, he merely opened his sleepy eyes, raised himself on his forelegs, yawned the most heartfelt yawn I have ever seen, stretched, and rolled over in bed, by all his actions begging for "just another week."

The chipmunk is another of our neighbors whom we shall see in the warm weather only. He is more sociable than the woodchuck, and if we are not going in for bulbs, and if he does not get the habit of destroying birds' nests, we may live on very intimate terms with him. Last summer one of our chipmunks was so friendly that when Mrs. Baynes was picking wild strawberries, he would put his head into the cup which she held in her hand and pick out the finest berries as fast as

she picked them. He was almost human.

Chipmunks often sit on our doorstep within a foot or two of us and eat anything we offer them. Like the woodchucks, they too spend the winter in underground burrows, but unlike the woodchucks, they carry in considerable quantities of food to last them through the long winter. That is



We can easily imagine Brer Fox thinking, "I wonder if I can reach that hen."



Evidently it wasn't such a hard jump after all. But do not condemn the fox entirely, for he is a valuable destroyer of certain pests



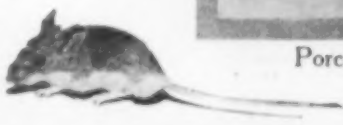
why in the fall we so often see a chipmunk looking like a small boy with toothache on both sides of his face. He stuffs his cheek pouches with cherry pits, nuts, grass seeds, wheat, apple pits and such things, which he carries into his underground galleries for winter use. It is quite surprising what a quantity of food the little fellows can carry in those pouches at one time. Last fall I caught a chipmunk who had been collecting the pits of the black cherry. His pouches were by no means fully distended, yet, when I made him disgorge, I took thirty-one pits from his right pouch and thirty-seven from his left—or sixty-eight in all. I am inclined to think that he could have carried nearly if not quite a hundred.

The red and gray squirrels are familiar to everyone, and there is literally no limit to the degree of familiarity on which we may live with them, if we choose. Gray squirrels are naturally disposed to be friendly, and the red ones, though inclined to be suspicious, become very bold once they find that they have nothing to fear from us. They will even come into the house and make their nests if we give them sufficient encouragement, and I once had a red squirrel who lived in a vase on the mantel-piece of my study.

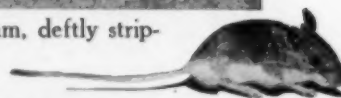
But squirrels as intimate neighbors have their drawbacks. They gnaw the woodwork, get into the roofs, and if allowed in the house will not hesitate to destroy rugs or clothing when looking for material with which to build their nests. Worst of all, perhaps, is the red squirrel's propensity for destroying birds' nests. After attempting to get along peaceably with all my wild neighbors, I was at last obliged to shoot a red squirrel in my garden as he sat on the edge of a scarlet tanager's nest, calmly eating the eggs, quite undisturbed by the frantic cries and actions



Porcupines are among the queerest and crustiest of our wild animal neighbors



Occasionally you may come upon a raccoon at the edge of a stream, deftly stripping an ear of corn before washing it



There is an old woodchuck neighbor with whom I am on intimate terms

of the birds. Two years ago red squirrels destroyed every bird's nest in my garden, and as I had to decide between squirrels and birds, I chose in favor of the latter; my neighbors have done the same, so that now we have few squirrels, but far more birds than ever before. The gray squirrels, on the other hand, are not nearly so destructive to birds, yet occasionally one of them gets the egg-eating habit, and when he does it is our duty to see that the birds are protected. Squirrels are beautiful, interesting creatures, and I for one am disposed to put up with a great deal of personal discomfort for the pleasure of having them about the garden. But the killing off of their natural enemies has in many places resulted in their increasing to the point where the birds have a very

slight chance of rearing their broods, and as the country is sorely in need of more birds, it is our duty to take a hand in the game and help to restore the balance of nature.

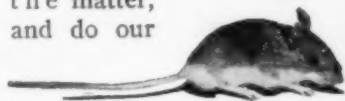
Sometimes we may live in a place a long while before we know who our wild neighbors are. Many of them are so shy and move about so quietly that they see us and take pains to avoid us before we are aware of their presence.

Moreover, many of them are nocturnal, and visit our gardens only

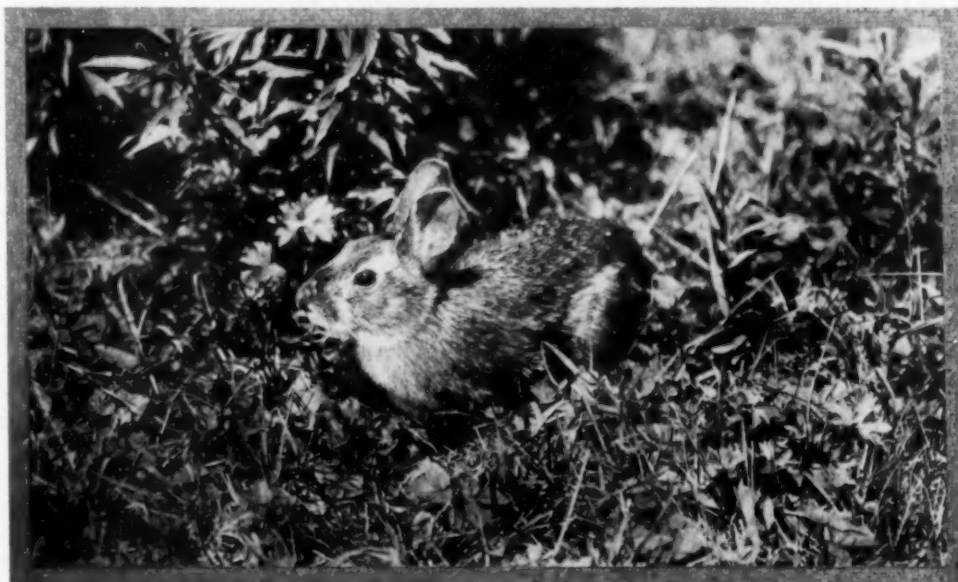
after dark. After the snow comes, however, we have a better chance, for then the ground is a leaf from Nature's autograph album, and on it each visitor not only writes his name, but a brief account of where he entered our grounds, where he left them, and what he did while he was within our gates. Perhaps we find a track which closely resembles that of a small dog, but with the footprints rather more in a straight line. It enters the garden from the woodland or the pasture, circles the hen-house, with a pause at every crack, passes on to a

decayed stump in the corner of the garden, where a nest made by white-footed mice—the dainty, large-eyed little fellows shown on these pages—has been torn out and strewn upon the snow, and finally leaves the garden by the cow-path running through the pasture. We may be reasonably sure, then, that we have a fox living not far away, and if we are not so careless as to leave our poultry out at night, we may find him a very useful neighbor. In spite of his bad reputation as a poultry thief, he is a persistent destroyer of wild mice the year round, and in the late summer spends a large part of his time catching grasshoppers, which often form the principal part of his diet at this season.

Or, we may detect the presence of a fox by his odor, not unlike that of the skunk, but milder and quite distinguishable. We often notice it when passing the spot where a fox has spent the night curled up on some hillside, perhaps. It is not a disagreeable odor, and to one in sympathy with outdoor things, always interesting. Speaking of scents, we are too apt to be prejudiced by oft-repeated statements of those who in turn have been prejudiced by similar statements. For example, the defensive odor of the skunk has for hundreds of years been referred to as vile and offensive, and whenever we smell it we are apt, without doing a bit of thinking for ourselves, to pass the adjectives along. Now, as a matter of fact, the odor of the skunk, while overpowering when in large quantities and at close quarters, is not, comparatively speaking, an offensive one when perceived at a little distance and in the open. It is a live, pungent, animal odor, not at all in the class with decaying carrion, badly kept drains and things of that sort, and if we free ourselves from prejudice in the matter, and do our



Red squirrels are attractive in many ways, but they have a bad habit of destroying birds' nests



Gentle and timid as it is, the gray rabbit is not much afraid of us if we exercise a little care



A meadow mouse rises on its hind legs, a characteristic attitude

own thinking, we shall not be bothered in the least by it, unless the defensive fluid comes in actual contact with our persons. And even if it does, we can hang our clothing in the sun and wind and the odor quickly disappears, and I am informed on excellent authority that if one will but stand in the smoke of damp hay for a few minutes, he may pass into the house without anyone being aware that he has been having a tête-à-tête with a "wood pussy."

If we live near large woods, where there are big hollow trees or rocky ledges, we are apt at any time to receive a visit from our neighbor the raccoon. If we are careless and leave our poultry houses open at night, the ring-tailed fellow is pretty sure to make a nuisance of himself



in some way or another, but otherwise he is a very interesting neighbor to have about. Some day, perhaps, when we are walking through the woodland we shall see the younger members of the family, peering from the entrance of their home high up in some hollow tree, or scrambling after one another over the big trunk. Comical-looking little fellows they are, with bright eyes peering from their black masks. Sometimes we may come upon a full-grown one near the edge of

a cornfield, deftly stripping the covering from a stolen ear of corn; or perhaps we shall see him close to the edge of a stream, washing a mouse or some other food before eating. This washing of its food is an unusual habit, and is responsible for the raccoon's German name of *Wasche Bar* or washing bear. The animal does not acquire the habit by instruction from the parents or by observation as some writers would have us believe; it is inherited. Young raccoons which I have taken from the nest at a very tender age, and long before they had

(Continued on page 309)



THE HUNDRED PER CENT GARDEN



THE THIRD TWENTY PER CENT—PART I, PLANTING THE EARLY VEGETABLES —THE VITAL OPERATIONS OF SOWING AND SETTING OUT PLANTS

BY F. F. ROCKWELL

NOTE: Heretofore the home garden has been looked upon by many people as more or less of a hobby, deserving only as much attention as one usually gives to the pursuit of recreation. That it deserves to be taken up seriously, studied in all its details and developed to the limit of efficiency, is a new presentation of the subject. How to have the very best garden possible on a business basis, is the theme of the present articles although they are also planned to aid those who can give but limited time to the garden's cultivation. They take up carefully and practically one detail after another in natural succession to the completion of the hundred per cent. garden. The first and second twenty per cent. dealt with sowing seeds indoors and with solving the plant food problem, appearing in the February and March issues. Part II of the third twenty per cent. will deal with the raising of late vegetables.

NO matter how carefully your garden may have been planned, how well the soil has been enriched or how thoroughly prepared, your expectations of one hundred per cent. results will have been foredoomed to failure from the beginning in proportion to the number and the extent of the skips and blank places which occur. Nothing is much more disheartening than to walk through a garden where a strip or patch of brown and barren earth tells the story of some "might have been" vegetable or flower—if conditions had only been made right.

One cause of these unsightly holes and patches in the fair vesture of the garden is poor seed. Poor planting, however, is a far greater cause. It is, of course, human nature to blame it on the seedsman when as a matter of fact one's own ignorant or careless method of sowing or planting is responsible for the failure or the "poor stand" secured.

This dual problem of getting a one hundred per cent. "stand" from seeds and from transplanted plants has a triple-factored solution. It is a matter of strength and vitality in the seeds and plants themselves; of soil properly fitted to receive them, and of sufficient care and skill of placing the former within the latter.

The necessity of securing the very best seed possible and the importance of having the best plants that can be grown, strong, stocky and well hardened, has already been taken up

VEGETABLE	NOTE	VARIETY	NO. OF ROWS	SPACE, FEET
SATURDAY, APRIL 6TH.				
Swiss Chard		Giant Lucullus	2	1+1½
Lettuce	B	Grand Rapids, Wayahead	1	1
Peas	A	Best Early	1	1½
Onion Sets	A	White or Yellow	1	1½
Turnip	B	Early White Milan	1	1
Cabbage, Early	A	Jersey Wakefield	1	1½
Radish	C	Crimson Giant	1	1½
Spinach	B	Victoria	1	1½
			8	10½
SATURDAY, APRIL 13TH.				
Cauliflower	A	Best Early; Dry Weather	1	1½
Radish	C	White Icicle	1	1½
Celery	D	Golden Self Blanching	1	1½
Leek	D	American Flag	1	1½
Turnip	B-A	Petrowski; Golden Ball	2	1½+1
Carrot	A	Chantenay	2	1+1
Beet	A	Early Model	2	1+1
Onion	W-E	White Queen (½), Prize Taker (¾)	5	1+4
			13	13
SATURDAY, APRIL 20TH.				
Salsify	W	Mammoth Sandwich Island	4	1½+4½
Parasip	W	Improved Hollow Crown	4	1½+4½
Potato, Early	A	Irish Cobbler	2	2+2
Radish	B	Crimson Giant	1	1½
Cabbage	A	Glory of Enkhuisen; Succession	2	2+2
Peas	A-E	Gradus	1	3
Lettuce Seed	B-D	All Seasons; Iceberg	1	2
Peas		Boston Unrivalled	1	2
			16	27
SATURDAY, APRIL 27TH.				
Peas	A	Royal Salute	1	2
Radish	B	Crimson Giant; White Icicle	1	2
Potato (sprouted)	A	Irish Cobbler	1	2
Onion (seedling)	E	Ailsa Craig; Gigantic Gibraltar	1	2+1
Carrots	W	Coreless	4	1+3
Beets	W	Columbia	4	1½+3½
Lettuce, Cos	A	Dwarf White Heart	½	1½
Kohl-rabi	A	White Vienna	½	1½
			13	18½

SUGGESTED PLANTING PLAN FOR THE EARLY CROPS, TO TAKE FOUR SATURDAY AFTERNOONS' WORK.

Note.—A—Crops that will be out of the way in time to be followed by others. B—Interplanted "companion" crops which will be out of the way before those next to them need all the room. C—Like above, except that they are planted between plants in the row, instead of between rows. D—Start in a special bed, for transplanting later. E—A good item to increase, as any surplus will find ready sale. W—May be stored for winter use.



Drills for various seeds. From left to right: ¼" to ½" deep for lettuce; ½" to 1" for early beets; 2" for early beans; 2" double row for early peas

in detail in a preceding article. However, for the sake of those who did not read it or have forgotten the warnings contained therein, I want to say here that you absolutely cannot afford to take chances on seed procured from sources unknown to you or through any indirect route. No matter how small your garden or in how much of a hurry you may be in, order directly from some reliable mail-order house in which you, or one of your friends or neighbors perhaps, has that confidence which is born of experience—and by seeds and not by words shall ye know them. The gaudily lithographed packets and the unbranded and frequently misnamed seeds displayed in water pails and washtubs at your hardware dealers or grocers, should be left there for those who are unfortunately less well-informed than yourself.

I have already spoken of soil well enriched and thoroughly prepared. Such preparation, however, was preliminary. The two essentials of the good seed-

bed are fineness and freshness. To do your planting right, you should, immediately preceding it, rake with an iron rake the surface that has already been left fine and smooth after the harrow. With this the surface of the soil will be made still more thoroughly fine and smooth and all lumps of dirt and stones removed. Your object should be, however, to pick up just as little trash as possible. Rake lightly, taking a narrow strip with the rake

back and forth in a way which will fill up all little unevennesses on the surface but without digging up any stones, weeds, sod or manure which may be harrowed under.

The object in giving this final preparation just previous to planting is to have a moist surface for that important operation. A finely pulverized soil rapidly becomes dried up for an inch or so on the top and will crumble and fall into any furrow or hole that you may make for sowing seeds or planting, thus interfering more or less with your getting that operation done to perfection, for the seeds or the plant roots must be placed in fresh, moist soil in order to secure quick and sufficiently vigorous reaction.

Even with seeds of good, strong vitality, and with a properly prepared seed-bed, sometimes it happens that a full "stand" is not secured. Several of these slips twixt the cup and the lip are, too deep planting, planting at a season unsuitable for the seed which is put in, or when the ground is too wet and cold, causing rot, etc. In order that the beginner may not find too late that he has made one of these various possible mistakes, I mention somewhat in detail the several matters which are to be taken into consideration in planting.

It is much safer to go by the season than by the calendar. Any date given for planting, therefore, which you may come across, either in this article or in any table you may be using, should be considered as approximate and not to be gone by absolutely. There is planting of various sorts to be done almost every week in the season from early in April, or as soon as the ground is dried out enough to be properly prepared, until late in the fall when such crops as lettuce and radishes in the cold frames, or onions and spinach to be wintered over in the open ground, are sown. The garden vegetables may be divided approximately into two classes: The "hardy" sorts which may be put in early in the spring in April and May or before all danger of late frost is over, and the

real warm weather has begun; and the late or "tender" sorts which should *not* be planted, both on account of danger of injury from the latest frosts, and also because absolutely nothing is gained by putting them in even where they escape a freeze, until the ground has become thoroughly warmed up. Such tropical heat-loving plants as tomatoes and peppers will not be any the earlier and may be severely checked by being set out too soon by the over anxious gardener.

There is an old rule that seeds should be covered to a depth of some four times their diameter. But as most amateur gardeners are not in the habit of carrying a pocket micrometer about with them, it would be perhaps more

helpful though not as concise to say that small seeds, such as radish, lettuce or onions should be covered to a depth of one-fourth to one-half an inch; medium-sized seeds, such as beets, spinach and parsnips, one-half to one inch; and larger seeds such as peas, beans and corn at a depth of two to four inches. But the season at which the planting is done and also the weather at the time of planting must be taken into consideration as well as the size of the seeds.

The first planting of peas and beans should be as shallow as one or two inches because at this season

there is still plenty of moisture in the top layer of the soil, which is more warmed up than that deeper down. The same varieties planted in mid-season for a late crop, however, would be planted at a depth of three or even four inches in light, dry soil, because the upper surface would be too hot and dry to insure proper germination. As a general rule, planting that is done late in the season or at any time when the weather is hot and dry and likely to continue so, should be about twice as deep as that for the same varieties early in the spring or in cold, rainy weather.

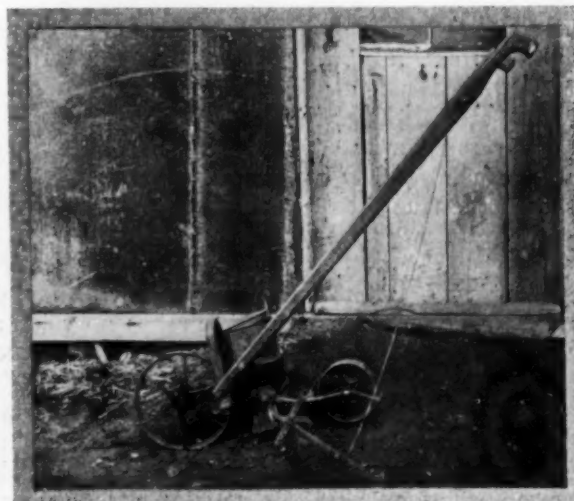
Even with seeds of the highest germinating power it is necessary to
(Continued on page 346)



Firm the newly set plants into the soil with the balls of the feet, removing the plants from the flats with a ball of earth.



The hundred per cent garden is planned to render all sections easily accessible for frequent cultivation, and arranged with greatest economy of space



The combination wheel hoe and seed drill is indispensable to the modern garden, performing all seeding



Here is a good arrangement of phlox and hydrangeas in white and pink tones, affording an attractive and varied mass of light color bloom. It is best to employ more than one variety of flower to produce the desired color effects

Color in the Flower Garden

HOW TO PLANT FOR COLOR HARMONY AND THE AVOIDANCE OF GARISH CONTRASTS—
THE WONDERS THAT MAY BE WORKED BY AN ARTISTIC ARRANGEMENT OF FLOWERS

BY IDA D. BENNETT

THE idea which seems to prevail in most gardens is to fill them with flowers and still more flowers, adding whatever caprice of the moment dictates or whatever novelty happens to strike the fancy from time to time.

The color relations which these new additions may bear to the old inhabitants of the garden is, apparently, little thought of, if, indeed, it ever occurs to the owner of the garden that as long as a flower is a flower and has individual merit, there can be any possible objection to its presence. In fact with the average gardener, it seems really to be a matter of pride to possess as many varieties of flowers as possible. But one has not learned the true art of gardening until one learns to hold his hand and to go slowly when adding to the garden's store.

Especially is this true when the garden, as it exists, is a happy expression of color and beauty. It is a safe conclusion that the average garden should be subtracted from rather than increased. If the garden in its entirety is the result of carefully thought out plans, then there is little need of caution, as the owner is not apt to run amuck among strange flowers and unknown colors, but even here it is always well to pause and consider whether it is not well to let the new variety alone, at least one should always take the precaution of informing himself of just the color and

shade of all such introductions to the garden. A trial garden is, perhaps, the most valuable possession a gardener can have. Here plants may be grown experimentally and transferred to the permanent garden as they prove their fitness, and there given just the conditions and environment that will bring out their good points to perfection.

To emphasize the value of a color scheme one has but to think of various inharmonious colors and imagine them together, not for one day or for several, but for the entire season of their bloom, through a succession of years.

It is not bad color work that a number of colors should occur in one garden but it is bad work when several tones of a color clash together. As an example; blue and red may appear in the same garden with less discord than scarlet and magenta.

If one has no color scheme and is at a loss to invent one, a visit to the milliners and the massing together of a quantity of flowers will very soon demonstrate how much better the effect of the proximity of certain colors is than that of others, and having determined this, plans may be laid accordingly. When one desires a great diversity of colors then one must remember that white is a great peace-maker and intersperse white flowers liberally between any shades that have the least taint of enmity.

It is seldom the case that a favorite flower must be discarded because of an inharmonious shade, as nearly all flowers come in a wide diversity of tones and colors and among these one may make suitable selection.

When uncertain as to what to use or what is really sought for in color, the adoption of some one color, say yellow with white, will produce a charming effect to which, another year, if one's taste has sufficiently crystalized, may be added another, blue or pink, and a color scheme obtained that should be satisfying in the extreme. But the use of one color in the garden is a fascinating development of color work and through its adoption one learns much of its possibilities, makes the acquaintance of many heretofore unknown members of old families of flowers and finds it, altogether, a delightful study.

Definite color schemes may be planned for each season of the year, and the early garden filled with masses of colored tulips of the desired shade—scarlet or soft pink with hyacinths to match, and the white of crocuses and other bulbs—the summer garden may be emphasized with the blue of iris, delphiniums, monk's hood, forget-me-nots, anachars, blue tufted pansies, bachelor's buttons, browellias, lobelias and the like, while the fall garden may be gorgeous with the yellow and white of chrysanthemums, golden glow and dahlias.

It will be found immensely interesting to take the catalogues and make a list of all the flowers of a certain color, together with their time of blooming. You will learn, for instance, that there are a great many more blue flowers than you supposed, and that the same is true of all the different colors, so that if you have a preference for certain shades you will be surprised to find how liberally the florists are catering to it.

A garden which has several divisions or is cut up by shrubbery, arbors or hedges, offers admirable opportunity for color work, as the separate parts can be devoted to separate color schemes rather than to separate flowers. This would add immensely to the interest of a garden, and is worthy of serious consideration in planning a new garden.

There is another arrangement of a color scheme which might appeal to some, and that is the shading of beds and borders of plants. This requires thorough knowledge of the color shades of the flowers employed or the aid of an experienced florist, but very pretty effects can doubtless be obtained by the use of flowers of a given color shaded from the palest tints down to the strongest

that are obtainable. Pansies afford an excellent opportunity for this form of planting and delphiniums another, as these shade from the purest white down to the strongest ultramarine. Roses give an infinity of shade gradations, and some very successful color schemes may be worked out by their use.

Where one has the knack of so growing roses that they will give a mass of bloom at one time, the rose garden, laid out in concentric beds surrounding a central bed of tree roses, is excellent, the roses shading from a rich, dark crimson at the center trees through successive and lightening shades to pale pink or pure white, at the outer edge, or if you prefer, the center may be white shading to a dark tone at the border.

Often it will be found necessary to employ more than one variety of flower to produce the desired color gradation, but this only adds to the interest and tests or increases one's knowledge of flowers.

There is another point to be borne in mind in planning the color effects of the garden, namely, the effect the color has upon its apparent dimensions. The presence of white always brings the planting nearer to the eye, while blue retires it so that where the effect of space is to be increased, as in small gardens, it will be wise to plant the white and light colors near the front of the garden using such colors as lavender, mauve and, especially, blues for the rear beds, as this will make them appear further away and so apparently increase the size.

For the benefit of those who may care to work out definite color schemes in their garden or in separate portions of it, the following list of plants and their season of bloom is indicated, and arranged in order of color as follows:

BULBS

A WHITE GARDEN

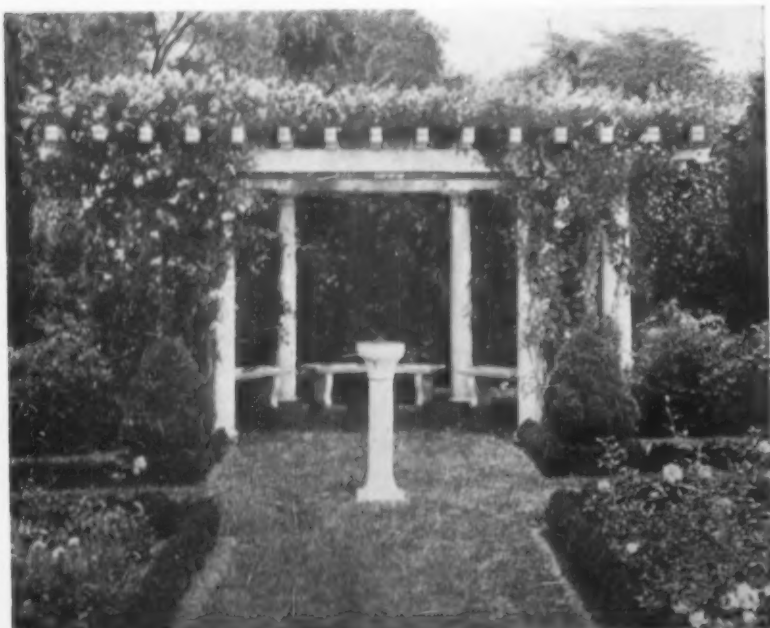
NAME	SEASON OF BLOOM	HEIGHT
Crocus-Giant White.....	March and April	4"
Hyacinth-Bouquet Royal, Duchess of Bedford...	March-April	9"
Prince of Waterloo, La Tour d'Auvergne, Alba-Superbissima, La Grandesse, L'Innocence.....	—	9"
Tulips-Joost Van Vondel.....	May	10"
L'Immaculee.....	—	9"
La Reine.....	—	10"
Pottebakker, White Hawk.....	—	10"
Double La Candeur, Rose Blanche.....	May	8"
Narcissus-Poeticus	April-May	12"
Alba Plena Odorata.....	—	12"



Vines and shrubbery around the house should be free from unpleasant color contrasts and it is frequently better to have entirely different hues than colors more nearly allied. White is a splendid medium in which to dissolve harsh contrasts

BULBS—Continued

NAME	SEASON OF BLOOM	HEIGHT
Anthericum	May	18"-2'
Eremurus	May-June	4'-8'
Gladiolus-White Lady	July-August	2'-3'
Iris, Ger.	May	2'
Iris Japonica	July	2'
Lilium candidum	June	2'-3'
Lilium auratum	August	3'-4'
Lilium Giganticum	August	6'-10'
Lilium Longiflorum	June	2'-3'



Wonderful effects may be had in the rose garden by gradation of color from crimson to pale pink or to white

<i>Lilium Speciosum album</i>	July-August	2'
Lily-of-the-valley	May	9"
Snowdrops	March	6"-9"

PERENNIALS

NAME	SEASON OF BLOOM	HEIGHT
<i>Astibe floribunda</i>	June-July	2'
<i>Arabis alpina</i>	April-May	rock plant
<i>Aquilegia</i>	May-June	2'-3'
<i>Cimicifuga racemosa</i>	September-Oct.	2½'-3'
<i>Dicentra sylvestris</i>	May	12"-15"
<i>Dictamnus alba</i>	May	2'-3'
<i>Digitalis</i>	June-July	2'-3'
<i>Funkia subcordata</i>	August	18"
<i>Gypsophila</i>	Aug.-Sept.	15"-18"
Hollyhocks	July-August	6'-12'
<i>Lysimachia</i>	July	18"
<i>Lychnis chalcidonica alba</i>	July-September	2'-3'
<i>Stokesia cyanea alba</i>	June-October	15"-18"
Shasta daisy	July-September	2'
Peonies	June	2'
Poppies, California	July	6'
Poppy, double white	July	2'
Phlox: Snowdon, Diadem, Von Lassburg	July-September	3'
<i>Physostegia alba</i>	Mid-summer	3'-4'

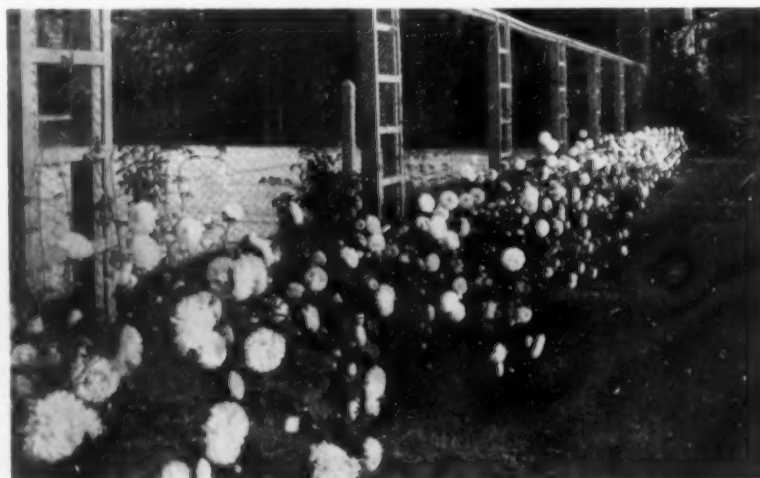
SHRUBS AND FLOWERING TREES

NAME	SEASON OF BLOOM	HEIGHT
Althea-Jeanne d'Arc	September	Tree
<i>Ceanothus</i>	Mid-summer	Tree
<i>Cephalanthus occidentalis</i>	—	—
<i>Cercasus serotina</i>	Spring	—
<i>Chionanthus</i>	May-June	—
<i>Cladrastis</i>	June	—
<i>Clethra alnifolia</i>	July-August	—
<i>Cornus Florida alba</i>	May	—

<i>Crataegus monogyna</i>	May	—
<i>Deutzia crenata candidissima</i>	June	6'-8'
<i>Deutzia gracillima</i>	May	2'-4'
<i>Deutzia Pride of Rochester</i>	June	6'-8'
<i>Diervilla candida</i>	June	4'-6'
<i>Exochordia grandiflora</i>	May	8'-10'
<i>Hydrangea arborescens</i>	July-August	4'-6'
Kalmia	June-July	—
<i>Ligustrum vulgare</i>	Summer	Tree
<i>Lonicera tartarica</i>	May	8'-10'
<i>Opulastero opulifolius</i>	June	—
<i>Oxydendrum arborum</i>	Mid-summer	Tree
Philadelphus, in var.	June	—
<i>Peterostyrax hispida</i>	June	—
Rhododendrons	June	2'-6'
Roses in var.	—	—
<i>Spiraea Van Houttei</i>	May	5'-6'
<i>Spiraea albiflora</i>	Summer	Low Shrub
<i>Syringa vulgaris</i>	May	Tree
<i>Syringa Mme. Casimer Perier</i>	—	—
<i>Syringa Marie Le Grey</i>	—	—

ANNUALS

NAME	SEASON OF BLOOM	HEIGHT
Antirrhinum, Queen of the North	Mid-summer to frost	1'
Aster, Giant Comet	August	18"-24"
" Early Wonder	Late June	18"
" Ostrich Feather	August	18"
" Electric	Aug.-Sept.	18"
Balsam, White Perfection	June	2'
Bellis, Snowball	May to Sept.	4"
" The Bride	—	—
<i>Campanula carpatana alba</i>	All seasons	6"
Candytuft, Empress	June	1'
Sweet Sultan, pure white	Summer	18"
Cornflower, white	—	—
Cosmos, white	Aug.-Sept.	3'-5'
<i>Delphinium album</i>	—	18"
Larkspur	Summer	2½'-3'
Nicotiana	—	2'-3'
Lobelia, White Gem	June-November	6"
White pansies	All summer	9"



A row of white asters is refreshing in the garden of brilliant hues.
White is the color schemer's talisman

Petunia, Snowball	—	15"
" Pure white	—	—
Double white petunia	—	—
Phlox Drummondii, snow white	—	15"
Poppy, The Bride	Summer	18"
" White Swan (double)	—	—
Portulaca	—	6"
Scabiosa, white	—	2½'
Sweet Peas	—	—
Emily Henderson	—	—
Mont Blanc	—	—

(Continued on Page 330)



Purchasing Garden Equipment

TOOLS THAT ARE NEEDED IN EVERYDAY GARDEN WORK — SOME EXCELLENT INNOVATIONS AND HINTS AS TO WHAT TO BUY

BY K. R. DUNN

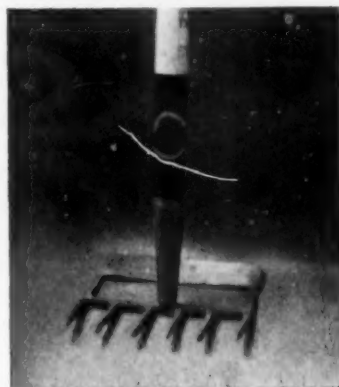
FORMERLY they made gardens with a rake and a spade, and they got results, but they had more perseverance and patience than the dilettantes of my acquaintance. I find that where science has advanced in lessening garden labors that the results are better. So if this is your first year at breaking into gardening, you want to fend off any possible chance of mistake, and "launch yourself," as Professor James said, "with as strong an impulse as possible, taking care that nothing shall spoil your enthusiasm until the gardening habit is formed."

As the first labors of the garden have to do with the preparation of the soil, we must consider first a hoe. I am taking for granted that your place is a small garden, and I would urge that you purchase a wheel-hoe. If you have any knack of tinkering with tools, this little garden assistant will be a joy to use. It has a small plow and efficiently turns over the ground. It has cultivator teeth and can cultivate deeply and then smooth the surface. Its hoes are of value in completing cultivation and breaking up clods of soil. It may then be turned into a seeder, and efficiently will sow a continuous row, or seed holes six, eight, twelve or twenty-four inches apart. In one operation it sows and covers, and this it will do for almost all vegetable garden seeds. If you do not have a wheel-hoe, you may get over the garden with a spade and a hoe and some backache. Of course, if your place begins to be extensive, a plow and a harrow should be included in the equipment, but on the small place the wheel-hoe may be used instead of these.

There are many makes of plows and harrows and nothing particular to be urged regarding them unless it be that you should get a reversible plow if possible. Without this type you will find that as you cross and recross the garden you pile the dirt up first at

one side and then at the other and work a great, deep furrow, that is sometimes very awkward. As to harrows, the ordinary, deep harrow that has lever control to change from deep work to surface cultivation comes in a variety of forms. The argument in favor of the disk-harrow is that it does not tear up the fertilizer and decaying vegetable matter that has been plowed under the soil, but loosens the dirt without pulling it to the exposed surface.

In the small garden and beds the hoe and spade take the place of the plow. Most people prefer the in-
(Continued on page 322)



The prong hoe combines hoe and rake features



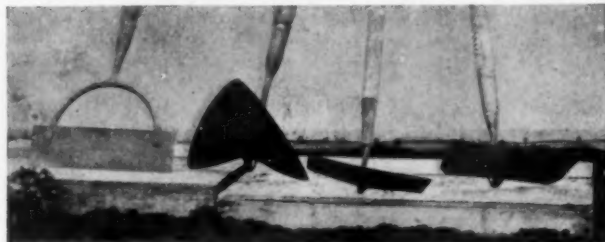
Long handled pruning shears are indispensable for high work



A useful trinity of tools, including the bow-headed rake



The spading fork, trowel, clippers and pruning shears are necessary implements contained in the garden basket



The scarifier, Warren hoe, short-bladed and draw hoes are a good average assortment



The wheel-hoe cultivates both sides of the row at once



The trellis as well as the pergola is considered an architectural feature to-day. When draped with vines it is extremely decorative



The stucco or stone house loses its sense of bareness when covered with climbing, leafy vines such as ivy or ampelopsis

Framing the House with Vines

BY E. J. GOODHUE

THE garden maker in his enthusiasm generally overlooks the vine as an adjunct to his place. It is important especially where the house is new and it is desirable to conceal the bare newness. Perhaps no other department of the garden lends so much atmosphere of homelikeness to the place as the vine and for this purpose

it would be well not so much to consider the field as to consider the special locations where vines may supplement the other plantings. In the first place the house itself needs the softening and toning down of a permanent vine cover. But vines are not made to cover up or conceal the architecture of the house. Indeed, they rather are complimentary architectural features, and as primarily their object is that of a drapery, this point should be borne in mind and they should follow the lines of construction; be architectural helps rather than hiders of building forms. Upon the house surface itself there are several sorts of vines that may be used. Because they are of different nature, some twining, some climbing by disc-like tendrils, others needing the support of wires, not all vines are available.

We shall take those first which are surface clinging. The English ivy (*hedra helix*) is evergreen both north and south and is practically hardy, but suffers injury



The supports of the pergola may be made interesting and attractive as well as the top. If such vines as clematis are draped along the pillars or are trained up on some wire framework the effect is particularly attractive

in February or March if grown in a sunny position unless protected by straw or litter of some kind. If on a northern exposure, it does not need this protection. English ivy is of slow growth, but beautiful at all times, and accomplishes the advantages suggested above when its growth has become developed. The house of brick, of stone, or of stucco affords the best surface for its development. Ivy is grown from slips or from plants purchased at the nursery, two-year-old plants costing in the neighborhood of twenty-five cents. A slightly variant form of English ivy is the Irish ivy which has a greater variation of leaf and grows somewhat quicker. Both these vines are interesting for their foliage.

Though it is not evergreen, a vine for similar uses is the Boston or Japanese ivy, *Ampelopsis tricuspidata* (Veitchii). This vine has the advantage of being perfectly hardy and growing on all sides of the wall, being not as particular about the grade of soil as the English ivy, and of somewhat faster growth. In the fall, the wonderful coloring of the leaves adds much in harmonizing any place to the landscape. As with English ivy the vine may be planted in the spring, setting out two-year-old plants and the ordinary wall surface will be very considerably covered with its beautiful drapery within three or four years.

A variety of the *Ampelopsis* is the Virginia Creeper, *quinquefolia*. This vine has not the disc-like tendrils of the two mentioned before, but may be supported on trellis work. Its special service is rather the covering of walls, embankments, and perhaps a dead tree which may be made an object of considerable adornment through its use.

Another creeping vine which may be used along the basis of masonry and has the advantage of being evergreen is *Enonymus radicans*. It is of rather slow growth, but of considerable beauty in its small leaves; one variety of the plant has a variegated leaf that is very decorative. This plant clings to walls as does the Virginia Creeper, and can be used to cover bare spots. See that it has a good, rich soil, and set the plants out in spring.

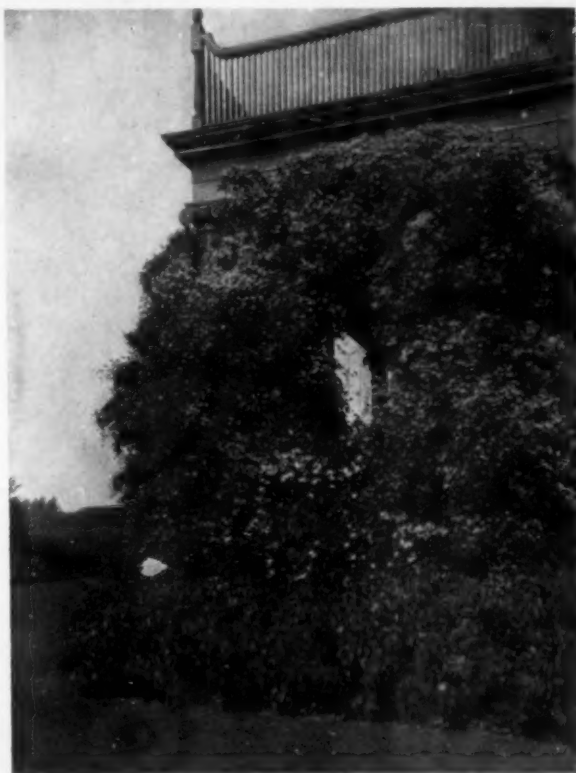
Of late years architects have been making lattice work an architectural feature. Simple lattice of rectilinear lines may support a variety of vines that are either twining or creeping. However, lattice work should not be densely covered; a draping is more effective. On such lattice honeysuckle, wistaria, clematis, trumpet creeper, false bittersweet, and other vines may be grown.

The familiar blossoms of the Chinese wistaria with its pale lavender or white hanging racemes, and the orange, scarlet trumpet creeper, *Tecoma radicans*, are hardy vines, also planted in the spring—the fall also. If they have rich soil they may be encouraged to climb on a solid support and grace the appearance of the house.

Valuable for house training are various forms of the graceful free-flowering clematis. The large flowered variety (*Jackmani*) with its purplish blossoms which appear in June and July is especially interesting in this

connection. *Paniculata* blooming in the full sun, flowers in the late summer and early fall. It is a very showy vine, well covered with clouds of flowers.

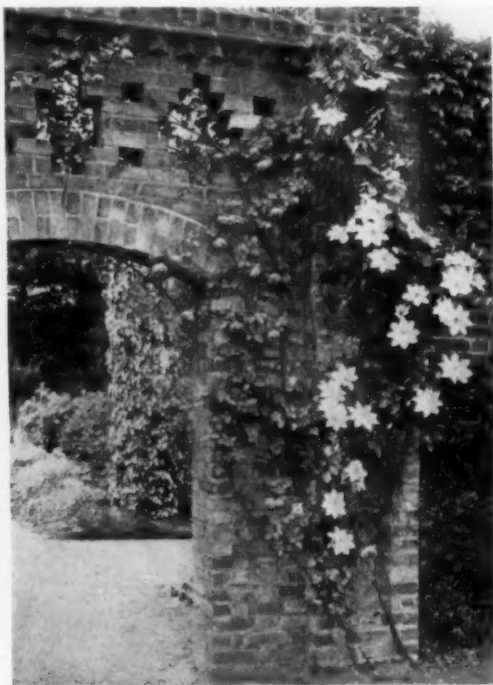
Honeysuckles may be planted in the spring or fall from nursery
(Continued on page 319)



Clematis paniculata makes a feathery mass of white blossoms especially valuable for porch treatment



Hall's honeysuckle is one of the best varieties, interesting in its foliage and its fragrant blossoms



The large flowering clematis is particularly interesting in its blossoms, but is not nearly as profuse as the other sort



Dutchman's Pipe is a quick grower and makes a good screen or is very valuable for its shade



The Rhoads house does not front upon the street, and obtains privacy thereby, the entrance stairs being upon the side and through a porch that may be inclosed. The gambrel roofed type was utilized here for the coolness obtained by projecting eaves, the windows of all the main rooms on the south side being shaded

THE RESIDENCE OF
MR. W. S. RHOADS,
RICHMOND, VIRGINIA

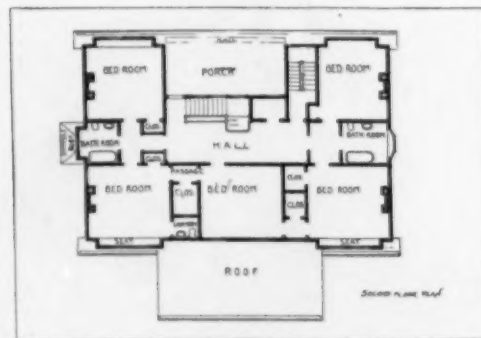


Although there is considerable hall space, it is so arranged that it really makes an addition to the rooms

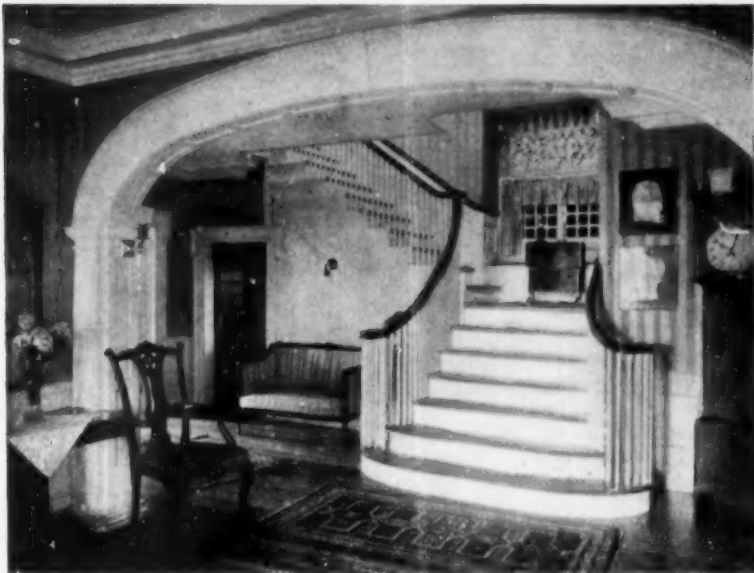


A low brick terrace gives entrance to one end of the porch

W. Duncan Lee,
architect



A bathroom at either end of the main hall is a convenient arrangement, especially when there are guests



The main staircase faces the entrance doorway and is seen through a flat arch—a very agreeable treatment



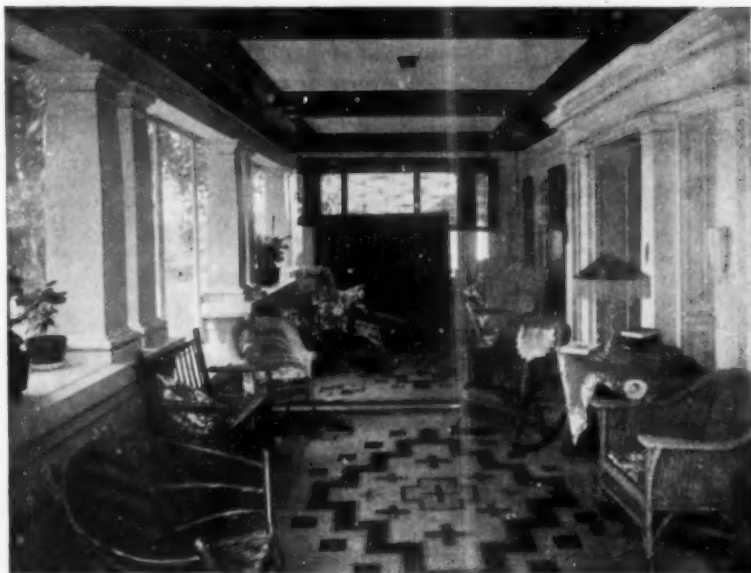
The arch gives the fore part of the entrance hall the semblance of a reception room and is furnished for that purpose



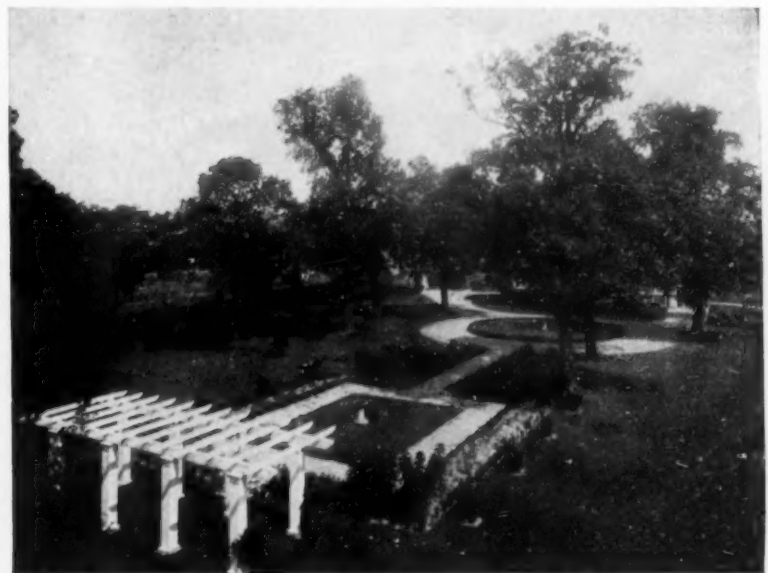
The living-room is particularly airy and is approached from the main hall and the west hall as marked on the plan



The bay in the dining-room looks out upon the garden and runs along more than one-half the southern side, providing light and cheerfulness



The south porch may be entirely inclosed with screens or glass, and since the doorway is at one end, takes on the qualities of a room



At the southern exposure a garden is laid out in formal lines, but it is very simple. Its axis runs through the center of the house



Inside the House

Timely Suggestions and
Answers to Correspondents



The Editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, please enclose a self-addressed stamped envelope.

New Curtains Made from Old Ones

IN these days when the high cost of living is bothering most of us, thrifty housewives are devising all sorts of schemes to stretch the income as far as possible.

In a well-furnished home in New York City, a woman has found a means of making badly faded curtains look presentable, thereby deferring for another year or so the expenditure of an appreciable sum of money. The suggestion may help some one else to solve a similar problem.

In the house in question, the window shades are dark blue. The dining-room windows, exposed to strong southern and western sunlight, were hung with dark blue embroidered scrim. After a year and a half of service, the lower half of each curtain, below the window shade was faded to an unsightly grayish blue, while the upper half retained its original color and beauty.

The housewife took down the curtains, turned them upside down, and re-hung them. The dark blue shades now show through the faded portions of the curtains, which are now at the upper part of the window, making them the same color as the lower parts, which are fresh and unfaded.

This idea could be carried out in any place where the shades and curtains are of a similar tone.

A New Shoe-Blackening Outfit

ONE of the ingenious novelties in household furnishings is a chair that combines all of the good qualities of that article and a shoe-blackening outfit as well, without interfering with the usefulness of either. The seat of the chair is hinged and lifts up, disclosing a box about four inches deep underneath it. In the box are the small brushes and cleaners, with boxes of blacking and polish, and other things necessary for keeping shoes in good condition. Fitted into wire frames attached to the under part of the seat are a large blacking brush and a lamb's wool polisher, while a foot rest with corrugated rubber top is fastened with a hinge just below the brushes, and falls into place when the seat of the chair or rather the top of the box is lifted. With the top

turned down the chair is quite like any ordinary chair in appearance. It may be had in dark oak, suitable for use in a hall or dressing-room, or finished in white enamel, making an attractive and useful addition to the furnishings of the bathroom.

The Cellar Problem

TO keep a house in perfect sanitary condition does not mean that you must be sweeping, dusting and scrubbing from morning till night. Let the air and sunshine into every part of the house daily. Do not let any decaying matter stay in the cellar. See that the pipes and drains are free and frequently washed out with strong, hot soda water. Look carefully after the refrigerator and wash and dry all cleaning clothes tubs, pails, etc., as soon as you have finished using them. It is not so much the dust that is in sight as it is the uncleanness, dampness and decay in dark, unnoticed places that makes a dwelling really unsanitary.

The storeroom for food may be the tiny

closet of the flat dweller in a city or the cellar of the village or farmhouse. In the last case it often has a commercial as well as a household value, since it keeps fruits and vegetables in good condition until marketed, as well as until they are needed for the home table; but in any case it should be cool, dry, clean and regularly aired.

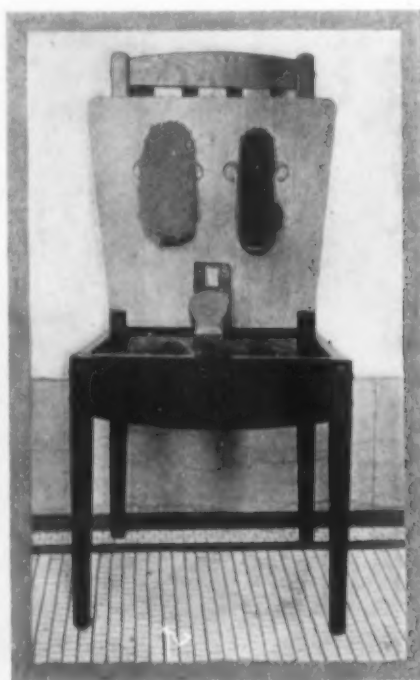
It may be well to describe a cellar that is badly built and carelessly kept, in order to see what should be exactly opposite conditions. Such a cellar is often dug in wet ground, without sufficient drainage of the subsoil; it may even be in contact with open sewers or drains, which have been proved in certain cases to contain specific organisms capable of producing disease. In many cases the cellar built against an earth wall is not protected from dampness by a layer of moisture-proof cement, and the water may stand in drops on its surface. Again, it may be dug so deeply below the surface of the ground that the windows are wholly inadequate for lighting and ventilation.

It may have an earthen floor, or one of badly matched boards, impossible to keep clean. It will probably have a musty smell, proof positive that mold plants are there and ready to attack any fruit and vegetables that are stored on its shelves or in its dirty bins.

If, in addition to this faulty construction, the cellar is badly kept and odds and ends of refuse are carelessly left about, not only will these conditions favor the spoiling of food, but they may prove injurious to the health of the family living above.

A cellar that meets modern requirements must be dug in ground that is well drained, either naturally or by artificial means. It must be remembered that a cellar is not, first of all, a storeroom; it is an essential part of a well-planned house in helping to keep an equable temperature, and if its walls and floor are what they should be, it prevents dampness and ground air from rising into the house.

If the house is set close to the ground, the cellar windows must be wide enough to compensate for their lack in height and must be set opposite each other to ensure a good draught and free circulation of air.



The combination chair and blackening-box is a convenient novelty

A Parcel Post Scale

SINCE the introduction of the parcel post a specially devised scale for weighing such packages has been constructed and put on the market. It will doubtless prove a decided convenience to many persons who are at a considerable distance from a post office, for it not only gives the weight of the package, but indicates the cost of sending such a weight to any or all of the various zones.

The scale, which is made of iron, has a dial of unusual size, and its capacity is twenty pounds. On the face of the dial, at the left of the indicator is a table of the various zones, which range from any distance under fifty miles for the first zone to anything over 1,800 miles for the eighth and last. Directly below each of the figures that indicates the number of pounds is a column of figures extending to the center of the dial, one for each zone, and opposite each zone figure is the amount necessary to carry that particular weight the required distance.

Although the scales will weigh anything up to twenty pounds, the table of figures is carried out only as far as eleven pounds, the limit of weight for parcel post packages. For further convenience there is also a tin scoop-shape receptacle such as is seen on grocers' scales, to be placed on the standard when there are bulky packages to be weighed.

With an assortment of parcel post stamps and a scale, one can be entirely independent of postman or postmaster, and rest assured that his parcels are sent out properly stamped and free from any risk of detention by the post office officials.

To Renew Wire Screens

WIRE screens may be made to look like new by the application of a good coat of linseed oil. Lay the oil on several days before the screens are placed



The new parcel post scale is planned for weighing at home

in the windows, for the dust will stick to the wire and cause a decidedly rough and unattractive appearance unless the oil is thoroughly dried beforehand. The oil will also prevent the screens from rusting, and prove a valuable aid to the housekeeper in preventing rust holes.

How to Clean Kitchen Woodwork

KITCHEN woodwork having much paneling and groove work is hard to clean in the ordinary way, so many angles and corners being inaccessible to the cloth that is customarily employed. And yet the proper cleansing of this woodwork is of first importance, for cleanliness in the kitchen should be considered before that of any other room in the house. To clean the woodwork properly it is feasible to use a vegetable brush covered with one or two thicknesses of cloth to soften the bristles which yet proves yielding enough to reach into every cranny and crevice evenly and with thoroughness.

A Timely Home Suggestion

MANY women in a sewing room constantly jump up and down to get some piece of lace or material to finish a garment. If the hundred and one things a woman needs at her work were all in some convenient place, all this trouble would be avoided.

If there is a large closet in the sewing room or in the room where most of the family sewing is done, get three or four shelves and divide these at convenient heights inside of the closet.

On each shelf arrange four or five boxes and then place the various kinds of laces, velvets, silks, buttons, each in a separate box, marking very clearly just what the box contains.

Two Household Conveniences

In a dining-room which was too limited in space to sacrifice room for a sideboard or buffet the following unique arrangement was devised. There was a window set high in the wall and in the space beneath this a cupboard was arranged by placing shelves. This was fitted with paneled doors, painted to match the trim, and served very well as a buffet. Beneath the shelves a cabinet for table linen was made and the board closing this compartment was hinged to drop downward. A pleasant variation of this scheme might be to use leaded glass in place of the wooden doors. In this way the decorative effect of the china could be made use of even when the doors were closed.

In another house where one of the bedrooms was often used as a sitting-room it was found that drafts coming from the fireplace were very annoying when the fire was not lighted. The owner conceived the scheme of hanging two doors that could be closed over the fireplace entrance. These were of sheet iron with paneling to match the mantel on the outside.



A unique way of replacing the buffet by a cupboard in the wall. This arrangement saves valuable space



The annoyance of drafts from the fireplace may be remedied by hanging two doors such as shown in this illustration



Garden Suggestions and Queries

The Flower Garden

CONDUCTED BY GRACE TABOR
Author of *The Landscape Gardening Book*, *The Garden Primer*, *Old-Fashioned Gardening*, etc.



THE garden should have one big surprise for the month of April, and the surprise itself is dependent upon just one thing; that is mass. The startled exclamation is absolutely certain if enough of any April blooming flower lies suddenly spread at one's feet. Crocuses numbering a thousand, pushing up through the sodden leaves of the previous summer, and scattered seemingly as if they had fallen of themselves and taken root haphazard, are as delightfully surprising as the sun bursting through black and sullen clouds. Creeping Phlox is as sweet an amazement as the soft airs and the warm glow of the summery day following the chill one.

Somewhere in every garden there is space that will admit of such planting—a space that can be sufficiently shut off from the general view of the garden to ensure the effect desired without loss to the rest of the garden.

Choice of Plants

SOME of the plants which may be used, beside the Crocus and Phlox already mentioned, are the Jonquils and the Daffodils, the grape Hyacinth (*Muscari Botryoides*), the poppy anemone (*Anemone coronaria*) and the checkered Lily (*Fritillaria meleagris*)—this last is one of the very best plants for naturalizing that there is. The latitude will, of course, vary the season of blossoming of anything planted, and what may bloom in April in the latitude of New York may not do so until May farther north. Generally speaking, however, the flowers that have been named will be on time. The spring snowflake (*Leucojum vernum*) may be a little early, and likewise the dog's tooth violet (*Erythronium Americanum*), but this must not be counted against them. The yellow bird's eye (*Adonis Amurensis*) is an April flower that is not a bulb, as most of those named are; so is the blood-root (*Sanguinaria Canadensis*), which prefers a place like the woods, with rich earth and shade.

It is not so much a matter of what is used, however; any one of these or any

other April blooming plant will be satisfactory, provided a great colony of them is established—enough to make them the dominant thing of their particular locality. Whatever space is given up to them should be filled completely, and with the one kind selected—not with two or several kinds.

The Earth and the Seed

THIS is, of course, the planting month; and everyone is busy planting something. Ground where seeds are to be sown must be very carefully made ready for them, and the annual spading is essential if the seeds are to have half a chance for their lives. If you will try to push a straw into the ground you will realize as never before, I think, the immense energy re-

quired to push the plant roots through it. Mellow and soft and yielding the earth must be, especially for the small seeds. Dig it up to a depth of a foot and turn over the clods and hammer them to pieces with the spade; then rake it and get out the coarse stones and the lumps that will not break apart. If it is heavy and stiff, stir lime through it, with some sand or sifted coal ashes to lighten it. Sandy and dry soil on the other hand, will need humus added; that is, organic matter, capable of holding moisture. Manure well broken down and rotted will furnish this; or old sod scrap-

ings, the tiny fibers of grass roots mingled with the earth in which they grew which the under part of sods will yield, if shaken or scraped. Make up your mind that you cannot have it too fine and soft, no matter how big and sturdy the seeds are which you are to sow; but if it is very light and powdery, press it together after all the raking is finished, by rolling it or by spanking it with the flat of the spade. For its tiny particles must be close enough together to let the moisture pass through it readily by means of the capillary attraction, and to prevent the presence of too much air about the roots. Then too, they must be close against the roots as these grow—for it is from these particles that the roots draw in

through their soft walls the plant food in solution—in quantities so minute that they are quite beneath our conception, and yet in enormous quantities, taken in the aggregate. So the earth must be dense enough to lie close to the roots on every side, without pressing them or offering too great resistance.

Do not cover seeds with too much earth. Remember what they must do—and that their strength is puny after all. Protection from sun and rain and temperature changes they must have, of course; but more than this means just so much extra work for the little plant as it makes its way to the surface. Never cover the seeds with more than four times their own diameter; usually three times is quite enough, and even less is not too little, if the conditions are all fa-

vorable to quick germination. An even degree of moisture is necessary; therefore the greater depth is the best, unless you have them where they can be watched closely and watered promptly to prevent drying out.

Keep the earth evenly moist, but *not wet*. More seeds are drowned annually than die of thirst in several seasons, through mistaken zeal in watering. The ideal condition is indicated by soil that will gently crumble apart after being squeezed in the hand. There is more water present than one would suppose.



A well arranged flower garden where space given up to one variety is filled with it in profusion, excluding all other kinds

quired to push the plant roots through it. Mellow and soft and yielding the earth must be, especially for the small seeds. Dig it up to a depth of a foot and turn over the clods and hammer them to pieces with the spade; then rake it and get out the coarse stones and the lumps that will not break apart. If it is heavy and stiff, stir lime through it, with some sand or sifted coal ashes to lighten it. Sandy and dry soil on the other hand, will need humus added; that is, organic matter, capable of holding moisture. Manure well broken down and rotted will furnish this; or old sod scrap-



Garden Suggestions and Queries

The Vegetable Garden

CONDUCTED BY F. F. ROCKWELL
Author of *Home Vegetable Gardening and Gardening
Indoors and Under Glass*



IN the rush of things that will require attention this month in the vegetable garden, such as sowing seed and setting out the early plants, and covered in detail in another part of this magazine, do not overlook the fact that you have to act now and to act promptly if you do not want the part of your garden in which you expect to have annuals, biennials and perennials to remain more or less a bare spot during the first part of the summer. A half a day devoted to your flower garden now will make all the difference in the world both as to its earliness and as to its approach to your ideal; and before the season is over you will be able to look back and see that it was one of the best days' work you put in.

The vegetable garden, like the flower garden, has much to do with the beauty of your grounds and every effort should be made to keep it as trim and as attractive as possible.

Care of the Lawn

NO feature of the place has more effect on its general appearance than the lawn. The first essential of a good lawn is smoothness. A perfectly even, smooth surface is necessary not only for looks but also because without it the grass cannot be properly taken care of. Where the unevennesses are only slight the lawn will be helped greatly by frequent rolling with a heavy roller. Especially while the soil is moist enough (as it is early in the spring; although it should not be touched while in a wet condition) to be plastic to some extent. Where there are holes and small depressions such as frequently occur where a comparatively new lawn has been made on a filled in foundation, it is necessary to go over the whole carefully in the spring and fill these with fine rich earth until they are built up level with the general surface after having been packed down. A little earth on top of the grass will not be injurious, as the grass will grow up through or where the earth is put too thick for this in patches it can easily be newly seeded.

Where, however, the lawn has never been made properly smooth and even, or where the "grade" which is equally important with the smoothness of the surface, has not been properly made, a more strenuous treatment will have to be given. In bad cases, or where it can be done without inconvenience, the best way will be to remake the lawn entirely. This probably will be no more expensive than trying to have it repaired, because a great deal of the work can be done with horses and plow and harrow, and it will be much more satisfactory to have done the work thoroughly in the beginning than to be continually in the throes of inconvenient patching and repairing, productive of poorer results.

and just before a rain give your lawn a top-dressing with these. Spread the bone and ashes evenly until the ground looks slightly white, but put the soda on very sparingly. Twenty-five pounds will be sufficient for a space 100 feet square. If you will apply it about three times during the season at this rate you will be astonished at the effect upon the growth of your lawn. If you have a fairly good sod to start with, pulverized sheep-manure and prepared horse-manure are also excellent articles to use as top-dressings, and free from the many inconveniences of stable manure, which incidentally it is often very difficult to get in proper condition to use for this purpose.



The vegetable garden should be kept as trim as the flower garden, for it often has much to do with the appearance of the grounds

Procuring the Seed

THE person with a small lawn will not usually bother to make his own mixture of grasses for seed, but he certainly should take every precaution to get only seed which he is very certain will be good, clean and honest. There are special grass seed mixtures on the market which are hardly worth the trouble of sowing to say nothing of the frequently exorbitant price asked. Sow the seed either over the whole lawn or over the spots which have been repaired, on a quiet day if it is possible and when the soil is fairly moist and then roll it in with a dressing of finely pulverized sheep-manure. This will greatly enhance the chances that this new seed will make a strong start and give you as satisfactory results as you had hoped for.

The Question of Fertilizing

IF you can get it underneath the soil where it will be out of the way, and in the position to do most good, there is nothing better than good manure with which to enrich your lawn. But do not, however, give your lawn a heavy top-dressing with it. There are other things which will give you results just as good or better, and be much less disagreeable and also much more convenient. Get a small supply of each of the following—nitrate of soda, fine ground bone and wood ashes,

results as you had hoped for.

How to Water Properly

WATER is the first requisite and the first remedy to try on your lawn should be in most cases an extra hundred feet of hose and a modern lawn sprinkler. Where the growing crop is kept clipped short and there is no possibility for cultivation as is the case with lawns, the soil dries out very rapidly. The new system of overhead makes possible what we heretofore have never had—fine American lawns.



EDITORIAL



EARLY GARDEN ACTIVITIES

THERE has not been that severity of winter here in the East that we have been accustomed to endure with poor patience. Indeed, winter has been mildly dallying with us. Now a tantalizing warm day that made us feel that summer was at hand; again a rigorous low temperature that presaged months of cold. The false alarms of spring have hardened us. It is the old story of "Wolf, wolf!" and most of us will cease to be excited over spring's awakening until we find a bluebird on a date when the calendar says winter is actually past.

But in the magazine world spring always comes at the same time. No matter what the weather prophet says, the planting time comes regularly at an appointed date. Within the office it is April in February—a real April that is entered each morning and left at night, as we leave the winter when we enter the tropic atmosphere of a greenhouse. It has its drawbacks, it is true, for Christmas begins in August, and is quite passed and gone by December twenty-fifth. There is, however, a longer period of summer weather with us. We enjoy both the false and the true time of flowers and growing things.

In a way one looks backward and forward at the same time. Just now we are attacking those early gardening activities, and the essence of past springs rising so strong in memory make the experience real. Out of those gardening experiences we wish to dwell upon one thing. We wish to give a weak second to the interpretation of Walter Prichard Eaton and agree with him for his emphasis of the humbler joys of gardening.

The hotbed! Could the author have found anything more inherently ugly to the fastidious cherisher of delicately perfumed, daintily hued blossoms? Yet for all its ugliness it is the garden toad with the jewel in its head. Within the small compass of the garden frame goes on the intense struggle of nature into life. In the open ground the phenomena seem less wonderful, less active, than beneath the dew-sparkled garden glass. Once you work the alchemy of the hotbed; once you find yourself master of the inclement spring, you will have passed your novitiate, and the glory of fruit and blossom will seem to be your more intimate creation.

ASTRONOMICAL GARDENING

THE abominable bedding plants must have been the common blot on the English landscape when Cowper wrote. Strange that they should persist until today! As early as "The Garden" was written, 1785, this style of planting was inveighed against. He speaks of such gardening as the work of the "insipid citizen" "plying a misspent industry at his uncouth, ill-chosen task of arranging suns and moons upon the lawn," planning grotesque arrangements until he had "fairly laid the Zodiac in the dust." That is rather a heavy arraignment of the case, but it deserves severe condemnation. With all the possibilities of smooth and rolling lawn why will people still persist in mutilating a pleasant green surface with fantastically worked designs as disfiguring as a goitre, having as much connotation of naturalness as that unfortunate affliction? If HOUSE & GARDEN can accomplish the destruction of the obsession to cut up clean lawn space with beds of foliage plants, cannas, etc.; can sink forever the outworn rowboat doing service before the house as a container of scarlet geraniums; can put an end to the astronomical gardening, it will be accomplishing the successful end to a campaign against these abuses started over a century and a quarter—goodness knows how long before that—ago. With all the opportunities offered by naturalistic planting, with decent formal arrangements, with the graceful possibilities of borders and edgings, shun the isolated bed as though it were plague-infested. It has been a garden disease too long, and should not be perpetual—or perpetrated—any longer.

CITY

PLANNING

ON May 5th, 6th and 7th the National Conference on City Planning will meet in Chicago to discuss the plans presented for the ideal development of the outlying districts of a rapidly growing city. The outcome of this discussion should be of particular interest to HOUSE & GARDEN readers in these days of mushroom growth. It is but a little while since what were rural districts with broad lawns and large trees have become crowded sections of various great cities now characterized by erratic styles, and, due to pressure, showing a layout devoid of plan. In our largest cities sections of this character are now in the stage of replanning. Experts are trying to make order out of the chaos: to add some beauty to the ugly conglomeration.

How much better it would be if instead of the spasmodic growth that typifies so much of our present building a purposive plan might prevail. It might be one way of correcting that change in character evident in so many residential sections. In American cities there is almost no permanent home district. Dwellings are no more fixed than the tents of the Bedouins, and the constant inroads of trade interests keep pushing them about from one place to another. There seems to have been no allowance for growth along regular lines in the old plans, which probably accounts for the spasmodic outgrowth of various sorts of districts here and there without purpose and of little duration. It is this fugitive quality, this fickleness of character that the city planning conference may provide against in new work and perhaps give some general instruction for curative measures.

The plan that was submitted some time ago for solution is given in brief below:

1. The tract is assumed to contain 500 acres of land located on the outskirts of a growing city of about 500,000 population, four miles from the center of the city but entirely within its corporate limits.

2. The rate and direction of growth of the city is assumed to be such that the tract when fully developed will be absorbed by the demand for building lots within a reasonably short period and at prices sufficient to repay the original investment in the land of \$2,500 an acre, together with the cost of development, interest, taxes, selling cost and a fair profit.

3. The demand is assumed to be mainly for the erection of dwellings and for such other purposes as are normally incidental to such development—retail stores, local places of amusement, schools, churches, etc.

4. In order to avoid discrepancies in legal conditions it is to be assumed that developments of private property are to be governed by the requirements defined in the Building Code approved by the National Board of Fire Underwriters and in the model tenement house law modified to a housing law.

5. The general plan should include: (a) The location of streets and other proposed public properties. (b) The development of private lands in accordance with the general plan and with such control as could properly be exercised by ordinance or statute under the most favorable constitutional limitations in the United States. (c) The recognition of such control as might reasonably be expected to be exercised by public-spirited land companies or other owners of real estate through restrictions in the deeds of lots.

It is not the purpose of the conference to conduct the usual competition and select one design which seems best fitted to cope with the situation. It is rather the idea to combine the excellence of ideas submitted by many, and to get a variety of suggestions.



FURNITURE FOR THE DINING ROOM

The appointments of the Dining Room, probably more than any other room in the house, reflect the taste of the occupant, and for this reason the selection of its Furnishings is a matter deserving most careful consideration. Interesting examples of the Dining Room Furniture now the vogue are shown by the exquisite Sheraton pieces illustrated. This and other XVII and XVIII Century English styles are admirably suited for the purpose because of their "livable" qualities and decorative character.

In our Division of Furniture and Decoration we have assembled a superb collection of suites and odd single pieces which have all the classic beauty and charm associated with the rare Antique Furniture of which they are *replicas* in every detail of design, materials and trimmings. In craftsmanship, durability and finish these reproductions are distinguished by a higher degree of excellence than was ever attained by the early cabinet-makers of fame.

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The Special Value of Perennials

(Continued from page 286)

there, as the colony becomes crowded. In some instances the number of plants may be left the same, and the individual size reduced by cutting off portions with a trowel, which may be accomplished without lifting the plant from the ground. Peonies are an exception to the rule, however, they should be planted two feet or more apart, as they dislike frequent disturbance.

Perennials usually are planted for permanent effects, but there is a growing tendency to use some of those that bloom in the spring and very early in the summer as bedding plants. Seedlings or small plants raised from cuttings are bedded out in the autumn, after the summer flowers have come to the end of their tether, and the year following, directly the height of bloom is past, they are rooted out and either thrown into the compost heap or divided and placed in nursery rows. This is the plan of Belvoir Castle, where every spring there is a superb display of bedded-out perennials on a scale that may be imagined from the fact that the annual consumption of aubrietias alone is some seven thousand.

Such temporary use of perennials within the limits of parterre formality and the set designs of park flower beds is quite common in England. The example is one that might well be emulated in the United States, where, aside from the most familiar bulbs, it is rare to see any plants but pansies, English daisies, arabis and forget-me-nots bedded out in spring. There is a long list to choose from, without touching the doubtful flowers such as various kinds of ranunculus and anemone.

This is not an expensive form of gardening, if one has the time for the additional labor required. Seed of perennials does not cost a great deal and as soon as a stock is started, propagation by cuttings uses up no money and very little time.

When seed is purchased, secure the very best obtainable. This costs more, but is decidedly worth the difference. Americans are apt to imagine that they are paying a high price for seed when they exchange a dime for a packet and to regard a nickel as a sort of standard price. The English, on the other hand, think little of paying the equivalent of twenty-four, thirty-six and forty-eight cents a packet; for they know what superior seed means and the choicest is never too good for them.

Seed is the best means of securing some of the perennials that are not in the American trade. Not only is the risk of importing plants done away with, but specimens born here are better fitted to stand the climate. One of the few American alpine gardens of importance has been thus stocked. Aside from this, the question of using seed depends a great deal on circumstances. It is the quickest way of getting a considerable quantity of larkspur, *Iris pseudo-acorus*, aubrietia, *Bap-*

tisia australis, blackberry lily (*Pardanthus sinensis*), oriental poppy, *Amsonia Tabernaemontana*, the maiden pink (*Dianthus deltoides*) and some of the primulas, to name only a few perennials, while it is a very slow way to accumulate herbaceous peonies. The only thing to go by is a knowledge of habit, which varies greatly in the length of time required for germination as well as for the attainment of the capacity of blooming; it is often difficult to get the seed of *trollius* and *Gentiana acaulis* to germinate until its second spring underground.

Creeping and prostrate plants commonly send out a large number of shoots that root readily, and, indeed, often strike root before being detached. All of the spring-blooming ploxes, arabis, doricum, *Polemonium reptans*, the ajugas, the veronicas and the stonecrops are readily propagated in this wise. Others, like the primulas and dropwort, can not be grown from cuttings; they form crowns that are easily pulled apart. Cuttings may be taken of *Phlox paniculata*, and it grows quickly from seed, but for ordinary purposes the best plan is to separate the roots. Large clumps may be safely cut with the point of a spade and the same is true of *Tradescantia virginica*, the funkias, homerocalis, Siberian and Japanese iris and all perennials that form a mass of roots so closely bound together that division by hand is out of the question.

There need be no fear of taking cuttings, within reasonable bounds, or of such subdividing. Both are good for perennials, which, it must not be forgotten, occasionally thrive more luxuriously in the garden than in their native haunts. To separate every few years, or every year, if conditions seem to warrant it, is good advice concerning the majority of perennials; divide peonies every seventh year and let fraxinella and the everlasting pea alone indefinitely, unless a transfer is absolutely necessary.

It is a custom, but one altogether too infrequent, to plant some of the perennials—generally grown from seed—in pots. For example this seems to be the only way to get perfection out of the chimney bellflower, *Campanula pyramidalis*. In pots the spikes of blue or white blossoms will shoot up five or six feet and there is nothing more beautiful for an early summer decorative change in the conservatory or for a porch or hall plant. All of the hardy primulas, but more particularly the English, Cashmere and Siebold primroses, the giant cowslip, the polyanthus and the border auricula, are remarkably handsome little pot plants for March and April indoors. The choicer pyrethrums, trollius, *Phlox divaricata* and many of the alpine are quite as handsome in their way. All of the plants may be set out in the garden after blooming, though the chimney bellflower is generally treated as a biennial and thrown away when this has taken place.

There are two more uses for potted perennials. One is to keep a reserve store for

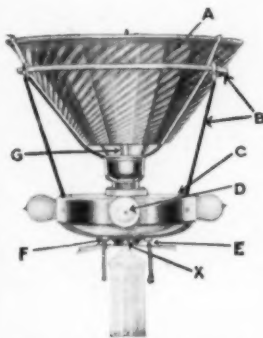


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filling gaps in the garden, and the other is to solve the problem of those perennials, including some bulbous and tuberous plants, that are unreliable and of questionable hardiness. Among the latter are several of the loveliest windflowers—*Anemone sylvestris*, *A. blanda*, *A. St. Brigid* and *A. fulgens*; the turban and Lebanon ranunculas and *Rehmannia angulata*. These, as well as the various hellebores known as Christmas and Lent roses—which, if they survive the winter in the open, do not always bloom satisfactorily in December, January, and March—may be grown in pots and sunk in ashes in a tight coldframe or kept cool indoors until brought out to bloom.

Some perennials hold strictly to species. Others have a perplexing number of varieties, the peony, *Phlox paniculata*, pyrethrum and larkspur running up into hundreds, where the original type may be lost altogether in cultivation. Where there is a choice of varieties, seek out the best. There is the greatest difference in the world, both as to size and color of bloom, between the best of the peonies, phloxes, pyrethrums and larkspurs and those that are neither bad nor yet very good. Of the best select not many kinds; a dozen plants each of the new, double, pale pink pyrethrum, Queen Mary, and as many more of that admirable double white, Carl Vogt, make a much finer showing than a mixture of two each of twelve varieties.

So, too, a massing of the *Festiva Maxima* peony or the old-fashioned red "piny" is better than the same number of plants in varied assortment, while *Phlox paniculata* loses half its effectiveness when there is not a generous grouping of one kind.

Not only be chary of varieties in the hardy garden and borders, but use the same restraint as to the multiplication of species. The wonderful big notes are struck by solid effects such as are to be found in nature. Bring your stock of *Phlox divaricata*—the type color—or *Alyssum saxatile* up to one hundred plants, which is easily done in a few years. Set them out in a long narrow drift of each and the point will be plainly apparent. This course does not call for the slighting of other desired perennials; they can be grouped as fillers, or used in the reserve garden and odd spots on the place. Often space by the south or east wall of a barn may be used for colonizing perennials not required for the garden. They make a fine show there because of the isolation and are always handy for cutting.

Everything considered, perennials are the cheapest of all plant investments. Most of them increase so rapidly that in a few years the result makes the money laid out seem ridiculously small. A large number of the commonest kinds may be had at fifteen cents each and for less by the dozen or hundred. Novelties and rarities are seldom more than half a dollar in this country, but in England all kinds of high prices are paid willingly and some of the 1912 novelties cost twenty-four dollars each.



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EDWARD GILLETT, Box B, Southwick, Mass.

Your Animal Neighbors

(Continued from page 289)

seen water or solid food of any kind, washed crackers in a pail of water the first time they were given the opportunity. I have had many raccoons under observation, and if captured young they take to captivity much better than do most animals; they are like their relatives the bears in this respect. Usually they are very gentle—even affectionate—but sometimes, apparently without cause, they will take a dislike to one, and it has been my experience that after that they are not to be trusted. The most severe biting I have ever received was given me by a raccoon with whom I had once been on the friendliest terms, and I had done nothing that I knew of to merit his change of heart. For all his winning ways and his charming family, the raccoon is a thief who must be reckoned with by those who keep poultry; but as he usually takes his toll at night and from the henhouse, a little forethought will prevent any trouble with him.

A sweet-faced little neighbor with whom we can hardly live on anything but pleasant terms is the gray rabbit. Shy as a schoolgirl, Bunny is not really very much afraid of us unless we are quite thoughtless of her comfort. I am very good friends with a bright-eyed little rabbit who lives in the woods near my house. In the evening she comes out into the lane, doubtless to nibble the clover and perhaps to enjoy the view as well. Sometimes as I am coming home at dusk, I suddenly feel my Great Dane stiffen at my side and looking ahead some fifty yards, I will see Bunny squatting in the middle of the road. I speak to my dog, who looks up into my face, then back at the rabbit, and finally turns his honest old face away as if to avoid the terrible temptation to throw obedience to the winds. And Bunny sits tight until we are almost upon her, when she hops unhastily along in front of us, then turns and disappears within the bushes at the side of the road. As we go past I peer into the shadows, and one shadow, deeper than the rest, is shaped like a squatting rabbit. The back is toward us, but I know that she knows that I know she's there.

In the daytime Bunny lives under an old brush pile in the woods, and I seldom go into those woods without stepping over to see her. Usually the first thing that betrays her immediate presence is her very bright eye, gleaming through the twigs. Then I see her soft gray body, lying in a little hollow in the brown leaves. I never disturb her, but tiptoe softly away again, just glad to know that my little neighbor is well and probably happy. In the winter I often help her out a bit with a carrot or some cabbage leaves, and she seldom finds it necessary to gnaw the bark of the fruit trees. As for the vegetable garden, it is understood that she may come in there occasionally, and though she does nibble the vegetables a bit, she's very welcome to the little she takes.

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old neighbors is the porcupine. No matter where you meet him—peering out from his lair in the crevice of the rocks, or looking down at you from the top of a small hemlock perhaps, his every look and sound and movement seem to say, "You go along and mind your own business." If you attempt to approach him from the front he will shuffle rudely off and leave you standing there, and if you literally corner him, he will deliberately turn his back on you, grumbling like an irascible old man.

At night, however, he is very likely to come shuffling around the house, looking for bits of food left by the domestic animals, or to gnaw the wooden handles of garden tools or canoe paddles, to enjoy the salt which has been absorbed from sweating hands. If you hear him and go out with a lantern, don't attempt to be too neighborly on short acquaintance. If you try to stroke him, he will surely resent the liberty and fill your hand full of quills which go in much more easily than they come out, though they must be extracted at once. And on no consideration let the dog go near, or you will probably spend the rest of the evening pulling quills out of his nose and mouth, and you may lose the dog after all.

These are but a few of the wild neighbors who will call on you from time to time if you live in the country, and who, if you treat them with broad-minded charity but without mawkish sentimentality, will add immeasurably to the joy of life. Do not look upon every tuft of clover eaten by a rabbit or a woodchuck, every fallen apple picked up by a deer in the autumn, as a loss; regard these things rather in the light of small payments for the pleasure you get (if you are a normal person) from living on friendly terms with your wild neighbors.



The Various Uses of Shrubs and Shrubbery.

(Continued from page 275)

that it is too valuable to be limited to the special division of berry bearing shrubs, for there are not a great number of species of this height and spreading habit which are reliably hardy in the northern parts of the country. Of the diervilla hybrids one may choose according to color preference. Eva Rathke is an attractive deep rose color, "alba" is white. Personally I prefer the former, as it is more distinctive at the time it blooms than white. As before mentioned, diervillas are also arching and spreading shrubs, their branches lying sometimes quite horizontal under their weight of blossoms. Thus they are quite as suitable for the front of a mass as any lower growing species.

The sweet *Daphne Mezereum* or Mezerion pink is one of the most fragrant flowering shrubs in the world and it has a way of blooming a second time late in



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the summer which is very delightful. Its period of actual blossom is very early, being before the leaves in March or April. The blossoms are a delicate pinkish lilac, small but produced in sufficient numbers to make up for their modesty.

In the supplementary list there is first the forsythia, familiar to all of us in the spring before anything else is awake, with the little yellow blossoms strewn along every branch away down to the very ground. It fairly blazes with the spring message of warm, golden life, and lights up every corner or spot where it is planted with delightful brilliance. It is always best to put this in the midst of other shrubbery, for its early bloom is seen quite as well when it is so placed; and after it has finished its riot of glory, it furnishes a fine background for other lower growing shrubs to spread their branches against. This is not to say, however, that it lacks effectiveness when placed in the very front of a mass; but only rarely should it be used thus, the better place for it being within the group. Its height also favors its use here.

Deutzia Lemoinei is the most showy of deutzias, but a pink form is perhaps to be preferred, for there is always an abundance of white in shrubbery and when it is possible to do so, it is well to choose something else. So *Deutzia gracilis rosea* may be used instead, for this has pinkish flowers. *Lonicera Tatarica*, Tartarian honeysuckle, also has pinkish flowers; and the Missouri currant, *Ribes aureum*, has delightfully spicy little yellow flowers. Finally, there is the common barberry, *Berberis vulgaris*, which droops under its weight of scarlet berries through all the fall and a goodly portion of the winter, and which colors wonderfully in the autumn. The small yellow flowers of this are not conspicuously in evidence when it is in bloom, yet they are attractive and not the least of its charms, for there are a great many of them, ranged along the branches like little bells ready to chime to every passing breeze.

Of special shrubs there are two divisions: the evergreen species such as laurel, rhododendron, andromeda and the like, and the shrubs so much used for winter effect because of their decorative berries. The latter are as suitable to all sorts of places as those which we have already considered under the general utility heading, but the broad leaved evergreens require special conditions and special treatment which I shall not attempt to go into here. If you wish to make use of these, study the problems concerning them first, and be quite sure that you have the proper conditions and soil for their healthy and successful growth.

Berry bearing shrubs are seldom conspicuous in flower; so it is hardly possible to secure winter effect and summer effect in equal proportions from a single group. Berry bearing shrubs by themselves, in large masses which show nothing else, are not as attractive as a mingling of them with a suitable number of non-

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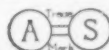
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fruiting shrubs, or shrubs with inconspicuous fruit. For all berries grow as monotonous as no berries; there must be variety.

The same *Viburnum opulus* that I have already described and recommended among shrubs for general use, is a leader among the ornamental fruited shrubs as well, and quite worthy of taking first place. But close second is its near kin, *Viburnum dentatum*, the common arrow-wood which bears dark blue berries in greatest abundance; and the *Viburnum cassinoides*, called witherod or Appalachian tea, which has great thick clusters of berries that are first pink but turn gradually to deepest blue, all the colors of the transition being present at once.

With these three as a beginning, the common barberry must be ranked next; and after that, *Cornus stolonifera*, red osier, which has bright crimson bark during the winter as well as its bluish-white berries to recommend it. Then there is the low growing Japanese barberry, *Berberis Thunbergii*, and the Japanese rose—*Rosa rugosa*—both with fruits that persist all winter and are not eaten by the birds, the former like the fruits of the common native barberry, the latter, great, red hips as large as marbles. Of course there are many others, too, but these are the choicest, to my mind—and the ones most likely to succeed just for the planting.

And now about the planting: how shall it be done? And when? And where? Of course the plan must answer that last query; so if you have not made a plan, that is the thing to do first of all. Perhaps the diagrams will help you; there is one to meet nearly every requirement, and there is really no reason why they should not be followed exactly, providing the place which is to be planted is just what they are planned for—that is, sunny or shady, according as they are labelled. If none of them are large enough, combine two or three as suggested and make up as large a group as necessary.

The principle of planting is always to frame lawn, of course; and always to keep masses of both lawn and shrubbery. There should be no scattering of shrubs about a lawn; this breaks up the mass of both the lawn and the shrubbery. Keep shrubs together and lawn intact. Never fill corners evenly with shrubs, however, in doing this, nor allow them to march around the open space in single file or double file or any way but just as if they happened to grow there naturally, as they happen to grow at the edge of a wood or beside the road away out in the country. Shrubby must not be handled formally, nor confined to lines of a design as flowers or even trees—under some circumstances—may be. It simply *must* be permitted to assume the formation which nature gives it, a grouping that is characterized by easy, careless, close yet flowing, mass. Corners filled with ever so lovely a selection of shrubs are only absurd caricatures of natural planting, and nothing can make them anything else. There is no such

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thing as conventionalizing nature in this instance. Shrubbery must be planted just as nature would do it herself.

The actual operation of planting a shrub is of course just the same as planting anything else, except that a shrub is larger than the things commonly handled, especially by the garden beginner. Holes must always be dug as large as the full spread of the roots; and deep enough to let the specimen go into the ground to just the depth at which it has always grown—no more, no less. Always aim to restore it exactly to the position which it originally occupied, to spread its roots in just the same way, and to bring each little rootlet into contact with the soil just as it was when it rested where it had worked its own way among the earth particles.

This for an ideal, literally, will do more to make it clear just how a thing should be planted than pages of directions could. Roots may be compressed by the packing to which they have been subjected when shipped, but this compression is easily overcome by soaking them awhile in water. Drain thoroughly after such soaking before planting, so that the tiny hairlike roots may separate and take their proper positions without being weighted with water; and so the earth will not cake around these and inclose them in a clay prison where they cannot find food or water.

If the soil in the bottom of the hole wherein a shrub or any plant is to be set, is loosened and worked over and then mounded to meet the downward thrust of the roots as they leave the trunk of the plant, the restoration is likely to be facilitated greatly. Set the plant upon this mounded cushion of earth and shake it up and down as the earth is poured in and around over its roots, and thus work it easily into the ground. Tamp the loose earth down at the same time with a rounded stick like the top of a broom handle, reaching into every crevice and little obscure pocket, and hammering sidewise as well as down. The roots are to be brought into as close contact with soil particles remember, as they enjoyed when they pushed their way through between these particles; and this is pretty close. Moreover, every littlest rootlet should be thus restored, and each is rather more important than the large and woody root from which it springs. So do not neglect these tiny hairlike growths, and do not allow them to be caught in pockets where they cannot reach the earth on any side.

In order to do all of this properly, the ground should not be very wet when planting is undertaken. A dry earth is far better to work in than a wet one; indeed, it is impossible to do anything unless the moisture is fairly well out of the soil. So if material arrives in wet weather from the nursery, heel it in temporarily by digging a trench, sloping on one side, laying the plants along with their roots in this, and throwing earth over these roots so that they will not dry out. Dormant plants may be kept perfectly well this way for a

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long time; and even after they start into growth, they will not suffer if the work has been well done. Always cut away any broken roots and leave a clean, smooth stump; and cut back as much of the top—proportionately—of any plant you may be moving as it has lost of root; that is, if a third of the roots have been injured, shorten in a third of its top—if a quarter, take away a quarter above.

The following lists summarize the information given above as to the planting of shrubs:

ALL-AROUND PLANTING

- 1—*Syringa vulgaris* (lilac)
- 2—*Viburnum opulus* (highbush cranberry)
- 3—*Cornus paniculata* (cornel)
- 4—*Philadelphus coronarius* (syringa)
- 5—*Spiraea Van Houttei* (spirea)
- 6—*Rhodotypos kerrioides* (rhodotypos)
- 7—*Diervilla florida* ("Eva Rathke"; Weigela)
- 8—*Daphne Mezereum* (Daphne)
- 9—*Forsythia Fortunei* (Forsythia)
- 10—*Deutzia gracilis rosea* (Deutzia)
- 11—*Lonicera Tatarica* (honeysuckle)
- 12—*Berberis vulgaris* (barberry)

COMBINATION CONTAINING BERRY-BEARING SHRUBS

- 1—*Viburnum dentatum* (arrow wood)
- 2—*Viburnum opulus* (highbush cranberry)
- 3—*Viburnum cassinoides* (witherod, Appalachian tea)
- 4—*Cornus stolonifera* (red osier)
- 5—*Rosa rugosa* (Japanese wild rose)
- 6—*Rhodotypos kerrioides* (rhodotypos)
- 7—*Diervilla florida* ("Eva Rathke"; Weigela)
- 8—*Berberis Thunbergii* (Japanese barberry)
- 9—*Forsythia Fortunei* (Forsythia)
- 10—*Deutzia gracilis rosea* (Deutzia)
- 11—*Lonicera Tatarica* (honeysuckle)
- 12—*Berberis vulgaris* (barberry)

COMBINATION FOR SHADE

- 1—*Viburnum dentatum* (arrow wood)
- 2—*Viburnum cassinoides* (witherod)
- 3—*Cornus paniculata* (cornel)
- 4—*Cornus stolonifera* (red osier)
- 5—*Ligustrum Iboia* (privet)
- 6—*Ligustrum Iboia*, *Regelianum* (Regel's privet)
- 7—*Diervilla florida* ("Eva Rathke"; Weigela)
- 8—*Berberis Thunbergii* (Japanese barberry)
- 9—*Forsythia viridissima* (Forsythia)
- 10—*Deutzia gracilis rosea* (Deutzia)
- 11—*Ligustrum ovalifolium* (California privet)
- 12—*Berberis vulgaris* (common barberry)

The numbers on the plans are in each instance the same, but they are understood to refer to the different planting lists, that according to the situation makes one or the other of these groups desirable. The plans are measured, each square being three feet by three feet.



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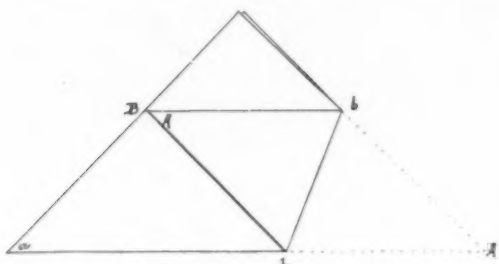
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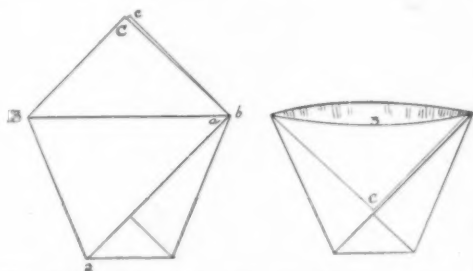
A Folded Paper Flower Pot

USE a tough manila paper that will not readily tear or soak through when filled with moistened earth. Cut into squares from seven to ten inches in size according to the seed which is to be planted. Double back diagonally as the cut shows and crease. Then lay flat upon a table and fold the point *A* over to the left to *B*, creasing the fold *i-b* down sharply. The edges of the paper *B-b* must be parallel with the fold at the bottom, *a-A*; you will note that in order to make them thus, the lower point *i* of this fold does not come in the middle of the bottom line but a little to one side of it.



Fold the dotted triangle over to position B-b-i

Fold *a* up to *b* and crease the line *B-2*, shown in the second cut. Now bring the point of the paper marked *C* down over the front of the "pot" as it lies before you and crease it; then turn the whole thing over and fold the other point, marked *c* down in the same way on the other side. This completes it. The top will not be perfectly even, naturally, the creased points



The final stages, showing completed pot on the right

rising a little on either side. But this does not affect its usefulness. Neither does the fact that it will not stand up unless set close among a lot of its fellows, or into a bed of earth. It is quite as serviceable a flower pot for raising seedlings as any that can be bought—and obtainable in quantity everywhere, for an hour's work some evening.

The Ten Annuals For This Year's Garden

(Continued from page 281)

bundle comes home in, of any desired size. And the seedlings transplanted to these are really ready for the ground without further disturbance, for the pot pulls off from the earth, which is lowered into the

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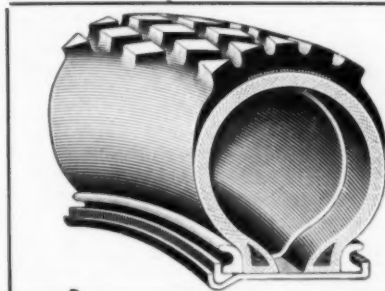
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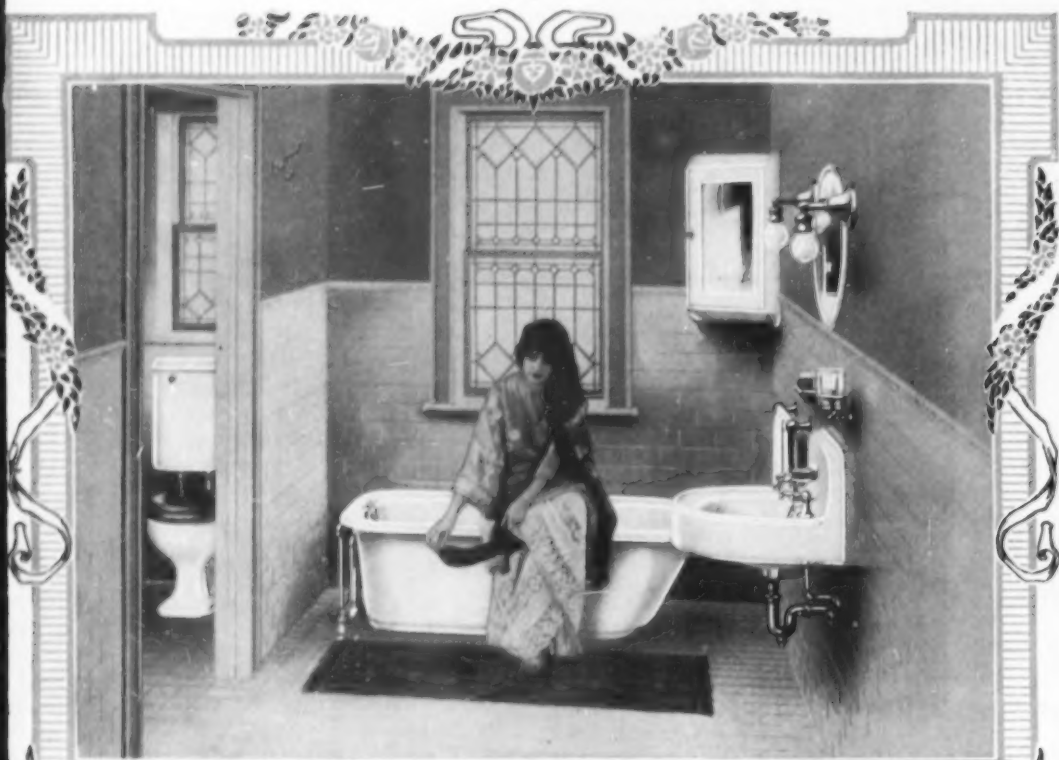
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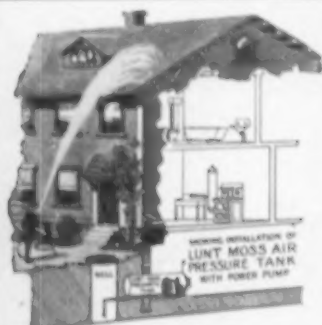
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ground without a root being disarranged. Set them about ten inches apart in the border, and to within five inches of the edge of it, along a walk. The straggling habit of the plants has been much overcome in the work that has been done with them; but they still are somewhat uncertain and wobbly—and need space, in case they do spread about. Their fragrance and beauty as cut flowers is one of their strongest points, and their freedom of bloom is another great advantage. But they were for so long a time such a craze that I suppose one should be somewhat careful in indulging in them now. For they are not up to the mark of a really fine garden standby in many ways.

I have spoken several times of the necessity of picking the flowers from annuals as fast as they fade. This is not only to keep the plant a more sightly object, but to stimulate further bloom. When the seed forming is thus nipped in the flower—not exactly in the bud, though figuratively so—a plant will go on producing more flowers in the effort to produce seeds, that being all it blossoms for anyway. So the removal of flowers induces more flowers, and in this way the entire season may be filled with bloom that otherwise would be over in a fortnight or a month at the most.

Planted sufficiently close for the best effect, very few beds or borders will need much care after the plants are grown—for these themselves will crowd out weeds, and keep the space about them clear. Until they are fully grown, however, it is necessary to till the soil of a flower garden quite as much as the soil of a vegetable garden. Moisture needs conserving here too—and though the annuals are hardy and will grow almost in spite of the roughest kind of treatment, they will do so much better for a little care that it is hard to believe they are the same plants. It is too much to expect to get the best results from any plants that are forced to struggle against the double handicap of weeds and dry, hard baked soil that lack of care induces.

For the sake of the garden's future, a record of this summer is to be kept—not an exhaustive one, but just a simple line or two a day, as the circumstances may demand. Some of the seed I may save, if the variety pleases; indeed, it is quite possible that some really wonderful and valuable variety may be developed from the most ordinary garden, any summer. For the seed of a plant of exceptional color may lead to a find, if consistently saved, the plants of succeeding generations showing this in greater and greater intensity where only seed from the brightest or darkest flowers is saved. This is one of the "by products," so to speak, that adds to the interest of the happy-go-lucky annual garden—the garden of change, of surprises, of greatest careless liberty—the one garden that, more than all the rest, is never finished because every year it is begun anew, right where it began the year before.

Why You Should Grow Small Fruits

(Continued from page 278)

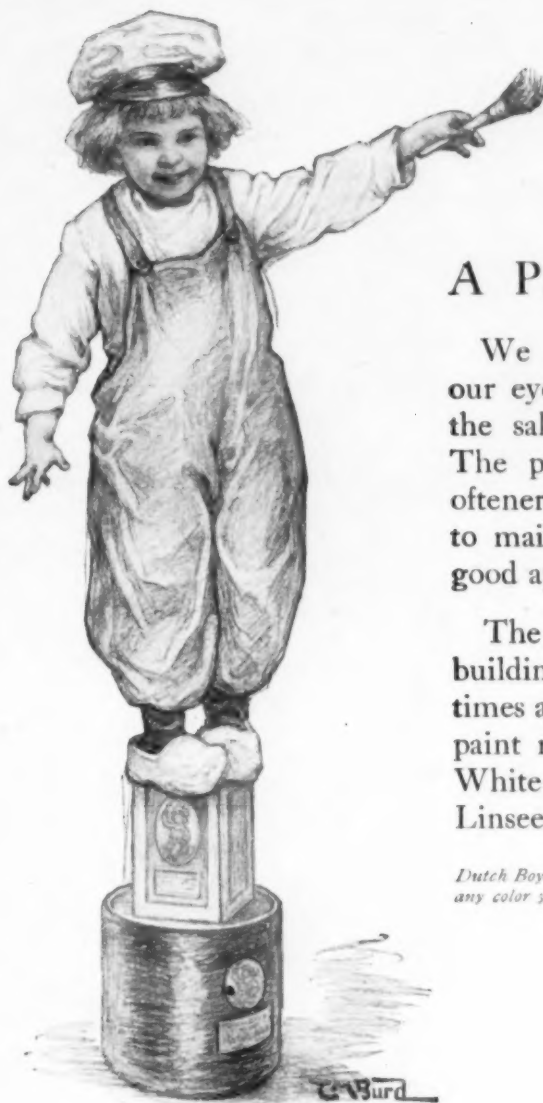
The canes may be cut back to three or four feet high in which case they will be sufficiently stiff and strong to support themselves. More satisfactory results as a general rule, however, will be obtained by giving them the support of a tall, stout stake to which they should be loosely tied with some soft material, or by running a wire along each side of the row so that they can be supported between them. Or they may be planted near a fence where room is scarce, and trained against that.

While most of the cane fruits are very hardy and will stand the winters in cold climates, the only way to make certain of having satisfactory results is to give them a mulch of rough material during the mid-winter months. This is for New York or more northern sections. It would seem at first that it would be quite a job to cover the berry patch six feet deep with leaves or hay, but that little task is got around by putting the canes to bed by bending them over so that they are almost flat on the ground and holding them in this position by burying their tips with a shovelful of earth. Then, just before severe freezing weather, the canes may be covered with soil, rough litter or hay, held in place by a few old boards or stakes.

The winter mulch should be removed in the spring before there is any sign of the beginning of growth, otherwise you will have trouble. When the canes are again tied up to their supports then some more pruning will be in order. Blackberries should be cut back to four or five feet for the main stalks and the side branches should also be cut back a third to a half. The blackberries and the Cuthbert raspberries—one of the finest of the reds, should have the side branches cut back almost two-thirds of the length, the main canes having been cut off to about two feet tall the previous summer to encourage the growth of the side shoots on which the fruit is borne.

Dewberries are naturally trailing plants running along the ground, but in the garden it is necessary to give them a support. This may usually be done by driving a stout stick near each plant and tacking laths across it at right angles and at a distance of a foot or a foot and a half from each other.

You can hardly kill a currant bush once it gets firmly established. But unless you are willing to give it some attention you cannot expect even fairly good fruit. If it can be given fairly heavy soil so much the better, as plenty of water is an essential. In hot very dry seasons with a drouth just before the fruit matures it will be very desirable if not absolutely necessary to give the soil a mulching with hay or rough manure and if possible an occasional thorough soaking with water. This is even more true of the gooseberry than of the currant. Both of these fruits like an open, airy position and should not



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be expected to do their best if stuck up in a corner of a board fence or where the air cannot circulate freely about them. Both of them, but more especially the gooseberry will stand a limited amount of shade. Fertilization should not be stinted. Old rotten manure and commercial fertilizers with a good per cent. of potash used in combination will give excellent results. Two or three plants well looked after will give quite an abundant supply of fruit. Be careful, therefore, in ordering not to overstock yourself, but on the other hand be sure to take the best care of the few that you get.

The greatest factor there is in the growing of currants is a merciless use of the jack-knife. Currants should be so pruned as to be kept in bush form but with what is termed an open center, that is, when you prune, cut out shoots from the middle of the bush and keep those on the outside. Cut out enough of the new growth so that there is no crowding and the wood that is four or five years old.

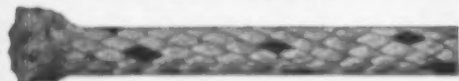
The gooseberry will require much the same care except that it needs to be pruned even more severely. All branches which touch each other or which trail down to the ground should be cut.

The friendly and gentle currant-worm will, without doubt, make annual visits to both your currant and gooseberry bushes. He usually gets around, bringing a large family with him a little while before the plants blossom. Receive him first with a Paris Green Spray, and if he insists upon coming back after this when the fruit has begun to form, use Hellebore.

The grape has been pre-eminent among garden fruits from time immemorial. Select for your vines, if possible, a place fully exposed to the sun. Even more than with the currants and gooseberries success with grapes will depend on sufficient pruning. The plants as received from the nursery should be cut back three or four eyes or buds at the time of planting. Unlike the currants or cane fruit the grapes bear their fruit on the present season's growth of wood. Furthermore, if left to follow its own will, the grape vine will start out to present you with several times the number of bunches of grapes that it could possibly mature in proper condition. Spare the knife and spoil the grapes!

Therefore heed well the following: When your grape vines come from the nurseryman, no matter what anybody may say, cut them back to three or four eyes when you plant them. And when these eyes have sent out their rapid-growing shoots as they are sure to, do not leave more than two of them. These should be tied up to the stakes, wall, or veranda upon which you are going to grow the vines. If you are going to train it on a regular wire support, only one of these canes should be left—the strongest—and the other should be cut off some time late next fall. If the vine is to be trained over an arbor or some other broad surface, leave both the canes to form the basis of your future grape and shade supply. The prun-

Samson Spot Clothes Line

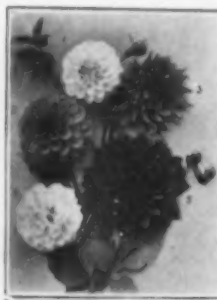


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ing you will have to give it thereafter will depend upon the way you grow it: if you use an arbor or some similar surface simply train the main vines over it in any way you see fit, and each year cut the laterals back to within three or four eyes of it. This may seem like an awful waste of nice grape vine—but as the grapes are borne only on new wood, that is on wood of the same year's growth, after fruiting only enough of it should be kept to furnish a starting point for next year's growth, which will bear next year's fruit.

If you find that your grapes are not ripening up as fast as they should in the fall, one of two things, or probably both, may be the matter—first that you have not been sufficiently severe with your pruning, and that the vine has set too many bunches of fruit, or secondly, the fertilizer which you have been applying is deficient in potash. A "2-8-10" fertilizer is very suitable for grapes. If you use an animal manure, you should make up the deficiency by using plenty of wood ashes, or a little muriate of potash.

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		Marshall, midseason	100	1.00
		Lester Lovett, late	100	1.00
Raspberry ..	3x6	The King, red, early	6	.25
		Cardinal, red, late	6	.40
		Cuthbert, crimson	6	.40
		Mumber, black	6	.25
Blackberry .	5x7	Mercerau, early	6	.40
		Erie, main	6	.25
Dewberry ..	5x7	Premo, early	6	.25
		Lucretia	6	.35
Currants ...	4-5 apart	Perfection, red	6	.75
		Lee's Prolific, black	4	.30
		White Grape, white	2	.20
Gooseberry .	5-6 apart	Downing, pale green	1	.15
		Red Jacket, red	1	.15
		Industry, red	1	.20
Grapes	6 or more apart	Green Mountain, E'y white	1	.50
		Moore's Early, black	1	.25
		Campbell's Early (Concord)	1	.25
		Delaware, red	1	.25
		Catawba, dusky red	1	.25
		Pocklington, golden	1	.25
				\$9.45



Framing the House with Vines

(Continued from page 297)

plants, and will subsist almost any place with little difficulty, but for house use some provision must be made to train the vines upon the wall.

There is one consideration to be taken when thinking of planting directly upon the house wall in the manner here suggested. Select those vines which are free from insects and litter of falling blossoms. You will find that the most satisfactory will develop into those leafy sorts mentioned in the beginning of this article.

When you approach the problem of the porch the number and variety of vines applicable is considerably increased. Here let us repeat again the warning. Follow the lines of construction and do not make vines grow over apparently empty spaces. If you desire screening for the porch or shade, use rectangular trellises or trellis arches and coax your vines on these. A



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20% Chinese and Japanese.
10% European and horticultural

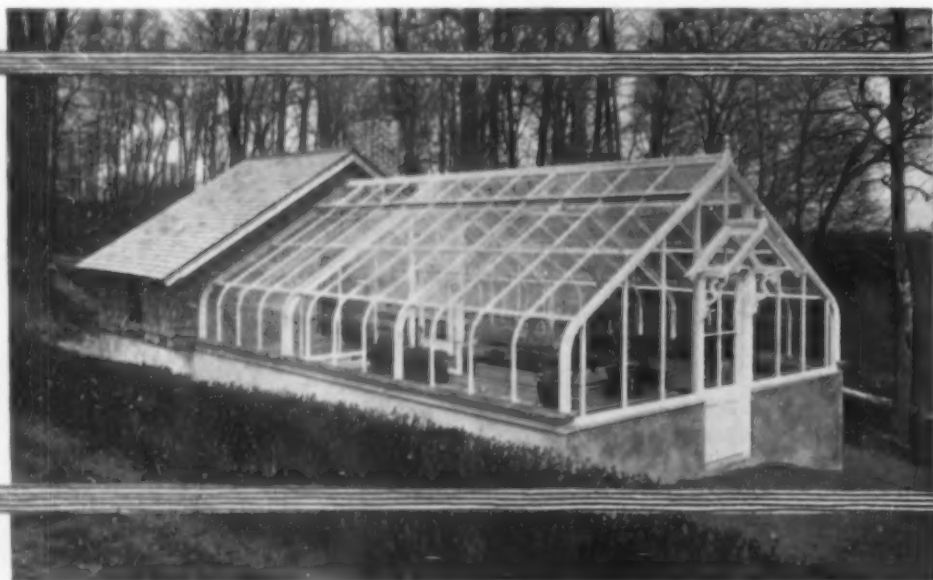
Above quoted from Wilhelm Miller's "What England Can Teach Us About Gardening"

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help in growing vines of this sort is to run a row of staples placed at regular intervals located near the ground. Duplicate this distance on an iron rod or a squared piece of wood and attach the wires, allowing the length you expect to have your vines grow. The wooden support or the iron rod may be held above by staples and the whole vine removed, if it is necessary to do painting, without tearing down the vine. Aristolochia, honeysuckle, woodbine, clematis, climbing rose, morning glory, Allegheny vine, scarlet runner bean, Japanese hop, and kudzu vine are some satisfactory kinds for this purpose. Perhaps it would be well to consider their requirements and their appearance.

Akebia quinata is a shrubby vine with beautiful leaves and dark purplish flowers appearing in May and June, liking a heavy soil.

Allegheny vine, *Adlumia cirrhosa*, grows very quickly, has a mass of light, pinkish flowers blooming in summer, but requires care and attention as it is of delicate growth. It attains a height of fifteen feet.

Cobaea scandens will serve to make an easy screen. Its foliage is green, but the leaf veins are a purplish bronze. The flowers are a purplish blue, large and cup-shaped. The vine will often grow to twenty feet, but requires a good rich soil, and should be sown early in the greenhouse.

Clematis paniculata should have a support of chicken wire or some wide meshed framework. Its bloom will come in the last of August or September, and adds beauty with its profuse, fragrant blossoms. *C. Virginiana* grows to about 12 feet, and is another desirable sort.

Dutchman's Pipe, *Aristolochia Sipho*, has large round leaves and purplish shadows and grows to a considerable height. It thrives best in fertile soil in the full sunlight and is a fine shade producer. The flowers are like long curved pipes.

Hall's honeysuckle, *L. japonica*, is half evergreen and grows to about fifteen feet. It is of easy growth but needs to be supported on wires or strings or trained over trellises. The variety *lonicera periclymenum* is the most fragrant type and has pinkish flowers. It blooms till September.

Hop, *humulus lupulus*, is a tall growing vine with interesting fruit and leaves of dark green. The variety *Japonicus* blooms in August from seeds sown out doors in May, and also is self-sowing. It is one of the quickest growing vines.

The kudzu vine, *Pueraria*, is a rapid grower that covers great distances during the summer—sometimes 40 to 60 feet—and is planted from tubers. It prefers sun and well drained soil.

Morning glories are valuable also for quick growing annual vines. The Japanese have made many improvements in them, but the ordinary *Ipomoea purpurata* is still a valued variety. If seed is sown in April, flowers appear in July. This blooming period may be hastened by sowing in a

greenhouse. The vine climbs up strings or wires. The blue form, *I. rubra coerulea*, heavenly blue, is first a purplish red and then a beautiful blue. The bloom of morning glories may be hastened if the seeds are either soaked or notched before planting.

Ipomoea bona-nox is the common moon-flower, and has great flowers nearly six inches across. The vine grows to a height of twenty feet and is of great fragrance. The flowers open in the evening, but if planted on the east and west side of the house since the blossoms do not close until in direct sunlight provide bloom all day.

Nasturtium in the climbing sorts makes a very effective companion vine to clematis or the perennial pea or honeysuckle, which vines are often ragged at the base. It is the easiest grown vine, and if planted outdoors will bloom in July. There are various shades of red, orange and yellow, generally mixed together; but where color effect is desired, it is often effective to plant only a single color.

The *Lathrus latifolius* or *odoratus* variety of pea will produce a bloom until August, and it should be followed by some later blooming vine, clematis or possibly nasturtium.

Scarlet runner bean flowers from July to frost if sowed by the first of May. It is very easy to grow, reaches a height of ten to twelve feet, and likes plenty of sunlight. The flowers hang in bright, scarlet racemes and are exceedingly showy.

The trumpet creeper, *Tecoma radicans*, will only flower where the sunlight reaches, but there are now many beautiful varieties and it seems to attract those interesting visitors, the humming birds.

If there is an entrance arbor on the porch or trellis work at the entrance, some of these vines may be well draped over it. Wistaria in this situation is exceedingly attractive. Clematis combined with the climbing roses is also effective. The best sorts for this situation are those flowering early: Lady Gay, single pink; Dorothy Perkins, single pink; Crimson Rambler, double red; Yellow Rambler, double, and White Rambler, double.

For pergolas and for columns there should be some substantial support of wood or of wire about the columns. Nothing is quite as effective as the delicate Virgin's Bower clematis (*C. Virginiana*), draped about the uprights. In this situation and over the tops of arbor and trellis wistaria, grapes, trumpet creeper, Virginia creeper, Dutch honeysuckle, clematis *Henryi*, the large flowering clematis, are effective. Two other plants worth using are *Vitis vulpina*, frost grape, a tall climbing variety, and *Vitis labrusca*, fox grape, with large, furry leaves and reddish wood. Fruit grapes may often well be used in this situation, but do better when trained along rows of parallel wires.

For covering objects and for screening, all the fast-growing vines such as kudzu, honeysuckle, hop, may be used, but in addition the various types of gourd make an interesting cover with their attractive



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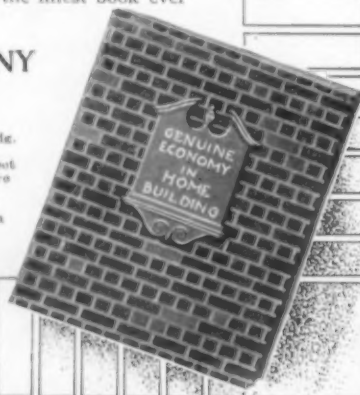
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When making provision for fall beauty the Virgin's Bower should be considered for its feathery fruit. *Ampelopsis heterophylla* is a handsome vine well adapted for rocks or walls, but appreciated for its blue berries. Another attractive berried vine is *Celastrus scandens*, a twining vine with very showy fruits of orange yellow splitting open and showing crimson seed envelopes like the bittersweet berry.



Purchasing Garden Equipment

(Continued from page 295)

strument with the handle instead of the long-handled hoe without a terminal grip. The spading fork, if there is a choice between the two, is of greater value all round than the spade. Get a four-pronged type, with slightly incurving prongs, and see that the iron is solidly fixed to the handle.

The rake is constantly in use as giving the final touches to the seed bed and making that carefully cultivated surface that is essential to good growth, so smooth and fine that even a cat's foot-print is left upon it. You must get a good, serviceable type. The bow-headed rake is best.

During the process of cultivation, and in fact during the whole year, the ordinary draw hoe will be a necessary item. See that you get one with a tight head with the iron running well up the shaft and the angle between the shaft and the blade a little less than a right angle. There are various sorts of hoes for breaking up clods and all the many general uses of the garden. There is the hoe with a shorter blade for lighter and quicker work in loosening up soil or cutting out weeds. There is the heart-shaped hoe or Warren hoe, well adapted to the seeding process. With a little acquired knack you can make the drill for the seed and cover it up with great facility in using this type. The scarifier comes in handily in scraping off weeds or breaking up the soil when about closely, and there are good uses for all these types, especially if you do not have some form of the mechanical wheel-hoe. Another instrument that is of value in the small garden and sometimes may precede the hoe proper is what is known as the prong hoe. At one side is a straight bladed hoe and at the other prongs. This tool combines some qualities of the rake, and is particularly good for working in around plants, loosening the surface and earlier in preparing the soil for seeding.

In setting out plants and flowers in the small garden the trowel is a necessity and any good type will do. Its work is seconded by a hand fork that bears the same relation to it that the spading fork does to the spade. Like tools of value in this connection are the various types of hand weeders. There is one particular type with a bent blade that has a strap for the fingers and that can work its way into

odd corners and leave the fingers free to assist in the work.

For the woman who gardens and for anyone whose activities are concerned chiefly with a flower garden, a garden basket equipped with tools is a help. There are compartments for various articles and as one works one's way about the garden each tool is handy and the basket can carry flowers that have been clipped without mussing them up at all. One good type of basket has two forms of trowel, a good serviceable knife, a good pair of pruning shears, flower clippers, a hammer, a spool of wire and a wire clipper. The wire is especially valuable in training vines and supporting bent down shrubs and plants; and the hammer included in this basket comes in handily in nailing trellises and vine strings and doing a thousand and one odd jobs. The pruning-shears are a vital necessity to every garden, and where there are trees on the place a pruner on a shaft to reach branches on a fruit tree comes in as a valuable auxiliary.

As plants mature the question of spraying is of paramount importance, and it is necessary to have an efficient sprayer. That type of compressed air sprayer with a galvanized can will do with one of the improved nozzles. It saves much time and trouble and is thoroughly efficient. A few strokes of the plunger fills the can with compressed air that makes spraying possible for quite a few minutes.

There is something to say about the lawn and its special requirements. The old joke of the suburban itinerant lawn-mower does not offer such a bad suggestion. To those whose places are adjacent it is a rather good economy to get a common lawn-mower of the better type. A horse roller with a set of detachable blades or else a motor mower can do all the work on a number of places along one street, or in one district; and if the expense of such a machine is shared, there will be really quite a saving in time and effort where there are extensive lawns. The horse or automobile motor is essential when there is a great expanse of lawn to be kept smooth and close cropped. If your place is large enough it will be an economy for you to get such an one yourself. At any rate, even on the small place, a hand mower of a good ball bearing type with a receiver to catch the clippings should be included. As was suggested with the lawn-mower the same idea might be carried out with the roller. The roller is quite essential to the good appearance of the lawn, and nowadays the sorts come which may be filled with water or with sand so that the roller may be moved easily and when filled be as heavy as desired. If you do not have the horse type of lawn mower which includes a roller, the roller possibly will be found necessary. Where there are tennis courts, bowling greens or grounds for games, such a roller is necessary to the equipment.

Just for the sake of suggestion, let us take a small place as typical and outline what equipment would be necessary to



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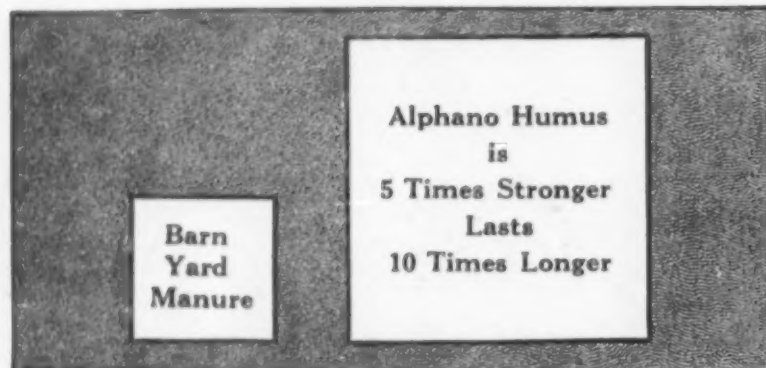
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Being in powdered form it is easily and quickly applied. Having no odor, it is neither an annoyance, nor in any way objectionable to handle.

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Five bags \$5. Per ton, \$12.00.

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Trowel	.50
Weeder	.20
Tree pruner	1.00
Sprayer	5.50
Garden hose	3.25

These are the essentials. As not all the people desire a clipped lawn these things are mentioned separately.

A good lawn-mower, \$8.50 to \$9.50

Roller 9.00 to 12.00

A medium-sized horse drawn grass-clipper will be \$65.00.

When the tools are bought in the basket as suggested the expense will be less.



Spring in the Garden

(Continued from page 269)

were not aware of it till one July morning when it poked up above the sill. A few days later, when we came down to breakfast, there it was abloom, nodding in at the open window!

Another spring excitement in the garden is the pea planting, both the sweet pea and what our country folk sometimes call "eatin' pea." No rivalry is so keen as that between pea growers. My neighbors and I struggle for supremacy in sweet peas at the flower show in July, and great glory goes to him who gets the first mess of green peas on his table. We have tried sweet pea sowing in the fall, and it does not work. So now I prepare a trench in October, partially fill it with manure, and cover it with leaves, which I remove at the first hint of warm weather in March. The earth piles on either side thaw out quickly, and I get an early sowing, putting in as many varieties as I can afford (my wife says twice as many as I can afford), jealously guarding the secret of their number. The vegetable peas are planted later, usually about the first or second day of April, as soon as the top soil of the garden can be worked with a fork, and long before the plowing. We put in first a row of Daniel O'Rourke's, not because they are good for much, but because they will beat any other variety we have discovered by two days at least. Then we put in a row of a better standard early variety. How we watch those rows for the first sprouts! How we coddle and cultivate them! How eagerly we inspect our neighbors' rows, trying to appear nonchalant! And doubtless how silly this sounds to anyone who is not a gardener! Last summer we got our first mess of peas on June twenty-first, and after eating a handful we rushed to the telephone, and were about to ring, when somebody called us. "Hello," we said into the receiver. A voice on the other end of the wire, curiously choked



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and munchy, cried, "We are eating our first peas! My mouth's full of 'em now!"

"That's nothing," we answered, "we've got our first mouthful all swallowed."

"Well, anyhow," said our disappointed neighbor, "I called up first! Goodby."

How is that for a neck-and-neck finish at the tape?

As April waxes into May, the garden beds are a perpetual adventure in the expected, each morning bringing some new revelation of old friends come back, and as you dig deep and prepare the beds for the annuals, or spade manure around the perennials, or set your last year's plantings of hollyhocks, larkspur, foxgloves and campanulas into their places, you move tenderly amid the aspiring red stalks of the peonies, the Jason's crop of green iris spears, the leaves of tulips and narcissus and daffodils, the fresh green of tiny Sweet William plants clustered round the mother plant like a brood of chicks around the hen. You must be at setting them into borders, too, or putting the surplus into flats and then telephoning your less fortunate friends. One of the joys of a garden is in giving away your extra plants and seedlings.

One morning the asparagus bed, already brown again after the April showers have driven the salt into the ground, is pricked with short tips. That is a luscious sight! Inch by inch they push up, and thick and fast they come at last, and more and more and more. My diary shows me that we ate our first bunch last year on May ninth. On that day, also, I learn from the same source, the daffodils were out, the Darwin tulips were budding, and we spent the afternoon burning caterpillars' nests in the orchard—one spring crop which is never welcome, and never winter-killed! At this date, too, we are hard at work spraying, and sowing the annuals out-of-doors in the seed beds, and planting corn (the potatoes are all in by now), immediately following the plowing, which was delayed till the first of May by a belated snowstorm. Winter with us is like a clumsy person who tries over and over to make his exit from a room but does not know how to accomplish it. It is a busy time, for no sooner are the annuals planted, and the vegetables, than some of the seedlings from the hot-beds have to be set out (such as early cosmos), and the perennial beds already have begun to bloom, and require cultivation and admiration, and the flowers in the wild garden—hepaticas and trilliums and bloodroot and violets—are crying to be noticed, and, confound it all, here is the lawn getting rank under the influence of its spring dressing, and demands to be mowed! Yes, and we forgot to get the mower sharpened before we put it away in the fall.

"May fifteenth"—it is my diary for 1911—"apple blossoms showing pink, and the rhubarb leaves peeping over the tops of their barrels this morning, like Ali Baba and the forty thieves."

Well, well, straight, juicy red stalks the length of a barrel, fit for a pie and the



It begins to look like we're back numbers "Billy"

Painted by C. H. Taffs, Copyright 1913, by the Republic Rubber Co.

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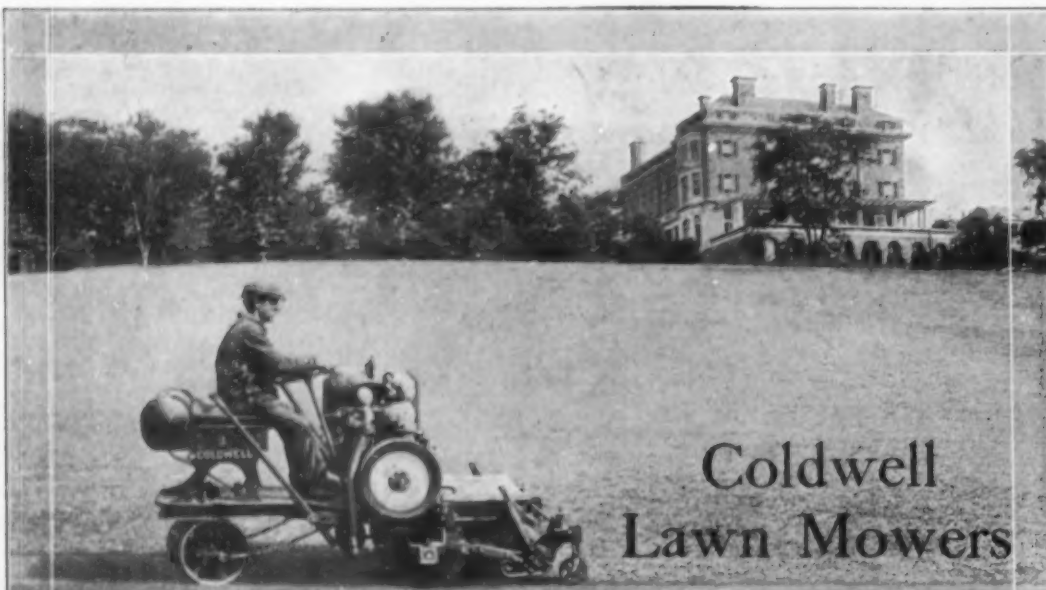
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market! It is our second commercial product, the asparagus slightly preceding it. The garden is getting into shape now, indeed; the wheel-hoe is traveling up and down the green rows; the hotbed glasses are entirely removed by day; and the early cauliflower plants are put into the open ground at the first promise of a shower. The annuals are up in the seed beds; the pool has been cleaned and filled, the gold fish are once more swimming in it, the Cape Cod water lily, brought from its winter quarters in the dark cellar, has begun to make a leaf, and we have begun to hope that maybe *this* year it will also make a blossom, for we are nothing in mid-May if not optimistic.

The earlier Darwins are already in bloom. The German irises follow rapidly. June comes, and we work amid the splendors of the Japanese irises and the flame-line of Oriental poppies, setting the annuals into their beds, from the tender, droopy schyzanthus plants to the various asters and the now sturdy snapdragons. The color scheme had been carefully planned last winter, and is as cheerfully disregarded now, as some new inspiration strikes us, such as a border of purple asters against salvia, with white dahlias behind—a strip of daring fall color which would delight the soul of Gari Melcher, which delighted me—and which my wife said was horrible.

So spring comes and goes in the garden, busy and beautiful, ceaseless work and ceaseless wonder. But there is a moment in its passage, as yet unmentioned, which I have kept for the close because to me it is the subtle climax of the resurrection season. It comes in April for us, sometimes earlier, sometimes later. The twenty-seventh was the date last year. The time is evening, always evening, just after supper, when a frail memory of sunset still lingers in the west and the air is warm. I go out hatless upon the veranda, thinking of other things, and suddenly I am aware of the song of the frogs! There are laughing voices in the street, the tinkle of a far-off piano, the pleasant sounds of village life come outdoors with the return of spring; and buoying up, permeating these other sounds comes the ceaseless, shrill chorus of the frogs, seemingly from out of the air and distance, beating in waves on the ear. Why this first frog chorus so thrills me I cannot explain, nor what dim memories it wakes. But the peace of it steals over all my senses, and I walk down into the dusk and seclusion of my garden, amid the sweet odors of new earth and growing things, where the song comes up to me from the distant meadow making the garden close sweeter still, the air yet more warm and fragrant, the promise of spring more magical. The garden then is very intimate and dear, it brings me into closer touch with the awakening earth about me, and all the years I dwell a prisoner in cities are but as the shadow of a dream.

Pheasant Raising

IT is only within recent years that pheasant rearing has been regarded seriously in this country. As early as the beginning of the Nineteenth Century a son-in-law of Benjamin Franklin imported a few birds and made an effort to establish them on his private estate on the Delaware. They did not survive the first winter, and various attempts made during succeeding years to import stock for private preserves met with the same sort of failure until the year 1880, when a successful importation was liberated in Oregon. These birds immediately thrive and increased until thousands of them were thoroughly established in the State.

To meet the growing demand for breeding stock many pheasantries were established in Oregon, and numerous importations of stock were made from the Old World in an effort to improve the quality.

Other States began to establish pheasantries and conduct experiments, through their game officials, private owners of parks and game preserves liberated stock on their land until thousands of birds were scattered throughout the country. Early in the nineties, Oregon was shipping thousands of pheasants to market in a single month.

All this has, of course, been the work of State officials or private game officials and large estates. Recently the work has been taken up by boys and girls as a fad or a means of making money at home. Several women have taken it up as a means of livelihood, rearing the birds in confinement and selling their stock, for the most part as breeders, and the eggs for hatching. In a few localities they are trying to rear them as market birds. This latter branch of the industry is bound to increase as the native stock becomes more hardy from generations of acclimated ancestry.

The varieties best adapted to the United States, for commercial purposes, are the English pheasant, the ringneck and English ringneck. The latter is a cross between the two former.

Autumn is the best time to purchase stock, as they should have a chance to become accustomed to their new surroundings before mating time, which occurs in February, usually. It is better to start with mature stock than with eggs, because you will have many eggs with which to experiment the first year, whereas if you bought eggs you would lose all, if you had bad luck with your first setting. If you buy eggs, order them in late winter to be shipped on notice later in spring, when you have a hen ready to take them.

There are many reputable dealers in the United States from whom you may obtain stock. The prices will vary according to the quality of bird you desire. The English ringneck is the cheapest of all, and good stock may be obtained at from \$5 a pair up. The pure-bred English and ringnecks will cost from eight to ten dollars a pair and upwards, according to breeding. The fancy varieties which are kept largely for ornament cost about twice as much and

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• Northern Pacific Ry •

A. M. CLELAND, General Passenger Agent, ST. PAUL

Panama-Pacific-International Exposition, San Francisco, 1915



Vista from Mt. Washburn Road—
The Fine Clod Summits and
Beautiful Hayden Valley, Yellowstone Park

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By HENRY HUGHES

The title describes precisely the purpose of this practical book. The author himself took up the game in middle age, and with his experience fresh upon him, explains the correct principles of golf in a way especially helpful to the late beginner. The illustrations are from actual photographs, showing correct and incorrect methods, also the various positions for the different strokes.

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McBRIDE NAST & CO., Publishers. Union Square, New York City



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 (1) Lombardy Poplar (2) Catalpa Bungei (3) Plane Tree (4) Japanese Barberry (5) Regel's Privet

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in many cases \$200 is paid for a single pair.

You will have your pen and shed ready before the birds arrive, with plenty of food and water to last the first few days. When birds arrive, place the crate inside the pen at night, leaving one side open, and keep away from the pen absolutely the next two days. The birds will find their way out into the pen, one by one, and settle down to peaceful occupancy in a few days.

Any well-drained, sandy loam will be suitable for your pens. There should be grass and some low shrubbery to provide shade and privacy, for the birds are semi-wild in disposition. The pens are constructed of ordinary poultry netting, at least six feet high and covered over the top to prevent the birds flying over. This top wire should be stretched rather loosely to prevent the birds injuring themselves, when they fly violently upward, which they have a habit of doing when frightened.

The pen should occupy at least a ten by twelve foot plot of ground, the larger the better.

No elaborate coop or expensive house is needed. The birds, themselves, naturally prefer living in the open, but a low, open shed is usually provided for shelter in storms and to afford a dry dusting place. This shed may have a canvas curtain for the front to be used in stormy weather, and should have a raised earth floor which is renewed twice a year with clean dirt. Perches should be supplied in the shed and also outside, a low, drooping shrub or dense vine affording an ideal shelter for the birds in the open.

The run as well as the house should be kept scrupulously clean, for filth is particularly fatal to pheasants. It is well, where practicable, to have two runs, to be occupied alternately, while the grass in the unused one is allowed to grow and the ground to freshen.

Where no shrubs or low plants are growing in your pen to start with, you must supply cover in the shape of evergreen boughs, or brush covered with quick-growing vines. Small evergreens make the best permanent covers, but currant bushes or grape vines will serve admirably.

Do not neglect to provide a sand pile with plenty of sharp grit in it.

The pheasant is not a heavy feeder, and care must be exercised not to feed too much while in confinement. One lady says she feeds, at the start, by hand, taking notice of the exact moment when they seem to feed less greedily, making note of the amount consumed up to that point. This is her standard for quantity, and is fed, thrown into the grass, twice a day. Table scraps, chopped green food, and meat food is fed in troughs once a day, at noon. Care should be exercised that no spoiled, putrid food is allowed to lie about in the pens.

Almost any edible thing may be fed to advantage, for the birds are not at all particular as to diet. All kinds of grain, table scraps, turnips, artichokes, cooked or green vegetables, weed seeds, clover, al-

falfa, onions, grass, cress and chickweed, are welcome. They require grit, oyster shell and meat scrap or animal food in some form, the same as chickens. Worms are obtained for them by buying wormy meal at the mill or grocery, keeping it damp and warm for a few days, when the worms are sifted out, fed to the birds and a new supply of worms allowed to propagate in the meal. If not enough can be obtained in this way, meat scrap must be purchased. A limited amount of house flies, caught in traps, are fed, freshly killed by drowning in the traps.

Pure, fresh water should be supplied at all times.

The birds naturally breed from February to July. They should be in the pens at least a month before breeding season arrives. They are polygamous, each pen containing from three to six hens to one cock. If you desire to keep more females, an extra cock or two may be kept, but they should not all be allowed in the pen at one time, for they are terrible fighters during breeding season. Better results, as to fertility, are obtained where the extra cocks are kept in separate enclosures and allowed with the hens on alternate weeks.

No nest is required, but a little assistance may be given in providing suitable places for them to choose their nest. The eggs should be picked up twice a day, packed in sawdust, bran or dry grain, turned every day, and kept in an even temperature until ready to be set.

Eggs should be hatched under chicken hens unless you have a sufficient number to warrant the use of an incubator. Pheasant hens do not make quiet sitters when in confinement. If incubators are used, there should be a sufficient number of chickens set at the same time to provide mothers for the little pheasants.

The hens, which should be free from roup, lice and scaly leg, should be provided with a dry, roomy coop, the same as for chicks. The little ones are allowed to run free, after a few days, the hen being confined to her coop. The brooding ground should be mowed short before the coops are placed thereon. It may be a grassy corner of the orchard, the back lawn or a piece of meadow land not too far removed from the dwelling.

Each hen may successfully care for from twenty to thirty chicks, according to the time of year and the climate.

The first thirty-six hours after hatching the chicks are absorbing the yolk and completing the development of their digestive system and should be allowed no feed during this period. Some fine sand and fresh, crisp grass are placed before them first of all, followed by some fine cut, lean meat, or meal worms. Hard-boiled eggs, chopped with fresh grass, makes a good food for the first few days. A raw egg mixed with dry meal or oatmeal to a dry, crumbly mass may be given once a day at first. The eggs may be gradually discontinued during the second week and fine millet seed, cut oats, wheat and corn added to the ration. A limited amount of



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dry curd may be given and some animal food is a necessity at all times. They get much of this themselves if the range is large. They should be fed five times a day the first few days, gradually extending the time between meals as they begin to pick up feed for themselves on the range.

There is no lack of demand for pheasants at present. Write to the game officials of your State and adjoining States, and any private preserves which you may hear of, and state the exact quantity and quality of stock you have to offer, sending photographs of birds, if you have them, asking for their best prices. You will perhaps be able to dispose of all you have to spare in that way. You may run an advertisement in poultry journals or a boys' and girls' magazine and dispose of your stock in that way. If you are rearing market birds only you will find your best market by getting orders direct from some nearby large hotel, shipping according to orders from the manager. Be sure to crate stock to be shipped alive so that they may not injure their beautiful plumage in transportation. Eggs are shipped exactly as are those of ordinary fowls.

JENNIE E. STEWART



Color in the Flower Garden

(Continued from page 294)

WHITE GARDEN

ANNUALS (continued).

NAME.	SEASON.	HEIGHT.
<i>Pinca Alba</i>	August	18"
<i>Verbena</i>	June to Nov.	18"
<i>Water lily, Tuberosa Richardsoni</i>	May-Nov.	—
<i>Tuberosa maxima</i>	—	—
<i>Nymphaea Gladstoniana</i>	—	—
<i>Nymphaea odorata gigantea</i>	—	—
<i>Nelumbium Shiroman</i>	—	3'-4'
<i>Zinnias</i>	Summer	2'

A BLUE GARDEN

At first glance it would seem that there are fewer blue flowers than any other color; certainly they are less in evidence in the garden; but a careful search of the florists' catalogues reveals a considerable wealth of this charming color, only awaiting our pleasure to possess. To be sure, not all the colors listed as blue conform to our conception of a clear blue or a sky blue, and some discretion is needed in selecting plants which will harmonize in a garden whose note is wholly blue, but the following list will be found fairly satisfactory as a whole, while many of the plants listed are magnificent in their pure, clear tones. As far as possible, lavender tones have been avoided.

BULBS.

NAME.	SEASON.	HEIGHT.
<i>Crocus, King of the Blues</i>	April	4"
<i>C. Pupurea</i>	—	—
<i>Hyacinth, Blondine</i>	April	—
<i>H. King of the Blues</i>	—	—
<i>H. Queen of the Blues</i>	—	—
<i>H. Chas. Dickens</i>	—	—
<i>H. Czar Peter</i>	—	—
<i>H. Grand Maitre</i>	—	—
<i>Early blue Roman hyacinth</i>	—	—
<i>Grape hyacinth</i>	—	—

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<i>Candytuft</i>	<i>Larkspur, Tall Rocket</i>	<i>Poppies</i>
<i>Centaurea cyaneus</i>	<i>Lupinus</i>	<i>Portulaca, Single</i>
<i>Clarkia</i>	<i>Malope</i>	<i>Scabiosa</i>
<i>Calliopsis</i>	<i>Marigold</i>	<i>Sunflower</i>
<i>Convolvulus, Dwarf</i>	<i>Marigold, Dwarf</i>	<i>Sweet Alyssum</i>
<i>Cornus</i>	<i>Mignonette</i>	<i>Zinnia, Dwarf</i>
<i>Echesholtzia</i>	<i>Nasturtium, Dwarf</i>	<i>Zinnia, Tall</i>

A dollar bill pinned to your letter will bring the collection together with an attractive garden plan insuring color harmony. Also our Spring catalog containing a wonderful list of flower and vegetable seeds, garden tools, etc., as well as many helpful hints and suggestions on the cultivation of your garden.

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New York

Anemone Harold	May	9"
Chionodoxa Luciliae	—	12"
Chionodoxa Sardensis	—	—
Chionodoxa Tmoulis	—	—
Funkia coerules	August	18"
Iris, Siberica orientalis	—	3'
Iris, Germanica	May	2'
Iris, Japanese	July	2'-3'
Scilla Siberica	April	6"

PERENNIALS.

Triteleia	May	6"
Anchusa Italica, Dropmore variety	Summer	5'-6'
Anchusa Italica, Opal	—	—
Hardy aster, Beauty of Colwall	September	4'
Sub-Coeruleus	June-July	12"
Thompsoni nana	July-Aug.	15"-18"
Ajuga Reptans	May	Creeping
Amsonia	June	2'
Aquilegia coerules	May-June	2'
Baptisia Australis	June-July	2'
Campanula carpatica	June-Nov.	6"
grosseke	—	2'
persicifolia	June-July	2'
pyramidalis	—	4'-6'
rotundifolia	—	3'-4'
Clematis Davidiana	June-Aug.	18"
Delphinium belladonna	Aug.-Sept.	2'-3'
Chinense	June-Frost	2'-3'
Duke of Connaught	—	—
Julia	—	—
Lamartin	—	—
Catanancho	June-Aug.	2'
Eupatorium coelestinum	Aug.-Frost	18"-24"
Houstonia serpyllifolia	April-May	Creeping
Lindlofia longifolia	May	2'
Linum perenne	All summer	18"
Myosotis Alpestris, robusta grandi.	—	—
flora	Spring	12"
Myosotis palustris semperflorens	All summer	—
Platycodon	July-Aug.	2'-3'
Plumbago	Sum. & Fall	6"
Stokesia cyanea alba	July-Oct.	18"-2'

PERENNIALS.

Polemonium reptans	May-June	12"
Richardsoni	June-July	—
Salvia azurea	Aug.-Sept.	2'-3'
S. Pitcheri	—	—
S. pratensis	June-Sept.	—
Scutellaria coelestina	July-Aug.	—
Macrantha	—	—
Scabiosa Japonica	July-Sept.	2'
Sisyrinchium Bermudianum	Spring	10"
Stokesia cyanea	July-Oct.	2'
Veronica spicata	July-Sept.	18"
Water lilies, Nymphaea Zanzibar.	—	—
tenis	July frost	—
Nymphaea Capensis	—	—
Nymphaea Grossherzog Ernst	—	—
Ludwig	All summer	—

SHRUBS.

Amorpha canescens	June	6'-7'
Amorpha fruticosa	June	6'-7'
Amorpha Montana	June	4'-6'
Caryopteris	All summer	3'-4'
Althaea coerules	Aug.-Oct.	8'
Syringa, Pres. Grevy	May	8'
Vitex agnus castus	Late sum.	Small tree
Paulownia	May	—

ANNUALS.

Ageratum, Cope's Pet	Summer	8"
Blue Perfection	—	—
Aster, Azure Blue	August	2 1/2'
Peony Fld., Lt. Blue	—	1 1/2'
Victoria, Light Blue	—	18"
Browallia in variety	All summer	18"
Cornflowers in variety	All summer	18"
Convolvulus minor tricolor	Summer	1'
Annual larkspur, dark blue	—	18"
sky blue	—	—
Linum perenne	—	—
Myosotis in variety	Summer	1'
Nemophilla	—	18"
Nigella, Miss Jekyll	—	1'
Pansy, Adonis	—	1'
Emperor William	—	—
Torenia	—	—

VINES.

Wistaria Sinensis	May-June	—
Clematis Jackmani	June	—
Japanese morning glory	Summer	—
Blue moonflower	—	—
Maurandia, giant blue	—	4'

THE YELLOW GARDEN

Is especially rich in material, and the following list by no means exhausts the supply of available plants.

BULBS.

NAME.	SEASON.	HEIGHT.
Crocus, Cloth of Gold	Mar & Apr.	4"
Crocus, Mammoth Yellow	Mar & Apr.	4"
Eranthis hyemalis	April-May	4"
Hyacinth, Ida	May	9"
Hyacinth, King of the Yellows	May	9"
Hyacinth, Adalique	May	9"
Hyacinth, Yellow Hammer	May	9"
Tulip, Canary Bird	April	10"
Tulip, Chr solara	April	10"
Tulip, Ophir d'Or	April	10"
Tulip, Pottelbakker	April	12"
Tulip, Gesneriana lutea	May	20"
Tulip, Orange Globe	May	26"
Tulip, Parisian yellow	May	28"
Double Tulip, Courenne d'Or	May	10"

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Double Tulip, Tournesol yellow	May	8"
Double Tulip, Yellow Rose	May	10"
Narcissus, Emperor	May	12"
Narcissus, Golden Spur	May	12"
Narcissus, Maximus	May	12"
Narcissus, Trumpet Major	May	12"
Jonquille, Campanelle	May	12"
Jonquille, rugulosus	May	12"

PERENNIALS.

Anthemis tinctoria	Summer	15"
Alyssum saxatile	June-July	Trailing
Aquilegia chrysantha	May-June	2'
Anemone pulsatilla	July-Aug.	2'
Asphodelus luteus	July	3'
Cactus, Opuntia arenaria	Summer	—
Physacanthus Major	Summer	—
Physacanthus Rafinesque	Summer	—
Caltha palustris	May	1'
Caltha palustris, fl. pl.	May	1'
Centaurea macrocephala	July-Aug.	3 1/2'
Centaurea orientalis	August	2 1/2'
Centaurea Ruthenica	Aug.	2 1/2'
Cephalaria	July-Aug.	6"
Cassia	July-Aug.	3'-4'
Chamelirium	June	2'
Chrysanthemums, Baby, Bohemia,		
Flora, Eagle d'Or, Golden Fleece,		
Overbrook, Sir Michael	Sept.-Oct.	2'
Coreopsis	July	2'
Digitalis ambigua	July-Aug.	4'-6'
Epimedium sulphurum	July-Aug.	—
Euphorbia polychroma	Spring	2'
Geum Heldrichi	Sum. & Fall	18"
Helianthus in variety	Sum. & Fall	—
Heliopsis		
Hemerocallis flava	June-July	2 1/2'
Hollyhock, double yellow	June-July	6"
Iris, Pseudo acorus	May	2'
Monarda, Cocus midora	June-Aug.	18"
Primula Veris superba	May	9"
Primula vulgaris	May	9"
Ranunculus, fl. pl.	May-June	1'
Rudbeckia, Golden Glow	July-Sept.	5'-6'
Rudbeckia maxima	June-Sept.	5'-6'
Rudbeckia nitida	Aug.-Oct.	5'-6'
Solidago in variety	July-Oct.	18"-5'
Thermopsis	June-July	3'
Trollius Europaeus	May-Aug.	2'-2 1/2'
Trollius Caucasicus	May-Aug.	2'-2 1/2'
Tritoma odalisque	July-Aug.	3 1/2'-4'
Tufted Pansies, Lutea splendens	All Sum.	6"
Water Lily, Nymphaea Mariacca	All Sum.	—
chromatella	All Sum.	—

SHRUBS AND FLOWERING TREES.

Caragana	Late Spring	10'-12'
Caragana chamagae	April-May	3'-4'
Chionanthus	Ear. Spring	—
Cyrtisus scoparius	May	—
Eleagnus angustifolia	—	—
Foraythia suspensa	Ear. Spring	8'
Foraythia fortunei	Ear. Spring	8'
Foraythia viridissima	Ear. Spring	8'
Hamamelis	Oct.	10'-15'
Hypericum, in variety	Summer	1'-5'
Jasmine	Ear. Spring	—
Kerria Japonica	Spr. & Sum.	4'-6'
Kolreuteria paniculata	—	—
Laburnum vulgare	Late Spring	6'-8'
Lonicera fragrantissima	Spring	6'-8'
Lonicera Morrowi	Spring	4'-6'
Potentilla fruticosa	All Sum.	—
Ribes aureum	Ear. Spring	5'-8'
Roses in variety	—	—
Spartium Junceum	—	4'-6'
Ulex Europaeus	Spr. & Fall	—

VINES.

Celastrum scandens	June	—
Passiflora nudiflora	—	—
Bignonia hunteri	Summer	—
Honeysuckle, Yellow Trumpet	All Season	—

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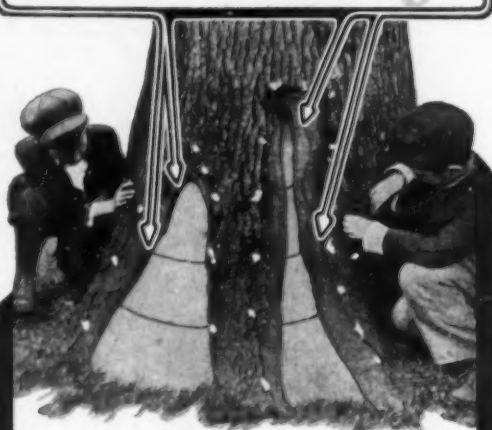
NAME.	SEASON.	HEIGHT.
Anemone, L'eclair	May	1'
Anemone, single scarlet	May	1'
Brodiaea coccinea	June-July	18"
Hyacinth, Gen. Peterson	May	1'
Hyacinth, Gertrude	May	1'
Hyacinth, Rives des Belges	May	—
Iris crateroides	May	1'
Incarvillea	July	18"
Lilium Siberica	June	1'
Lilium elegans incomparabile	July	2'-2 1/2'
Lilium Krameri	June	2'
Lilium speciosum melpomene	July	2'
Tulip, La Reve	May	15"
Tulip, Gesneriana spathulata	May	28"
Tulip, Glory	May	24"
Tulip, Othello	May	24"
Tulip, Pride of Haarlem	May	24"
Tulip, Duke of York	May	0"
Tulip, Imperator Rubrum	May	9"
Tulip, Salvator Rosa	May	7"
Gladiolus, princeps	July-Aug.	2 1/2'
Gladiolus, Cardinal	July-Aug.	2 1/2'
Gladiolus, Geo. Paul	July-Aug.	2 1/2'
Gladiolus, Falconer	July-Aug.	2 1/2'
Gladiolus, Jessie	July-Aug.	2 1/2'
Gladiolus, Eugene Scribe	July-Aug.	3'

PERENNIALS.

Aethiopappus pulcherimus	July	2'-3'
Anemone, Japonica Kriemhild	Sept.-Oct.	18"
Anemone, rubra	Sept.-Oct.	18"
Anemone, Prince Henry	Sept.-Oct.	18"

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Anemone, Alice	Sept.-Oct.	18"
Cactus, Echinocactus	Summer	—
Cactus, Simpsoni	Summer	—
Aethionema	May-Aug.	18"
Armeria maritima splendens	All Sum.	8"
Callirhoe involucrata	All Sum.	Trailer
Chelone Lyoni	June	4'
Chrysanthemum, King Phillip	Sept.-Nov.	2'
Chrysanthemum, Victor	Sept.-Nov.	2'
Chrysanthemum, Strathmeath	Sept.-Nov.	2'
Chrysanthemum, Queen of Bulgaria	Sept.-Nov.	2'
Dianthus, Latifolius atrococcineus	June to Fall	1'
Dodecatheon	Spring	—
Geum coccineum	Sum.-Fall	9"
Heuchera sanguinea	Summer	18"
Heuchera rosea	Summer	18"
Hollyhock	Summer	4'-6'
Incarvillea grandiflora	Summer	18"
Lychnis chalcedonica	June-July	2'
Lychnis chalcedonica fl.pl.	June-July	2'
Lythrum	July-Sept.	3'-4'
Monarda didyma	Aug.	2'-3'
Monarda rosea	Aug.	2'-3'
Monarda splendens	Aug.	2'-3'
Peony in var.	June	2'-3'
Pentstemon	June-Aug.	18"
Phlox, Bechant, Geo. A. Strollin	June-Oct.	2'-3'
P. Struthers, Siebold	June-Oct.	2'-3'
Pinks, Comet, Homer, Marian	—	—
Souv. de Salle	May-June	1'
Potentilla Moabiana	June-Aug.	18"
Potentilla sanguinea	June-Aug.	18"
Potentilla Vulcan	June-Aug.	18"
Pyrethrum, Alfred	June	18"
Poppo, Oriental	June	18"
Rehmania	June	5'-6'
Saponaria oxynoides	Summer	9"
Saxifraga orbicularis	Spring	1"
Saxifraga splendens	Spring	1"
Silene Schafta	July-Oct.	4'-6"
Silene asteris grandiflora	July-Aug.	3'
Tritoma	Sept.	2'-3'
Valerian	June-July	18"
Water lily, Nymphaea gloriosa	All Sum.	—
Nymphaea lucida	—	—
Nymphaea James Gurney	—	—
Nymphaea maritima ignea	—	—
Nymphaea Wm. Falconer	—	—
Nelumbium, Osiris	July-Frost	3'-4'
Nelumbium Parkinensis rubrum	July-Frost	2'-4'

SHRUBS AND FLOWERING TREES.

Aesculus rubicunda	June	Tree
Azalea lutea	May	2'-4'
Azalea nudiflora	May	2'-4'
Azalea vaseyi	May	—
Cornus Florida	May	Tree
Crataegus monogyna pauli	May	Tree
Crataegus punica	May	Tree
Weigela rosea	May	4'-6'
Weigela, Eva Rathke	All Sum.	2'-4'
Erica cornea, stricta, vagans	May	—
Kalmia angustifolia	June	—
Lonicera Periclymenum Belgica	All Sum.	Vine
Lonicera melis floribunda f. Par	—	—
kensi	—	—
Robinia hispida	Early Spr.	2'-3'
Roses in var.	Summer	—
Spiraea, Anthony Waterer	July-Fall	2'-3'

ANNUALS.

Abronia	Summer	Trailer
Althaea, Duchesse de Brabant	Aug.-Oct.	12"
Aster, late branching, etc.	Sept.	2'
Aster, Crimson King	Sept.	2'
Balsam, camellia-flowered	Summer	18"
Belis perennis	All Sum.	6"
Candytuft, carmine	At intervals	1'
Carnations, Marguerite, bright rose	All Sum.	2'
Centaurea, brilliant rose	June	2'
Cornflower, rose	Summer	18"
Convolvulus minor	All Sum.	1'
Cuphea	All Sum.	—
Cosmos	Sept.-Frost	4'-6'
Dahlias in var.	July-Frost	4'-5'
Dianthus, fireball	All Sum.	15"
Dianthus, Lucifer	All Sum.	15"
Dianthus, Crimson Ball	All Sum.	15"
Dianthus, Vesuvius	All Sum.	15"
Gaillardia amblyoden	All Sum.	18"
Godetia, gloriosa	All Sum.	18"
Godetia, brilliant	All Sum.	—
Hollyhock	June-Aug.	4'-6'
Impatiens, Sultana	Summer	2'
Larkspur, lustrous carmine	Summer	2'
Lychnis	July	2'
Nasturtiums	July-Frost	Trailers
Nicotiana Sanderca	Aug.-Frost	2'-4'
Petunias	All Sum.	Trailers
Phlox Drummondii	All Sum.	9"
Portulacca	All Sum.	Prostrate
Scabiosa	June-Frost	2'
Sweet Peas	June-Sept.	3'-5'
Stock, La France	July	2'
Stock, blood red	July	2'
Vinca rosea	Aug. On	2'
Zinnia	All Sum.	1'-2'

VINES.

Lophospermum	July-Frost	10'
Clematis, Madam Edward Andre	May-June	6'-8'
Clematis, Montana rubrum	April-May	15'-20'
Clematis, coccinea	June-Frost	—
Clematis, Ville de Lyon	—	—
Honeysuckle, coral	Sum. & Fall	—
Japanese morning glory	All Sum.	20'

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Knowing the Flowers by Name

EVERY little while you hear this remark: "I never can remember the names of flowers." Change "can" to "do" and it would be nearer to the truth. Many do not remember the names of flowers; that is lamentably apparent; but anyone can remember them if sufficiently interested. It is only a question of training the mind, consciously or unconsciously.

The memory will be helped a great deal if the striking similarity of the rules of naming flowers and civilized human beings is grasped clearly. In the botanical world the natural orders are divided into genera. Each genus, or family, has a name, which corresponds exactly to the surname of a man or woman. Only the generic name always comes first, a plan which has much in its favor. A genus, in turn, is divided into species. This necessitates a Christian name, so to speak; in botany it is called specific. Usually there is only one specific name; but, as with the human race, there may be another that is still more specific. Thus, to make the correspondence clearer:

Order	Genus	Species
Cruciferae	Iberis	gibraltaria
American	Jones	Hezekiah

Latin is used for orders, genera and species, for the reason that it is the universal language of science. The order and specific names are translatable into any language; the generic name not always, as in the case of wistaria, which is coined from wistar. In the instance just mentioned the plant is Gibraltar candytuft and it belongs to the order of cross-bearers. Candytuft is doubtless a corruption of Candia tuft, as the first species cultivated (*L. umbellata*) was discovered on that island. Gibraltar implies habitat, but not a geographical restriction of range. Cross-bearers are so called because the four petals of the blossoms of plants in this order form a cross.

As plants come into cultivation, frequently in the wild state, they generally acquire a common name, which may be a literal translation or something suggested by a fancied resemblance or a mere notion. Literally *Viola tricolor* would be the tri-colored violet, but that is not its customary name; in Europe and in this country the plant has numerous popular names. So the correspondence may be carried still farther by the statement that flowers, as well as human beings, frequently have nicknames—sometimes strikingly appropriate and again quite unfathomable as to the one reason therefor.

If only the correspondence had stopped right there. But flower names change; by force, not volition. Some one says to *Bignonia radicans*, "Here, you; from this time on your name will be *Tecoma radicans* and don't mind what So-and-so says to the contrary. Understand?" Or to *Geum coccineum*, "A mistake was made at your christening, it seems. You are not *G. coccineum* but *G. chilense*." So in looking over the pages of the floral directory you occasionally have reason to

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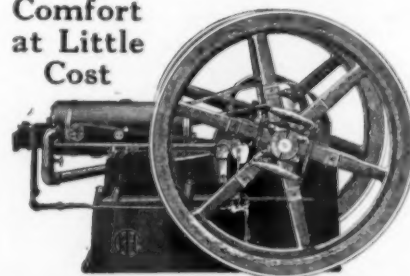
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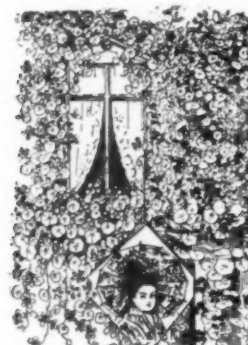
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| <i>L. Umbellatum</i> . Buff to apricot. Upright chalice, glowing colors, 2½ to 3 ft. | .15 |
| <i>L. Tenuifolium</i> . The Coral Lily of Siberia. Nothing brighter than this exquisite Lily. The petals are recurved, color richest coral red, stems 2 ft. bearing many of the lovely blooms. | .15 |
| <i>L. Washingtonianum</i> . From the snowy regions of Mt. Washington. This grand species attains 3 to 5 ft. The large wide open Trumpet flowers, open white shading to a tender rose, gradually fading into deep rose and wine red. Most deliciously fragrant. | .30 |

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wish that some variety had been let alone. Fortunately the confusion is only here and there.

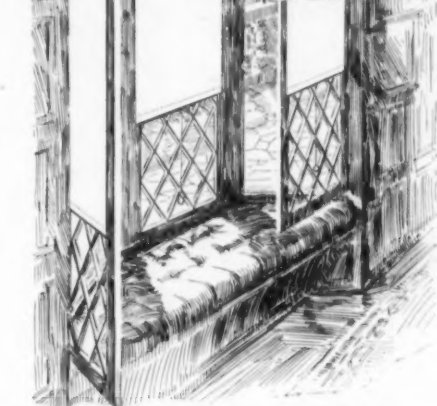
The common names are most important to remember, provided that they are either the best possible rendering into the vernacular or, if fancifully descriptive, are sufficiently distinctive. Dog rose (*Rosa canina*), in the one class, and Chinese lantern plant (*Physalis Francheti*), in the other, are sufficiently definite. London pride is not, nor is bluebell; the former is *Saxifraga umbrosa* in England and *Lychnis chalcidonica* here, while the latter is applied to more than one plant on each side of the Atlantic. Jerusalem cross is really a much better common name for the lychnis, as each blossom suggests the red cross of the crusader.

It is well to inquire into the reason of every common name. The result is generally to create in the mind an association between the name and the plant. Moreover the inquiry leads one into a very pleasant field of folk lore study, as well as greater intimacy with the garden. Look at a blossom of any aconitum on the plant and it is apparent from the shape of it why it is called monkshood and helmet flower. Pluck it, when fully open, and hold it with the back of the helmet down and it will be no less apparent that the little boys and girls of seventy years ago did not overstrain their imagination when they spoke of it as Pharaoh's chariot. It is just as well to know all these names; also that the best is aconite, because it is an English rendering of the generic name, *aconitum*.

Learn all the common names that you can, for the pleasurable side of it, but hold to the best for ordinary use. Choose white rock cress (*Arabis albidia*), for example, in preference to welcome-home-husband-be-he-ever-so-drunk; and prince's feather (*Polygonum orientale*) to kiss-me-over-the-garden-gate. Not that these names are so foolish as they might seem at first glance. The arabis—also one of the stonecrops (*Sedum album*), which appears to have been given the same name—has a mass of white blossoms well calculated to enable a man to locate his doorstep at night and as for the knotweed it hangs its deep rose plumes over a gate in a most inviting way.

Having associated the common name with the plant, try to associate the botanical name with both. Such things, for example, as finding out that true bellflowers have the generic name of campanula (little bell), that a windflower is anemone (from the Greek word for wind), that the pink is dianthus (green for Jove's flower), that any spring primrose is primula (from the Latin for first), that the finger-shaped blossoms of foxglove are the digit of digitalis, and so on. Adding specific names you get, *Campanula persicifolia* (peach-leaved bellflower), *Anemone pennsylvanica* (Pennsylvanian anemone), *Dianthus neglectus* (neglected pink), *Primula vulgaris* (common primrose) and *Digitalis purpurea* (purple foxglove).

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The two other grades of Brenlin—Brenlin Filled at 55c and Brenlin Machine Made at 30c—will be found by far the best window shade values at these prices. They are cut full length and finished with unusual nicety. Look for the Brenlin label on the wrapper.

Write today for the Brenlin Book

This book shows actual samples of Brenlin in all colors, and gives many helpful suggestions for the artistic treatment of your windows. With it we will send you the name of the Brenlin dealer in your town. CHAS. W. BRENNEMAN & CO., 2081 Reading Road, Cincinnati, Ohio.

For sale by leading dealers everywhere

MAIL ORDERS If no dealer in your town can supply Brenlin, write us and we will supply you direct. We satisfactorily fill hundreds of orders by mail every year.

Redfern—

the corset that makes Paris look to her laurels. Lightest in weight, most supple in boning—authoritative fashion summed up in one word

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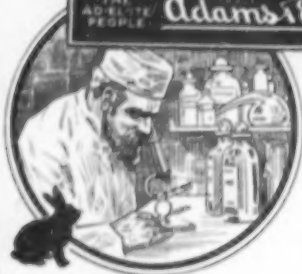
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by leading Chemists has proven that Hygienic Kalsomine is instant death to all germ life.

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"The Home Decorator"

a book of helpful hints, is filled with combinations for ceiling, side wall and border in colors. It is yours for the asking. Call upon your dealer or write us.

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Fine Specimens
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Horse Hoe and Cultivator**

cuts down the work of growing corn, potatoes and similar crops. Gives bigger and better results. Adapted for more different kinds of field-work than any similar tool. Strong, light, easy to handle. Fully guaranteed.

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Pair off the various worts with the respective generic names and note the close relationship in some cases—such as saponaria (soapwort), plumbago (leadwort) and pulmonaria (lungwort). Woundwort (*stachys*) has reference to the use of the woolly leaves to stop the flow of blood. Some of the other worts are more difficult; so are the banes—wolf's (*aconitum*), leopard's (*doronicum*) and flea (*erigeron* or *inula*).

Labels are always a good aid to the memory, but should be relied upon less and less for species. For varieties they will always be necessary to a certain degree, as it would be foolish, even if possible, to burden the mind beyond a reasonable limit in that direction. Keep all labels out of sight wherever the planting is decorative; if there is a reserve garden use such tags on the memory there, so far as this can be done.

H. S. ADAMS



April Leaves from a Southern Garden Book

EVERY man or woman who makes a garden should keep a garden calendar or book. Mine is a small blank-book about seven by five inches—small enough to slip easily into my hand-bag, and thus to enable me to make my entries either at home or at the office. The records are written across each double page, which represents the record of a week in garden operations. It is really a log-book of my journey on the road to garden success, and, because the journeying was so rough at first, and mistakes were so frequent, the first entry on each page is one of encouragement—that of the blossoms, then the buds, the planting operations, and, lastly, notes or remarks.

When entries of planting are made, whether of seeds, or perennials, or shrubs, the situation is also noted, and, as all the first records are written with ink, a later entry in pencil is made if it is necessary to note that the work is a failure. At first there were many "n. g.'s."

The book is a complete record of what is planted, when it is done, where it is placed, how it grows, and what the ultimate result is. Experiments are noted with especial care. Perhaps it would seem an arduous task; but, systematized in this way, it really has taken only a few minutes each week, and has been worth much to me. I copy the April leaves of last year that you may see how simple and yet how valuable a record it is. The pencil notations are put in parentheses:

APRIL 1 TO 8, 1912

Blooming—Tulips, very fine; hyacinths; crocuses; daffodils; violet; pansies, very few; *Devoniensis* rose; banksia roses, east border (shade).

Azalea Indica, white and pink. Beautiful. Northern exposure, full shade.

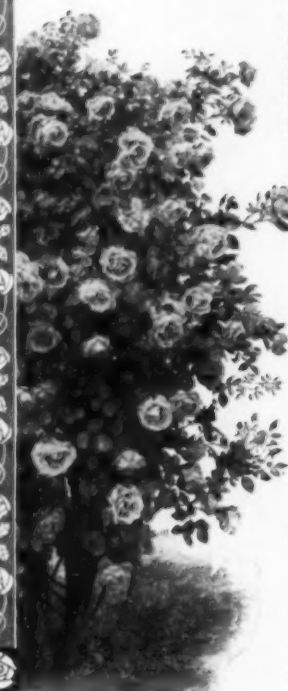
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No Lawn or Garden should be without it

The Climbing American Beauty

The most beautiful climbing, pillar or bush rose ever introduced. Hardy as an oak. Fine, dark green, healthy foliage, free from black spot or mildew. A perfect mass of bloom in June and flowering occasionally throughout the entire growing season. Roses 3 to 4 inches in diameter on single stems, color and appearance like the old American Beauty, with the same exquisite fragrance. While the old American Beauty is rarely satisfactory in the open ground, our new Climbing American Beauty has proved perfectly hardy, stands heat and drought as well as any rose in our collection and produces twenty times as many flowers as its pollen parent.

Don't fail to plant this beautiful rose this spring. Strong One Year Plants, \$1.00 each, \$10.00 per dozen. Send immediately upon receipt of price, or at the proper time for spring planting, post or express paid. Colored illustration on request.



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If you contemplate the improvement of your grounds or the planting of a commercial orchard, write us for information or prices.

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Needs



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—comfort of the real sort, the kind that makes evenings in the country things to be looked forward to every minute of the day. There's small need to dilate upon the superiority of electric light to all other forms of artificial illumination. No up-to-date city house uses anything else, for electric light's brilliancy, safety, convenience and dependability have made it one of the necessities of civilization. And now the individual Electric Lighting Plant with

The "Chloride Accumulator"

Makes It Available to Your Country Home

The "Chloride Accumulator" is a storage battery that is an exact duplicate (on a small scale) of those used in municipal lighting stations. It makes your light economical, instantly reliable and it does away absolutely with the old necessity of running your engine at the time light is needed. Merely connect it to your engine and dynamo for a few hours, whenever most convenient, and it accumulates and stores up enough electricity to furnish light for house and grounds. The "Chloride Accumulator" is a battery of extremely long life and it requires little attention. It will make the light of your country home as dependable as though supplied by a large city station—instantly at the disposal of your finger on a switch.

Our nearest sales office will send you our book, "Country Home Electric Lighting Plants," on request. It tells all about individual Electric Lighting Plants giving details and costs. It is of vital interest to every country householder.

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1888 Philadelphia, Pa. 1913

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Your Meats, Butter and Milk Will Always Keep Sweet in the Dry, Cold Air of a Brunswick Cooled Refrigerator.

You know that the damp, germ-laden atmosphere created by melting ice does not keep food supplies in prime condition. The uncertainty of the ice supply, too, often becomes a great inconvenience. A

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Refrigerating and Ice-Making Plant

does away with all these troubles. It makes you independent of ice-crop and ice-man. It keeps your refrigerators at a temperature 10 degrees lower than is possible with ice and creates a dry, pure atmosphere in which food keeps indefinitely.

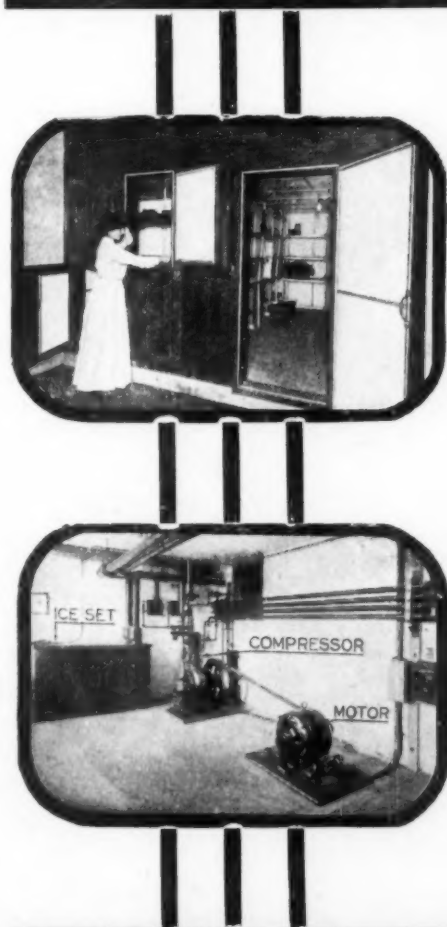
An abundant supply of pure ice for table use can be made daily by the butler, and a little attention from him will keep the plant in perfect running order. It does not require expert help.

Brunswick plants are simple, durable and extremely economical. Each plant is designed especially for the home in which it will be installed and is absolutely guaranteed to give satisfaction.

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A combination of Range Boiler and Gas Water Heater, essential in small kitchens. Its installation is a step towards solving the problem of economy in the household. Saves fuel, time and labor. Can be operated independent of coal range. Easily installed, does not get out of order, and always ready. A Thermostat can be furnished if required. Send for descriptive catalog.



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No sharp points to scratch, no edges to chafe the hands and the clothes as in ordinary lines, but a smooth, white, soft, even surface. That is—

Silver Lake CLOTHES LINE

A solid braided cotton cord, in which there is nothing to stain the clothes or chafe them. Lasts as long as a dozen cheap lines. 50 feet, 10 cents; 75 feet, 45 cents; 100 feet, 60 cents. Look for the name "Silver Lake" on the tank.

Silver Lake is the accepted standard in U.S. Government braided cord specifications.

Sold by most dealers or direct from us, prepaid on receipt of price. Write for free sample. Silver Lake Co., Chauncy St., Boston, Mass. Originators of Solid Braided Cord.



A WORD TO THE HOUSEKEEPER

Last year you had to take the second-best in your improvements because the best was beyond the reach of your designers and there were no experts in your locality.

House and Garden is the advisor you need if you contemplate improvements of any kind about the house or garden. It covers the field of decoration, furnishing and gardening with authority, artistic taste and precision, and its whole purpose is to make the home more beautiful and more livable. The beauty of the magazine and its illustrations will be a pleasure for you, even if you do not plan any changes or improvements just now. Let your subscription start with April 1st, and include this helpful expert among your regular visitors.

\$3.00 a year; 25 cents a copy.

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A properly designed and well planned Pergola is the finishing touch to the architectural and landscape perfection of elaborate grounds—it is the one thing needful to confirm the artistic character of a modest home.

If interested in Wood Columns, send for Catalogue P-40.

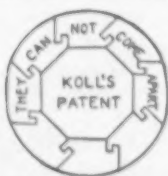
Our Pergola Album P-28, just issued, contains 48 large pages devoted to the illustration and description of Pergolas, sunrooms, and other garden accessories in their adaptations to every requirement of landscape work. Same will be sent on request.

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Suitable for

PERGOLAS, PORCHES,
and INTERIOR USE

EASTERN OFFICE

1123 Broadway, New York City

Budding—All roses, all shrubs.
Planted—Seed of *phlox drummondii*, west border front garden, shade (n.g.).
Nasturtiums on west side of driveway, full sun (good).
Grass seed in back lawn (fine).

APRIL 8 TO 15, 1912

Blossoms—Same as last week.

Germinated—Asters and zinnias in borders; petunias in box.

Remarks—Radishes for the table.

Hyacinth and daffodil bulbs removed from porch boxes and summer ferns planted in same. House plants, ferns, palms and pines repotted.

APRIL 15 TO 22, 1912

Blossoms—*Azalea Indicas*, grand. *Philadelphus coronarius* or syringa, east border, shade. Very fine.

Forsythia or yellow mock rose, west border (shade).

Climbing rose on west side of front porch (full sun).

Pansies and tulips in all borders.

Devoniensis rose, red roses, pink roses in rose garden (full sun).

Germinated—All seed in boxes and borders.

Remarks—Radishes and lettuce to eat. Very fine.

APRIL 22 TO 30, 1912

Blossom—Pansies everywhere. Roses in full bloom in rose garden; glorious. Syringa beautiful.

Transplanted—Tomatoes and peppers into full sun of vegetable garden. Thinned out asters, zinnias and helianthus.

Perennial phlox into east and west borders front garden. Sun and shade (results excellent in both situations).

Remarks—Planted hedge of hollyhocks between front and back gardens. Full sun (although planted several weeks late they were beautiful).

Lettuce and radishes for the table.

As last year was the first time I attempted to raise pansies from seed, I made careful entries of my operations, and, tabulating these, I find the life history of my beautiful 1912 blossoms as follows:

SEPTEMBER 15, 1911

Planted—Giant Trimardeau pansy seed of the following varieties: Adonis, light blue; Emperor William, deep blue; Fire King, mahogany and gold; Golden Gem, rich yellow; King of the Blacks; Lord Beaconsfield, blue-violet; Snow Queen, white with yellow eye; Striped, white with purple eye, yellow with dark center.

The seeds were planted in a shallow box, in well-prepared soil, the different varieties in separate rows, and kept carefully moistened and covered with glass until germination had taken place.

OCTOBER 15, 1911

Pansies up. Four leaves.

BOBBINK & ATKINS

**WORLD'S CHOICEST NURSERY
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The spirit of the times is to live in the country and to possess a comfortable home surrounded by beautiful grounds, profitable and attractive gardens. Our Landscape Department can create this, giving you an abundance of Fruit and Flower in a comparatively short time.

Our Products are of a higher grade than ever this season, placing us in a better position to fill orders and complete plantings of any size with a class of material that will give satisfaction to all our patrons. Our Nursery consists of 300 acres of highly cultivated land and a large area covered with Greenhouses and Storehouses, in which we are growing Nursery and Greenhouse Products for every place and purpose.

THE FOLLOWING ARE AMONG OUR SPECIALTIES:

ROSES, BULBS AND ROOTS	ORNAMENTAL TREES
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HARDY CLIMBING VINES	HARDY OLD-FASHIONED
EVERGREENS AND PINES	FLOWERS
RHODODENDRONS	FRUIT TREES AND SMALL
	FRUITS

Our Illustrated General Catalog No. 40 Describes the Above

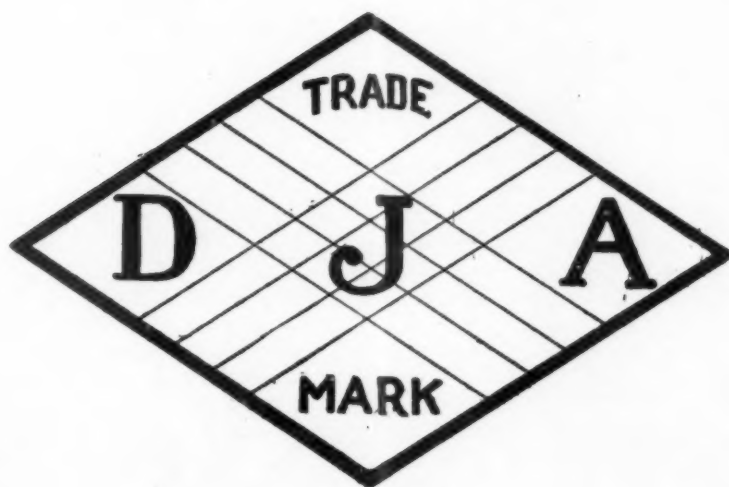
**OUR LANDSCAPE DEPARTMENT PLAN AND PLANT
GROUNDS AND GARDENS EVERYWHERE WITH OUR**

"World's Choicest Nursery and Greenhouse Products"
LANDSCAPE GARDENERS

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RUTHERFORD, NEW JERSEY

Original—Best



SCOTCH GINGHAMS

***Can be obtained at all
leading retail stores***

At this time the mistake is often made of cutting back Lilacs. This pruning should not be done until after the blooming is over—as blossom buds are otherwise cut off.

The instructions here given, on this April date of our GARDEN and PLANTING CALENDAR, show how we aim to supply authoritative information (from the pen of Mr. George T. Powell), always on the right day, so that it will not be overlooked—and for 365 days of the year.

WHAT THIS MEANS TO YOU:

For a 5-lb. bag of MAK-GRO PLANT FOOD at \$1.00 or with a bag of EARLY-CROP ODORLESS FERTILIZER at \$3.75, we will be glad to send this unique and Artistic Calendar.



Saturate part of a clean Blotter with ink—Let it dry thoroughly—Pour water on it—Notice how the dry ink re-dissolves and runs into the freshly-moistened fibers of the still clean part of the blotter. This will suggest how, in like manner, the grains of our EARLY-CROP

ODORLESS FERTILIZER

(and of our MAK-GRO ODORLESS PLANT FOOD), when mixed with the soil, are acted upon by the rains and the soil-moisture, releasing from time to time from the fiber base of the compound, a quantity of immediately available Nitrogen, Phosphoric Acid and Potash, so that plants are supplied uninterruptedly throughout the entire growing season, with the food required for their proper growth and good crop-development.

EARLY-CROP ODORLESS FERTILIZER

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**FOR EXTENSIVE PLANTING
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AND IN TON AND CAR LOAD LOTS
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We want to send you our Descriptive Booklet on the subject, so that, being convinced of the value of our product, you will be prepared to try it out in your Garden and Planting Operations *this year*. FOR ALL GROWING THINGS. Among the dozen or more Booklets by Mr. George T. Powell on Gardening and kindred subjects, which we intend for extensive distribution, may be several you might want. SEND FOR THE LIST.

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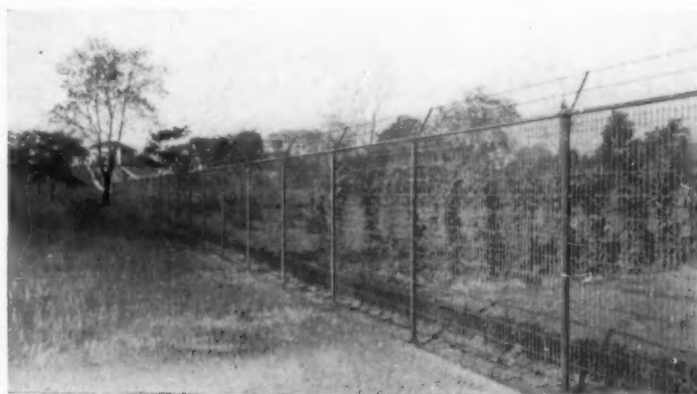


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Lawn Fences That Last

A good fence is a lasting source of satisfaction and a poor one a continuous source of trouble and expense. In selecting a fence choose one with a performance record back of it—one that will improve and not detract from the appearance of your grounds.

Anchor Post Fences

erected twenty years ago are still giving good service. They are built on Anchor Posts, which are set up without digging post holes and stand straight and true under all conditions. Anchor Post Fences are galvanized throughout to prevent rust. We have catalogues illustrating lawn fences, tennis-court and chicken-run enclosures; wrought iron fences and gates. Write for the one you need.



ANCHOR POST IRON WORKS
11 Cortlandt Street, (11th Floor) NEW YORK

(2013-g)

Grimm's Galvanized Corrugated Wire Lathing

requires no furring on account of the V-shaped corrugations which are imbedded at intervals of seven inches.

This feature alone is worth considering, but that's not all. It **WILL NOT RUST** as it is heavily galvanized with the finest grade of Western Spelter, and is much easier to handle and will conform to irregular curves much better than any other form of metal or wood lath.

Walls or ceilings plastered on this lathing **WILL NOT CRACK OR DROP OFF**, owing to its great keying qualities, which we will explain if you will drop us a card asking for our booklet No. 61.

"Note the V"

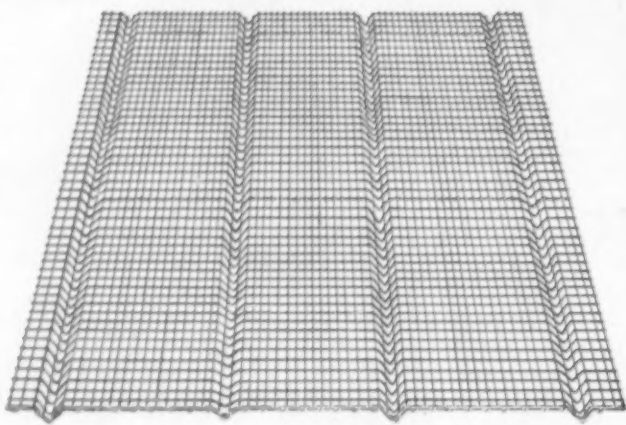
Our general catalog will also be mailed free upon request, which describes our entire line, such as Greening's Patent Trussed Steel Wire Lathing, Buffalo Crimped Wire Concrete Reinforcing, Wire Cloth of all kinds and Wire and Artistic Metal Work for all purposes. **DROP US A LINE AT ONCE.**

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Planning a Trip Abroad

By BLAIR JAEKEL, F. R. G. S.

It is not too early to begin to think about your trip to Europe, and to make plans for it. Particularly timely, therefore, is this valuable book, for it is a guide to both the planning and the going. It suggests preparatory reading, helps you to choose steamer and stateroom advantageously, tells you the clothing you will need, how to carry your money, what provision to make for steamship comforts, how much and when to give tips; and there is a great wealth of other information on every travel need.

75 Cents net; postage 8c.

Your bookseller can supply you. Send for catalogue.

McBRIDE, NAST & CO., Publishers, Union Square, New York City

Meehans' 1913 Specialty Plant Book



Meehans' Mallow Marvels

Brilliant red, soft pink and white. Blossoms the width of this page.

is full of information on well-grown trees, shrubs and hardy garden flowers. Unlike most catalogs, it includes many of the rarer, more unusual plants that give individuality to your garden. Includes improved strains of the famous

Meehans' Mallow Marvels

—the plant creation of the century. Introduced by us in 1907, after twenty-eight years of experimentation—a plant combining all the virtues of the beautiful tropical Hibiscus with the hardy native mallow. Grows five to eight feet high, is covered with a luxuriance of brilliantly colored flowers from July till frost comes. Herbaceous—dies to ground in Fall, but root lives and grows luxuriantly the following season. Survives severest Winters.

2-year roots in pink or white, 50c each.
2-year roots in red.....75c each.

Meehans' 1913 Specialty Plant Book also tells about the finest hardy chrysanthemums, including the best varieties, such as Souer Melaine, May Suydam, A. Neilson, Golden Mlle. Martha, Julia Lagravere, and Fremy—five plants of each, 30 in all, being offered for \$3.

Write today for this book. If you have a new, unplanted property of an acre or less, ask us to send also our **Special New Property Proposition.**

Thomas Meehan & Sons Box 40
Germantown, Phila.

In writing to advertisers please mention HOUSE & GARDEN.

JANUARY 10, 1912

Pansies transplanted into sunny borders. (January 11 to 15, 1912, heaviest snowfall in the history of our city. Pansies unprotected.)

APRIL 1 TO 8, 1912

Pansies slowly coming into bloom.

APRIL 15, 1912

Pansies blooming everywhere.

APRIL 15 TO JUNE 15, 1912

The same entry was made, "Pansies everywhere," for eight consecutive weeks. (They were picked daily by the hundreds, and this lengthened the time of bloom.)

JUNE 21, 1912

Pansies over. Plants thrown out.

They were planted in the borders next to the violets, which separate the flowerbeds from the lawn, and the colors were massed so that when they came into bloom the varieties were distinct. The effect was very striking and beautiful.

From the above record you will see that I have in my garden book a complete garden guide, and am enabled by its help to repeat my successes and to avoid my mistakes. I could easily multiply instances that would serve to show how this little calendar of my weekly garden progress has helped me to gain garden joy. Not the least of its pleasant features is that it makes of the garden a permanent possession; for is not memory possession? It is easy to recall the beauty and sweetness of the flowers as I turn over its almost fragrant leaves. As I read on the April pages, "Pansies everywhere," my memory gives me a glowing picture of their bright faces and rich colors in the borders, and in the bowls and vases, which not only brought joy to me, but to many, many, of my friends. I can see the rhythmic beauty of my pansy color scale, with its snowy masses of white melting into the delicate blues, which, again, darkened into the deeper tones. I remember the golden glories of the yellows blending with the rich harmonies of the mauves, turning again into violets and reds and blacks, and, whether in the garden or in the rooms, always and everywhere, fragrant and beautiful. Ten weeks of such wonderful harmony are enough garden joy to balance the mistakes and failures of a year.

"Lettuce fine," calls to my mind the long lines of delicate green that formed such a beautiful background for the pansies and such a delicious foreground for the luncheon table.

"Roses glorious," serves to emphasize the fact that roses are always wonderful and that April is essentially the month of roses in the South. Then it is that they blossom out in their full spring fragrance and beauty. White or yellow, crimson or scarlet, clearest and most dainty of pinks, or deepest and richest of reds, climbing to the tops of the tallest trees or trellises, or blooming a foot or two above the ground, wherever and whenever found, the rose is the queen of the garden beauties and best of our Southern garden friends.

JULIA LESTER DILLON



The "Iris Catalog" Will Help You to Know the Finest of the Flowers

This Biltmore Nursery book will make you acquainted with the new and glorious forms of the iris. It will show you how, by judicious choice of varieties, you may have magnificent flowers from the first breath of spring until summer's arrival. To make clear to you exactly what the choicest kinds are, in both form and color, Biltmore Nursery has reproduced seven varieties of unrivaled beauty in all the colors of nature—the rich purple, golden yellow, lavender, white and other markings and shadings are pictured with wonderful fidelity.

But the illustrations are not confined to beautiful individual flowers or clumps of them. Engravings of plantings, like the one shown above, are added to suggest landscape effects that you may duplicate at little cost. The most noteworthy varieties in every section are described in detail, making selection easy. To aid the amateur still further, an "introductory collection" is offered. This book will be sent gladly to any one who contemplates planting iris soon. The edition is limited, so early requests are desired.

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Hardy Garden Flowers
The illustrations suggest many pleasing forms of hardy perennial planting from the simple dooryard effect to the elaborate vista. The descriptions are full and complete, yet free from technical terms.

Flowering Trees and Shrubs
Many of the best of the trees and shrubs producing showy blossoms are shown from photographs, as grown in typical gardens, lawns and yards. The pictures and text give useful ideas for planting the home grounds.

Biltmore Nursery Catalog
A guide to the cultivated plants of North America, 196 large pages, fully illustrated. Cost \$1 a copy to complete. Intended to help those who have large estates and contemplate planting many varieties.

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BILTMORE NURSERY, Box 1645, Biltmore, N. C.



DREER'S DIAMOND JUBILEE GARDEN BOOK

Roses for the Amateur

Two-year-old plants carried over winter in cold houses with only sufficient artificial heat to exclude severe frost; will give immediate results.

We particularly recommend the Dreer Dozen of Hardy Ever-blooming Hybrid-Tea Roses; all well-tried varieties which will produce an abundance of flowers to cut until frost.

Caroline Testout: Bright satiny rose; **Earl of Warwick:** Soft salmon-pink; **General MacArthur:** Rich crimson-scarlet; **Kaiserin Augusta Victoria:** Soft pearly-white, shaded cream; **Killarney:** Well-known, sparkling, brilliant pink; **Konigin Carola:** Satiny-rose, six to seven inches across; **Lady Ashtown:** Soft rose, shading to yellow at base; **Mme. Jules Grolez:** Attractive satiny china-rose color; **Mme. Leon Pain:** Salmony-pink, with orange shading; **Mme. Ravary:** Splendid Nankeen-yellow; **Prince De Bulgarie:** Silvery-flush, shaded with salmon; **Viscountess Folkestone:** Creamy-pink, shading deeper at centre.

Any of the above in strong, two-year-old plants, 50c each. \$5.00 for the collection of 12 varieties; \$35.00 per 100.

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For a complete list of roses of all types for garden planting, see Dreer's Diamond Jubilee Garden Book. Within its pages you will also find all the vegetables, plants, hardy flowers—everything worth growing.

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17 special Departments; the plants and trees, etc., are all classified in these Departments, with special notes on hardiness to withstand cold, and when to transplant, and so on, so that a novice can make intelligent selections for the living-room, conservatory, orchard or garden.

We Have the Stock

in immense variety, from all over the tropics, and are constantly adding to our variety. Whenever you want a rare (or common) plant or tree merely look in our complete index in catalog, which should be on your desk or library table for ready reference, and order it by Parcel Post at catalog price, postpaid, or, if a large speci-

men, by Express or Freight. We ship to all our foreign colonies, Mexico, Canada, Europe and all tropical countries, as well as all parts of the United States. On receipt of your request we shall be glad to send a catalog, and we promise no follow-up literature or passing your name on to other firms.

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The New Canna Mrs. Alfred F. Conard

HERE is the most popular pink canna ever introduced for planting singly or in beds. Its exquisite salmon-pink flowers are of the largest size, carried proudly on erect stems 4 feet high. The photograph shows Mr. Antoine Wintzer, who for 20 years has specialized on canna propagation, critically examining a canna bloom head. During the 20 years he has doubled the size of some blooms, trebled the variety of colors, increased the endurance of the petals, and given bronze foliage to flowers which before had green.

Canna, Mrs. Alfred F. Conard

PRICE—50 cents each; 6 for \$2.50; 12 for \$5.00; 100 for \$37.50; or

7, enough for a round bed 4 ft. in diam., \$3.00
37, enough for a round bed 10 ft. in diam., 15.00
19, enough for a round bed 7 ft. in diam., 8.00

ALL ABOVE PRICES PREPAID

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judging the
new canna

Conard & Jones Lily-Cannas produce, from June until frost, a mass of brilliant bloom in all imaginable colors and combinations except blue. Different plants grow from 2-12 to 10 feet high, with large leaves and sturdy stalks, tropical in their luxuriance. Should be used freely for beds, borders, hedges and screens. Prices range from \$1.00 per dozen upwards.

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Orders take for special designs in Plastic and Marble Reproductions

— SHOWROOMS —

113 East 34th St., New York

The Collector's Corner

(Continued from page 263)

easily answered. The ware was comparatively soft. It cracked as usual and chipped easily. Grease penetrated the glaze and stained and discolored it. Owing to their cheapness, such pieces were thrown away. Porcelain became commoner and cheaper, and the blue no longer held in such high esteem was relegated to the buttery and finally was discontinued almost entirely.

Now as to prices, and here is the rub! Even that very platter which brought \$1,200 last year, if put up at auction tomorrow might not bring half that sum. When I am asked, "What is such a piece worth?" I always feel like answering, "What you can get for it." It depends on where it is sold, if somebody wants it very much, if there is rivalry at the sale, and if the person who wants it most has a long pocket. Mr. William Hearst, who bought the one I showed, wanted this platter, and got it. Probably never again will anyone want it so badly.

Not just any old platter in dark blue, even if it be marked Clews, Stevenson, Adams, Wood or any of the well-known English potters, is valuable. The "Landing of Lafayette" design has decreased in value during the last ten years, so much of it has been uncovered. The "Pittsfield Elm" has met the same fate.

But if you have pieces marked "Syntax," you might bustle about somewhat, always bearing in mind that seven of the Syntax designs have been forged! If you have any pieces with the "Arms of the States" on them you can glow with satisfaction, for even the most common one, New York, is worth over twenty dollars, while Pennsylvania almost comes up to the "New York from Brooklyn Heights." Such collector's pets as the "Battle of Bunker Hill" platter, the medallion pieces, some of the college views, portraits of Washington, Lafayette, Franklin, etc.—well, all these should be regarded with attention and examined by an expert.

The Vital Functions of Light in the Home

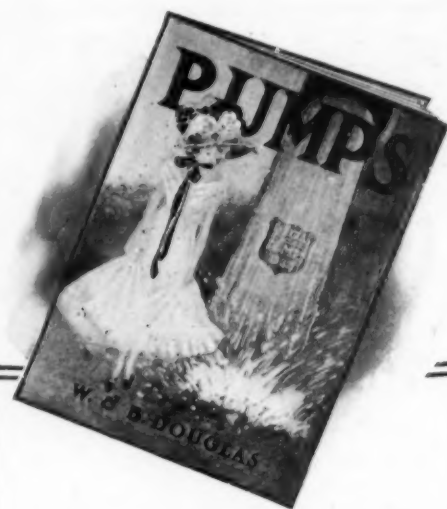
(Continued from page 272)

There are three types of systems supplying gas, and in addition the engine-operated electric plant. The gas generated is acetylene, gasoline and Blau-gas.

An acetylene generator is usually in two main compartments of galvanized steel, sometimes placed upon one base, sometimes two; the generator proper and the gas receiver. The gas-making material is calcium carbide, a substance produced by the electric fusion of lime and coke. This is supplied in lumps looking like pieces of crushed stone, and can be handled, shipped and stored with no more danger than if the steel can contained so many pieces of granite. If kept free from moisture it will last indefinitely.

Carbide is placed in an automatic feeder

(Continued on page 344)



CITY WATER CONVENIENCE AT LITTLE COST

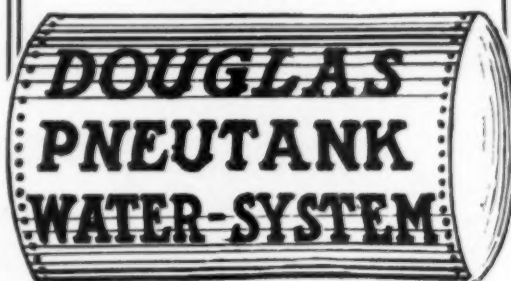
When our outfits cost so little it seems a pity not to have running water in your home. You can own your own water works and have water as convenient as the city people. Quit lugging and tugging with pails and tubs for baths and cooking.

Send a Postal for Douglas' Free Book

It will open your eyes to the low price and ease of installing in your home. The upkeep is next to nothing. The Douglas Pneutank in the cellar can't freeze. The construction is simple—nothing complicated. It is easily operated. Beats attic reservoirs and wind power towers and tanks. Every thing where you can get it quick. This system will appeal to you. Write now for above booklet—a postal will bring it.

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Pump-Makers for 81 Years



"Detachable" Hose Reel



Can be easily changed from one faucet to another. Put a faucet on front and rear of house, in garage, etc.

Quickly slipped on and off the faucet. Hose securely attached to reel. Easily carried about. You can unroll the hose as needed with the water turned on. Reel revolves on the faucet.

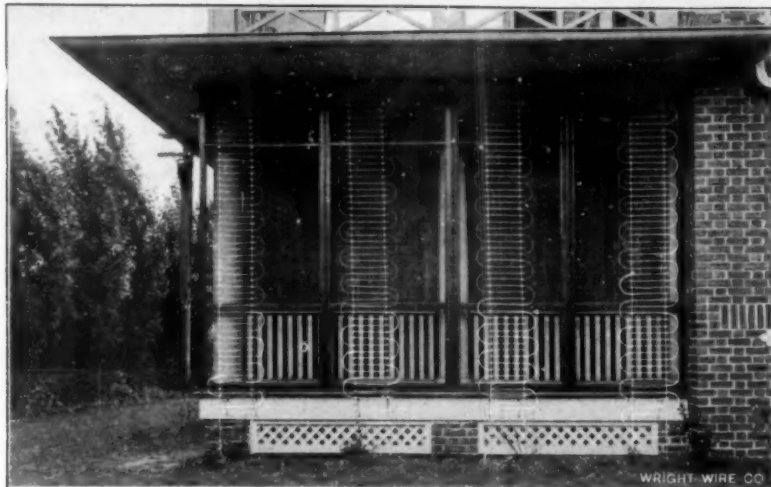
Prevents kinks and twists in the hose—makes it last longer.

Fire Protection—ready for instant use by having a special faucet in kitchen or laundry, small expense.

Ask your hardware dealer to show you or write for booklet "Useful things for lawn."

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Latest
Novel



\$1.25 net
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You will find them delightful garden guests. They have a beauty all their own. They dress most tastily in snow white, beautiful rose pink and Aunt Prue Lavender.

Each color 35c. a package—3 packages, \$1.

These Astermums are fully described in Boddington's Garden Guide—which is the real "social register" among the flower and vegetable folks. Send for the Guide—it's free.

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Special Correspondent of the *London Times* at the front

Presents a vivid and timely picture of the stirring events, but recently enacted, as they were witnessed by a keen and trained observer who was on the spot and behind the scenes. The book shows a knowledge of the diplomacy which led to the outbreak of the war, and presents the various stages of the conflict in panoramic fashion. *With 32 Illustrations.* \$1.40 net.

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THE well designed entrance often needs a fountain to give the final touch of beauty.

Unexpected and pleasing effect in landscape gardening may be accomplished by an out-of-door ornament.

Lawn, garden and courtyard embellishments shown in catalog. Special designs planned for fitting and harmonious effects.

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Fifth Avenue & 17th St., New York

Established 1828

and made to drop piece by piece into a compartment containing water. There the chemical combination results in giving off a gas that is piped to a receiving chamber and from there purified and piped into the house. The old difficulties of the original machines have now been removed. An automatic (or weight-driven clockwork motor) feed assures an even generation of gas; by ingenious arrangement the floating gas bell of the receiving tank shuts off the feed automatically when sufficient gas has been generated, or falling as gas is withdrawn, it starts the carbide feeder again. The whole process goes on without any attention whatever beyond feeding in the carbide once in three weeks or a month or in the removal of residuum sludge after a long period of operation. Modern machines are all but fool-proof. Safety devices provide the liberation into the air outside of all possible escaping gas, thereby preventing explosions. It is impossible to open various parts of certain machines without automatically stopping the generation of gas, so that only an exceedingly ingenious suicide maniac could do damage with the modern perfected generator.

Acetylene gas is a white light of much the same quality as that produced by a tungsten burner. The carbide to produce the gas costs about \$3.75 per hundred pounds, and one pound generates about five cubic feet of gas, so that it will readily be seen that light is supplied at considerable economy.

Another economical and efficient system is that of generating gas from gasoline. The volatile gasoline is combined with air by means of a carburetor situated usually with the gasoline supply underground and some distance from the house. The air necessary to mix with the gasoline to produce a gas or a vapor is supplied under pressure created by some sort of power (hand, windmill or engine). The resultant gas flows back, and is regulated by a governor in the cellar so that the supply may be just proportionate to the number of burners in use. There is a steady circulation of air from the house to the carburetion chamber and back again as gas, and there is no labor necessary beyond occasionally operating the engine to compress a supply of air or once in a while replenishing the gasoline. Gas is generated only as required, and as soon as the fixtures are closed the supply of gas runs back into the container.

The appearance of the gaslight is much the same as that of ordinary illuminating gas, and its cost of manufacture, outside of the original expense of the plant, is little. It is claimed that a twenty-five candle flame can be kept burning in one burner for forty hours at a cost of five cents.

Another gas similar in appearance to illuminating gas is the Blau-gas mentioned earlier, which is supplied in steel cylinders much like those used for automobile headlights. The gas is bottled under high

(Continued on page 346)



Protect your metal laths in the frame of your stucco house with

Bay State Brick ^{A N D} Cement Coating

Applied to the exterior cement or concrete it protects against dampness, becomes a part of the material without destroying its distinctive texture, and gives you a uniform tone of a number of beautiful tints. Can also be used as an interior tint of softest velvet tone on wood or plaster.

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House for Tree or White Bellied Swallow—size 12 x 14 x 9 inches high. One compartment. Substantially built of cypress, \$3.00; with all copper top, \$4.00. F.O.B. Chicago. This house is also made with two compartments for Wrens and Bluebirds.

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The Wren House—solid oak, cypress shingles, copper coping—Price \$5.00, F.O.B. Chicago.



Garage



Play House



Sand House

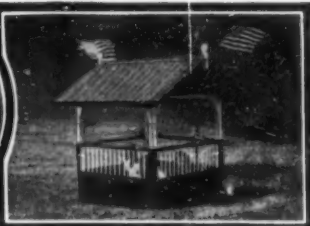
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AND NOT A POISON—Harmless to Animals other than mouse-like rodents. Rodents die in the open. For a small house, 1 tube. 75¢; ordinary dwelling, 3 tubes, \$1.75; larger place—for each 5,000 sq. ft. floor space use 1 dozen, \$6.00. Send now.

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Also makers of
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SOBER PARAGON MAMMOTH SWEET CHESTNUT

Paxinos Orchard Crop brought \$30,000

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Every Tree We Ship This Spring Bore Chestnuts Last Season

St. REGIS Everbearing Raspberry

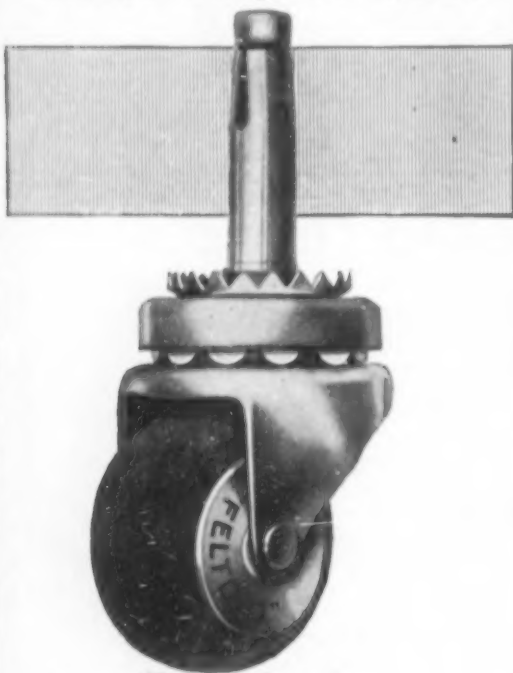
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They prevent furniture from ruining hardwood floors and mutilating rugs. Hard-wheel casters cut and gouge. You can't afford to use them.

"Feltoid" Casters and Tips are made of a specially treated material. They are hard—wear indefinitely—yet have a tread as smooth as silk. When you buy new furniture, see that it is shod with "Feltoid." "Feltoid" all your furniture.

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Moth-Proof Cedar Chest

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pressure and connected to pipes of small diameter. The plant for connecting the source of supply with the house is very simple and may be placed either outdoors or in the house itself. All that is necessary to make use of this gas is to connect up a new steel cylinder when the gauge shows that the supply is low.

To all these independent gas systems may be applied the instructions and the warnings given heretofore, since fixtures of many sorts are procurable for all burners.

For the city supply of electric light the country dweller may substitute the independent electric light plant which may be installed in the cellar or an adjacent outbuilding. The equipment usually consists of a gasoline engine, a dynamo, switchboard and storage battery. The engine is run for a short time each day to work the dynamo and generate electric current which is stored up in the batteries for use at night. This plan may be alternated and the electric energy from the dynamo used to supply current direct to the lights and the batteries simply maintained as an auxiliary supply. Storage batteries are procurable which may be charged with sufficient current to light the house for ordinary use for as much as six or seven lights.

A special advantage for the electric system is its adaptability for power supply. The engine may be used to pump water, drive a motor or furnish the power for various uses upon the country place.

The less carefully refined gasoline—usually sixty-eight degree—is used as fuel and costs only from eight to ten cents a gallon when bought by the barrel, at which rate it is figured that the cost per sixteen-candlepower light per hour is about one-tenth of a cent. With the greater economy of the tungsten lamps this would be materially reduced. In figuring the size engine required, a ten-horsepower engine can operate one hundred sixteen-candlepower lights. Where there is less current demanded in a small cottage or bungalow a generator of but two horsepower may be procurable that will operate eight sixteen-candlepower lights for eight hours, or eleven lights for five hours.

The Hundred Per Cent Garden

(Continued from page 291)

sow much more thickly than the amount of space in the row required by the plants would indicate to the uninitiated. For instance, from five to twelve onion seeds to the inch are put in when sowing the usual amount to the acre, and yet the onions are wanted only two or three inches apart. Experience will show that this is the only way of making certain of full rows. Some seed will fail to germinate, some that germinate will, on account of one accident or another, fail to make plants. And fungous diseases and other enemies of your garden are sure to get a few more. So you will see that when the seedsman tells you to put five to eight squash seeds or eight to fifteen cucumber or muskmelon seeds

(Continued on page 348)



Old Hickory Furniture

For your Lawn or Porch—it's the Best in the World.

Made from sturdy hickory by hand, and gives you more comfort than you've ever known before.

Stands more use and abuse than any other furniture made. You can't break it. Old Hickory stands exposure, outdoors summer and winter.

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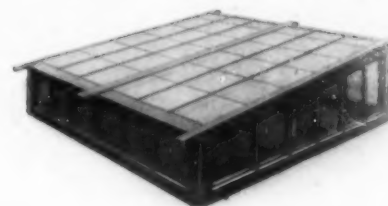
These prices do not include Cushions, for which a moderate charge will be made. Free delivery within 100 miles of New York. Beyond 100 miles special arrangements can be made depending on size of order.

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in a hill where you want only two or three plants, he doesn't do it in order that he may sell you more seeds, but that he may stand some chance of getting your order again next season. As in the other matters connected with planting, however, no definite set of rules can be laid down. The gardener must use his judgment and according to the quality of his seed, the condition of his soil, the favorable or unfavorable condition of the weather, with the eternal chances of injury from insects or disease, he must plant more or less seed.

With seeds that require a very long time to germinate, such as celery or parsley, where it is desirable to gain a few days' time in getting the crop started, where conditions in the open ground are unfavorable for germination, or with seed that is so scarce that you wish to make every kernel count, the method of getting the germination well under way before planting is very frequently being used with great advantage. I have, for instance, gained five days in getting sweet corn up by soaking the seed a day and a half before planting, in warm water kept in a warm place after the water had cooled. These seeds may be soaked in tepid water until they are swelled but germination has not quite taken place, then spread out and dried fairly thoroughly, a necessary process which may be hastened by rolling in land plaster. Or the germination may be carried still further along by rolling the seeds in wet newspapers—several thicknesses of old newspapers and an outer covering of old bagging—then placing the "seed-roll" thus formed in a mild heat. Take care that it does not dry out, and plant in a carefully prepared bed as soon as the seeds have sprouted. It is best to have a separate package for each kind of seed used, as some will sprout more quickly than others. You must be careful that there is not too sudden a change from the temperature in which the seed has been sprouted and that of the soil in which it is to be put.

Probably the most prolific of all causes of failure with seed is loose planting. This is for two reasons, first, because a certain amount of moisture is necessary in order to get the seed to sprout, and, secondly, because the embryo tap root breaking through its husk must, in order not to perish, issue at once into congenial surroundings. If it first strikes a miniature air space in the soil or dry, dusty earth, it is likely to die. The seed should be, therefore, so placed in the soil that the earth is pressed firmly and closely about it on all sides. The best way to do this with large seeds such as peas or beans, or even with small seeds such as turnips and winter cabbage when they are planted in very dry weather, is to make the seed firm in the bottom of the row before covering. Do this with the back of a narrow-bladed hoe or with the ball of the foot. The covering also should be made firm on the top of the

(Continued on page 350)

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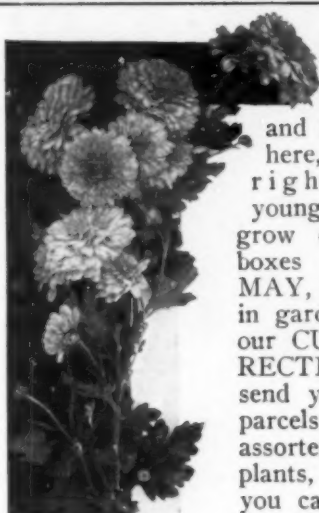
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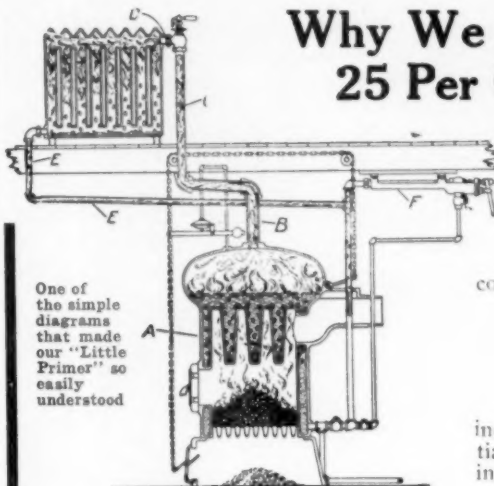
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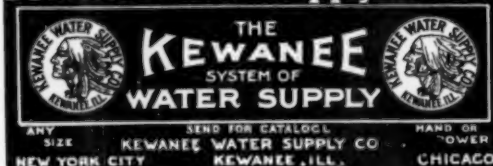
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row in the same manner, both to compact the soil and to mark the row.

It must be very obvious, even to the beginner, that the different habits of growth of the various vegetables demand different methods of planting them. A carrot occupies some four inches of space, a cabbage taking four square feet or more, and a cucumber running over the sixteen to thirty-six square feet allotted to it and then crawling over into a row of beans or up a tomato pole, necessarily require different methods of planting. Most of the root crops such as carrots, radishes, beets, turnips, etc., are planted in drills or continuous rows, where they are grown as close together as they can be without too much crowding. Most of the leaf crops, such as cabbage or lettuce, are set in rows where the plants, though put at regular intervals apart, have practically all the cultivating, as with drills, done in one direction. The vine crops, such as cucumbers, squashes, melons and most of the fruit crops, such as tomatoes and pole-beans, are planted in hills—usually at equal distances apart each way and always far enough apart to allow of cultivation in both directions.

I have taken this matter up at length because it is the most important thing which the beginner in gardening has to master and because lack of skill in this matter, given a suitably prepared soil, is, I believe, the cause of more failure and discouragement than any other one thing.

For detailed information as to the needs and requirements of each individual vegetable see the accompanying planting table on page 282.

To get early crops of such vegetables as lettuce, cabbage and beets and to get satisfactory results with such late things as late cabbage, cauliflower, celery and so forth, it is necessary to set out and to transplant plants already started.

The distance apart for the rows and for the plants in the rows for the various vegetables is given in the table on page 282. As with seed sowing, you should have a perfectly smooth and freshly prepared surface. Mark out your rows with absolute straightness, not only because it will look better but because you will find it of the greatest assistance in cultivating during the entire season.

With many of the plants that are set out in rows, unless the garden has received the heaviest kind of a dressing of rich manure, it is a very good plan to give the plants an extra quick and strong start by a "manuring in the hill." I do this very quickly and easily by marking out the rows and opening a small furrow with the plow-and-wheel-hoe attachment, marking off the cross rows, dropping the required amount of the compost to be used where each plant is to be set, and then covering it in again with the wheel-hoe, thus leaving a very small, low ridge with the earth in the best possible condition for rapid and thorough plant setting. The cross marks still left between the rows will indicate the direct point at which the plants are to be set.

(Continued on page 352)

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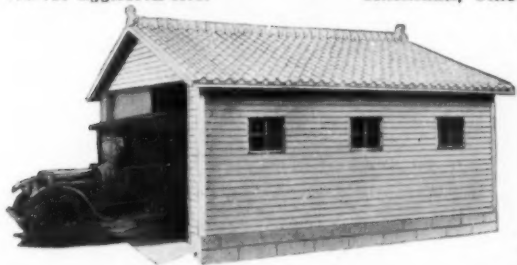
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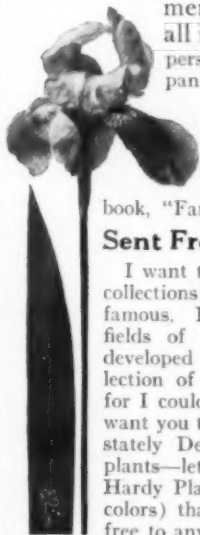
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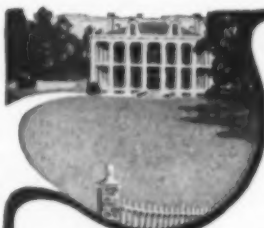
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The plants you set, whether you grow them yourself or buy them, should be thrifty, short and stocky. Tall, spindling plants are almost sure to wilt or "lop over" and be very much delayed in getting a start even if they do finally pull through. In addition to being the right size and shape they should furthermore be thoroughly hardened off by exposure to the air by night and day for several days before setting out. All the plants which may be safely set at an early time, April first to May fifteenth, belong in the hardy class and cannot be injured by a few degrees of frost after setting out, if they have been thoroughly hardened as suggested above. Last year the thermometer went down to fourteen degrees below freezing and the ground was frozen stiff every morning for several days in succession after we set out our early cabbages, but in spite of the cheerful prediction of all our neighbors that they would be absolutely lost, almost every plant came through and we had the satisfaction of having the earliest cabbages anywhere about. On the coldest mornings we watered them with cold water to give them a chance to thaw out before the direct rays of the sun struck them.

The day before you expect to plant, give all the flats in which the plants are growing a thorough soaking, so that the soil therein will be in a good moist condition, but not muddy, when you are ready to work. Furthermore, if the plants are pretty large and tall and the leaves of good size, it will pay well to trim them back about one-third, as this makes them much more convenient to handle and not so likely to wilt after setting.

Having all in readiness, and your rows marked out, take the plants out of their flats carefully, having left as good a ball of earth as possible with each one. This will be easily accomplished if the soil is in the proper condition, but if it is too dry or too wet you will have difficulties. Distribute the plants along the row or carry them at your side in a basket, in either case being careful not to take out so many that they will begin to get dry and warm at the roots before you can put them into the soil—a precaution that is especially needed if the day happens to be very bright or windy. Where it is possible, a cloudy day or late afternoon should be selected.

With the fingers, trowel or dibble make a hole big enough to take the ball of roots and earth without crowding them, and deep enough so that when the plant is set and the soil filled around it, it will be covered one-half to two-thirds the length of the stem. The taller the plant the deeper it should be set. Pack the earth firmly down upon and against the roots with the fingers and knuckles of both hands. When you are through the plant should stand up as straight and firmly as if it had been growing there. When you have finished the row go back over it and pack each plant still more firmly down into the soil, pressing the ball of the foot close to the stem on either side and bearing down with all your weight.



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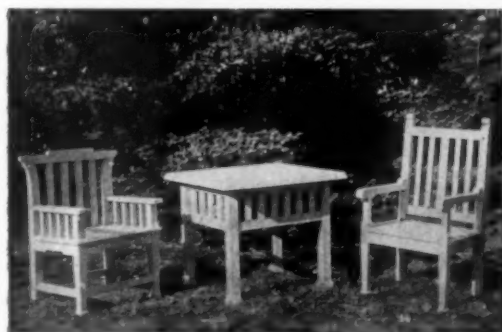
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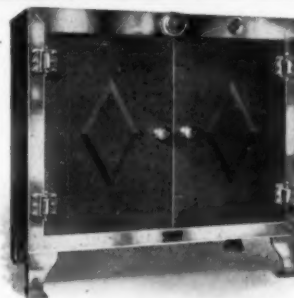
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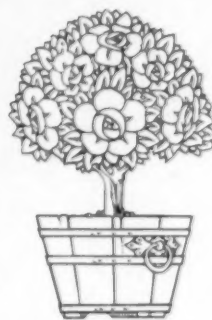
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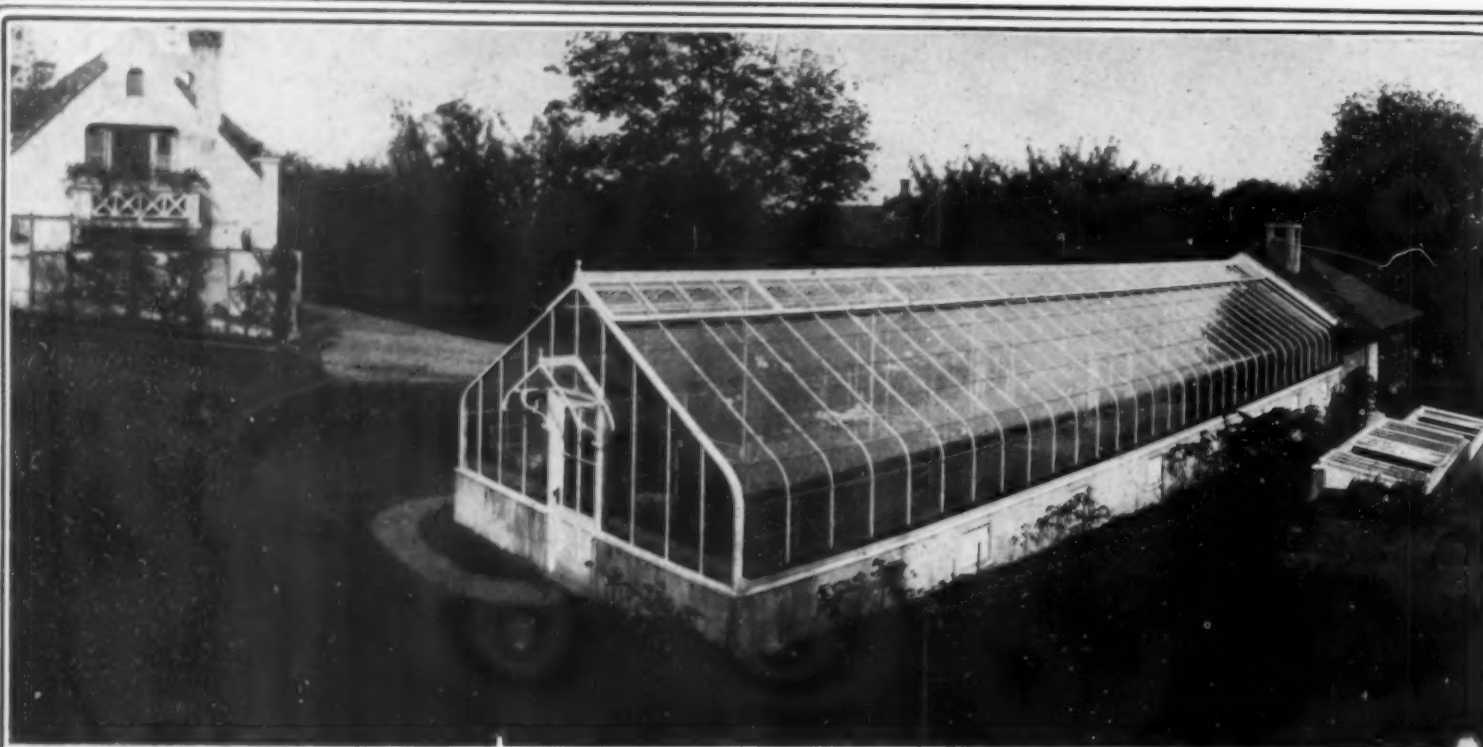
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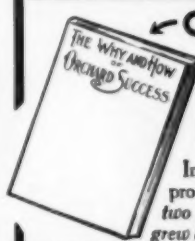
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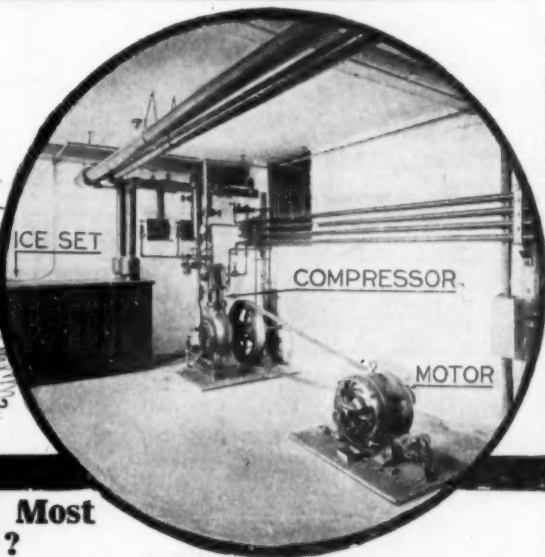
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The violets must be looked after, first of all. No matter how luxuriantly they are growing, after the season of bloom is over every plant must be taken up, the leaves cut off, and the roots planted in permanent positions, about three inches apart. This is the only way to grow them successfully. If not separated annually they multiply so rapidly that deterioration takes place very quickly. Many do not think it necessary to cut the leaves when transplanting, and the result is unsightly, withered or dead leaves on every plant, marring the appearance of the whole garden. Planted with the leaves cut, not too closely, the strength of the plant goes to form new roots, and when the leaves begin to grow they are fresh and green, and stay so. It is a great deal of trouble to take up violets every year, separate the roots, and replant; but what do we have in life that is worth having, without working to gain it?

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The dahlias and gladioli should be staked at this time, and tomatoes transplanted in the latter part of April will also be ready for the stakes. Plant them in rows two feet apart. In the first row begin the planting one foot from the end and continue at intervals of two feet until the end of the row is reached. In the second row begin three feet from the end, and then plant two feet apart. If there were eight plants in the first row, there will be seven in the second, eight in the third, seven in the fourth, and so on. The gain in plant-

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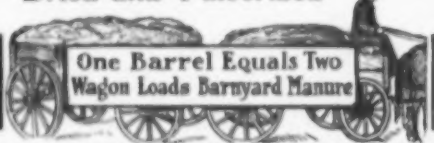
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ing in this way is more room to pass between rows and around the plants, and a more symmetrical effect. The plants should be staked as soon as they begin to put out suckers, which are the shoots between the leaves and the main stalk. Strips of lumber heavy enough to support the vines can be secured from the nearby lumber yards. A load of strips will be enough to stake a half dozen city gardens. They should be cut so that the stakes are six feet above the ground, at least. In tying the plants to the stakes, soft cloth cut in strips about an inch wide is the best material to use, and in tying, care should be taken that only the stems of the leaves are fastened to the stakes. This leaves the main stem tree to grow and flourish, which it does not fail to do.

Success in tomato growing consists in keeping the suckers cut. They grow a foot over night, and must be religiously removed daily. Grown in this way, the main stalk goes up to the top of the stakes very soon, the fruit is borne in quantity, no storm is likely to beat them down, and, if the season is dry, it is not hard to keep the roots well watered. Last year, through a very wet summer, I had tomatoes daily in sufficient quantity for a large family, while gardeners who had used the ordinary low framework for supports had none.

Chrysanthemums also must be looked after in May. They, like the violets, do equally well in sun and shade, and well repay all care. They should be carefully separated, kept well watered and shaded until rooted in the new positions, and then left alone until August. By buying a dozen good plants to start with, and adding a few each year, these will so increase that the garden will be well supplied with this bravest and best of autumn flowers. If the small black lice get on them, as well as on the roses, as they so often do at this season, two or three applications of a sulpho-tobacco soap solution will rid the garden of the pests.

Rudbeckias, or golden glow, may be put out in early May, and, once planted, need only to be thinned out occasionally to keep them from covering the earth. They are desirable because they give a wealth of gay blossoms in midsummer, when flowers are scarce. They make a gorgeous yellow background for the white perennial phlox. Growing tall and having rather scraggy stems, they should always be placed at the back of the sunny border, but they will not grow in the shade.

Annuals, such as asters, zinnias, and salvias, must be placed in permanent positions this month—it ought to have been done before. The more carefully the colors are grouped, the more attractive the garden composition will be. Crimson zinnias planted back of the violets, against a background of white phlox, or white asters against scarlet salvia, make charming combinations. But I had to pull up a whole row of beautiful blue-violet asters last summer because they dared to blossom in front of the vivid coloring of the

scarlet sage. Can you imagine anything more hideous? Knowing when to remove is almost as important as when to plant; I am ruthless when false notes are struck in my garden harmony.

Salvia, used sparingly, with groups of varicolored coleis scattered here and there to break the color line, is beautiful and satisfactory. With the soft greens of the lawn in front, the dark evergreens in the background, with only white flowers against its vivid masses of glowing red, the picture is all that could be desired.

JULIA LESTER DILLON

Zephyranthes—Pink and White

A ROW of small brown bulbs below the surface of the garden bed. Above, a row of slender, dark green, grass-like leaves. A month or more of spring sunshine; then, given either a warm rain or a soaking from the garden hose, and the zephyranthes buds—pink and crocus shaped—are up. No green calyx, no sheath nor covering veils their delicate color. A rapid growth of the slight, fleshy stem, and in less than a week from the first start there is a swaying row of blooms, in color a delicate, deep pink, as soft as panne velvet, and as perfect in texture.

Nor is that all. After a blooming time lasting nearly a week, during which the beautiful blossoms, closing at night and opening fresh each morning, slowly fade into a softer pink, then droop away; and the border looks forlorn and dry and faded and you turn the water on it again just for pity—then, a few mornings after, there is *another* row of pink heads pushing out of the ground. Again the quick growth and sudden expansion of blooms, another swaying row of beautiful flowers, and more of them than at the first blooming. All summer long this is repeated, but with fewer blossoms as the season goes. Starting with perhaps two hundred blooms at one time in a row twenty feet long and four or five inches across, the zephyranthes gradually diminish until, toward the close of the summer, there will be only a dozen blooms.

Six broad, pointed petals constitute the bloom, opening out flat when fully grown. Each blossom is single on its stem, and from three and a half to four inches across, the waxy, white pistil rising well above the bright yellow anthers. The whole forms a picture absolutely unique in color and grace.

Why are they so little known? Perhaps one reason is that they are very fragile; and while they keep well in water, yet the petals are so easily broken in handling that it is difficult to carry a bouquet to a friend. As cut flowers, therefore, the florists do not handle them, and they lack this potent means of being advertised.

The white Zephyranthes which differs from the pink variety in many ways is often called the bulb crocus, and the name is singularly appropriate.

LILLIE F. SHAW



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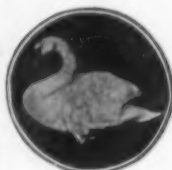
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Issued by Housewives

Official Organ of the Housewives League
Supervising Editor, MRS. JULIAN HEATH,
Founder and National President

The Authoritative
Magazine for Producers
and Consumers

THE AIMS OF THIS MAGAZINE

We defined our aims in our first number. In case you did not read that number we want to repeat them, to state again our platform and give our pledge to all—alike to members and non-members—who have the interest of the home at heart. With the purposes of the League you are doubtless familiar, but we go on record here with platform and pledge as follows:

OUR PLATFORM

To organize the housewives of America for educational, constructive and defensive work for the home.
To demand and obtain fair prices for all commodities.
To bring together the producer and consumer with this object in view. To obtain clean shops. To demand and obtain pure products which are what they claim to be. In short, to work for honesty, quality, efficiency and a square deal for all. So much for our platform; now for our pledge which is as new and unique, we think, as the Magazine itself.

OUR PLEDGE

First and foremost we pledge ourselves to independence. Few magazines can make such a pledge, since their editorial policies are of necessity controlled by business interests.
Our editorial policies are under no such control. They are dictated by the National Central Council of the Housewives League and solely in the interest of the Housewives of America.
This is a vital point in our pledge, the value of which every woman will appreciate.
For the rest, with your co-operation and support, we pledge that the Magazine will do all in its power to make our platform an accomplished fact.

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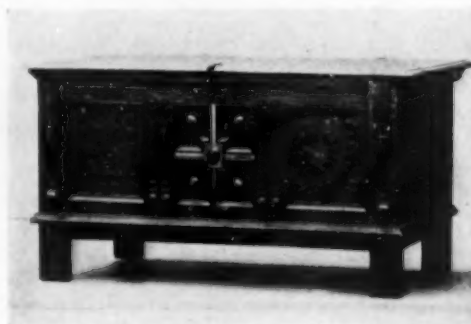
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The Collector's Corner

CONDUCTED BY N. HUDSON MOORE

Questions will be cheerfully answered by the writer of this department. Letters calling for a personal answer should contain postage for reply.

IN the entire range of domestic articles the chest undoubtedly stood first. It was easily made, it served the triple purpose of a seat by day, a bed by night, and always a repository of the family wealth, which might not be reckoned by gold or jewels, but in a more precious commodity to the struggling settlers, seed wheat. I



The chest served as seat, bed, and repository for the family wealth

find a record from Jericho, L. I., where two sisters complain that their chest had been broken open and the wheat stolen therefrom. Chests were not only of varying sizes, but they might stand flat on the ground or be raised on legs; they might be carved or painted, and, finally, they acquired drawers—one, two, or three.

The chests shown are Connecticut pattern, from the fact that so many of these chests have been found in Hartford County, Conn. The lids, backs, and bottoms of the chests are commonly of yellow pine, the front and sides of oak, and the decoration is almost identical on the different chests, the center panel showing a conventional sunflower, and the ends a pattern derived from the tulip. The split



Split balustrades and egg drops are characteristic of all Connecticut chests

balusters and egg drops are seen on all pieces, and these, as well as the moldings, are always stained black, sometimes showing traces of red, in imitation of cedar.



Are you going to be married this Spring? Do you want to know what fashions are most in favor at this moment? Have you a country home to be furnished or refurnished at a minimum of cost? Then don't try to get along this next month without Vogue.

The May 1st Vogue

NOW ON SALE

Late Spring Fashions—all the new things, big and little, evolved since the Paris openings—are given the place of honor in the current Vogue. This number has, too, a delightful flavor of brides and bridal arrangements. Here are photographs of the principal brides of this season, and little sketches of what they are wearing at the ceremony and afterward.

This Vogue makes it easy to choose and buy a trousseau—to decorate the church and the home—to buy wedding presents—to remember all the innumerable things that have to be done when a woman of fashion is married.

In the current Vogue also begins our important series of papers on good manners. Were it part of a college course, this series would be called Advanced Etiquette. The first paper discusses the early training of the woman of society—she will be expected in after years to carry on the traditions of her family and position.

The May 15th Vogue

READY MAY 9th

Be on the watch for the next Vogue—a number that tells exactly what to wear in the country. One goes in, nowadays, for extreme simplicity by day and extreme elaborateness by night. In the May 15th Vogue you will find a profusion of smart new waists, skirts, hats and tub frocks. Also riding habits, top coats and hats, boots and gloves.

It is strange how few people realize that there is a definite standard for outdoor wear. By reading the next Vogue, you will avoid the hybrid half-masculine, half-feminine outing clothes so often offered.

The next Vogue also gives plans for a very simple little country home—the kind you can safely lock up and leave from Tuesday to Friday. We will show not only the floor plans of this home, but also a pleasant variety of appropriate furniture, wallpapers and cretonnes. Watch for the next Vogue.

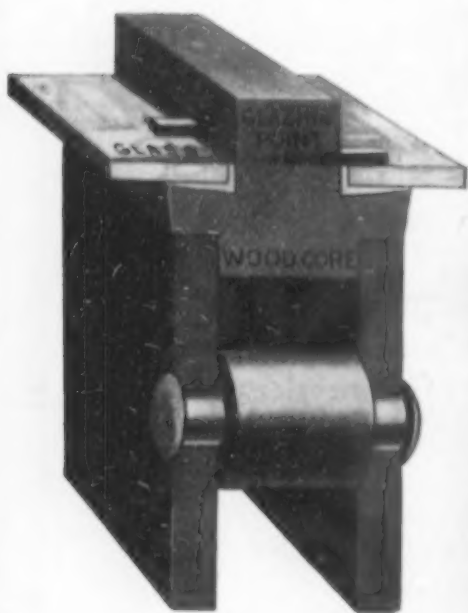
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