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WILLIAM A. VOLLMER
Managing Editor



NUMBER 2

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Do you realize the possibilities of the little sluggish stream that winds through your meadow as a potential water garden? It takes little effort to convert it into a pond where grow the many-hued water lilies and it can supply the water for other garden features if you set it at work



House & Garden

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VOLUME XXIV

August, 1913

NUMBER 2

Water Gardens for Every Place



INEXPENSIVE POOLS AND PONDS THEIR SITUATION AND MAKING

HAVE you any recollection of the infinite delight you had as a child playing at damming up some stream? Perhaps you spent a day in diverting a little runlet of muddy water with sticks and stones and sod until at last you actually had a lake on which boats could sail, a glorious Niagara and some caverns through which the stream ran, which, though not as extensive as those where "Alf, the sacred river, ran," were certainly more satisfying to you. I have never gotten over this delight at playing with water—in those days they called it, as they angrily escorted me by the ear to dinner, "mussing in the mud." Even now I find inexpressible delight in diverting water into my garden and find that with a little ingenuity there are greater opportunities for pleasure than those I have mentioned above.

When hot weather comes, a water garden is absolutely a necessary adjunct to any country place. It need not be so extensive, but if any urging of mine may avail, make some form of water garden and add to it as time and opportunity allow.

There are certain special features of the water garden that you may have



BY ARTHUR W. DEAN
Photographs by Thos. W. Sears and Others



The butterflies and birds, dogs and children all find delight in the garden pool

THE BEST WATER LILIES—HOW TO PLANT AND CARE FOR THEM

for your own delectation. There is the still, reflecting surface of a pool or basin wherein the August sky lies blue and cool and the forms of trees are stretched in horizontal green shadows across it. There is the splash of falling water, tossed heavenward from the fountain that sounds as it falls a song of coolness. There is the trickling stream that meanders between moss-covered rocks and murmurs through tiny grottoes a seductive melody. There is the formal pool with its stone or masonry coping and its marble seats, and then there is the slow, winding streamlet that runs through bogs into a still pond where grow water lilies in profusion. Perhaps you may not have all these water features, but aspire toward some, at least. August loses its dread, if you attain them. I fixed as my ideal the picture which is reproduced at the head of this article. Above, there is the white water tossed high. It runs in cascades down into a great basin, where in places it is quiet enough for water plants. Then there is a long marble trough wherein all the architectural beauty and the falling water itself are reflected. In an humble way and simple form similar effects can be provided by almost every country

house owner. Perhaps a few hints will help you.

Let us presuppose that water is a scarcity. It will be a considerable expense to have it running from the house into your garden to provide a place for water plants to grow. If you can acquire a large brewer's hogshead, have it cut in half, first wiring the staves to keep them in place. By a judicious use of pitch or tar or some waterproofing medium, repair any leaks. Then sink these tubs in the ground and you will have a very satisfactory water garden.

The evaporation of the water and the transpiration of it by the plants can easily be overcome by adding to the supply a bucketful every day or so. Don't place such a water feature at random in your lawn, but find some sunny spot where the tubs may form a unit in the design. Remember that because such tubs are circular they must be formal and must have a formal treatment. So, do not attempt to cover the edges with a naturalistic growth of bog or water plants. A single variety of *nymphaea* is sufficient for each. But such a water garden is really a temporary makeshift. You will want something more substantial. Let us see what is to be done with the permanent water basin. You may construct such a desirable feature yourself without particular difficulty. Have it in circular or rectangular form or the rectangle broken by a semicircle at either end. Fussy designs are never desirable. You must first make it waterproof and next weatherproof. Manufacturers of concrete advise what is known as a rich mixture wherein one part of



An attractive lily pool placed at one end of a garden where its formal treatment is fitting to the site. Work such as this is possible of home accomplishment



The Garrison house has a large lily pool constructed with a brick wall. There are probably too many plants growing here



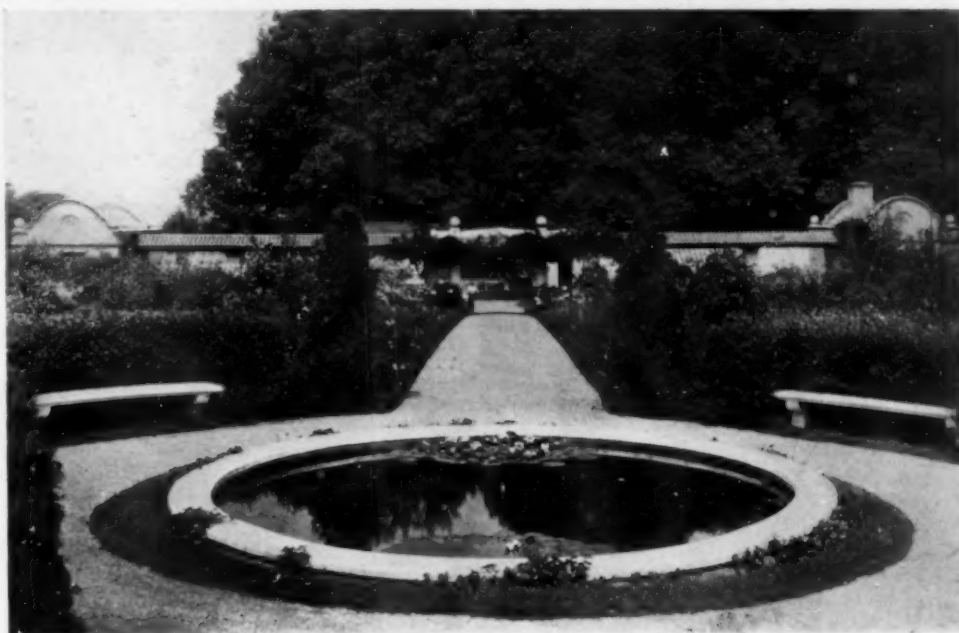
If the situation is satisfactory, the lily pool may be made in the form of a rock basin, its edges being planted with moisture loving and rock plants

Portland cement is combined with one and a half parts of sand and three parts broken stone or loose gravel. This works out to four bags Portland cement to 5 7/10 cubic feet of sand to 11 4/10 of gravel or broken stone. To get the best waterproof results the concrete should be combined in a sloppy mixture so that it remains wet until it is possible to complete the whole job. Walls of this mixture are thick enough if six inches through, and the pool is a small one. If, however, you are making a large concrete basin, it would be well

to use the quarter-inch metal manufactured rods or the reinforcement of wide-meshed wire. At any rate, reinforcing up the sides and into the bottom would be a help. For growing water lilies two and a half feet of water is all that you would need. In the neighborhood of New York the frost line extends only somewhere between two and a half to three feet, but if you intend to have the pool a permanent one to winter over water lilies, it would be well to go below this depth. Dig out a basin in the soil from three to three and a half feet and tamp the soil firmly into place. If the basis of the pool is not solid, it might be well to fill in for about six inches with broken stone and slag, tamp it down for a foundation and then lay the cement bottom on top of this. Some have made a simple basin in a situation where the earth is of a consistency to pack tight by laying a concrete bottom for the pool and using a wooden mold only on the inside. In other words, the dirt itself serves instead of an outside mold. The walls of

such a pool should slope out at a slight angle, otherwise ice in winter is apt to do damage. They are often given a slope of forty - five degrees. When the concrete is hardened, which it will do in about two days, it is a good plan to trowel on a cement coating all over the inside and finish the projecting rim with the same material. A wooden mold box can be built to put the proper finish on the basin rim. Owing to the difficulty in making carpentry molds that are exact, many people prefer to lay the base of their pool in concrete and build the sides of brick set in cement. This is quite a satisfactory method of procedure, and a brick wall will be sufficiently strong, if from eight to twelve inches wide, for the ordinary pool. Brick should be laid in cement mortar, and when the work is completed gone over with about an inch coat of Portland cement. In this way the pool will take on a similar appearance to that of the concrete one.

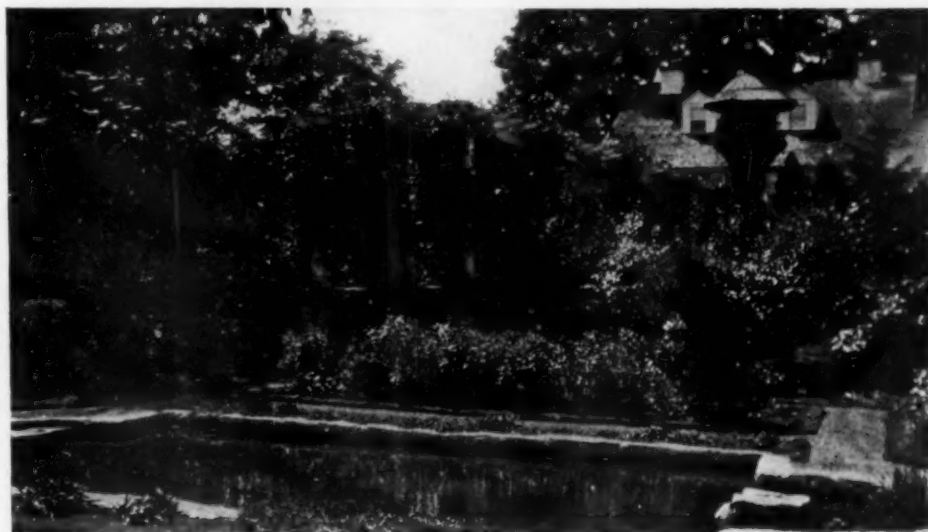
There is one point in construction that it is worth while to make mention of before work is begun, and that is to make provision for the inlet and the outlet pipes. William Tricker, who has had considerable experience with lily ponds, advocates an outlet standpipe made of several detachable sections of pipe. This should rise perpendicularly from the floor of the pool, and its top wall determine the height of water. By simply unscrewing the top section the water will be automatically lowered. The inlet is best placed on the opposite side, and unless there is a powerful source of supply, should be bent up beyond the level of



Locate the pool as a garden center. Even the simplest forms are decorative and their effect is heightened when not too freely planted



Such a rectangular pool may be very inexpensively constructed, having as its source of supply merely the garden hose



The sides of this pool are constructed of fairly uniform fieldstones. It was considered more desirable to have the reflection from the surface than many growing plants

the water in the basin. But whatever form is used, see to it that the provisions are made while the concrete is being laid.

When the work has been smoothed off with cement and properly dried, it is well to allow water to stand in it for a day or two and to give it several washings, for caustic properties in the cement are apt to do damage to water plants. Such a basin as suggested may be used without an inlet or outlet. The same principles hold true when squared field-stone is used as the material for making

pools. Treat as with the brick, setting the stones in cement mortar and have a concrete floor, but endeavor to make a regular coping treatment, if the pool occupies a position in the garden proper.

The main considerations, then, are to have the bottom of your pool below frost line and provide facilities for drawing the water off.

Although it is impossible to give specific direction for every place, we have noted some general structural requirements for the garden pool that apply universally. Such basins should be situated along one of the main garden axes and are most effective if the view to be had of them comes from above. Seats and trees not close enough to obstruct the sunlight make this type of garden attractive. The trees serve as a wind-break and thus assist the growth of water lilies.

A natural pool is somewhat different both in its construction and in its situation. The very small suburban or country place cannot be treated in a natural-esque or landscape fashion. The near presence of house and

lawn and driveways make the wild or simulated natural appear out of place. But where the regular beds and borders are not seen in juxtaposition, a natural pond is highly desirable. It is most successful if there be a winding stream on the property. The simple mechanical expedient of making a dam accomplishes the purpose. An irregular area may be excavated and the water, if the source is constant, will produce a very excellent pool. Of course, such ideal conditions are not often found, but there are artificial means to gain results. One should be cautious of undertaking too much; a good-sized pool is expensive. If clay may be had in the neighborhood, the bed of a pond may be made by "puddling." The clay must be broken up and mixed with water

Concrete makes a more lasting pool, but is, of course, expensive. It is difficult to make it look natural. The margin must be slightly lower than the earth banks and well covered with sod. While the concrete is hardening, stones and sand scattered over and pressed into its surface will help to create a natural appearance. Such ponds as these must be of irregular contour with tiny bays and promontories. A successful form is an irregular pear shape with the inlet at the small extremity. If at the opposite end water is allowed to run off into the soil a situation for bog-plants will be formed which will soften the edges of the pool and add to its natural effect.

I have in mind a place that successfully combined several of



One mistake in making garden pools is to attempt the natural in a situation that demands formal treatment. Here is an ideal natural pool made by damming a small stream. Water lilies grow along the edges and reed-like plants are placed nearby, as well as plantings of ordinary white flowers that like the moist situation

until it is in a mushy plastic condition. It is then shoveled into the pond site which has been previously excavated and tamped down as hard as possible. The clay should also be tamped down and be about one foot in depth to remain for any length of time. In some cases when the site selected is in porous ground, a "puddle gutter" may be run around the extent of the pool about a foot from its margin. This method is equivalent to making a clay dam. A trench eighteen inches wide is dug to about a foot below the proposed depth of the pond. This is filled with the clay and packed tight, then the trench is covered with sod. If the earth on the pond floor is beaten down hard, the clay walls will prevent the water from seeping away, provided a fair supply is maintained.

these features. The land fell away suddenly from the back of the garden, making a rather steep slope to a meadow about ten feet below. This slope was sparsely wooded and the trees formed a pleasing fringe along the edge of the garden. Along the foot of the slope there ran a little stream. As this was of almost constant volume all summer long, the owner conceived the idea of damming up at one end to form a pond. There was a natural hollow which made this practicable and it was accomplished by a three-foot dam. When this feature was completed someone spoke to the owner of the workings of the hydraulic ram and he proceeded to install one farther down the meadow slope and

(Continued on page 115)



The Motor Emigrants



THE STORY OF A "BACK TO THE LAND" MOVEMENT THAT WAS STARTED BY A MOTOR CAR
CHAPTER II; THE SEARCH FOR BROADER LANDS AND COUNTRY COMFORTS]

BY C. H. CLAUDY

EDITOR'S NOTE: The man whose business ties him to the city may feel the call of woods and fields, but the unpleasant prospects of isolation, lack of transit facilities, provincialism, etc., have deterred him from making a change. The automobile has solved these difficulties for many and has made a home in the rural country possible even for city business men. This is the account of an emigration to a rural district made possible by a motor. The automobile was considered part of the plant, and yet even when its original cost was included in the price of the home, they found that it enabled them to buy quite extensive lands for the price of a place in a high-class suburban development. How a motor served in a variety of practical purposes, brought friends, made the family independent of distance and time-table, is taken from the experiences of a man who has proved his experiment. The story is of considerable interest in the facts it gives about the practical value of the motor car in the country and the part it plays in the family budget. The first chapter told of the start of the emigration. Succeeding issues will give details of the important services the motor rendered in all their activities.



MR. SPENCE was game! But there was soon found to be a great difference between a firm determination to find a place on which a man of moderate income could live, enjoy life, have a garden, plenty of room, a nice house, pleasant neighbors, within easy commuting distance of the city, at a price he could afford, and finding said place!

The real estate men were all enthusiastic and extremely optimistic.

"Of course we can find you just what you want! Plenty of fine places going for very little money. No difficulty about selling your place—not surprised you want more room, though—these suburbs are pretty crowded!"

But there was the same difference between the optimism of the real estate agent and his performance, as between Spence's own determination and the accomplishment of his dream. He was carried hither and thither, far and near, up and down, to look at "places." Some were lovely to look at—and had neither light nor sewers. Others had light and water and sewers—and were next the county jail or on the edge of small towns more populous than prosperous. Others had every feature Spence desired, except sufficient ground—"And," as he said to Mrs. Spence, "there is no use giving up a two by ten garden and lawn to get one three by fifteen feet. If we can't get a house and real grounds, let's go back to a gilded cage and the park!"

The real difficulty between Spence and five acres and a mansion, was that of price. He saw plenty of houses, surrounded by grounds of ample size, and whenever one of these had a "For Sale" sign displayed, Spence promptly telephoned to the agent mentioned. But he soon grew tired of hearing, "They are asking \$75,000—won't you make an offer?" or "The owner thinks he

should get \$67,000 for the place, but I have no doubt we could arrange the price!"

It was on his train, tired from a day's work, that he first saw his way out. He had been discussing his hunt with Garnfordt.

"And I've about concluded it can't be done!" he had finished. "I've looked everywhere for the moderate priced home with large grounds in a moderate priced suburb, where moderate priced people can live. But there is always something the matter. Either I've got to live a long way from the station, or I've got to pay a big price for land. I won't isolate myself and my family, and I can't pay the big price. It's back to the city for us, I guess. Living—just plain, ordinary living—is certainly one complicated subject!"

"I beg your pardon," interposed a voice from the rear seat. "I couldn't help overhearing. If you won't put me down as too much of a 'butter-in,' I think maybe I can show you the kind of place you are looking for."

Mr. Spence turned, prepared to squelch the intruder with the city glare that a steady procession of agents, insurance solicitors and beggars engenders in every true office cliff-dweller. But the face which looked smilingly into his was that of so young and slight a man—hardly more than a boy—and the expression was so frankly ingenuous and pleasing, that Spence smiled in spite of himself.

"You don't look dangerous," he admitted. "If you have any place I can buy which will suit me, you can 'butt in' all you want!"

Garnfordt changed his seat, and the young man moved up.

"My name is Swift," the stranger began, producing a card. "I'm with Dalton, Harmon and Belt. We have a number of places which might interest you, but I'd like to have you go to our Castleton property, if you will. It's —" and Mr. Swift launched into a description of the place, to which Spence, tired of hunting the thing he couldn't find, paid an attention closer than he realized. It



Seated in Swift's shining automobile, he found that two miles were only a matter of five minutes, and that by motor five minutes placed the station conveniently near

was only when Mr. Swift left the train at Janey that he discovered that his close attention had been more for the purpose of detecting some statement which rang false, more of an attempt to find the "nigger-in-the-woodpile," than any real hope or belief that the casual acquaintance could solve his problem.

But he was dogged enough to follow up all his clues, and so on the next Saturday half-holiday he met Mr. Swift in the station and took the train to Castleton.

The run was forty-nine minutes—his regular commuting run from Willisport thirty-eight.

"It doesn't seem as if eleven minutes ought to make all that difference in price," mused Mr. Spence.

But he saw a great light when he got off at Castleton.

"Why — why — where's your town?" he inquired, blankly.

"There isn't any—we are not selling lots in a town!" answered Mr. Swift. "Did you ever figure what a town would be like where every house has at least five acres of ground? The plot I want you to see is two miles from here."

"But—two miles! Man, I could never get up, walk two miles, and then take an hour's run to the city!"

"Certainly not!" agreed Mr. Swift. "You are not supposed to walk. Use your car. We are going to use mine—there it is—" pointing to a dark green, shining automobile.

At this initiating information Spence lapsed into an emphatic, if impolite exclamation: "Have I wasted half a day coming out here to find I've got to have a car to invest in your precious suburb? Why, man, I wouldn't own one of those undemocratic, purse-proud, expensive contraptions if you gave it to me! When does the first train go back to the city?"

To his surprise, Mr. Swift made no show of anger or displeasure.

"I'm sorry you feel that way," he said. "I'm sorry, too, there isn't any train until—let's see—3.24—hour and forty minutes. Plenty of trains coming the other way—look at the cars waiting in that shed over there!" and Mr. Swift pointed to an open structure where stood a dozen or more cars, watched over by an attendant. "We have lots of men out here, living from two to five miles from the station," Mr. Swift went on, "who leave their cars here when they go into town and pick them up on the way out. Others are driven in by their wives or older children, who then call for the man of the house at evening train time. They joined in, erected this shed, and share in the watchman's wages—costs about \$2.00 a month, I believe."

"But as long as you are here," continued Mr. Swift, "even if you don't want to consider a place which needs an auto, won't you come and look at it? It's really worth seeing—I couldn't afford to bring people out here to see a country place for reasonable money and then not show them something worth while. You can believe me when I say you won't waste your time if you come, and I'll bring you back for that train, sure."

So Mr. Spence went. There was nothing else to do. He did not

fancy sitting around a station for the rest of the afternoon, and while he heartily disliked the idea of owning a car, he had no special objections to riding in one. So he went, and found that two miles on a good road for a good car was a matter of five minutes without any trouble at all. He could hardly believe that he was really "there" until Mr. Swift skilfully piloted the car between two stone pillars, up a winding driveway, and stopped in front of—the house of Mr. Spence's dreams.

There it was—big, broad porch, great high trees in front, smooth green lawn for the kiddies to play on, a swing hanging from a branch, with a worn place beneath in the grass, showing where little feet had kicked their owner heavenwards into the joy of swinging play; a neat garage behind, and—best of all—a flower garden in front, that couldn't be jumped across endwise, and a vegetable garden looking as if it might really grow vegetables, in the rear. More and more—there was a pig-pen, a hen-house, a chicken-run, and, crowning joy, a small orchard of trees old enough to bear.

Nor was the house less attractive. There were nine good-sized rooms, two baths, and an attic. The house was modern, had good but not elaborate fixtures, and—

"What sort of light is this, anyway?" asked Mr. Spence, investigating. "Surely you don't have gas in this out of the way place!"

"No," said Mr. Swift, "we don't. This house is fitted for either acetylene or for a private electric lighting plant. The present owner has been using the acetylene, because, as he says himself, a hired man can run a generator, but it takes ordinary mechanical brains to oversee a house electric plant, and he is one of the kind who can't drive a nail straight or

without hitting his hands, let alone understanding such a plant."

"Then, how does he run an automobile?" asked Spence, turning swiftly and suspiciously.

"Oh, you don't have to know anything about mechanics to run a car!" answered Mr. Swift. "You evidently haven't investigated the modern car much. Five years ago you did have to be a mechanic, indeed, to get along with a motor—now they are so simple and fool-proof they don't need much attention. I don't know even what my gear case or differential looks like inside. I take my car into a garage once in two weeks or so, and they oil it up—make a few adjustments—I never bother my head with its works, any more than I do with the telephone or typewriter in the office. There are three excellent garages within two miles of Castleton station, and they are much cheaper in their prices than the city garages."

Mr. Spence was still suspicious. But Mr. Swift was evidently sincere, and Spence went on with his examination of the house.

Mr. Swift was wise in his day and generation. It did not take long for his trained eye to see that Mr. Spence was interested. It was evident that here was something the prospective customer had not seen before.

"And the price of all this? What's the figure on this prop-

(Continued on page 112)



There it was—broad porch, great trees, and, best of all, a garden that could not be jumped across endwise

Consider the Lilies

THE PLACE OF LILIES IN THE GARDEN

AMONG the hardy lilies are to be found some of the most desirable of all perennials. In beauty they certainly are unsurpassed. The season of bloom, by proper selection, may be prolonged through most of the summer until late into the fall. Their culture, once they are established, is of the simplest, and they are practically free from disease and insect troubles.

The fact that the hardy lilies seem to be overlooked by a great many gardeners, only adds another point, that of comparative rareness, in their favor. Undoubtedly one of the reasons why the hardy lilies are not more frequently seen, is that it is necessary to secure and plant the bulbs a year before results are to be had. Another reason is that with improper planting, failure is pretty sure to be the result; and this, of course, is generally charged up against the bulbs, rather than against the improper planting. Furthermore, fifteen to seventy-five cents apiece for lily bulbs often seems a good deal to pay, in comparison to the prices asked for the spring flowering bulbs which can be bought by the dozen for that price. Nevertheless, they are well worth the difference. Who, for instance, does not stop to admire the beauty of the golden banded lily of Japan, no matter how frequently he may have seen it before, or pause in new wonder before the perfect grace of the "Bell" lily, even though he may have seen them growing wild by the dozen in meadows and woods? There is a charm, almost a mysterious enchantment, about lilies that is as ancient as the proverbial beauty of the rose.

As stated above, the culture of many of the hardy lilies is of the very simplest sort. One of their greatest advantages is that they remain in the soil in the same place for years, giving equally good results each season, while most of the fall planted bulbs, such as tulips, hyacinths and narcissi, have to be replanted or replaced every second or third year for the best results. For this reason alone they should be more largely used than they are.

There is no place where room for lilies cannot readily be found, especially as they thrive well in partial shade. Some of the extra large strong-growing sorts may be planted as single specimens, but as a rule they will be much more effective if used in groups of at least three or four, or, better still, half a dozen in a place. They are equally valuable for use in the hardy border (which, in fact, never seems complete without them), and also for lending a naturalistic effect to stray corners in the shrubbery planting.

With lilies, as with most other things which one plants, the

THEY ARE SIMPLE IN CULTURE, HARDY, WILL GROW IN PARTIAL SHADE, AND ADAPT THEMSELVES TO VARIOUS BEAUTIFUL EFFECTS—THEIR MANY USES

BY D. R. EDSON

degree of satisfaction with the results achieved will depend very largely upon the proper care and judgment in selecting varieties. Some sorts, also, are considerably hardier than others, and this, too, should be taken into consideration in selecting bulbs for planting in Northern sections.

The golden banded lily of Japan (*L. auratum*), with its enormous fragrant white flowers, nearly a foot across, freely spotted with crimson, and a broad yellow band running through the center of each petal, is usually considered the most beautiful of all. It is, however, not as hardy nor as easy to succeed with as the other Japanese lilies (the various varieties of *speciosum*) which are almost as beautiful and among the hardiest and most satisfactory of all the lilies. Where partial shade, which most of the lilies prefer, cannot be given, the best sorts to use are *candidum* (commonly known as the Annunciation or Madonna lily) and Martagon, purplish red in color, with bell-shaped flowers. *Speciosum* also will stand the full sun very well.

The well-known tiger lilies, of which the new variety *splendens* is a great improvement, our native lilies, such as *Canadense* and *Philadelphicum*, will succeed almost anywhere that conditions at all suitable can be given. Further particulars as to color, height, season of bloom, etc., may be found in the short descriptive list of lilies suitable for outdoor planting which is given towards the end of this article.

L. Philadelphicum

Lily bulbs should be ordered early, with instructions to ship as soon as received. Order direct from some large house which makes its own importations, rather than depend on some local florist or seed store from whom you may possibly get bulbs of inferior quality. Most of the early bulbs come in several sizes, and it pays to get those of first and second size, even at greater expense, rather than to get smaller ones and have to wait two or three years for them to attain full development—although if they are to be used for naturalistic effects, in quite large quantities, the smaller bulbs will give good results.

The great secret of success with lilies is thorough drainage. This must be supplied before success can be hoped for. Unless the ground is naturally light and the subsoil porous, by far the best way is to prepare a bed thoroughly at the outset by trenching out the ground to a depth of eighteen inches or so and putting in the bottom old bricks or stones, plaster or something of the sort. Where the lilies are to be planted in a hardy border or

amongst mixed shrubbery, and it is not at all practicable for the bed to be prepared in this way, it is an easy matter to dig holes where they are to go and place drainage, or at least a good shovelful of sand or gravel at the bottom of each. In any case, to be on the safe side, it is well to put a good handful of sand under each bulb when planting and to surround or cover the bulb to a depth of half an inch to an inch with the same material. The roots and top will have no difficulty whatsoever in making their way through this porous wall, and it prevents standing water, and manure, fertilizer and any other possibly injurious substance in the soil from coming in contact with the bulb. Where lilies are to be grown either in a collection or for a mass effect by themselves, it usually pays to make a raised bed or border edged with turf, as this not only sets them off to better advantage but makes good drainage certain.

The soil should be made very rich, and preferably slightly sandy. If nothing but a heavy loam or clayey soil is available, this may be lightened by the addition of wood or coal ashes, and sand or fine gravel, and by a heavy dressing of leaf mold or some similar light, porous material worked well down into it. *Leichtlinii*, *Brownii*, *Batemani* are more particular sorts as to soil.

The best materials with which to enrich the soil where lilies are to be planted—and it should be made rich if the best results are to be expected—are old, thoroughly rotted stable manure, the older the better, and bone dust; or coarse ground bone, if it is



L. Speciosum rubrum. A very hardy and a most reliable lily, suitable for sun or shade, very handsome with its mottlings of crimson

as *speciosum* and *candidum*, should be placed on their sides.

The proper depth at which to plant will depend upon the variety and the nature of the soil, as they may be put an inch or so deeper in a light soil than in a heavy one. Variety rather than the size of the bulb determines the depth of planting, because some bulbs make their roots and next year's bulb above the bulb that is planted, and some below. The former class, which in-

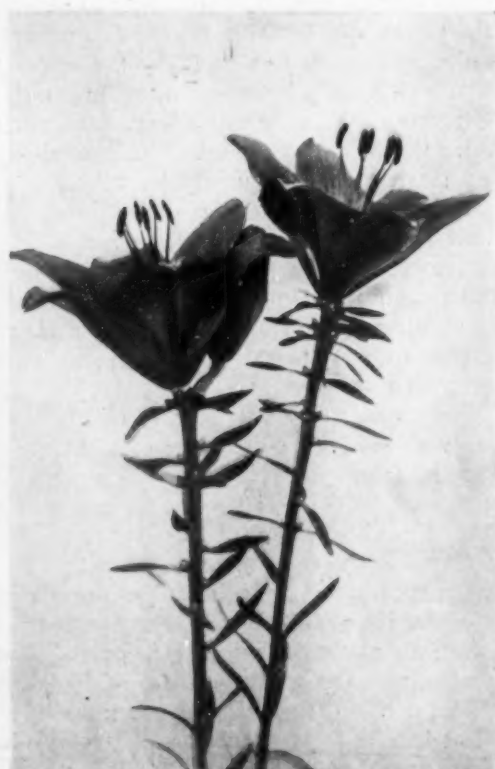
desired to prepare the soil so that it will need no further treatment for a number of years. Fresh manure and commercial fertilizers should not be used, as they are pretty sure to injure the bulbs. The best time for planting most of the lilies is in October, though they may be put in, especially in more Southern sections, or if there is a mild, late fall, in November. The most important exceptions to this general rule are Madonna lily (*L. candidum*), Excelsum (*Testaceum*) and golden banded Japan lilies (*auratum*). These should be put in in August or September, usually as soon as the bulbs are received if they are in a good plump condition. Where the bulbs are to be planted singly and it is not convenient to put manure into the ground, one can make a small hole (an earth augur or a post hole digger being good for the purpose) a foot and a half or so deep, and into the bottom of this put several inches of fine old manure, covered with several more of good top earth. Upon this put a trowelful or so of clean sand or of very fine gravel and plant the bulb on this. In damp situations, the loosely-formed bulbs, such



L. Canadense. Light orange spotted with brown



The Madonna lily, or *L. Candidum*, is one of the oldest lilies, but beautiful in its pure white corolla and yellow anthers. It may be used singly or in groups



L. Croceum does well in almost any soil. It fits well in the garden border or placed among shrubs

cludes *auratum*, the various *speciosums*, *Brownii*, *croceum*, *Hansonii* and *Batemanni*, should be set so that the crown of the bulb will be four to six inches below the surface. *Auratum* should be placed from eight inches to a foot below the surface. The second class, which includes the *Madonna lily*, *Canadense*, *Philadelphicum*, *tigrinum*, *Martagon*, should be three to five inches below the surface, depending on the size of the individual bulb and the soil.

After the first hard freeze, especially where the lily bed has been newly made, an efficient winter mulch should be put on. For this purpose old, dry, strawy manure or leaves raked up from the lawn or the street, kept in place by a few pine boughs or pieces of board, will be convenient. The covering should be from four inches to a foot in thickness, according to the severity of the climate, and should extend well beyond the edge of the bed. The newly-planted bulbs will have made no top growth by this time, but the covering is not to protect them from the frost so much as to prevent the ground from heaving and possibly displacing the bulbs, and injury to the new growth in the spring in case of a warm, early spell which starts the growth prematurely. In spring the mulch should be removed gradually, the last two or three inches being spaded into the soil to rot and to form a good main-absorbing mulch on the surface of the ground.

The only care required annually after this will be to give the proper mulching and to spade into the soil a little old manure or bone dust in the spring, cutting off clean the old tops when they begin to dry after the plants are through blooming, and putting on the winter mulch.

Most of the lilies remain for years

if unmolested, as they do not multiply so rapidly as the blooming bulbs. If you want to increase your supply of them, the small bulbs or "offsets" which are formed each year may be saved and planted out in a border or the flower garden, and in the course of two or three years they will reach blooming size. When for any reason the older bulbs are to be reset or moved, they should be taken up after the foliage has turned yellow when the plant is through blooming, and reset again at once. Do not dry them off and store them the way you would tulips or daffodils.

It has been said of the lily family that "there are no poor relatives." That is, that although they differ widely, each one seems to be quite perfect in itself. And this is quite true; nevertheless, certain desirable features such as color and character of bloom, height and so forth, should be looked for when we want to fit them into any scheme of planting which includes other things, and also to suit personal differences in taste. The following brief list, therefore, which includes those varieties which have proved most satisfactory, will be of use in making out the order for bulbs. Prices vary a good deal, from a dollar to seven dollars and a half a dozen, for the varieties mentioned below:

Auratum (Golden banded lily of Japan)—Flowers white, spotted crimson, with a broad golden stripe running through the center of each petal. Flowers bell-shaped, with the ends of petals recurved. Perhaps the handsomest of all the lilies and very fragrant; three to five feet high.

Candidum (Annunciation or Madonna lily)—This is the best of the pure white lilies, stands full
(Continued on page 110)



The lily at the left is *auratum* or the golden banded lily of Japan, a white lily, spotted with gold and with golden ribs—a very magnificent addition to any garden with its great blossoms almost a foot across. At the right is the tiger lily (*L. Tigrinum*), for a long time a favorite with many. It grows anywhere and seems to resist most unfavorable conditions. Above is *L. Testaceum*. A lily of dull apricot shade with orange anthers

Simple Wall Treatments That Are Effective

REASONABLE SUBSTITUTES FOR PANELING THAT ARE ADAPTABLE TO VARIOUS CONDITIONS—THE PROPER USES OF THE DIFFERENT MATERIALS AND SUGGESTIONS AS TO THEIR COST

BY LOUISE SHRIMPTON

Photographs by George Doust

THE modern room is inevitably a box lined with plaster or wood. A structural effect, the use of the same material throughout the thickness of a wall, is practically unattainable. Only in an occasional fireplace or in the living-room of a camp, is the visible wall material other than a facing. This facing, of wood, or of plaster uncolored, painted, or covered with paper, fabric or leather, is, however, an important factor in house furnishing. The open doorway, as a section of wall filled with hangings or glass, is equally important.

In the selection of wall treatment the home-builder's possessions must be considered from the outset. Paintings of value, or bits of rare pottery, require a special setting. A wall with such strikingly decorative quality that it does not show the owner's treasures to advantage is an impertinence. The wall designed primarily to hang pictures upon is of unobtrusive pattern if papered. If paneled in wood the panels are perhaps so contrived that some of them frame the pictures, and wall niches are also designed to hold choice pieces of porcelain.

If there are no belongings of artistic value that dictate a mode of treatment, the wall becomes a decoration in itself. A patterned frieze or side wall satisfies a desire for interesting design; or flat, uninterrupted wall spaces, with accents given by patterned draperies in doorways, are preferred. Color prints are perhaps selected, not as dominant features, but to harmonize with the general scheme, and are framed in the wood used in the interior trim.

Whether decorative in itself or a mere screen for a decoration made up of art objects, the wall must be considered chiefly as a background for the owners, a possibly harmonious setting for the women of a household and their gowns, for the gay, light colors of children's frocks, or for flowers in vases. As a background it remains subordinate,



Built-in furniture is often an essential feature in wall decoration. The woodwork is gray, oil stained

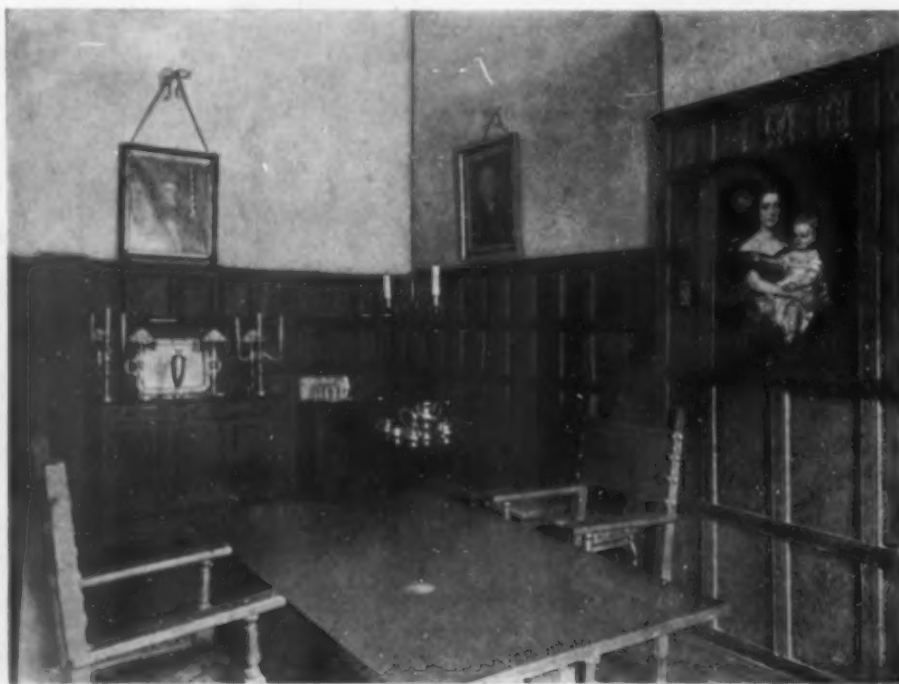
not entering into competition with the foreground through violent forms or colors. The house owners, who after all are of primary importance in house furnishing, have in the simply fitted house the most becoming of environments, not a reproduction of some historic period that makes modern costume an anachronism, but walls modern in character.

Color is an imperative need. However subdued in tone—and our gray climate would make the brilliant tones of the East intolerably garish—color that is beautiful in itself as well as forming a suitable background is a vital necessity. But in devising color schemes the non-existence of absolute color is soon discovered. In a suite with the same color throughout on the walls the results in rooms with different exposures are entirely dissimilar, as home-builders possessing color feeling often find to their dismay. For not only is there no direct sunlight to warm the wall in rooms of northern exposure,

but the windows towards the north are more potent as spots of color; the sun, behind the spectator and shining full on the landscape, turning them into framed pictures often of extraordinary brilliancy. These windows must be played up to in the wall decoration. A color warm and pleasant enough on a wall towards

the south becoming pallid in a north room, a warmer, more positive tone must be used to make them an apparent match. We are impelled toward the paradox of making the colors different in order to have them alike. As a general thing, wainscoting of warm colored woods, and wall papers and fabrics of rich, full tone are appropriate to a northern aspect, while on the south side of a house, walls may be in lighter and paler tones.

Besides the value of walls as backgrounds and the esthetic considerations of color and tone, the home-builder in planning wall coverings has many practical points to



Simple molding for rails and stiles approximates the effect of more expensive solid paneling and may be stained in various colors

consider. A choice of materials must be made, a choice governed by suitability and cost. Plaster or wood are alternatives for the lower sections at least of living-room walls. Wainscoting, for many years neglected because of the popularity of wall papers, is again coming into use in the distinctive home. Wainscoting in its present machine-made form is not costly and is the most effective of backgrounds; once put up it does not permit of alteration nor removal; the wall furniture now so often built becomes an integral part of the paneling and with it a possible architectural feature; considering the cost of the plastering and papering it displaces, even in the small house a wainscot of good height in one or two rooms is a perfectly feasible wall covering. The cost of the most ordinary of wainscots in plain oak is about sixty-five dollars a thousand square feet; of North Carolina pine about thirty-five dollars. A newly devised wall treatment that is inexpensive and uncommonly attractive is wainscoting in "built-up" boards of three- or five-ply, cross banded. Very thin pieces of wood, practically veneers, are glued together so that, plain or quarter sawed, the resulting thin board has the same appearance as the more expensive thick board. Also there is no danger of warp or check on account of the different directions of grain in the composite material. Panels cut the required size in the three-ply are framed by stiles of ordinary lumber an inch thick or so. Hard pine is quoted in the three-ply at four and a half cents the square foot, and oak at seven and a half cents. Sanding and cutting would

bring up the mill cost somewhat. Finishing is usually done on the wall, the entire woodwork of a room being stained and waxed after the carpenters are through, preferably by expert finishers. Or possibly, as in some of the recent English woodwork and furniture, the wood is left untouched, in its natural color. Light

tones of gray and brown are now obtained instead of dark effects. The less expensive woods, such as pine and gumwood, are often preferred, as being refined in grain and taking a stain well. Quarter-sawed oak, stained a light, warm gray, or a light brown, gives beautiful results. Painted wainscoting, usually white-wood, is seen in the house of Colonial design, or in sleeping rooms. A wainscot in which the panels are canvas painted like the wood is a device not intended to deceive, but giving a unified effect at reduced cost. Wood strips laid across a papered wall, or filled in with fabric, are sometimes used to give a wainscot appearance. In calculating the number of square

feet of lumber that is needed for a wainscot, the running measure of the room is multiplied by the desired height of wainscot.

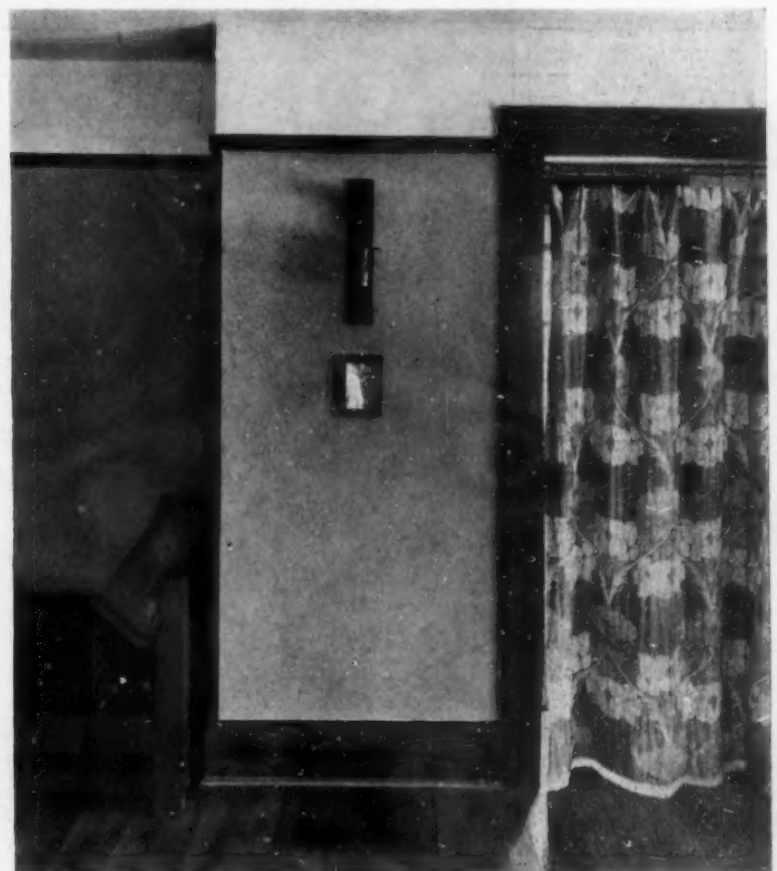
Plain plaster, unadorned by paint or paper, forms a somewhat austere wall treatment that under the hand of a skilled plasterer possesses marked beauty of texture. Three coats of plaster, sand finished, are employed. The walls for this treatment should be of unusually good construction, as cracks cannot be hidden. The natural gray of plaster has good color quality, and warmth is given to a scheme through portières of decided color. Where a



Pale gray grass cloth, costing a dollar a roll, combines well with quarter-sawed oak stained a warm gray



The sand finished walls of especially good construction are uncolored, retaining the grayish tint of the natural plaster



A side wall finished in dull blue American paper costing fifty cents a roll. The Voysey drapery is an interesting bit of design

warmer color is desired, a coat of orange shellac applied to the wall imparts a yellowish tone, the texture of the plaster showing through. A little pigment added to the shellac gives different effects, a small amount of Prussian blue producing a golden green; a little burnt Sienna a light tan. For an alcove or a plastered chimney breast this treatment gives especially interesting results. For those who prefer the opaque, matte tones given by paint there are either water colors or oils, applied usually direct to the plaster. Powdered calomine colors, soluble in hot or cold water, are easily applied and frequently a whole house (except in baths and service rooms, where washable walls are necessary) has its walls colored in this medium. A five pound package, making nearly a gallon of paint, costs about thirty-five cents, and suffices to put one coat on the walls of an ordinary room, two coats being sufficient.

Oil colors, more practical for many rooms since they permit washing, are now on the market in a variety of agreeable colors and in a matte finish. Walls and woodwork alike are sometimes painted with them.

The cost is about one dollar fifty-five cents a gallon, an amount that covers at least five hundred square feet. A coat of sizing is sometimes, in the case of either oil or water colors, applied to a new plaster wall as a preliminary. Two coats of the oil paint are necessary.

Wall paper is for many rooms the best treatment. In a figured paper the landscape and foliage patterns are often used, the domestic landscape costing about seventy-five cents a roll, the imported ranging perhaps from three to five dollars. Reproductions of the famous Morris designs can be bought. Papers of pronounced figure are usually employed only for the frieze. For the side wall patterns are indeterminate, conventional or foliage papers of subdued tone being used. In plain papers, the old ingrain make still gives an agreeable light toned background at ten cents a roll. The heavier "oatmeal" is thirty cents, while a satisfactory darker hued paper is sold at fifty cents. Imported papers cost at least a dollar a roll and are better in quality, though frequently the same color may be found in the domestic variety. A good sized room with drop frieze was recently papered in a warm golden brown, the paper, at twenty-five cents the double roll, costing the rather absurd sum of one dollar. Japanese gold paper, at three dollars a roll, makes an effective frieze. To compute the cost of wall paper for a room, one method is to take the dimensions of the room, to get from this the perimeter, so many running feet; then to subtract the width of window and door

openings; the width of the paper, usually one and one half feet, measured, the number of strips required is easily found, as for a room about ten feet high a single roll supplies two strips. About three pieces should be added to cover waste and fit around openings.

Japanese grass cloth, giving a pleasing texture to a wall, and coming in colors positive yet toned, like those of the Japanese prints, costs about a dollar a roll. In gray or in golden brown it is especially effective. The Japanese imitations of leather, copies of various French and English designs, costing about eight dollars a roll, are prodigious feats of mimicry that scarcely seem worth the doing and must weigh heavily on the artistic conscience of their makers. The Japanese have shown their cleverness in another way that is not really an imitation. A very, very thin veneer is made of wood and attached to paper. This is flexible enough to be applied as ordinary wall paper, and when properly used in combination with woodwork gives the effect of a solid woodwork. Papers of this sort are manufactured here as

well as imported, and are an inexpensive though effective wall treatment.

Leather as a wall covering is costly and as durable as the wall. Used in panels, framed in wood strips, it is appropriate for the library. It is commonly stained a color that contrasts with the wood. The skins might be bought of an importer and stained after the leather is moistened and stretched on the wall. As in wood staining, two colors, one over the other, give varied color with glimpses of the sub tone.

Fabric is for hygienic reasons

usually confined in the modern house to a frieze, where it often gives delightful results. India prints of varying price, Moorish tapestry—fifty-two inches wide, at about a dollar forty a yard—Japanese crepe at thirty-five cents, silks and tapestries varying in cost from a few cents to as many dollars a yard, are materials among others drawn upon for the frieze, and giving often the exact decorative note required. English chintz or linen, in gay figured patterns showing birds and foliage, is frequently used for a frieze as well as chair coverings in a sleeping room. The material employed, which may be thin, even flimsy in texture, is either stretched on frames or is pasted directly to the plaster.

Whether the kind of wall treatment is settled upon by the architect in his disposition of wall spaces, or is planned solely by the home-builder, the proper arrangement of pictures, the color and the material of wall facings, are matters to be considered early in the task of house planning.

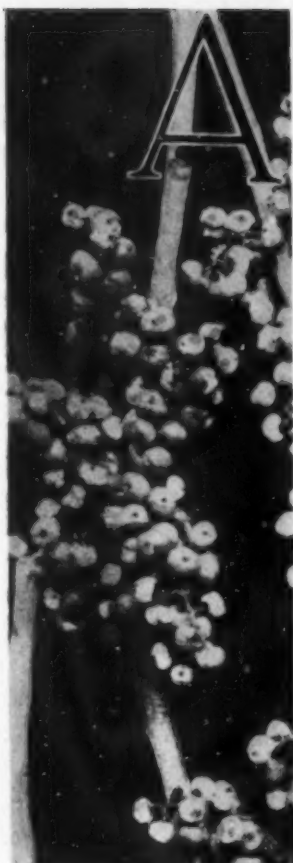


In this dining-room a wood wainscot effect was created by connecting the plate rail and the base-board with wood strips. Give both wood and plaster a generous coating of enamel

Poison Ivy and Poison Dogwood

TWO NOXIOUS WILD PLANTS AGAINST WHICH YOU SHOULD TAKE PRECAUTIONS—HOW THEY MAY BE EASILY RECOGNIZED AND WHAT REMEDIES ARE USEFUL AFTER EXPOSURE

BY ANNIE OAKES HUNTINGTON



Poison ivy berries

As the days shorten in early autumn, and the night air grows crisp and cool with the approach of frost, nature's miracle of the changing leaves transforms mountain forests, wooded hillsides, and low, swampy thickets into a brilliant pageant of color nowhere more varied or striking than in our North-eastern States.

Among the many different trees and shrubs, each contributing their peculiar color tones to the scheme, none is more pronounced, in having a certain shining, scintillant quality which immediately arrests the attention, than the poison ivy and poison dogwood—both members of the genus *Rhus*. Their beautiful, glossy leaves flash scarlet in the sunshine, and entice the unwary, while beneath their beguiling exterior lies a poison more virulent in its effect on those coming in contact with it than that of any other American plant.

The poison dogwood, or poison sumac (*Rhus vernix*) is more limited in its range than that of the poison ivy (*Rhus radicans*). It is found from northern New England to northern Georgia and Alabama, and westward to northern Minnesota, Arkansas and

western Louisiana, whereas the poison ivy is found in almost every State in the Union, with the exception of those in the extreme West, where it is replaced by the poison oak. In its habitat the poison dogwood is confined to moist, swampy places, low, wet thickets, and the borders of ponds; but the poison ivy runs riot everywhere, up the shaded trunks of trees in the woods, along walls in open pastures, over banks by dusty roadsides, and even pricks its way through the burning white sands of the dunes along the seacoast.

The poison dogwood is a shrub which sometimes becomes twenty feet high, with a broad head and clustered stems; the poison ivy is a climbing, or trailing, woody vine. In foliage a marked difference is seen between these sister plants. The leaves of the poison dogwood are unequally pinnate, with from seven to thirteen obovate-oblong leaflets, a shining green on the upper surfaces, and paler beneath; those of the poison ivy are trifoliate, the three leaflets varying in shape from ovate to those which show a tendency to become four-sided. The flowers of both species are much alike, yellowish-green and small, in loose, slender panicles, those of the poison dogwood measuring three to ten inches long, while the panicles of the poison ivy are seldom more than four inches in length. The fruit of both is a waxy white, or gray drupe, but the berries are thick-set along the stems of the poison ivy, and hang in long, graceful racemes from those of the poison dogwood.

The toxic principle in both is a non-volatile oil, called toxicodendrol, and found in every part of both plants, in stems, branches, leaves, bark, roots, fruit, and even in the fine pollen

dust from the flowers, in sufficient quantity to produce a bad case of poisoning if the wind happens to blow it across the hands or face.

Cases of poisoning are most frequent in summer, when the blood is overheated, and the pores of the skin are open and susceptible to the action of the poisonous juice when it comes in contact with the skin. It usually develops within four days of the exposure, and lasts about two weeks in severe cases. It may be recognized by small blisters which appear on the skin, filled with a watery fluid and accompanied with itching and burning sensations. In extreme cases these vesicles spread and become confluent, and the swelling and irritation cause great discomfort. The only effective treatment in a case of this poisonous eruption is a wash which mechanically removes the poisonous oil from the skin. The toxic principle is soluble in alcohol, and a weak solution (fifty to seventy-five per cent.) may be used, adding to it all the powdered sugar of lead (lead acetate) the alcohol will dissolve. Bathe every half hour with constant changes of fresh solution. This treatment, however, is not one whit more effectual than successive and thorough washings with common yellow soap, water and a scrubbing brush, a method strongly upheld by the most scientific investigators of the subject. An article on the active principle of *Rhus toxicodendron* and *Rhus venenata* by Franz Pfaff, in the *Journal of Experimental Medicine* (March, 1897), will be of interest to those who wish to read the account of his experiments.



Poison ivy grows in widely differing surroundings; it seems as much at home on the sand dunes as in the deep woods



Poison ivy need never be confused with Virginia creeper; its leaves are trifoliate, while the creeper's are in clusters of five

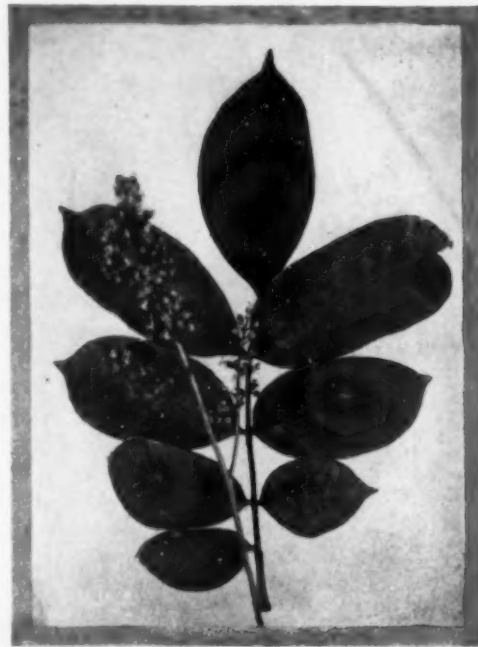
On many country estates the poison ivy takes firm hold, causing constant annoyance and spreading each year over more and more ground. Certainly no vine could be more pleasing to the esthetic sense than this one, with its decorative leaves, its cool, refreshing green tones and shining surfaces, but in spite of its loveliness it is wise to get out a spray pump, fill it with arsenate of soda and water (a pound to every twenty gallons of water) and proceed immediately to the attack.

The surest way, of course, to elim-

inate poison ivy and poison dogwood from situations where they are a menace to human safety and peace of mind, is to root them up by main force. It is a well-known fact that certain individuals are practically immune to the effects of the poisonous properties of the plants, and such fortunate beings can tear up roots and all without danger to themselves. This is the most certain method, but one attended by less danger of poisoning, and quite effective

withal, is the use of concentrated sulphuric acid. In this latter method the plants do not need to be touched. A half teaspoonful of the preparation should be applied to the stem of the plant every two or three weeks during the spring, care being taken to prevent the acid touching the skin of the operator, as it is extremely corrosive. All the refuse of odds and ends resulting from either method of eradication should be burned outdoors, where it can do no possible harm, and when the acid treatment is employed it should be entrusted only to those who fully realize the responsibility attendant upon its use.

It is sometimes surprising to learn for what long periods of time the poisonous element in these two plants will remain in a virulent state when separated from its parent stem. One well-authenticated case of poisoning occurred during the winter months from gloves not used since September.



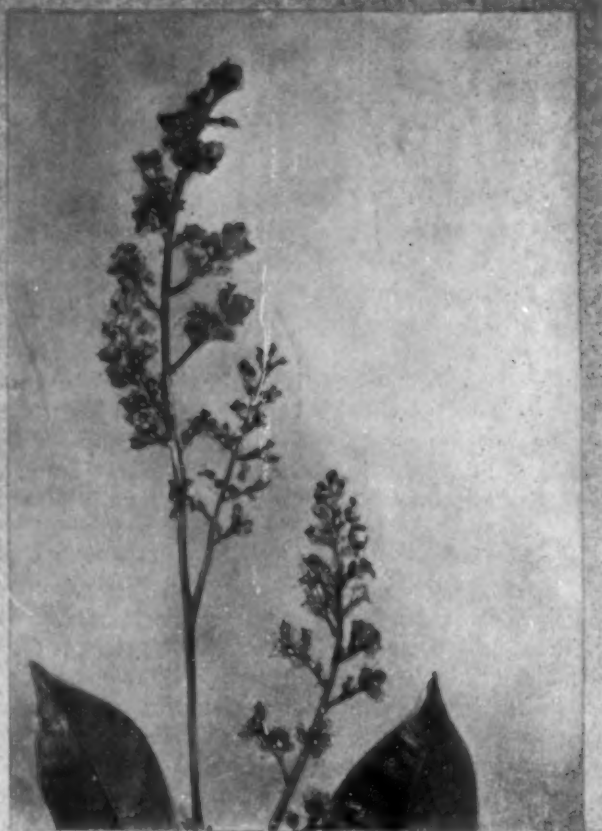
Leaf and blossoms of the poison dogwood, closely related to the ivy. It grows, however, in a more tree-like form



Poison ivy flowers are yellowish-green in color and grow in comparatively short panicles



The pale gray winter shoots of poison dogwood



The panicles of poison dogwood blossoms are sometimes ten inches in length

The Life of the Butterfly

FACTS WITH WHICH WE ARE NOT ALL FAMILIAR ABOUT MOTHS AND BUTTERFLIES—
THE CHARACTERISTICS THAT DISTINGUISH THE DAY FROM THE NIGHT FLIERS

BY FRANK E. LUTZ, PH. D.

Assistant Curator Invertebrate Zoology in the American Museum of Natural History

Photographs by the Author and by courtesy of Am. Mus. Nat. Hist.

THOREAU once wrote: "We accuse savages of worshipping only the bad spirit or devil. Though they may distinguish both a good and a bad, they regard only the one which they fear, worship the devil only. We, too, are savages in this, doing precisely the same thing. This occurred to me yesterday as I sat in the woods admiring the beauty of the blue butterfly. We are not chiefly interested in birds and insects, for example, as they are ornamental to the earth and cheering to man, but we spare the lives of the former only on condition that they eat more grubs than they do cherries, and the only account of insects which the State encourages is of insects injurious to vegetation."

Fortunately this is no longer true. It is not yet noon and there have already come to my desk three letters asking for the names and other information concerning insects which are not injurious. Judging by the writing, one is from a child who has looked up her butterfly in a book and decided that it is a species which the book says does not occur within two thousand miles of the place she found it. She wants to know what the trouble is, and doubtless secretly hopes that she has found out something which the book did not know.

This is not at all an impossibility. Saying nothing about the rest of the country, there are about 15,000 species of insects recorded from the vicinity of New York City. In the same region there are more than 2,000 kinds of butterflies and moths. Not only are species previously known as native only to some other part of the world constantly being found here, but we are still finding right around home, species which are new to science. The latter feat cannot usually be accomplished by the amateur, but there is so much still to be found out about even the commonest species that anyone who watches them may discover hitherto unknown facts. Even if the facts have already been recorded, he who finds them out for himself is nevertheless a real explorer and gets his reward in the pleasure of his discovery.



Children will become enthusiastic naturalists if they are encouraged



The skippers are strong-winged, rather dull colored butterflies of swift, erratic flight

Another of my letters is somewhat unusual, but encouraging to those who would arouse a popular interest in all nature because it concerns an insect which is neither beautiful nor ugly, but just an insect.

Unfortunately this awakening interest occasionally takes another turn. One of the characters in a series of recent widely read novels is a lady who supports herself and gives employment to certain of her younger friends by collecting the butterflies and moths of her neighborhood. These novels are very good fiction, but fiction nevertheless, and along with much good that they and similar books have done, there has come a bit of harm. It is occasionally pathetic. Not long since the Museum received a much-battered specimen of a Luna moth and a letter from a boy of upper New York State who said his mother had been reading that some of the moths were "worth a lot of money" and he hoped this one was and that the Museum would pay him for it because he would soon be nine years old and he would like to get a black pony for his birthday.

A cripple in Missouri asked if she could sell the moths which came to the light of her lamp.

Now, a Luna is one of the most expensive of our local insects, yet a specimen in perfect condition may be had from a dealer for a few cents. On the other hand, no one who has ever truly seen this pale green, gracefully shaped creature floating in the moonlight would, if he could, sell the experience for a net full of money. Furthermore, if he knows the secrets of Luna's childhood, he will spend many happy and healthful hours scratching in the leaves at the foot of forest trees for Luna in her silken winter quarters, and will even see beauty—prospective, if not present—in the young Luna. In this way Luna is actually "worth a lot."

The graceful flight and harmonious colors of adult butterflies have made them the most popular of insects, but in their youth their appearance is rarely attractive. They are "horrid caterpillars," poisoned by gardeners and



A young Grapta trying vainly to shed its skin which it has outgrown

enough known rule for recognizing an insect is that it has three pairs of jointed legs, if any. "If any" was added because young house flies, for example, have no legs. Spiders and centipedes are not insects; they have more than three pairs of jointed legs. The hard brown "thousand-legger" which looks so much like a caterpillar, is not an insect either. It will be objected by the observant doubter that caterpillars have more than three pairs of legs. Like most good rules, this one has its exceptions, but it is not to be caught on anything so easy as that. Only the three front pairs of the caterpillars' legs are jointed; the remaining "legs" are merely fleshy props or claspers. If scientific names were more generally used this paragraph would not have been necessary, since the real name of insects is *Hexapoda*, or "six feet."

This raises at once the question which will not down, as to whether we ought to use the scientific or the popular names. Almost any one says "Rhinceros" and, not knowing, perhaps, that it is really the scientific name, makes no objection. I taught my daughter when she was four years old that the burly, yellow and black bees which attracted her attention were called "Bombus"; but, alas, she came in tears later because someone else had

told her that they should be called "bumble bees." I confess that "Mourning Cloak" is, for some reason, easier to remember than "*Antiopa*," but the butterfly to which these names refer is the "Camberwell Beauty" to the English laity, although its scientific name is *Antiopa* the world over. A New York school teacher gave me a very severe

scolding several years ago because I used scientific names in the Museum Insect Hall to the exclusion of popular ones. I have not done so since, and will not do so here, but I still think that I should.

An insect never gets wings until it is full-grown, so that little winged house flies never grow up to be big house flies. The main

shunned by all except the few who see in them the possibilities of maturity or are looking for interesting points in their life histories. However, all caterpillars do not develop into butterflies, the majority become moths and some creatures which strongly resemble caterpillars are really quite different from butterflies, moths and even insects as a whole.

A simple but not generally

divisions in the classifications of insects are made according to the characters of their wings. True flies are *Diptera* ("two wings"), yet how many insects with four wings are called flies! True bugs are *Heteroptera* ("different wings," one part of the front pair of wings being different in structure from the rest), yet even the students of butterflies are called bug-hunters! Moths and butterflies are classed together as *Lepidoptera* because the wings are covered with countless minute scales. It is these scales which bear the beautiful colors. One of the illustrations given here is of a Swallow-tail (*Papilio cresphontes*) with the scales removed from one wing. Nothing is left but a semi-transparent membrane supported by veins.

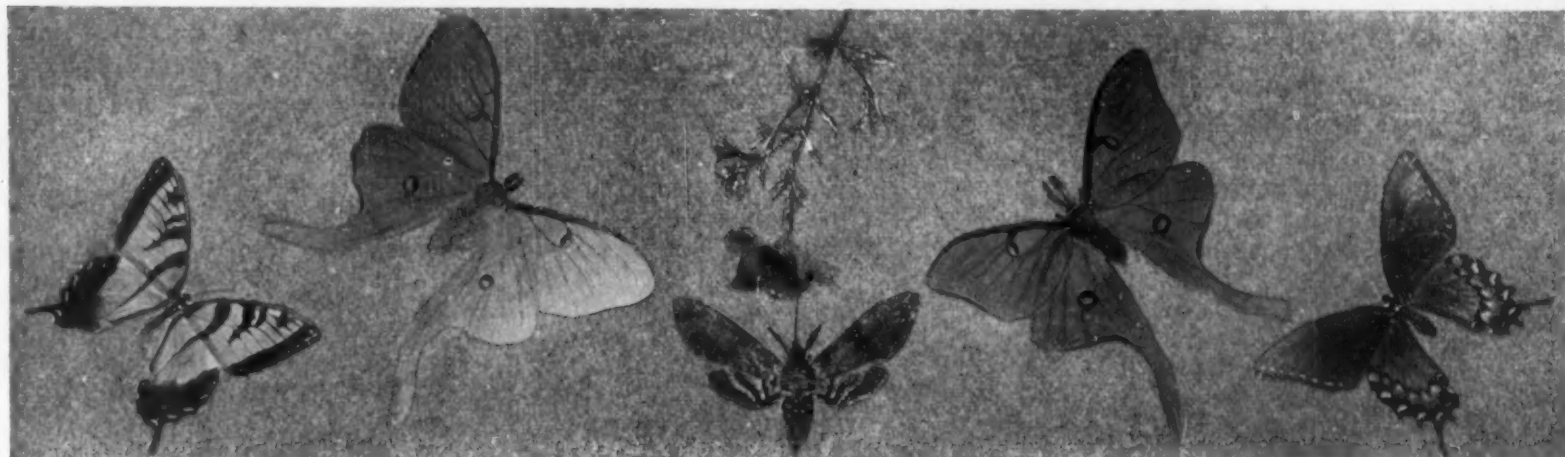
Adult butterflies are active only by day and, as a rule, moths fly only at night; butterflies usually hold their wings upright when at rest, while moths rarely do; but the two may be further distinguished by their antennae. It is unfortunate that these useful organs are so generally known as "feelers." A mosquito hears with its antennae. A very pretty experiment, but difficult to carry out, is to watch, under a microscope, the antennae of a male mosquito when females are singing about, or a tuning fork of the same pitch as their song is sounded. The

hairs start vibrating as does a violin string when another tuned to it is played—we see the mosquito hear. Moths, on the other hand, smell with their antennae. Those who have read Fabre's account of "The Emperor" know how difficult it is to prove this, but proof is not lacking. Now, moths, flying

chiefly at night, seek their mates and the proper plants on which to lay their eggs largely, or solely, by the aid of their antennae, while butterflies probably depend largely upon sight. This is the explanation given for the greater complexity of moths' antennae.



The Mourning Cloak comes out of its winter quarters to bask in the weak sunshine of early spring



At the left is one of the striking "black-and-yellow" butterflies, *Papilio glaucus turnus*, and in the right corner is its black form. The pale green Luna moths and the Hawk moth in the center, illustrate two divergent types of night fliers

They are feathered, the plumules being series of sensitive hairs. Butterflies' antennæ are smooth and have a knob at the end. Even if a moth's antennæ have plumules so small as not to be seen with the naked eye, they usually lack the terminal knob, and one is not likely to be deceived.

There are four ages, really called stages, in the life of all *Lepidoptera*—egg, larva, pupa and adult. The eggs are frequently beautiful objects under a microscope, and are usually laid, either singly or in masses, on the leaves of the plant which serves as food for the caterpillars or larvæ.

When the caterpillars have eaten their fill once, they cast off the skin they have been wearing, but which is now too small, and get a larger one. This process is repeated three or four times, and finally they are full-grown caterpillars.

The other day I found a young Grapta, a butterfly, which was about to moult. I knew this because it had made a platform of silk on the leaf so that it could get a good foothold. Furthermore, the neck, where the old skin bursts, was so swollen that it showed yellow. I focused my camera on it and waited for three hours in the hot sun to get pictures of the process, but although the poor thing twisted and squirmed and stretched, it could not break the old skin, and finally died. A great deal of the mortality which reduces the scores or hundreds of insects born to a single

female, down to the two which replace their parents, comes at the time of moulting. Perhaps my sorrow for this young Grapta was increased by the loss of the picture which I had waited so long to get.

It is difficult to describe the difference between the larvæ of butterflies and those of moths. When, not long ago, I was asked to do so, I failed utterly; so I asked two older men who had been interested in these creatures most of their lives. They passed the question up to a specialist in *Lepidoptera*. The consensus of opinion was that there is no difference, but that it is easy to tell them apart! Perhaps a reader can do better. I have since found a difference which I think will hold, but I am afraid to put it in print now, and will answer the question by mentioning some moths. That leaves a smaller number from which to pick the butterflies.

Butterfly and the majority of moth larvæ have four pairs of legs which are not true legs (the props mentioned above) in the middle of their body and a pair of claspers at the hind end. If there are more than these, the larva is not a caterpillar but a young saw fly, related to wasps. Inch—or measuring—worms are moth larvæ. They are unlike other young *Lepidoptera*, in that they have no props in the middle of the body and must go looping along. As for lepidopterous larvæ with the full complement of



The skippers are of wide distribution and are found in a great number of different species. They belong to the enormous class of insects that are harmless



The nymphs are easily recognized by the prominent eye spots on the under surfaces of their wings. This photograph also illustrates a characteristic wing position

legs of all kinds: if they build nests either out of silk or by rolling leaves, they are pretty certain to be moths; cut worms (the gardener will know what is meant) are young moths, as are also fuzzy caterpillars, caterpillars with a single horn at the hind end and those which are larger than a man's little finger.

When a caterpillar is full grown it gets ready to moult once more. If it be a young moth it usually spins a silken covering—the cocoon—or goes into the ground. The silk of commerce is the silk which young moths make for their protection. If it be a young butterfly, it fastens the hind end of its body to some

support and may also pass a single thread around what might be called its shoulders. Having thus made itself secure, its skin bursts and a very different thing is revealed. It is the pupa, motionless except for convulsive twitchings, without free antennæ, legs, wings or appendages of any kind. It has every appearance of death, and has been aptly used as a symbol of human death, for it is not lasting. In the course of time the creature within bursts its bonds and emerges in all the beauty of perfect maturity. The pupal stage is the stage of transformation from the crawling worm feeding on leaves to the free-flying butterfly sipping nectar from the flowers in your garden.

Unfortunately, cold fact chills to some extent the glow of poetry. The adult life of butterflies and moths is usually short. Some have no mouths at all or provision for feeding, and those which have are as apt to use them to sip water from roadside puddles or barnyard pools as they are to suck the nectar from some beautiful blossom. The mouths are coiled tubes, admirably adapted to the purpose. Indeed, the attraction water has for the butterfly is taken advantage of by the museum explorers who seek the rare insects partial to the blossoms of tall trees. A mirror placed on the ground brings them to earth, as it is mistaken for a small pool.

I think it was Burroughs who said that all nature is a tragedy. Some of these tragedies are enacted in the pupal stage or, more strictly, are concluded there, for when the butterfly is still a caterpillar, wasp-like insects or certain flies frequently lay their eggs on or in it and their young feed inside the young butterfly. After the caterpillar pupates, the parasite completes its work of destruction and pupates also.

Later a full-grown wasp-like insect or fly emerges instead of a butterfly and leaves an ugly-looking hole in the side of the chrysalis.

After all, it depends upon the viewpoint. This was a tragedy

for the butterfly, but not for the parasite, and we look upon it as a tragedy because our sympathy is all with the butterfly. Two moths, the Gypsy and the Brown-tail, were recently introduced from Europe into the vicinity of Boston, and their larvae started to eat the leaves of all the deciduous trees. The damage amounted to millions of dollars, because the parasites which keep these insects in check were not imported with them. The United States Government is now importing parasites as a last resort, and our sympathy is with the parasite.

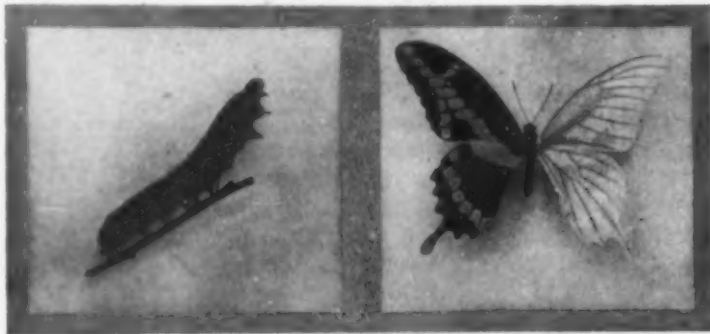
The only butterfly whose larvæ do considerable damage is also

an immigrant from Europe. It is the white cabbage butterfly (*Pieris rapae*), the one which is yellowish on the underside but has no silver spots there. Usually the male has a black dot on the upper surface of each front wing and the female two, while both sexes have the front corners black, but in the spring generation these marks are apt to be absent or faint.

The cabbage butterfly passes the winter as a chrysalis (the name given to the pupæ of butterflies), but the Mourning Cloak winters as an adult, coming out from its shelter in a hollow tree or under a pile of stones to warm itself in the first genial sun of spring. When autumn comes, the Monarchs, whose young fed on the juicy leaves of the milkweed, assemble in large numbers, hanging from the leaves and branches of trees and shrubs. These flocks then move south to spend the winter there.

Although the main outline of the lives of all butterflies and moths is the same, there are countless variations of detail. These details can be worked out by the amateur with the greatest of pleasure to himself and profit to his health. The material comes to your garden or flits before you as you take your strolls. There is the yellow *Papilio* whose female occasionally puts on black (we do not know why) instead of the normal yellow; the Skippers of more kinds than there are steamship lines, the Nymphs, with their conspicuous eye spots. All have something of interest about them, and practically nothing can be said against any of our native forms, even in their youth, though you may have heard certain alarmists speak discouragingly to the contrary.

Perhaps you may be persuaded to remember this as you go through your garden and to poison the foreigner "more in sorrow than in anger," for even he reaches a maturity, if he can, which is pleasing to the eye not filled with cabbages.



Two stages of papilio. The caterpillar's only true legs are the three front pairs; when the scales are removed from the butterfly's wing a mere tissue skeleton remains



In early autumn the Monarch butterflies migrate in huge flocks which, when they settle on a tree, swarm among the leaves in countless thousands

The Porch and Its Uses

VITAL CONSIDERATIONS IN THE PLANNING, BUILDING AND FURNISHING OF THE PORCH—THE PROBLEMS OF LOCATION WITH REFERENCE TO EXPOSURE AND OUTLOOK

BY HAROLD DONALDSON EBERLEIN

THE properly planned porch should be held an integral part of the house *tout ensemble*, and we have no more right to be haphazard in dealing with it than we have to be careless about the rooms within. With our personal clothing we think out first just what we wish to have and then insist upon having it just as we wish it. This is right. We should do the same with our houses. Our houses are only a more expanded form of our personal environment than our clothing, and should express our personality quite as much as does our apparel. Careless disregard of purpose in planning our porches or rooms, or any other part of our houses, for that matter, is sure to breed dissatisfaction and regret later on, most of all if people are at all sensitive and particular. It is better to be sensitive and particular beforehand and then reap lasting satisfaction afterward.

After deciding upon the exact object of the porch with reference to its placing, and before settling the precise location, we must think of the season of the year and the time of day when it is to be most used.

A living-porch for summer use, for example, should be planned to command the maximum of prevailing breeze and the minimum exposure to the sun. One delightful living-porch that the writer knows, has an exposure north by northeast. Except in the very early morning, when it is not likely to be in use, there is entire freedom from glare or direct sun rays, while a refreshing breeze is generally creeping up the glen and through the garden that the porch overlooks.

Outlook is another factor that must be taken much account of in fixing the porch's location. There is a rare and inexpressible pleasure in having a stretch of fair country spread before one's eyes, and our enjoyment of it is greater when viewed from outdoors than from within. It is, therefore, always well to plan porches with the outlook in mind.

Sleeping - porches, which will, of course, be on the level of the



An interesting development of the porch as an integral part of the house

second floor or above, should have an eastern or, preferably, southern exposure, so that they may be used the year round without subjecting their occupants to the too rigorous buffetings of the weather. It would seem the part of ordinary common sense for those purposing to build a sleeping-porch to keep this and several other important considerations in mind. Forethought and judgment, however, are by no means universal.

The paving or flooring of the porch is the first item to confront us when it comes to actual construction, but before determining of what sort it shall be, it must be decided whether the porch is to be on the ground level or to be elevated somewhat. Into the settlement of this matter must enter the question of drainage and the contour of the ground. In some places it is quite feasible to have the surface of the porch at lawn level—and it is often desirable to have it so—because the ground slopes rapidly enough away to insure perfect drainage; in other places, owing to the contour of the ground, it is manifestly im-

possible to do so without running the risk of undue dampness and perhaps occasional flooding.

For a porch at ground level, the floor should be of brick, tile, stone or concrete. A wooden floor at ground level, no matter how dry the spot, will last but a short time. Its contact with the soil is bound to cause rot, especially as the timbers get no ventilation. For any of the other materials mentioned, a carefully prepared bed must be laid, although the ground may be solid and exceptionally dry. A deep cinder bed, solidly tamped, such as is generally used for a concrete sidewalk, is the best, and a curb of stone or concrete should be deeply set before anything else is done.

When bricks are to be used, the customary sand bed, of the desired thickness, can be spread on top of the cinders. Better than sand is a bed of concrete for bricks. After they are laid,



For a porch at ground level the floor should be of brick or other material that is unaffected by dampness. In such a situation wood rots too rapidly

thin cement can be poured in between the joints, either filling them or else allowing a little space to remain to be filled up with gravel or sand or a natural accumulation of dust, thus avoiding the bleached and bald appearance of concrete. Varied interesting effects in brick floors can be secured by the pattern in which the bricks are set. They may be laid on edge in twos and threes at right-angles, forming a quarry design, or set herring-bone, or in a dozen other ways, according to the ingenuity and decorative taste of the porch builder.

A cement or concrete floor has the great advantage of being easily kept clean, but in certain conditions of the weather it will always collect surface dampness and is apt to be cold, so that the use of some sort of rugs or mattings is almost imperative. Concrete porch flooring will be laid exactly the same as a concrete sidewalk.

Stone flooring is susceptible of much variety of treatment. According to the character of the house the stones may be rough, so long as they are approximately flat, with wide joints or carefully dressed and set close. The rough stone flooring is particularly suitable for porches of the overhang-trellis or pergola type. The stones may be laid in the style the English people call "crazy" paving, that is, random shapes and random sizes, or rectangular stones of random sizes may be used, exactly in the manner of a paved garden path. The latter style is, perhaps, preferable. For a stone floor it is not necessary to prepare so deep a bed as for brick, concrete or tile. In fact, when used for an overhang-



Wicker ware and rattan are among the materials best adapted to porch furniture, as they withstand exposure to sun, rain and dampness

trellis or pergola porch the stones may be laid directly on the earth with perfectly satisfactory results. In some cases, however, a shallow concrete bed may be advisable. With either "crazy" or "rectangular random" paving the joints between the stones, of course, cannot be very close.

A tile floor must be laid in cement or mastic. There is no end to the variety of colors and patterns available in the different sorts of tiling. One very satisfactory kind of floor may be made of the large red quarry tiles, set in mastic, so much in favor for flooring roof gardens. All the tiles must

have a carefully prepared deep bed. When the porch is above ground level it must be bounded by a substantial and well set coping of stone, concrete or brick.

In all cases, whether on ground level or above it, the surface must be given enough outward slant to insure perfect drainage of any water that may get on. In an intramural porch, inasmuch as it is an integral portion of the house, it seems more fitting to use for the floor some such durable material as one of those just mentioned, rather than wood. With a built-on porch, on the other hand, wood makes a perfectly satisfactory flooring, more so, oftentimes, than the heavier substances. Overhang-trellis or pergola porches, however, should be paved and not boarded, owing to their exposure to the weather.

Considered from all points, the best wood to use for porch flooring is Georgia yellow pine. For the porch posts, if they are to remain their natural color and have merely a coat of oil or spar varnish, either cypress or Georgia pine will prove satisfactory. If, on the contrary, the posts are to be painted, they had better be of white pine or poplar, preferably the former, although it is becoming very scarce. The practice of setting wooden porch pillars on blocks of stone, rising an inch or two above the floor, is advisable for preventing rot. For painting the porch floor, deck paint may be strongly recommended.

If it is intended to utilize the porch as a kind of outdoor living-room in summer, or if it is to be enclosed for a sun-room for winter, it is necessary to have a ceiling. Tongued-and-grooved yellow pine is suitable for this purpose. It is desirable, generally speaking, to have a ceiling unless the aim be to cut down expense, under which circumstances the rafters and under side of the roof can be made presentable.

For any kind of lattice work use pine strips. The pattern and closeness of the lattice will be determined by individual taste or the necessity of the oc-



Separate porch roofs may be avoided in such designs as permit of the main house roof being extended to cover the porch

casian. It may be remarked, however, that entire privacy may be secured without putting the slats so close together as is often supposed to be necessary. Leaving them as far apart as possible makes for a better circulation of air, hence adds to the comfort of the porch.

A porch railing is often architecturally pleasing and useful, but if the porch is to be used for a conservatory or sun-room in winter, it is much easier to manage if there is a solid wall up to the height of an ordinary railing. When there is no such wall there must be sections of solid boarding and sills that can be

screwed in place on the approach of cold weather. The sashes will be fitted in above this, making the whole porch weather-proof.

Sashes should not be too large—not over five or six feet by two and a half or three. It is better to have a number of small ones than a few that are too large to handle conveniently when putting them up and taking them down. A large, heavy sash, too, is apt to sag on its hinges, and when being opened or shut its sweep takes up too much room. Sashes are ordinarily hung so as to open vertically like casement windows. They can, however, be hinged and hung to open horizontally, and in this way the whole space between pillars can be opened to the air. This arrangement is particularly useful where the sashes are left in place the year round.

Sleeping-porches ought to be equipped with canvas curtains that can either be laced or hooked through eyelets at the edge to hang wherever they are needed to keep off beating snow or rain. Balustered balconies atop of porches may have the floor covered with heavy canvas, such as is frequently used on the upper decks of river steamers. This canvas must be well painted and the floor given enough slant to insure proper drainage. If the porch has a tin roof, slat platforms made of scantlings an inch thick, resting on blocks, make a good flooring. The deck canvas floor will be pleasanter to use.

Specific allusions to cost of material and construction have been purposely kept out of this article, as prices vary so widely in different localities, and if any figures were given they would be sure to be misleading in many instances for that reason.

Turning now to porch furniture, remember that this should, above all things, be simple. So soon as the porch is overloaded it becomes stuffy and loses all its outdoor freedom. Porch furniture should be light in weight because it is being, and has to be, moved about so constantly. Wicker ware, rattan and strongly made but light wooden



One way of admitting plenty of light and air to the wide porch is to have part of the roof open save for the girders over which vines grow

things are especially desirable. This does not apply to certain stationary pieces of furniture such as built-in settles or tables that are expected to be kept in one place. A settle built on the porch is most useful.

There ought to be nothing about the porch appointments that cannot stand some exposure to sun and rain and dampness. For this reason it is sometimes perplexing to know what to do about pillows, cushions and chair seats, but there is a very acceptable waterproof fabric out of which covers can be made. To make a porch thoroughly comfortable there ought

to be a Gloucester swing settee. Steamer chairs, mandarin chairs in rattan, and Windsors, both side and arm, are all appropriate for porch use. Nearly everything that one could wish in the way of porch appointments can be had in wicker ware, from easy chairs and couches to tea-tables and tea-wagons.

Grass and straw mattings or Navajo blankets make the most desirable floor coverings. If the house has electric attachments it is well to make some provision for both movable and fixed lights on the porch. It will be found a great comfort and convenience to have them, but at the same time it would be advisable to put up screens to keep away beetles and all insects that a light at night always attracts. Unless there is heavy shade around the porch there will be times when awnings or screens of some sort are needed. There is much to be said in favor of split bamboo screens, as they can be rolled up tight when not in use and are quite out of the way. They are cool and pleasant-looking, too.



The loggia type of porch may sometimes be used as in this interesting two-tiered example where the porches run the length of the house

The Right Use of Evergreens

A LESSON IN THE PROPER GROUPING OF EVERGREEN TREES AND SHRUBS FOR LANDSCAPE EFFECTS—THE THEORY AND THE PRACTICE OF PLANTING—AN ATTEMPT TO WIPE OUT SOME OLD DOGMAS

BY GRACE TABOR

Photographs by Nathan R. Graves

EVERGREENS are expensive garden material—which is one reason why they should be used with great discrimination and a very clear understanding of what one is about. They are also very *positive* garden material—the most positive in the world,—which is another and even better reason for knowing exactly every why and wherefore concerning them. It is, indeed, the great big reason for studying them and working out theories concerning their merits and decorative possibilities; for cost is, after all, a passing episode, but garden effect is a permanent condition.

There are, of course, many evergreens which do not grow to large size. These, we have been assured again and again, are providentially provided for the small place; but there are many more that become large forest trees just as soon as they are able—obviously, by analogy, to give the man with acres a chance. The two kinds are impartially used together, however, on both large and small places, in those evergreen groups which so many are persuaded to plant—how, I do not know! I wish I did; for, in order to correct an evil, one must get at the reason of it; and I very much wish to correct this.

Undoubtedly the trade is partly responsible for many of our garden errors, since the lavish use of fancy forms is still encouraged by some. But there is a responsibility resting upon the gardener which cannot be shifted; and on two distinct counts he alone must answer. There is, for one thing, the everlasting

impatience which demands something now—to-day!—at once!—but is regardless of to-morrow. And there is the lack of real taste which our superficial attitude towards everything in general allows. These two together are the faults which each must recognize and wrestle with and overcome.

As a beginning—a first step in the right direction,—suppose we put aside all the ideas which the alluring literature of the trade may have promulgated, and get down to the actual truth about evergreens themselves, before we undertake to decide how they shall be placed anywhere. This is not to say that just as many may not be used in the end as are used now; nor is it to imply that untruths have been written concerning them. But there is no doubt that a biased point of view has

been presented; this is what must be made straight and true.

The final test of any planting is the test of truth. Whatever the material may be, the plants must be so placed and so combined that they are true to nature and to themselves. Mind, I do not say they must be planted *naturally*; this would be a preposterous general garden dogma. But they must be true to their best possibilities; in other words, to their nature, just as a human being, properly educated and rightly developed ethically, is true to himself, although almost inconceivably removed from the "natural" or primitive state. What is the truth about evergreens? This, then, is the question: What is their nature? And



The planting at the extreme right is good, but against the house berry bearing shrubs should have been used for winter effect



The screen planting should be something more than a screen, it should be a natural bit of landscape. This is, in a large degree, a desirable planting where the trees are both well placed on the lawn and where they conceal an unpleasant view. The evergreens used in this landscape are with but a single exception all the same species. Compare this result with that on the next page



A white pine hedge, a rather uncommon but a very beautiful use of an American tree that should be more widely planted. It is attractive, is easy to grow and resists bad weather



In its later years *Pinus Strobus* is difficult to be excelled by any other evergreen. These two pictures show what a variety of effect may be obtained with the same trees in different uses

what does nature do with them?

As to the first question—really the second: they are assertive and individual always, and severe very often. They strike a sharp, clear, distinctive note wherever they are come upon, and one that dominates and rings insistent above everything else. But each kind strikes its note on a different key. In addition to this marked individuality, they are always dignified, even when they are not majestic:



An exceedingly fine landscape planting. The cedars are used as they would grow naturally and their effect is not impaired by other trees

the little fellows as well as the big, preserve the same serenity and hold themselves with the same lofty reserve, impressing their importance upon the most casual.

So, passing on to the second query, nature, herself impressed, handles them differently from anything else. She establishes them under very much stricter laws than those governing the less imposing deciduous plants; and she accords them privileges in keeping with their importance.



A show case landscape such as this attempts to crowd into a small space as many varieties of evergreen as possible under the theory that the more kinds there are the more beautiful the effect is. The immediate effect is ugly and when the trees mature, is still more unpleasant



Evergreens are too individualistic to be mixed with evergreens, but they act as highlights when planted with deciduous trees. Here among a mixed deciduous planting incidental white pines are placed

One kind chooses a given area for its home, and she keeps other kinds away. But as some areas do not suit their exacting demands at all, they are, after all, limited in numbers, and occupy a small space, proportionately, in the world's vegetation.

Here is all that we need, to help us determine the use of evergreens. It becomes now simply a matter of drawing conclusions—only we must take care that we draw *right* conclusions.

Honest and dishonest use of any kind of plant does not affect garden design, and is not affected by it as much as might at first seem, although it does, of course, bear upon it to a certain degree. But a formal planting may use material quite as honestly and with as due regard for its nature and demands as an informal treatment, and false relations are as readily avoided in one as in the other.

The first essential, whatever the garden scheme may be, therefore, is recognition of the evergreen's "dominating personality." And, of course, recognition of a dominating personality is accomplished simply by allowing it to dominate; in other words, by not allowing anything else to conflict. With this granted, it becomes

instantly apparent that several kinds cannot be used in combination, for each kind, remember, is so distinctly individual that it will dominate; and something very like bedlam will therefore be let loose.

This brings us to exactly the same conclusion that nature reached long ago, apparently, with regard to these independent and arrogant things: avoid trying to combine them. Let them be true to themselves, always true to that inherent and divine right to rule which cannot be denied any one of them. It is only when thus respected that they will serve us fully, lending beauty as well as protection to our little schemes.

So groupings of many kinds must be absolutely taboo, likewise the monstrous evergreen "color effects" accomplished by such groupings. Guided by the general purpose for which the planting is to be done, select *one* variety and use this to the exclusion of all others, or to the exclusion of all save possibly a specimen or two of an allied variety, if personal preference for more than one kind is too strong to be over-

come. Close adherence to just this one rule alone will assure a far greater degree of success in evergreen planting than is ever achieved in the usual system—if system it may be called, with its strained effort to do something which evergreens were never intended to do.

The character of a place, quite as much as its size perhaps, should govern in the selection of the kind of evergreen to be planted. A variety that is ponderous and heavy should never, of course, be used in a trim and toylike suburban garden, any more than toy trees should find their way into a broad and expansive landscape. Take into consideration, too, the surroundings. What are they or what are they likely to become; what of the place itself? Then choose something appropriate to the two together. Surroundings may not matter as much on a large place as they do on a small one, to be sure; for with land enough it is possible to create almost any sort of conditions, and to exclude them altogether. Still, they do have something to do with the general character of the whole; and they should never be altogether eliminated from consideration. Picturesque trees like the white pine



Pinus Montanus Mughus is a little suggestive of the white pine, but of lower growth and more compact habit. Groups are interesting on sloping land



Retinospora filifera edging a lawn. The beauty that is shown in such situations is detracted from when various novelties are mixed in together without harmony

or the hemlock, for example, certainly do demand a setting that has in it some of the elements of the picturesque. Unless such a setting is available, choose another kind of conifer.

Evergreens as shelters, evergreens as screens and evergreens as "general effect" material are all subject to the same generalizations, and many of these are the generalizations which apply to deciduous material as well. A screen must never be obviously just a screen, but always a natural group of spruce or fir, or arborvitæ perhaps, if done in miniature. Similarly, a shelter belt should never be literally just that and nothing more; but, rather, the individuals which compose it should be naturally grouped into a little grove that, standing with every appearance of accident on the spot it occupies, protects seemingly by a happy chance the area or spot requiring protection.

Sometimes, however, natural groupings are precluded by the limitations of the situation, and only a straight row is possible. Where this is the case, plant frankly in just a straight row, but be sure that that row runs definitely between two points and does not start and end aimlessly. For example, it may quite possibly require only half a dozen arborvitæ to hide a neighboring building some distance away; but six of these little trees, set down along the boundary of a plot, just in the range necessary, would be absurd in effect and actually call attention to what they were intended to hide, by emphasizing its presence. Plant the *entire* boundary, or else plant them between two very positive limits, such as may be set by a tea-house or summer house at one extreme, and an arbor or perhaps the corner of a garage or stable at the other. This makes their beginning and ending reasonable instead of arbitrary, and furnishes an excuse for both.

Considered in the light of their very positive individuality, evergreens are manifestly the last material in the world which could be expected to unite a building with the ground, softening its architectural rigidity and making it a part of the landscape. Yet the smaller kinds are more often used—or misused—for just this purpose than for almost any other.

This is a handling of both building and plants that is to be



There are seven or eight varieties of evergreens in this small boundary planting. It fills up the space all right, but is about as artistic as the mixed crowds in a packed train. Try to decide on a single evergreen for such combinations

utterly condemned as false. In the first place, it interferes, eventually if not immediately, with the function of the windows, which is to admit light and air and permit the building's tenants to see abroad. Then it introduces still more angular and severe lines, of a new and aggressive sort, to the building's exterior; and it forces the plants into a position that is unnatural to them—hence dishonest.

Do not be persuaded, under any circumstances, to group evergreens, either broad-leaved or coniferous, around and against a building's foundations. Forget that it has been, or is being, done; or that, in certain instances, the effect seems to be good. Such effect is only seeming—for evergreens do not *belong* in such a location, therefore they *cannot* produce anything actually good and artistically worthy when so located.

Novelty, remember, is not beauty. "Beauty is truth, . . ." That is all we know on earth and all we need to know, literally. For this sums up in a single phrase all the formulas for accomplishing whatever we may wish to accomplish, in whatever field

(Continued on page 111)



Thuja occidentalis, arborvitæ, may be used as a hedge or planted in groups for landscape effect. This is the case of a screen that is interesting in itself



The peculiarity of the Colorado blue spruce is only emphasized when thrust among other evergreens. The group planting of this tree is beautiful rather than startling

Late Planting and Care of the Vegetable Garden

SUCCESSFUL METHODS IN CARING FOR GARDEN CROPS DURING THE SUMMER MONTHS—WHAT VARIETIES TO SOW FOR FALL AND WINTER CONSUMPTION

IF there were some way in which the enthusiasm for planting of the average home gardener could be divided up so that part of it might be used in late summer, instead of having it all exhausted during the first spring months, the garden would be very greatly the gainer thereby. But in the average case, when the cucumbers, melons, lima beans, etc., have been put in, and the eggplants and peppers have been set out, the gardener puts up his reel and line and his seed drill with a sigh of relief, and compliments himself with the assumption that it is all over for another year with the exception of plantings of such things as radishes and lettuce.

That is the course usually pursued, and the result is that in the average garden one generally beholds along in July, when the dry spells are beginning to strike us with their inevitable accompaniment of bugs and troubles of one sort and another, rows and whole patches of desirable and valuable space, the original occupants of which have gone by, are left empty or are full of pods or fruits so old and tough that they can never be used. As space is limited in the average home garden, such a condition is first of all a waste of room which should be devoted to some useful purpose; more than that, as such spots quickly become neglected, it frequently happens that the weeds there are overlooked and allowed to go to seed before they are noticed, and in any case the overgrown or overmatured vegetables are drawing heavily upon the plant food in the soil, which, if it is not used to grow something useful, should at least be saved until wanted at another time.

In the garden that is carefully planned and executed, however, every space that is planted and set out first to a crop that will mature and ripen before the season is over, will yield a second and in some cases even a third one in the late summer and fall. In many instances, in fact, two crops are growing on the same ground at the same time by the use of "interplanting" and "companion planting," which some gardeners make use of in order that there may not be even temporarily ground that is not fully occupied.

The fact that there are some vegetables which will mature quickly enough and which will start off well in hot weather, and that others will with slight protection go through the winter safely, gives the gardener an opportunity for planting in three distinct groups during July and August. The first is vegetables for late fall use and to keep through the winter. The second is crops to start now and to winter over for early results in the spring, and the third, which is not so commonly utilized but which is just as important, is the opportunity which the use of plants gives the gardener for maintaining or even for increasing the fertility of his soil—or, in the case of the small general place, making the garden and any unoccupied ground there may be contribute to the fall and winter supply of materials for the horse, cow or chickens.



BY F. F. ROCKWELL

Photographs by R. S. Lemmon and Others

There is a number of things which should be taken into consideration in making plans for these late plantings, because the conditions are in many respects very different from those that obtain in the spring. In the latter case the danger is that the ground may be too wet and cause the seed to rot; on the other hand, the danger in late planting is that it may be so dry and so hot as to make germination impossible. In the spring it is well to get the ground plowed in advance of planting in order that the soil may have a chance

to become warmed up and dried out a little on the surface; with the late plantings, on the other hand, it is usually best to plant just as soon after plowing and

harrowing as can possibly be done, giving the newly-sown seed the benefit of the moist soil turned up by the plow from the lower depths of the soil.

Unless one has to encounter a spell of wet weather, which is not likely at this time of the year, the seeds should be planted deeper than the same varieties if they are put in in the spring. In regard to this, there is no definite rule, but twice as deep as the planting in the earlier season will in most instances be not too much.

Perhaps the most important pointer in getting good germinations from late sowings of seeds is to see that they are properly firmed into the soil. The great importance of this simple precaution is not generally recognized. In many instances it may mean the difference between a poor, straggling "stand," or even none at all, and good full rows. Large seeds, such as beans or peas, may be firmed into the bottom of the row, before covering, with the sole of the foot. Smaller things, such as turnips or radish, may be firmed in the drill before covering, if planted by hand, with the back of a narrow-bladed hoe or by running the wheelbarrow wheel, if it is sufficiently wide, along the row. When using the seed drill with only a very small quantity of seed, a small stone or something of the kind can be used as a weight so that the earth will be packed down over the drill more compactly, or the whole patch when planted may be gone over with the garden roller. Taking this trouble to get the earth up tight against the seeds and covering them up on all sides is done not only to insure a quicker and surer germination, by having whatever moisture is available brought into direct contact with the seeds, but also to insure the life and growth of the plants after germination, because if the tiny embryo root issues forth into a miniature empty space full of hot, dry air, its fate is soon settled.

In setting plants the same precaution of getting them absolutely firm into the soil should also be taken. Plants set out in wet, cloudy weather in the spring will live if simply thrown on the surface of the soil (I cut two nice heads of lettuce yesterday which had had no further care than to be dumped out by chance from a flat last spring when we were setting out cabbages and

left there on the ground), but in the hot, dry weather of August it is often necessary to take every precaution in order to secure success in either transplanting or setting out plants. In the first place, see to it that the large outer leaves are cut back about one-half, and if the roots happen to be long and straggly, cut these back when it is necessary, in order to get them into such shape that they will not be crowded and jammed together when setting out. Wet the soil thoroughly where the plants that are to be transplanted are growing, some hours before you want to take them up, as dry earth will crumble away from the little seedling rootlets and leave them without protection from sun and drying air. If the soil is so dry that it is necessary to use water, pour about a half a pint or a pint in the bottom of each hole where the plant is to be set before planting. Do not waste your time and strength by setting out a row and then going over it and spilling a little water around on the surface. In dry weather, besides making the plants as firm in the soil as possible in setting them out, it always pays to take the additional insurance of going back over the row and pressing with the balls of the feet on either side of the newly-set plants, bearing down with all one's weight. In case it is dry, hot weather with a hot sun the plants will be very greatly benefited if they can be shaded a day or two after setting out. This is done readily where only a few dozen plants are being put out by taking a half sheet of newspaper and placing it over each plant, in the form of a tent, holding it down with a little earth or a couple of small stones. One other thing to keep in mind in connection with late planting is that any delay which is likely to occur is very much more likely to be a serious disadvantage than with early planting. Vegetables which are planted as much as two weeks apart in the spring may be within a few days of each other in maturing, but a delay of two weeks in getting in a last sowing of beans or the fall crop of cabbage or cauliflower may mean the difference between success and absolute failure. For the last plantings of vegetables early varieties are generally used, as these mature more quickly and there is, of course, more or less chance of being caught by frost.

The following vegetables may be planted after you receive this month's issue of *HOUSE & GARDEN*, with the reasonable expectancy that in an average season they will mature—that is, of course, assuming that the ground is in

a good condition, sufficiently moist to give things a prompt start, and containing enough plant food in some forms which are immediately available—food that is either the remnant of the spring's top dressing of manure, which by this time should be in the finest possible condition, or by a second application of some good garden fertilizer containing a fair percentage—three or four—of available nitrogen. In any case, a quick start and strong, early growth may be assured by a light top dressing of nitrate of soda as soon as the seedlings get well started, or a week or so after the plants have been set.

One of the most ordinarily neglected of the fall crops is beans. There is no time to lose if you would have a supply of these for the end of your garden season this year. The earliest varieties may be planted up to as late as the first of August in the vicinity of New York, but it is better to get them in before that date if you can do so. If the soil is dry, plant three or four inches deep, a quick way being to mark out your rows eighteen to twenty inches apart, go over each marked line with the plow attachment

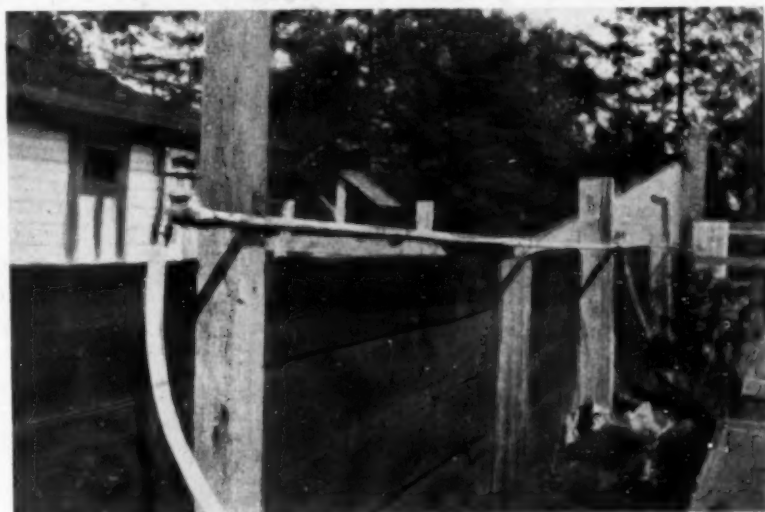
for furrowing and then drill them in thinly with the regular seed drill in the bottom of this trench. This will get them down into nice fresh, moist earth if there is any to be found anywhere, and if you will then use your wheel hoe with the single wheel and the plows arranged for covering you can give the seeds an extra firming into the soil and cover them at the depth desired at the same operation. Stringless Green Pod, Bountiful, Full Measure (green) and Brittle Wax and Rust Proof Golden (yellow) are good sorts for late planting. The two former, put in as late as August 15th, will frequently come through in time,

but one is taking the risk, of course, of a hard, early frost.

Beets also may be planted as late as the first part of August, and unless there is indication that there will be sufficient left over from the second or third spring planting, you should sow a few

rows now in order to be sure of having some through the winter. They will reach a good size before killing weather, as they continue to grow until quite late and will be much better in quality than overgrown roots from an early planting. They should be put in half an inch to an inch deep, according to the condition of the soil, and if only a few are to be put in and sown by hand it will gain a few days' time to soak the seeds a day or so

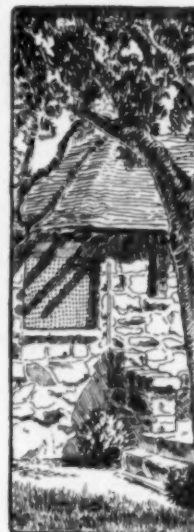
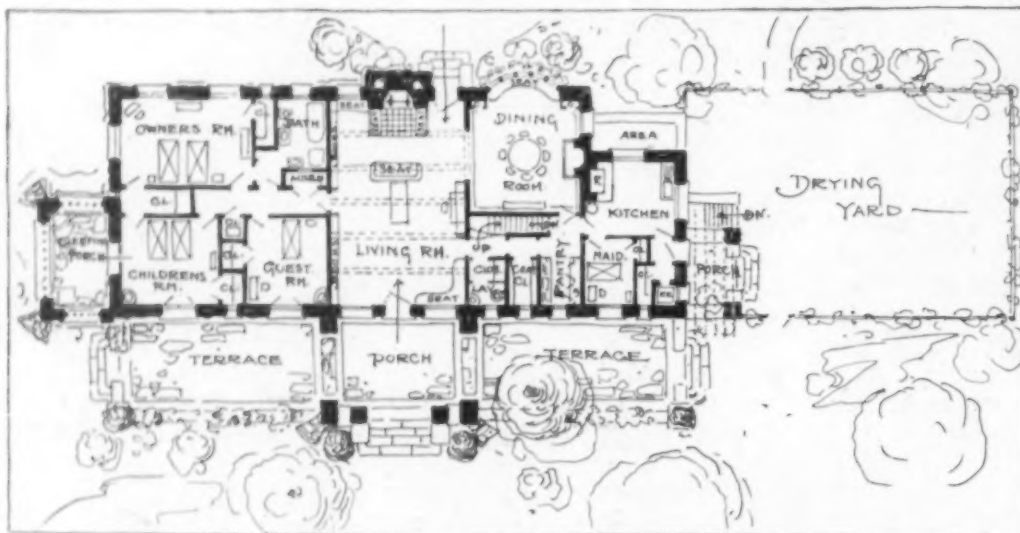
(Continued on page 118)



A metal pipe line fitted at intervals for hose connections and supported on posts is convenient for watering the small garden



In setting out the late plantings of vegetables be careful to firm them well in the soil, thus conserving the moisture as much as possible



RESIDENCE OF MR. M. A. SELSOR

This house, with its field stone walls, its long low roof, and its living quarters all on the ground floor, has endeavored to satisfy all the demands for comfortable, informal summer living. The living-room running right through the center of the house has no side windows, but may be opened at either end, permitting the breezes to sweep through its extent, and is cool and shady. The sleeping quarters occupy one end of the plan. Their capacity is increased by a commodious sleeping porch. The kitchen and its subsidiary rooms occupy the other extreme and join a drying yard surrounded by lattice



GREENWICH, CT.

Arthur Ware
Architect

The stone work is not finished off and the wide interstices between the rough stones give color to the surface. The long porch and terrace paved in brick is really an integral part of the living quarters, since life in the open air is one of the requirements that the architect had to provide for. One end of the terrace is built around an apple tree which sheds an agreeable shade over it. Provision has been made to allow the roots proper moisture and sustenance.

The roof projects over this terrace, making a vestibule porch of generous proportions protecting the entrance from direct sunlight



Set in an old orchard the house appears to have grown coincidentally with the trees, and so happy is its treatment that the building creates a feeling of being part of the landscape



Mr. Selsor's house shows a very happy use of shingles laid to imitate thatch. The fitness of his home to its site is shown very well here where the outcroppings of native rock in the foreground appear almost to be roots of the building extending into the ground



Field stone is the logical medium for the small house in many locations and it is seldom used to better advantage than here. Many of the stones gathered nearby show a fine sense for color effect in their various shades, which add an agreeable warmth to the surface



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

A Chair of Old English Inspiration

AN interesting form of modern furniture that probably receives its inspiration from that made years ago in English cottages is gradually finding favor here in America. It is built on simple lines, reproducing chairs that stood in such cottages as Anne Hathaway's, and made of oak and similar hard woods. The legs are slightly turned and the wood finished generally in oil. The interesting effect of rush seats is taken advantage of in many of these chairs, and the combination with the dark natural oak and the lighter seat is rather attractive. Some of these chairs are fitted with a back panel of caning. Since the chairs are so simply made and built on such straightforward principles, they are enduring and well fitted for all-the-year-round use, as well as a place in the country cottage.

Practical Hints on Renovating

TAKING care of the floors is one of the most important tasks of the household when it comes to renovating. Many a modern house has the hardwood floor which must be kept free from dust and in a spotless condition if we wish it to show off the rugs to any advantage. The carpeted floors, such as must necessarily be used in the old-time homes that have not had the floors renewed, come under the head of carpet cleaning; but plain wood floors, parquet floors, oilcloth or linoleum, must one and all have individual care and attention.

Water should never be put on a hardwood floor; this is very important. The floor should first be brushed clean with a hair broom or straw broom covered with a soft cloth, cotton flannel preferred. It should then be wiped with a cloth that has been dampened in crude oil and turpentine, equal parts. This should be rubbed well into the floor. Kerosene also may be used, but this will leave an odor for an hour or so. A great many patent preparations for renovating the hardwood floor are also to be had. Most any one of these is good; it is the rubbing with an oil that brings the desired effect.

In cleaning oilcloth it is wise not to use too much water, as it will drain through

and rot the cloth beneath it. Use a flannel cloth well wrung out, and wipe the floor until clean. Sal-soda will aid greatly in this. Wipe the white spots caused by spilling any hot liquid on the oilcloth with a few drops of spirits of camphor.

Window Shades

WHY not make the windows in a country house bright from without as well as from within? In a church we admire the glass in daylight and at night those without are charmed by the beauty of color and subject. So it ought to be with many of our home windows. In Europe one sees window shades depicting scenes of various kinds, and in this country years ago these pictorial window shades were much used. It is possible to use them advantageously again, especially since period furnishing forms such an important part in decorating.

Instead of going to a shop and buying

the ordinary green, yellow or white shades, buy several yards of glazed chintz or plain chintz, cut it the desired width and length, stitch it and then tack it on the roller. If you are not apt at this particular branch of decoration, you can have it done at the shop where you purchase the material. How attractive a room would look with shades made of a bright-colored chintz, with the sunlight bringing out every color. From without the effect would be equally charming, quite enlivening the bare side of a house with bits of bright hue. I have seen this done several times lately with excellent results. Picture chintz in the soft grays of the old French wall-papers will make delightful shades. From Italy comes a shade in vivid greens depicting a mountain scene with a border of yellow. This shade hung in a room with side curtains of brown, yellow walls and white woodwork is quite an addition and a relief from the plain shade that makes the window look more or less like a void.

The Fireplace in Summer

WE all acknowledge that the fireplace is the hospitable center of a room in winter, spring and autumn, but in the warm days of summer it must give other parts their chance. In most houses one finds the fireplace for the time being forgotten and with little thought or care it has been hidden from view. Don't hang a piece of material in front of the opening. That is at once crude and ugly. Don't stick a piece of furniture there, either, for that seems much out of place and, then, why do it in summer when one would not think of doing it in winter when the open fire is so nobly doing its duty?

Here are several suggestions that may help to keep the fireplace an attractive open spot and not one hidden by some unsightly article. Pile birch logs in your open fireplace and stick in branches of pine with the cones that are so suggestive of the delicious forests where one goes to get the true breath of nature. Let this remain until a new lot is needed to freshen up with, but don't hide the opening. So shall your fireplace with its filling of birch and pine be a gentle reminder of the joy it gives you in the cold days of winter.



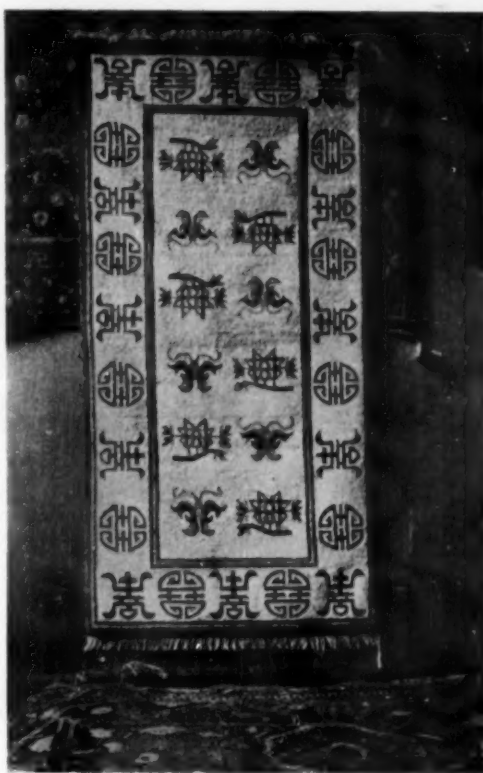
A form of cottage furniture inspired by old English ideas that is durable and attractive

Blue and White Furnishings

MUCH as it has been exploited and in a way done to death, it is really hard to find a more satisfactory combination of colors than blue and white for the furnishings of the summer cottage, the piazza or even certain rooms that are in use all the year round. New ideas in furnishings of this sort are being brought out constantly by importers and manufacturers, and it is a scheme so comparatively inexpensive that one need have no hesitation on the chance of its growing tiresome with long and enforced association.

The blue and white Japanese toweling that has been put to so many different decorative uses is now being made up into lamp shades with most satisfactory results. A large wire frame covered with the fabric makes a charming shade for a blue and white porcelain lamp, and these shades can be bought ready for use, or it ought not to be a very difficult matter to make them oneself. Blue and white rugs, too, are being shown at reasonable prices and in greater variety just now than ever before. For the piazza there are Chinese mats made of grass, warranted rain and sun proof, with checked or plain centers and blue and white borders. These come in sizes up to nine by twelve feet.

Cotton rugs in blue and white are distinctively Japanese in design, and can be had in an even greater variety of sizes, all the way from little two by four foot mats up to the twelve by fifteen foot size, while the wool rugs in this combination of colors are made in Tien-Tsin, China, and are decorated with Chinese designs quite suggestive of the enormously expensive Chinese rugs. Both the cotton and wool rugs are washable, and the latter are wonderfully artistic in design and



Velvety rugs of soft, creamy tints are obtainable, their designs being in blue

need not be limited to the uses of the summer cottage alone.

Of course for summer and outdoor use furniture of wicker or willow seems most suitable with these imported rugs and fabrics, and the new shapes in the willow pieces from China and Japan go to prove that the Oriental manufacturers are keeping up well with the procession of new ideas. Where the assortment was formerly limited to the familiar hour-glass chair with perhaps an odd table or two, there are now tabourets of willow in

various sizes, foot-stools, tea-tables that are light in weight and serviceable in shape, and even a Chinese Morris chair that looks like a very distant relative of its English prototype, but is at least thoroughly comfortable as a lounging chair. Among the newer pieces this season are tables and small stands made of strips of bamboo with closely woven tops. The bamboo is treated in such a way that the strips are flat and quite thin and they are interlaced to form substantial and effective looking pieces of furniture.

Door Porters

A USEFUL addition to the furnishings of the hall in a country house where it is not always necessary to be barred and locked in, is a door porter, that serves the purpose of holding open the front door and at the same time imparts an air of hospitality. It is, no doubt, a distinguished version of the worthy brick covered with an old piece of carpet that propped open the doors of preceding generations, and while rather more ornamental than the brick, it does its duty in exactly the same way. It is necessary for it to be quite heavy as a matter of course. The less expensive door porters are made of cast iron in different ornamental designs and the weight of the iron is sufficient to resist any amount of force from the door, but the more elaborate varieties, which are made of brass, must be heavily weighted at the bottom in order to be of service.

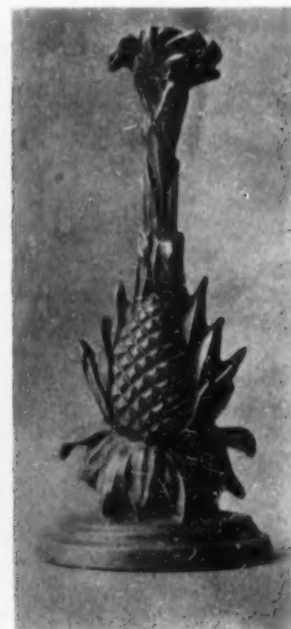
They are all made so that there is a definite, loop-shaped handle at the top, or the design is such that there is a knob or excrescence of some sort by which it is easily picked up and moved about. The two shown in the illustrations are of brass, the plain one being of polished brass, the other a dull finish.



The porter is a convenient means of preventing door slamming



An interesting scheme for summer cottage use, combining hour-glass chairs, soft blue and white rug, and a new form of tabouret. Lamp shade and pillows are in blue and white toweling, while the lamp is a gray pottery with blue figures



An attractive dull finished porter of pineapple design



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 August Garden

RUN to seed and overrun with weeds—this is all too probably the state of the garden before the last month of summer is even well on its way. And even good care cannot prevent the first of these conditions, except to a certain degree. For things must go to seed, and we must let them—unless we prefer to buy fresh seed each spring, and have no special favorites which we wish to propagate. I always find, however, that some thing produces, once during the summer at least, a flower enough unlike its fellows to make it worth while marking that stalk and saving seed from it, if from none of the others, just for the sake of gratifying curiosity to the extent of seeing whether the "sport" will "fix" itself, and actually reproduce a succeeding generation. Of course it does not, probably, more often than it does—but it is fun watching, and wondering, and perhaps sometimes a valuable accession is made. In this way a number of new varieties have been developed—mere freaks in their inception.

But generally "gone to seed" the garden need not be, even if this is the month of fruition. Pick off flower heads as fast as their petals drop, and keep up the bloom throughout August and even September by thus forcing the plants to try and try again to bear fruit. That is what they bear flowers for, of course; and they are very persistent, some of them, actually blossoming themselves out of existence in their efforts. If they seem to be failing, apply fertilizer in the shape of liquid manure or bone meal. The latter especially makes for more flowers.

The Month's Planting Work

BY the middle of August evergreens are ready to be moved or to be brought from the nursery and planted. And this is the time usually preferred by experts for handling them, for now their growth for the year is over and they feel the loss of rootlets less than at any other time. Planted thus early, too, they have ample time to take hold before

winter is upon them, and with the arrival of another spring they are ready to go to growing again without any loss to speak of.

Never buy evergreens that do not come with an earth ball sewed in burlap about their roots. I do not know that there is a dealer anywhere in the country who would think of sending them without this; but there may be, so I speak of it. Or there may be department store "bargain sales," just as there are sales of roses and other plants during the sum-



Care in the picking of bloom will help keep the garden looking fresh and attractive even in August

mer, where stock minus the earth ball may be offered. Money is thrown away that is invested in such as this.

When the plants arrive, each sitting tight in its lump of native earth, do not open the burlap casings until the holes are ready to receive the roots, and water is at hand to pour in upon them when they are placed and the holes partly filled in. Remember that you cannot be too careful in handling evergreens, lest the

rootlets dry out—and drying out is fatal almost without exception. The resin in the plant fiber hardens when the roots are exposed to the air and thus dried, and cannot be softened up again—and of course unless these tiny roots are soft and open, the plant must starve. Exercise every precaution, therefore, to prevent drying, for this is one of the instances where prevention must be used, there being no cure.

Many times the earth wall will have become loosened through the jolts and jars of shipping, or because the earth originally was not as moist as it ought to have been when the plants were dug—or perhaps was too light and loose a soil. When this has occurred it is usually well to soak the roots through the burlap, watering until the earth is again united into a sticky mass that will cling together, provided it is carefully handled. It will not, of course, unite into as ideal a lump as might be desired, but any lump at all is better than having the roots left quite exposed, as they must be if the earth falls away completely.

With the hole dug a little broader and just as deep as the earth ball in which the roots are resting, move the plant close up beside it before untying the burlap, and decide upon the direction it shall face; that is, which side shall be turned to the north or south or in any given direction. Turn it about until it is exactly in position; then open the burlap carefully, lift the plant on this, using it as a hammock by holding it at the corners—it takes two or three men to do this properly, even though the plant is not very heavy—and, keeping the trunk upright and steady, carry it over the hole and lower it all together until within perhaps a half inch of the bottom of the hole. Then, at a given word, let go the burlap on one side and pull it quickly out from the other, as the earth ball finally comes to rest on the bottom of the excavation. This getting the burlap out is quite a trick, and requires a signal to which all respond *instantly*, so that it is literally whisked out as the tree comes down to its final resting place. Where it is accomplished just right, the earth ball will hardly be disturbed.



Garden Suggestions and Queries

The Vegetable Garden

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



Midsummer Activities

AUGUST may be termed the hinge month of the garden year. A good part of this year's garden, with its mistakes and achievements, lies behind, and yet with the things that are left we may still accomplish a great deal. On the other hand, thought for the garden that is to come next year, and which of course we are already planning to make a more successful one than we have yet succeeded in attaining, must be taken now.

The first resolution to make, then, is not to let the garden go by default, no matter how great may be the temptation to do so—for during the great heat, and the days or even weeks without a drop of rain, things begin to look pretty shabby, if they do not actually get so dry as to stop growing or even go backward. But do not let any of these things interfere with what you have set out to do. Keep the good work up, comforting yourself, if necessary, with the consoling thought that this is the hardest stretch in the season's garden work and that the fruits of your labor, with such delicious late things as eggplants, peppers for stuffing, cantaloupe, and lima beans, are in sight.

Guard Against Insect Pests

EVEN though you may have been fortunate enough to have escaped so far with little or no injury from the various garden insects and pests, do not let this good fortune lull you into a false sense of security, for they are likely to appear when least expected, and the only way to prevent the considerable damage which they are otherwise quite certain to do is to be ready to fight them immediately and to the finish. With every well selected garden equipment there should be a small compressed air sprayer, and this, with the various stock solutions or prepared ingredients, such as arsenate of lead, Paris green, Bordeaux mixture, soap, kerosene, tobacco dust, etc., should enable you speedily to get the better of most of the things which you are apt to encounter. Even though the bugs do catch you napping and ruin your crop of eggplants or

muskmelons, do not let them continue unmolested or you will rue it next year. Complete extermination is just as important under those conditions as though you had a crop to save, and sometimes it is made easier by the fact that stronger solutions or more strenuous methods than you otherwise would be able to use may be applied.

If you do not take the matter firmly in hand now you invite increased trouble for next season by reason of the greater numbers of insect eggs laid this year.



Proper cultivation and attention to watering are essential to the success of midsummer vegetables

Cultivation and Water

THE one thing which we reiterate more than any other in these columns, because in practice it has to be repeated more persistently than any other, is surface cultivation. And during the usual August dry spell this is more important than ever. Keep the surface stirred up, no matter how dry and dusty it may seem, for only by thus doing can you save the

precious moisture in the lower levels of the soil. Some things, such as celery and eggplant, simply must have an abundance of water if they are to do well, and even if you have no adequate system of irrigation, such as was described in last month's *HOUSE AND GARDEN*, much can be done by applying water with hose or with a watering can in the proper way: where the amount is limited, dig a shallow trench near the row, or with a dibble or hoe handle make several holes around the roots of the plant, in the case of such

things as eggplants or peppers, and toward evening fill these with water, giving all you possibly can spare, or even saturating the soil so that it will not readily absorb more. Then the following morning draw dry earth into the trench or fill up the holes, so that your dust mulch will be resumed in time to prevent the sun from drinking up part of the scant supply of the vitally necessary moisture.

A mistake which very frequently is made in the garden is to neglect patches of vegetables which have gone by or that have grown so abundantly as to get ahead of the demand for them from the kitchen. How very often one sees rows of lettuce or heads of cabbage which, having become too old to use, have been allowed to go to seed and remain unmolested for the bigger part or even all of the rest of the season. A vegetable that has "gone by" becomes a weed: it is occupying ground that should be used for something else, and it is robbing the soil of fertility which should be fed to or at least saved for another crop. A great deal of waste may occur in this way because plants during the flowering and fruiting stages draw more heavily upon the plant foods in the soil than during the

earlier stages of growth. Furthermore, crops which are allowed to ripen their seed, such as beans, will stop bearing much sooner than they would if the pods were all picked off clean. If you cannot use them all yourself, some neighbor will probably be glad to help you out, or the chickens are always glad to get them. Keep your vegetables gathered up clean, removing at once anything that has become too old or tough to use.



EDITORIAL



HOUSING REFORM IN THE COUNTRY

EUPHEMISTIC ideas of the country have for so long been accepted that most of us have become blind to the peculiar problems of the rural or suburban districts. The man who lives beyond the limits of the metropolis becomes sympathetically exercised over the tenement house evil of the great city, but is oblivious of the presence of similar abuses in his own neighborhood. When they affect him personally, of course he is aroused, but generally too late.

In these days of an awakening social conscience it is being realized that one's duty does not end at the boundaries of one's own property. There is a duty to the community that must be heeded. If the obligation is slighted, the individual suffers with the town. We refer to the housing abuses in the country. Everyone knows of districts in his section where conditions are little better than in the tenement of the great city. These ugly spots cannot be covered up by indifference. The ostrich attitude does not do away with the country slum. What is more, its rank growth partakes of the nature of the weeds; it spreads. In an address delivered by Mr. E. S. Forbes, of Boston, the matter and its import were clearly presented. Some of the salient features might well be brought out here, for the same spirit that has actuated the National Conference on City Planning will be found ready in the country if only the need is felt. The address from which we quote is illuminating. In speaking of the country slum tenement, Mr. Forbes says: "This type of dwelling is the joint production of the land shark, the shyster architect and the jerry builder, and nothing in the way of a tenement house could be worse except another of the same sort but higher. It is usually of the flimsiest construction, and after a few years the owner is likely to ask for an abatement of taxes because of its depreciation in value. It is a dangerous fire hazard, dreaded alike by the fire department and the owners of neighboring property. It is terribly destructive of real estate values, and the coming of one such building into a residence district will cut in two the selling price of the nearby properties. Within a month a building company appeared in one of the large suburban towns in the vicinity of Boston and announced that it proposed to put up fifty of these three-deckers. The people, rich and poor alike, could almost hear the crashing of property values and at once took steps to ward off the impending danger and to protect themselves against similar attacks in the future.

"This shows to what length carelessness and ignorance and unregulated greed will go in their predatory raids upon the welfare of the community. We should all agree that the exploitation of the tenant is a greater injustice than the destruction of property values, but there is no reason why either of these things should be permitted. Both are common in our suburban towns. We have heard much about the injury to the tenant, but not so much of the other side of the question.

"One of the serious results of the lack of building regulations is that no property owner, be he large or small, knows what is going to happen to him. The daily newspaper supplies illustrations of this. 'A citizen built a beautiful house within an area of 50,000 square feet of land—and presently found himself confronted by a garage. A gentleman expended \$17,000 on his place, as he called it—and by and by a fellow citizen built a row of seven one-story shacks on the opposite side of the street. A third citizen, whose property cost him \$50,000, awakened one morning to discover a Chinese laundry in the basement adjoining his own, and the selling price of his estate automatically reduced by that master stroke of Fate and an unscrupulous neighbor to \$13,000.' A policeman in a country town which I knew well, built himself

a comfortable house on a generous lot and adorned it with trees and shrubs to suit his taste. Along came a speculator who planted a flimsy firetrap of a three-decker within three feet of his lot line, cutting off his sunlight and robbing him of half the savings of his lifetime. These are the tragedies of the suburban towns, and they are certainly worthy of the attention of the National Housing Association. They do things better than this in Germany, as we all know. There you are not allowed to go on your way with no regard whatever for your neighbor. You may not kill him with an unsanitary and unhealthy house, if by chance he does not own his own home and has to rent one from you; or if he is so fortunate as to own his own place you cannot rob him of his property by building some unsightly or undesirable structure in his immediate vicinity. Why should these things be permitted in America? They need not and ought not to be. At the same time that the protection of the law is thrown around the tenant, securing him against oppression and wrong on the part of the owner of his dwelling, something should be done to preserve the beauty and attractiveness of our towns and cities and to afford a reasonable safeguard for the property values of the homes of their citizens.

"The only difference between the evil housing conditions of the small village of a few hundred people and those of the city of as many thousand population is in degree not in kind. There is only one problem in both village and city. It was perfectly natural when we woke up to the evils of bad housing that we should at first direct attention to the tenement houses of the large cities. The evils were concentrated there, we could see the outrages practised upon tenants and the dangers which threatened the rest of the community, and we said these iniquities must go. But now a clearer and fuller knowledge has shown us that bad housing is quite as much a matter of the one and the two-family house as it is of the dwelling which shelters a much larger number of families, and reform is just as necessary in the one case as in the other. It makes no difference what kind of a house a man lives in, he has a moral right to fresh air and sunlight, to proper sanitary conveniences, to privacy, to protection against fire and to freedom from overcrowding because these things are necessary for health and decent living. If the speculative builder will not recognize this fundamental right, or if an owner is so ignorant that he does not know enough to satisfy these moderate requirements then they should be enforced by law, and this whether the dwelling in question is designed for one family or two or twenty.

"I am convinced the only way in which owners, occupants and community can be assured of adequate protection against bad living conditions is by bringing every kind of dwelling within the scope of the law. A tenement house law is good as a step towards something better, but the general situation demands not a tenement house, but a well enforced housing law. Under such a law it will probably be necessary to classify dwelling houses according to the number of families occupying them, but this offers no great difficulty. The great achievement will be the wiping out of the troublesome distinction between tenement houses and private residences and the bringing of them all under one general housing law. The City of Columbus has already done this. In several of the towns of Massachusetts groups are at work upon a similar law. It is bound to come, nothing can stop it, because it is in the interests of the health, morals and happiness of all the people."

These questions which Mr. Forbes discusses should merit your attention on the ground of your duty to society and for the protection of your own home. Will you act in your locality?

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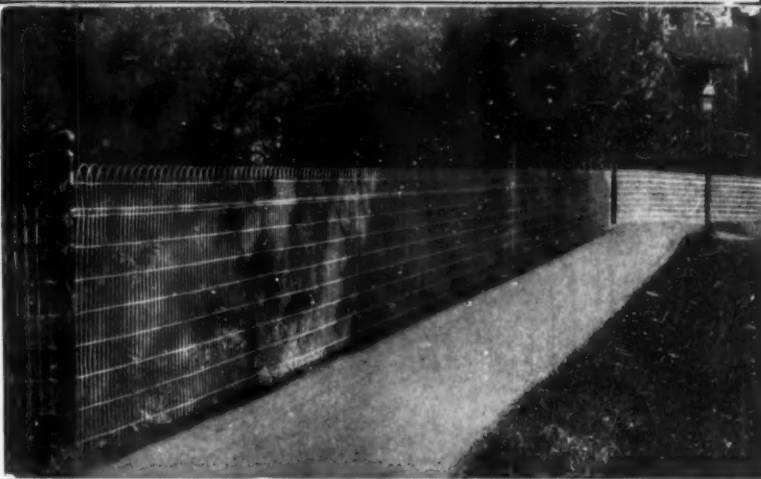
My nurseries contain the best of the German, Japanese, English and Spanish Irises; many of them are of my own hybridizing and cannot be obtained elsewhere. My Peonies have been selected from the finest collections in Europe, and experts say they are not equaled by any other growers in the world. If you want to know more about my hardy perennials, write today for

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PHILADELPHIA, PA.

Consider the Lilies

(Continued from page 83)

sun and is in every way satisfactory. Three to four feet high.

Speciosum (Lancilolium)—Of this most excellent and satisfactory class there are a number of varieties, all of which are exceptionally good. They are three to four feet high, and bloom rather later than the other sorts, being in flower for most of the time practically from August until frost; *album*—pure white; *roseum*—pink, and *rubrum*—white, heavily suffused with crimson, are three old but still popular favorites. *Melpomene*, a large and very deep, heavily-spotted crimson, and *magnificum*, a new sort with the most intense coloring of any of the *speciosums*, are not so well known, but should be included in every collection.

Tigrinum—Of the old popular tiger lilies, a newer sort, *Tigrinum splendens*, is a great improvement over the old variety, and should be used. These are usually only a dollar a dozen. It is very tall, often reaching a height of six feet, with a striking black stem. Blooms in August.

Elegans—This is another fine class, of which there are several excellent varieties, all at very reasonable prices. Incomparable has the richest color to be found anywhere among lilies. *E. erectum* is a dwarf-growing sort, attaining usually a height of only one and a half feet and blooming quite early—June and the first part of July. Color, orange spotted with maroon.

Martagon is purplish red in color, blooming early in July.

Croceum has extra large flowers, golden in color, with a faint tint of scarlet. Blooms in late July and August. Four to five feet in height.

Excelsum (testaceum) has beautiful flowers with recurved petals of an unusual buff color. It is exceptionally fragrant. Blooms in July.

Longiflorum—Snow white and very fragrant. Has flowers six to eight inches long, trumpet-shaped, like those of the Easter lily. Blooms early—June to July—and grows two to three feet high. These also are very reasonable in price, being usually not over one dollar a dozen.

Philadelphicum and *Canadense* are both native lilies, the first growing about two feet high with two or three flowers of orange-red with dark spots, held erect, blooming from June until August. The latter is bell-shaped, with flowers of a bright yellow, thickly spotted with black. It is exceptionally graceful in habit, and under favorable conditions attains a height of seven or eight feet, with sometimes as many as twenty or twenty-five flowers to a stalk. Both of these kinds are exceptionally good for colonizing in shady places or among shrubbery. They like fairly moist soil.

The Right Use of Evergreens

(Continued from page 99)

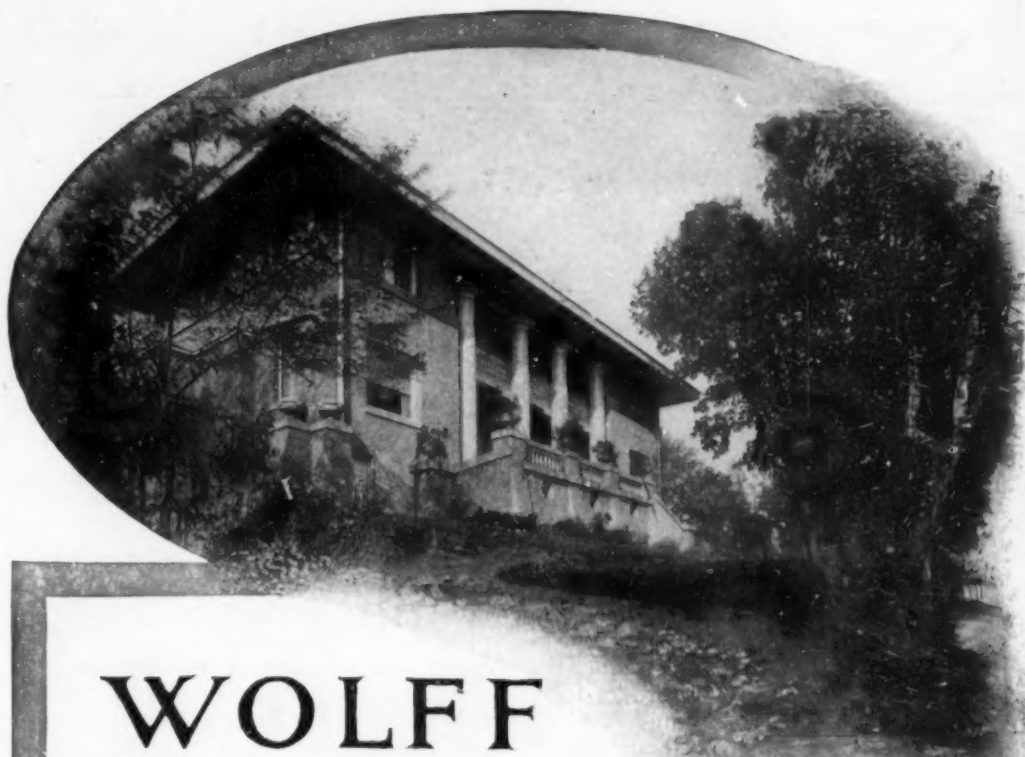
of activity we may be laboring. If we fail to achieve beauty, it is simply because we have not recognized—or have not been willing to be guided by—truth, so keen has been the thirst for novelty. Beware of novelty always, therefore; and especially when it comes in the form of as permanent a thing as a tree or shrub! Among flowers it may be endured and even adopted sometimes, but nowhere else in the garden. Stick to the truth. Plant rhododendrons in places that rhododendrons would choose; that is, within the at least partial shade of trees, under their drip—never on an open lawn, unshielded and unsheltered, or against house walls where they sit painfully upright, in conscious and unlovely stiffness. Plant arborvitæ or cedars as thickly as you wish in any location save this same unhappy and unnatural one, and stick to whichever kind you choose, remembering always that they grow in time to fifty or sixty feet in height. Dispense with the fancy *Retinosporas* and the *Biotas* altogether; or else select one or another that suits your particular requirements, and use it and no other.

In certain formal schemes, the tiny *Biota orientalis aurea nana* is undoubtedly a delightful sunshiny little exclamation point, cheerful and happy and optimistic in every line and branch. But it is quite as unadaptable as all its lordly tribe, and should never be mingled with other varieties.

Plant the pine and hemlock and fir just as you would any other forest denizen—never very close to your dwelling or to any building, yet within sociable proximity—always bearing in mind their future state of rugged majesty, not so very far distant, even though they may be only very little chaps when they are set out. Generally speaking, the white pine—*Pinus strobus*—is perhaps the most desirable of evergreen trees for average situations. Its soft and delicate texture distinguishes it with a peculiarly exquisite beauty, and to my mind it is quite the most lovely of all the evergreens in the world.

For very exposed situations, however, Nordmann's fir—*Abies Nordmanniana*—is probably the best choice that one can make, and this, too, is a splendid tree. The Colorado blue spruce—*Abies concolor*—used in a group where a group is possible, is quite another thing from the isolated freak specimens commonly planted. This tree has a legitimate place and a very real beauty when legitimately used, but we have had it so continually offered as a specimen of abnormal color that it has come to be regarded hardly as a tree at all, in the ordinary normal sense. To me personally, its color peculiarity is rather less of an advantage than otherwise, except as it is used in groups of itself, or else quite alone without other evergreens about it.

The Norway spruce is another useful



E. Hill Turnock - Architect

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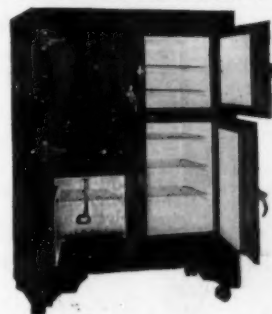
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and delightful tree—*Picea excelsa*—and is one which grows rapidly, moreover, and is willing to put up with a variety of soils and with almost all kinds of climate—which is more than can be said of most of this class. Then there is our own hemlock—*Tsuga Canadensis*—which, either for hedge or as a tree is without a peer, its graceful, waving wand-like branches draping a fine strength and ruggedness. The Austrian pine—*Pinus Austriacus*—much used because of its stout and rapid growth, requires distance if it is to be most effective, for it is altogether too coarse for real beauty, unless forming a part of a considerable landscape. It is a splendid windbreak, however, when planted in numbers, with the branches of each in close contact with its neighbors'.

Long ago it was the fashion to plant arborvitæ—*Thuja occidentalis*—much more frequently than it is planted to-day; and who does not remember some old places, somewhere, with a prim arborvitæ hedge, or a long straight row of the pointed, slim, sentinel-like trees, outlining a driveway, perhaps? It is of all evergreen trees the one most suited to a very small place—indeed, it is almost the only one suited to such a place. And the density and persistence of its growth make it ideal both for screen and windbreak planting anywhere. But combinations of it and hemlock, for example—or spruce, or any of the large-growing trees must be avoided. Keep it by itself, just as everything else is to be kept by itself. And use it as a tree always, and never as a shrub.

This really sums up the whole matter, whatever is to be planted; even the low-growing, small forms, not larger than shrubs though they may be, must never be used as shrubs are used. Shrubs are to be mixed together and intermingled—indeed, they must be planted in this way if they are to produce the best effect; but evergreens, first, last and all the time, are not "good mixers."



The Motor Emigrants

(Continued from page 80)

erty?" asked Spence, belligerently and suddenly, turning to the salesman.

"Sixteen thousand dollars will buy it, I think," was the quiet answer. "Mr. Elkins, the owner, is holding it at seventeen thousand, but I know he wants to sell it—I think it could be engineered at the lower figure."

"Why does he want to sell it?" demanded Mr. Spence. "It looks all right."

"Oh, it is all right. Mr. Elkins just fell into an inheritance of some size and wants to get a bigger place. He's talking of one a mile further on, with twenty acres. He loves to farm, for the fun of it, and he says he has been so successful here he wants to try it on a bigger scale. I'll in-

roduce you to him if you like and he will tell you all about it."

This was unusual—Mr. Spence had found that agents didn't want their customers to meet the owners of many of the places they had tried to sell to him. But the thought of the car suddenly occurred to him.

"Well," he said, "this is a nice place, and I'd buy it in a minute at that price if it was within walking distance of the station."

"No you wouldn't," answered Mr. Swift, positively. "If it was within walking distance of the station, it would bring from thirty-five to forty-five thousand dollars. Have you been able to find any such place as this anywhere, in any suburb, at any such price as this, if it was within walking distance of the station?"

"That's a fact—I haven't," admitted Spence, candidly. "But the car—I can't 'go' a car. They are undemocratic and a bother and I can't afford it."

"Well, perhaps you can't, Mr. Spence," answered Swift. "I can't tell what a man can and cannot afford. But if you cannot afford a car, you cannot afford a place like this. If you could afford one within walking distance of the station, you would not need a car. By investing one thousand dollars in a car, you save about twenty thousand dollars on the price of the place. If I could move this place two miles, I could treble its price. By having a car, you are within five minutes of the station—though you don't walk. A car may be undemocratic—I don't know. But you can't use a place like this without a windmill for water, without a lighting plant for light, and without a bathroom and a stove and a telephone, and I can't honestly see the difference between having these modern conveniences, which make your life comfortable and worth while, and that other modern convenience which eats up distance and brings the country and a fine country place within the reach of the man of moderate means."

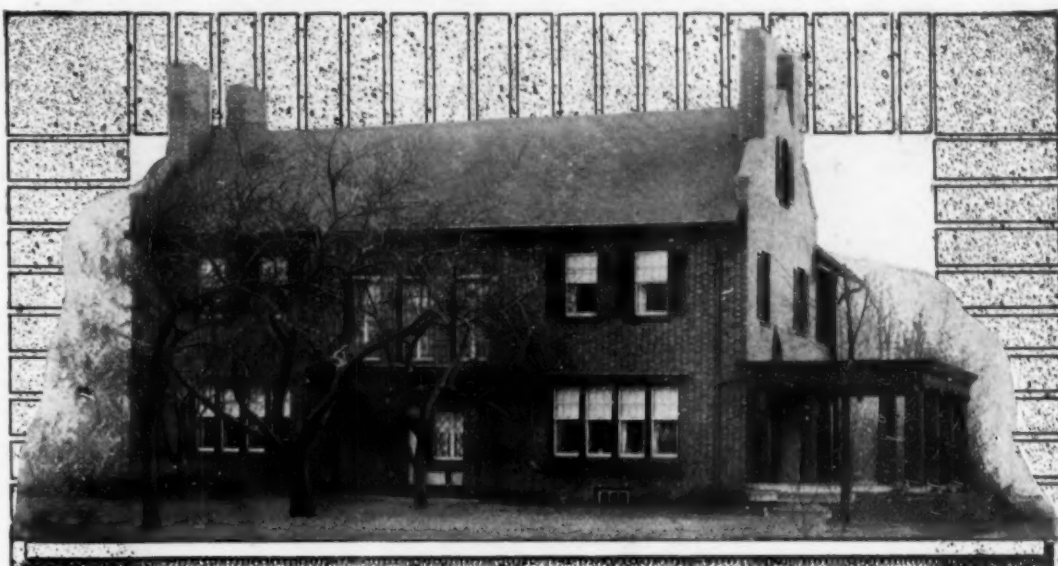
"Well, if you put it that way—no, I'm blessed if I can stand a car. They are too expensive, I tell you!"

Mr. Spence was obstinate. Yet—that ground, that orchard, those hens, that garden, the swing, the wide open spaces, the gardens—

"How much do you want for your present place, Mr. Spence?" asked the salesman, suddenly.

"I paid twenty thousand dollars," was the reply. "I'd like to get out whole."

"Well, supposing you did—you'd pay sixteen thousand for this, buy a car and still have a surplus. You'd be as close to the station in point of time as you are now, almost as close to the city, your taxes would be much less, your living would be infinitely less, on account of the garden, and see—just look about you and see what you'd get here for less money than you now have invested in your present home. The income from your left-over money would much more than pay for the slight increase in your commutation."



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To back this assertion with tangible proof, we have just issued a booklet, "Suggestions for Small Hy-tex Homes," giving pictures and floor plans of 26 brick houses of really moderate cost. It is full of suggestions to home-builders and shows the adaptability of Hy-tex to comparatively small houses. Sent to any address on receipt of four cents in stamps to cover mailing charges. Send for your copy today.

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"Well, 'all that' isn't as bad as you think it is, perhaps," suggested Mr. Swift. "Let's get a few figures to working and see."

Mr. Swift busied himself with pencil and paper. Mr. Spence sat thoughtfully regarding him, the nervous puffs of cigar smoke trailing lazily out from the porch across the lawn showing his state of mind.

"There," announced Mr. Swift, passing over the card. "It doesn't look so terrifying when you get it down in black and white."

Mr. Spence took the card, and this is what he saw:

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"You see," explained Mr. Swift, "if you buy this place you have to buy an automobile. It's just as much a part of the investment as the place itself. So I haven't figured interest on investment or depreciation. It's true, you do lose the interest, and it's true a car does depreciate. But if you only use it for hack purposes, its depreciation will be very small. I've allowed you ten miles a day, nearly—if you just hack to the station and back, it's only four miles a day, which is much less. I've put insurance way down because fire insurance is all you need here—tires and incidentals are large here even for the ten miles a day—for the four miles you will use the car they are huge. But taking all that into consideration, you only pay, say, ten dollars a month for your auto. Your taxes here, including everything, will be only \$78.00 a year. What do you pay where you are?"

"Three hundred a year," confessed Mr. Spence, somewhat unsettled in his mind.

Mr. Swift was too wise to point any moral. That Mr. Spence could add up \$78 and \$120 a year for the automobile and subtract from \$300 seemed fairly certain. And in a moment he knew that Mr. Spence had done so.

"Then I could buy a car and have it cost me altogether \$222 a year in upkeep and still break even," he mused, "and then—"

"Not break even," insinuated Mr. Swift gently. "Remember you are breaking even on the taxes and the automobile—but the cost of living, the air, the ground, poultry, vegetables, fruit, pigs, chickens, eggs—don't you like to 'garden?'" he shot at his victim, suddenly.

And Mr. Spence collapsed.

"Lord, yes!" he said. "I want this place so bad I can taste it! I've always hated

autos, and do now. But I don't see any way around your figures. If an expert can't pluck holes in them, I'll bring my wife out to see this place Monday and—

"We'd better start now if we are to catch the 3:24 back to the city," suggested Mr. Swift, slowly.

"Oh, there's all afternoon," said Mr. Spence. "Come back and show me that garden again and let me look at the lighting plant. I don't exactly understand how you could put an economical electric lighting plant in here. You said you could explain that, if I was interested!"

Joyfully, but outwardly calm, Mr. Swift led the way. And he had the good sense not to say "automobile" again. For he knew Mr. Spence worked with figures and he knew his own figures would supplement those already given. He knew that the sale of this property depended on the customer's willingness to buy a machine.

Lingeringly taking leave of that fascinating pig pen, that orchard whispering of fruit, that garden with its promise of fresh vegetables, that swing with its suggestion of pleasure for Dorothy and Larry, the lawn which spoke of running feet and fresh air and good, healthy, normal children, the space which fairly sang of privacy and liberty, it was a somewhat unsettled mind which Mr. Spence carried home, and a perplexed expression which he brought into the house.

But his real attitude of mind was expressed in the little joke he sprang on his wife and children at the dinner table.

"People," he said, suddenly, "I'm thinking of buying an automobile."

(To be continued.)

Water Gardens for Every Place

(Continued from page 78)

below his dam. He then built a garden shelter near the fringe of trees spoken of and concealed a good-sized water tank in its roof. This furnished sufficient water power to supply a fountain jet and fill a rectangular lily pool. The outlet of the lily pool opened part way down the bank already spoken of and the water running over mossy stones and fern grown rocky basins tumbled into the meadow stream.

For him who is desirous of gaining the delights of a water garden, the ram offers many such opportunities. A spring, brook or a flowing artesian well will give it operating power and even if only a small stream of water be available, if the supply be constant and there is an incline of at least three feet within a moderate distance between the ram and its source of supply, this little genii can lift a stream of water to a height thirty times the difference of the level from which it is fed and the ram itself. Once started it works away automatically without operating expense. Indeed, wherever there is a possibility of installing it, it renders a natural



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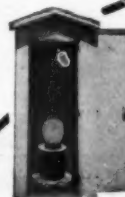
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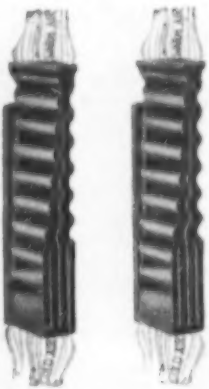
are affected by whichever way the wind blows and delivers small volumes of air so overheated that much of the life is burned out of it. Such air cannot be healthy air.

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The cold air from outside passes through the heated zigzag tubes (see cuts at left) and is thoroughly warmed and given such a velocity that not only is it unaffected by any direction the wind blows, but it can be satisfactorily driven to remote rooms.

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and cheap and constant source of supply for the water garden.

We have still to speak of the water lilies and water plants which make any water feature so desirable. Within recent years so many varieties have been introduced, most of them hardy, that unless you have investigated the subject you are probably not aware of the wonderful effects they produce, or of the wide range of colors that are available. Nymphaeas, the water lilies, and Nelumbiums, the Egyptian lotus, have been so improved that as Neltje Blanchan says, "The culture of many of them is as easy as growing potatoes."

They need a heavy, clayey loam composted with well-rotted cow manure—one-third cow manure to two-thirds rotted sods, if you must prepare the soil. The hardy varieties will thrive in a heavy leaf mold or similar rich earth. The plants do not require much soil—the hardy varieties from 4 to 10 cubic feet, the tender forms somewhat more—perhaps a box 3' x 4' x 1'.

Although the earth space is small, the plants require considerable water surface. This is one cause of failure, crowding too many plants in a small area; besides hindered growth, the plants are not as interesting if too much water surface is covered. We speak of tub planting because it will be found much more satisfactory to sink tubs of water plants rather than set out the tubers in the loose soil. The roots are not so apt to be injured, the plants can be more easily tended, and tender varieties removed for the winter; besides, the water cannot shift the roots about. Tubs should be filled two-thirds full of soil and sunk about ten inches below the water surface. A coating of sand or gravel will keep the earth from being washed away. There should be holes in the tub bottom covered with broken stone, much as crocking for pot planting is placed. When water lilies are to be placed in a large pond where the soil warrants permanent planting, the roots may be done up in old bagging and sunk in the positions they are to occupy.

There has been much said about the necessity of changing the water constantly to prevent stagnation in tanks and pools. As a matter of fact, too frequent changing is injurious. Nymphaeas and kindred plants do not do well where there is a cold spring in a pond or a fountain spray of any considerable volume. The water temperature is apt to be lowered too much in the former case, and in the latter the plants too much disturbed to do well. A very fine spray, however, is of slight effect, and is harmless with the more hardy water plants. A water garden will do very well, if only the evaporated and transpired water be replaced from time to time. The growing plants oxygenate the water and tend to keep it fresh. Of course algæ will grow, but this green scum will not be prevented by numerous water changes. Sulphate of copper, the blue vitriol crystals, if put in

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LIGHTING FIXTURES

a bag and dissolved, will destroy the nuisance. The other pests incident to still pools—mosquitoes—will be done away with, if you allow fish to swim in the tanks. Aphides are about the only insects that bother water lilies and the active urchins may be feed to gather lady bugs—the deadly foes of these insects. In large pools you will need wire frame work to protect the plants from ducks and swans.

Having determined the sort of water garden you desire to make, having completed your arrangements for soil and source of water supply, you should take up the question of plant varieties and their planting. The most likely source of supply will be either the *Nymphaeas* or *Nelumbiums*. The *Nymphaeas* are of two general sorts, but many varieties and types. Your dealer will speak to you about the hardy and tender sorts. The hardy varieties may be planted toward the end of April and the tender about the 15th of May and 1st of June. Or, if pot grown plants are purchased of either, they may be set out during June or July. *Nelumbiums* should be planted about the 15th of May. The hybrid hardy *Nelumbiums* do not produce seed and have no rizzom or tuberous root. They flower continually during midsummer. The tender varieties are distinct and in some ways superior. There are two sorts, day and night blooming. The flowers of either of these varieties are excellent for cutting, as they stand well above the surface of the water and are very fragrant, but the tenderer varieties are more vigorous and are better for large ponds.

The following twelve hardy *Nymphaeas*, as advised by Tom Tinker, are best suited for culture in small tanks, tubs or concrete basins:

N. Gratiella—yellow changing to orange red.

N. Laydekeri rosca—delicate rose pink to carmine.

N. Laydekeri lilacea—rosy lilac.

N. Laydekeri purpurata—rosy crimson.

N. Aurora—soft rosy yellow changing to deep red.

N. fulva—yellow shaded pink to orange red.

N. pygmaea—pure white.

N. pygmaea var. *helvola*.

For a medium sized garden, natural or artificial, the following are adapted:

White.—*Nymphaea alba candidissima* and *N. Marliacae albida* are two of the best white varieties.

Yellow.—*Nymphaea marliacae chromatella*, an excellent pure yellow water lily. *N. odorata sulphurea*, of good yellow color but ragged growth.

Yellow and Red.—*N. Paul Hariot*. Clear yellow with delicate shadings of red at the base of petals, deepening in color succeeding days. *N. Robinsoni*, a rich yellow deepening red toward the center; petals broad at base; stamens are rich orange red.

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Pink and Red.—*N. Marliacea rosea*, fine pink, large. *N. William Doogue*, pink; flowers large, beautiful, cup-shaped and of a delicate shell-pink color. *N. Gloriosa*, flowers large; deep carmine rose. *N. James Brydon*, flowers uniformly large, or a rich rosy-crimson color. *N. Wm. Falconer*, brilliant dark red, or bright garnet. *N. Arethusia*, like *N. James Brydon* except in color, which is a brilliant crimson pink.

In large ponds one may use varieties of the vigorously growing nymphaeas. Here are twelve that require space and are apt to spread. Most of them are either pink or white.

Nymphaea odorata — The common sweet scented water lily of the eastern states. White.

N. odorata gigantia — Large white pond-lily of mid-Atlantic states. White.

N. odorata Luciana—A pure pink water lily; exquisitely fragrant.

N. odorata W. B. Shaw—A large rose flower, valuable for cutting purposes.

N. odorata, sulphurea and *sulphurea grandiflora*—A hybrid water lily, a cross between *N. odorata* and *N. flava*, which is the yellow species.

N. odorata Eugenia de Land—Plants vigorous and free flowers; deep rose pink of iridescent hues.

N. odorata Mrs. Roche—Deep cerise pink; vigorous and free flowering.

N. tuberosa—Large white flowers.

N. tuberosa maxima — Large white flowers.

N. tuberosa rosea—Flowers pink.

N. tuberosa Richardsoni—Large white flowers; petals incurving; six to eight inches across.

N. Helen Fowler—Large flowers of a rich rose pink color, fragrant and desirable for cutting purposes.

There is a great variety of other plants that are suitable for bog gardens and planting in the neighborhood of water gardens. First to be mentioned are various sorts of the common wild flag *Acarus colamus*. Its blossoms are in excellent harmony with any of the water lilies. The water poppy, *Limncharis humboldti*, with its brilliant yellow flowers. *Cyperus alternifolius*, the pickerel weed with its glossy foliage, and the various sorts of cat tails and white rice are suitable. The tall grasses, *Foullalia* and *Bambusa metake*, go well for natural borders, as does *Arundo donax*, the great reed.

Late Planting and Care of the Vegetable Garden

(Continued from page 101)

before planting. Early Model, Crimson Globe and Columbia are all fine quality varieties, the first being the earliest of the three.

Carrots cannot be put in so deep, and it is important that they be given a seed bed very finely prepared and as moist as possible. Chantenay variety is very fine in quality and quick to mature, gives a good

yield, and keeps well through the winter. For the quickest results, however, use early Scarlet Horn.

Endive takes a longer season to mature and should be started by the first of August at the latest. It should not be neglected for want of moisture and it will require blanching by tying the leaves together or by placing boards in the form of inverted V's over the rows, a week or so before you want to begin using them. Corn salad will mature in a shorter period, and may be planted as late as the middle of the month.

Lettuce, too, if you have some way of applying water so that it will not be checked in the early stages of growth, may be planted as late as the middle of the month. The quickest sorts to mature are the loose-heading varieties of which Grand Rapids is the best, though not quite so early as White-seeded Simpson.

Peas are another crop very seldom found in the late fall garden. Plant them about three inches deep, or even a little deeper in light soil will be none too much, but give them the heaviest soil which you have available. It is well to use one of the dwarf growing sorts such as Little Marvel or Blue Bantam or British Wonder, the first two of which are a little earlier than the latter. Where support can be given use Gradus, Early Morn, or Senator.

By planting at the right time and using the proper varieties, radishes may be had through fall and winter. The early spring sorts may be sown up until as late as the middle of September, and should of course be put in only a few at a time, a week or ten days apart. Crimson Giant and White Icicle are two of the best, not only growing quickly, but remaining without getting corky for some time. Of the winter radishes, which to be in the proper condition for storing by the time frosts come should be sown about the same time as late turnips, it will be well to plant two varieties, white Chinese Celestial, or California White.

In every garden a supply of turnips for use through the winter should be grown. The earlier sorts, of which Earlier White Milan and Petrowski are exceptionally good, may be sown as late as September. It is best, however, to start a little earlier and to put in at least a few rows of one of the fine yellow sorts such as Amber Globe or Golden Ball.

Onions and Spinach may be sown in the fall for wintering over so that they will be ready much earlier in the spring than if sown in April. The onions should be sown early in September, care being taken to make the seed bed in a spot that is absolutely well drained. For this purpose use one of the Globe varieties of onions as they make a thicker stalk when reaching the size for which they are desirable to pull green for bunch onions. The spinach may be planted a little later; select a variety which will go through the winter safely, such as Thick-leaved, Prickly, or Hardy Winter.



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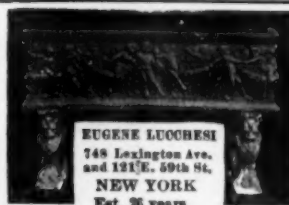


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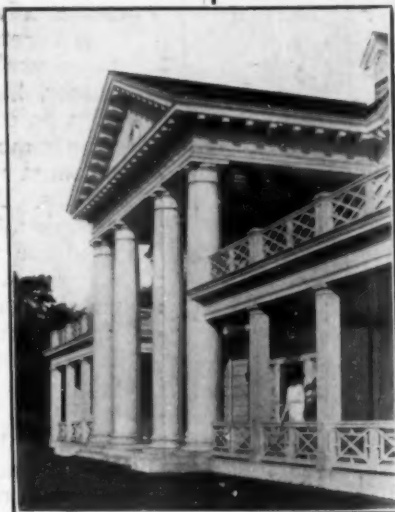
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Poultry and Garden on a Suburban Lot

THE suburban man, grown weary of doubtful eggs at fifty cents a dozen, and anxious to keep a few hens of his own, is constrained to give up the idea, because he has a weakness for raising his own fresh vegetables and thinks the two could not be combined on his small plot. In like manner, his neighbor watches the vegetables he carries in from his garden each summer morning and sighs enviously that he cannot raise vegetables because of the chickens. Both have arrived at a mistaken conclusion. Hundreds of city men have solved the problem of keeping hens and raising small fruit and vegetables on the limited area of an ordinary small city lot.

My neighbor, the doctor, has set his entire back lot to fruit trees and small fruit with a vegetable garden 20 by 44, approximately.

Two apple trees are set on the edge of the lot opposite each back corner of the house. Two more shade the garage on the back corner of the lot. There are six cherry and plum trees on the back end of the lot with four currant bushes and a dozen red raspberries along the side next to our lot. The apple trees take up all the side next the street. Grape vines are trained over the back porch and a small summer-house in the yard. The vegetable garden is along the path to the chicken house and garage.

The chicken house is 8 by 10 feet on the ground, 6 feet to the eaves in front, four in the rear. It is a combination of the open front house and tight roosting closet. The building is made of matched lumber, tight on roof, ends, back and half the front. It is covered snugly over the entire surface outside with roofing paper to make it absolutely wind and water-proof.

The building faces the south, and the east end was taken for the roosting closet as this was the half having a tight front.

Four feet from the east wall a wire netting partition was constructed having a door at the south end for the attendant's use and a tiny one for the hens' use. A heavy burlap curtain was hung at the top to drop down outside the netting on extremely cold nights for protection against the cold.

Two feet from the floor, which was of dirt, was the droppings platform, made of thin boards. It was hinged to the back wall and suspended from the ceiling, at the front end, by means of iron chains, so that it might be lifted and secured to the ceiling by day, that the fowls on the floor might have all the sunlight from the window. This window was so arranged that when it was raised, the droppings could be easily scraped from the board out through the window, the whole operation taking but a moment's time each morning. A specially bent hoe was used as a scraper. The perches, three in number, were arranged on crosspieces, the back one hinged to the wall four inches above the dropping board,

the front one, chain-suspended like the droppings board, from the ceiling.

The perches are one foot apart and one foot each from the wall and partition, to give the hens plenty of room on the roosts.

The floor beneath the droppings board is always, like the scratch shed outside, covered several inches deep with clean straw or leaves. This makes a very cozy place for the fowls to sun themselves of cold winter days when the curtains are down, over the netting.

The scratching shed is six by eight, floor space, and is mostly open in front, having a wire netting door twenty-four inches wide and a space the same size covered with wire netting alongside. In bad weather there is a white muslin curtain to drop down and button snugly over the netting to keep out storm and let in light and air.

The nests are arranged along the west end and rest on the floor, but a better plan would be to have them raised eighteen inches to allow the hens the use of the extra floor space. They have sloping covers to prevent hens from roosting thereon.

The food hoppers are the slatted, covered variety, and are arranged on an elevated platform that the fowls may get under to gather up all shattered grain. The water vessel is on a like platform. Charcoal, bone, oyster-shell and meat scrap are in little compartments arranged along the back wall.

Fifteen hens were kept in this house, summer and winter, for two seasons, and they furnished eggs for a family. When it was decided to add five more hens to the regular flock and rear fifty chicks each season, a portable pen was added to give extra room and allow of some foraging. This pen was made six by sixteen feet in size and twenty-four inches tall, of wire netting and covered over the top with a six foot wide strip of netting.

There was an opening in one end, and one in one side of pen for ingress or egress of the hens, one to correspond in each end and in the front of house.

By closing all but a pair of openings, the fowls could, by proper arrangement of the pen, range over quite a large area of ground without having a chance to molest a thing. There was always green grass for them in season by this method. The chicken house is set in the midst of the plum and cherry trees, and the range of the small portable yard comes upon the grass beneath them.

There are about six hens set along in late February and the month of March, the aim being to have about three broods of chicks to furnish early pullets for the next winter's layers and to have what young cockerels the family cares for for eating. The chicks are placed in coops with the hens under the currant and raspberry bushes, being allowed their liberty to roam over lawn and garden till five weeks old, when they are taken from the hen.

The cockerels are separated at this time

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from the pullets and given a run by themselves under the trees, while the pullets are placed in a similar pen, for by this time the garden is up and the chicks must stay in bounds.

At eight weeks the older cockerels are placed in slatted coops to be fattened for the table. The operation takes three weeks, and each pair killed is replaced by another, so that there are always several pairs in preparation.

In the spring when some of the hens are sitting and caring for chicks and the price of eggs is down, the family begins to eat the hens, and as the chicks grow and demand more room the old hens decrease in number to give them room.

In June, all the hens that are left are sold in the market, for eggs are cheap and the young cockerels are ready for the table. The young pullets are ready to commence laying by the time fresh eggs begin to go up in price.

The kitchen scraps, waste vegetables and fruits go a long way towards keeping the hens in winter, the little chicks picking up much of their feed from grass, bugs and worms until penned in May. Lawn clippings are carefully saved to be scalded for the hens in winter.

My neighbor bought his first start of pullets from a man having a trap-nested, record laying flock, purchasing them as eight-weeks-old chicks in June, and rearing them from that age on according to the latest approved methods for early laying pullets.

In the garden, early onions, radishes, peas, beets and lettuce were grown, with later vegetables, such as tomatoes, cabbage, corn, cucumbers and string beans taking the places where the earlier ones were removed. The pole beans, tomatoes, cucumbers and summer squashes were trained on wire netting, along the borders, to save ground space.

The poultry droppings are all forked into the garden ground in spring or summer and spread upon the lawn in autumn and winter.

The young pullets are placed in the big house as soon as all the old hens have been disposed of, and after the young cockerels have been eaten, they have the benefit of both the portable runs till they are needed next spring for young stock again.

The pullets have always been laying by the first of October, and supply a family of five with all the eggs they can use during the winter, with now and then a dozen to sell at fifty cents a dozen. In spring they are laying so heavily that even with the number being gradually reduced by brooding hens and an occasional chicken dinner, they continue to keep up the table eggs till June, when the final clearing out of old hens takes place.

The doctor's whole family find an interesting and healthful diversion in caring for their garden and poultry, besides the enjoyment of their own chickens, eggs and vegetables at meal time.

JENNIE E. STEWART

Keep the Soil Busy

LAND that is lying idle is land that is looking for trouble. Do not be misled by the old idea of "resting it," for all the rest it needs is a change. Keep something growing on it all the time either to plow under when it has attained the right size or to feed to any animals which may be kept on the place and to be returned to the soil again in the form of manure in the spring.

Building the New Poultry House

IT is a great advantage to have the new poultry house built early enough so that it will have time to become well dried out before the pullets are placed in it for winter. It should be complete in every detail before the birds are moved into it, so that they will not be disturbed after they begin to lay. At the best, some time will elapse before they become thoroughly at home in their new quarters.

The kind of house to build is a matter to receive careful consideration. The experts can't decide the matter for you, for the experts fail to agree. Local conditions make some difference, but it is safe to say that some type of fresh-air house should be adopted. The front may be left entirely open, except for poultry wire to confine the fowls, or it may have a long horizontal opening with a muslin curtain tacked to a frame to drop over it in stormy and very cold weather, and an upright window, extending nearly to the floor, to give light when the curtain is closed.

Just now there is a tendency toward deep houses, as deep as twenty feet even, with the front left entirely open save at the bottom, where boards two feet high serve to prevent the wind blowing directly on the fowls. It is argued that such houses are especially warm because an air cushion is formed in them which prevents the wind entering, even though it be blowing violently outside. No curtains are used in these houses.

The argument against the deep house has been that the sunlight could not reach the rear wall and the roosts unless the front were made absurdly high. The State Experiment Station of New Jersey has met this objection by building a semi-monitor type of house twenty feet square which it recommends to the poultry-keepers of that State. This interesting house has a double pitched roof, but the roof which slopes to the front is lower than the one which slopes to the rear, and a row of windows is placed where the break comes. These windows let the sun into the rear of the house in winter and provide ample ventilation in the summer. The front of the house is open the year around, but there is little danger of frosted combs, even when the mercury drops far below zero. It is probable that this type of house will acquire considerable popularity, for in addition to being efficient, it is inexpensive. A square house is cheaper to build than a long and narrow one, and a continuous house can be built in twenty-foot units if one desires to keep more than

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the one hundred hens which a single pen will accommodate, allowing four square feet to a hen. Doubtless people interested in this new type of house can secure further information about it by addressing the State Experiment Station at New Brunswick, N. J.

For a smaller house, a model designed by the Experiment Station at Purdue University, LaFayette, Ind., can hardly be improved upon. It is a shed roof house, about fourteen feet deep, with an opening to be covered with muslin in bad weather, and a long glass window. The opening is high enough so that the wind will not blow on the fowls, but the window extends almost to the floor, a very desirable plan, for it allows the birds to bask in the earliest rays of the morning sun on cold winter days. In many such houses the windows are too high, and it is late in the morning before direct sunlight floods the floor.

When shed roof houses with curtain fronts are used, it is highly important that the curtains be kept clean, although this fact is often overlooked by the amateur. A muslin curtain coated with dust is no better than a board over the window. The curtain is usually tacked to a hinged frame and hooked to the ceiling when open. Sometimes light birds like the Leghorns will fly onto them and use them for nests. Oiled muslin is to be avoided; it does not admit sufficient air. Curtains must be used intelligently, and not closed when the weather is warm.

Extra curtains may be dropped in front of the perches in extremely cold weather, and are needed if the house is very shallow—eight feet deep or less—or if breeds with long combs are kept. They should not be used, though, except when the temperature is much below freezing. Coddling the hens is almost as bad as neglecting them.

A shed roof house seven or eight feet high in front and four and a half at the back is high enough. The walls may be of drop siding or rough boards covered with roofing paper. Roofing paper of good quality is much better than shingles for the roof; it admits less air and carries off the water better, so that its cheapness is by no means the only reason for making use of it. It is important that the house should be free from draughts and dampness, which means that it must be tight everywhere except in front.

A house of this type is likely to be uncomfortably hot in summer, so that the birds will suffer on sultry nights. To remedy this condition, it is well to cut several openings in the rear wall just under the roof, hinged shutters being dropped over them when the additional circulation of air is not needed.

It is not wise to build a good house on a poor foundation, for then rats and decay will work havoc. A concrete foundation is easily made by digging down sixteen inches and constructing a board form four or five inches wide. The form should extend five or six inches above the surface.

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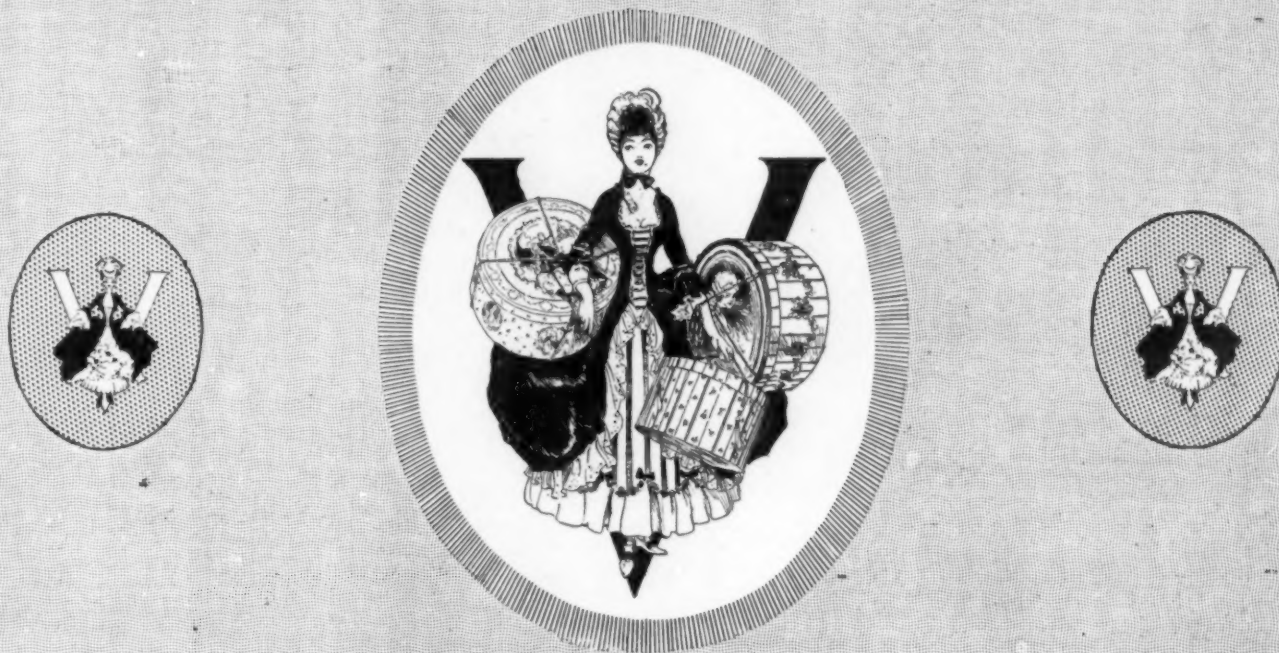
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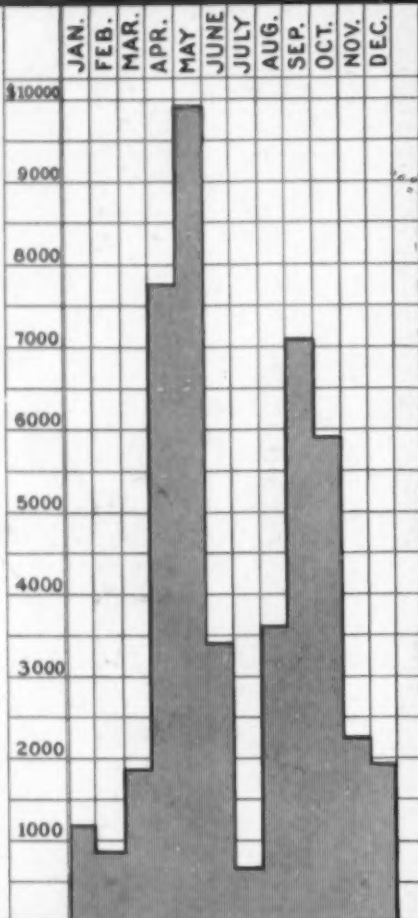
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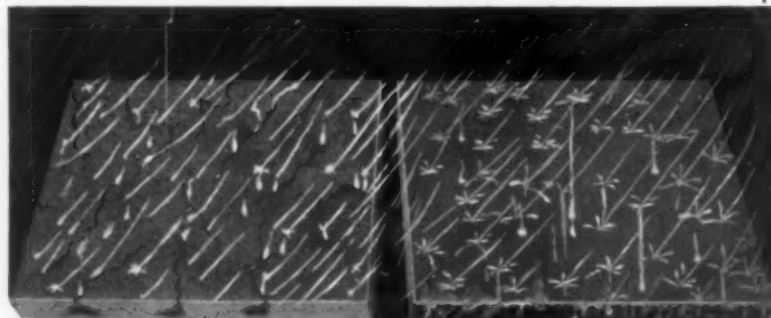
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