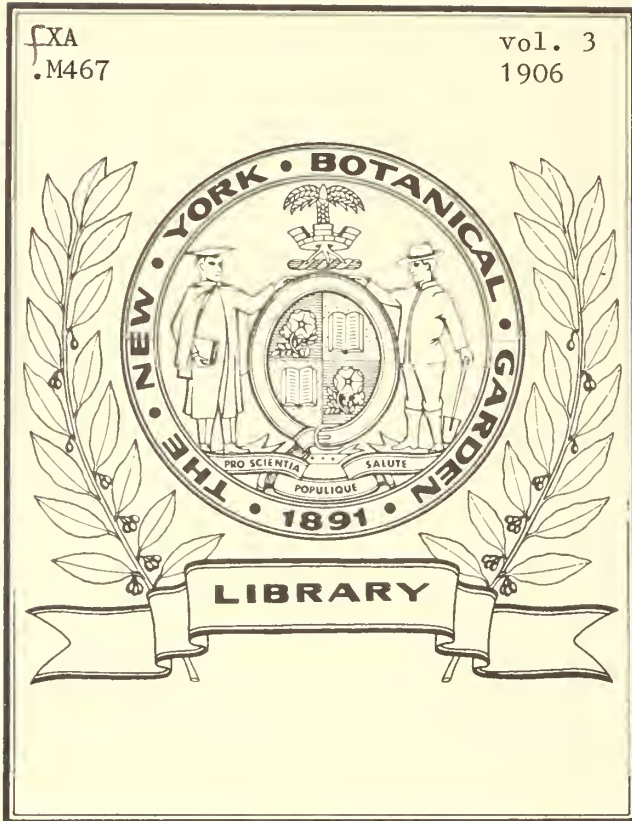




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vol. 3
1906





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Volume III—July to December, 1906

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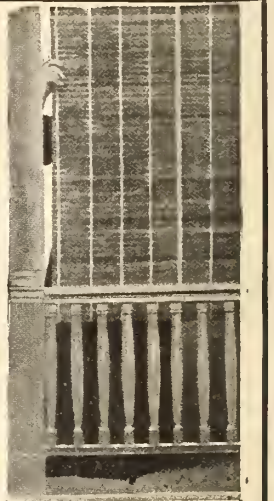
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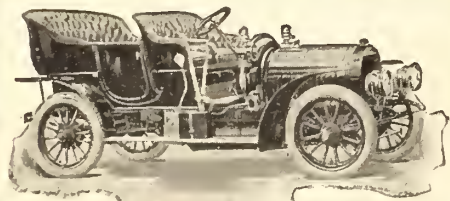
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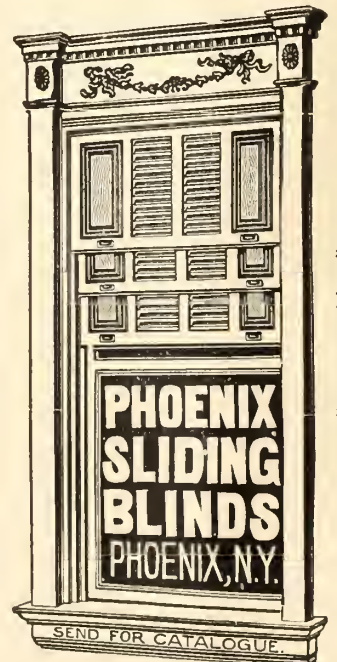


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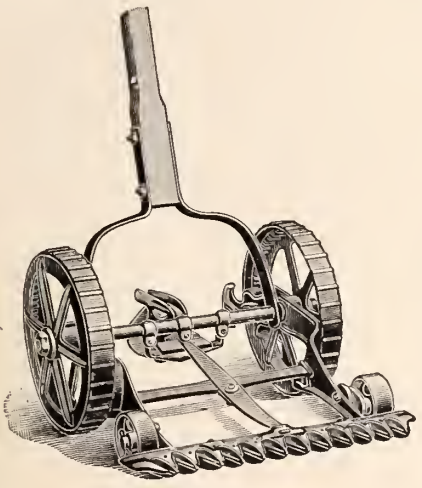
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At the Paris 1900 exposition, the Baldwin piano, already known to the musical elect as an instrument in which unusual characteristics had been attained, made its professional debut into the society of the classic makes of Europe. It was awarded the Grand Prix. A local exhibitor expressed his surprise at the decision on the score of the visitor's comparative youth. Had he for-

gotten the early maturity of musical genius—Mozart, Beethoven, Handel? One of the jurors, a famous piano teacher of the Conservatoire, replied—“My dear B——, you will have to get used to hearing this young piano's name.”

His words have been amply justified. In addition to the Grand Prix award, the head of the Baldwin House was made a Chevalier of the Legion of Honor. At the St. Louis Exposition the Grand Prize was given the Baldwin, forming another in the sequence of successes which has marked the Baldwin's career. In the realm of tone, it has received the homage of men and women whose names adorn the contemporary gallery of fame. In homes of culture and wealth, it has gained a welcomed entrée.

The Baldwin has moved so steadily to the heights where it now stands that to those who have known it and played it its name in the mere speaking carries a suggestion of all that is most desired in an artistic piano. The tone is pervaded with a loveliness of quality wholly individual and fresh—a quality described by Felix Weingartner with Leschitzky's phrase “extra-musical.” Its union of sound and significance, power and imagination, is the accepted ideal of tone-beauty. The charm of the Baldwin, indeed, may be said to be an affair of immense sonority plus emotional beauty. It is a tone that admits of the subtlest shading, the finest melodic hues and infinite combinations. If Liszt, as Heine phrased it, is “the Raphael of the piano,” the Baldwin Piano, in the paraphrase of Sembrich, is “the Raphael among pianos.” In her use of a concert piano the great *coloratura* artist has selected the Baldwin. “It enriches, heightens and extends the beauty of song—it gives a regal setting to musical art.” Such is the Sembrich tribute.

A memorable event of the musical season just past was the playing of the Baldwin by Raoul Pugno. Not one of the thousands who heard the great French artist will forget the heroic effects produced by the fuller and deeper tones of this instrument. “It is the tone that dazzles and excites the emotional life, yet stimulates the intellect,” said Pugno, with the vivacity of his race;—“an immense tone for an immense technique”—was the critic's comment. With De Pachmann's exquisite interpretations of the gossamer music of Chopin on the Baldwin Piano, the whole musical world is familiar. The nuance, the accents and shimmering effects of



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One of the most interesting expressions of modern genius is the Baldwin Small Grand. If the abbreviated concert Grand was ever regarded as an evanescent or undetermined factor in the piano world, it is not so to-day. Poe taught us years ago that the supreme excellence of a poem is not necessarily its length. The Arabian magician shows the whole beauty of earth within the magic circle of a ring. The Baldwin Small Grand in a compass that admits it to the consideration and abridged quarters of the small home, possessing amplitude of tone and grand-like richness of tone, is a triumph of as much artistic consequence as the concert grand. The completeness of its success bears out Prosper Mérimée's dictum that the artist who engraved certain Greek medals is the equal of the sculptor of a colossus. The Baldwin Small Grand has an "orchestra in miniature"—all the beauty of tone color, warmth, emotional ardor and vibrant power, that delights us in modern concert-rooms.

The tribute offered the Baldwin Piano extends beyond the artist. There is in it a quality of tenderness and sympathy that arrests and charms the untutored ear; a quality as beautiful and quite as indefinable as that which makes a child stop and listen to a lark-song or stretch out its small hands in response to the fragrant purity of the violet. Whether this characteristic be "human interest," or artistic cunning, it endows the Baldwin with the intimate charm that makes it the ideal piano for the small circle; to those who make music a real part of every day life, it gives the best.

The acquaintance with the technique of piano-building which the House of Baldwin brought to the establishment of the Baldwin Piano-plant included the structural nature of every piano of consequence made within the past twenty-five years. This knowledge had come with the well-known career of the Baldwin makers as a great sales-house and also with the command of financial resources required to gather together the talent necessary to the making of a superior instrument.

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An important and growing department of the Baldwin House is the designing of special cases for small grand, concert-grand and upright Baldwin Pianos, in the different historic periods of architecture. The popular liking for a case that is individual or allied with the decorative motive of a room, has resulted in many distinguished designs. The embellished case, though not increasing the musical value of the instrument any more than Benvenuto's work is rated

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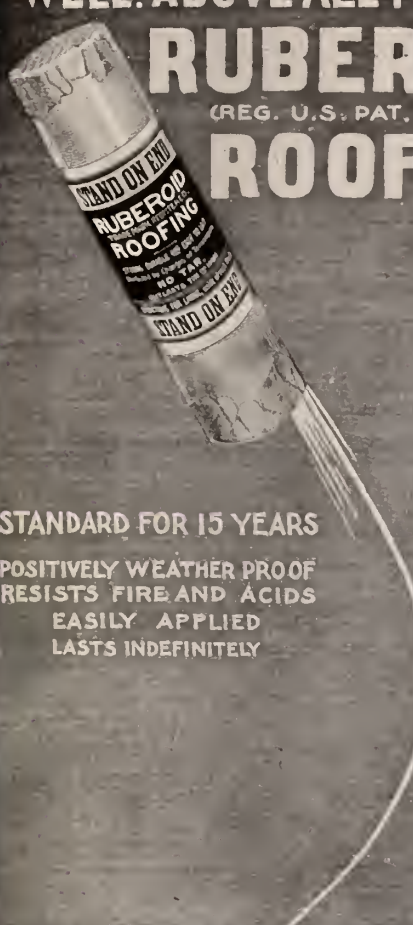
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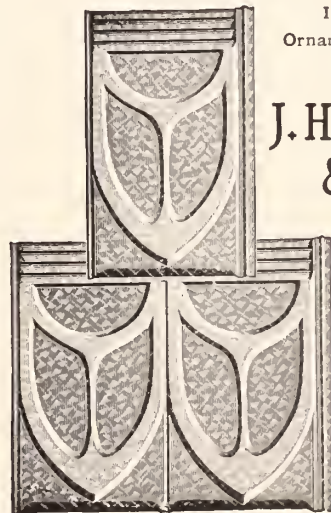
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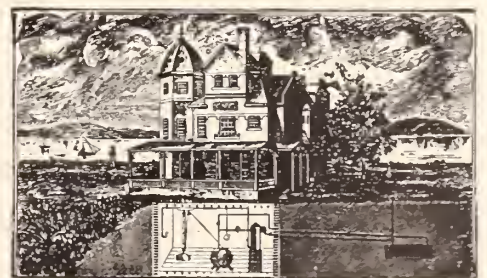
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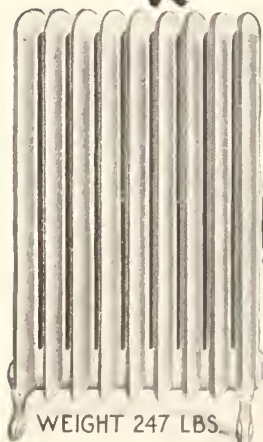
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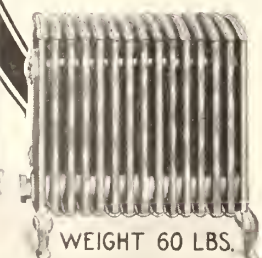
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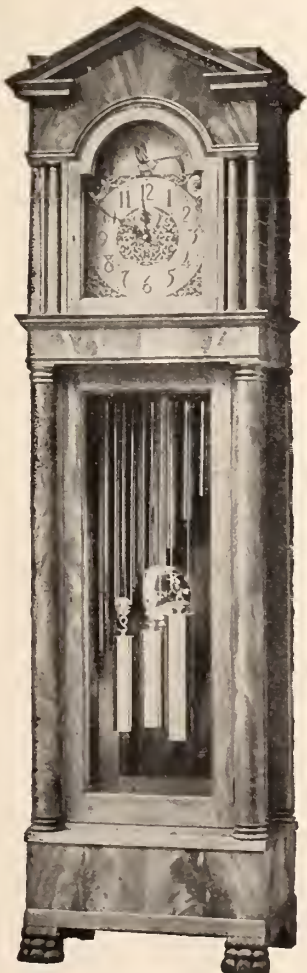
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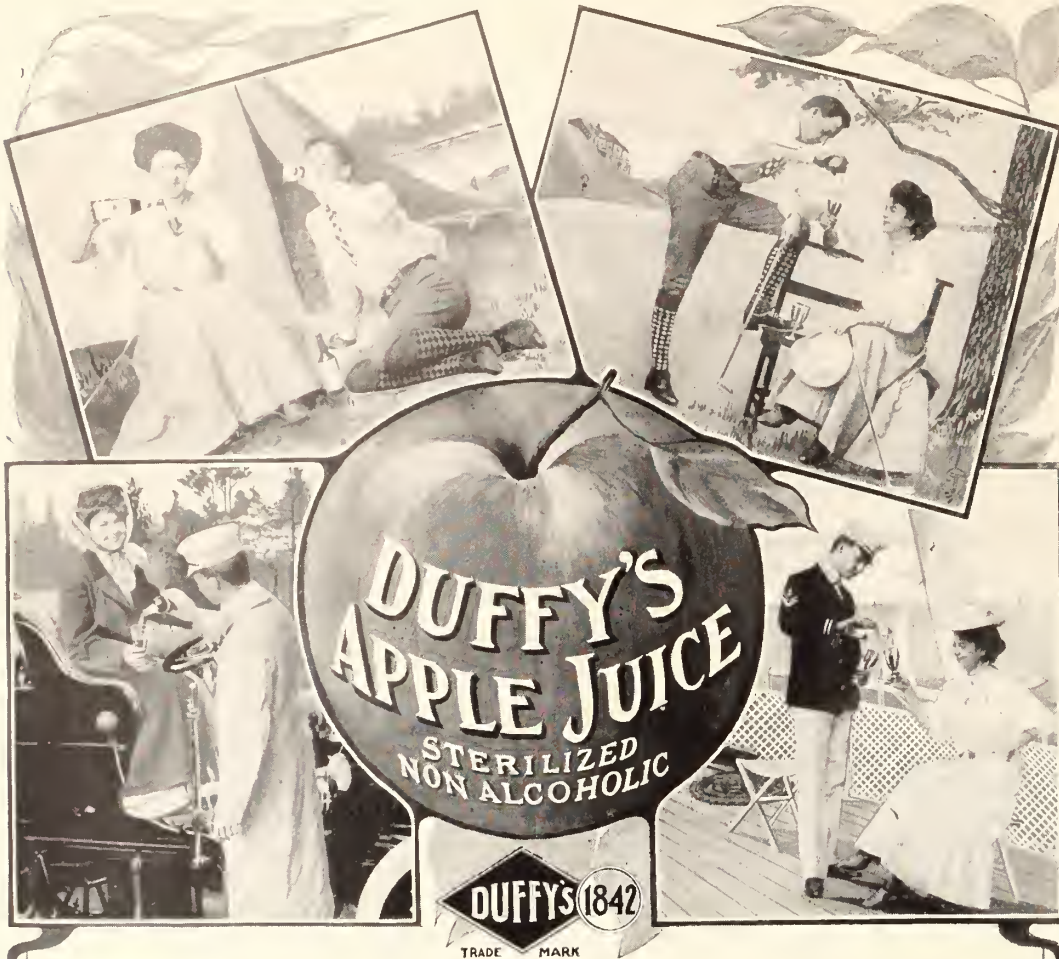
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The Gladiolus, the Peony and the Dahlia.
The Lawn.

Vines for the Wall and House.
New Books.

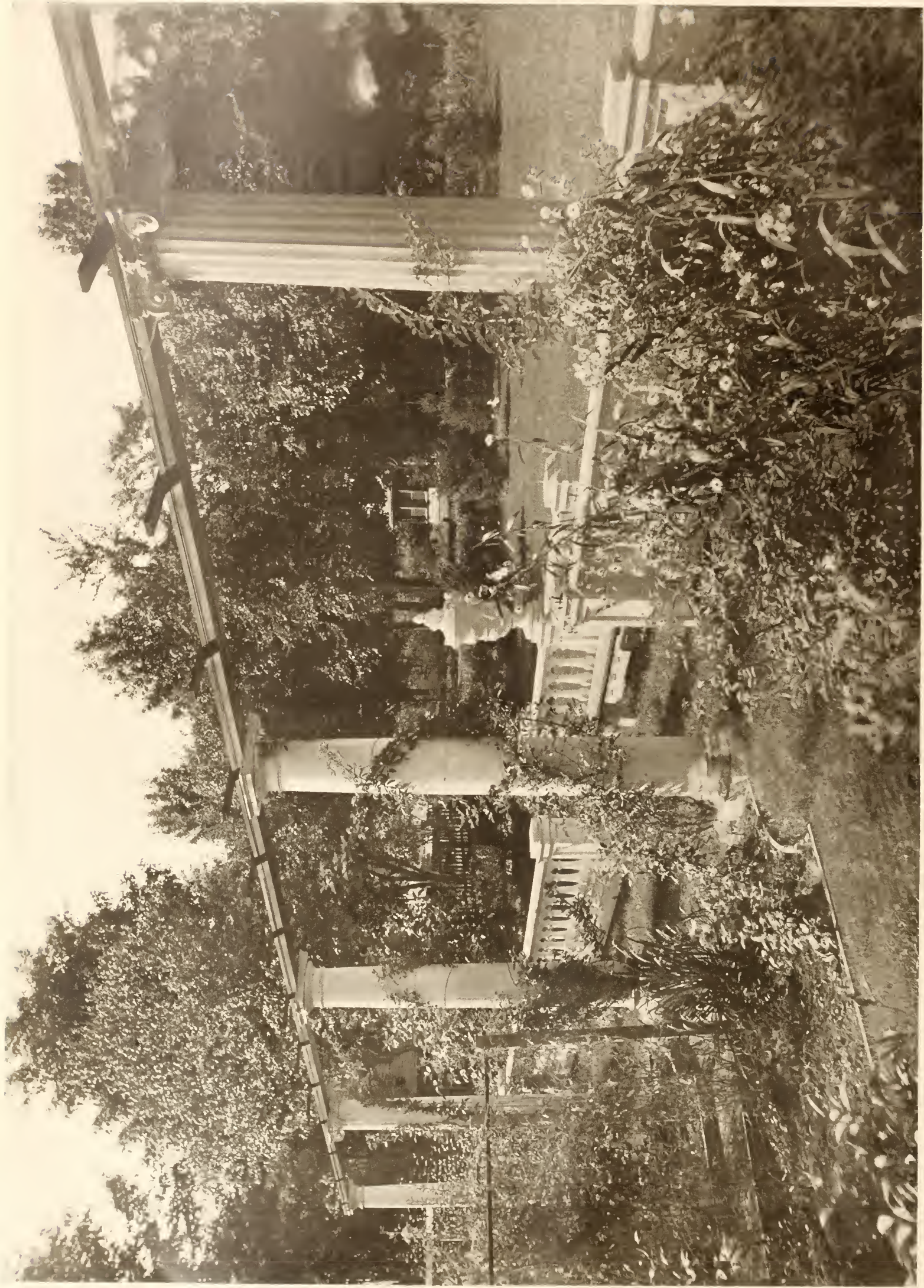
Combined Rate for "American Homes and Gardens" and "Scientific American," \$5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, \$4.00 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

[Copyright, 1906, by Munn & Company. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879]

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JUN 27 1906



A Colonnade Extends along the Western Side of the Garden beyond Which there is a Broad Settle. An Urn Carved with Fruits and Flowers Stands on the Inclosing Balustrade
On the Estate of L. S. Couch, Esq., Danvers, Massachusetts

AMERICAN HOMES AND GARDENS



Volume III

July, 1906

Number 1



"Sunnyside"—The Summit of the Terrace Front is Beautifully Arranged for Peaceful Enjoyment of the Scenes Below

Monthly Comment



THE summer season is naturally the period of greatest anxiety to the agriculturist. The anxiety with which the warm season is awaited by every one engaged in outdoor pursuits or avocations is never lessened for a moment until the cold weather has finally set in and the summer is confessedly at an end. The discomfort experienced by the suburbanite and country resident from unduly warm weather is, in itself, a comparatively slight matter, be the personal inconvenience as great as it may; the more serious aspect of very hot weather is that presented to the farmer and those dependent on the weather for their sustenance. And this, in its turn, is not a personal matter, but a national affair, affecting the crops, producing, often enough, extraordinary effects on the money market, and resulting in colossal national losses. The hot wave of 1894 is estimated by the national government to have cost the State of Iowa alone the immense sum of \$50,000,000, a total that cuts a considerable figure when compared with the loss occasioned by the San Francisco earthquake, and is actually double the loss incurred in the Galveston disaster. Such weather losses are liable to happen any year, and to affect much larger areas than that of a single State. There is always great personal discomfort in unseasonable weather at any time, but the most serious aspects of the weather are those which affect great areas at times when large crops can be permanently harmed. Such disasters are without the spectacular elements which make catastrophes like those of Galveston and San Francisco so thrilling, but they are just as real and just as serious in their results.

At first glance mid-July may not appear to be a particularly seasonable time at which the householder should take up the question of his household heating, but it is nevertheless the very time of times when this most important domestic matter should be attended to. The furnaces and boilers are now out of use; they can be taken apart, repaired and put together again without inconvenience and without trouble. This, therefore, is the time when they should be attended to. Every furnace should be promptly cleaned out at the expiration of the winter's use, and the whole apparatus immediately put into good working order. There is still a good two months from the first of July before these things will be called into use, but any adjustment or change that is needed should be attended to while there is no possibility of use. There are few things more awkward than to have to hurry up furnace work.

The only distinctions that come to architects are derived from foreign sources. Success, and distinguished success, is obtained at home, but honorary distinctions for architectural achievements—except honorary degrees from colleges and universities—are exclusively of foreign origin. And this comes, in most instances, in the form of membership in architectural bodies. Foreign, honorary or corresponding membership in foreign architectural societies come to but few American architects. The greatest honor is unquestionably that of the Royal Gold Medal awarded annually by the Royal Institute of British Architects. But two American architects have been deemed worthy of this honor by the great representative body of British architects. The late Richard M. Hunt received this medal in 1893, and Mr. Charles F. McKim in 1903. Six American architects have been found worthy of admission to the class of Honorary and Corresponding Members of the Royal Institute. French

recognition is, perhaps, more highly prized than English, since our leading architects now living have been educated in architecture in France, or follow the French school as the latest expression of modern ideals in architecture. The latest French honor accorded an American architect has been worthily accorded to Mr. Whitney Warren, who has been made a foreign correspondent of the section of architecture of the Academy of Fine Arts of the Institut de France. It is a rare and unusual distinction, and one which Mr. Warren richly deserves by reason of his own achievements as an architect, and for the zealous zeal he has shown in furthering the ideals of the French school in America.

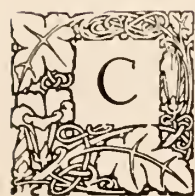
The lamentable state of affairs whereby the American nation fails to house its foreign representatives, either properly or in buildings of its own, is a favorite subject for popular debate. It is, quite seriously, a reflection on our public spirit, our generosity, our justice to our public servants. The spectacle of the American ambassador hunting for a house has more than once been held up as an illustration of our inability to understand how to conduct ourselves as a nation abroad. And in truth it is a sorry sight, and one that calls aloud for remedying. Meanwhile, however, it is a matter of some interest to note that no ambassadors are housed so splendidly as those of the United States. Dorchester House in London, the official home of Mr. Whitelaw Reid, is confessedly the most splendid embassy in Europe. The Pringheim Palace in Berlin, occupied by Mr. Charlemagne Tower, the Nassau Palace in Vienna, lately occupied by Mr. Bellamy Storer, the superb house occupied by Mr. Robert McCormick in Paris.—all these are palaces of the first rank, houses great in every sense, and admirably adapted to their present uses. The official salaries of the gentlemen occupying these dwellings do not even so much as pay their house rent, and in this the impropriety of the American method calls loudly for remedy. But it should not be supposed that, because the United States provides no houses for its ambassadors the public state is not sufficiently upheld by its foreign representatives. It is, however, a gross reflection on our nationality that our ambassadors must meet the cost of this display from their private purses.

The adjournment of the various State legislatures has been met with varied feelings on the part of the automobilists and the much larger non-automobiling population. The former have for so many years disregarded the rights of the latter, they have killed so many people, injured so many others, created so much alarm, and raised so much disturbance generally, that the non-automobilists have risen in their might and demanded, and in some cases secured, the enactment of laws restricting the performances of the automobilists on the public highways. Obviously it was quite time something was done. The necessity for the doing has long been obvious. Both sides have doubtless been unfair, the one unwilling to concede enough, the other demanding too much. It will probably take several years and a good deal of legislative tinkering to put the automobile question right, and it is likely that some hard knocks will be given to one of the most delightful and exhilarating of sports. But any sport that endangers life calls for restriction. There is no room for debate on that question. The State legislatures, however, do not attack the automobile, even in enacting stringent regulations concerning its use; but are endeavoring to give both parties—the automobilists and the non-automobilists equal rights. The situation seems hardly helped by the fact that the former constitute our richest class.

Notable American Homes

By Barr Ferree

"Sunnyside," the House of Harleston Deacon, Esq., Tuxedo Park, New York



CRITICISM is easily silenced and dissolved at Tuxedo, the place is so beautiful in itself and has been so beautifully developed; yet its charms naturally fall into two classes, natural and artificial. This division is really more literal than it may seem, for the land development of the Park has been on rather strictly natural lines, with a fine emphasis of the natural beauties, and with as little possible assistance in the way of artificial landscaping. This fortunate circumstance was entirely due to the natural qualities of the place. Tuxedo Park, as is well known, possesses many of the natural qualities of a park. Its gentle slopes, its gracious woods, its natural water, embedded and surrounded with higher hills—mountains, perhaps they call them—afford a fine foundation on which, by comparatively little effort, a superb site for country houses could be erected. It was the easiest thing to make this place beautiful, for no effort was required other than the making of good roads which would open the place to civilization and render it at once convenient and accessible.

Into the details of this development it is needless to enter. Tuxedo Park has for many years, been regarded, and rightly

regarded, as one of the most desirable residence sites on the border lands of New York. But it is well to note that while the natural advantages of the place are of quite overwhelming charm, its continued popularity as a place of residence and its inherent advantages as such, have been promoted, increased and rendered permanent by the very admirable manner in which it has been developed from this point of view. It would be a mistake to say that every house in Tuxedo Park is of interest or worthy of situation within such splendid natural environment, but the general quality of taste is very good, and the Park enjoys a well merited reputation as a delightful site for delightful homes. And more merit than this it would be hard to note of any place of residence.

Surely it would be difficult not to build an interesting house in a locality so filled with interesting sites as this. The basic idea of the whole place being that of a park, no individual owner has been called upon to surround his dwelling with vast areas of land, to build up great gardens of his own, to create an individual estate within the greater estate on which he lives; the vast tract is a continuous park and the beauty of one portion of the space is a part of the



The Spacious Hall is a Beautiful and Cheerful Room

beauty of the whole. One does not, therefore, look for large estates in Tuxedo Park, but one looks for—and finds—many houses of distinguished merit, for much architectural skill and genius have been lavished on Tuxedo, which, in a certain sense, may be regarded as a museum of full sized models of the best work in country houses of the best American architects for two decades or more.

One may be quite certain that when that most individual of American architects, Mr. Wilson Eyre, Jr., of Philadelphia, was called upon by Mr. Deacon to design his Tuxedo house for him the creative fancy of the architect found much to inspire him in this beautiful land. But he certainly gained nothing from the most suggestive of his neighbors,

themselves. If, perchance, he adds, as he has done time and time again, a note of carved ornament, it is a bit of sculpture, charming in itself, a real note in the whole fabric, and yet occupying a subordinate position. In other words, the very simplest of Mr. Eyre's houses have a charm due to their inherent simplicity. It is architecture of a very high order, the supreme test of the architect who lovingly welds his rude building materials into a resultant that wins admiration through the sheer ability displayed in their use.

These qualities are admirably brought out and very beautifully illustrated in Mr. Deacon's house. It would be difficult to imagine a building more completely devoid of the extraneous additions with which most architects are ac-



The Quiet Entrance Front is a Remarkable Study in Irregularity and Variety

for Mr. Eyre designed a thoroughly individual house, admirably adapted to the hill-side site on which it is built, and as completely characteristic of its designer as it is individual in its design and captivating in the quiet simplicity of its parts.

I doubt if we have any architect who gets as much out of buildings as Mr. Eyre does. Thoroughly alive as he is to the artistic possibilities and realities of the related arts of painting and sculpture, he nevertheless believes—as his numerous buildings amply testify—that in seeking for architectural grace in buildings the building as a building—in its structural parts—must be graceful and beautiful. Hence his houses are studied with consummate art, his plain walls, his simple outlines, his spacing of voids and solids are conceived with a penetrating skill and yield a charm in

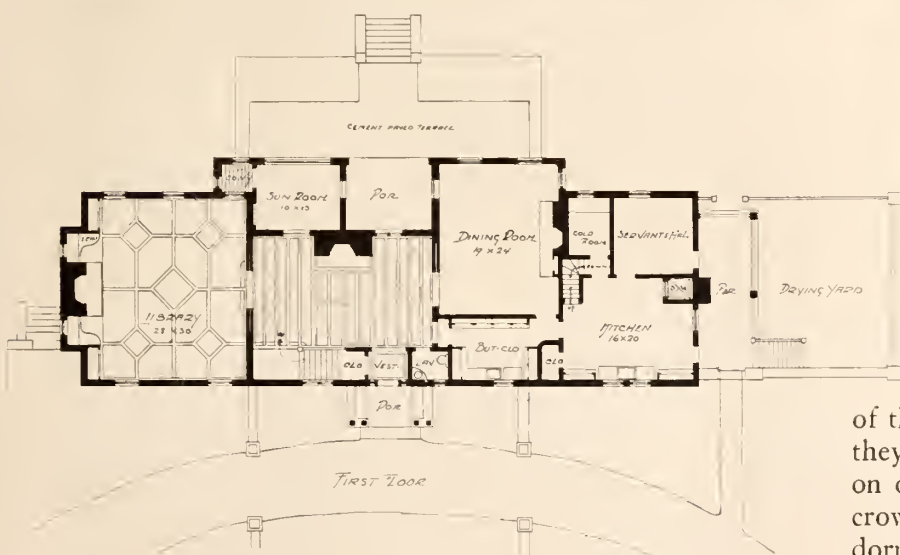
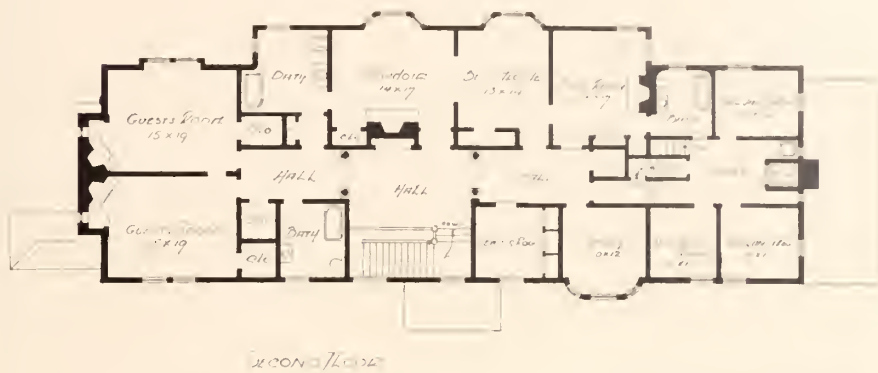
customed to obtain their results. It is a long, low house, as has been intimated, on the side of a hill which descends so sharply that of level building area there is nothing at all. And it is perfectly plain. That is to say, it consists of four plain walls in which various doors and windows have been cut.

True, no house has as yet been built which, in its elemental parts, was more than this, but Mr. Eyre has emphasized his elements by leaving them in their elemental state but so spacing and proportioning them, so arranging and combining them, that his elementary treatment has exactly that effect of interest and art which its designer contemplated from the outset, an effect that could be reached in no other way, and which—let copyists beware—could have been obtained by

no other living person than the very accomplished author of this design.

He has discarded, as he has done more than once before, all preconceived notions of symmetry and balance, and designed his exterior to meet the requirements of the interior. In itself this implies no novelty since it is exactly the process on which every architect proceeds—or is supposed to do so. But Mr. Eyre declines to believe that because your main entrance is in the center of a house the walls and openings on either side must be identical. His argument may be briefly imagined to be this: The rooms on either side of the entrance have different functions; therefore I will cut my windows where they will be of

phy, he has, in the Deacon house, proceeded in exactly the way I have imagined him to have done. His window spacing is as irregular as it can be. There are six openings in the first floor, three on each side of the porch; but the two outer ones at each end are unlike in size and situation, and of those next the porch one is a small oval window and the other a two-story opening with an arched top. The spacing



The Terrace Front and its Massive Stone Base

the most service to the rooms; these windows in shape and size will be the best windows I can think of to suit the interior purposes; and if the result is not good it will not be because I have not done the best I could.

We may be very sure that the latter clause never entered Mr. Eyre's mind, and the results of his theorizing have more than once proved the soundness of his reasoning and the completeness of his art. But whatever his general philoso-

of the windows on the second floor is quite as irregular, since they are not over those of the first story, and the bay window on one side is not repeated on the other. This wall is crowned by a high shingled roof in which are three simple dormers. The entrance porch is of the plainest description, with a high shingled roof, while the adjoining space, on each side, is separated from the further areas by a low stone wall applied to the stuccoed wall of the house.

So much for the entrance front, yet this bald description by no means sums up the whole of the exterior of the treatment. At one end is a great chimney, built without the wall of the house and rising from the ground. Just before it is a hooded wall, pierced by an archway and closed with a hooded gate. At the further end is the servants' porch with



The Sun Room Furnished in Japanese Style



A Corner in the Enclosed Porch

steps leading to the enclosed yard arranged below. The terrace or inner front of the house displays quite different characteristics from those which obtain on the entrance front. The latter front being directly on the level with the ground, necessarily seems low. The terrace front, on the contrary, is loftily elevated, owing to the steep slope of the ground. The symmetry which Mr. Eyre discarded on the entrance front is more apparent here. The whole of the center is occupied by a great stone terrace, with a double

flight of steps by which the lower ground may be reached. The central part of the house is here projected forward, and is surmounted with twin gables. Immediately below them, in the center of the design, are two bay windows, and the other openings are symmetrically disposed. It is a charmingly imagined design, carried out with the quiet simplicity which distinguishes every part of the house, a dwelling without extraneous ornament, and without a single ornamental feature on the exterior which has not a true



The Terrace is a Lounging Place of Distinctive Charm

structural function. In other words, it is pure building, a circumstance perhaps not so meritorious in itself as the related and more important fact that every part of this pure building has been carefully studied and adjusted to the other parts with a keen artistic sensibility.

I have already adverted to the fact that the exigencies of the site determined a narrow house, very much longer than wide. The entrance doorway leads into a small vestibule, flanked on one side by a lavatory and on the other by a closet. Immediately beyond is the hall, occupying almost the center of the house, and extending through to the ter-

The arrangement of the second floor is equally simple. The owner's bedroom and boudoir are in the center on the terrace front, the boudoir and chief bedroom being lighted by the bay windows which are thrown out below the central gables. At the extreme end, over the library, are two guest-rooms. On the right of the central hall is a sewing-room and study, and the remainder of the space is filled with bathrooms, of which there are three, and rooms for the servants.

The spacious hall into which the visitor is ushered immediately from the vestibule, is a beautiful and cheerful apartment. The woodwork is walnut, the walls covered



French Gray is the Prevailing Color of the Dining-Room

race front. The entrance is quite to one end, the delightful symmetry which characterizes the exterior being evident within as well as without. On the terrace front the hall gives upon a porch and a sun room, both of which immediately adjoin the terrace. The stairs are built against the entrance wall, as the large, round, arched window has previously hinted. Beyond, to the left, is the library, occupying the whole of the further end of the house, and at the end of which is the capacious chimney which is so marked a feature of the exterior. On the right is the dining-room, opening onto the terrace front, while the butler's closet abuts against the entrance wall, as does the kitchen, which is next to it. On the entrance front is the servants' hall and a cold

room. with silk tapestry, and the plastered ceiling is finished with a handsome geometrical design. The mantel is paneled and carved with festoons. The large window on the stairs is filled with stained glass. On the further side is the porch, enclosed on three sides with white walls covered with lattice work in pale green. Adjoining it is the sun-room, furnished in the Japanese style, and with an adjoining alcove, in which stands a graceful little marble fountain.

The library is two steps below the level of the hall, and is a room of penetrating charm. Its arched ceiling has a geometric design of delicately modeled ribs. The fireplace at the furthest end has a facing of Caen stone with a very richly carved over mantel finished in gold. Elaborately carved columns, also treated in gold, stand on either side.



The Library Has an Arched Ceiling; the Fireplace Has a Gilded Over-Mantel with Carved Columns; the Furnishings and Drapery are Green

and in the recesses immediately adjoining are paneled seats below windows glazed with leaded glass. The walls are paneled in wood throughout and the furnishings and draperies are of green brocade.

French gray is the prevailing coloring of the dining-room. The fireplace has a marble facing encased within the wood frame; above is a built-in mirror, richly carved. On either side are china closets. The furniture is upholstered in coral brocade, and the rug, tapestry, draperies and wall decorations are of similar tone. The ceiling, which is supported on

a decorated cornice, is plain, save for two severe circles in the center from which the chandelier depends.

The terrace without the house is a lounging place of singular beauty and interest. A broad cement floor adjoins the house and is covered by an awning which is removed in winter, thus permitting free entry to sunlight in the winter season. The ends of the terrace are enclosed within a low stone wall, but the opened railing of iron in the center gives an opportunity for an uninterrupted view of the landscape without.

Parks—Large and Small



THAT parks are the breathing places of cities has become an aphorism. It is a statement soundly true, and yet it by no means expresses the modern conception of parks. It is the older point of view that parks were breathing places, places for recreation and rest, for pleasant passing to and fro, for gentle driving and riding, if one had the means, for quiet retreat on a summer's day or for a family picnic at stated seasons. Very useful the parks were for all these purposes, and others like them, but they hardly correspond to the modern ideas of parks.

In the modern city parks are not breathing spots and places of resort alone or resort only, but they are absolute necessities, an essential part of the utilities of every community, large and small. This places them in an entirely new aspect, and one much more important than they could have under the earlier notion. So long as a park is looked upon as a mere pleasure resort it will receive but secondary consideration. There are so many essential things that require the public money that any object which has simply

pleasure for its end and aim is apt to receive scant attention from even the most careless of city fathers. Parks are no longer regarded as "frills" in municipal councils, but are viewed, and rightly, as among the first of essentials.

At the beginning the parks were confined to the larger cities. Where great numbers of people were brought together it seemed obviously necessary to provide some public place, if not for recreation, at least for open-air enjoyment. Our most notable parks are still associated with our largest cities, but many smaller communities have come to know their value, and park after park has been added to our small towns as a regular feature of town development.

And with this new idea as to the value of parks has come their rapid extension in the large cities. Parks that seemed ample enough for communities of considerable size are now found quite too small for modern needs. It has not often been found possible to extend the size of existing parks, nor has that always been desirable. As cities have grown the problems of transportation have become more complex. A park advantageously situated twenty-five years ago is now only convenient to a portion of the population. Hence there

Some Inexpensive Houses

Adapted to Suburban Needs

By Paul Thurston



THE first inexpensive house shown in Figs. 1 and 2 was built for Captain P. A. Nickerson, at Wedgemere, Mass. It is constructed of shingles for the first and second stories, and half-timber and stucco for the gables. This half-timber work and all trimmings are painted white, except some of the trim which is painted bottle green. The roof is covered with shingles stained a moss green.

The hall is treated in the Flemish style, and contains a paneled wainscoting, ceiling beams and an ornamental staircase. To the left of the entrance is a small reception-room treated with white enameled trim, beyond which is the living-room. This living-room is provided with cypress trim, the same as the hall, and has an open fireplace built of brick, fitted with tiled facings and hearth and a mantel. The den is conveniently located and is treated in a handsome manner; it has a paneled wainscoting, and an open fireplace.

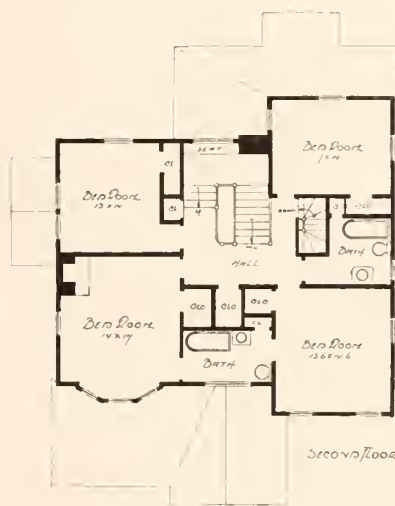
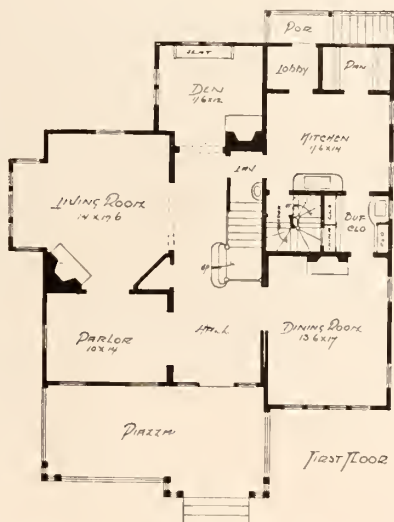
The dining-room, trimmed with mahogany, has a paneled wainscoting and ceiling beams. The fireplace is constructed of red brick with the facings and a hearth of similar brick; this fireplace is a false one and is provided with a gas log. The kitchen and its dependencies are fitted with the best modern conveniences.

The second floor is treated with white enamel, and has four bedrooms and two bathrooms; the latter being paved and wainscoted with tile, and furnished with porcelain fixtures and exposed nickel-plated plumbing. The third floor contains two



1—A House of Good Style with Shingled Sides, and Half-Timbered Gable Ends

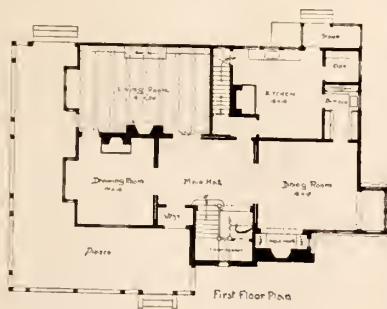
servants' bedrooms, trunk room and a billiard-room. The cellar, cemented, contains a laundry, furnace, fuel room, etc. Cost, \$5000 complete. Mr. Robert Coit of Boston, Mass., was the architect.



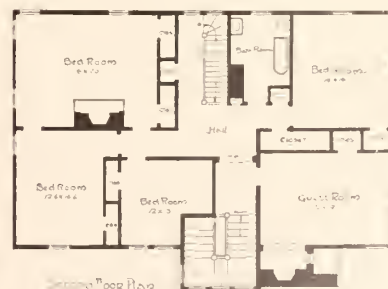
2—The Plans Show a Convenient Arrangement of Rooms

A Cottage at Lowerre Heights Yonkers, New York

The cottage which is illustrated in Figures 4 and 5, has been erected for Mr. J. B. Fenton, at Lowerre Heights, Yonkers, N. Y., and is of quite a different character from the one built at Wedgemere. The design is of the gambrel roof order, and is built of a combination of field stone, stucco, and shingles. The underpinning and chimneys are of field stone laid up at random. The first story is covered with rough



3—A Picturesque House Built of Brick, Shingles and Stucco, Placed in a Pleasant Setting



stucco tinted a soft gray color, and the second with shingles stained a soft brown. The trimmings are painted white. The roof is shingled, stained a moss green. There are porches at either side of the entrance, but the living-porch is placed at the rear of the house where there is seclusion and privacy.

The central hall is trimmed with white pine, treated with white paint. It contains an ornamental staircase with white painted balusters and newels, and a mahogany rail. The parlor, which is to the right of the entrance, is treated in the Colonial style with pink and white wall decoration, and white painted trim. The fireplace is furnished with white tile facings and hearth, mantel of Colonial style with over mantel and mirror.

The library is trimmed with oak, has bookcases built in, and a green tiled fireplace with hearth of the same, and an oaken mantel. Beyond this library, and also connecting



4—The Staircase is the Feature of the Hall, in the House Shown in Fig. 5

and floor, and is fitted with porcelain fixtures and exposed nickelplated plumbing.

The cellar, cemented, contains the laundry well fitted with trays, and a heating apparatus, fuel rooms, etc. Cost \$4500 complete. The architect was Mr. Robert C. Spencer of Yonkers, N. Y.

A House at Cape Cottage, Maine

The house illustrated in Figure 9 is a Summer cottage erected for Mr. Howard Soule, at Cape Cottage, Maine. It is built on cedar posts placed on stone footings. The superstructure above grade

is covered on the exterior with matched sheathing and then with shingles stained a soft brown, while the trimmings are painted a cream white. The blinds are painted a cream yellow. The roof is also shingled and is stained a moss green.

The interior, throughout, is trimmed with yellow pine.



5—This House is Unique in Type, Built of Stone, Stucco and Shingles



6—The Twin Gables in Gambrel Form are the Feature of the Exterior

with the hall, is the dining room, which is trimmed with cypress, and finished in a soft tone of brown. It has a high paneled wainscoting, and a plate rack. The fireplace has facings and a hearth of brick and mantel.

The side hall from the dining-room leads into the butler's pantry, which is fitted with sink, drawers and cupboards.

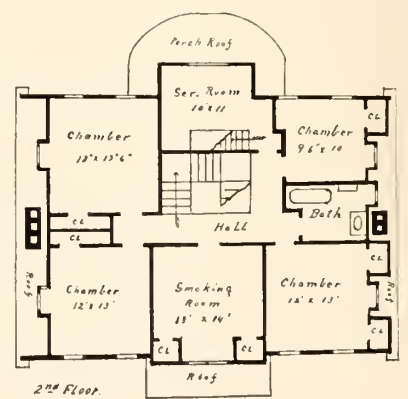
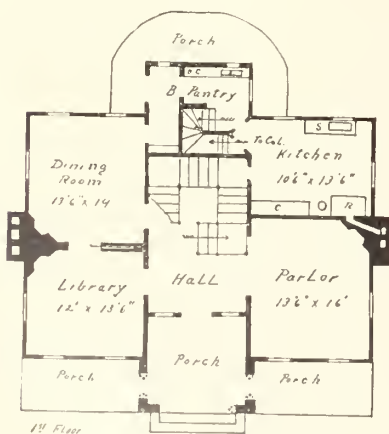
The kitchen is placed beyond and connecting to the butler's pantry, and is fitted with all the best modern conveniences.

The second story is trimmed with white pine, treated with white enamel paint. It contains four bedrooms, den, bathroom, and a servants' room with a private stairway to the first story. The bathroom is furnished with tiled walls

The living and dining-rooms are separated by an archway. The walls are ceiled up with battened wainscotings, and the ceilings are exposed to view, with the floor joists dressed and finished natural. The living and dining-rooms have open fireplaces built with red brick facings and hearth laid in red mortar and a mantel shelf. This floor also contains a kitchen which is fitted with a large pantry, dresser, sink, etc. There is also a bedroom on this floor.

The second floor is plastered and contains four bedrooms and a bathroom; the latter is wainscoted and is furnished with porcelain fixtures and exposed plumbing.

The third floor contains the servants' quarters and a trunk room.



There is a cellar under the kitchen extension. Cost \$2500 complete. Mr. Frederick A. Tompson of Portland, Maine, was the architect.

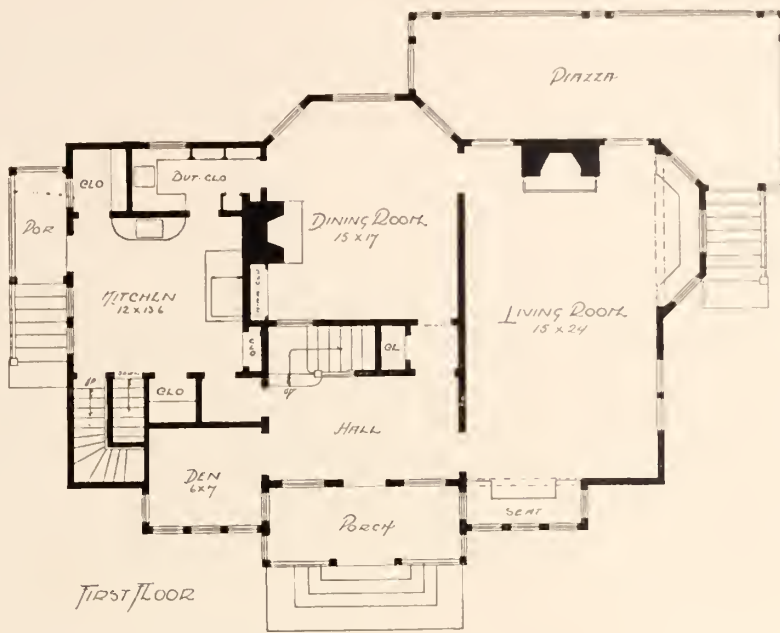
A House at Chatham, New Jersey

An illustration of a house built for George S. Pollard, Esq., at Chatham, New Jersey, is shown in Figure 3.

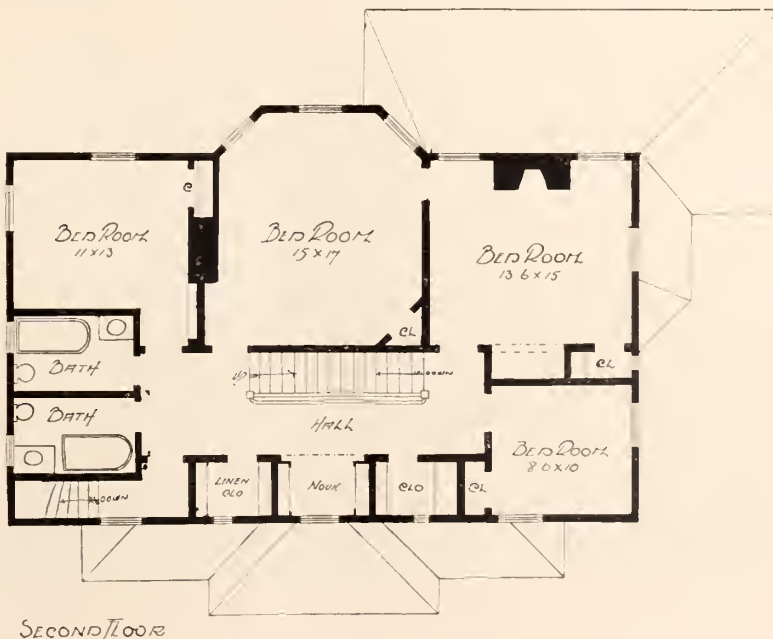
In the general style of architecture the building is English suburban, and in construction it is partly frame and brick. The underpinning and part of the first story is constructed of red brick laid in red mortar. The remainder of the building is covered with matched sheathing, building paper and cedar shingles stained a butternut brown, with trimmings of white paint. The roof is covered with shingles and is left to weather finish a natural silver gray.

The main hall is trimmed with chestnut, stained a warm brown color. It has a paneled wainscoting five feet in height and an ornamental staircase treated in a similar style. The drawing-room is trimmed with pine, treated with enamel white; it has a low Colonial wainscoting, wooden cornice, and an open fireplace furnished with tiled facings and hearth, and a mantel of Colonial style. The living-room is trimmed with California redwood, and has a paneled seat built in, and also an open fireplace furnished with tiled facings and hearth and a massive mantel.

The dining room, trimmed with oak, has an ingle-nook containing a fireplace built of brick with facings and hearth and a mantel treatment with cupboards above the shelf. The butler's pantry is fitted with china closets, bowl, drawers, etc. The kitchen is trimmed with white-wood and contains an open fireplace for a range, a sink, store pantry, dresser, etc. The second story is trimmed with white-wood and the various rooms are painted white or stained. This floor contains five bedrooms, large closets and a bathroom; the latter treated with white enamel and fur-



7—This Square-Rigged House Provides Ample Rooms of Good Size It Has a Rubble Stone Foundation with Shingled Walls and Roof. Contains Ten Rooms and Bath



nished with porcelain fixtures and exposed nickel-plated plumbing.

The third story contains the servants' quarters, trunk rooms, and storage space. A cemented cellar contains a laundry, a steam heating apparatus, fuel rooms and a cold storage plant. Cost \$8,000 complete. Mr. Albert Philips, of Newark, New Jersey, was the architect.

A House at Arlington, Massachusetts

The illustrations shown in Figure 8 present a house built for the Robbins Estate at Arlington, Mass., which is a good example of its class.

The house has a foundation built of field-stone laid at random. The superstructure is of wood, and the exterior framework is covered with matched sheathing, good building paper, and shingles stained a reddish brown, and ivory white trimmings. The roof, covered with shingles, is stained moss green.

The entrance is into a large reception room, containing the staircase which is of ornamental character with broad landings, etc. The trim of this room and the stairs are treated with white enamel finish. The sitting-room is also treated with white enamel and has a large bay-window and a broad tiled fireplace. The dining-room is stained oak and has a high plate rack, and a buffet built in with latticed doors, glazed with plate glass. Underneath the counter shelf, is a closet. The dining-room is connected with the kitchen by a china closet through a serving pantry having a sink and dresser.

The kitchen is fitted with pot closet, pantry, and an entry large enough to admit ice-box. The second floor is treated with white paint, and contains four bedrooms, large closets, and a bathroom; the latter is wainscoted with cypress stained, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. The third-floor contains one servant's room, trunk and store rooms. The cellar, cemented, contains a laundry, heating apparatus and fuel rooms, and store

rooms. Cost \$5,700 complete. The architects were Messrs. Gay and Proctor, of Boston, Mass.

A House at Montclair, New Jersey

The quaint and interesting house illustrated in Figure 7 was erected for A. H. Dodd, Esq., at Montclair, New Jersey.

The underpinning is built of limestone rubble, and laid in cement mortar. The exterior is covered with shingles and left to weather finish a natural silvery gray color. The trimmings are painted white, and the blinds bottle green. The roof is also covered with shingles.

The plan shows a square hall. It is trimmed with cypress and finished natural, and contains an ornamental staircase. The living-room is trimmed with pine and treated with white paint. It has an attractive bay-window with paneled seats, and an open fireplace built of brick with the facings of the same and a hearth laid herring-bone style. The den is painted black and the walls are treated with crimson burlap.

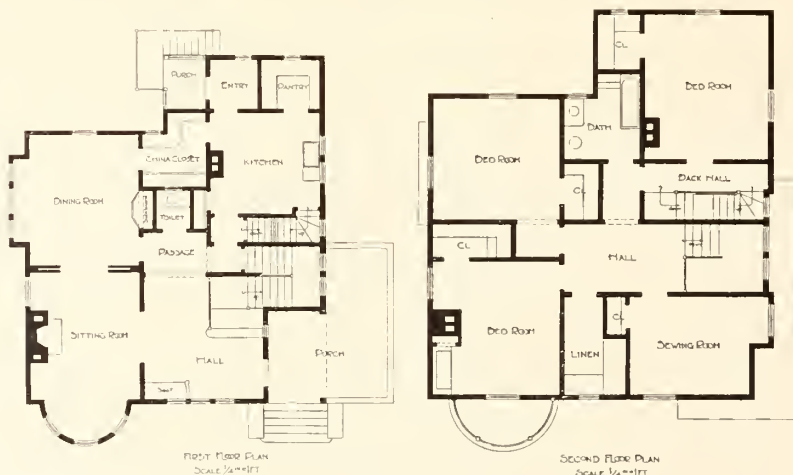
The dining-room is trimmed with white pine treated with white paint and has an open fireplace similar to the one in the living-room, and a china closet with leaded glass doors built in at the side. The butler's pantry is fitted complete, and the kitchen and its dependencies are furnished with all the best modern conveniences.

The second floor is treated with white paint, and contains four bedrooms, with large closets, linen closet and two bathrooms; the latter are furnished with porcelain fixtures and exposed nickelplated plumbing. The third floor contains the servants' quarters and ample storage. A

cemented cellar contains a laundry, heating apparatus, fuel rooms, etc. Messrs. Howard and D. E. Waid of New York were the architects.

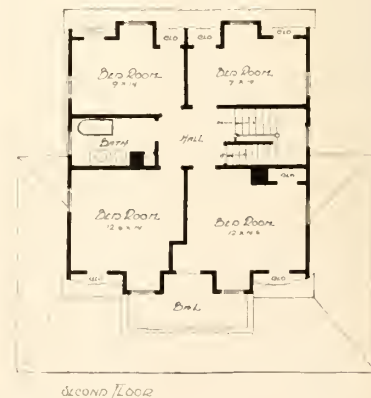
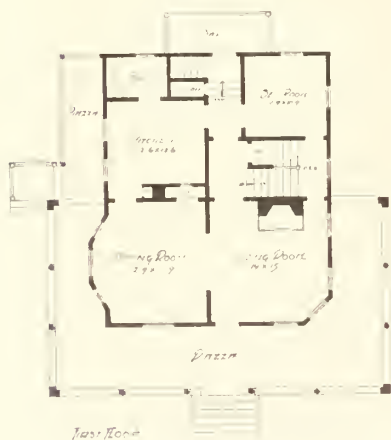
All these houses have an interest of their own quite apart from that which attaches to their cost. They are houses of excellent type; well built, planned in a thoroughly economical manner, designed in quiet taste, and finely adapted to the individual personal requirements of their owners. They illustrate, in a very marked degree, the moderate priced house of the better class, just such houses as most people want to have, and exactly the kind that every one is looking for.

In designing houses of this type it is apparent that the first and chief consideration, if, indeed, it be not the only one, has been an economical utilization of space. The architect's first business is to plan well, and this means, in most instances, planning economically. And the meaning of this is obvious, for economical planning means the best disposition of space. In itself this is something different from getting the largest number of rooms within a given area. That is often desirable and sometimes imperative; but more than mere number of apartments is needed in a well-planned house. The rooms must be properly related to each other and thoroughly adapted to their use. A good plan obtained, the architect proceeds to his elevation. This offers no difficulty to the designer of good taste, skill and real ability. His foundations being good, the superstructure partakes of the same excellent character. No part of the work is "easy," and if these houses here illustrated are good, it is chiefly because they have been well studied in every part.



8—The House, Covered with Shingles on Both Sides and Roof, Has Latticed and Bay Windows Which are the Features of the Exterior

The rooms must be properly related to each other and thoroughly adapted to their use. A good plan obtained, the architect proceeds to his elevation. This offers no difficulty to the designer of good taste, skill and real ability. His foundations being good, the superstructure partakes of the same excellent character.



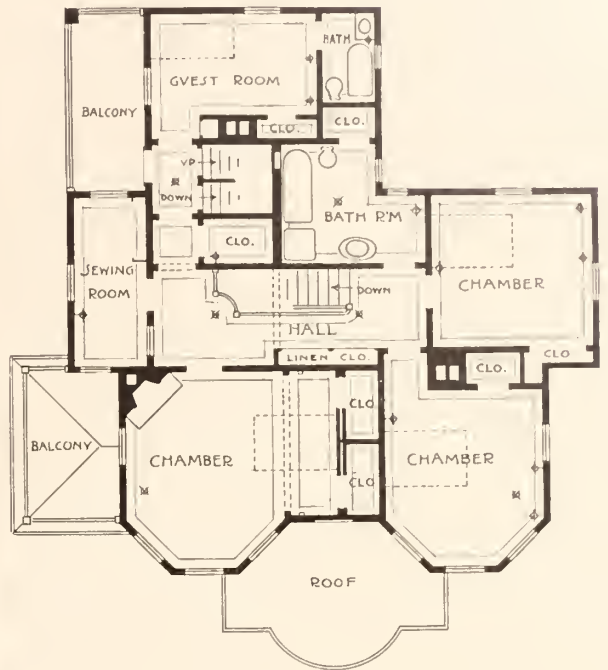
9—This Gambrel-Roofed House Has a Spacious Piazza, Ten Rooms and Bath. Cost \$2,500 Complete

How a Two-Family House was Remodeled into a Private Dwelling And Its Grounds Transformed into a Beautiful Garden

By Francis Durando Nichols



The House Before it was Altered Showing the Old Porch in its Conventional Form at the Front of the House

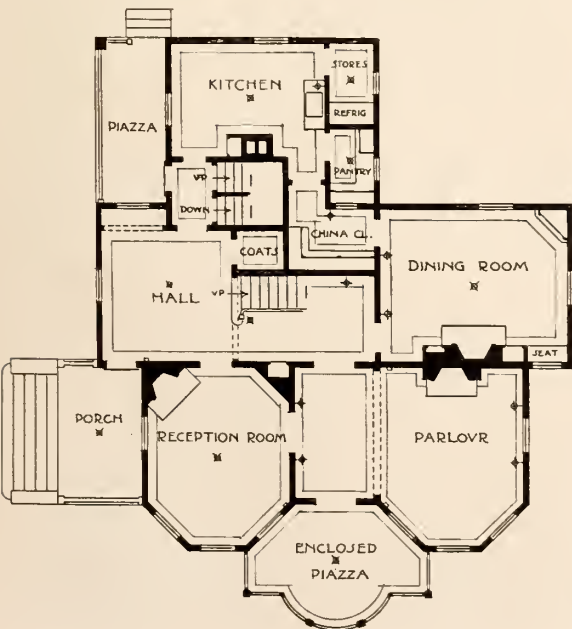


PLAN OF THE SECOND FLOOR



HOW to remodel a modern two-family house into a private dwelling, and to cultivate its surrounding grounds into a beautiful garden, was the problem which the well known Boston architect, Mr. L. S. Couch, had to solve, when he remodeled his house and garden at Danvers, Mass. The first problem was, of course, the house, which required skillful attention in order to preserve its outlines which were very good, and also its gambrel roof of Dutch character. A study of the elevations from the photographs of the building as it was and as it now is, will show that the amount of change has not been excessive, and that the entire improvements have been carried out in sym-

pathy with the subject and its environments. The only visible difference in the exterior is the changes made in the entrance porch; the old entrance porch being enclosed with glass, forming a sun-room with entrance to it from the living-room, while a new entrance porch was built at the corner of the house. Access to this porch is obtained from the drive which enters from the road. It faces the formal garden, and under the shelter of its roof a doorway has been



PLAN OF THE FIRST FLOOR



The Alteration of the Exterior has not been Excessive. The Principal Change has been in the Adoption of a Side Porch and Entrance, and Transforming the Old Porch into a Sun Room

placed and ornamented, for it is now the main entrance to the house. Along the property, in front of the house, an unobtrusive fence has been built, formed of a massive balustrade, terminating into massive posts which are placed at either side of the entrance gate and surmounted with iron urns filled with red geraniums and growing vines. This fence extends into the grounds as a division fence between the house and the formal garden, of which it forms a part. It is built low, so that passers-by on the road can easily see over it into the garden. The charm of the house has been enhanced



The Grounds at the Side of the House as They Appeared Before the Garden was Laid Out in a Formal Manner

by the painting of the entire house in pure white, except the blinds, which are painted bottle green, giving the place, at once, an air of distinction.

On the inside of the house, the problem was quite different. After the old piazza was enclosed for a sun-room, it shut off all the necessity of a hall, consequently the partition between the hall and parlor was removed, and the space thrown into the living-room as shown in one of the illustrations. The staircase was placed at the back, and the partition removed in one of the original rooms, which is turned into a hall from which an entrance is



The Garden at the Side of the House After the Transformation, Showing the Balustrade and Pergola in the Foreground

made into the house. The reception-room and dining-room occupy similar places to the ones in the original plan. The remainder of the interior has undergone many small changes which were made to meet the necessary requirements, but still retaining the outlines of the main house.

The entrance hall is treated in an artistic manner, and presents the key-note to the whole general scheme. The trim and the moldings on the walls are painted white. These moldings are placed on the walls forming panels which are treated in French gray. An attractive arch, with fluted pilasters, forms an alcove for the grandfather's clock; a similar arch separates the staircase hall from the main hall. The trim of this hall is painted white, and harmonizes well with the wall paper, which is in the design of a green trellis on which are large rose vines of red, yellow and pink.

The staircase has a balustrade of white painted risers and balusters, and a mahogany rail and treads. At the rail and underneath each tread is a scroll bracket of Colonial detail. The wall space at the side of the staircase is covered with portraits of the Presidents of the United States—the first eleven being old colored lithographs framed exactly alike in old mahogany frames.

The reception room is placed at the right of the entrance, and is treated in a green color scheme. The trim is painted white. The walls have a low dado formed by moldings placed on the walls and the whole painted white. Above this dado the wall space is covered with green striped water silk with border cut out of gathered silk of pink roses. This border is placed at the top of the dado and extends up and

old sofa, the Windsor chair, the card table and the old mirror.

Glass doors open to the hall and living-room, giving attractive vistas and enlarging the apparent size of the room. Opening from the hall, and connecting with the reception-



The Summer House at the Terminal of the Walk has a Stately Entrance with Massive Pilasters at Either Side, Supporting a Pediment



The Fountain in the Center of the Garden is Surrounded with a Profuse Growth of Ferns

around the door and window openings. The same border extends around the room under the wooden cornice with which the whole is finished. The fireplace is quite the feature of the room and has a facing of Aurora marble, a tiled hearth and an elegantly carved mantel with over mantel. The furnishings of the room are good, particularly the

room, is the living-room, which is treated in a general scheme of red, of which the design is French. The walls have a low, paneled dado, above which are panels with moldings painted white. Between these moldings the panels are covered with red striped French paper; all the trim of the room is painted white. The fireplace has facings of marble, with a very handsome carved mantel and over mantel, in the style of Louis XVI.

The floor is covered with a large red rug with a plain red center and a wide border. The furniture is upholstered in red rep. The draperies are of striped material with dainty French designs in alternate strips. The combination of color in this room is extremely brilliant, warm and attractive. French windows open into the sun-room, which is furnished with green wicker furniture and turkey red upholstery.

The color scheme of the dining-room is blue. The trim is painted white. The walls have a low Colonial dado, and above this they are covered with wall paper in two shades of blue, dark and rich, and finished with a block cornice. The ceiling is ornamented with fruit wreaths in plaster.

The mantel side of the room is quite the feature. The fireplace has facing and hearth of sienna marble, and a handsomely carved mantel which is an exact copy of the mantel in the Governor Wentworth house in Portsmouth, N. H., with the addition of cupboards for china placed at either side.

The furniture of the room is of dark oak. The rug is of blue, in two tones, and the pictures are framed in gold to



The Reception-Room has Low Walls Covered with a Green Watered Silk Bordered with Pink Roses



French Feeling is Dominant in the Parlor. The Trim is Painted White and the Panels of the Walls are Filled with Crimson Paper
The Sewing Thousand-Legged Table and the Windsor Chair are Worthy of Note

give a little color in addition to the gilt gas fixtures. There is a portable dark oak cabinet in one corner of the room for rare china.

The butler's pantry is the connecting link between the dining-room and kitchen; it is fitted with drawers, dressers, and closets. The kitchen is fitted with all the best modern conveniences, including two store pantries.

The second floor contains a large open hall, four bedrooms, sewing-room, two bathrooms. The owner's room is quite the room of the floor and has a bed alcove, beyond which are two closets provided with sliding doors, so as to take up the least possible room. The walls are covered with white watered silk, draped and caught up by pink roses. The furniture is painted a French gray with white lines and hand-painted pink roses, making a very pleasing effect. The other rooms on this floor are treated with white paint, and each is decorated in one particular color scheme. The bathrooms are wainscoted with tile and each is fitted with porcelain fixtures and



An Urn, Carved in Fruits and Flowers, Stands on the Balustrade Behind the Settle

exposed nickelplated plumbing. A separate stairway leads to the third floor which contains the servant's bedroom and trunk room. The cellar contains the heating apparatus, fuel room, and laundry complete.

The Garden

At the side of the house there was a plot of ground extending to the corner of the street, which was bare and unkempt, as shown in the illustration presented and the problem, "How to beautify it," was an important one. When the garden was first laid out it comprised a plot of about thirty feet square near the house, and at the right of the picture. The second year it was enlarged and laid out as shown in the illustrations which have been recently taken. The garden was laid out in a formal manner

and the beds were formed by strips of cypress boards set down into the earth with the exposed part being painted dark green, except the beds which are about the summer house and fountain which were cut from the sod, leaving grassed walks. The garden was planned with the purpose of



In the Bedroom of the Owner the Walls are Covered with White Watered Silk, Draped and Caught Up by Pink Roses
The Furniture is Painted Gray with White Lines and Hand-Painted Pink Roses

having a view from the house and porch, and the entrance to the garden, on either side of which are placed large terra-cotta pots filled with red geraniums, faces the porch. The central walk opens from this gateway, and terminates in the colonnade which extends along the western side of the garden, beyond which is a broad settle, placed in front of the low balustrade fence with which the garden is enclosed.

The garden is screened from the street by a colonnade formed of a row of Ionic columns with each capped with a basket of fruit and flowers. Between these columns which are painted white, is placed a latticed screen, painted green. The columns of this colonnade are ten feet in height and are connected with stringers and cross pieces, on which crimson ramblers are trained as they grow; one large bush being planted at each column. From the center of the garden the walks cross and the one leading to the street end shows a fluted column, on which is placed an old sun dial of the date of 1717, and beyond is an old marble niche. In the opposite direction the walk leads to the fountain in the basin of which there are sporting gold fish, and about which are ferns growing in artistic profusion. Beyond this is the summer house, which is placed at the terminal of the walk, and is stately with its entrance way showing two massive pilasters, at the top of which are brackets supporting the entablature with pediment above.

The beds throughout the garden are planted with perennials which are so arranged and planted that they are in continual bloom from early spring till late in the autumn. The old cement and iron vases are planted with annuals. The effect from the summer house, looking toward and beyond the quaint fountain to the old sun dial and the old marble niche beyond, is extremely fascinating as also the view into the garden from the porch of the house to the marble seat, with the old vase as a center feature; beyond which is a grassed lawn extending to the street, and enclosed with a privet hedge.

To the right of the house there has been much planting done in connection with the white painted stable in its relation to the house. At this side is the vegetable garden, in which are also grown the kitchen flowers, and the whole screened and enclosed with a privet hedge. The house, stable and its gardens in their relation to each other, and as a completed whole is most perfect, and it very ably demonstrates what can be done to beautify one's home, and surround it with a proper setting by a little thought on the part of both the architect and his client. The home of Mr. Couch is the height of simplicity, and yet is beautiful in its appointments for it contains nothing that does not mean something for the pleasure and comfort of its inmates and their intimates.

Parks—Large and Small

Concluded from Page 18

has been a gain in extending existing park boundaries; new parks have been located at various spots, and the total park area increased and made more available at the same time.

One of the most notable tendencies of modern life is toward recreation. We waste quantities of time, it is true, and have always done so; but as a people we have been backward in matters of recreation, the sporting columns of the newspapers to the contrary notwithstanding. This is particularly true of outdoor recreation, which has been helped so immensely of late years by the bicycle and the automobile. Even those who had no mechanical means of getting about have been attracted out-of-doors by the current tendency in that direction. The pleasures of outdoor enjoyment once tasted seldom pall, and thus with our increased parks has come an increased use of them, a greater appreciation in their delights, a keener satisfaction in their beauties. The accessibility of the parks has added greatly to their use, for the current tendency is to bring them as close to the people as possible, if not actually by location, then as near as may be by good transportation facilities.

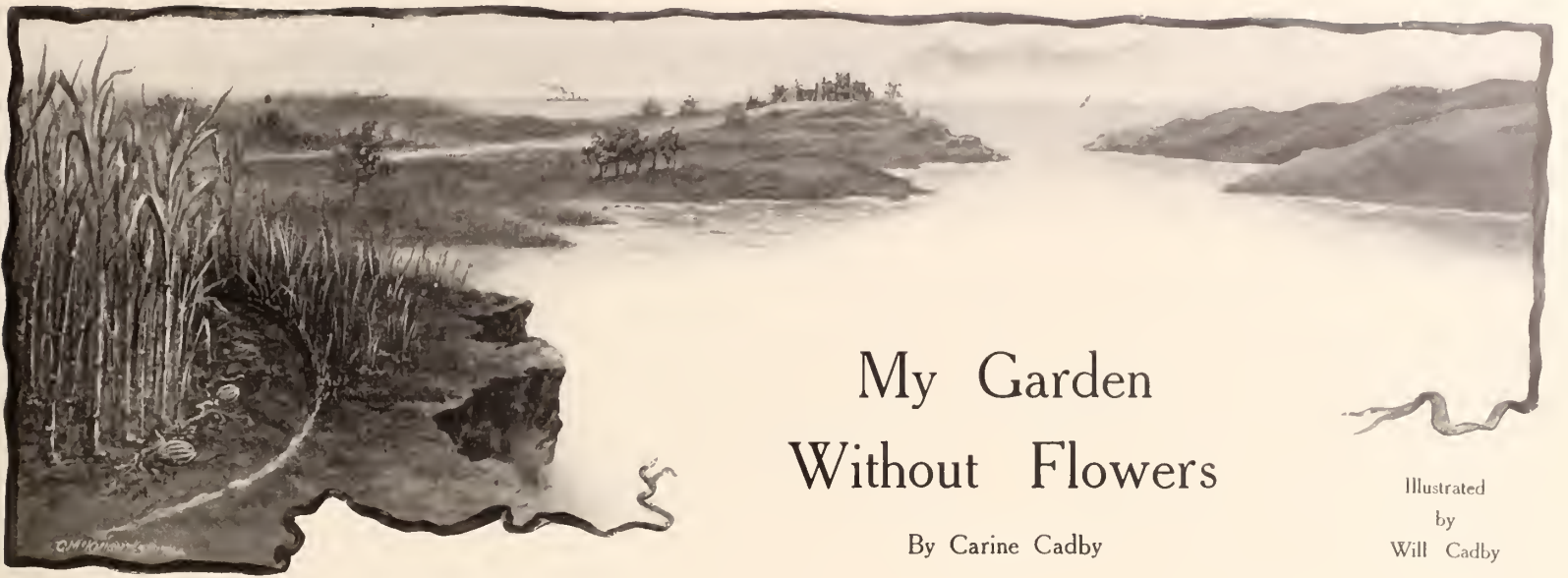
It is obvious, from our later park development, that all parks do not serve identical ends, nor are they intended for identical purposes. The large park is available for many uses. It has roads for driving, bridle paths for riding, picnic grounds and playgrounds, perhaps a central concourse and music stand, a lake for boating in summer and for skating in winter; it certainly affords many opportunities for landscape gardening. The small park can not compete with its greater sister in the manifold nature of the attractions it offers. Nor should it be expected to. As a mere breathing spot it quite well fulfills every demand that may be put upon it. As a simple place of resort it is doing all that can be asked of it. As a playground it is sufficient, and more than sufficient, for the part it takes in the municipal life of the day.

Playgrounds, however, should not be confused with parks. A park implies a certain ornamental character from which it derives its chief charm. A playground may have none of this and yet give even greater satisfaction than a park and be many times as useful. It is a mistake to imagine that

every open spot can be treated in the same way, or that it has the same end and purpose as every other open spot. The small parks would soon lose their value if this were so. A park must be suited to its neighborhood. This is particularly true of small parks, whose areas are so small that only a limited number of people can be accommodated in them.

Thus the neighborhood park has come into existence, one of the most useful members of the park system, and a very recent development that bids fair to become one of the most popular. Once the idea of separate small parks was developed it became apparent that what was good for one neighborhood might not be suited to another. A park in a residential section of well-to-do people simply added to the values of the surrounding real estate without in the least fulfilling any needed purpose. Such a park in a tenement house region, with its warnings to keep off the grass, with its handsome shrubbery requiring constant care, became a pure mockery. Apparently the tenement parks must be of a different sort, and the neighborhood park, the public playground, the play place of the children living close by, was created, helping to a better life in many ways.

All this new growth of parks necessitated a still further step in park development, and that was their connection and the creation of a system of united parks out of the many unrelated and scattered members. There are limits, of course, beyond which the connective system can not be carried. Parks of some size are alone advantageously joined by connecting boulevards. No good end is served by fastening the many small parks onto the large park system. Large parks are very largely maintained for driving purposes, which are at least important enough to be considered in their development. There is a very obvious advantage in being able to drive from one park to another through streets and boulevards which are adapted to that use. It is an arrangement that helps the city as a whole, for it makes the parks more available, brings them closer to the people and greatly facilitates their growth. Thus the park movement has grown far beyond the bounds imagined by its pioneers.



My Garden Without Flowers

By Carine Cadby

Illustrated
by
Will Cadby



LIKE every one else, I began my garden with very high ambitions. There were to be rows of daffodils, jonquils and tulips in the spring. In the summer roses, sweet peas and mignonette were to scent the air, and dahlias, asters and chrysanthemums were to cheer me through the autumn.

For a few years I struggled with fate, but circumstances, in the shape of an abominably poor soil, were against me, and my flowers refused to grow. I fed the hungry soil with rich food, but nothing seemed to still its hunger. It ate up all my seeds; my bulbs went into the ground and were seen no more; and my cuttings perished miserably. The tiny row of hollyhocks that had been coaxed into existence were mistaken by a friend for a dwarf species; the few daffodils that condescended to grow gave me no blooms; and as for the roses—they once and for all refused my garden's hospitality.

While I was still battling with my refractory flowers, an old book fell into my hands, and I learned from it how, in the old days, gardens without flowers had been considered pleasure enough. In fact it was only in 1567 that flower gardens were really invented by a man named John Parkinson. Until then only fruit, vegetables and herbs were cultivated, and one reads of the square plots bordered with privet, sage or gooseberry. Red and white currants seem to have played a prominent part, being referred to as

"raisins." Queen Elizabeth, with her love of color, naturally encouraged flower gardens. Here was an idea for me. If my foremothers before her had been content to do without flowers why should not I?

After this I felt quite justified in ending the unequal struggle. Flowers I would give up. They should vex me no more. My garden should be frankly useful; but, at the same time, not a dull kitchen garden. There should be something pleasant and comely to look at from the windows. One must have a place in which to spend the long

out-of-door summer days. The anaemic flowers should all go, but the fir trees and little lawns had served me well for carpet and shade and never made my heart ache, so they might remain.

Now my garden is thoroughly pre-Elizabethan. There are borders of marjoram, rosemary and lavender, and beds of sage, mint, thyme and other herbs, besides rows of gooseberries and "raisins." The beans climb up their tall sticks along the grassy path, forming quite an avenue. The beetroot leaves, with their warm red, make a beautiful patch of color. The onions, when in bloom, stand up boldly in a row, forming a most charming decorative frieze. What is prettier than an asparagus bed, with its red berries? Cabbages, with their leaves of wonderful bluish gray, are studies in tone; and even the potato patch, when it is still green, is not unsightly. One has to confess it becomes a little cheerless when its growth is completed, but the



The Wild Bit of Land



Among the Carrots with Their Feathery Leaves



The Potato Patch

potatoes grown on my poor sandy soil are so good it makes one lenient to them even in their ugly stages.

A row of carrots with their feathery leaves and a row of peas in bloom as a background have a distinct decorative value. Even the soil itself, with its mauve bloom, when once one has forgiven it, has a charm for the eye. The espalier fruit trees, with their old-world look, are quite in keeping with my garden; they suit the old-fashioned grass paths, and they yield their fruit in a generous way, almost laying it into one's hand.

One corner of my garden grows chestnut and oak trees. I leave it wild. One can afford to give Nature a bit when there is ground to spare; and I can be lavish in this respect, having no cuttings, seeds or bulbs crying out for room. So the trees and underwood keep my wild bit furnished. In the autumn, when the leaves are swept to the sides, they form a border of most wonderful colors; and the vivid yellows and brilliant reds almost compensate me for having said "good-by" to my flowers. Of course, it will always be "almost," for in spite of compensations one is really like the fox in the fable, who lost his tail, and it is in his attitude of mind that one will regard the gardens of the more fortunate. Like the optimistic fox, one can accommodate oneself to circumstances, and in the end become quite convinced that flowers, like a tail, are a useless encumbrance and that one is ever so much better without them.

One needs, of course, to thoroughly appreciate the point of view from which such a garden should be considered. Is one's admiration for it somewhat forced? Perhaps so; yet I hasten to put such thoughts away from me. The flower gardens one sees are very beautiful—many of them—but they represent an expenditure of time and money I could not put into my place. Moreover I had tried, tried hard, labor-

iously, expensively, with results more and more saddening and disheartening, to make just such a garden as I would like to have, to grow exactly those flowers, trees, shrubs, and bulbs I had always wanted to grow; but evidently the world held nothing of that kind for me, not the particular part of it I had made my own.

But a garden I must have, and a garden I did have, albeit a new-old type of garden that perhaps not every one would be satisfied with. And it pleases me and interests me, interests me thoroughly, and delights me amazingly. And why not? The vegetables and fruits I grow have real beauty of their own. They are arranged to develop that beauty. They are planted, in most cases, in accordance with a definite scheme. And I have beauty of form and color, beauty as real as any that nature produces in her plant life, beauty as varied as nature shows anywhere. And there is no trouble, no worry, no loss of sleep pondering if the seeds are coming up, no worry over results.

And I take, I dare say, a keen delight in the uniqueness of my garden. I know no other like it, and it is mine own, my very own. I have thought this garden without flowers might give hints of helpfulness to others. Why should not the market garden be arranged with somewhat of the taste and care that are lavished upon the flower growth? Why, if one is cramped for room, should not one deck one's borders with useful vegetables, planted with an eye for beauty, as one plants flowers? Surely if a plant be good to eat it may not the less be admired for its appearance. However, I need not argue the question. I submit my own case, and it has given me many delightful hours and many a good dish of healthy food.



The Espalier Fruit Trees

Helps to Home Building

The Value of Architectural Study to the Architect



THE architect is concerned with the practical problems of actual building. Much of his work is pure drudgery, hard, unprofitable, unentertaining study. Like most men engaged in any occupation he has constantly to do things he does not want to do and when he does not wish to do them. The agreeable side of his work is the designing of agreeable things. He likes to design and enjoys the study that results in designing. But before he can design he must learn many things. The chief of these, without question, is to learn to design. His natural gifts in that direction may be as great as you please, but training and studying are necessary before a structure can be so designed that it can be built in an economic and artistic manner.

The training of an architect is a subject that has received a great deal of attention. In Europe—at least on the continent—it is more or less a matter of governmental control. The greatest architectural school in the world is the celebrated Ecole des Beaux Arts in Paris, and most other architectural schools are modeled on its methods. This is particularly true of the architectural schools in this country which are supported or encouraged by men who have studied in Paris.

The trained architect is a comparatively modern creation, trained as architects are now expected to be trained, and trained as they must be if they would achieve any sort of success in their profession. The architect to-day must be a learned man. It is true that many good architects and many successful architects cannot be so described. This, however, by no means vitiates the truth of the statement, for the architect who knows the most is the one who wins the most notable success.

Knowledge with architects implies more than the mere possession of groups of facts. Architecture is a practical art, concerned with practical affairs. Architectural knowledge must be real knowledge, adapted to practical work and capable of being translated into actual buildings. He must have creative ability as well as stores of knowledge, for without the former the latter is of no value whatsoever.

The conditions of architectural practice are not conducive to the acquirement of knowledge or the development of creative powers. The architect who enters his profession filled with the enthusiasm of youth for beautiful buildings and exquisite decorations, soon loses his young ardor in the exacting requirements of actual work. The fine buildings he dreamed of are never realized. The great schemes that enthused him fail of realization. One by one the cherished dreams, ideals of his early life, fail him, and there is little left save hard reality.

The experience is not confined to architecture, but is characteristic of all callings which are in any way dependent on the emotions or which have an emotional aspect. The result in architecture is, however, well calculated to arouse sympathy, for the dreams of the young artist are pleasant dreams that seem so capable of realization if the opportunity to carry them out but presents itself.

The architect, however, no sooner becomes immersed in professional work than he realizes that he is no longer an artist but a man of affairs. The question whether architecture be a profession or an art has been argued by many weighty minds without either side being satisfied. The current idea

among architects as a rule is that they are artists. The practical conception of them among those outside their profession is that they are men of business, engaged in business matters. They are entrusted with their client's money; they administer practical affairs, and they are concerned with all sorts of things which have no artistic meaning or significance, and which are essential in the practice of their art.

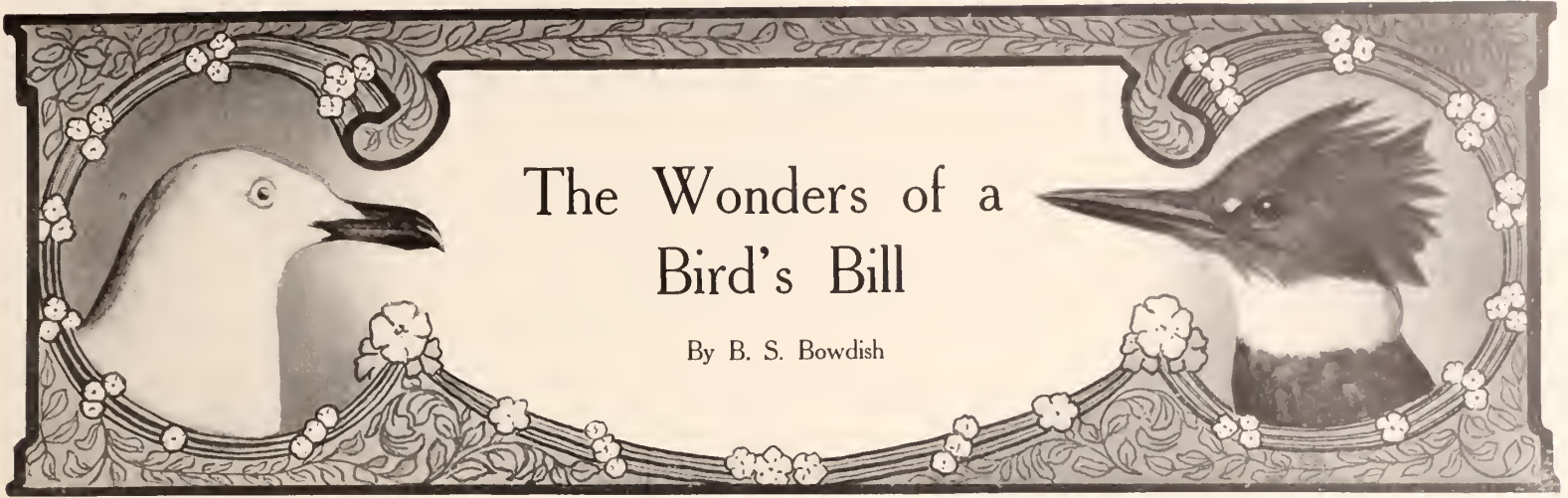
All of this brings out very clearly the very great knowledge the architect must have. He must know all sorts of things. He must keep in touch with the advancement of science. He must know what is the best material to use for certain exposures, situations, method of construction and results. He must know what is being done in his profession to-day, and he must know what has been done before.

The pleasures of the study of architectural history are very great. It is the most important part of the architect's early training—of his pre-professional career. Once plunged into office work he will have little enough time for historical study. Then his ideas are narrowed more and more to the rigid requirements of actual building. His time is so occupied, the things he has to do are so varied that he speedily realizes that he must devote himself to only the subjects of immediate and practical importance if he can hope for any satisfactory results. He does not mean to be narrow, he does not mean to restrict his knowledge; but facts are against him. He lops off historical study with one blow and comes to look upon old buildings chiefly as sources of practical ideas, from which he can borrow what he can and from which he can compile the most.

But the architect must know the past as well as the present. No contemporary work looks so consistently to the past as architecture. It ceased to be an original art in the old and literal sense of the term, nearly four hundred years ago, and since then it has been an art of compilation rather than an art of creation. The greater the necessity, therefore, for architectural study; the more urgent the need for familiarity with the achievements of past time; the more vital it is that this knowledge should be the widest possible, knowledge without limit, knowledge without practical restrictions, knowledge the mere recalling of which will be a pleasure and a delight.

For the buildings of the past have a greater art interest than those of our own time. They were built under better artistic conditions, by men who labored for art and who were, in a sense, the masters of their employers. They went into architecture because they loved it, and they worked at it with enthusiasm that no modern man can bring to his own labor. Architects do not work in the same way today. Their problems are wholly different. They do not build on the same scale nor with such splendid results. They have no opportunity of doing so. Their work is less grand but more practical. They are concerned less with the artistic side of building than with the practical. They add less to the beauty of life and more to its safety. And if they can combine safety with artistic expression they have achieved the most that can be asked of them and the most that can be expected.

This is the real new note of modern architecture. And it emphasizes the enormous difficulties under which the modern architect must work. He must use the old motifs as the basis of his designs, and he must solve new problems with old materials. Is it strange he does not always succeed?



PROBABLY few people ever stopped to think what a wonderful organ a bird's bill really is, less as to structure than to what is accomplished with it. It has been asked what a man would do if he had to build his home and procure his food with his hands tied behind him. This is in effect what the bird has to do, and the constructive and artistic work shown in nest building has ever defied all effort of man to successfully imitate.

A bird's bill is hand and mouth. As a hand it takes, holds and carries food and nesting material, constructs and cleans its nest, dresses its feathers and cares for the cleanliness of its young, and in some cases, as the parrots, assists itself in climbing. As a mouth the bill tears, cuts or crushes the food, according to what it consists of. The bill is both lip and tooth to the bird, which has neither.

The general shape of the bill is such as to give the greatest strength with the utmost lightness and delicacy. It is formed of light, projecting skull bones, sheathed in horny cases, instead of being covered with skin.

The primary functions of a bird's bill are, first, the securing of food, and, secondly, the building of the nest. These being the general main requirements, it might be supposed that there would be comparatively little deviation from one general pattern of bill. The difference in the nature of the food, however, and in the manner of procuring it, among the different orders and families of birds, is such that there is probably no other one feature common to the members of any group, in which is to be found so much diversity in the matter of form and general size.

For the most part the form of the bill is found to correspond pretty closely with the nature of the food and the manner of procuring it.

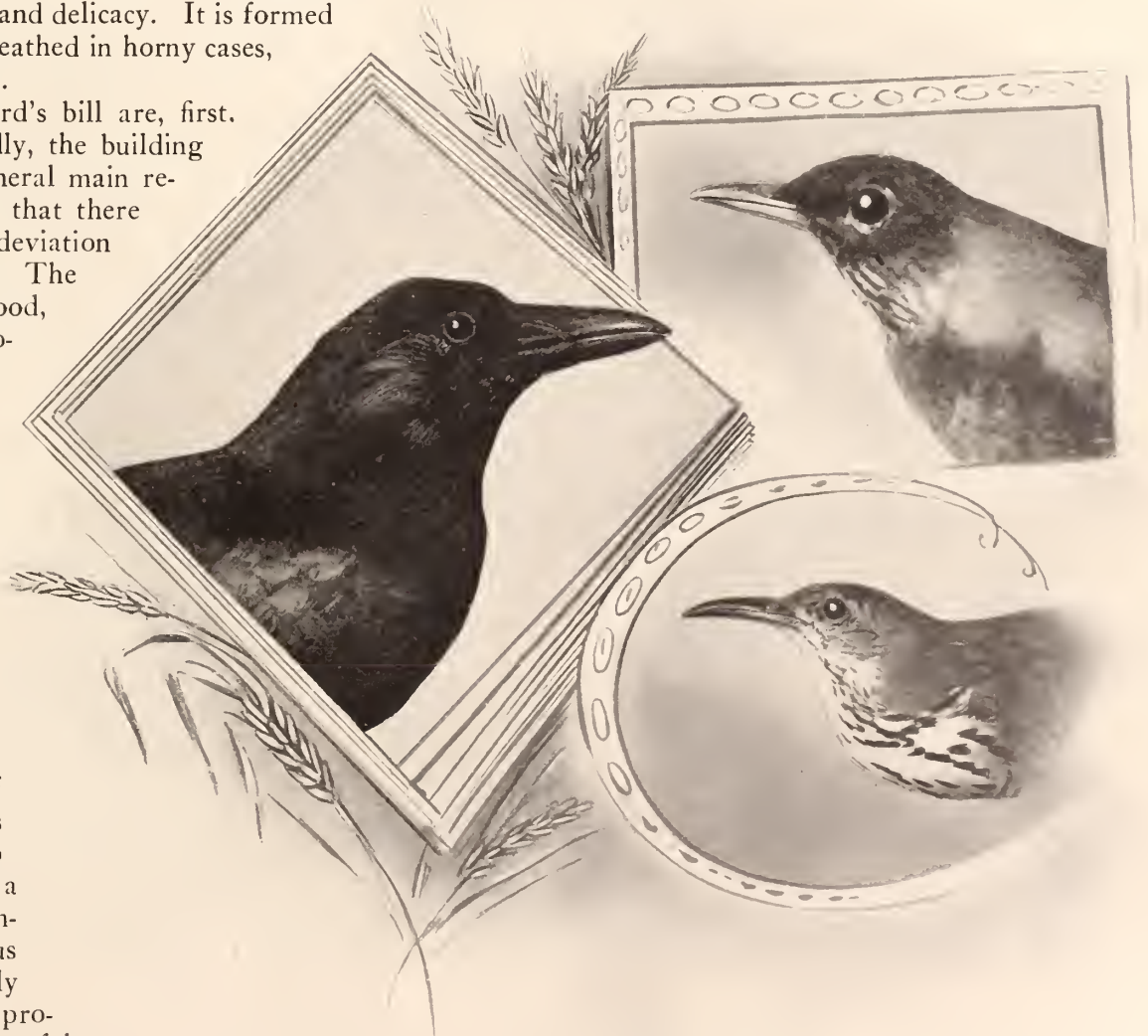
The various requirements of nest building and minor matters seem to be made subservient to this essential one. Taking as a type form of bill, the shape common to birds which are omnivorous in food habits, we have a nearly straight conical bill, of moderate proportions, of which the crow's is a fair example. Such a bill, while not as

well adapted to the procuring of any one kind of food as some specialized form, yet seems best adapted to meet the needs of obtaining a varied bill of fare under diverse conditions. In many cases the general nature of the food of two or more families is alike, but the method of procuring it varies greatly among the different orders of birds, a fact which results in considerable difference in size and shape of bill.

The food of both pelican and man-o'-war bird is fish. The former is an honest fisherman, and, like other honest fishermen, has times of abundant success, and others when he has only "fisherman's luck." It is therefore to his advantage to

Robin

Long-Billed Thrasher



Crow



The Bills of Some Common American Birds

- 1 American Egret. 2 Bill of Rhinoceros Hornbill. 3 Brown Pelican. 4 American Goshawk. 5 Carolina Paroquet. 6 Common Puffin. 7 American Flamingo
 8 Roseate Spoonbill. 9 Bill of Pileated Woodpecker. 10 Man-o'-War Bird 11 Mexican Crossbill

have a bill adapted for the rapid gobbling up of the small fish of the schools with which he may come in contact, as well as a basket in which they may be deposited until a time of leisure for devouring them presents itself. Strength is not an essential, hence we find the bill of the pelican attaining a length of ten or more inches, the upper mandible only of sufficient strength to meet the requirements, the lower mandible a light, pliable framework, divided nearly to the tip, and supporting a capacious pouch.

The man-o'-war bird, besides being sometimes an honest fisherman, is often a robber of other fishermen, worrying other birds who have made a catch until the prey is dropped, to be seized by the marine highwayman. While the bill is of the same general pattern as that of the pelican, it is modified to meet the difference in habit, lightened and made less cumbersome by being much shortened ($4\frac{3}{8}$ inches), and decidedly firmer, with a greatly reduced pouch.

every one from the bill of the domestic bird. It varies in degree to a considerable extent in the different forms, but the general shape remains. The spoonbill has a very well shaped ladle for scooping up his food.

The bill of the woodcock is a striking example of perfect adaptation to special requirements. Long, slender, and tubular in shape, the upper mandible projects beyond the lower, and the tip is flexible, and exceedingly sensitive. The bird feeds by probing in soft, damp earth for worms and the like, the flexible mandible tip acting as a sensitive finger to locate and extract the prey. The snipe, with a bill almost exactly similar, has about the same habits in feeding. The sandpipers, with food habits more intermediary between the woodcock's and those of birds possessing the type form, have bills more approaching in shape those of the latter, and the plovers still more typically shaped beaks.

There are examples of very remarkable bills, whose



Grooved Bill Ani

Horned Owl

Mangrove Cuckoo

The puffins, another family of seabirds, include crustacea with fish in their bill of fare, and find a most radically different form of bill best adapted to their needs. The gulls and terns, birds of the seas and great lakes, are more omnivorous in their food habits, being water scavengers, and their bills approach much more nearly the type selected. Seabirds either build no nest at all, laying their eggs on bare rock or sand, or construct a loose, shabby affair, of seaweed, so that they are unhampered in this task by the lack of a more delicate organ.

The flamingo, feeding in more or less shallow lagoons, on certain crustacea, is compelled, by his height, to take his food with bill inverted—that is the lower mandible is above while feeding, as the bird's neck is bent down. Often scraping the food from the bottom of the pools, an exceedingly peculiar shape of bill is the result of the bird's special needs.

The typical shape of bill in the duck family is familiar to

strange shapes are not explained by requirements of food-getting or nest-building. These are most conspicuous among certain foreign species. The rhinoceros hornbill of Africa is an example of one of these very peculiar forms of bill. In such cases it is supposed that the decorations of the bill serve as sexual attractions.

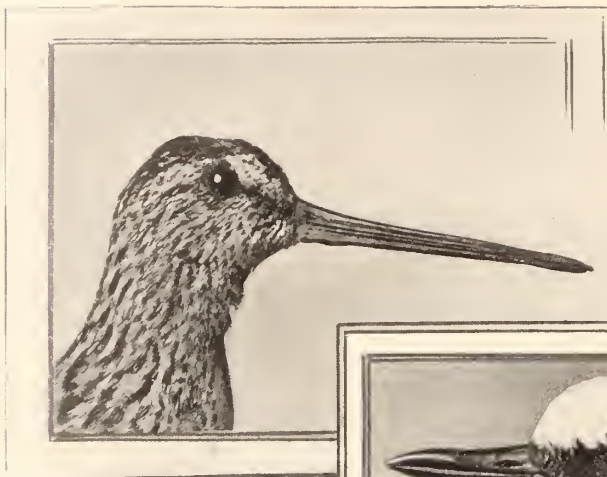
The gallinaceous birds, to which our domestic fowl belongs, are more or less omnivorous in feeding, and the bill forms are not widely divergent from the type.

The hawks and owls require bills that will hold and tear prey, and they have prolonged and strongly curved upper mandibles and bills of great strength. The shrike, belonging to a very different order, yet with food habits much the same, has a similar shape of bill. The kingfisher, securing his prey with a scissors-like motion of the bill, after a dive, has a large and powerful beak, well suited to cut the water as he plunges. A small relative, found only in the West

Indies, the tody, feeds upon small insects, taken both on the wing and from the foliage, and the bill is wide and long, to better adapt it to the ready securing of its prey. Both of these birds excavate holes in banks of earth for nesting, for which work their bills form excellent spades.

The bill of the parrot is well adapted to its fruit-eating habits, but is also a very useful member in climbing. It is very heavy and strong, with the upper mandible well curved. The tongue of the parrot is also remarkable among bird tongues for the resemblance it bears to the human tongue. This probably accounts for the facility with which these birds learn to articulate words. The food of humming-birds consists of two quite different substances, the nectar of flowers and minute insects. Even the latter are taken chiefly from the interior of flowers, and to facilitate the obtaining of this food the birds are equipped with bills taking the form of long, slender tubes, and with tongues of unusual and very interesting structure.

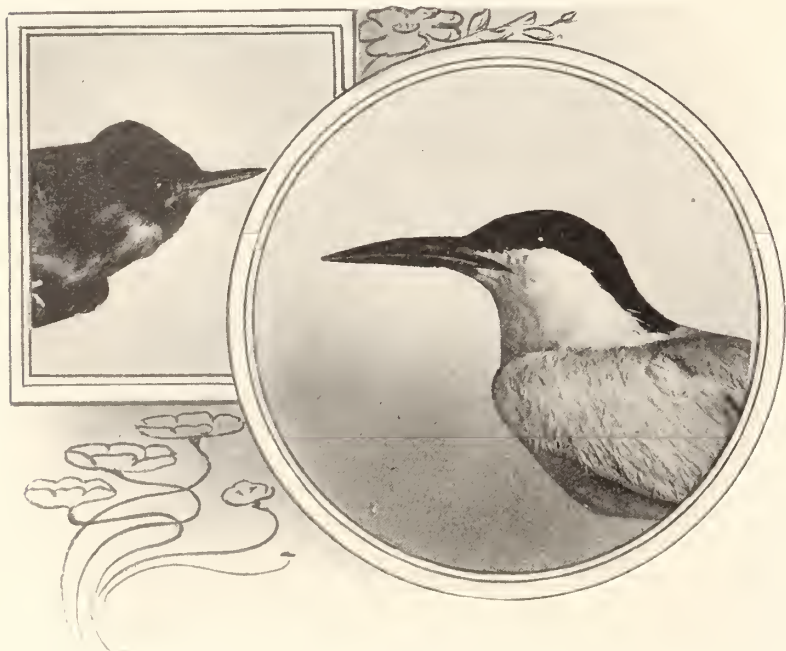
In the tyrant flycatchers, comprising the kingbird, crested flycatcher, least flycatcher, wood pewee and others, a rather typically formed bill is considerably widened, tending to render more easy the capturing of insects on the wing.



Dowitcher

Black Bellied Plover

Mourning Dove



Tody

Roseate Tern

The typical woodpecker bill is a very efficient chisel, accompanied by a tongue which acts as a probe. This structure finds its highest perfection in the ivory-billed and pileated woodpeckers, while the flicker, feeding much of the time

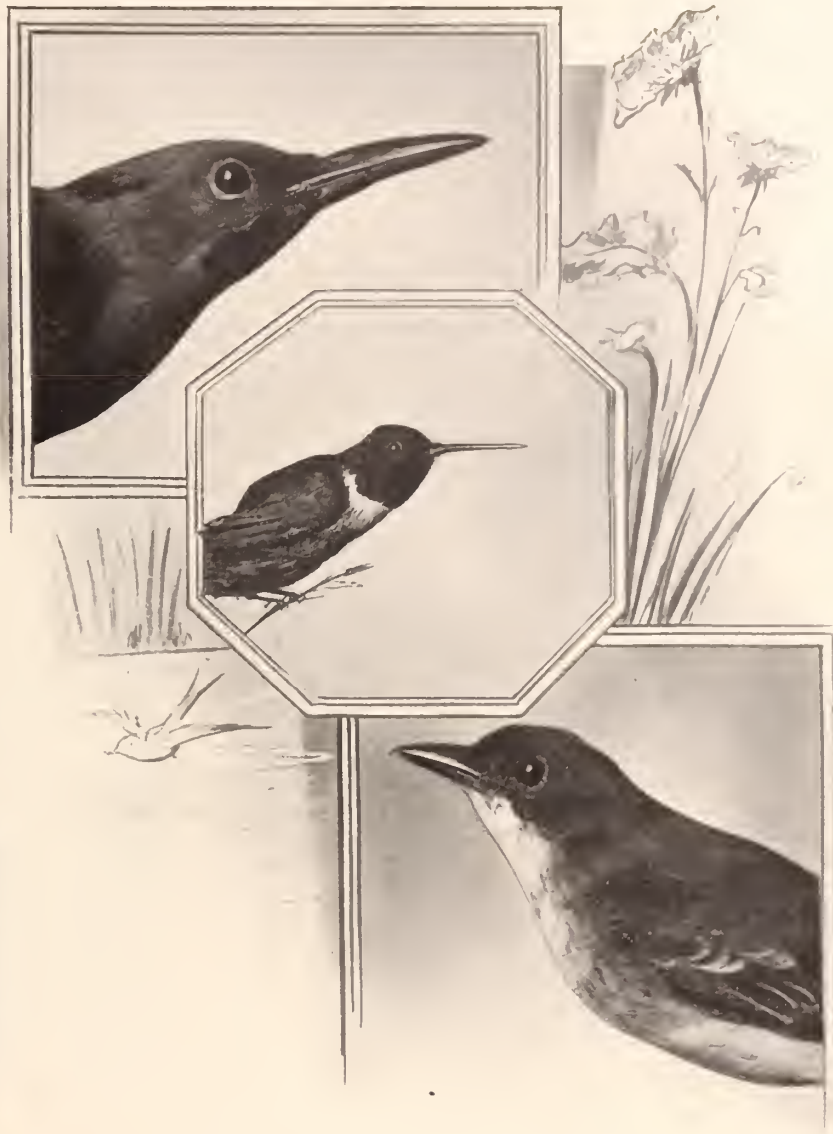
in the manner of the meadow lark, and nesting usually only in the softest of dead wood, has a bill shaped more like that of a meadow lark than that of other woodpeckers.

Intermediate between these two forms come the downy and red-head, with many other species. A peculiar construction, permitting of the extreme protrusion of the tongue in woodpeckers, is the great length of the roots of that organ, in some species extending from the base of the tongue around the back of the head, on either side of the neck, over the top of the skull, with the ends resting close to the base of the upper mandible.

Among the smaller birds, as a rule, the more the food consists of seeds and vegetable matter the more the bill tends to a heavy, short, conical shape, while those species feeding more exclusively on insects tend to have more slender, elongated, conical shaped bills, in some species more or less decurved. In the grosbeaks, some species of the tanagers, and some of the southern sparrows, the seed-eating type of bill finds its most extreme proportions. The warblers are among the birds exhibiting the other extreme, with the thrashers, wrens, and creepers, as examples of the decurved form of bill.

One remarkable example of the surprising manner in which nature secures for her creatures that structure best adapted to their needs is shown in the case of the crossbill. One unfamiliar with the bird's method of feeding would suppose that it would be fatally hampered in eating by the crossed mandibles, but after having watched the dexterity and rapidity with which the bird extracts the seeds from cones (its principal food), one will readily agree that the bill is shaped to its needs.

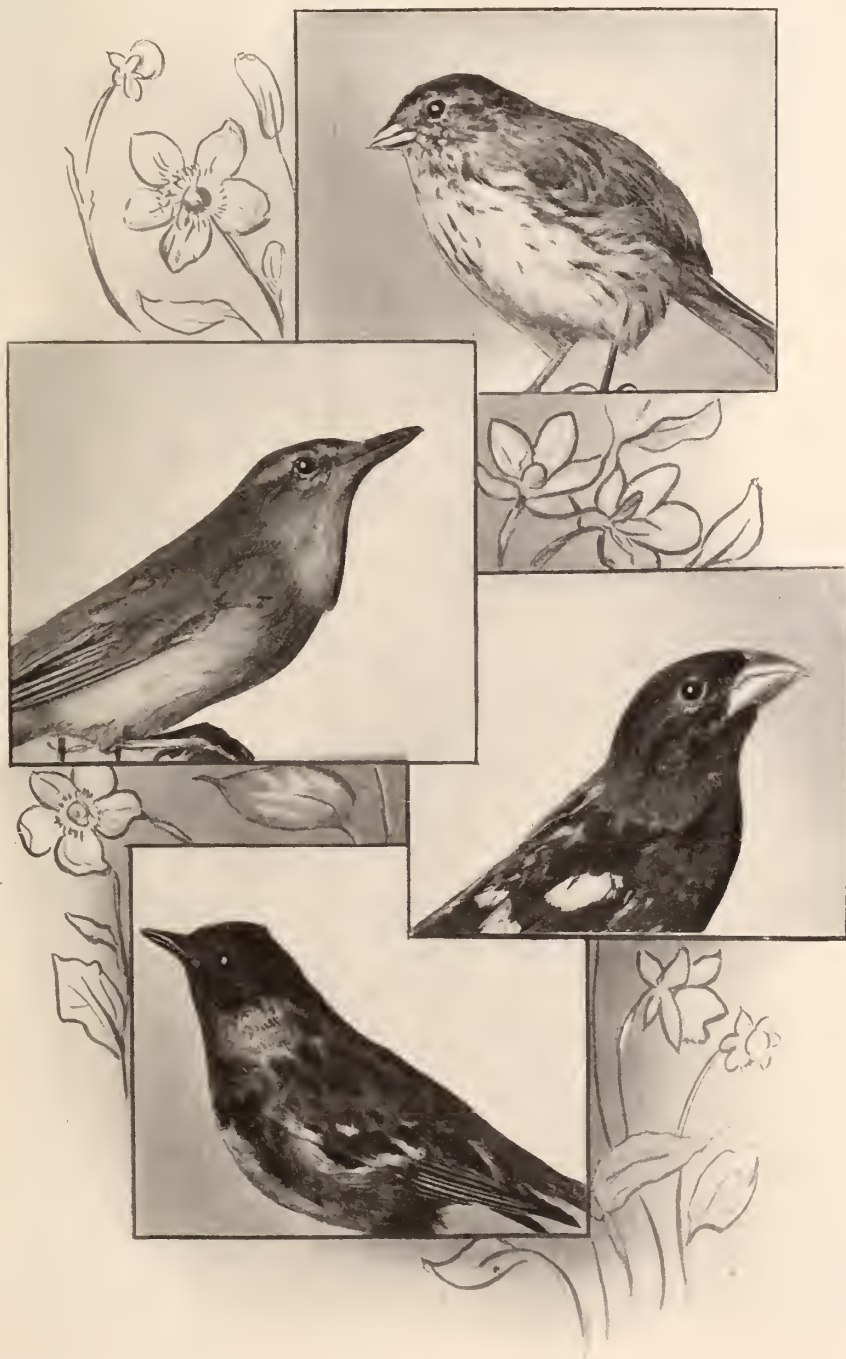
The growth of the bills of birds continues through life as with our finger nails. Where freak or accident prevents the proper meeting of the mandibles the resulting interference with the ordinary functions of the bill minimizes the wear to a point where it is exceeded by the growth, resulting, sometimes, in peculiar malformations. Such a case was exhibited by a Porto Rican woodpecker which I collected. It had suffered an injury to the lower mandible near the base. Apparently, as this injury healed, the edges of the wound contracted, warping the mandible to that side, and tending to a corkscrew shaped growth. The bird was debarred from hammering by the weak, misshapen bill, and the growth which normally would have replaced wear abnormally prolonged both mandibles, though why the lower so much more than the upper is not easy to understand. In this bird the upper mandible had exceeded the average length by about a third of an inch, while the lower mandible was nearly three times the normal length. The lower mandible made a half turn, so that what should have been its lower surface, was, at the tip, the upper. It would have been interesting to know if this bird was able to feed on seeds and fruit, which normally form a large part of the food of this species, or whether it was fed by the mate, which was with it when shot. At the time it was collected the stomach was empty, while



Flicker

Humming Bird

Kingbird



Red-Eyed Vireo
Bay-Breasted Warbler

Song Sparrow
Black-Headed Grosbeak

that of the mate contained the remains of a large dragonfly.

As in the time of Noah, the dove returned to the ark with an olive branch in its bill as a token of promise, so now, each spring, the birds return to our dooryards and shade trees, bearing nesting material, as though it were a sign of the delightful intercourse we may have, and the study of the beautiful creatures we may enjoy if we will but meet them in friendly spirit half way.

The horny sheath of the bill is called rhamphotheca and is formed by the outer layers of the malpygian cells. It resembles in structure the other horny parts, such as claws, nails, and spurs. In some birds, as some of the ducks, this covering remains soft except near the tip, which contains tactile organs. In the hawks and parrots the distal end of the upper mandible is hard; basal portion, called the cere, is thick and soft. This latter is usually very sensitive, and in it the nostrils are enclosed.

In most species the cere is bare, but in some species of parrots it is covered with feathers and in such cases its structure is similar to the ordinary skin.

The covering about the nostrils is soft in some species and presents a means of externally closing them though without special muscles. Such an arrangement is called an operculum, and is prominent in pigeons.

In petrels and shearwaters the operculum forms a complete tube, whence these birds are called Tubinares or tube nosed birds.

The Concrete Garage of Dr. N. B. Van Etten

Tremont, New York



CONCRETE construction in its modern forms and uses, and the successful application of the principles of reinforced concrete to the building of country houses, stables and garages, which shall be architecturally beautiful in themselves, and harmonious with their surroundings, is the most engaging topic among the architects of the present day.

The garage of Dr. N. B. Van Etten, at Tremont, N. Y., of which Mr. Robert W. Gardner, who is making a specialty of this class of work, is the architect, is a very excellent example of this form of construction. Mr. Gardner has shown an unusual appreciation of the possibilities open to concrete construction, and much that has been accomplished may well be termed novel and the results attained both from the practical and artistic standpoint, justify his confidence in the new material.

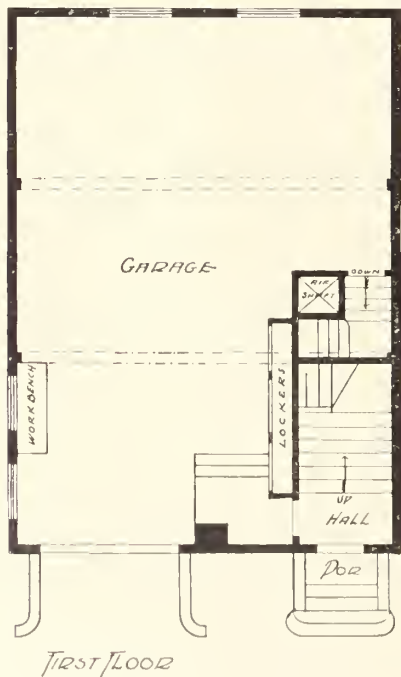
The foundations, the walls, the floors, stairs, steps, partitions, and even the roof, are constructed of reinforced concrete; the only wood used throughout the entire building being that which is found in the jambs of the doors and windows, and the doors.

The concrete for the garage was mixed in the proportion of one part cement, two parts of sand, and four parts of three-quarter inch trap rock. The forms used for the walls were made of rough lumber and were generally five and a half feet in height; rods with key nuts and washers passing through the walls in the line of the uprights, served to hold the boards in place and to prevent

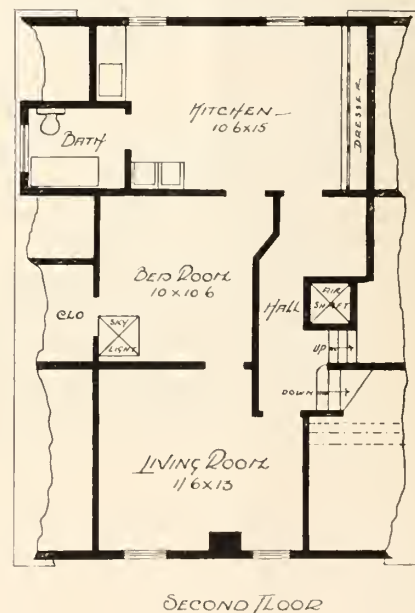
spreading as the concrete was deposited, rammed and spaded. As the work advanced, the molds were raised, while the finished wall served to keep them in line. As the walls progressed they were reinforced by quarter-inch iron rods, placed perpendicular and horizontal and from eight to nine inches apart. The walls were built eight inches thick. The beams, twenty-five feet long, which are placed nine and a half feet apart, were built twelve inches deep and nine inches wide, spanning

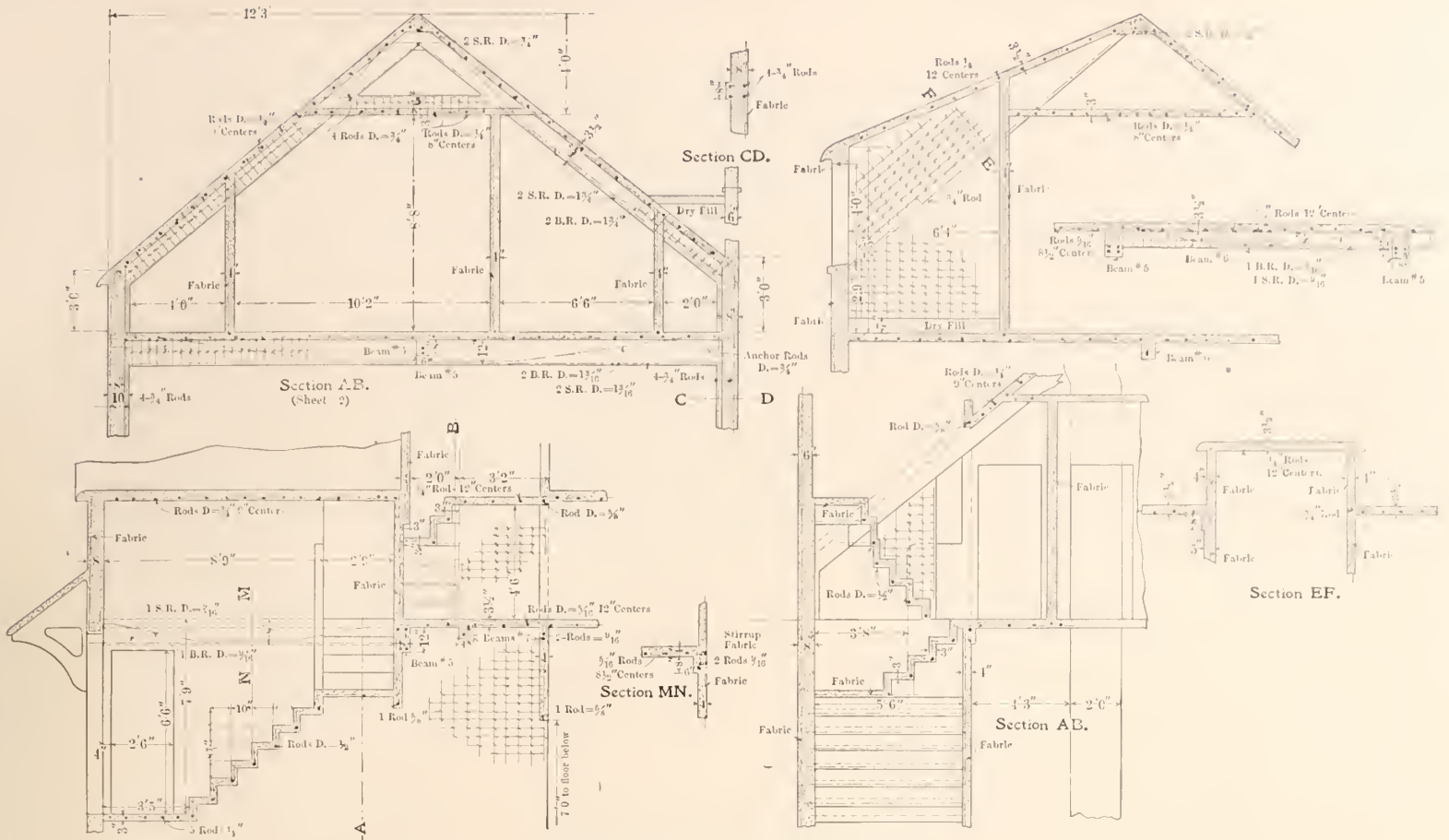


A Garage Constructed of Reinforced Concrete throughout Walls, Floors and Roof



The Angle of the Room Shows the Line of the Roof Which is only Three and a Half Inches from the Inside of the Room to the Open Air





A Section Showing the Reinforcement

the building, and with one line of longitudinal beams eight inches deep. It is interesting to note that the strength of these smaller beams was tested to the weight of 32,000 pounds. The floors, which are four inches thick, were built on forms, the reinforcement being placed in position before the

concrete was laid; after the floor was set, the forms were removed, thereby completing the floor and making it ready for use.

One of the most novel features is the roof which is also built of reinforced concrete, three and one-half inches in

Concluded on page 46



The Court Showing the Wall, and Fence Wall Built of Reinforced Concrete



The Gateway from the Street to the Court, and the Wall Built of Reinforced Concrete

How to Buy Worthless, Run-Down Farms with \$1,000 or Less and Make Them Productive

By S. L. De Fabry



Is it advisable for the city man with a few hundred dollars and no experience to start farming with some assurance of success is a question often asked, but difficult to answer. The vision of a snug country home is inviting to the average breadwinner crowded in his city quarters, but the perils of inexperience and an abundant lack of capital weigh down the efforts and discourage the attempt. If a man is willing to rise with the birds, work sixteen hours per day in all kinds of weather, not minding a sore back or blisters on his hands, is frugal in his wants, saving in his earnings, willing to lead a lonely life, and combines sound judgment with perseverance, that man can safely undertake the experiment.

Jersey and Delaware and along the eastern shore of Maryland there are many cheap farms, held by mortgagees or heirs who have no use for them, and who by renting them out on half shares succeed in increasing the number of the run-down farms. The soil is generally light, sandy loam, responding quickly to good cultivation, the climate is healthful and not severe in winter, and the land can be developed with leguminous crops to a state of productiveness with less difficulty than the stiff, often sour or stony soils of the cheap New England farms. They are eminently adapted for the non-experienced amateur, as the land besides being good for general farming is suited for fruit and vegetable growing, also poultry raising, opening a variety of crops to the beginner, which is of vital importance, as it is the



How the Barn Looked at the Time Possession
was Taken



The Young Son, Who with a Helper
Did Most of the Farm Work

He soon will own his home and may add to his own the homestead of his neighbor who has been less adept in profiting by "long experience." Experience of the wrong kind is the very reason that so many cheap, run-down farms can be bought East, at almost any price. The so-called "abandoned" New England farms demonstrate that the style of farming of fifty years ago is unprofitable to-day. The homestead, which can be purchased at the mortgage value, teaches the lesson that life-long experience, if not adapting itself to modern ideas, is valueless and may prove disastrous. The fundamental principle is, never to undertake more than what can be accomplished successfully and to develop with the utmost energy the profitable and to throw out the unprofitable. In selecting a place the acreage is not of importance; the fertility of the soil and market facilities are the main points that should guide the beginner. In certain sections of New

only guide to discriminate between the profitable and the unprofitable. Farms of fifty to one hundred acres can be bought in that section from \$1200 to \$2500. The terms are generally easy, only a small cash payment being required in most cases. Of course, if the place is really cheap, the buildings are no doubt sadly in need of repair; the fences may be down; the orchards are probably in weeds and neglected; but as a whole, if properly handled the future prospects are good and success lies entirely with the man who attempts the feat. I know of a farm of one hundred and fourteen acres near New York in New Jersey, three miles from Lakewood, which was sold two years ago for \$2500—five hundred cash, balance on five years' time. Years ago this farm produced annually the amount for which it was sold. The heirs having no taste for farm life and being wealthy people, rented the place "on half shares," to care-

less, incompetent and in some cases dishonest tenants, until the owners' share hardly paid the taxes. Naturally discouraged, no repairs were made, the buildings decayed, the tenants wore the land out, without replenishing it, and the place decreased in value from year to year until the owners were glad to sell at such a figure.

A fairly good two-story nine-room house with a very large barn sadly in need of repairs and some outbuildings went with the place. The land is flanked by a river and a good brook runs through the property. The soil is sandy loam, with a clay subsoil. Eighty-five acres are cleared; the balance is woodland and oak brush. Twenty acres are of the richest bottom land which will grow anything. This choice land was not available, at the time possession was taken, as through neglected drainage the tract was submerged every spring. After the first payment was made less than \$500 remained with which to make the start. Of that sum \$250 was expended in a cheap team of horses, cows, young pigs, chickens, implements and seeds. Implements and wagons were well worn and bought at a chance purchase for a trifle. The first work attempted was to repair the drainage of the bottom land. It was successfully accomplished and the entire tract planted with corn. An excellent crop was raised, sold for cash and only an amount sufficient for feed retained. An extensive home garden provided potatoes, cabbage, and all necessary vegetables for the entire year, for family use, leaving an abundance of waste, which was utilized to feed the pigs and chickens. Good pasture land with an assured large hay crop and facilities for the disposing of milk for cash showed the new owner's good judgment in having given his attention to the dairy possibilities of the place. During the first winter strenuous efforts were made to keep the remaining little cash sum intact. Team work at \$3.00 per day was obtained, more than enough to cover living expenses. Three more cows with calves by their sides were purchased out of the winter earnings, and still a trifle was left for the necessary spring expenses. Following the set purpose, young calves a few days old were purchased from neighbors or where opportunity afforded at \$2.00 per head and raised to milch cows. At this writing the herd in the fall of the second year has increased to eight milch cows and seven heifers of all ages. The milk is sold at the door to wholesale dealers at four cents per quart in summer and five cents in winter. The aim is to bring up the herd to thirty head, which will be possible in course of a few years, counting the natural increase, and by successfully raising the purchased calves. The barn has been repaired and put in good order, and stalls for the fifteen head now in possession have been erected. A further increase in the herd will neces-



Another View of the Barn



The New Outbuildings Completed the Second Year



The Herd of Milch Cows



The Nine-Room House, Plain but Comfortable

sitate an additional barn, as the six horses kept now with the cows occupy the entire stable. The success of the plan is feasible, as the place can support thirty cows and enough feed can be raised so that only very little has to be purchased in additional dairy food, to winter them over. Besides the dairy prospect, the actual farm improvement received attention the second spring. Six acres were planted in potatoes requiring twenty-five barrels of seed potatoes. Three tons of fertilizers were bought, to be paid for after the harvest was sold, and used in planting the potatoes. An average of sixty-five barrels per acre was yielded. The entire crop was sold to a New York produce dealer at \$1.25 per barrel net, the dealer sending on the car and bags to the nearest railroad station, three miles from the farm, so all that was required was to dig, bag and haul the potatoes to the station and load them on the car.

A potato digger necessitating five horses to work successfully was rented and with the help of four additional laborers the crop was dug, assorted, bagged and loaded in a few days. Only eight acres were planted in corn, yielding on the average forty bushels of shelled corn to the acre. Fifteen tons of hay were cut at an average value of \$16 per ton. The vegetable garden was extended and every kind of vegetable grown in larger quantities. The place being only fifteen miles from the coast, with the summer resorts as a good market, this end of the business with its fair profits and cash sales was developed. Three times a week, start-

ing early in June, a two-horse load, filled with vegetables, fruit, butter, eggs and chickens was dispatched to these resorts. Business relations with hotels were readily established and the products sold for cash. The business increased rapidly so that the home production was soon in some things unable to meet the demand, and to keep up this lucrative end, farm products had to be bought in a nearby town having a regular farmers' market; but even at that rate from \$20 to \$25 per week was cleared for four months.

Almost the entire summer farm work was carried on by a young son of sixteen with a helper of about the same age, the latter receiving \$10 a month and board. The only additional labor employed was day labor for harvesting potatoes and getting in the hay. In addition to the above, time has been found for utilizing two acres of sandy soil not doing well in grass, but well for small fruit. These two acres were set out in blackberries in the spring, and this crop alone if properly cultivated and intelligently handled will pay the interest on the mortgage. The future of the venture is assured now, and the required \$2000 will be on hand at the expiration of the time. Then the net results of five years of arduous labor will be the ownership free and clear of a combination dairy farm with a herd of thirty or more, giving a daily income of from \$8 to \$10 from the sale of milk alone. The value of the place, governed by the revenue obtained, will have increased nearly thrice as to the original price, besides giving an income which will leave a handsome surplus yearly if all

obligations have been met, making it not only a creditable but certainly a profitable business venture.



Wife and Children, Who Gathered Peas and Beans, Picked the Berries and Shipped Them



The Marvels of Plant Retardation

By S. Leonard Bastin

NEVER before in the history of the world have such striking advances been made in the realm of horticulture as has been the case during the last twenty years. Step by step, patient investigation and skilful experiment have removed those difficulties and deficiencies of which the old time gardener was so painfully conscious. Probably few innovations have had such a revolutionary effect as the introduction of the system of plant retardation by cold, which was first practised in England about eight years ago.

The root idea of plant retardation is so simple that it is a wonder that nobody had thought of attempting something of the kind years before the scheme was put to a practical test. It is a fact well known to everyone that in the natural world the retarding of vegetation by low temperature is of common occurrence. During late winters when the grip of the ice king sometimes extends well into the spring season, all kinds of plant life are often held in check for weeks. That this does not in any way cause injury is very evident from the fact that directly the warm weather comes, the buds on the plants split and the tender green leaves begin to develop, none the worse for the experience. All that has taken place has been a prolonging of the winter sleep or resting period, in which all plants indulge.

As has often been the case before, mankind has taken a leaf out of Nature's book. The retardation of plants as practised by the 20th century gardener is merely an artificial lengthening of the dormant state, although carried much farther than is ever the case under natural conditions.

It is curious that it is not known who was the discoverer of the method of plant retardation. The idea had not long been mooted however, before an English firm of flower specialists decided to test the matter thoroughly in order to find out its commercial possibilities. It was felt that if certain plants could be kept from flowering at their natural time by means of a continuously low temperature and then blossomed quite out of their season that a most valuable addition would be made to the resources of the florist. This is what has actually been accomplished, with the result that in the case of some kinds of plants the gardener is quite independent of the seasons.

The first experiments were carried out in connection with Lily-of-the-Valley. This plant is, of course, a naturally spring flowering variety, and as it had shown itself amenable to forcing it was felt that it would be likely to prove a suitable subject for retardation. Some lily roots were placed in a refrigerator in the late autumn, and were kept there all through the winter, past the proper blooming time of the species, right until far into the summer. On a certain day



A Cold Storage Building in Which Plants are Retarded. In this Building Five Million Lily-of-the-Valley Plants Were Retarded in a Single Year



The Man Who Works in the Channels that Lead Cold Air into Chambers Wears Arctic Dress



A Fine Epiphyllum in Full Bloom

the roots were properly thawed in a cool place, and then were brought out into the light and warmth. In a surprisingly short space of time the plants burst into a wealth of flower and foliage and for the first time in history lilies-of-the-valley were on the London market in August.

As may be imagined it was not long before many other kinds of plants were tested as to their ability to stand the ordeal of retardation. It was found that nearly all the Japanese lilies, as well as such plants as azaleas, spiraeas, syringas, etc., were very good subjects for the treatment and the list seems to be capable of a good deal of extension. It is strange that up to the present all attempts to retard hyacinth, tulip and narcissus bulbs have met with failure. Why this is so does not seem to be at all clear, for one would think that the plants would be more capable of standing the degree of cold than the Japanese lilies.

It is obvious that it is only hardy kinds of plants which could be retarded, and even with these the matter of the adjustment of the temperature is of supreme importance. Some varieties will bear only a degree of cold which is just at the point of freezing, whilst others do best with several degrees of frost. To find out all this requires a great deal



Lilies-of-the-Valley After Retardation Showing their Appearance on the Seventh Day of their Exposure to Heat

of investigation and the secret of the exact temperature which is most desirable for each plant is jealously guarded by firms who make a specialty of retardation.

It is an interesting experience to visit a plant retarding establishment. By far the most prominent feature is the huge cold storage building in which the plants are stowed away. Under the care of the guide one passes the portals. In a moment one steps from the warmth and light of a summer's day into the cold bitterness of a winter's night, the darkness of which is but feebly relieved by the flickering hand lanterns. The interior of the building is divided up into various chambers and each one of these is allotted to some particular kind of plant. This is full of lily-of-the-valley roots, the next is packed with boxes containing Liliun bulbs, whilst again a compartment is crammed with small potted plants of azalea and spiraea. Each and all of these varieties are in a dormant condition, sleeping away their time entirely unconscious of the changing seasons in the outside world. The walls of the chambers are thickly coated with a deposit of frost crystals, and millions of these



A Splendid Specimen of Phyllocactus Albus Superbus

flash like diamonds in response to the rays of light from the lamp.

The degree of cold is usually obtained by means of a compressed air apparatus, and the freezing current is led into the different chambers through wooden channels. In course of time these passages get choked with hoar frost and it becomes necessary for a man to enter them and clean the accumulation away. That this is a cold job may be realized from the fact that in places the temperature is as low as twenty degrees below zero. The costume of a workman engaged in this clearing out operation consists of what is practically an arctic outfit. Every part of the body with the exception of a small hole for eyes and mouth must be protected with thick wool. Otherwise serious frost bites would ensue.

Retarded plants may be kept in check for eight months, or at times as long as a year and curiously enough they do not seem to be any the worse for the treatment. Indeed the experience seems to make them grow all the faster when they are allowed to make a start. Some varieties grow at a tremendous rate when they are brought into heat, and this is particularly noticeable in the case of lilies-of-the-valley. The writer as an experiment tested a batch of lily roots which had been retarded just to see how fast they would grow. These were planted on a certain day and in one week had made great progress, being six inches in height. More remarkable still, in another week the plants were fully out in a splendid display of leaf and fragrant bloom.

The whole process only took fourteen days from start to finish. Of course, all this means an immense saving of time to the flower grower. All kinds of retarded plants are exceedingly easy to grow and do not require any great amount of forcing. The principal point to bear in mind in their culture is that all roots must be well thawed before they are placed in a warm situation, and that the growing plants should be shaded from strong sunshine.

There is no doubt that plant retardation has a great future before it. As the system extends, the gardener will

would be an impossibility. No amount of artificial heat would take the place of the rays from the solar orb. This will apply to all kinds of fruit-bearing plants.

At the present time experiments are being actively pursued on both sides of the Atlantic to see whether it is not possible to discover some light which would have the same effect on vegetation as has the sun. Science is familiar with the composition of the solar rays to a large extent and it does not seem an unreasonable thing to seek for an artificial substitute. As a matter of fact the rays from an acetylene lamp



Lilium Auratum After Retardation



Azaleas are Good Subjects for Retardation. Potted Specimens are Brought into Flower at Any Time of Year

be able to turn the seasons topsy-turvy and produce flowering plants at any time of the year. Were it possible to apply this method to fruit trees it is obvious that a tremendous step would have been taken. But in this direction there lies a great difficulty. It is quite likely that an apple tree, for instance, might be kept from starting into growth in the spring and held in a latent state all summer through. Then early in the autumn the tree might be placed in a glass house, when it would almost certainly burst into flower and leaf. With the diminished power of the sun which is characteristic of the winter months, however, the development of fruit

have been found to approximate very closely to sunlight. So much is this so that fairly well developed plants have been produced which have never known the daylight, the whole course of their existence having been spent under the influence of acetylene light. Still up to the present the experiments tend to show that there is something in sunlight which has not as yet been demonstrated by analysis; some magical influence of which human beings are conscious but cannot explain. The secret is worth finding out, for artificial sunshine in combination with plant retardation would place the gardener in a wonderful position.

Concrete Garage of Dr. Van Etten

Concluded from page 39

thickness and on forms, in a similar manner to that in which the floors are built. The stairs, steps and even the hood over the front porch, are constructed of concrete, which are in themselves a most interesting form of building.

On all the exterior wall surfaces after the forms were removed, the walls, partitions and roofs were given a smoothing coat composed of one part of cement to two parts of sand. After this was done, in order to reduce the cold tone of the natural cement color, which is so objectionable to many, the whole was given a coat of La Farge cement, producing a smooth, soft, warm effect.

The plan of the garage provides for lockers on one side, and a handy work bench placed in front of the window on the other side. Steps of concrete lead up to the second floor, which contains the living quarters for the chauffeur,

and consists of a living-room, kitchen, one bedroom and bath. In this particular case the bedroom is very well lighted and ventilated by a skylight, though an outside window could be provided if desired. All of the rooms are well fitted with all necessary appointments. A corner of the living-room shows the angle of the roof which is only three and one-half inches in thickness, between the inside and the open air. The walls and ceilings of this floor were given a sand finish coat of plaster. The court between the house and garage has a wall built of concrete which is also worthy of note.

The rooms are dry and wholesome, and the temperature is easily regulated both in summer and winter, while from a sanitary standpoint, the evidence from the owner is thoroughly in its favor.

House Hygiene

V.—House Drainage

By Ralph Ernest Blake



THE object of house drainage is to provide means of promptly and safely removing all sewage and waste from the house. It is a subject of prime importance in the sanitation of the dwelling and has been made the subject of much study and investigation by sanitary experts. In cities it is regulated by law, down to the smallest particulars; such regulations represent, on the whole, the best modern practice, and cannot, of course, be departed from within the region governed by them.

The subject of house drainage is concerned with three important things: (1) the pipes; (2) their position, fixing, adjustment and position; and (3) the traps by which their openings and connections with the house are safeguarded. Any system of house drainage presupposes a system of water supply within the house and connection with some outlet or waste receptacle. In the city the latter will be a sewer, built and maintained by the municipality. In suburban regions connections may also frequently be made with a sewer; in the country the discharges from the drain pipes will be received in a cesspool or distributed through a sewage disposal plant.

Glazed stoneware pipes, which were long used for drainage purposes, and are still frequently so employed in rural regions, are no longer regarded as the best for this purpose. In many cities, in New York, for example, they are prohibited within the house. A good drainage pipe must be sound and perfect in every respect. It must be made of a permanent material, that is, one that will not wear or collapse with time. It must be absolutely sound and perfect, without flaws or holes. It must be strong and durable, able to resist weight and pressure, capable of sustaining sudden changes of atmosphere and of resisting sudden shocks and blows. It must be thoroughly water-proof and gas-proof. It is obvious that all these requirements are not possessed by stoneware pipes, especially strength and gas-proof. Pipes of cast iron have, therefore, come into general use within the house. Wrought iron pipes are exceedingly strong, and a plumbing system constructed of them has every quality of permanence and effectiveness; but it is very expensive and the pipes cannot be readily repaired.

Cast iron pipes are made in two weights for plumbing purposes, but while the lighter weight is frequently used it is prohibited by most municipalities as not being strong enough and difficult to use in making a gas-tight joint. Its weight and thickness vary according to its diameter. It is sometimes dipped in hot tar, a process not permitted by the New York law, as it conceals sand holes and other flaws. The regular length of cast iron pipe is five feet, but short pipes of convenient shapes and dimensions are made for connecting purposes. The jointing is made by lead-calked joints, a work that requires both experience and skill to be well done.

Lead pipe is used for branch waste pipes and short lengths of water pipes. It is easily bent and shaped and is particularly convenient for traps and connections. It is, of course, soft and is readily broken into by nails and gnawed through by rats. Lead pipes are connected with lead pipes, and with brass and copper pipes—both of the latter being sometimes used in expensive plumbing—by “wiped” solder joints.

Lead pipes and iron pipes are connected with brass ferrules.

House drainage requires receptacles for collecting the wastes and waters: they must admit of ready cleansing; vertical pipes for sewage, waste water and rain water; they must be upright, non-corrosive, gas and water tight, thoroughly flushed and ventilated; short branch pipes to connect the receptacles with the vertical pipes; traps to disconnect the house sewer from the house drain and traps at all fixtures; and, finally, the ventilation of the whole system by means of fresh air inlets, vent pipes and the extension of the vertical pipes.

The house drain receives all the wastes of the house and conveys them to the sewer or place of disposal without the house. It is a most important element in the sanitation of the dwelling. Its size is proportionate to the work required of it; but it must not be too large, or it will not be self-cleansing, which is one of its essential requirements. Four-inch pipes are required in most cities but three-inch pipes are often sufficient for a small sized house. It must be laid with a sufficient inclination towards the sewer so as to be self-flushing and self-cleansing. Experiments have demonstrated that a four-inch pipe should have an inclination of one foot in 40; a five-inch pipe of one in 50 feet, and so on. In the cellar it is placed in a horizontal position, and, whenever possible, should be exposed to view. If there are fixtures in the cellar it cannot be hung from the ceiling or against the wall, which are the best positions; but it must always be placed so it can be examined throughout its entire length. An arched or otherwise protected opening should be made in the cellar wall for its passage beyond the house. Curved elbow fittings of large radius “Y” branches and 45 degree bends must be used for connection with the soil waste and rain leader pipes.

Put rather literally traps are bends in pipes arranged to hold a quantity of water, called a water seal, which prevents the entrance of air and gases from the sewer into the house. Its value depends on the depth, strength and permanency of the water seal, on the diameter and uniformity of the trap, on the simplicity of its form, on its accessibility and on its self-cleaning properties. The shape, nature, purpose and names of traps in common use are of the greatest variety. Seals are sometimes lost or broken through natural agencies. The water may evaporate, as when a house remains long in disuse; in such cases if filled with oil or glycerine the seals will remain efficient. A sudden flow of water may entirely empty a trap; the utmost care in the construction and placing of the trap will remedy this; traps may be emptied by capillary attraction from paper or rags which may remain in them; they must be of uniform diameter without corners and well flushed to overcome this difficulty; they may also be emptied by siphonage; several methods are employed to overcome this trouble. One is the vent system, by which vacuums are created by extending the vertical pipes over the roofs and connecting the traps with open vent pipes.

Notwithstanding that the house drain is disconnected with the sewer by a special trap called the main trap, and there are traps applied to each fixture, further protection against odors and injurious gases is secured by the ventilation of the various pipes within the house, by the extension of the vertical pipes above the roof and by a fresh air inlet on the drain.

The Kitchen

V.—Pots, Pans and Apparatus

By Sarah Adams Keller



IMPORTANT as the permanent fixtures of the kitchen are, it would be wholly without practical utility were it not properly supplied with cooking utensils of every sort, together with such devices for their use as convenience may dictate or ingenuity suggest. Essential as all these matters are it is extremely difficult to make general suggestions upon them. Advice which might be well adapted to kitchens of one size would be wholly inadequate to larger kitchens and perhaps burdensome to smaller kitchens. Nor is the question fixed altogether by size, for some cooks and some housekeepers will do very much more with few utensils than others will accomplish with many. Moreover, articles which are essential to one person will be completely superfluous to another.

So well recognized are these facts that conservative cook books refrain from presenting lists of necessary kitchen apparatus, their authors being well aware that any list they might prepare would represent only their own individual ideas of what they themselves would need; it might not meet the wants of the advanced cook; it might be confusing to the beginner.

The very questions of quantity and variety are themselves debatable. Shall one buy every possible object, or content herself with as few as seem permissible? The more articles one has in one's kitchen, the more labor is entailed in their care. On the other hand too few things means constant awkwardness and inconvenience. Fortunately few housekeepers approach the plenishing of the kitchen without some idea as to what is needed. The knowledge may not be very practical but it is something to go on. It is often better to begin in a somewhat limited way, as it is generally comparatively easy to add, while useless articles, obtained at the beginning, are cumbersome and add to the daily labor or are regretfully added to the junk pile which is more or less common to every household.

Whatever one does one must be sure to have a sufficiency of cooking utensils. This is a matter that requires some forethought, for the central moment in the preparation of a dish is distinctly not the time to ascertain that one has not tools enough. It is always better than to have to use the "best" bowl because the ordinary ones have run short. A more definite rule is always to have the best possible. Kitchen utensils of good quality are invariably the cheapest in the end; they last longer and give better service. It is always better, for example, to have articles of a permanent material rather than of one easily broken. Accidents are more liable to happen in the kitchen than in any other part of the house, and they invariably happen at the most inconvenient times. It is at least some protection to have utensils that will not break, and accidents are so very liable to happen that this precaution will be found, in the long run, to be most serviceable.

Another good idea is to carefully study any new utensil or device. Not nearly so much attention is given to kitchen equipment as the importance of the work requires; but in the last few years this condition has changed a good deal, and new ideas, new devices and new methods are coming constantly into use which the careful housekeeper would do well to familiarize herself with.

The "model kitchens," which are maintained by many department stores in the larger cities should also be visited for new ideas and new methods. These are rooms fitted up as a modern kitchen is supposed to be fitted, and while they are not apt to be in practical operation, and their attendants are seldom expert cooks—the only persons competent to advise on these weighty matters—there are comparatively few housekeepers who will not be benefited by studying them attentively. Here, at least, they will find all the "new" things, and can inquire as to their availability and use.

The equipment of the kitchen can, in a general way, be classed under six heads: 1, earthen, china and glass ware; 2, wooden ware; 3, agate ware; 4, iron ware; 5, tin and wire ware; and, 6, miscellaneous. The various articles may be more specifically named as follows. Not all of these articles will be needed by every one, but the list is fairly complete. No attempt is made to indicate the number of various sorts of each. Thus several bowls will be required in every kitchen but the number must be determined by the housekeeper.

1. Earthen, china and glass ware.—Pitchers, quart and pint; baking dishes, large, small, round and oval; bowls of various sizes and in varying number; cuts; cups for popovers and custards; platters of various sizes; pie plates; molds; bean-pot; tea pot; stone jars; table dishes as needed; glass rolling pin; Mason's jars, quarts and pints.

2. Wooden ware.—Wash board; bread board; meat board; chopping tray; potato masher; water pail; pails, for water, scrubbing and refuse; knife box; flour-barrel cover; coffee mill; ice-cream freezer; ice pick; spoons and knives, assorted sizes; brooms; whisk-broom; crumb tray and brush; brushes for scrubbing, stove blacking, polishing, dusting; mop; egg basket; hard wood roller pin; nests of boxes and buckets; spice boxes; dish mops; sink scraper; wash tubs.

3. Agate ware.—Double boiler; covered pots and kettles of various sizes; sauce pans of various sizes; pans; preserving kettle; hand basin. The variety of articles now made in agate ware greatly exceeds this list. Many of them are most attractive in colors and add greatly to the beauty of a kitchen.

4. Iron ware.—Griddle; dish kettle; tea kettle; dripping pans; frying pans; gem pans; iron pot; waffle iron; enameled kettle; scales; flat irons; knives and forks; carving knife; bread knife, chopping knife; meat saw and hammer; can opener; iron spoons; skewers; larding needles.

5. Tin and wire ware.—Nutmeg grater; large grater; apple corer; pepper box; salt, flour and sugar dredger; spice box; tunnel; ice-cream molds; oil can; steak and fish broilers and toast; spoon; egg beater; frying basket; strainers for various purposes; colander; dish pans; milk pans; covered pails; quart measure; scoops; double steamer; molds for various purposes; tins for small cakes; muffin rings; coffee pot; wash boiler; dust pans; cutters; skimmers; dippers; ladle; bread pans; cake pans (various); pie plates; meat pans; molasses cans; tea canister; covers for bowls and pans.

6. Miscellaneous.—Towels, dish, hand, and for other purposes; cover holders; floor cloths; sink cloths, dish cloths, etc.; canvas ice bag; linen strainers; needles; twine; thread; scissors; lamp; ironing sheet and holders; coal hod, shovel and sieve; ash hod; household tools.

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THE GLADIOLUS, THE PEONY AND THE DAHLIA

By Eben E. Rexford

AMONG the more popular flowers of today we must include the gladiolus, the peony, and the dahlia. The gladiolus, all things considered, is our best summer bloomer. Nothing in the whole range of the floral world excels it in rich, beautiful, and at the same time delicate coloring, with its hues of carmine, crimson, pink, and lilac, as well as vivid touches of other colors. The gladiolus in a mass is magnificent and this without a hint of coarseness, such as we often find in the highly colored blossoms.

The gladiolus has many merits to commend it to the attention of the amateur gardener. Among these are its beauty and its ease of culture. It is a plant that anyone can grow; in fact, it is one of the few that seem almost able to take care of themselves. Beyond placing the corms in the ground in May and occasional weeding as the growth develops, no other attention is necessary. I have seen beds of this flower which, in spite of neglect, had grown to a height of three feet with blossoms for half the length of the stalks and scores with three and four stalks to each root. Many other plants would have given up the fight against the weeds early in the season, but the sturdy gladiolus courageously triumphed over the encroaching growths.

When planted, as it always should be, in masses, the gladiolus makes a brave display of color. Charming when planted singly, it is unequalled in gorgeous wealth of solid color when massed. One must see fifty or a hundred plants in a bed ten or fifteen feet long, fully to appreciate what can be done with it. The corms should be set about eight inches apart each way and not less than fifty should be placed in one bed.

The time to plant is May—certainly not earlier—after the soil has become warm. Cold, wet earth often causes the roots to decay. The bed should be spaded up to a depth of at least a foot, working the soil into a light and mellow state, with the addition of a liberal quantity of old, well-rotted manure from the barnyard. The gladiolus thrives best with this fertilizer though many of the commercial kinds can be used with success. The plant will sometimes do well even in unfertilized soil, but such a condition is naturally not favorable for the best results.

The corms should be put about four inches below the surface, care being exercised at planting to see that they are right side up. As soon as the plants appear some provision should be made for the support of the stalks. If you prefer to stake the beds, set the stakes about two feet apart each way. The wire or cord need not be stretched upon the stakes until the stalks are fairly grown, but it is advisable to put the stakes in position early in the season to avoid the possibility of injury to the plants after they have got a good start, for they are then easily bruised and hurt. The wire or cord should be run in several directions in order to furnish efficient support without the necessity of having the stalks lean out from the perpendicular. For two years past I have made use of wire netting with a large mesh, placed over the bed and fastened upon stakes about 18 inches high. The plants find no difficulty in working through the large meshes and with support of this kind they dispose themselves in a natural manner. The netting need not be placed over the bed before the early part of July. By that time most of the weeds which will appear during the season have been disposed of and the netting will not greatly interfere with the proper cultivation of the beds.



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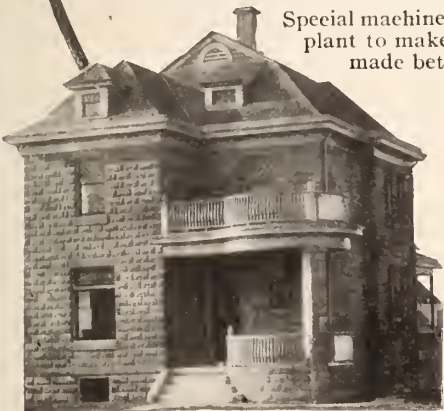
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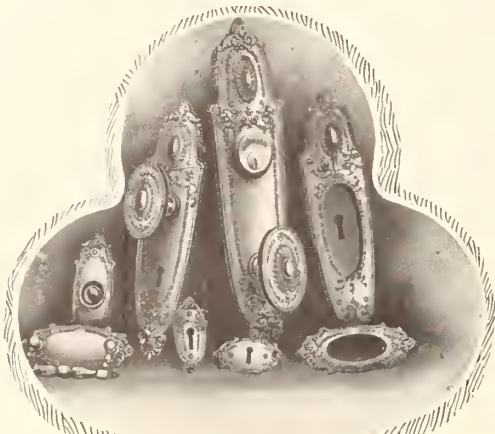


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The gladiolus is extremely effective for interior decorative work. It should be cut with long stalks and these should simply be dropped into the vase and allowed to arrange themselves. With daily change of water the blossoms will expand and develop perfectly.

While the peony may lack something of the delicacy of the coloring which characterizes the rose, and while its fragrance may not be quite as refined, it is nevertheless as magnificent a garden flower. The peony, too, requires but a fraction of the care that the rose demands for its perfection and thus it is rapidly superseding the latter for garden decoration. All things considered it is entitled to first place, for it is hardier by far than most roses, especially the more desirable varieties, and it can always be depended upon.

In contrast to the short-lived rose, it lasts for a lifetime when once established and demands very little attention. All that need be done is to place over it in the fall some old cow manure and to work this into the soil about its roots in the spring, for the plant thrives exceptionally well with strong food.

The peony likes a rather heavy soil—one that will be firm and compact about its roots. In mixing the fertilizer with the earth, care must be exercised not to go deep enough to disturb a single root, for probably no other plant so resents interference with its root system as the peony.

As a border plant nothing is equal to it. Its foliage is attractive and when the blossoms are out in full splendor, every clump is a flower show in itself. As it comes early, it serves excellently to supply the garden with bloom at that period when it is usually still bare. The peony can be effectively used for decoration indoors. If cut with long stalks and as the buds are just about to open, it will last for several days. It does not take kindly to combination with other flowers, nor should too many stalks be placed in one receptacle. For use where strong bits of color are desired, I know of nothing superior to it. Let the stalks be somewhat unequal in length, that there may be no suggestion of primness or formality. Charming results are secured by using flowers of different shades. While we never hear much about the scent of the peony, it nevertheless has fragrance, and that of some varieties is almost as delicious as that of the rose, strong, perhaps, but never overpowering.

Another merit to which the peony can justly lay claim is its freedom from insects. Anyone who has waged war with the bugs and worms which infest the rose will appreciate this immunity of the peony. If the flower-loving reader has no collection of peonies let me urge him or her to set about making one this fall. The plants can be put out in September or October, placing them about five inches below the soil and at least three feet apart. A well-established plant will have a spread of at least that distance and ought to bear a hundred or more flowers in a season, though it does not reach its prime for several years after the planting.

The old, very large, double dahlia was, for all its formal arrangement of petal, a very beautiful flower, and it is to-day regaining its former popularity. Recent years, too, have seen the development of distinct new forms—the cactus, the decorative and the single varieties being the most noticeable. These are just at present more popular than the old type, but everything points to a re-establishment of such old favorites as fox-hunter, with its ball of fiery scarlet, flamingo, a sphere of vermilion and white, and Hebe, pure glistening rose, which are difficult to find to-day, but which many of us remember with pleasure. I do not believe any of the newer sorts can



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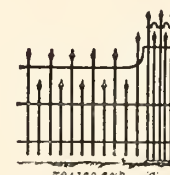
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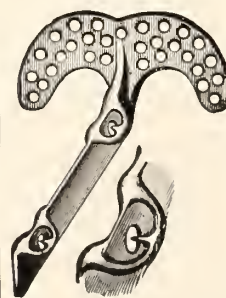
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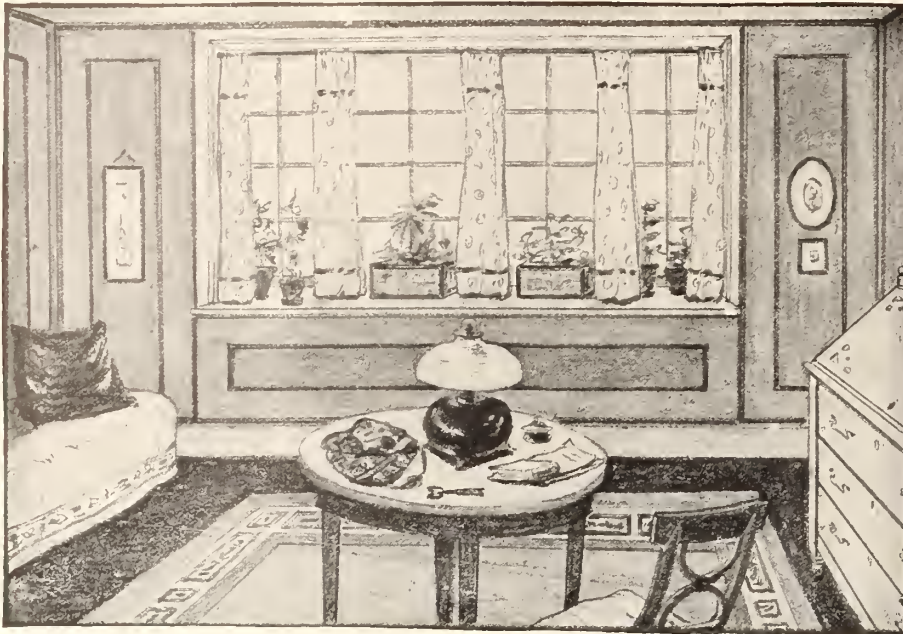
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surpass them in richness of color or freedom of bloom.

The decorative dahlia is doubtless a great improvement in many respects over the old type. Its flowers are far more graceful in individual appearance and they show to much better advantage on the plant. They are excellent for cutting. They last for days if the water in which they are placed is frequently changed. The single ones are pretty and showy with their yellow disks, and so are the cactus variety with their curious, twisted petals.

Starting dahlias indoors early in the season and transplanting them in June seldom gave good results. To-day even at the north the practice is to wait until the ground has become thoroughly warm, and then to put the roots into the beds where the plants are to grow. The soil should be rich—very rich. It should be made mellow to the depth of a foot and a half and for at least that distance on all sides of each plant. The secret of successful dahlia culture is, in a sentence, rich soil, and plenty of moisture at the roots. The plant will advance steadily and rapidly if well fertilized and if given all the water it needs. Dahlias should be tied to stout stakes with strips of cloth at least an inch in width, rather than with strings, as the latter are liable to cut into the soft stalks.

THE LAWN

By L. C. Corbett

THE canvas of the architect and the landscape gardener is the lawn. It matters little whether the extent of the lawn be great or small, its inherent qualities are the same, and its intrinsic worth is determined by its character and the manner in which it is kept. Mother Earth abhors rough edges and broken places on her bosom, and immediately proceeds to cover such ugly spots with green grass. Man likes to get his feet upon the soil, but better still upon the soft, yielding greensward. Rich rugs and carpets do not give the elastic spring that the well-made and well-kept greensward yields.

A lawn is the accompaniment of every effort on the part of man to beautify the surroundings of his abiding place. The great increase of interest in suburban and rural life has caused a corresponding increase of interest in matters pertaining to the making and maintenance of lawns. Suburban railways, the extension of electric lines into the country, and the return of man to natural ways of living are all factors contributing to the growing interest in matters pertaining to lawn making.

GENERAL CHARACTERISTICS OF LAWNS.

The lawn should be useful and it should at the same time be beautiful. Its beauty depends upon the contour of the land, the color and texture of the grass, and the uniformity of the turf. The use of the lawn is to provide a suitable setting for architectural adornment and landscape planting. No effort should be spared when working with small areas to give the lawn the appearance of great extent. The buildings should be kept well back, the foundation not too high, and the grading of the ground should be slightly convex—that is, a gently convex, rolling surface from the base of the foundation to the street line—rather than concave. A convex surface tends to give the effect of increased area, while a concave surface seemingly shortens distance. The extent of a lawn is also amplified by preserving as large areas of unbroken greensward as possible. This means the use of trees and shrubs only upon borders or margins of the lawn, rather than a promiscuous scattering of them over the greensward.

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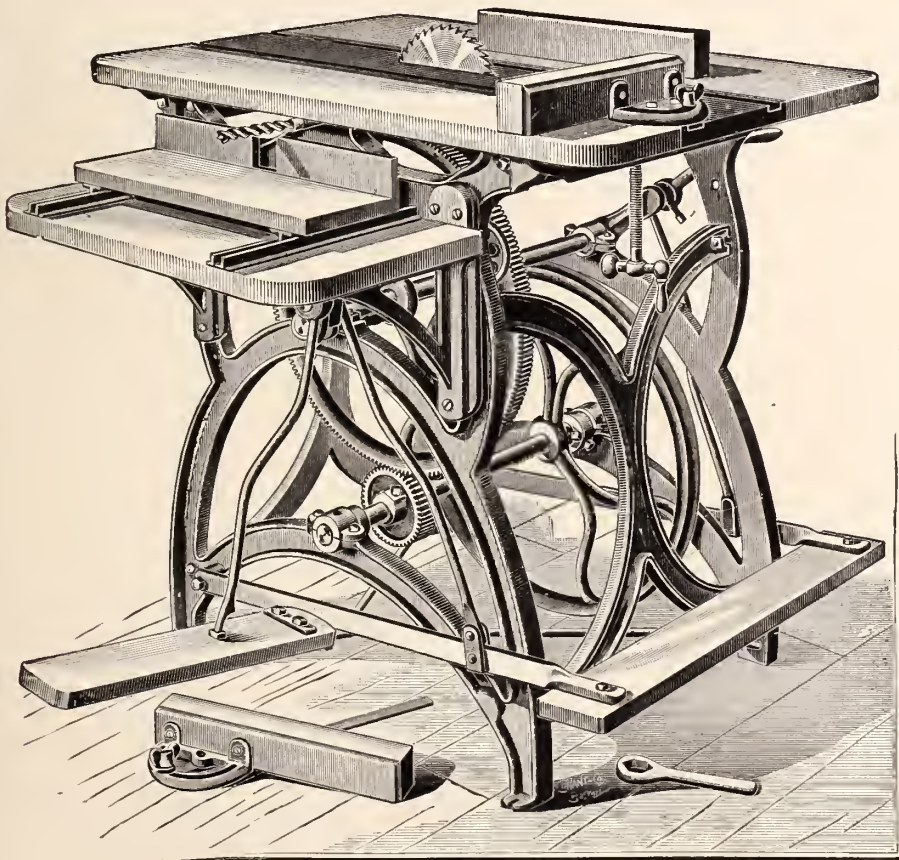


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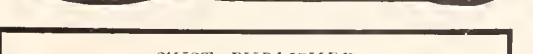
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THE SOIL.

The ideal soil for a lawn is available in but few cases where it is desirable to establish a greensward. Ordinarily the lawn in which a man is most interested is that immediately surrounding his abiding place. The soil here is usually greatly modified by building operations or necessary grading. The soil with which one has to deal, therefore, is seldom a normal soil of the locality. It is a portion of the surface soil mixed with more or less of the subsoil which has come from excavation in making the foundations of a house. Large lawns and parks are not, as a rule, so subject to difficulties of this kind as are small private grounds. The problem before us, then, is that of converting not a normal but an abnormal soil into a suitable and congenial place for the growing of grasses.

The ideal soil for grasses best suited for lawn making is one which contains a considerable percentage of clay and is moderately moist—a soil which is somewhat retentive of moisture, but never becomes excessively wet, and is inclined to be heavy and compact rather than light, loose, and sandy. A strong clay loam or a sandy loam, underlaid by a clay subsoil, is undoubtedly the nearest approach to an ideal soil for a lawn; it, therefore, should be the aim in establishing a lawn to approach as near as is possible to one or the other of these types of soil. In many localities it will, however, be very difficult to produce by any artificial means at one's command a soil which will approach in texture either of the types. The aim, nevertheless, should be to attain as closely as possible these ideals.

Where a pure sand or a light sandy soil is the only foundation for the lawn, a top-dressing of two or three inches of clay should be incorporated with the first four to six inches of the sand; the area should then if possible, be used for the production of some green crop which gives an abundance of vegetable matter. In latitudes south of Washington, D. C., cowpeas and soy beans, and in districts north of this red clover, vetches, and Canada peas are suitable for this type of soil improvement. These crops, if allowed to occupy the land until their maximum growth is attained and then plowed under, will act very beneficially upon the structure of the soil in making it more retentive of moisture, better able to hold fertilizers applied to it, and less liable to allow the greensward upon it to be killed out in times of drought. When green manuring is not desirable good results can be attained by the use of stable manure which will add available plant food and at the same time increase the store of humus. A dressing of thirty to fifty two-horse wagonloads of such manure to the acre is not too much for quick returns and lasting effects.

GRADING.

Before definite preparations are made for the seed bed, the surface of the lawn should be reduced to the desired grade. In large areas a gently undulating or broken surface is much more pleasing than a uniformly graded surface. Such a surface also lends itself better to plantations of trees and shrubs. For small grounds less than an acre in extent the grading should be comparatively uniform and of the simplest possible character. The general statement made in regard to the contour of the surface is sufficient for guidance in grading such small areas.

PREPARATION OF THE SOIL.

Since the lawn is intended to be a permanent feature of the decoration of a place, its span of life is of utmost importance. In general, grass seeds are small and the surface seed bed for the reception of these seeds need not be more than one inch in depth; but since grasses, as they become established, send out

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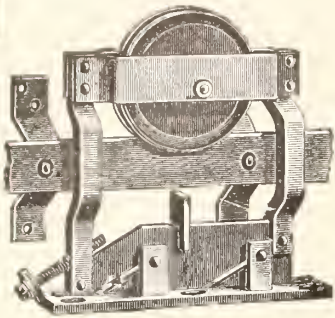
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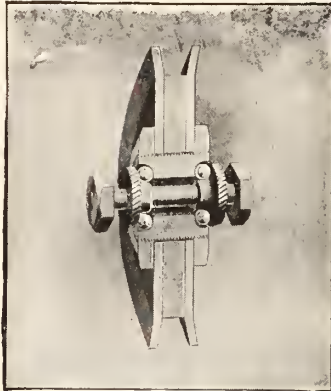
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long, lateral feeding roots, it is necessary that the area containing the available food for these plants should be large. Since the surface of the area cannot be increased, greater feeding space for the plants can only be provided by deep cultivation and thorough preparation of at least eight to ten inches of the surface soil. The soil to this depth should be made rich and should be put into an ideal condition for the development of plant roots.

Cultivation should have for its object the liberation of plant food and destruction of weeds which may interfere with the establishment of the lawn or which may be detrimental to it after it is once established.

After the seed bed has been thoroughly and carefully prepared and the grass seed scattered in appropriate quantities, according to the kind used, the surface should be given a careful raking or rolling if the area is dry. If showers have been frequent, raking after the seed has been sown will suffice until after the grass has reached a height sufficient to be clipped by a lawn mower. Prior to clipping the grass with a lawn mower, if the ground was not rolled after seeding, a heavy lawn roller should be passed over the surface in order to make it as smooth as possible. After the grass has an opportunity to become erect it should then be clipped with a mower.

FERTILIZERS.

Thoroughly composted stable manure which is as free as possible from detrimental weed seeds is undoubtedly the best material to use in producing the desired fertility of the soil. Thirty to fifty loads of well-decomposed stable manure are not too much to use upon an acre of land designed for the greensward. Where such stable manure is not available the next best plan to follow is that previously suggested—the plowing under of green crops, such as clovers, cowpeas, soy beans, and similar plants. The land should then receive an application of about 1,000 pounds of lime to the acre, and at the time of preparing the seed bed 500 to 1,000 pounds of fine-ground bone, together with 300 to 500 pounds of a high-grade fertilizer upon each acre. The fertilizer may contain three per cent. nitrogen, six to eight per cent. phosphoric acid, and about eight per cent potash.

After the lawn has been established and it has gone into "winter quarters," it is well to give the young grass a mulch of well-decomposed stable manure, which shall not be heavy enough to disfigure or mar its appearance, but should be so fine and well decomposed that it will be carried beneath the surface of the grass by the rains and snows of the winter, leaving very little rough or unsightly matter to be raked off in the spring. If this is not desirable, after the greensward has passed through the first winter it should be treated to a top-dressing of fine-ground bone at the rate of 1,000 pounds to the acre.

(To be continued)

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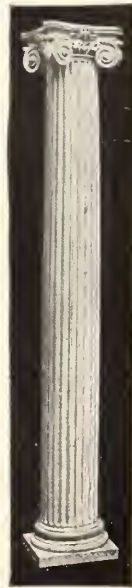
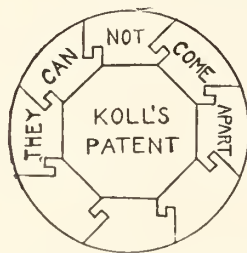
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tempt be made to imitate it in the well kept suburban home or the city residence. In all planting in the immediate vicinity of the home, the extreme of neatness is called for. Everything, lawn and parterre, calls for perfect grooming and the careless vine and leafage should be studied and not allowed to become rampant and uncontrolled.

There is a certain stubborn prejudice in the minds of certain people anent the growing of vines on the house arising from a false idea that they cause decay. This idea I find more prevalent in country towns than in the city where it is rare to see a handsome house that is not beautified with the ivy or Boston ivy. I do not think that the idea of vines drawing moisture or causing decay has any foundation in fact. Certainly it has not been my experience, as I have always grown vines on my own dwelling and have had frequent occasion to note that the parts of the house protected from the hot sun by such vines as woodbine and the like remained in much better state of preservation as to paint and the like than the unprotected portions, and it is a well known fact that in England where the use of vines on buildings is universal, in many buildings protected by the ivy it is almost impossible to tear away the stone work, so perfectly has the ivy protected the cement with which the stone is laid.

Certainly a house is rendered not only more attractive by the judicious use of vines, but it is also made far more comfortable; especially is it the case in frame houses, where in summer the sun seems to find little obstruction in the wooden walls and penetrates the house to an uncomfortable degree. A screen of leaves would prove a great protection for the walls of the house itself and convert a hot and sunny porch into a cool and shady refuge from heat.

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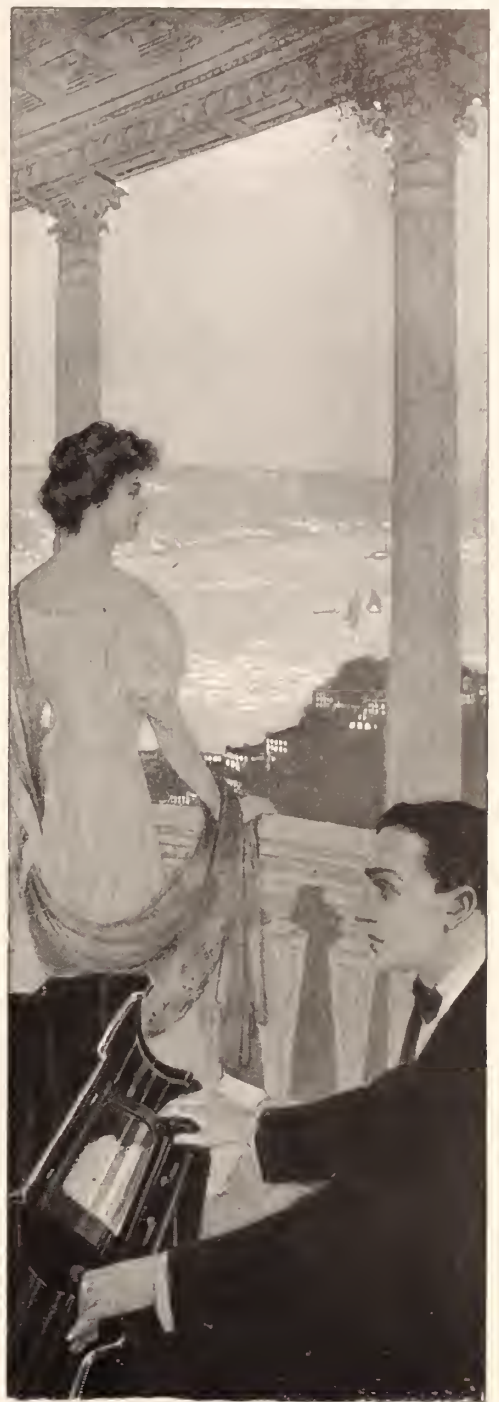
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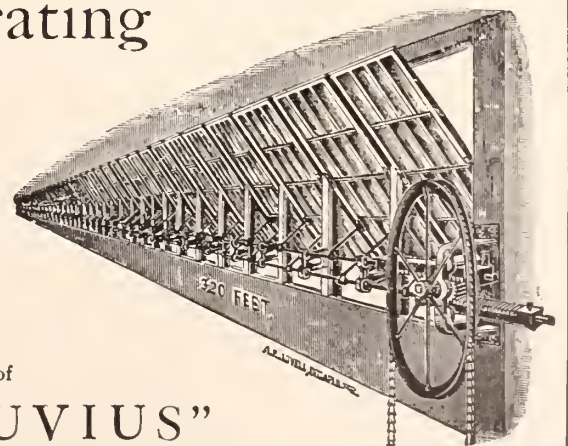


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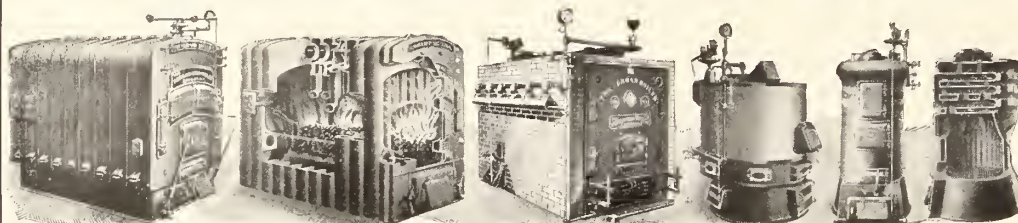
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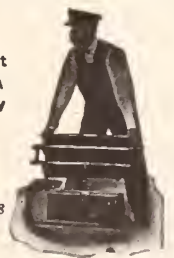
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very uncertain grower and bloomer. Often refusing—for no apparent reason, to do either for years at a time, but when it does condescend to bloom in abundance it well repays one for all trouble and annoyance its dilatoriness has caused. The purple or mauve is far the more beautiful of the two. It prefers a high trellis or decayed tree trunk on which to grow but should not be planted on live trees as it is apt to destroy them by the fervor of its embrace. It is admirable on porches and high places and should be given a support around which it may twine—as a cord, wire or pole.

Another vine well adapted to places where a dense shade is desired is the *Aristolochia Siphon*, or Dutchman's pipe. This has immense, heart-shaped leaves that overlap and furnish a perfect screen from the heat and sun. It dies to the ground each fall, coming up with renewed vigor each spring when it quickly covers a considerable space. The culture is the same as for all hardy vines, good soil, well enriched with old manure made fine and deep and an abundance of water during the growing season.

But as it is not always expedient to wait for the growing of hardy vines recourse must be had to the annuals, and for this purpose no better vine for immediate effect may be had than the *Cobaea scandens*. This has a dark, rich foliage and a wealth of trumpet-shaped blossoms that, opening, are a greenish white and change from day to day until they have passed through all the varying shades of lavender and violet until, ere they fade, they have become a deep purple and wine. The effect of the many colored blossoms on the vine is very beautiful and as a cut flower they are unusually lasting and lovely. As to the culture, it would be difficult to specify, so many situations and varieties of soil seem to suit it. I have grown it with equal success on the east and the west side of a building, on the north and in full sunshine, with an abundance of water and restricted to the natural rainfall, in window boxes and in the open ground and always, everywhere, it has grown to the top of whatever support offered itself and blossoming every step of the way. It is grown from seed and the seed should be started early in the house or hotbed and planted out when all danger of frost is passed, and a little attention paid to it at the start, that it may begin to climb and not waste strength and time lying prone on the ground. It clings by tendrils—attached to the end of every leaf spray, to the siding of the house, crevices of stone or brick work and to the bark of the tree, but as it is liable to be blown down from the house in rough weather, it should be provided with wire netting to run on if a neat and symmetrical growth is desired. No better vine for covering a dead tree could be desired and it will quickly reach to the top of even a tall tree and wreath it with bloom.

Another vine that much resembles the *cobaea* in the shape of the blossom, but is of a fine rose color, is the *Lophospermum scandens*; this also is started from seed sown in the house or hotbed early in spring and transplanted when all danger of frost is passed. The foliage, however, is inferior to the *cobaea*, being a rather coarse, heart-shaped leaf, somewhat rough, but the blossoms are handsome and rare, and very freely produced.

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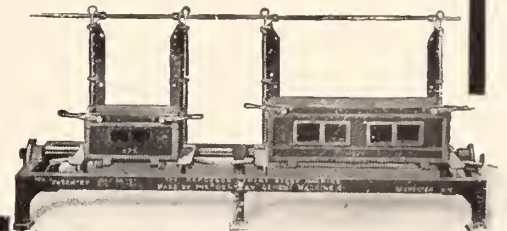
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Still another of the more delicate vines is found in the *maurandia*, a vine with delicate, heart-shaped leaves of dark, glossy green, which bears tubed-shaped flowers of violet, of pink and of white. The plant makes a growth of five or six feet and is an especially desirable vine for the window box and for hanging baskets, being of all the vines known to me the most truly graceful and airy. It is grown, like the *thunbergia*, from seed and should be started very early in the house, or, better still, carried over from the previous year if the vine is wanted very early for immediate effect.

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PICTORIAL PRACTICAL FRUIT GROWING. By Walter P. Wright. New York: Cassell & Company, Ltd., 1905. 16mo.; pp. 152. Price, 75 cents.

The author makes excellent use of a system of substituting a set of illustrations grouped in a convenient way, and with a sufficiency of explanatory matter for the long, wearisome, and usually not very clear articles to which gardening readers have been accustomed, and the instantaneous success which followed this innovation seems to show that he has met a real public requirement. The book is a brief manual giving instructions for the management of practically every important fruit in cultivation. That the amateur as well as the professional fruit grower will find it exceedingly helpful, is undoubted by any one acquainted even slightly with the information which it contains.

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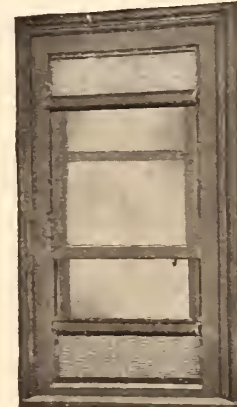
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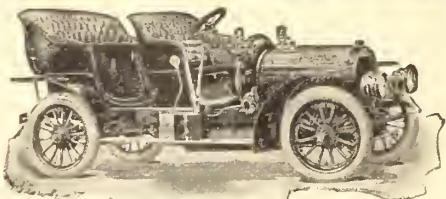
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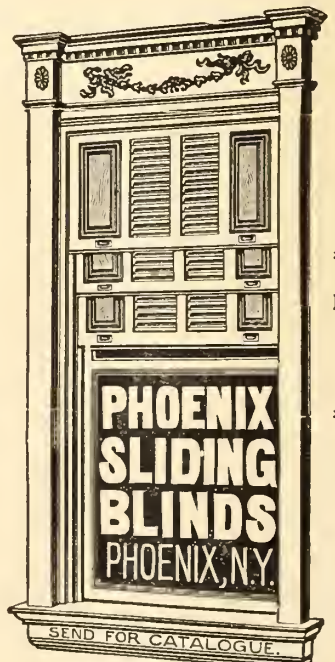


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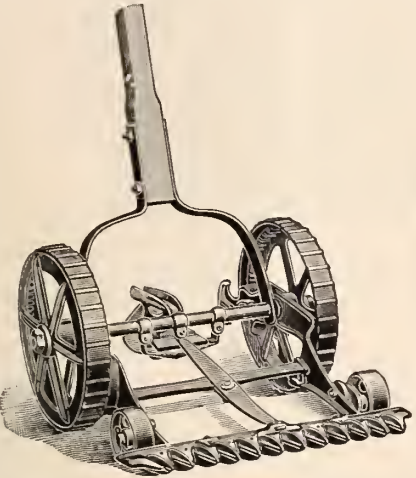
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the grass will
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Publishers of Scientific American
361 Broadway, New York

Details of Building Construction

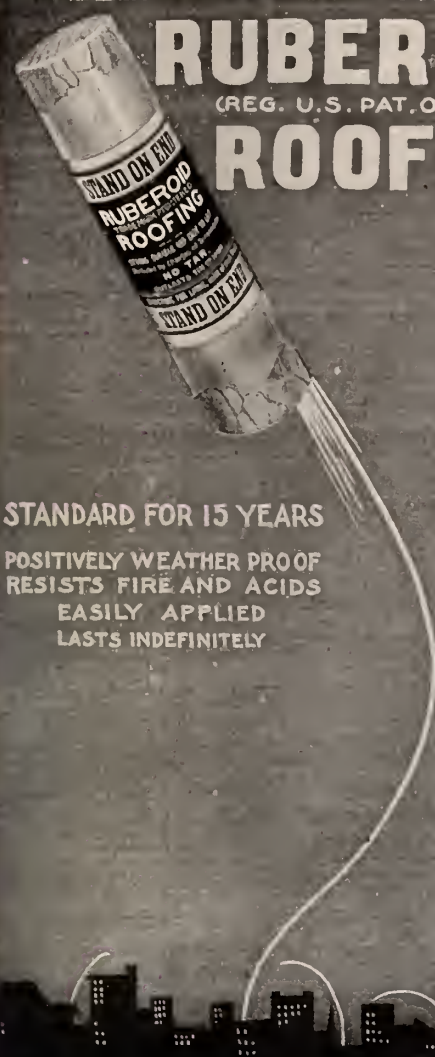
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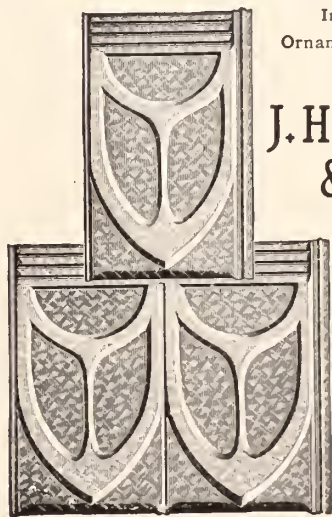
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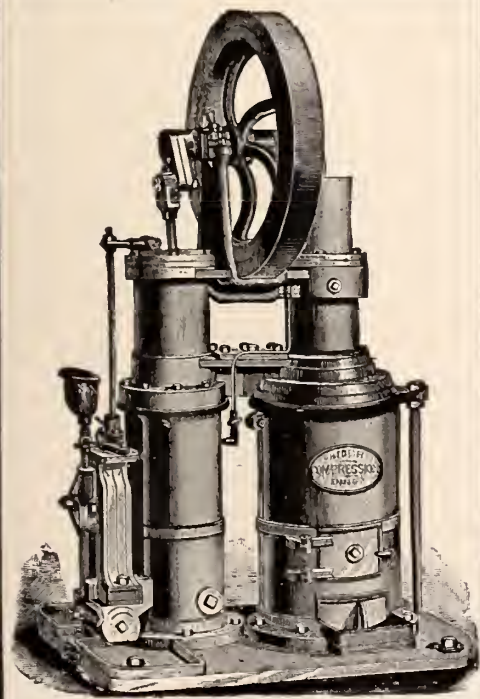
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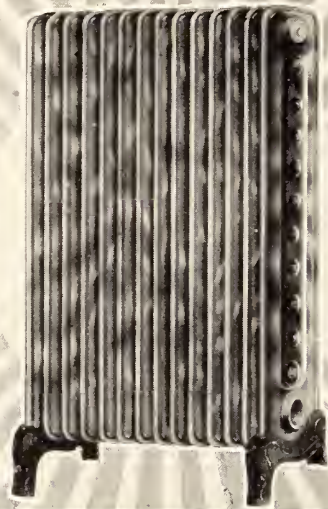
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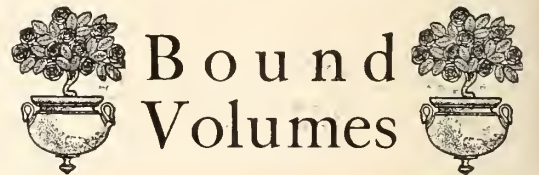
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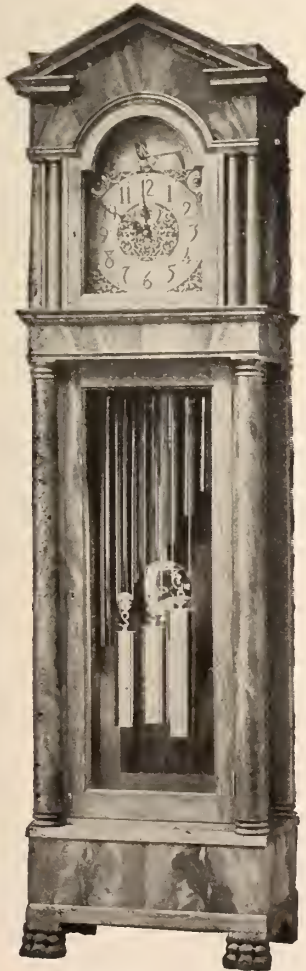
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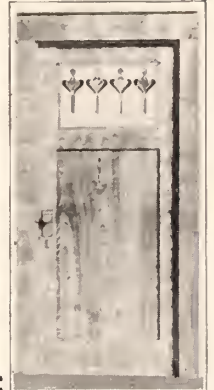
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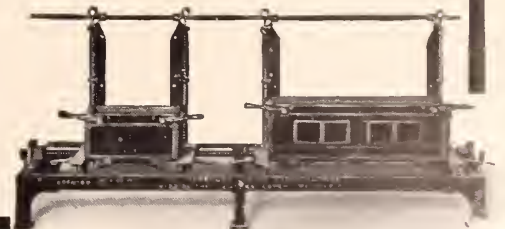
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PHOTOGRAPH OF STEINWAY GRAND ON BOARD OF THE "MERIDA," BEING ONE OF FOUR PIANOS JUST COMPLETED FOR THE WARD LINE

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Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

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The Entrance Front Opens on a Forecourt which is Formed by the Wings of the House

Estate of E. C. Knight, Jr., Esq., Newport, Rhode Island

AMERICAN HOMES AND GARDENS



Volume III August, 1906 Number 2



The Garden Front of the Home of E. C. Knight, Jr., Esq., Newport, Rhode Island

Monthly Comment



UGUST has long retained its reputation as the vacation month. To the great employed class it means a period of no work and regular pay. It is a delightful situation which, could it but be continued throughout the year would bring unalloyed joy—perhaps. To the smaller class of employers it brings varied feelings. The very great can, of course, have their vacations whenever they want it and, as a matter of fact, have it pretty much all the time. To the less great it means an adjustment of their business to meet the necessities occasioned by the absence of valued employees. To the small employer it means paying out money for nothing, for is he not paying wages and getting no return in work? The philosophical economist will doubtless assure him that this is not the case, but that the increased zeal and renewed faithfulness which comes from wages-paid vacations is more than returned at other seasons of the year. The practical man will retort to this that there is no such thing as gratitude on the part of employees and that all his people think of is to do as little as they can for the largest amount of money, and that the vacations they get count more than the work they do. In many cases the practical man is right, but the theorist is not wholly wrong. As a matter of fact it should be quite the other way; the theorist should speak for the majority of cases, the practical man for the exceptions. In a very real sense vacations should mean an equal benefit to the employer and the employee; both should be the gainer, both should profit by them.

LEADERS of the columns of the daily press wherein are chronicled the doings of the very rich must notice, from time to time, that the owners and occupants of great country houses change their summer abode quite as frequently as those possessed of less attractive places of residence. It is a singular and interesting phenomenon. A great country house implies fine grounds and a beautiful garden, even if it is not necessarily accompanied with a large estate. These properties are never so beautiful as in the summer season, and hence never so enjoyable as at that time of the year. Why not, then, it may be asked, stay at home and enjoy them? Natural as the question is it indicates a profound ignorance of the wealthy temperament. This is distinctly the temperament of unrest, of craving for change, of weariness of the good things of life and a seeking after the unattainable. It is even more necessary for the rich to be amused than for ordinary folk, for amusement and occupation is in most cases, their single occupation in life. It is not to be wondered, therefore, that the most sumptuous of summer places fail in interest at times, and the home grounds, beautiful as they be, cease to give daily interest. Forthwith another great place is rented and the family emigrates to another home, only, it is to be hoped, to return to their own in due season, amply refreshed, and with a keener sense of the beauties and conveniences of their own abiding place.

A VACATION means more than a mere change of air and scene. Both these are important and valuable in their way, but they are very far from representing all the benefits a true vacation brings. The chief of these is unquestionably complete relaxation from ordinary occupations. This is particularly the case with the business man and woman, who must put away all thought of business, all regard for ordinary occupations, all reminders of worry, vexation, work. New scenes, whether they be natural or artificial; that is, whether

the vacation be spent among nature's wonders or amid a gay social life, are the greatest possible helps towards this end, since they afford fresh matters of interest, the very sight of which commands attention, excites interest, provides the mind with new ideas, and promotes that forgetfulness of the usual and the ordinary which is the end and aim of all vacations. In arranging for a vacation, therefore, it is a first essential that one's affairs be so adjusted that no harm will result to one's business or occupation. And they must be so arranged that no thought of these matters need present themselves during the period of relaxation. The employed, rather than the employers, have somewhat the better of this situation, if they can be assured their "job" awaits them on their return. The man of affairs is differently situated, since he must provide for the running of his business during his absence and the unbroken continuity of his occupations. But it is just this man that stands in most need of a complete vacation, and of all persons he is the one who most needs to completely forget home affairs while away. Some men do this better than others, and some do it in a complete and thorough way that is little short of surprising.

NOTHING is more needful in a vacation than that it be complete. Anything short of completeness means failure and waste of time. Incidentally it means loss of money, and a new kind of weariness and vexation when the usual grind is resumed at the end. Singularly enough a complete vacation is often difficult to obtain. One may, indeed, adjust one's affairs so that everything runs like clockwork, but the hold that ordinary occupations have on people is often so complete that their very absence entails a sense of loss, a feeling that something is absent from one's life, that something that should be done each day is not done. For such persons the quiet life of the country is quite unsuited. It offers too little variety, there are not enough things to do. The most charming landscapes, the most comfortable of hotels and boarding houses pall on one when there is not an engrossing occupation. It is not sufficient that one's habitat be changed, there must also be welcome change for the mind, new occupations and new interests. A vacation planned towards that end has every chance of being successful. And a successful vacation is not only one that has meant an agreeable period of time but one that has been accompanied with a complete forgetfulness of the ordinary cares that, with too many people, are altogether too engrossing.

WHILE August is still the great vacation month it is well known that other times of the year afford opportunities for pleasurable vacations quite as numerous as the height of the summer. It is not so many years since when an all-the-year hotel at the seaside was a rarity of a very unusual sort; now they exist by the score and the mountain and other resorts are finding early and late trade almost as profitable as that of the height of the season. A large summer hotel is a very expensive establishment to maintain, and there is no wonder that proprietors close up as soon as the crowds begin to grow less. But as a matter of practical affairs it is not possible for every one to have their vacation at the same time. The vacation season has, therefore, widened at both ends, and for those who must have their holiday in the winter there are southern and California resorts that give delights unnumbered. One need not enjoy their vacation the less because it comes at a time of year when every one is not engaged in the same pursuit of idleness and pleasure.



The Entrance Gates Afford a Charming Glimpse of the Forecourt and Entrance Front

Notable American Homes

By Barr Ferree

Photographs by Almann and Company

The House of E. C. Knight, Jr., Esq., Newport, Rhode Island



THE beautiful house of Mr. Knight, at Newport, is in design at once distinguished and simple. It is a broad, low house covering a considerable area of ground, and being surrounded with two acres of land, enjoys the advantage of a spacious site. The architect has very clearly sought to gain a dignified effect by means of the simplest motifs. The house is, therefore, a purely architectural creation in which the ornamental features are strictly architectural. The Indiana limestone of which it is built readily lends itself to monumental treatment and its capacity in that respect has been well utilized in this design.

The house consists of a central edifice, two stories in height, which forms the main portion of the building. Two short passages connect it with two wings, one on either side. All these subsidiary parts are but one story in height, effectively emphasizing the importance of the central building and at the same time giving it added dignity by widening the lateral dimensions of the whole structure. The wings extend beyond the connecting passages on both the garden and the entrance front; but they are brought forward much further on the entrance front than on the other side, creating a fore court at the entrance.

The plan thus provides, at the outset, for an effective massing of parts and a judicious utilization of broad wall spaces. The stately entrance doorway, a simple pediment supported by two columns, is the most conspicuous feature of the entrance front. On either side are two windows rectangular in form, with delicately moulded frames. A plain string course marks a division between the two stories and supports the windows of the second story. These likewise are rectangular, but support pediments alternately segmental and triangular. The walls at the ends are heavily rusticated and support a strong cornice, above which is a pierced balustrade which completely hides a third story. The elements

which constitute this design are carried completely around the exposed parts of the central building, which is a true rectangle in form, having five windows on each of the longer fronts and three each on each of the shorter.

The identity of parts which distinguishes the main portion of the house is equally characteristic in the wings. As in the main building their outermost corners are emphasized with a deep rustication. The windows are identical with those in the first story of the main part and the string course between the floors now becomes the main cornice which is surmounted with a somewhat high broad plain band, capped with a final string.

It is now easy to realize exactly in what the charm of this house consists. Its plan and dimensions are quite unusual, facts in themselves of no merit, but here given merit by reason of the strong way in which the whole design has been handled. For the design is unquestionably a strong one, very beautifully conceived and carried out in fine spirit. The various elements of the design are perhaps lacking in variety; the various parts have not in themselves an intense interest; yet the whole is a design of great interest, an interest of quiet, penetrating beauty, an interest of monumental wall spaces treated in a monumental manner; spacious windows spaced in ample breadth of wall; the walls themselves amply buttressed by the thickening of the cornerstones and a roughening of their surfaces; the crowning cornices and balustrades being well proportioned to the work they have to do and the part they take in the finish of the design.

Moreover there is a real note of joyousness in this design. It is immediately apparent that it is a palace, not over sumptuous if you please, but a stately house for stately living, admirably fitted to the gay life which has come to be so natural to Newport. These qualities are not always readily expressed in buildings, but here very admirably shown and in a thoroughly delightful way.

The house being symmetrical both in plan and design, save as regards the extension of the wings, as has been noted, it only remains to note the significance of the entrance front and the garden front. The sojourner in Newport is fortunate in being able to obtain an excellent view of the entrance front of the house from the gateway of wrought iron by which the grounds are entered. The whole of this side of the property is enclosed within a high stone wall, perfectly plain, and interrupted at the center by lofty piers which support the great main gates. Very agreeable it is to stand here and peer within, looking across the spacious lawn to the main doorway with its splendid doors of bronze. The planting of this front has been somewhat simple and yet it is quite sufficient. Groups of lofty evergreens stand at the corners

forming an outdoor lounging-room. The brick floor is laid in simple geometrical patterns.

The plan of the house is quite well expressed by the disposition of its exterior. A hall runs through the center to the terrace overlooking the garden. On the right is the dining-room and on the left is the drawing-room. Beyond the drawing-room is the card room and in the left wing are apartments for bachelor guests. Beyond the dining-room is the pantry, and in the right wing is the kitchen and servants' dining-hall.

The entrance hall is treated in cream white plaster throughout. The floor and stairs are of white marble. The walls have a paneled wainscot; above them the surface in alternately large and narrow panels, the former being perfectly plain within the enclosing molding, while in the latter the



The Floor and Stairs of the Entrance Hall are of White Marble. The Walls are Paneled in Plaster

of the outer pavilions, while trees of lesser growth are planted near them. The ground on either side is somewhat raised above the central level which forms a shallow place, while the house is thus, as it were, placed on a grassed terrace. This heightens and emphasizes the central steps, which are buttressed on each side by pleasant groups of evergreens.

The garden front looks upon a spacious flower garden which occupies the center of the space immediately beyond the house and which, like the center of the entrance front, is several steps below the beautifully kept lawn that surrounds the house on all sides. It is a sunken formal garden, with paths radiating from a central flower bed, and surrounded, on all sides, by a brilliant bordering of flowers. An elevated terrace adjoins the house here and is covered with an awning,

whole surface is delicately decorated. The doors have molded frames with decorated consoles to carry their crowning member. Exposed beams divide the ceiling into panels which are supported on decorated cornices. The stair rail is of black iron with mahogany handrail.

The walls of the drawing-room are in plaster toned a cream white. The wainscot is plain without panels, and with a base molding, and an egg-and-dart molding at the top. Large panels fill the upper surfaces of the wall, whose size and design vary somewhat according to the space they have to fill. A rich cornice beautifully detailed supports the ceiling of plain plaster, undecorated save for the ornaments from which the chandeliers depend. The mantelpiece is of white marble. The curtains are old rose and determine the color



The Dining-Room is Finished in Cream White Plaster, with Curtains, Furnishings, and Rug of Green



Old Rose is the Prevailing Color of the Drawing-Room. The Furniture is Georgian and Principally Chippendale

scheme of the room, the rug, which is a splendid Oriental fabric, being in harmony with them. The furniture is Georgian and principally Chippendale. The wood is mahogany and the coverings are mostly of old rose damask. Some pieces are covered with old silk.

Like the drawing-room the dining-room is finished in cream white plaster. It has an elaborately carved white marble mantel. The walls are paneled with the wainscot below and large plain rectangular panels above. The windows have ornamental frames encasing the curtains which are sea green in color. The prevailing color of the rugs is green and the Chippendale chairs are covered with dark green

of this description, and has produced a dwelling of genuine interest. It is a design that combines in a quite remarkable degree the somewhat contradictory qualities of quiet dignity and real homeliness. The ornamental and festal aspects of a Newport cottage are qualities not to be ignored by the architect who would obtain success in designing houses of this description. These are qualities essential to buildings of this class. And these qualities are quite distinctly prominent in this design. But the monumental character of this residence is obtained by the use of quiet lines, of simple motifs and by thoroughly restrained treatment. No dwelling of this class can have, or should have, a character of marked domesticity;



The Terrace Overlooking the Garden is Paved with Brick and Shaded by an Awning

leather. The sideboards are fine examples of Chippendale and Hipplewhite.

Of the material portions of the house—of the kitchens and service-rooms, the bedrooms for the owners and his guests, the bathrooms, and, lastly, the sleeping-quarters for the servants, it is unnecessary to speak. Important as all these rooms and apartments are, they are better classed as the private parts of the house, with which the public are little concerned and of which, indeed, many guests in such a house know little or nothing.

Here, then, is a very agreeable and charming house, very beautifully envired in its park-like grounds of two acres. It is a house of quiet and distinguished beauty, designed with uncommon skill, and finished and furnished in a truly delightful manner. Mr. Horace Trumbauer, its architect, of Philadelphia, has brought to his task unusual ability in work

but in this stately design Mr. Knight has been fortunate in obtaining a house that partakes quite as much of this character as could be expected.

And in this, surely, is the chief reason for its success. A successful house should not only be good to look at, but it should be manifestly suited to the needs of its owner and to the requirements of the environment in which it is placed. A Newport cottage can not, by its very nature, be an insignificant or unimportant structure. Neither, on the other hand, need it be, as many of them are, glaringly prominent. It is Mr. Knight's rare good fortune to have obtained a house of abounding architectural excellence, of real dignity, of ample size, and withal so delightfully simple and good that it stands in a class almost alone. This is an achievement of no small importance. It is not often so admirably achieved in a building of this size in so admirable a manner.

Some Modern Concrete Country Houses

By Francis Durando Nichols



ONE of the most important subjects among the building trades of the present day, and one which has aroused a pronounced interest in laymen as well as architects, is the building of reinforced concrete houses. The advent of concrete in house-building is a matter of some moment to all classes. The chief matter of concern, however, is whether the concrete house is practicable; a glance at the houses illustrated herewith in this series should convince the skeptical as to that point. The concrete house has made its appearance, and it has undoubtedly come to stay. As an economical method of building it is a remarkable success.

The advantages of concrete over frame structures are many. In the first place concrete is absolutely fireproof; in the second place it effects an economy in heating, because it retains warmth much better than does a frame structure; and in the third place the cost of repairs is materially lessened, because concrete, if properly mixed and applied, is practically indestructible. This form of construction possesses many possibilities for cheap, sanitary and fireproof houses, such as modern requirements demand.

A discussion of the possibilities of reinforced concrete construction may best be illustrated by a series of views showing what has already been done in this direction.

Reinforced concrete, or concrete steel construction, is a combination of concrete and steel in structures where each material is relied upon to take special strains. Concrete is very strong under compressive stresses, but can not take stresses of more than small amount safely. Here steel plays its part. Each material supplements the other in making the structure strong. The combination may be



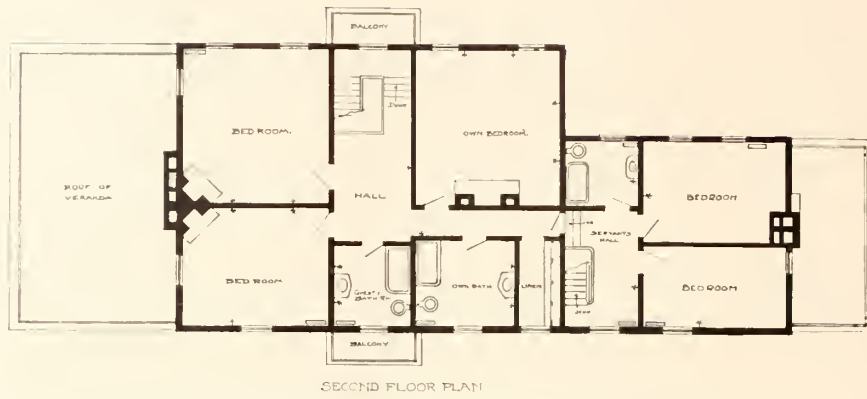
1—A Broad Doorway with Windows on Either Side, and a Balcony Inclosed with an Iron Railing



2—The Reinforced Concrete House of Alexander Smith Cochrane, Esq., at East View, New York, Showing the Walls, the Terrace and Finished Columns to the Piazza

used in floors, walls, columns, beams and roof. With our increasing fund of experience designs will be improved.

There are several forms of concrete construction, the first being absolutely fireproof with walls, floors and roof built of solid concrete, such as is shown in Figs. 2 and 4. Fig. 12 presents a house constructed of concrete blocks, with solid concrete floors and roof. The hollow block construction has, perhaps, an advantage over the solid wall, for the reason



3—Isolated from the Main House are the Servants' Bedrooms and Bath on the Second Floor

of the buildings, but this can be very easily overcome by giving the whole structure a coat of cement mortar, or, better still, a coat of pebble dash. That the prices for reinforced concrete construction work are decreasing with its more extended use in the building of houses can not be more aptly demonstrated than in the vast number of houses to be seen in the

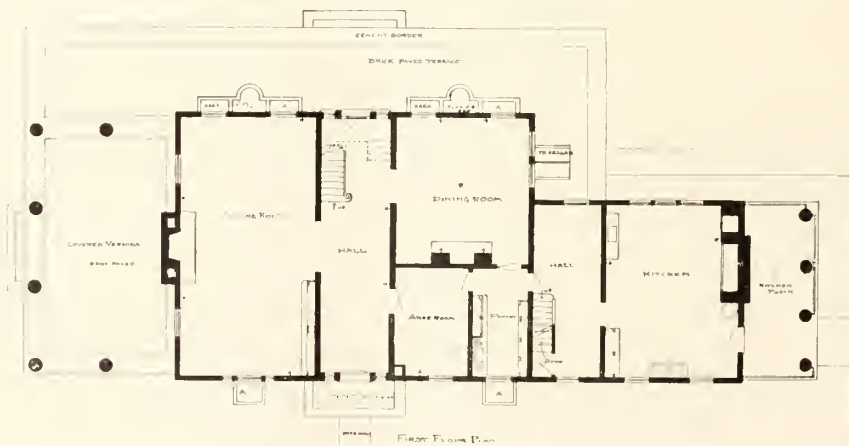
course of construction in the suburban districts throughout the country.



4—The House, Showing the Roof of Reinforced Concrete. The Kitchen Extension and the Servants' Porch are Excellent Features of the House

that the hollow spaces keep out all possible dampness and also form good ducts for the running of ventilating flues, pipes, and electric wires. Moreover, the blocks tend to prevent sudden change of temperature within the house, making it cool in summer and more easily to be heated in winter. Hollow blocks are easily laid, for they require a small number of joints and little mortar. There is, of course, some objection to the uneven breaks in the blocks about the windows and doors and at the corners

Utility as the keynote for artistic values is shown in the simple lines and proportions in concrete houses, which may be enhanced in beauty by attractive doorways and leaded windows, as shown in Fig. 1, or by ornamental balustrades and pergolas, as presented in Figs. 15 and 16. Concrete, under certain conditions, can be admirably ornamented to meet the requirements of an æsthetic taste.



5—Plan of the First Floor, Showing the Hall and Living-Room Extending Through the Depth of the House and the Dining-Room and Other Dependencies

One of the most interesting and important houses built in the form of solid reinforced



6—The Construction of the Columns to the Piazza

concrete construction is "Grasslands" (Figs. 2 and 4), and erected for Alexander Smith Cochrane, Esq., at East View, N. Y., of which Mr. Robert W. Gardner, of New York, is the architect. It is a most imposing house, and stands upon a site of a former dwelling of historic interest. Its silver-gray walls and roof blend well into the soft green of the magnificent trees with which the site abounds, and which form a very delightful setting for the house.

The walls are built of solid concrete, resting on a stone foundation. The forms for the walls were made so that the walls could be built one story at a time, and were constructed of rough lumber. These forms were fastened together with iron rods with key nuts and washers, passing through the walls in the lines of uprights, serving to hold the boards in place and to prevent spreading as the concrete was deposited, rammed and spaded.

The window and door frames were placed in position before the walls were commenced. The forms were filled with concrete composed of one part of Portland cement, two parts of sand and four parts of cinders.

As the walls progressed they were reinforced by one-quarter inch steel rods. Furring strips were embedded in the inside of the walls for the purpose of having something to nail the paneled work to after the walls were built.

The beams, which are placed some ten feet apart, are also built of similar concrete, and are reinforced with three-quarter inch steel rods. Between these beams the forms were built on which the floor was laid. This floor is reinforced with three-quarter inch steel rods, and is three and one-half inches in thickness; the reinforcement being placed in position before the floor is laid, and sufficient distance from the



8—The Roof, its First Coat of Concrete and the Reinforcing Rods in Place

forms to secure a proper key. After the floor was set, the forms were removed and the floor made ready for use. This completed the first story. The same methods were used in constructing the second story.

The roof, three and one-half inches thick, was built on a form in a manner similar to the floor. Figs. 7 and 8 show the manner in which the roof was constructed, which is built similar to the roof of the house shown in Fig. 12.

After the whole building was completed the walls and roof of the exterior were treated with a wash of La Farge cement, which gives it a soft tone of coloring, thereby overcoming the cold gray of the natural cement color.

During the progress of the work, orders were given for the interior trim and woodwork, so that immediately after the exterior was completed, the interior walls of the hall, living and dining-rooms were covered with paneled work, which had been made in advance and in sections, and which were made to extend from the floor to the ceiling. This paneled work and trim were treated with five coats of paint, with a finish coat in white enamel. The Colonial characteristics



7—The Forms for the Roof, Showing the Reinforcement Rods in Position Ready for the Concrete

dominate the treatment of the interior. The hall is a central one, and it contains an attractive, but simple staircase with white enameled treads, risers and balusters and a mahogany rail. It has a broad landing with a French window opening upon a balcony inclosed with an ornamental iron railing. Broad doorways with windows on either side at the front and rear give ample light and ventilation.

To the left of the hall is the large living-room, which extends through the entire depth of the house. The fireplace is built of concrete with soapstone linings and hearth. The facings are of black and gold marble, and the mantel, of handsome design in the Colonial style, was one removed from the old house which was built upon the site before the Revolution. The ceiling is plastered, and the concrete beams are covered with wooden panel work. French windows open upon the piazza, the roof of which is supported on solid columns built of concrete, shown in the course of construction in Fig. 6. This piazza floor and terrace are laid with red brick. Near the front entrance the den is placed, and is conveniently fitted up. The dining-room has also an open fireplace furnished the same as the one in the living-room. On

either side of the fireplace there are arches, in one of which there is built an attractive china closet provided with a glass door, and in the other a door leads into the butler's pantry. The butler's pantry is fitted complete with all the best sanitary appointments. The rear hall has a staircase built of solid concrete.

The kitchen is also fitted with the best sanitary improvements. The old fireplace in the kitchen was retained from the old house, and the Daughters of the American Revolution have erected a tablet over it to commemorate the fact that it was used to cook food for the soldiers during their stay in that vicinity at the time of the Revolutionary War.

The second floor contains the owner's suite of one bedroom and bath, and two guest rooms and bath. This floor is treated with white enameled trim, plastered walls covered with artis-

been erected a concrete house, which is in many respects a pioneer in fireproof residence construction. With walls and partitions of hollow concrete blocks, floors and roof of reinforced concrete, it was the first building of this character to be constructed in New York City. There have been a number of reinforced concrete buildings erected in this city, and some in which concrete blocks are used as a facing, but this is believed to be the first in which hollow concrete blocks were used as supporting walls. The New York Building Code is very strict upon the subject of concrete blocks, believing that there is such a chance to make poor blocks, or blocks without a sufficient quantity of cement, that it is wiser to condemn them all at the start than to permit them to be used in such a manner as to jeopardize the use of them for building purposes.



9—The Living-Room has White Enameled Paneled Walls, and a Fireplace Fitted with an Old Colonial Mantel Removed from the Eighteenth Century House Which Stood Upon the Site of the Present House

tic wall papers and open fireplaces. The bathrooms have tiled wainscotings and porcelain fixtures and exposed nickel-plated plumbing.

The wing over the kitchen extension contains two servants' bedrooms and bath, with a rear hall and stairway to the first story.

The cellar contains the heating apparatus, fuel rooms, cold storage, etc.

Architecturally, the building is designed to meet living requirements, and its particular beauty rests in the simple, straightforward fulfilment of its purpose. Strong, substantial construction, inexpensive with no hint of cheapness, and, above all, supreme usefulness, is the keynote of the whole.

In the building of Mr. W. J. Steel's house at New Dorp, Staten Island, N. Y., as shown in Figs. 12 and 14, there has

The requirements which such blocks must meet are unusually severe, and it was only after many satisfactory tests that the blocks were permitted in the present building.

This building, of which we are able to show a number of views, was also erected after the plans of Mr. Robert W. Gardner, architect, of New York city.

The blocks of which the walls are constructed were made on a Normandin machine; a small shed supplying the necessary shelter for the blocks until hardened enough to be piled in the yard, where they were kept wet for about ten days. While the blocks were hard enough to be laid in the wall in two weeks, it was possible to make enough in advance so that the majority were nearer a month old before moving them from the yard. Three sizes of blocks were used, 12-inch for the basement walls, 8-inch for the walls above the basement, and 6-inch for the interior partition walls. The

blocks were made of Atlas Portland cement and coarse sand in the proportion of one of cement to four of sand, and although the building was unoccupied for several of the winter months no water or moisture has presented itself on the inside of the walls, whether exposed to the weather or below grade in contact with the soil. In order to take no chances, however, the owner has had the exposed walls treated above grade with a double wash, somewhat similar to the Sylvester process. The materials in the washes are entirely different, however, and the resulting action is said to be more waterproof and lasting, and does not discolor the stone in the least.

In the preparation of the blocks high-class labor was not employed; only the foreman being a first-class mason. This one man directed

the making and seasoning of the blocks, and later, the laying of them in the walls. It was found that the cheaper laborers were just as efficient as higher paid men, for their principal work was in the carrying and distributing of the blocks, and the interest which they took in the new form of construction



10—A Simple Staircase with Mahogany Rail Rises up to a Broad Landing from Which Windows Open on to a Balcony Inclosed with an Ornamental Iron Railing

being productive of better results than would have been the case had the work been entrusted to men disposed to treat the blocks as a form of construction inferior to brick or stone masonry. The floors are supported by 3 x 10-inch concrete beams reinforced with "Kahn" bars, and over these is laid

a concrete floor in one continuous slab, having embedded in it nailing strips for the finished floor, which is of wood. Where partitions occur in the second story other than over first-story partitions, they are carried by reinforced concrete girders, which show below the ceilings of the first story. Some of these are shown and are treated as a feature of the room, as shown in Figs. 9 and 17. The absolute fireproof qualities of the building are worthy of imitation. As a matter of fact, why should not every dwelling be fireproof? In the basement of a residence, for instance, a fire burns for about six months of the year. Why should there be a large quantity of woodwork exposed to accidental flame from the furnace, or a spark from the ashes? The ordinary cellar sometimes has a concrete floor, it is true, but the ceiling is often of open wood construction, with the exposed

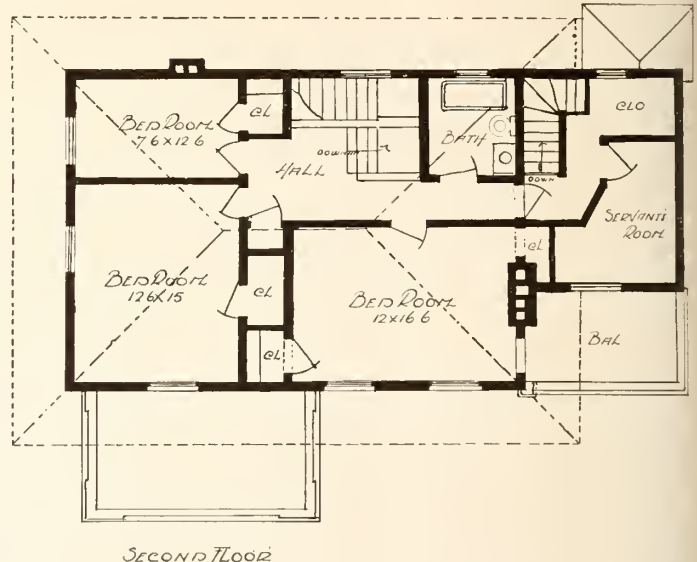
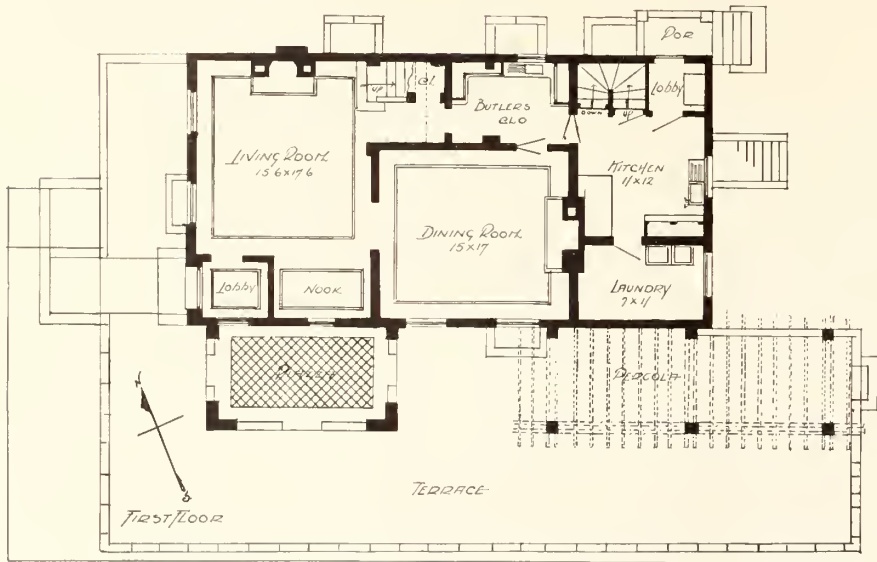


11—In the Dining-Room is a Fireplace with Black and Gold Facings and an Old Colonial Mantel The China-Closet Placed in One of the Arches is a Good Feature of the Room. The Furniture is of Mahogany

and cobwebbed beams almost inviting a fire. The feeling of absolute security from fire which such a construction as this presents will appeal to those who have suffered from the overheated furnace or defective flue. In cities where the building department is severe, and requires that ceilings of basements be furred and lathed with wire lath and plastered, there is not so much danger; but this occurs in only the larger cities. In the smaller places and in the country, where fire protection is least, no requirements whatever are made, and no precautions taken to prevent a fire in the worst possible place in the whole house.



12—House of Mr. W. J. Steel, at New Dorp, Staten Island, is Constructed with Hollow Block Walls and Reinforced Concrete Roof and Floors



13—The Plans Present an Arrangement of Rooms Equal to Those of Frame Construction



14—Skilled Labor is Not Required to Make the Hollow Concrete Block of Which the House is Built

The fact that there is nothing to burn about the building might also lessen the insurance, and in some cases it might be disregarded entirely; but no cautious owner would neglect taking out insurance on at least the contents of the house, which are just as combustible as in other houses. The proximity of other houses would determine whether there was danger from external fire entering the doors or windows, but this is a circumstance which rarely occurs except in densely built-up sections.

It has been said that the interior partitions are of six-inch blocks, which makes an extremely strong partition. Sufficient strength would

have been obtained with a four-inch block, but this is too small to be cast hollow, and the actual material would be about the same for both the four-inch and six-inch block, and the thicker block gives a more satisfactory jamb for the doors and trim. The faces of these partitions, as well as the walls and ceilings, are in the main plastered with pulp plaster, which has the advantage of giving a soft and pleasing effect. Moreover, it can be tinted or adapted to various applied decorations. Some of the walls are, however, covered with burlap tacked to one-half inch strips put in after the walls and partitions were completed.

The house stands by itself on a large corner lot, the two principal sides being flanked by a terrace, the wall of which is built of blocks a little wider than the rest, and having plain edges. The front entrance as seen in Fig. 16 is covered with a hood built entirely of concrete, the brackets and roof being reinforced with plain round rods. On one side of the house is a veranda, the columns of which are built of large blocks and carrying a balustrade of interlaced blocks.



15—Leaded Glass Windows and a Pergola Lend Character to the Building

This construction is better shown in Fig. 16. On the same side of the house and a little toward the rear is a pergola, the columns of which are built up square, with girders of reinforced concrete carrying rafters of small poles left with the bark on. With these covered with twining grape-vines the place will be one of beauty as well as usefulness. This pergola is shown in more detail in Fig. 15.

The roof is of somewhat novel construction, the fireproofing system being also carried out here. The rafters are reinforced with "Kahn" bars, and over these is laid a slab of concrete reinforced

with plain round rods placed both vertically and horizontally on the roof surface. The top is of a richer composition, and although it has been through a number of both summer and winter storms, no sign of a leak has appeared. The slab forming the roof extends down to form a cornice, thus completing the frame without a single piece of wood. The gutters are formed in the roof by embedding a wire mesh bent to the proper angle and the concrete troweled around



16—The Hood Over the Entrance-Way, and the Columns to the Porch are Made of Reinforced Concrete



17—The Rear Outside Steps are Cast in One Form



18—The Mantel and Shelf Supported on Corbeled Brackets is Built of Concrete. The Walls are Covered with Crimson Burlap. View Shows Reinforced Beams in Ceiling Which Carries the Floor Above

and through this. The services of the tinner were required only for the running of the roof leaders. The roof surface is troweled smooth.

The steps to the rear entrance are cast in one piece, a few rods being sufficient reinforcement for the purpose. This flight is shown in Fig. 17.

There is the present objection, more or less just, from the architects, that the sizes of blocks considered commercially economical do not lend themselves easily to design. We have here one example of what can be done with blocks, and the contractor has carried out the architect's design. There is little doubt but the block manufacturers will give the architect what he wants as soon as the architect comprehends the material. It will take united effort to bring the results, but they will surely come.

The walk and the approach to the house is constructed of concrete as well as the steps and the hood over them. The entrance is into a lobby, at the side of which a door opens into a large living-room.

The floors are built on forms, the same as in Fig. 9, on top of which the floors are of yellow pine nailed to

sleepers embedded in the concrete.

The walls of the living-room (Fig. 18) are covered with crimson burlap which harmonizes well with the creamish tint of the ceiling and the soft gray of the mantel and staircase which form the characteristics of this room.

The fireplace, and its mantel-shelf supported on corbeled brackets, is built of solid concrete. The staircase (Fig. 20) is also constructed of concrete. The ceiling shown in the photographs shows the beams; the spaces between show the span of the under side of the floor.

The only wood used in the house is the upper floor laid on top of the concrete, the door and window-jamb and the doors. A nook at one side of the living-room provides access to the piazza.

The dining-room is an attractive room, with its walls

covered with green burlap, its cluster of windows at one side and its concrete fireplace and mantel, which is similar to the one in the living-room.

The butler's pantry is fitted with drawers, dressers and cupboards and all the best appointments. The rear stairs



19—The Dining-Room has Wall Covered with Green Burlap, and a Fireplace and Mantel of Concrete

are constructed of concrete. The kitchen and laundry are fitted with all the modern fixtures.

The second floor contains an open hall, three bedrooms and a bathroom, besides a servant's bedroom. The bathroom is furnished with porcelain fixtures and exposed nickelplated plumbing. The walls are plastered and are tinted in colors with artistic effect.

The cellar contains the heating apparatus, fuel rooms and a cold storage.

The house of Mr. Bassett Jones at Bryn Mawr Park, N. Y., as shown in Figs. 21 and 22 and built after the plans prepared by Mr. Sullivan W. Jones, of New York City, is one of the most interesting houses of its class.

It is constructed similarly to the house shown in Fig. 2, except that it is planned after the bungalow type, with all the rooms placed on one floor; one square house, with wings extending at an angle from it in either direction. This house has wooden floors and roof. The foundations and the terrace walls are built of rock-faced stone. The



20—The Stairs and Hand-Rail are Built of Reinforced Concrete Treated with a Cement Tint

main walls were constructed in one form from its foundation to its roof. The composition of the wall material is somewhat different from the one already described, and, that is, it is composed of one part of Portland cement and seven parts of cinders, the various ingredients of the cinders forming a very compact mass with the cement. After the forms were removed the exterior walls were given a coat of rough cast, composed of one part "Giant" Portland cement and two and one-half parts of sand, the whole stippled with a whisk-broom to give it an uneven surface. The timbers used in the forms were reused in the construction of the roof and the interior, thereby materially reducing the cost.

The roof, which is of frame construction, is covered with shingles and stained a moss green, harmonizing well with the soft gray of the cement color of the walls. The columns to the piazza, which form the chief characteristic of the exterior, are constructed of solid concrete. The building as already



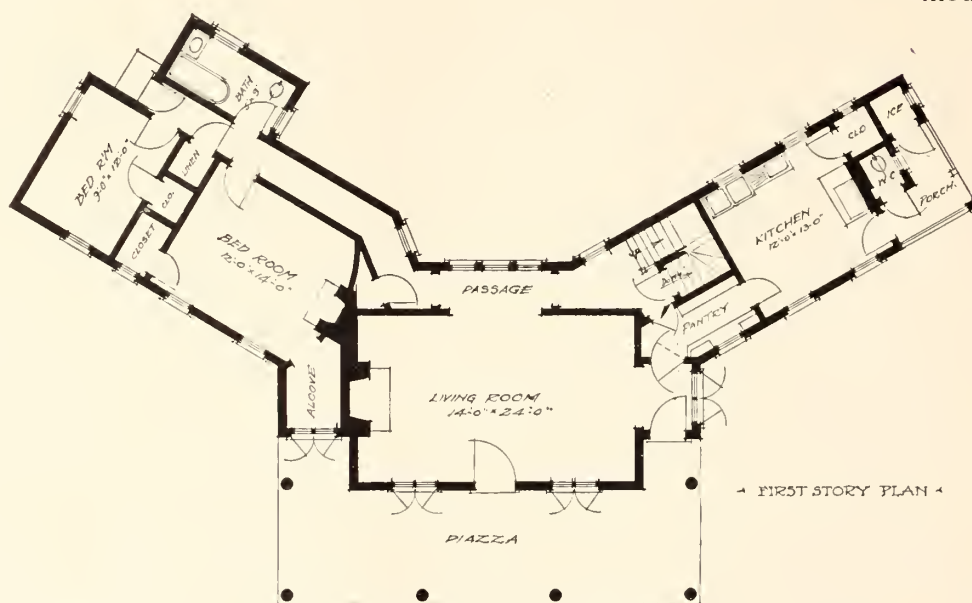
21—The House of Mr. Bassett Jones at Bryn Mawr Park, New York, has Reinforced Concrete Walls Finished with a Pebble Dash, and a Shingled Roof Stained a Moss Green with Good Effect



22—An Annexed Extension Isolates the Servants' Quarters from the Main Living Quarters

mentioned, is planned in the bungalow form; one large living-room, forming the main part of the house, is placed in the center, while two wings, one containing the owner's sleeping-room and bathroom is thrown out at one corner of the living-room, while a similar wing containing the kitchen and its dependencies is placed at the opposite corner of the building.

The living-room, which is used for both living and dining uses, occupies the main part of the house, and is entered from the porch. This living-room (Fig. 24) is treated with a simple trim of cypress stained and waxed in a soft brown. At one end of the room, which is used for living purposes, there is built a large open fireplace, constructed of rock-faced field stone laid up in a rough manner and finished with a neat wooden shelf. At this corner of the room there are comfortable chairs and tables, and a bookcase within easy reach, while at the other end there is the dining-table, which is pulled out into the room when occasion requires, and is then placed against the wall when not in use. The trim of the entire house is similar, and the floors throughout are laid of maple.



23—The Plan is in the Form of a Bungalow, and Presents a Large Living-Room from Which Wings Extend in Either Direction, One Containing the Kitchen and its Dependencies, and the Other Sleeping-Rooms and Bath



24—The Living-Room is Trimmed with Cypress, Stained and Waxed in a Soft Brown. The Fireplace is Built of Rock-Faced Stone

At the back of the living-room there is an archway, which forms an entrance to a corridor extending in either direction. Opposite this archway there is placed a group of windows which present an attractive feature immediately upon passing through the Dutch door at the front of the house. Access is obtained through this corridor, and also through the attractive little nook at one side of the room, with the kitchen and its dependencies, which occupy one of the wings of the house. This kitchen has a good cross ventilation, and is fitted with all the best modern conveniences.

From the corridor access is also obtained of the wing to the left of the house, which contains the owner's room and one guest room. The bathroom is conveniently placed for use by the occupants of either bedroom. A simple little staircase from the corridor rises to the second floor, which contains one servant's bedroom and storage space.

The cemented cellar contains a vacuum steam heating system, fuel rooms and storage.

The Automobile and the Country House

By Paul Thurston

THERE are few pleasanter ways of viewing the country than from the front seat of a modern automobile. Consequently it was with great pleasure that I accepted the invitation of Mr. Jesse B. Cornwall to visit "Oakknoll" at Redding, Conn., and see the advantages accruing from the use of a moderate-powered touring car in connection with a country house. The start was made early one hazy June morning, and we passed through several delightful old villages before striking out into the open country. Here we found Nature at her best, for whether we skimmed along the hilltops or wound through shaded valleys cooled by hillside streams rushing madly over their rocky beds or through the breaks in disused dams, the same freshness of verdure was met with everywhere. At length, rising gradually, we skirted along the hillside opposite Redding Ridge—a high range of hills descending into broad valleys and surmounted by ancient but staunch farmhouses that have sheltered many generations. Prominent among these buildings is the old church, the steeple of which still stands as a sentinel over the surrounding districts, though now without the huge old weather-cock which so proudly proclaimed its superiority over the English soldiers and maintained its lofty position despite the British bullets that hit and sometimes penetrated it during Revolutionary days. After passing around the Ridge, we soon found ourselves on top of a high hill opposite, from which the country place of Mr. Cornwall can be seen to advantage, spread out upon another hill about one hundred feet below.

On one side of the road near the summit of this higher



The Redding Glen

hill is to be seen the caretaker's house and barn, while on the other side is an inclosed well fed by a number of splendid springs, which always furnish a plentiful supply of pure water to the house and other buildings on the estate. Upon reaching the entrance to the grounds, with its broad gateway and cobble-stone posts extending into a stone fence that surrounds the estate, we halt, for here it is that a close, unobstructed view is obtained of the entire place. The house, which faces the east, is reached by a circular drive from two entranceways. The road extends around the south end of the house to the garage and barn beyond.

The house has an excellent broad piazza, extending across its front, and from which, on a clear day, a wide expanse of the surrounding country is visible. From the piazza at the south end a beautiful view down the valley of the Saugatuck River is to be had. As there were ample field stones upon the property, these were collected and laid with broad, white mortar joints, so as to form the first story wall of the dwelling. The building, above, is



The House on the Knoll



A Field Stone Fence Incloses the Estate

constructed of frame, with the exterior covered with shingles, which are left in their natural state. The chimneys, which pierce the roof and break out of the face of the exterior walls, are also built and capped with stone similar to the first story wall of the house. Upon entering through the broad doorway the visitor finds himself within the great living-room, which occupies the main part of the first floor. The wood-work is of cypress, stained and finished in a very dark brown. The walls have a paneled wainscoting, some five feet in height and finished with a plate rack. Above this wainscoting the walls are tinted. The ceiling is beamed, forming panels, which are plastered. At one end of the room is a broad, open fireplace, constructed of selected field stone, with its face rising from the floor to the ceiling. The field stone is laid with wide mortar joints. A dressed stone slab, supported on stone corbels protruding from the face of the chimney-breast, forms the mantel shelf. At the side of the fireplace there is an attractive bay window furnished with a paneled seat. The staircase rises out of this living-room with a simple balustrade

of square posts and balusters, and is finished the same as the trim.

The furnishings of the room are of the simple "Craftsman" style, which harmonizes admirably with the architectural scheme. The dining-room, which is quite a part of this room, is treated in a similar manner, and the furnishings, of English character, are simple and neat. The kitchen is fitted up complete with a china closet, pantry, sink, tubs and stairs

to the cellar. The second story is plainly yet artistically treated. It contains six bedrooms and bath. Each room is well lighted and ventilated, and each has a well fitted clothes closet. The bathroom has porcelain fixtures and exposed nickelplated plumbing. The cellar contains a heating apparatus, fuel rooms, and cold storage. A feature of Mr. Cornwall's place is the "Casino," at the rear of the house, contained in a separate building. This consists of a large living-room fitted at one end with



The Garage on the Estate

a huge open fireplace built of field stone. The room is made use of for dances, parties, theatricals and the like, and when not in use for such purposes, it is used as a living-room by the



The Dining-Room with its Beamed Ceiling and Paneled Walls

servants. From it a stairway rises to the servants' quarters, consisting of three bedrooms and bath. An attractive porch is placed on the south side of the building, and at the west end is provided a wood shed in which to store the huge logs burned in the fireplace on a cool, autumn night. Beyond this building is the garage, which is built to accommodate two automobiles, is conveniently fitted up, and is designed in keeping with the house. The stable is also in harmony with the scheme of the estate, and it contains ample accommodations for all the horses and carriages required on a place of this character. Mr. Charles T. Beardsley, Jr., of Bridgeport, Conn., was the architect of the house and also of all the other buildings on the estate.

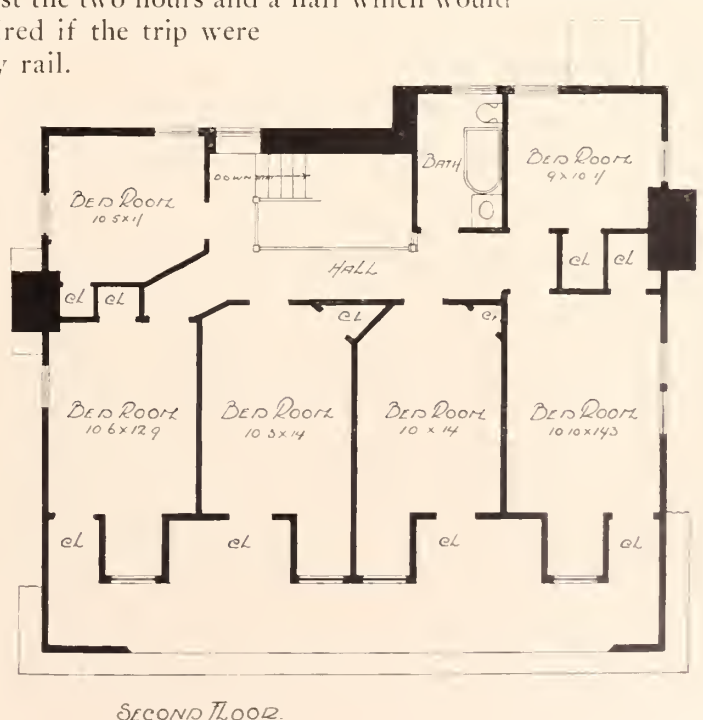
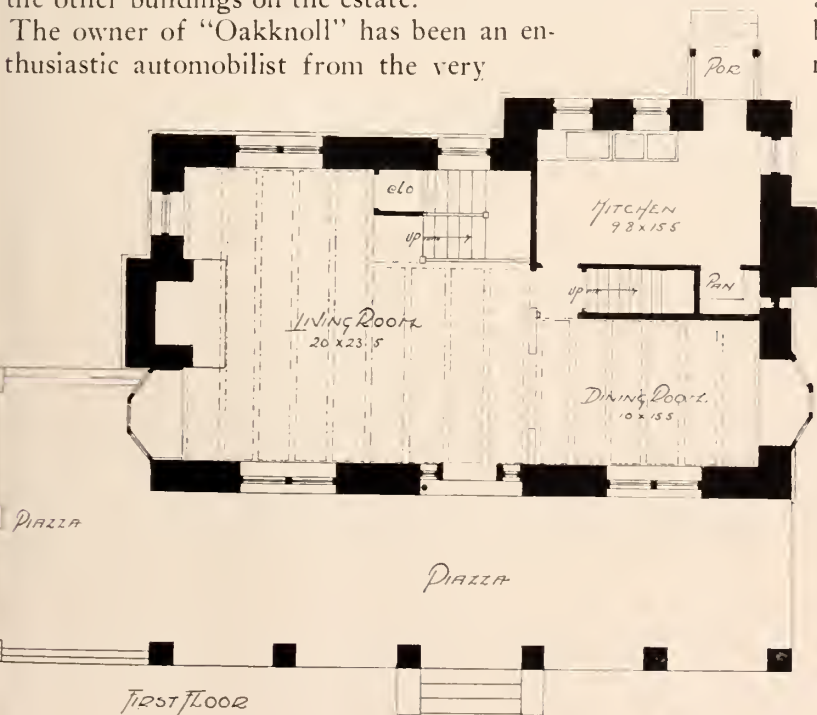
The owner of "Oakknoll" has been an enthusiastic automobilist from the very

beginning of this sport in this country. His is a case which forms a practical demonstration of the usefulness of the automobile in connection with a summer home in the country—the real country, I mean, where there is no interruption from the strident tones of the locomotive whistle or the clanging gong of the trolley car. Even in some places where there is rail communication, better time can often be made by automobiles if the rail route is roundabout and if it has to be completed by a drive of some miles at one end. This is shown to be so by the experience of Mr. Cornwall, who finds



The Living-Room is Trimmed with Cypress, Stained and Finished a Dark Brown. A Stone Fireplace and a Staircase are the Features of the Room

that in his Locomobile he can cover the sixteen miles that separate his country house from his city house in fifty minutes as against the two hours and a half which would be required if the trip were made by rail.



The Plans Show an Open and Convenient Arrangement of Rooms on Both the Lower and Upper Floors

Helps to Home Building

The Value of Architectural Study to the Layman



HERE are but two aspects in which the study of architecture is of value to the layman. These are the pleasure he may take in it, and the utility his knowledge may be in any building work he may have in mind. In the first instance it is a hobby, and a more agreeable hobby to ride does not exist in the whole world. It is a hobby that takes one into the furthest reaches of the past. It brings one before the mightiest of human creations. It touches on every form of art. It explains life, manners and customs. It emphasizes the great facts of history. It is a source of unending delight and of constant change, joy and pleasure.

But the layman must be interested in architecture in a very real and complete manner if he would derive the best from its study. He must be absorbed in it, saturated with it, engulfed with it. It must be to him what the collecting of stamps is to the small boy, or the gathering of paintings is to the adult man. His interest must not only be real, but must be complete. If his interests turn to architecture he will find that the more he studies it the greater will be his delight in it. Incidentally his acquaintance with all useful knowledge will broaden, for architecture touches on many things not architectural.

No one can be argued into the study of architecture for its own sake. There must be inherent love for it, inherent interest in it, capacity for architectural understanding and sheer delight in it. If none of these things come naturally to a man no argument will induce them, no plea lead to interest, no urging produce intelligent results. The architectural hobby is a rare one for the layman, for most men who are thoroughly interested in this art will assume it as a profession—and then instantly find that the professional point of view is something quite different from the hobbist's aspect.

The layman, if he can, will find it best to keep entirely clear of the professional aspects of architecture. Only a trained architect is competent to design, and he often does it badly enough. One may develop an architectural idea, but that is something wholly different from developing it for practical execution. In no art has the amateur less place than in architecture, the amateur designer, that is, for the mistakes he will make, the errors he will create will surpass belief. To the layman architectural study must be a source of personal gratification, not something by which he may keep an architect out of a job.

The architect is entitled to all the work he can get if he gets it honestly. There are few enough jobs of any kind to be passed around, and quite too few, as every architect is aware, of the first quality. The amateur has no business to compete with the architect in any way. It is true enough he has done so in past times and sometimes with amazing results. But these are exceptional cases, that by no means entitle the modern amateur to intrude on the field pre-empted by the modern architect.

Interest in architecture is something quite different from ability to design, and that in its turn, is distinct from ability to build. Both designing and building require practical experience, long study and much ability directed towards definite ends. Mere interest in the art will not reach these ends or even touch them. The requirements of modern building are so complicated that only the man who knows can carry out any work to successful completion. One has but to try a very simple problem in practical designing to realize how true this is and how disheartening.

Of what, then, is the value of architectural study to the layman? The retort is obvious: of what use is anything unless it be practical or unless it give pleasure? The study of architecture, however, is almost an essential to the well balanced and cultured man. It greatly enhances the value of European travel, to cite the most apparent instance. Europe is filled from end to end, with buildings of the vastest interest. Year after year hordes of thoughtless travelers pour through the spacious halls of European palaces or walk beneath the vaults of great churches, with mouth agape and wearied eyes, wondering what it is all about. Wasted effort, no doubt, and rightly wasted, if one has no knowledge of architecture and no appreciation of it. A more foolish proceeding than the inspection of the great monuments of European architecture without any appreciation of what they may mean can not be imagined. Yet it is done every year, and thousands of times every year, and will doubtless be done so long as any stone of these wonders remains erected upon another.

The study of architecture will remedy this absurdity and give fresh zest to European travel. And it will accomplish this end in more than an architectural manner. The objects of architectural interest in Europe have an historical point of view as well as an artistic one. These great buildings are expressions of national life. They depict and illustrate in the most striking manner the manners and customs of the times in which they were built. More important than this they were the scenes of many great historical events, the mere mention of which sends a thrill through the cultured man and which give a vitality and reality to these structures quite apart from any considerations of architecture. Think for a moment if you can, how the history of the later French monarchy is written into the buildings at Versailles; of how the enthusiasm of the middle ages was expressed in the erection of the cathedral of Chartres; of how many stupendous events the superb front of Notre Dame at Paris has looked down upon, or of how the history of the world was affected by the building of St. Peter's at Rome. The Doge's palace at Venice, the cathedrals of Florence, Pisa, Siena and Orvieto are nobler monuments to civic life than any single shaft or painting. These buildings are not dead inert structures, but living organisms, dowered with many human passions. One cannot realize their meaning as one should without a knowledge of their architectural characteristics.

In a more practical way every layman about to build or concerned with building in any way, should be familiar with the chief performances of the architectural art. He should, at least, have an intelligent appreciation of architectural styles. He need not know how to design—in fact he should not do so—but he should be able to discuss his building intelligently with his architect, and know, when the latter throws a round arch, whether it be Norman or Roman.

In other words, to have dealings with architects requires a knowledge of their business. It is the esthetic side that appeals to most laymen, and a knowledge of architectural esthetics is, in most cases, sufficient for all practical purposes. There is less of interest in the scientific side of building; questions of sanitation and of hygiene, while of abounding importance, are not inspiring to the average mind. But architectural esthetics are of transcending interest and importance and have, in addition, a practical utility that will often be most hopeful.



Training the Cavalry of the United States

By Benjamin Winslow



CONTRARY to popular belief the United States regular army is an organization of hard-working men. Although the term "soldiering" has come to mean the act of loafing, real soldiering has an entirely different meaning for the real soldier. Army routine, with its rigid disciplinary rules, does not afford the soldier much chance to "soldier." Especially is this true of the cavalry branch of the army, which might be called an organization of the hardest working hard-worked men. Still the American cavalryman has his recreation and his sport. In his sport, which consists principally of feats of horsemanship, he has no equal on earth.

At each cavalry post frequent exhibitions are given which show, by the daring feats performed by the cavalymen, the

result of the careful training given the men and their horses. The training begins with the horses. To become a cavalry horse the animal must be a male, sound, kind, of good conformation, not too large, without vicious traits and not a thoroughbred. This last requirement is important, for it has been found that a thoroughbred is too sensitive and not quick to learn his duties. The horses are purchased through a board of expert officers, and come principally from Kentucky or Tennessee stock. Usually they are sent to a depot maintained by the government and thence to a cavalry post. They are sometimes transported directly from the place where they are purchased to the nearest post. At the post his training begins in a fenced ring, called the "schute." Here he is taught the three cavalry gaits—walk, trot and gallop. The teaching of these is often quite difficult, for the animal usually



As the Two Horses Take the Hurdle the Trooper Leaps from the Ground Over the Back of One Horse and Upon the Back of the Other



The Three Men Seated on their Respective Horses are Safe Enough, But the Man Carried on the Shoulders of His Two Standing Comrades is Dependent Upon Them for His Security

has a variety of gaits and a set purpose to use all but the one most wanted. But as the horse is the most intelligent of animals, he soon learns that the soldier is his master. After learning the gaits, he is next taught to jump, and finally to lie down at a command. The rest of his training comes with

part of the equipment. The muscles of the recruit soon become hardened to the uses to which they are put in holding this seat, and even the unusual efforts of a fractious animal will fail to unseat him. The ability to hold his seat by means of the legs only is of great advantage to the trooper, as it gives him free use of almost every other muscle in his body.



At a Command from His Rider the Well-Trained Cavalry Horse Will Drop to the Ground and Remain there Until Told to Rise

that given his rider, not the least difficult part of his work.

The first thing in which the recruit is instructed is the use of all equipment issued to him. He learns to care for it, and then to attach it to his horse, or his person, as the case may be. Before he is placed on a horse he is taught the various parts of the saddle, bridle and halter and given oral lessons in horsemanship. He has to recite what he is told, and further training does not begin until he is letter perfect. Then he is placed on a horse and taught the seat. There are two methods of finishing the trooper's education, both of which have advantages. One requires the new man to go through a series of practical lessons in horsemanship before he is permitted to drill with the troop. By the other method he is mounted on an old horse and put in the troop drill, where he gets the benefit of working alongside old troopers.

The recruit's instruction in practical horsemanship begins when he is placed in the saddle and given detailed schooling in the proper manner of "sitting his mount." In this training will be found the secret of American army horsemanship. He must sit erect, with the weight of his body resting on his hips, trunk bent slightly forward, legs hanging naturally, with the ball of the foot resting in the stirrups, the sole of the shoe on a line parallel with the body of the horse. The reins must be held in the left hand, the right rein passing between the third and fourth fingers, the left rein between the fourth finger and the palm, and the end of the reins passing out of the hand between the thumb and forefinger, falling to the front. The hand, with the forearm horizontal, thumb uppermost, must be held in front of and six inches from the center of the body. The right hand, which is never used in the management of the horse except in extreme cases, is supposed to hang naturally at the side, except when carrying the saber or some other

part of the equipment. The muscles of the recruit soon become hardened to the uses to which they are put in holding this seat, and even the unusual efforts of a fractious animal will fail to unseat him. The ability to hold his seat by means of the legs only is of great advantage to the trooper, as it gives him free use of almost every other muscle in his body.

When the recruit has learned to sit and manage his mount, the saddle is removed and he is made to perform a variety of fancy evolutions on the animal's bare back. He learns to ride at all gaits and over hurdles, first with one horse, then with two, and finally with three and four, leaping to the horse's back as the animal takes a hurdle and leaping from the ground to a standing posture on the mount.



With One Trooper Sitting on the Shoulders of Another, Hurdle After Hurdle is Taken Without Mishap

The recruit is next taught to pick up objects from the ground while riding at a lively gallop. His instruction begins with a hat, then a glove, a saber and finally a comrade, although in the last named feat the speed of the horse is considerably lessened. The lessons require him to jump clear



Over the Hurdle in the Roman Style

over the horse and onto the back of another trotting beside his own, landing first in the natural seat, then facing the rear, and then standing. After he has acquired these tricks he is permitted to do what else he can, and he is encouraged by the officers to learn new tricks. These things are permitted and encouraged by the officers because they give the man confidence in his ability to manage his horse, and help him therefore to become a good soldier. Some of the exhibitions given frequently at cavalry posts outshine even the best efforts of a carefully trained circus rider.

But while the "rookie," as the recruit is called, is learning these fancy tricks, he is also being drilled in other branches equally as important, but, to him, the most onerous and useless task he has to perform. These are, to groom, "police" and drill. The first sergeant and even the officers give him instructions in grooming, and the wise recruit will make special effort to master the details, for he is held responsible for the proper care of his mount, and should he be remiss he will be reminded of his responsibility in a fashion not too gentle.

"Policing," which in the army means to clean, is another irksome lesson the recruit has to learn, and he must learn to



The Trooper Stands Erect on His Horse and Takes the Hurdle

do it well, for there is no excuse for bad "policing." This "policing" is not limited to the stable, but extends to the kitchen and dormitories, and in fact the entire quarters.

It has been said that if there had been two regiments of cavalry at Manila in February, 1899, properly mounted and equipped, the insurrection could have been put down within a month. This statement was probably based on the fact that the cavalry branch of the military service were, at the time the war with Spain commenced, all well seasoned soldiers. They had spent the better part of their lives in the West, fighting much of the time, enduring hardships almost all of the time. The ten regiments of cavalry, split up into small units and scattered over thousands of square miles of territory, were used to restrain any disposition that might be manifested by the red man to leave the happy home a paternal government had provided for him and take up the bellicose habits of his fathers. This service was not attractive. To spend days and nights at lonely posts in Arizona or New Mexico, enduring the blasting heat of an almost tropical climate, or to be compelled to do duty in Montana, Wyoming or the Dakotas, where the temperature frequently registered forty and fifty degrees below zero during the long winters, was not calculated to attract any but the hardest of men, who



Posing for the Camera. The Horse Assumed this Position at Command

were imbued with a genuine love for the service. They were not pretty to look upon; they were nothing but tanned bone and sinew, but they could spend twenty-four hours in the saddle, if need be, without rest or food. They could remain in the field for weeks at a time and subsist on almost nothing, and they could endure anything human beings could endure still retaining their vigor under all circumstances.



Six Men and Three Horses. This is a Modification of the Three-Horse Pyramid. The Success of the Feat Depends Upon the Horses' Rising Together at the Hurdle

American Reforestation

By J. Chandler-French



GO AMONG your trees, and see where the branches have been severed; plunge your knife into the wounded parts and you will have a revelation that will make you sick at heart. Turn back to your botany and read of the wonderful cell structure, and see how the tree butcher has left it all exposed until you can find holes in some trees big enough for your head. It will prove a painful task and an instructive one, for it will tell you of the tree's heart failure as nothing else will.

The trees through the Middle West are receiving a new lease of life through skilled surgical operations and other scientific care. In Western Pennsylvania in the rear lawn of a handsome home there stands a gigantic white oak that was recently the patient of the tree doctor. A huge black snake had climbed 100 feet to its summit and made its snug home nine feet down in the topmost branch. The wood began to decay. Gradually the trunk rotted a little further and yet further, until the entire tree was suffering from the effect. The dead wood was carefully drilled out until the wood cells gave no sign of decay, the cavity thus made being filled with Portland cement, at once a preserving and antiseptic composition.

The natural condition of all things living is health. When there is disease and death there must be a cause. Life and death are antagonistic forces and cannot long exist side by side. The work fast extending through the country to the relief of suffering trees is surgery, pure and simple. The decay is removed and life is preserved. The natural condition of forest trees is health. The roots are covered with earth, over the top of which covering the leaves rest lightly, admitting the rain, holding the moisture, at the same time not excluding air. Trees that decay at the time of their lives when they should be flourishing are usually those upon private property where the property owner insists upon both trees and sod. The close lawn sod keeps out air and does not retain moisture. There is but one remedy for trees suffering for moisture. Dig out the sod two inches deep with an area of four feet, and in this space lay a stratum of coarse gravel. Gravel provides the best substitute for the leaves that are so beneficial to forest trees.

During the months of July and August trees require a great deal of water and nature's supply is not sufficient for these months where the tree has not the advantage of the moisture of forest soil. There are thousands of trees upon

private lawns and in public groves dying of thirst and the passer-by can see no cause of the dwarfed, wilted condition. The tree with an ample supply of water will grow symmetrically, and be subject to few diseases.

Not a great distance from the white oak is a great elm, split for several feet. When the splitting began the usual tree man was summoned. According to accepted methods he placed a heavy iron chain around the body of the tree. This answered, to all appearances, for a few years, but the time was not far distant when the powerful laws of nature asserted themselves, and the great and wonderful growth, since it could not burst its iron fetters, was retarded, and the entire trunk became diseased. So strong are nature's laws that sometimes their power even bursts such chains and

bands. The chain in this instance was removed just in time to preserve the life of the tree. The tree doctor made use of the lag-hook, driving it gently at triangles into the upper branches to stay them against the wind. Below, in the body of the tree, where the main split occurred, the decayed wood was removed, an iron brace the exact size and shape of the cavity inserted, and the cavity itself filled with Portland cement. A drain pipe inserted in the tree both below and above the filling not only served to carry off all moisture but to hold the tree firm during its process of healing. The bark eventually heals over the cement and the tree lives its centuries. This is expert surgery of a high order.

Twenty-five per cent. of maples and elms split, and the result of splitting is decay. It is often necessary to drill out the decayed wood until the tree is nothing but

the merest shell. Even such a cavity may be successfully filled and the tree preserved for a hundred additional years.

If apple trees are not prospering and bearing fruit at the age of two hundred years it is because of stupidity. They are ignorantly pruned and their wounds left frequently uncovered, exposed to the elements and destructive insects. It is because of such carelessness that our markets are being overstocked with such imperfect fruit. There is really little excuse for such conditions when a little time given to the study of trees would place one in a position to administer to their needs comprehensively, and produce satisfactory results.

One may not take up the profession of tree surgery without the possession of very broad culture in horticulture, landscaping and floriculture. The first of all requisites is the love for all life. Trees must be studied as individuals must be studied; considered in truth



The Result of an Abundance of Water

as human beings, the tree doctor feeling impelled as any physician to relieve the suffering of his patients. The work must begin with the study of soil. Long years of farming will teach this as nothing else can. If the disease and decay



Dying of Thirst

of a tree can not be traced to conditions of soil, the next thing to be determined would be if the patient had plenty of water. Trees must be supplied with an abundance of moisture or they grow into deformities and die unnatural deaths. Where the trail of the tree butcher is found it is not so difficult to determine causes, and for these there is but one help, intelligent care of our trees.



Portland Cement is at Once a Preserving and Antiseptic Composition

Trees all over the country that have received the care of this scientific tree surgery attest the enormity of the work and the fact that the American people are no longer sluggish, but have awakened to the necessity of the great need for reforestation.

No people on this earth are blessed with such a wonderful territory, range of climate, variety of soil and general adaptation to fruit growing as those of North America. Still we are confronted with the appalling fact that unless something is done to arrest the diseases and check the ravages of untold billions of insect pests that prey upon our apple trees, inside of ten years it will be next to impossible to grow even defective apples. For the last twenty years there has been a gradual decrease in the quality of this most desirable and staple fruit. Similar difficulties are being encountered in attempts to grow the peach, pear, and other fruit, and shade



A Shell Filled with Cement to Preserve Life

trees are going to pieces. The whole country is getting alarmed over the disasters that await us from the destruction of our fruit crops, and at last some sections of the country have been able to lay the ax at the root of the trouble. The ghastly wounds of the glorious tree friends of man have begun to cry aloud their sufferings in no uncertain way, and the day for their relief is at hand—nay, it has already begun.

Trees by the roadside and in our groves are many of them defective without our knowledge. Not more than ten per cent. of them are in a perfectly sound condition. And more deplorable still is the fact that more frequently than otherwise people are ignorant of their condition and the causes thereof. America leads the world in commercial enterprise, education and industry. Our forbears cried aloud, as they pushed through the wilderness west, "Trees! trees! trees! nothing but trees! Cut them down—burn them, anything to get rid of them." Of course it was necessary in the beginning to hew down the wilderness to procure land for agriculture and timber for building, but when the butchery continued in wholesale destruction through the years without ceasing it is scarcely a surprise that the day has arrived when we are called upon to pay the penalty of our ancestors' thoughtlessness, and when I say "thoughtlessness"

I speak charitably. The early land clearer destroyed; the next generation also destroyed, so that it was soon necessary to plant seedlings in order to furnish the highways with shade. To-day it is difficult to find, in some sections of the country, even a sufficient number of seedlings. Hence the necessity of nurseries.

I watched a tree surgeon and his men at work in Ohio upon a beautiful maple which had been subjected to decay by having the central branch, or "leader," cut out. The force of the wind had rent the tree asunder, and the entire trunk was in the far stages of decay. The excavations had been made, and it was interesting to watch the process of filling with the cement. Nature is kind in healing her wounds. Next season a new growth will start out from under the old bark and in time will unite over the cement, leaving no visible trace of the skilled surgery that has been practised.

There are many trees in the Middle West that have undergone scientific operations. The virus has been removed until only the shell remained, an arched steel brace inserted inside the great cavity, and the



Splitting Means Decay

new lease of life to trees and maintaining nature's beauty wherever it has fallen into decay. The work already accomplished in this direction is both helpful and encouraging.

filling completed, when the great silent forces of nature heal over ghastly wounds, enabling the beautiful growth to continue in health for centuries. The work is spreading rapidly, and a school of horticulture and landscaping, teaching the new methods and training men for the work, has been successfully started in the West.

All this means new work, new impetus to tree life, and more and better trees. Our people are awakening more and more to the fact that the growing of trees is a difficult art, and that a tree once destroyed can not be replaced. The interest in reforestation proves that this is realized. The tree surgeon aims to help tree life exactly as the human surgeon aims to help human life. But he does more for trees than the ordinary arboriculturist, since he aims to preserve trees, rather than to grow them.

This surely is noble work as well as useful. It means giving a

The Country Home and the Country Life



THE large country house built in a splendid style, fitted with every possible convenience, and furnished and maintained in keeping with the resources of its owner, leaves nothing wanting to the completeness of country life. These houses have all the conveniences and all the luxuries of the modern American hotel, which, among all the buildings in the world, is of a type calculated for such purposes and for nothing else.

It is under such circumstances and because of them that the country house has become the center of American country life. The country house that may be briefly described as good, need not be a large and costly edifice, although often it is such; but it must be roomy and convenient; it must have an ample water supply; it must be supplied with the most advanced sanitary appliances; it must be capable of being thoroughly warmed in the cool weather and thoroughly adapted to winter use; it may have such special apparatus and equipment as the needs of the owner or his means may demand; it must, in short, be complete in every respect.

Outside the house, but commensurate with it in completeness, are many subsidiary buildings with which it is closely allied. There will be a table and carriage house; there may be a polo stable; it is possible there may be separate houses for the men help; a dog kennel may be added; an automobile garage; a hen house and chicken run; and a lodge for the porter at the main entrance. If the house be located on an extensive estate there will be a full line of farm buildings and a corresponding increase in the number and variety of the buildings.

And the house of the owner is the center of the whole. It is because his house is so complete that he lives in the country; fond of country life as he might be he could not tolerate it

without a dwelling that satisfied his needs and his desires. It is the conveniences of his house that most appeal to him, although he may have instructed his architect to make it comparatively splendid in appearance. He has learned, in most cases, of the value of a handsome house; but he appreciates more thoroughly the value of a convenient house, of a house thoroughly adapted to his own personal needs, reflecting his personal tastes and his own personal pleasures in the country.

The architects have in many instances risen to the solution of this question, and splendid country house after splendid country house, has risen within reachable distance of all our great cities. The countryside near New York, Philadelphia, Boston, Chicago and other great cities is thronged with fine houses that owe their existence to the skill of the architect and of the household engineer quite as much as to the addiction of their owners to country life. The fondness for that life, and appreciation of it, may have long existed, but the architect with his modern house, built in a modern way and equipped with the resources of the modern house builder's art, has made country life both real and practical. The country house is, in truth, a powerful instrument in the development of country life and the real center of country living.

No one, doubtless, lives in the country for the sole pleasure of living in a great house; yet it is possible to have a much more complete dwelling, one provided with more conveniences, one affording greater pleasure as a house, than any city residence, even of the utmost sumptuousness, can do. It is the general country joys that are drawing the people to the countryside, but the country house is being developed in a way that ministers to the delights of country living in a supreme manner. It is helping on the satisfaction in country life as perhaps no other single cause is doing. And this is the real value of the country home to country life.

Summer Camps

By Elizabeth L. Gebhard



ALL over this broad land the summer camp is gaining favor. Under the shadow of mighty rocks, in clearings in the heart of dense woods, by mountain streams and along the sea coasts summer camps and lodges have sprung up and multiplied rapidly in a few years. Men tired with the strain of business or professional life find real rest in these unconventional dwelling places near to Nature's heart. Boys and girls seem to return by an unseen step into their native element, while the busy housewife, if she can not leave all care at home, finds at least her burdens simplified in a wonderful degree. The complications of the life of the twentieth century are left far behind in camp, and in their place is a life which touches the freedom of the pioneers without their burdens. Building and furnishing a camp has a charm all its own. "First build your chimney, and be sure it has a good draught; then build your house around it" is the dictum of a camp lover. Where it is possible, the stones of the vicinity are used in the construction of camp chimneys, and both without and within the great boulders give a sense of solidity to the otherwise light structures. The triangular keystone which bears the weight of the curved fire front is also the keystone of comfort in the house. When the wind blows and the storm rages the logs burning brightly in the fireplace give a sense of security and solid comfort.

Each separate camp has some point of originality in its construction or furnishing. A woman with an artistic sense has made a veritable bower of beauty of a camp on a New York lake. All winter she watches for prints and sketches in magazines and periodicals, putting them in passe-partout frames, till she has a ample adornment for the rooms of her little cottage. Diamond paned casement windows are shaded with curtains of dotted mull; iron bedsteads painted white have tinted

coverlets, and rugs to match on the hard wood floors. Splint and rattan furniture of the simplest type adds to the furnishing, with an ample provision of rocking-chairs for the broad piazza, and one of the daintiest, yet simplest, of summer camps is complete.

A camp owned by a club differs from this entirely. Here every effort is made to omit all details, so entailing no extra care on each party occupying the house in turn. A generous fireplace in the living-room, a long hospitable dining-room table, a sideboard filled with blue dishes, chairs, and lockers for each family of the club, is the furnishing of the living-room, which is only the living-room in stormy weather, for the piazza and boats are the gathering places of the campers on sunshiny days.

The bedrooms here have sealed walls of narrow boarding unadorned, and the white iron beds boast good hair mattresses and red blankets, suggestive of many a good night's rest. The square windows frame a glory of sky and water, hills and woods beyond the art of man. A well stocked kitchen gives warrant of comfort for the inner man. The pictures in this camp are those that hang on memory's wall, of merry-hearted guests and happy weeks of boating, bathing and fishing, and the small boy's enjoyment in an uncounted gathering of frog's hind legs.

A seashore camp has a picturesque portière of iridescent sea shells picked up after the tide had rolled great waves upon the beach. Its delicate beauty is charming, and it also suggests a wealth of time in the long summer days. A camp in the Adirondacks is noted for certain features of ease and comfort. Wooden plates are always used at the meals, and afterward utilized as firewood. Agate-ware cooking dishes are brought from the stove to the table, and in this way much dish washing, that bane of camp life, is saved. This camp has the charm of many



Camp Lookout—The Adirondacks



A Row of Log Camps in the Maine Woods

bright colored pillows in every conceivable place, with their thought of ease and restfulness. A little naphtha launch upon the mountain lake adds to the many attractions of this Adirondack camp.

One of the most unique of camps is to be found under the shadow of the Ramapo Mountains. In a "Daniel Boone" clearing in the woods is a little four-room bungalow. The solid masonry of its great chimney on its exterior is only exceeded by the charm of its deep fireplace within. A rough board mantel is supported by two posts of curled spruce, just as they were cut down in the woods, their curly sides making one think of the leather breeches of Western cowboys. In the cavernous depths of the fireplace are old-fashioned



The Bungalow on Long Island Sound Where Ella Wheeler Wilcox Works and Rests in Summer



In Sight of the Berkshires

A gun leans against one window, while a beautiful stag's head and hunting scenes adorn the walls, which are full of convenient crannies in the rough building for books and pipes and cartridges, and in the midst of it all is an unexpected wealth of Chippendale furniture, and egg-shell china cups in the little corner cupboard. Unexpected and unique as the combination seems to us to-day, our great-grandparents were accustomed to not wholly dissimilar homes.

Far out to the east the Dutch door opens on a view that reaches

brass andirons, the property of an ancestor who was among the first settlers. The logs they have held in the long ago and in the camp of to-day have furnished the home cheer of many a generation.

Buffalo horns lie on each side of the hearth. These were picked up in Oregon by the host of the bungalow, where they once formed the boundaries of land, when the buffaloes wandered in herds over the prairies. A brace of revolvers flank each side of a long old-fashioned mirror, while below them on the mantel silver candlesticks hold their own beside stuffed birds and amateur photographs.



The Wyonegonic Camp



Camping on Lake Charlotte, New York

The use of material furnished at first hand by Nature's own witchcraft is a fad of camp builders. Trees are cut down, making a clearing in the dense woods which serves the double purpose of letting in floods of sunshine in pleasant weather and giving a space in which to build the camper's shelter from storm.

Log camps are common all through the Adirondacks and the Maine woods. Sometimes a long row of these rough-hewn, but solid, structures are placed near together, the parties occupying them making a social community with kindred interests, while the endless stretches of wild land on every side offers solitude to those seeking it, and a hunter's paradise to the devotees of rod and gun.

to the rim of the earth, glorious and full of inspiration.

It is at the back, in a further clearing among the trees, that a Southern Molly reigns supreme over a camp cook stove. A stone lifts the sliding door for draught, and a twig rakes the dead ashes away, while the little, long, slender pipe is wired to two saplings to steady it, the smoke winding hither and thither with the vagrant breeze. Molly lifts pots and moves covers from which delectable odors emanate. Molly is not quite alone in her out-of-door clearing, for three hunting dogs have their kennels near by, and a horse gives friendly neighs from a shed window not fifty feet away. The woods and sky and the animal world are an unending source of delight, while the seats between twin trees lure one to meditation, or a simple basking in the joys that lie near to Nature's heart, and are only waiting for the hand of man to grasp and his eyes to possess in the long days of summer.



Where Harvard is Honored in a Girl's Summer Camp



A Camp in the Woodbridge Hills

Where every household comfort is carried many miles on the backs of guides, luxuries are reduced to a minimum. Campers in the log-camps of the mountain fastnesses, reached by long and devious trails, are accustomed to "roughing it" in earnest, but they claim an exhilaration of spirits, a joyful relaxation from the bonds of civilization, an increasing strength of nerve and muscle, that gives their privations a touch of humor and makes the monotonous camp fare, varied with the delectable taste of venison and salmon trout, a veritable feast of the gods.

Fireplaces are not common in the hunting-camps of the Adirondacks or the Maine woods. Small, air-tight stoves furnish the heat required indoors, and are

largely used for cooking as well, but a guide cooking with deft skill over an open fire, while the odor of the coming meal wafts through the open to the waiting or returning campers, is one of the charms of a hunter's life.

But it is not alone in these log camps that Nature's offerings are utilized. The Wyonegonic Camp in Maine, where hosts of young girls have spent delightful summers fishing, rowing, tramping, riding and botanizing, has the walls of its club-house built about two fine old trees, taking Nature's beauties into the home life, as well as going out to meet

seats of artistic design built at each side of the fireplace, the library table and chairs, and the books and pictures make a complete whole, whose charm can not be surpassed in bungalow interiors.

Ella Wheeler Wilcox's seashore bungalow, on the rocky coast of Long Island Sound, is that of a worker. Everywhere the books of her large and well-selected library are in evidence. It is a place to lure a thinker and worker. Yet conspicuous as is the literary atmosphere within its walls, there are touches everywhere of the sea and the shore. Fish-



In the Heart of the Woods

them. Seats are built around the ample tree trunks, and ferns grow about their roots, while their rough sides higher up afford knots from which hampers and tennis rackets hang in close sympathy with each other. This same ideal camp has stairs made from the small, round limbs of trees, winding their way from the living-room to the floor above. These stairs remind one of a corduroy road, and are as strong as they are picturesque.

In a camp in the Woodbridge Hills a beautiful fireplace cut from the solid rock is a special attraction, while swung above, by means of iron chains, is the half of the trunk of a good-sized elm, which is used as a mantel. Nature and art are combined in this camp—the wrought-iron lanterns, deep

nets are used for portieres, decorated above with sea-shells strung in ornamental designs. A great horse-shoe crab is also prominent as a hall mark of this seashore home, while hammocks and easy chairs invite the fortunate guest to stop awhile, within sound and sight and smell of the sea.

Mountains and woods, lakes, rivers and sea, each have a charm of their own in the summer days. The lover of his own campfires hovers near his own ingle-nook, and follows his own well-beloved trails, but the lover of his country travels between camps, searching out new beauties and fresh joys. To both the summer offers itself with lavish hands, giving peace and happiness and quiet joy to those who spend its sweet-scented days near to Nature's heart.





A Private Arboretum

At Topsfield, Massachusetts

By
Mary H. Northend

THE estate of Mr. Thomas E. Proctor, at Topsfield, Mass., promises to become one of the most interesting of the many estates on the eastern coast. This estate, containing about four hundred acres, is being converted into a private arboretum. The land is of varied character, and may be divided into two areas. The smaller and more important part consists of a small rounded hill, originally owned by Governor Simon Bradstreet. Upon this hill is built an old mansion house, which forms the residence of the owner when upon his estate. By far the larger area, however, is occupied by marsh and woodland. The Ipswich River almost surrounds the hill, and beyond this lie farm lands which have been added by purchase to the original area.

It is Mr. Proctor's intention to make of the estate a private arboretum, containing all hardy, native and foreign species of trees and shrubs, as well as many varieties that have never yet withstood the severe northern climate.

As a setting for this arboretum, extensive engineering feats have been accomplished and are still in progress. Around the

hill a circuit road has been constructed. This road crosses an old roadway that leads from the two entrance gates at the foot of the hill up the western slope to the house at the top. The construction of the circuit road was started in 1902, under the direction of Mr. A. L. Schoerbel. Considerable grading was necessary and many native trees had to be cut away. Besides the main circuit road, other drives, leading to different parts of the estate, have been built. In time it is hoped to extend these drives so they will encircle the estate on its extreme outskirts.

An important engineering feature still in progress is the construction of a large pond upon the northern side of the hill in the marshy land. This is to be densely planted about the edges, and to be approached by a system of paths and drives. Many footpaths, both in the open and woodland, have been laid out in order to enable the visitor to better inspect the specimens planted.

Naturally one idea suggested another, and thus it is that the construction of the woods is by no means finished. Nevertheless, enough has been decided so that the positions of the different families of plants have been permanently located.



The Porch at the Front of Simon Bradstreet's House
Topsfield, Massachusetts



Home of Simon Bradstreet, Governor of Massachusetts 1679-1686
Topsfield Massachusetts, Now Owned by a Descendant, Thomas E. Proctor, of Boston

These various roads, paths and ponds will give to the trees and shrubs an ideal setting and provide localities suitable to all classes of plants.

By the fall of 1902 Mr. Proctor had determined to establish an arboretum, and work along the line was begun. It was decided to plant the species in botanical sequence of Professor Koehne's Dendrologie. During the winter a catalogue was issued containing over three thousand different species arranged in the order to be planted. In the following spring work could not be carried out with speed enough permanently to set out the plants upon their arrival, so that nine stations were established at intervals about the hill. In these nurseries the plants were arranged in proper sequence in order that they could easily be removed to their final position. Work was further complicated, as specimens of the same varieties were purchased from different nurseries and countries better to test their adaptability to soil and climate. The scientific and botanical work has been directed by Mr. John G. Jack.

In the spring of 1904 permanent planting was begun in earnest, and in botanical order. It was found, however, that the scheme had to be partly abandoned in order to procure better location for the plants and more effective landscape results. Nevertheless, the families are kept near together, although groups of trees may at times occupy positions be-



On the Crest of a Knoll, Covered with Trees, has been Erected a Rustic Summer House Planted Around are Aristolochias and Different Ivy Species

longing to lower growing species if the effect is thereby improved. The families follow nearly in sequence along the circuit road, but are in some cases extended into the swamps, or up the hill toward the house.

We may enter the estate by the stone gateways upon the western side of the hill and drive for a short distance on the old farm road to the circuit road at about one hundred feet from the gates. At this point begin the botanical groups of



A Glimpse of the Ipswich River and Islands from Mr. T. E. Proctor's Place, Topsfield, Massachusetts



The Water Drain and Rockery Surroundings, Planted with Vitex, Lavender
French Mulberry, Callicarpa and Salvia

plants. If we turn to the right we find ourselves in the midst of the maple belt. The moisture loving varieties extend from the circuit road toward the swamps, while those suited to drier soil are planted upon the upper or left hand side of the road. In this genus are to be found rare kinds from Japan and the Balkans, as well as many other species, including all common varieties. The small and beautiful maples are planted close to the roadside. The maple groups near the swamps are backed by a natural growth of maples, hickories, and elms, which give a fine setting to the younger trees.

The box family comes next, shaded by two large red ash trees. Some very tender forms of box are here being tested to the climatic conditions of Massachusetts.

From the driveway, at the point, an open and extended view is obtained through a break in the fringe of natural woods, across the Ipswich River, its islands and marshes, to the rolling hills far in the purple distance.

Sumacs were planted after the maples and box, and occupy both sides of the road. They are, however, equally well suited to a steep place in the hillside above the road, and are here set off by a framing of the Tree of Heaven *Ailanthus glandulosa*, and others of its family. Across the road from the latter group is built one of the rockeries that serve as outlet for the drains that are laid under the road. Steps lead through the rockery to one of the many paths which extend in every direction to give better access to the plantations. Sumacs of rare forms, as well as our native varieties, are to be found in the sumac belt.

Euonymus is placed next the sumac, although other species, as *Cedrella*, *Straphylea* and *Sophora*, are tucked between and almost reach the edge of the swamp. A fine location is offered here for those of the *Euonymus* family that like moisture, while the kinds suited to more open soil are placed on the higher ground.

The pulse family is located behind the *Euonymus* and extends nearly to the hill-

top. A fine group of old locust trees, *Robinia pseudacacia*, happens to be growing at this point, and furnishes a most fitting center for the group of younger forms of the same family that are planted about these trees. Honey locust, *Gleditsia triacanthos*, and the Redbud or Judas tree, *Cercis Canadensis*, here find their proper place. Near this group a small undulating hollow has been cleverly made of what was an irregular and unsightly piece of ground.

By walking along the path that lies through this, we meet more of the pulse family, as well as silver bell trees, *Halimodendron Lespedeza* and *Laburnum*, and of plane trees, *Platanus orientalis*, for a background. New Jersey tea, *Ceanothus Americanus*, has been planted as a ground cover under the plane trees. Across the road from the pulse family is the currant, or *Ribes* group, while *Deutzias* and *Hydrangeas* extend beyond to the swamps. Along the border of the swamps the Mock Orange, or *Philadelphus*, and *Liquidambar* are planted.

To return to the circuit road and follow along from the currants, we meet barberries of all sorts and varieties. Many rare and strange forms are to be found. These lie, for the most part, on the lower side of the road among rockeries and backed by natural woodlands, as are the maples. Clematis of many kinds, both climbing and herbaceous, has been planted near the barberry, and in the woods, back of the trees. The low and evergreen kinds of barberry have been prominently placed along the road and in the rockeries; the heavy character of the stonework gives just the right setting for these varieties. Across the road yellow root, *Zanthorrhiza*, forms an edging with *Sassafras* trees behind. Close to these trees starts the magnolia group, filling both sides of the road. The tender varieties have been planted in the shelter of the swamp and woodlands, while the more enduring, as well as larger kinds, are planted up the hillside and approach a background of pines, which in time will serve as a protection as well as producing a fine bit of



A Rockery, Showing the Lycium Family as Ground Cover

woods. The pines are of the white and red varieties, with some hemlock between. The magnolias are carried down the hillside to a little valley, beyond which rises a knoll covered with trees; a picturesque summer house has been built upon the knoll, and in time will be covered with such vines as Dutchman's pipe, clematis and ivy.

Passing by the magnolias along the driveway we come to the elm family holding full sway. Forty-four varieties are here represented. Such common varieties as the English elm, *Ulmus Campetris*, American elm, *Ulmus Americana*, slippery elm, *Ulmus Fulva*, and many other forms have been set out. Low growers as *Ulmus Pumila* and *Parviflora*, are placed along the circuit drive. The corky elm, *Ulmus Racemosa*, has been placed in the valley near the swamp. Close by the elms a branch road leads off the main drive through the swampy lands to other parts of the estate. The large pond that is in the process of construction extends beside this road for some distance beyond. Both these roads were built with great difficulty, and the bog mud and peat had to be removed before solid foundation could be laid. Running water also was encountered in the operation.

The elm group is continued by hazels (*Corylus*), beech (*Fagus*), and hop-hornbeam (*Carpinus*). Chestnuts come next, the more tender forms to be protected by a grove of chestnut trees. The Symphoricarpus family overlap the chestnuts, and the dwarf chestnuts are grouped close to this family. Oaks occupy the next position and stretch for some distance beside the drive. Smaller shrubs, groups of honeysuckle family, are interspersed between the large oak species. Honeysuckles, Diervillas and Viburna are to be found thus placed among the oaks.

The moisture-loving varieties of oaks have been planted on the lower side of the road near the swamp. Among these are found swamp white oak, *Quercus Bicolor*, *Quercus Uliginosa*, willow oak (*Quercus Phellos*), pine oak, *Quercus Palustris* and others. Masses of climbing honeysuckle have been planted against rock boulders among the oaks. Of these Japanese honeysuckle, *Lonicera Halleana*, the native southern honeysuckle, *Lonicera Sempervirens*, and *Lonicera Sullivanti* are most prominent. The smaller oak species have been kept in the foreground along the road and the taller growths placed to form a background. The red and white oaks are found in many varieties, some extremely rare and unknown to this clime. A water drain lying in the midst of the oak plantation, is extended under the road to the rockery at the lower side. In this rockery are planted Vitex, Lavender, French Mulberry, Callicarpa and Salvia.

From the first, along the lower side of the road, the land becomes swampy and offers a fine location for such species as Catalpas and broad-leaved evergreens. Oaks are still con-



A Fine Woodpath on the Simon Bradstreet Estate, Flanked by Maples. The Borders are Filled Out with Rhododendrons Catawbierse Intermixed with Rhopontisum and Many Species of Ferns and Other Tender Plants Used as Ground Covers

tinued along the hillside above the road till they meet the Varnish trees and Koelreuteria.

Numerous rockeries have been built along the road near the Catalpas. One is devoted to the Lycium family, another to the andromedas and still another to evergreens. Another rockery is located under an old willow tree. Clethra makes a background, while small andromedas are planted among the rocks. The Sambucus family and Oxydendron groups adjoin this rockery. Across the road, under the Catalpas, are planted blueberries of sixteen varieties. Next to these, upon the swampland, a magnificent group of Rhododendrons has been started. These extend upon both sides of the road. Hardy and tender varieties are planted in profusion. Azaleas, too, are used abundantly to produce an effective mass, especially upon the upper side of the roadway. Trumpet creepers are also located near this group. The Rhododendrons are backed by an immense plantation of hemlock, which will become a glorious sight.





Lead Garden Statuary

By
Lawrence Weaver
F. S. A.



THE uses of lead in English architecture are as varied as they are delightful. Whether for fountains, pipe heads or the sheathing of spires and domes, lead has values which are as great decoratively as they are practically. The place of leadwork in the garden is, however, almost entirely in decoration, whether it takes the form of cistern, vase or statue. Against lead it has been alleged that it is a makeshift material. It is doubtless true that in the case of many of the lead portrait statues that remain, such as that of William III. at Dublin, lead was employed because it was cheaper than bronze. So much I willingly concede, but as to garden statues, it is fair to affirm that it is a more suitable material. It has a gentle, unobtrusive quality which harmonizes with the domestic air of

gardens. Bronze statues, which are the memorials of the great, and are placed in great sites, may have a noble quality to which lead does not aspire. Moreover, in many cases, the figures have obviously been modeled with a certain roughness, appropriate to lead, which would be coarse in bronze. Compare, for example, the bronze Cupid, by Donatello, which is in the National Museum at Florence, with the lead Amorini at Melbourne, Derbyshire, and pictured in the headpiece to this article. The fine lines and detail of the Donatello would lose if reproduced in lead. Even if attempted, the statue

would soon be blurred by the battery of time and gently effaced by lichens. Impossible, too, in lead is that exquisite delicacy of expression which Donatello gave to his bronze, the impish gaiety which a surface defect would destroy.

It can not be said of the Melbourne boys that they lack movement, but if they are compared with Andrea del Verrocchio's bronze "Cupid with Dolphin" it will be seen that the sense of merry elfish agility which Verrocchio's figure suggests is not only absent from the Melbourne figures, but would be misplaced in lead. The question of muffled detail is particularly noticeable in the wings. In Verrocchio's figure each feather is distinct; at Melbourne they are little more than suggested. There is, of course, the inferiority of the artists in lead as modelers. The Melbourne figures came from Jan Van Nost, early in the eighteenth century, and the accounts are preserved.

There is an item of "Young Triton with brass pipe in middle £6 9 0." Van Nost was a Dutch sculptor who came over with William III. and started a foundry of lead statues and vases in Piccadilly. It has been the habit to sneer at these "imaginings in lead." The Earl of Burlington did so, though his gardens at Chiswick were full of them—but it was no mean artist who modeled a certain lead boy in his garden. His legs have ill stood the passage of two hundred years, but the whole pose of the body and the natural fling of the head make him an exquisite figure spouting



Cymbal Player in Lead



A Personification of Art

freshness, while his little leaden brothers quarrel. Cupids are abroad at Melbourne, and it is impossible to exaggerate the added charm they give to the spacious terraced gardens, playing and fighting against the trim hedges that surround the fish pond. There are four pairs which tell a story. In the headpiece two of them are seen. There is a struggle for a garland, and they pull each other's hair unmercifully, but the fourth group shows them healing their quarrel with kisses.

It is curious that while there are no Donatellos reproduced in lead, Giovanni de Bologna seems to have been a prime favorite with the lead founders of Piccadilly. As he was a Fleming, from Donai, despite his Italian name, the Dutchman Van Nost, who copied his figures, would doubtless be drawn to his work as that of a fellow Low Country man. Not only is there this Flying Mercury at Melbourne, but the Rape of the Sabines in lead at Painshill, Surrey (the original is in marble in the Loggia dei Lanzi). The only excuse for a Mercury in lead, apart from its cheapness, is the exquisite patina which lead takes on when it weathers. This is a charm peculiar to leadwork, and it is of a simple graciousness which makes the figures harmonize with the domestic dignity of formal gardens, in a way that stone never does.

Moreover, stone and terra cotta are very apt to split with the frost. Lead may collapse (the Mercury at Melbourne had a stumbling inebriate pose for years), but it can easily be restored.

At Melbourne, unhappily, this patina is a thing to be desired but not seen, for the statues have been painted continually to their great vulgarizing.

At Castle Hill, Devonshire, a residence of the Earl of Fortescue, there is a great number of garden ornaments, and among them a bust of quite extraordinary interest. It stands on a stone pillar which slopes down to its base, and against a background of trees is a very incarnation of the woods.



The Flying Mercury at Melbourne. Lead Collapses in Time and Produces Distortions, as Shown in this Picture

Grapes are in his hair, and above his wicked ears there are horns. He may be Pan or Priapus. As Pan his appearance in the wood would scarcely bring panic fear to the wayfarer. He may not be benevolent, but he is not alarming. There is a look of smiling quiet lust on his lips which perhaps suggests

the fecund Priapus, but he lacks the marked ugliness of Dionysus' son. I incline to Pan. It is a hypnotizing face, libidinous and cynical. It was a fantastic wit that put it in the same garden with the sphinx. She is cold, unamusing, and, one is convinced, little friendly to the bust of Pan.



Male Arcadian Figure

chastely glad, perhaps, that the artist gave him no goat's feet to set him dancing as statues will of nights, in any wisely-people garden. The sphinx has a wonderful headdress. Even Pan would take no liberties with such severity. She is as stiff as the lead sphinxes at Syon House (the residence of the Duke of Northumberland) are graceful. The sphinx is hardly a garden ornament. She belongs to architecture rather. It is on the piers of the Lace Gateway that we find them at Syon House. Others, rather dull ones, are on the back of the Strand front of Somerset House.

To return to Castle Hill, one of our illustrations shows a study from the antique in a cymbal player. It is not a very interesting figure, but one of a not uncommon type in the eighteenth century.

It is an unhappy thing that, with the exception of a Neptune of Elizabeth's reign, at Bristol, by the Temple Church, there is no English lead statue of pre-Restoration times. Of Mediæval lead statues there must have been plenty, but in England they have not survived. While there are some of the seventeenth, they are chiefly of the eighteenth century. Their home is generally the garden, but there are a number that form an integral part of architectural schemes. This is not only in garden architecture, such as gate piers and garden houses, but in decorating the parapets of great houses in the ultra-classic manner.

Giacomo Leoni, an architect imported by Lord Burlington (and employed probably as the "ghost" of that ingenious nobleman) showed some forty statues on the elevations of the palace he designed for Thomas Scawent, at Carshalton Park, near London, but fortunately never built. It is evident that one of the figures was to have been the Borghese Gladiator. The entrance gates and a little bridge are the only features of this pretentious scheme that ever took shape. As the two statues on the stone piers that flank the gates are of lead, it is not unreasonable to suppose that the other forty



The Sphinx of Castle Hill



"Pan"—at Castle Hill

would have been of the same material. I regret the lead statues, but the house was best unbuilt, as it was a ponderous and not very successful exercise in a very bulky manner. The two statues on the gate piers are of Diana and Actaeon, and give an added interest to a range of admirably wrought iron-work. At Hardwick Hall there are six lead statues in the garden. Two represent Painting and Sculpture, and two are musicians, one holding a violin, the other a trumpet. The remaining two are youths, one Bacchanalian with uplifted cup, the other of somewhat lascivious aspect, with a flute. These statues were taken a few years ago to Hardwick from Chatsworth. They are average examples of a type of figure which the eighteenth century turned out in considerable quantities. The lady has a look of massive complacency which would induce boredom in a gallery, but is not without merit in the restful atmosphere of a formal garden. The drapery of this figure is uninteresting, but no worse. It is, I imagine, intended to be classical. On some of the others the intention somewhat fails, and this is notably the case with the violin player. Her clothing is an exercise in drapery instinct with the spirit of compromise. It suggests the result of a study of Greek art by an intelligent Papuan.

It would be unreasonable, however, to demand too much of a garden statue. In the garden one can be tolerant and

does not look for masterpieces. If I may quote from Mr. Lethaby's charming little book on leadwork, "Lead is homely and ordinary and not too good to receive the graffiti of lovers' knots, red letter dates and initials." One can not, for example, regard seriously the male Arcadian figure here pictured. It is merely a witticism in lead. It erects the inappropriateness of material to subject almost into an exact science. Shepherdesses and their swains are so essentially the subjects for the delicacy of Dresden china that to transpose them into the coarseness of lead and make them four feet high compels amusement. Considering the unfitness of the material, it is noteworthy that the feeling of the figure and the light hang of the shepherd's clothes are so well conveyed. This statue, which is of the middle of the eighteenth century, is now in the South Kensington Museum facing a shepherdess.

It is the sort of statue that would gain by some touches of gilt. In days past they often went further and painted the figures all the colors of the rainbow. That seems to be a superfluity of naughtiness. There is a fitness in the gilding of a lead statue. It is a metallic decoration on a metallic ground. It throws up the natural color of the lead, while painting in other colors (unless they are transparent colors which illuminate without veiling the metallic feeling) is almost necessarily a mistake.



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AUGUST WORK AMONG THE FLOWERS

By Eben E. Rexford

CHRYSANTHEMUMS which have been grown in the garden beds through the summer, will have to be lifted and potted early next month. Get ready for this work now. Provide yourself with a quantity of good loam, well enriched with old cow manure, or its best substitute, fine bone meal. If new pots are to be used, soak them well before putting any plants in them. Have drainage material in readiness against the time of need, and provide stakes to tie the plants to as soon as you have them in pots. Florists offer galvanized iron rods in various lengths, and of different sizes, for this purpose. They are, in some respects, superior to wooden stakes, as they never rot, or break, and are not conspicuous. They cost but little more than wooden or bamboo stakes, and can be bent to suit all requirements, if necessary. My preference is for the long ones, bent double. This gives them a stronger bearing, when inserted in soil, and enables one to furnish much better support for a plant than can be secured by the use of a straight rod. Bend two of the five feet of wires, and insert them in a pot in such a manner that they cross each other at right-angles, at the top, and you have an ideal support which calls for little tying. By fastening them, where they cross, with a small wire, they stand rigidly, and furnish all the support needed by a good-sized plant.

I have found it advisable to cut about my chrysanthemums, about a week before lifting them. I use a thin-bladed and rather narrow spade in doing this work. I cut around each plant in a circle a little smaller than the pot I intend to put it in, running the spade to its depths in the soil. This severs all roots extending beyond the limit of the pot to be used, and encourages the plant to start new feeding-roots inside the ball of earth. These new roots will nourish it when the plant is lifted, and greatly assist it in adapting itself to its new quarters. There will be no such shock as results from exposure of the roots where no preliminary cutting has been done.

Several correspondents have asked me which classes of chrysanthemum were best for general culture by amateurs. I must reply that depends upon individual taste. Some prefer the Japanese sorts, with their tasselly, fantastic flowers. Others, the flat, double kinds. Still others, those with globular, incurved bloom. Personally, I have a preference for the varieties having rather flat flowers, of which Ivory and Timothy Easton are representative types, and the semi-double sorts which show a yellow disc, of which a good illustration accompanies this article. These are wholly lacking in formality, and will delight the flower-lover who has no use for a plant of which primness is a leading characteristic. We do not see very many of them, but when a well-grown specimen is on exhibition, at the fall flower-shows, it is sure to have a host of admirers. They do not lend themselves to freakish performances, as the great, flowered kinds do, therefore the florists do not find them as useful for their purposes, but they are excellent for home decoration, and deserve a place in every collection. The large, flat and globular kinds are stately, and in every way showier, and produce magnificent effects, when well grown. A few of the ragged Japanese sorts are useful, in all collections, to give variety, but, with me, a few answers all purposes. However, as I have said, it is all a matter of taste.

I would advise going over the hollyhocks and cutting away the old flowering-stalks.



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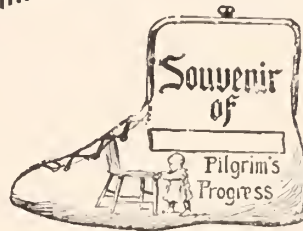
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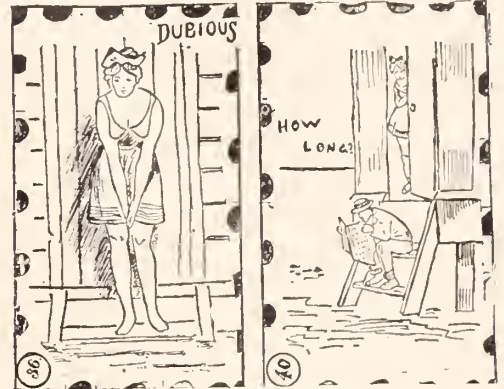
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Nearly all plants will send up new ones, for which a really fine crop of flowers will be borne, next month, if this is done. You will find these rudimentary stalks near the base of each plant, as a general thing, waiting, apparently, for some encouragement to make something of themselves. If the plants are allowed to develop and perfect seed, these second-crop stalks will not be likely to amount to much, but as soon as the older stalks are cut away, and the process of seed-bearing is interfered with, they will at once spring into activity, and make very pleasing autumn-bloomers of the old plants. These short stalks will be found excellent for cutting. For use in tall vases, the hollyhock is one of our best large flowers. Its stately habit and rich coloring makes it extremely effective for room decoration, or for church use.

The gladiolus is another very useful plant for decorative use. If its stalks are cut full length, when their first flowers begin to expand, and the water in which they are placed is changed daily, nearly every bud in the spike will develop.

Tea roses will not do their best this month, in the open ground, unless well mulched, if the weather is hot and dry. Grass-clippings from the lawn should be spread among them, two or three inches deep. These will break the force of the sun's rays, and prevent too rapid evaporation of moisture from the soil. A little water used in connection with such a mulching, will do a great deal of good, but without the mulching, it would be of small benefit; cut back these plants well, and apply some good fertilizer, and thus bring them into condition to do effective work later in the season when cool weather comes. These roses are ideal fall bloomers.

Look to the asters, from time to time, to make sure that their worst enemy, the black beetle, is not troubling them. If he is there, make use of the ivory soap infusion heretofore made mention of, and use it persistently, until the enemy is routed. It may be well to use some of it on the chrysanthemums, for this beetle is often found working on these plants.

If you find that some of your plants look as if struck with rust, the proper thing to do is to cut away the affected portions at once, and burn it. For what we call "rust" is a fungus growth which, left to itself, will soon spread to other plants, and eventually work sad havoc in the garden. Hollyhocks are almost sure to be attacked by it. Asparagus is often ruined by it. Asters frequently suffer from it. The remedy is Bordeaux mixture, sprayed all over the plants. Use it promptly, and liberally. You can doubtless obtain this fungicide of local gardeners, or, if unable to do so, you can buy it of seedmen and florists, who have two preparations of it for sale—one a paste, the other a powder. These are prepared for use by being mixed with water, and will be found very satisfactory.

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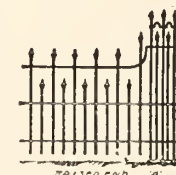
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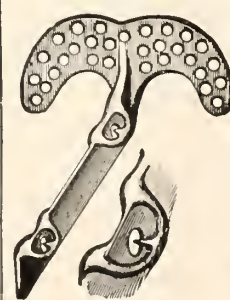
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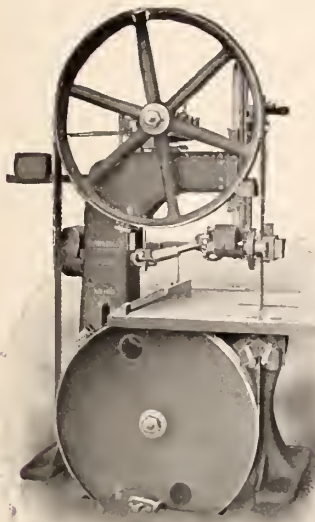


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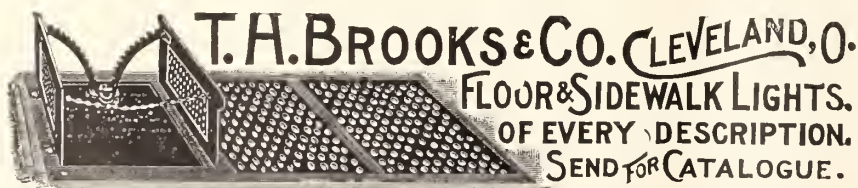
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when thus grown, and quite as desirable for use in front rows, as its lower branches will bend to the ground under the weight of their enormous heads of bloom. To secure best results from it, manure it heavily each season, and cut it back sharply. Do this early in the season.

If you are going to put out some bulbs this season, send in your order for them as soon as you get the catalogue of the florist you are in the habit of patronizing. We make a serious mistake in waiting until October and November before planting our hyacinths, and tulips, and narcissuses. They should be got into the ground as early as possible, that they may form good, strong roots before the coming of cold weather. If they do this, they will give a fine crop of flowers next spring. Late-planted bulbs only half complete the development of roots by the time winter puts an end to their work. This interrupted work they will have to go on with in spring, at the time when they are trying to develop flowers, and the result is generally weakened plants and inferior bloom.

Along with your bulbs for outdoor use, order some for flowering in the window-garden in winter. The best, for this purpose, are Holland hyacinths, preferably the single varieties—Roman hyacinths, tulips, of the early single sort, narcissus, and Bermuda lilies. All of these bulbs bloom finely in the house, if properly treated. What I consider proper treatment I will speak about next month. In ordering the Bermuda or harissii lily, be sure to get the large, heavy bulbs. They are surer to bloom than the smaller ones, and will give you finer flowers, and more of them. If I could have but one bulb for winter use, it should be this beautiful lily.

A correspondent asks me if I would advise her to repot her palm now. That depends. If it really needs repotting, the sooner it is done, the better. But if it is in a healthy, growing condition, I would not consider that it needed any change. I believe more palms are lost by over-kindness than from neglect. People are under the impression that they are difficult plants to manage, and they coax and coddle them to death. My rule is this: If a palm is doing well, let it alone. I do not repot my plants very often. I do not find it necessary to do so, because I use a good deal of fertilizer on them, and in this way they get all the food they need. They do not have to depend on fresh soil for it. I have a "made-up" palm—of three plants—which I bought four years ago. It was put into a nine-inch pot when sent home, and it is in the same pot to-day. It is perfectly healthy—I do not think it has lost a leaf—and it is constantly making new leaves. It is as fine a specimen as I have ever seen. When I potted it, some horn shavings were mixed with the soil. These decay very slowly, are rich in elements of plant-growth, and constitute an ideal fertilizer for plants of this class. This plant, by the way, has always been kept in the hall, or the living-rooms, therefore green-house conditions are not responsible for its vigorous, healthy condition. If you are sure your palm requires a larger pot, turn it out of the old one without disturbing its roots, set it in the new one, and fill in about it with fresh soil, making it firm by crowding it down with a blunt stick. Then water well, and let the plant take its time to begin growth. Never attempt to force matters by giving strong fertilizers while the plant is standing still. Many a plant that would have begun to grow, after a little, if let alone, has been killed in that way. My palms, grown in living-room and hall, are always in jardinières, but I make sure that their pots never stand in water by elevating them on bricks. Many a palm is killed by water about its roots.

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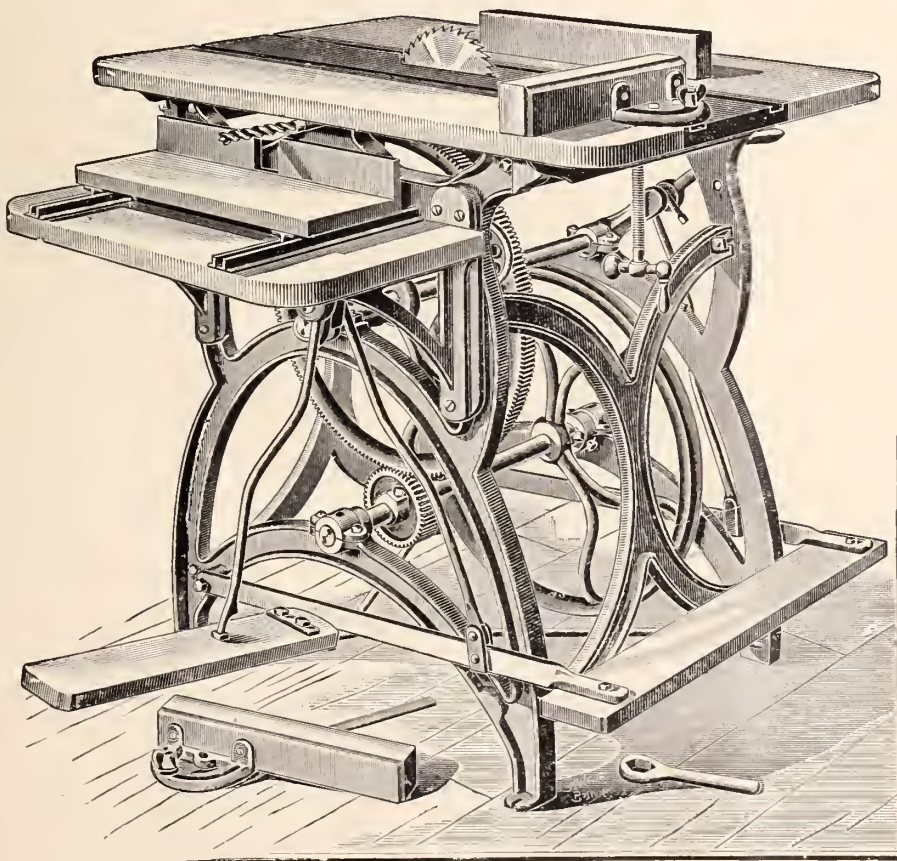
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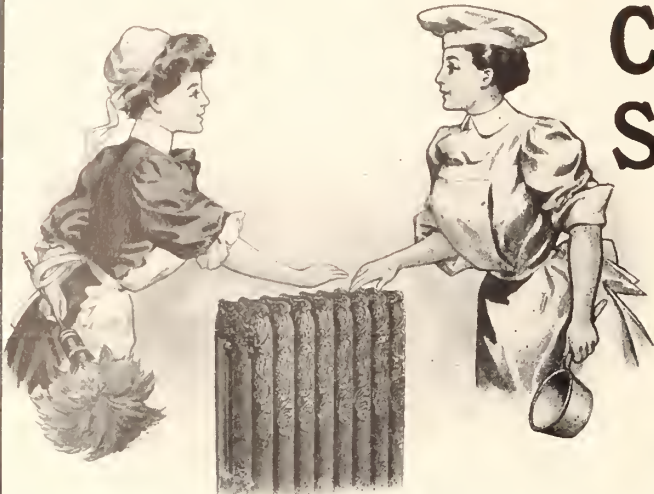
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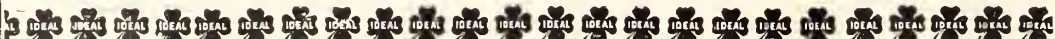
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THE LAWN.—II

Grasses Adapted to Lawn Making

By L. C. Corbett

ONLY such grasses as are capable of making a close turf are suitable for lawns. Most grasses which have creeping rootstocks, short joints, and produce long, narrow leaves in abundance about the crown of the plant adapt themselves well to lawn making. In addition to this, a desirable lawn grass possesses a pleasing color, which does not change decidedly from season to season, is drought resistant, responds quickly to a change of conditions from winter to spring, and bears repeated clippings with the lawn mower. It will be noted that the requirements of these grasses are exceedingly exacting, and it is not surprising to find the list of such grasses a comparatively short and meager one.

In general, in those localities where ideal soil and climatic conditions are not present a mixture of grasses is better adapted to lawn making than a single variety. Under conditions where the soil and climate are congenial for the development of grasses a more beautiful lawn can be made by using a single species than by the use of a mixture.

Kentucky bluegrass is undoubtedly the great lawn maker for all that section of the Atlantic coast region north of Washington, D. C., and for the Allegheny region as far south as northern Georgia. Bluegrass thrives best in a strong, comparatively retentive soil where there is an abundant but not an excessive amount of moisture. In localities where precipitation is greater and upon soils of a lighter character such grasses as redtop, Rhode Island bent-grass, creeping bent-grass and white clover are more to be relied upon for lawn making than bluegrass. Redtop, Rhode Island bent-grass and creeping bent-grass all have the same ability to make a compact and deep sward, as does bluegrass. In fact, under certain conditions redtop and the bent-grasses are able to make a softer, although not a more permanent, turf than does the bluegrass. Upon the light soils found in the States south of the latitude of Washington, D. C., white clover forms an important feature in lawn mixtures.

Because of the varied conditions of shade and moisture existing upon a lawn as the result of trees, shrubs, and architectural objects, mixtures and more desirable than pure grasses. The different degrees of shade and moisture in the soil resulting from the presence of trees, shrubs, and buildings produce a variety of conditions under which a single species would not give a uniform lawn.

From the city of Washington southward, particularly upon the sandy soils of the Atlantic coast, plain Bermuda grass is the main dependence for lawn making. When the confines of Florida have been reached, however, the conditions are somewhat different, and the warmer climate and greater humidity admits the St. Augustine grass, which has a coarse and very upright leaf, although it has a creeping rootstock. This grass is of special value in Florida, as it remains in a green condition practically throughout the whole year.

Korean lawn grass is a maritime grass from Asia and Australia, which is proving of value along the sea coast from Charleston southward. It thrives well in the latitude of Washington, but the leaves are not hardy, and assume a light straw color in winter. It will, however, undoubtedly be a decided acquisition for lawns near the seashore in latitudes south of Washington.

Seashore lawns are each year becoming of more and more interest because of the great number of residences which are being established along the Atlantic coast from Maine southward. While there are a number of



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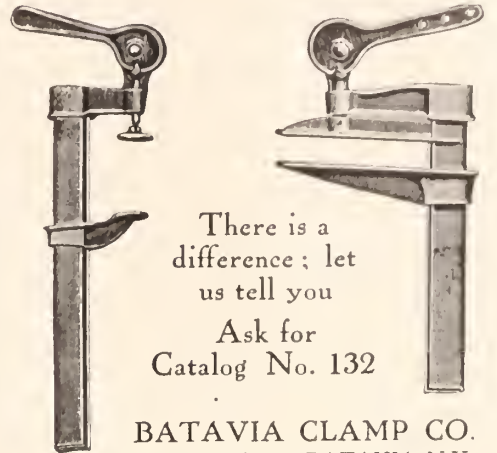


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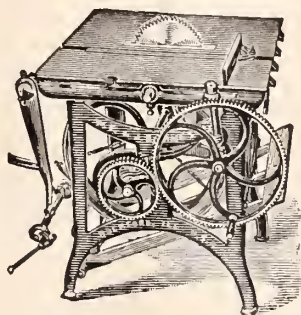
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maritime forms of common grasses, besides bluegrass and red-top, none of these have been taken up by commercial seedsmen and produced in sufficient quantities to be available for lawn making in these regions. Persons wishing to establish lawns under these circumstances must, therefore, depend largely upon the same grasses that are used for the making of lawns farther from the coast—bluegrass, Rhode Island bent-grass, redtop and white clover. Under coast conditions it is advisable to use mixtures containing a large number of varieties. In this way those not suited will be replaced by those best fitted for withstanding the conditions without re-establishing the lawn.

There are a few grasses which in themselves are well suited to lawn making, but which, because of their habits of growth, are not well adapted to use in lawn mixtures. Italian rye-grass is a notable example of this type of plant. It is in itself capable of making a fairly good lawn, but because of its more rampant growth and broad leaf blades, which possess a shiny appearance, it does not blend well with other grasses on the lawn—such as redtop, bluegrass and white clover. It grows more rapidly than do those species, and always appears as an obtrusive companion upon the lawn. It is, therefore, not advised as an important or desirable feature in a lawn mixture.

SEED.

Too great care can not be exercised in procuring seed for establishing a lawn. Pure seed, of high germination, is of great importance in securing a good stand of grass. Pure seed is the keynote to a clean lawn, provided the work of preparing the land has been efficiently done. Thorough preparation involves not merely the mechanical treatment of the soil to reduce it to a proper seed bed, but the use of weed-free manure and the adoption of a course of treatment previous to preparing for the lawn which shall serve to eradicate weeds. Such preparation, coupled with pure seed, should give a satisfactory stand of grass which shall need only the usual care necessary to maintain a lawn after it is once established. Too much can not be said in favor of securing pure seed, and, if possible, specially selected seed. This is of considerable importance with light seeds like bluegrass, redtop and seeds of the bent-grasses. In the case of bluegrass, select seed weighs about twenty-two pounds to the bushel, while the ordinary grade of bluegrass, although it may be called pure, averages about twelve pounds to the bushel. Select or re-cleaned bluegrass is, therefore, the most economical to buy, although the original cost is considerably more than that of the common commercial article.

The stand of grass resulting from the use of re-cleaned, selected seed is much more uniform than when seed containing a great number of hulls and light seeds is employed. The same remarks hold with the bent-grasses, and even with white clover, although the market at the present time does not offer as much opportunity for selection with this last-named seed as with the bluegrass.

The quantity of seed to be used upon a lawn is of decided importance. It is better to use an excessive amount of seed and allow natural selection to eliminate the weak specimens rather than to seed sparsely with the hope that the natural habits of the plants will be sufficient to enable them to take possession of the entire area. A thick stand of plants of the desired species gives little opportunity for the development of weeds, while a thin stand of the same species offers a place for the growth of weeds, which may become determined competitors for the possession of the ground, thus subjecting the gardener to the necessity of eliminating the weeds or of re-establishing the lawn. Heavy seeding of

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grass is, therefore, a very important matter in the establishment of lawns.

Bluegrass, bent-grass, and the fescues, if used in combination, should be sown at the rate of two to three bushels of seed to the acre. Bluegrass, if used alone, should not be used at a less rate than two bushels to the acre, while white clover, if added to the collection of the above-named sorts, should be used at the rate of a peck to the acre. Upon sandy lands and in spring seeding white clover is a very important factor, because it germinates quickly and covers the ground, affording protection and presenting an attractive appearance earlier than is possible by the use of the other grasses. White clover, too, is able to re-establish itself very quickly after periods of severe drought, and until the bluegrass, redtop, and bent-grass become thoroughly established the white clover will usually be in the ascendant. As the turf-forming habits of the other grasses become more strongly marked, however, the white clover will gradually disappear and give place to the more permanent grasses.

ESTABLISHING A LAWN.

The successful establishment of a lawn depends upon the careful preparation and the proper fertilization of the land and the selection and planting of appropriate grasses. In those localities where a lawn can be established by the use of seeds the preparation of the seed bed and the selection and sowing of the seeds are exceedingly important questions. General directions for the preparation of the soil have already been suggested. In order that seeds of suitable character may be secured, it is desirable in the first place to determine the varieties which succeed best in the locality. In the northeastern part of the United States bluegrass, redtop, Rhode Island bent-grass, and white clover are the chief constituents of lawn mixtures. In the latitude of Washington, D. C., bluegrass and white clover, Rhode Island bent-grass, and Bermuda grass are all more or less important lawn grasses. Bermuda grass seed is not commercially grown in the United States, and because of the expense of the Australian product the only economical means of propagating this grass is by division of the rootstocks.

In order to secure a uniform distribution of the seed, the seeding should be done in two directions. The seed should be divided into two lots, one of the lots being scattered in one direction across the land and the other scattered at right angles to the first. This is done in order to obliterate as far as possible balks and streaks in scattering the seed.

Since grass seed is very small, every precaution should be taken to bring the seed in close contact with the soil. Nature does this in an ideal way by gentle showers. It is therefore desirable upon small areas to sow the seed immediately before a shower. If the shower is a gentle one of some duration, it is more desirable than a violent rain. Torrential rains, if the surface of the lawn is sloping, usually cause damage, which must be repaired.

In the case of establishing lawns, if the grasses which grow from seed cannot be used, it is necessary to resort to one or the other of the following methods: (1) The establishment of the lawn by the use of small tufts of grass or pieces of turf planted at intervals, sufficiently close to allow the natural spreading of the plant to soon take possession of the entire area, or (2) covering the entire area with turf. In the Southern States, where the Bermuda and St. Augustine grasses are depended upon for lawn purposes, the common practice is to cut the turf into small fragments, about two inches square, or to take small tufts of roots and stalks of the grass, as much as can be easily grasped in the hand, and insert them

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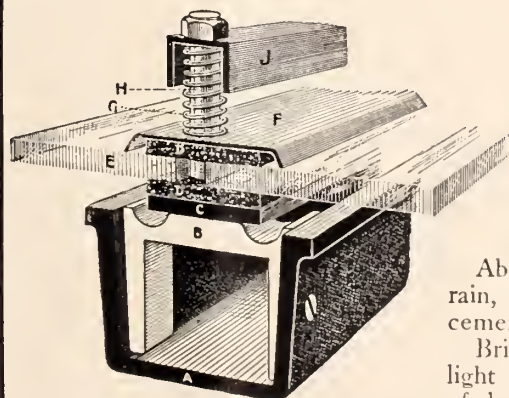
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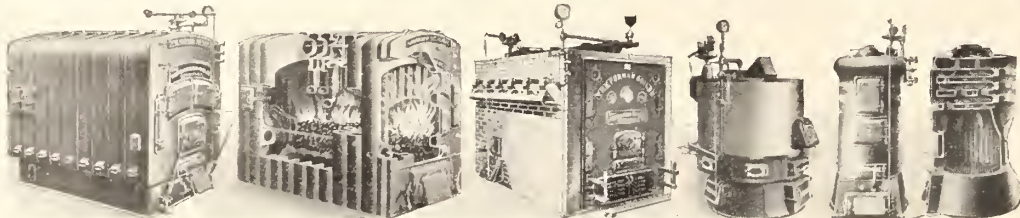
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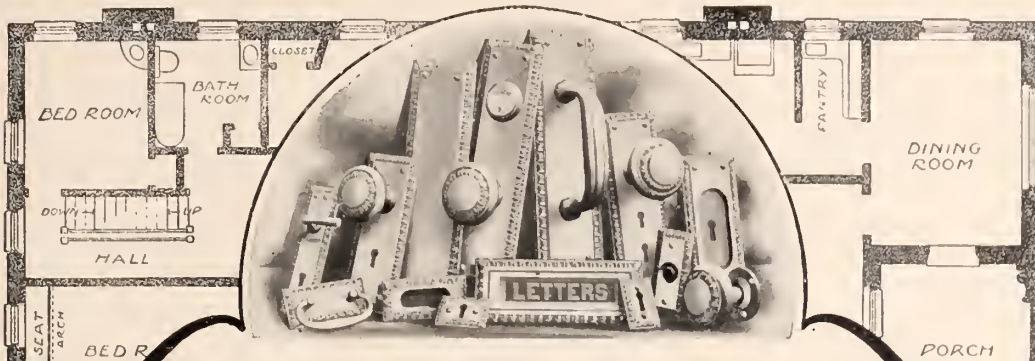
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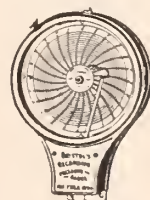
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in the soil at intervals of about ten or twelve inches in each direction. When not planted in check rows in this fashion the roots are usually set in rows or drills twelve or fifteen inches apart in one direction, with the tufts of grass six to ten inches apart in the row. Slight cultivation is then practiced between these rows to keep down weeds until the root-stocks of the plants have gained possession of the entire area.

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Upon terraces and banks where grass cannot be readily established from seed or by planting, as before indicated, the sod or turf is usually removed from some area where suitable grass is well established and used to cover the entire surface of the bank or terrace. A common method employed in this work is to cut the sod into pieces a foot square and about two or two and one-half inches thick.

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WHEN TO PLANT A LAWN.

There are those who are very successful in lawn making who depend almost entirely upon fall planting, and there are others who are equally successful who advocate the practice of spring planting. Both of these systems are successful, and the prospective lawn maker may use the method which best suits his convenience. If the seeding is to be done in the autumn, the latter part of August or the month of September is the best period for accomplishing the work in latitudes between Washington, D. C., and Boston. In the southern portion of this zone the work may be deferred until October.

If possible the seeding should be done at a time when the fall rains are most abundant. It is not advisable to sow the grass seed during a dry period, unless there are at hand artificial means for watering which can be used to force rapid germination and growth.

Fall planting has the advantage of allowing a number of the weeds in the area to germinate and be killed by the frosts and freezes of the winter. If the grass attains a height of two and one-half or three inches before winter there is little danger of loss from severe weather. In localities where the surface of the earth is not protected during winter by a snow cover and the ground is likely to freeze and thaw repeatedly it is not advisable to attempt to establish a lawn in the autumn.

Spring planting is more certain of results than fall planting in the long run, particularly in the zone under discussion. The drawback to spring planting is that work must frequently be delayed longer than is desirable because of unfavorable soil conditions, particularly upon heavy and retentive soils. Young plants suffer severely from heat and drought if they have not had an opportunity to grow and form considerable root before the hot period comes on. Weeds which come in advance of the spring planting of the lawn can be overcome in a measure by giving the land partial preparation in the autumn and allowing the first crop of weed seed to germinate before cultivation and the preparation of the seed bed is completed, using this cultivation to destroy the first crop of weeds as well as to prepare the seed bed for the lawn. The latter weeds can be held in check by frequent clippings with the mower.

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securing a uniform sod or turf over the entire extent of the lawn. In order to secure this the plants which constitute the lawn should be kept in a luxuriant, vegetative condition and never allowed to go to seed. There is no operation connected with plant life which is so trying upon the vitality as the production of seed. In order to keep a close, even surface over the area, it is necessary to use a mower frequently, but in using the mower the clipping should not be done close enough to deprive the plants of sufficient leaf area to carry on their normal functions; that is to say, as a general rule the lawn mower should be set high rather than low. Upon newly established lawns the operation of clipping should not be delayed until the grass is too high. As soon as a mower with a blade two inches high will cut the ends of the leaves, the mower should be passed over the surface. By repeating this at close intervals during the growing season a better and more uniform stand of grass will be secured.

It is a mistake to allow a lawn to go in an unkept condition during the first months of its existence. It should from the beginning be subjected to the same treatment which is to be carried on later in its life. It is not advisable to clip the lawn frequently during periods of drought, but even during these periods it is not well to allow the plants to produce seed stalks. The general plan of keeping a lawn clipped to a height of two inches is a very safe one to follow. The clipping, too, should be sufficiently frequent to prevent the necessity of raking off any considerable quantity of material after each clipping. If the soil is moist, very rich, and the growth luxuriant, it will be necessary to rake off the clippings, but on comparatively poor soil the clippings will not be detrimental unless they produce an unsightly effect. Before growth has advanced to any considerable extent each spring, the lawn, as soon as it is comparatively dry, should be gone over with a heavy lawn roller, so as to embed firmly any of the grass roots which may have been loosened by frosts and to reduce the surface to a uniform condition.

The winter top-dressing has already been referred to, and upon soils which are not uniformly very rich and retentive this dressing is very desirable, as it not only furnishes a winter protection for the roots of the plants, but supplies them with a liberal quantity of immediately available plant food for starting growth in the spring. In some localities it is necessary to give special attention to the eradication of persistent weeds, such as plantains, dandelions, and other deep-rooted plants of this character. Where these can not be crowded out by constant clipping and the liberal use of fertilizer, it becomes necessary to remove them by the use of a trowel or knife. If the lawns become depleted and a large percentage of the vegetation is composed of dandelions, docks, or plantains, it will in general be most economical to break up and re-establish the lawn rather than attempt to eradicate these weeds by the use of the trowel or knife.

NEW BOOKS

VERSAILLES AND THE COURT UNDER LOUIS XIV. By James Eugene Farmer. New York: The Century Co., 1905. Pp. 447. Price, \$3.50 net.

A good book on Versailles has long been needed in English. The vast palace has, in recent years, been subjected to much careful study by French scholars and much new material has been unearthed concerning it and the part taken in its building by the many famous personages associated with it. Mr. Farmer's book will hardly meet this need, although to those unacquainted with the history of Versailles it will be very welcome, summarizing,



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as it does, the history of the palace in the time of its creator and during the period of its greatest brilliancy.

This, however, is but a part of the story of Versailles and by no means exhausts its enormous interest. Versailles, as it stands to-day, is a colossal monument to some of the most absorbingly interesting periods of European history. Versailles to us is not simply a great palace endowed with memories of Louis XIV, but a building deeply associated with the history of his immediate successors. Nor does its interest terminate with them, for the proclaiming of the king of Prussia as emperor of Germany within its splendid walls is as romantic an episode as transpired there at any time. It is true Mr. Farmer deliberately limits his book to the time of Louis XIV, but the reader who wishes to know the history of the palace will not be content with the long period treated in this volume.

Versailles, in fact, is a striking example of the close tie that exists between building as building and the personal associations of people connected with it. It is one of the most human of structures. It was built as an expression of the state and glory of one king, closely identified with the supremest follies of

another, associated with some of the most tragic episodes of a third. As an architectural creation it far surpasses in interest any other modern palace. Its extent is overpowering, its magnificence scarce equaled, its gardens one of the wonders of the modern world. Its influence as a building is still potent, for while no one undertakes to build a Versailles to-day its wonderful structures are still a source of constant inspiration to contemporary architects.

Versailles makes an instant appeal as an art creation. Its vast palaces have excited astonishment from the days of their first building. The rich and ornate decoration is brilliant testimony to the artistic powers of its creators. Its great park has rarely, if ever, been equaled for the beauty of its landscape work and the sumptuousness of its sculptured adornments. Even to-day, although much has been lost, it is still adorned in an extraordinarily rich manner with the most difficult and the most decorative of the arts.

All this splendor was created for the glorification of a single monarch and for the exhibition of as great a state, for the exploitation of as wonderful an etiquette as the world has seen. Much of Mr. Farmer's book is taken up with the brilliant people who lived at Ver-



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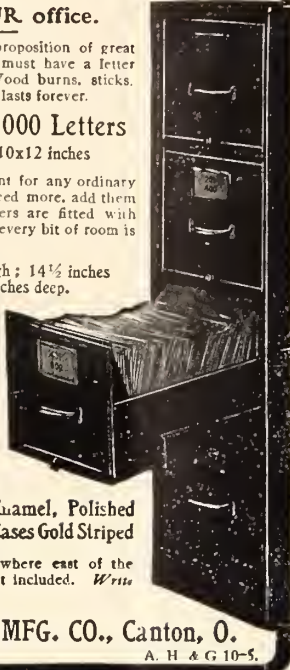
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sailles under Louis. He is nowhere enthusiastic, hardly ever sympathetic; yet his picture, on the whole, is not an erroneous one. The numerous illustrations add much to the value of the book.

HOME FURNISHING, PRACTICAL AND ARTISTIC. By Alice M. Kellogg. New York: F. A. Stokes Co., n. d. 12mo. Pp. 265. Price, \$1.50.

The Home is the keynote of this journal, and this book will appeal to all our readers. The author's advice is excellent, and we quote from the Preface as follows: "The interior of the home is naturally a reflection of its occupants, and the possibility of achieving satisfying results has created an ardent desire for adequate knowledge. Even in homes of moderate cost an effort to unite beauty and utility has become remarkably apparent, and, fortunately, artistic surroundings are not dependent on large outlays of money. To give practical aid to the aspiring home artist the author has considered the different parts of the house in turn, and suggested the appropriate furnishings and decorations for each." Such is, in brief, the scope of this admirable book, which will appeal to all readers of this magazine. The illustrations are admirable and are excellently reproduced.

PRACTICAL STUDIES. Interior Decoration and Furnishing. By Henrietta P. Keith and Eleanor A. Cummins. Minneapolis: Max L. Keith. 1906. Pp. 186. Paper.

Apparently there can not well be too many books on interior decoration adapted to meet the wants of the household furnisher, for there are few subjects of which there seems to be less known, and every new book finds, it is to be hoped, a new circle of readers, or impresses afresh the lessons gained taught by other books. The present volume is a well made and well intentioned effort to discuss anew this most perplexing of subjects. The authors approach their topic from the practical standpoint, and have endeavored to give truly helpful advice to the average householder who wants his house to look as beautiful as it can, perhaps without too great expense, and certainly without any great offence. The book contains many helpful suggestions and can be read and studied with profit.

PROFITABLE STOCK FEEDING. By Howard R. Smith. Lincoln, Neb.: Published by the Author, 1906. Pp. 12 + 413.

Prof. Smith's book had its inception in a series of lectures prepared for the Nebraska School of Agriculture. These have been entirely rewritten and reduced to book form for the present publication. Himself a practical stock feeder, engaged in the business for profit before becoming a college professor, Prof. Smith has unusual qualifications for writing a book of this sort. His own personal experience, his wide correspondence and his teaching duties gave him not only practical knowledge of his subject, but made him familiar with the facts practical feeders most needed. Moreover, he has aimed to condense and present the results of the most important experimental work in feeding carried on in many places, and his book has, therefore, all the qualities of practicability which are necessary to give it practical value.

He divides his subject into eight parts and treats at length of the feeding necessary for milk production, for beef cattle, for sheep, for swine, for farm poultry and for horses. General principles are discussed in the opening chapters, and the specialistic topics are treated with all-sufficient fulness. A number of photographic illustrations add to the value of the book.

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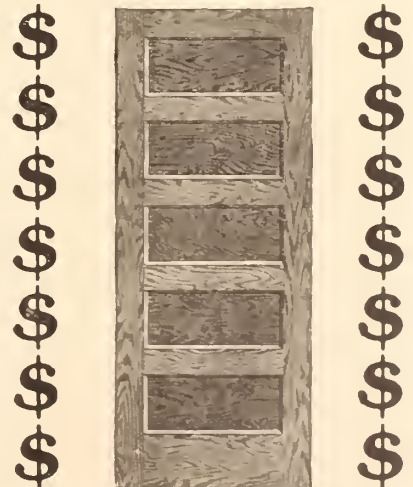
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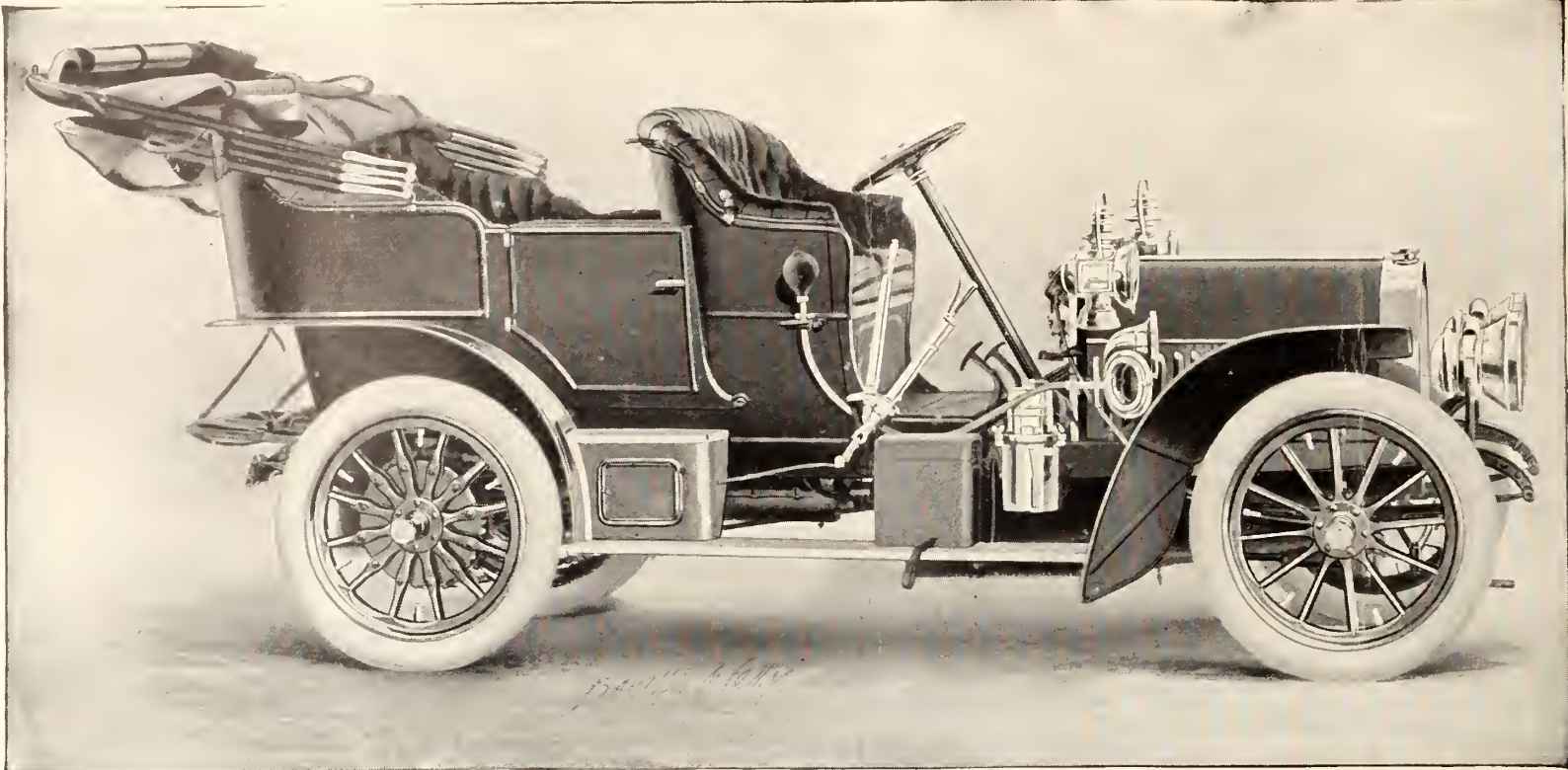


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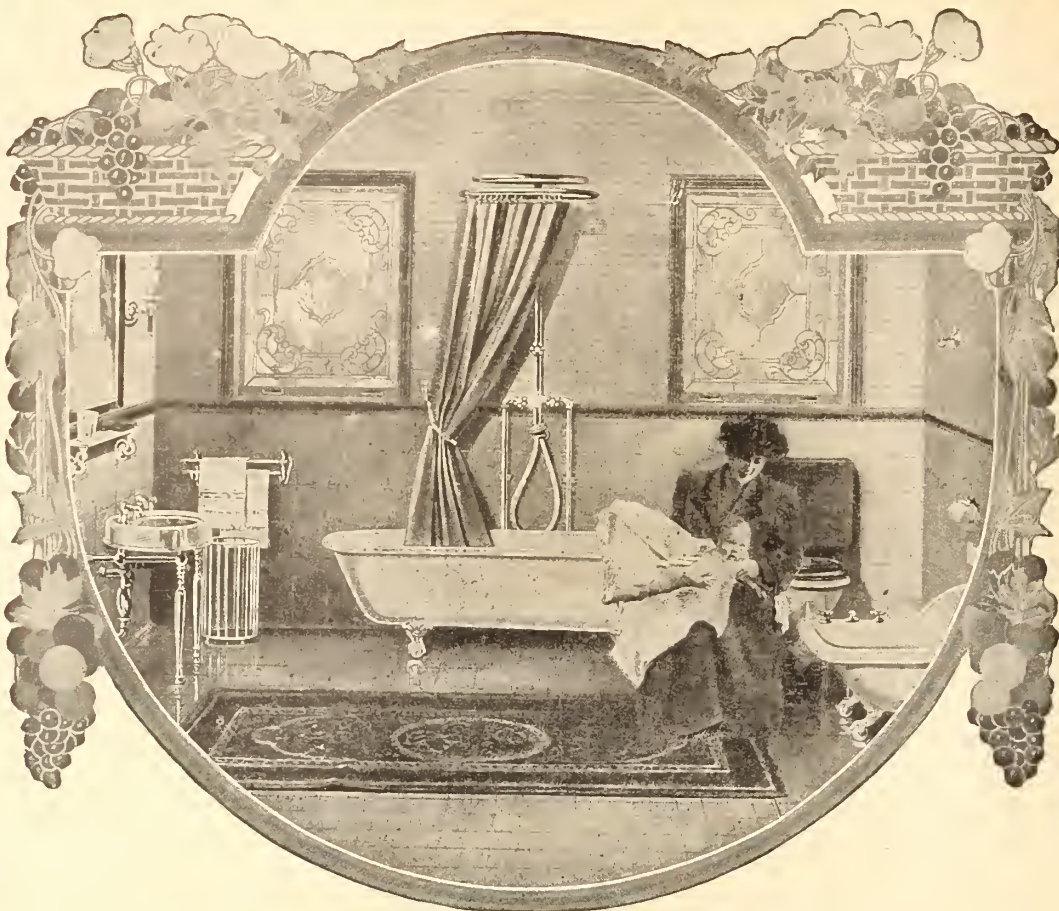
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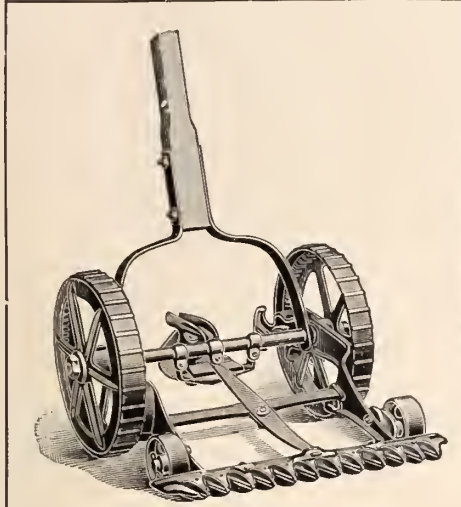
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- Schools*
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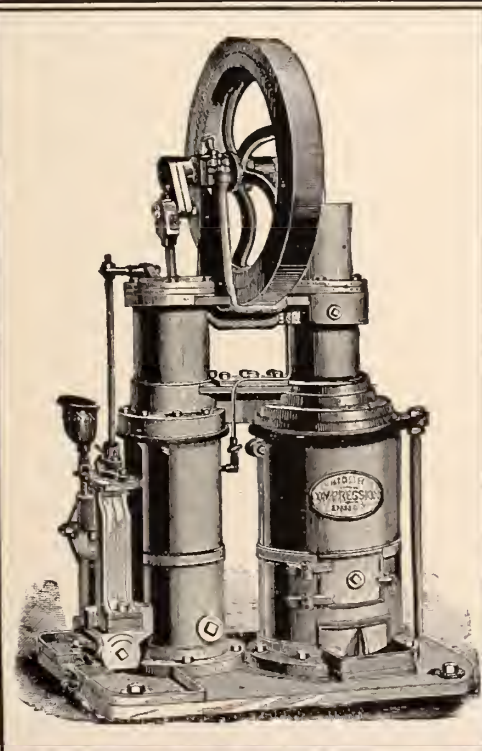
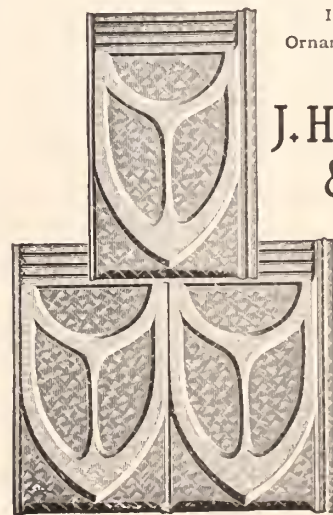
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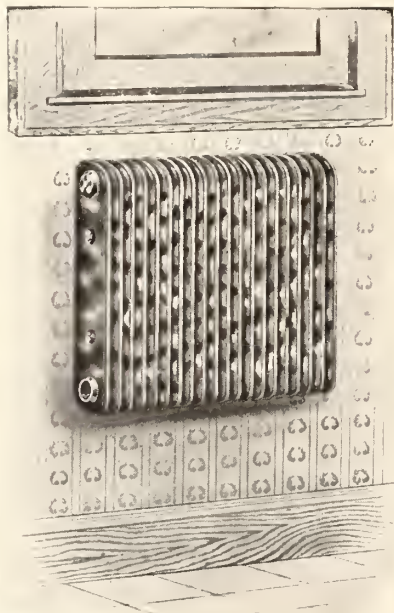
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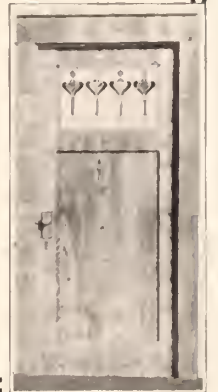
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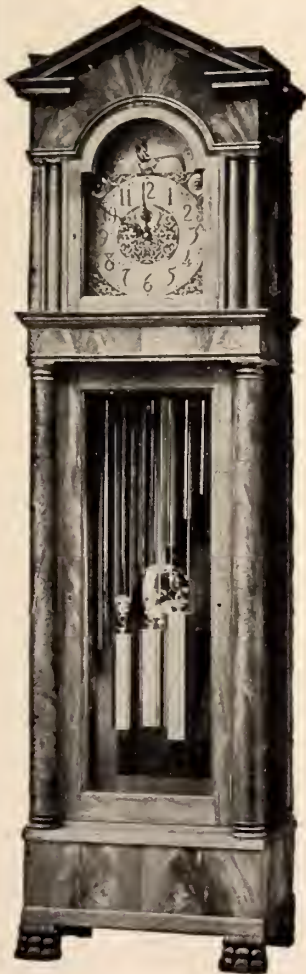
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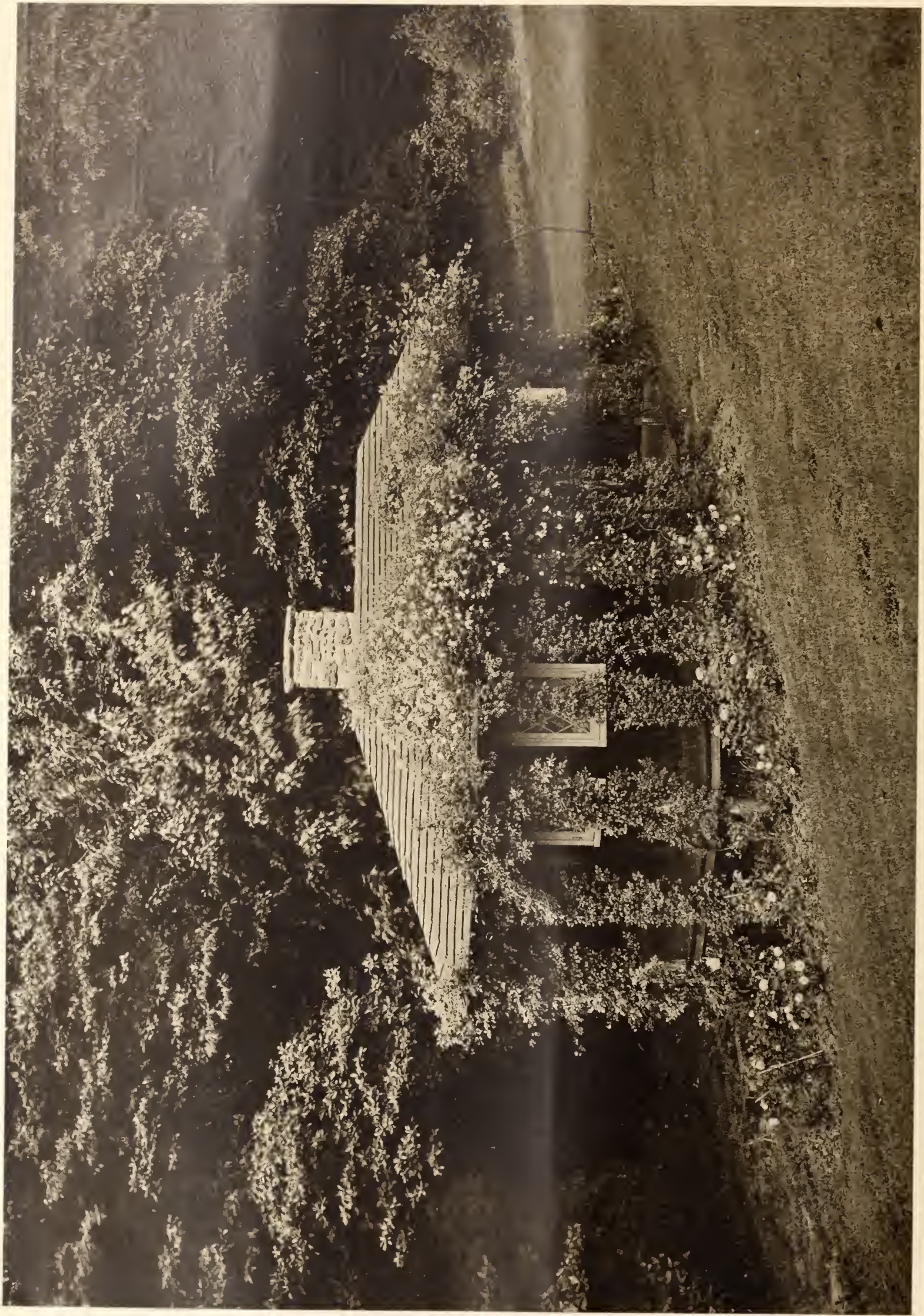
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A Rose-Enclustered Dairy

AMERICAN HOMES AND GARDENS



Volume III September, 1906 Number 3



A Glimpse of the Marble Room, Floored with a Mosaic from the Torlonia Palace, in the Summer Home of Ambassador George von L. Meyer, Hamilton, Massachusetts

Monthly Comment



STATISTICAL publications are not often of abounding general interest, but numberless valuable facts can often be extracted from them. A recent Bulletin published by the Bureau of Labor might profitably be studied by a much larger class than the comparatively limited number of specialties to which it appeals. It contains an elaborate study of the living expenses of nineteen poor families living in the District of Columbia, expenses itemized down to the last cent and detailed in the most minute manner possible. The families in question are avowedly poor. In one of ten the only wage-earner is the husband, who brings in from \$9 to \$12 per week; in another of seven the husband earns \$2 per day when he has work, but loses many days; a daughter brings in a small weekly amount; in another the husband and oldest son—the family numbers seven—each earns \$1.50 per day in good weather; in another of eight the father earns \$12 per week at irregular labor, and a boy \$4.50 per week. The rents paid vary; some pay \$5 per month, others \$10, another \$4, and so on. Most of the places in which these people live are unsanitary. They are not only poor, but are typically poor, representing the financial circumstances of a large portion of our population.

THE chief object in life to all these people is to obtain food. Everything else is subordinated to this vital necessity. Yet the figures show a very wide divergence in the expenditure included under this head. One family spent \$5.31 in the first week investigated, and \$8.57 the last; another spent \$5.86 in one week, and \$3.91 the next; a third, \$6.77 the first week, and \$2.45 in the last. The differences were found to be easy of explanation, being due partly to lack of work during a portion of the time, partly to the fact that in the week of least expenditure the rent was due, partly because debts had to be met. In other words, while the obtaining of food was the chief business in life for these people, even that important matter became secondary when other vital expenses were absolutely unavoidable.

IT must not be hastily concluded that it is possible to bring up families on any such amounts as these in any degree of comfort or even with satisfaction. In purchasing food it is not only important to bear in mind the quantity, but it is much more necessary to purchase with a view to its nutritive power. Many nutritious foods are cheap, but the present investigation does not show that the families under examination bought their food chiefly for its nutritious value. One family which in five weeks spent an average of 98 cents per adult male, paid out, in the same time, \$1.80 for pies, and \$2.21 for cake and candy. These people bought \$7 worth of baker's bread, 60 cents worth of flour in 10- and 20-cent lots, consumed half a peck of potatoes, and used no rice or oatmeal, and only 10 cents worth of cornmeal. In the week of lowest expenditure it purchased 37 cents worth of meat, and spent 25 cents for pies and 55 cents for cake and candy. In another family 55 cents was spent for meat in one week, when 90 cents went for pies and 5 cents for cake. These are offered as extreme cases, but it is probable that they are largely typical.

EVEN when, as is actually the case, from forty to sixty per cent of the total family income is spent for food there is little variety. The staples are bread, meat, potatoes, coffee

and tea. The quantity of bread used seldom varies, a falling off of income being immediately followed by a lessening of expenditure for other sorts of food. Home-made bread is little used, dependence being placed on the baker, with a preference for stale bread, which is always cheaper than the fresh. Only the cheapest kinds of meats are used—sausage, cheap stew-beef and pork, with an occasional cut of round steak. Three families alone used chickens, and but two had oysters, although fish was frequently purchased. Five families bought no eggs whatever, and milk is used irregularly, sometimes not at all. Butter is used to a greater or less extent, but sometimes weeks pass without it, dependence being placed on syrup and cheap preserves. The total expenditure of sixteen families for fruits for the five weeks amounted to \$8.09; three families used no fruits at all.

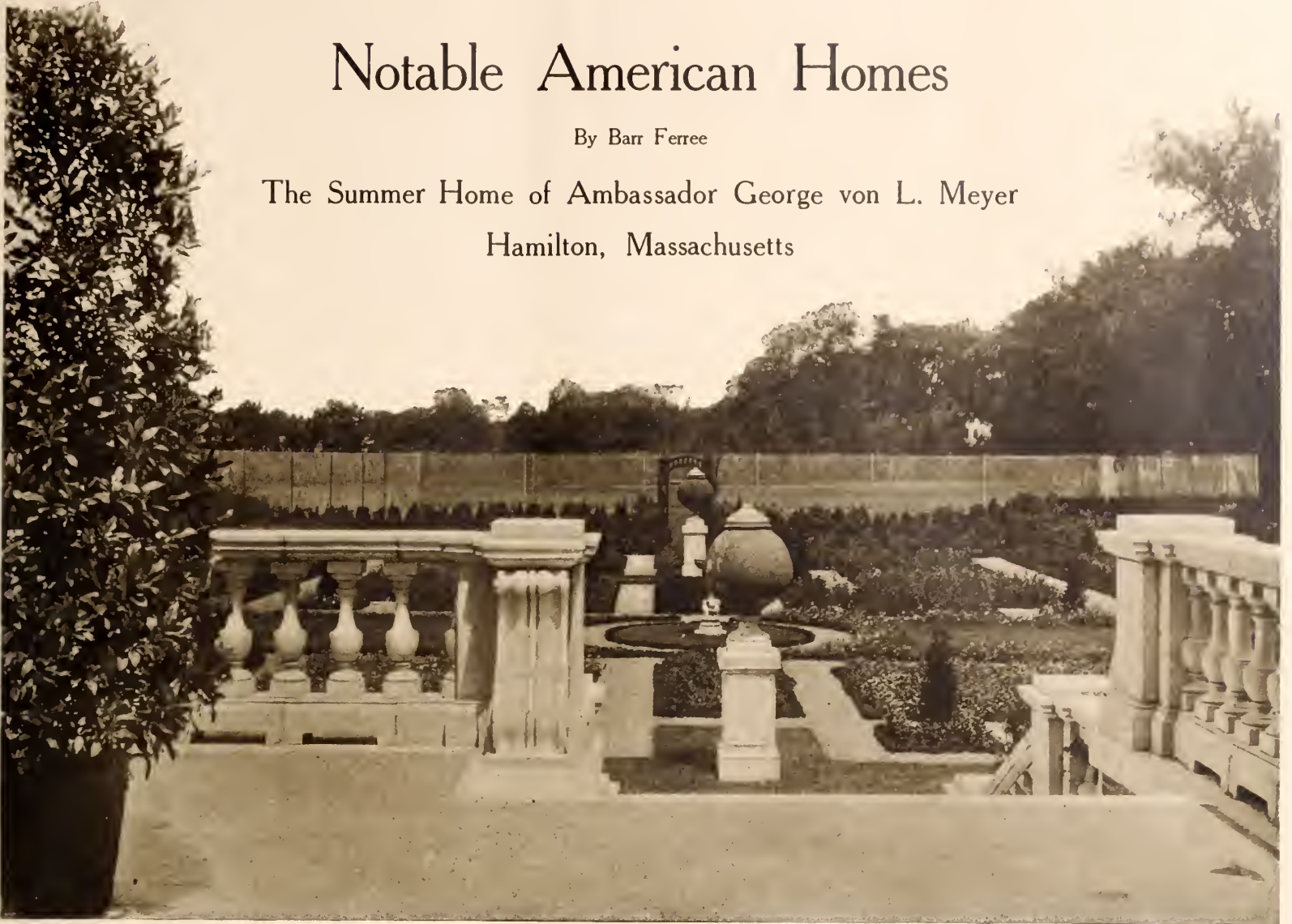
THE pleasures of the table can not, of course, be known to people compelled to partake of such a regimen, nor to those who live under such restricted conditions. Yet small as these expenditures are, they are accompanied with even more pressing deprivations in other directions. The rent question at times equals the food supply in importance; while there is a limit below which the expenditure for food can not be pushed, else starvation will ensue; there seems to be no bottom limit for rent. This investigation shows a variation in rents from \$4 to \$14 per month, and it was clearly established that, with diminished income the family moved to cheaper and cheaper places, each one more wretched than the preceding. But even such economies give little relief, for food must still be bought, and there are other unavoidable expenses. We all know what they are—clothing, fuel, furniture, insurance, medicines and the doctor. As little as possible is spent in carfare, and not one weekly budget shows as much as a cent spent for amusements. It is true, there is the candy, the cake and the pies; these are unwise expenditures and careless living; but of comfort there is hardly any; of the conveniences of modern living scarcely a suggestion, and of freedom from care, bother and worry, none at all. Of the exceeding discomfort, of the grinding poverty, of the lack of enjoyment, of the real difficulties of life, these reports show little enough. To a man who will pay \$10 for a single dinner for himself it will appear incomprehensible that a family of ten could exist on \$5.31 for a whole week.

AND so it is. There is nothing truer in the world than that the one-half does not know how the other half lives. This Washington investigation throws a flood of light on a topic that most people—most people in ordinary and well-to-do circumstances—know nothing about. To the laboring man, whose greatest income in the most favorable times is but \$12 per week, the problems of house-ownership and house-building do not exist. His first object in life is to get something to eat; then to have some sort of a shelter, then some wearing apparel; if there is any money left it goes so quickly he does not remember he ever had it. Yet a year or two ago the magazine world was treated to an extended series of articles showing how homes were built or purchased on incomes not much greater than those cited here and on savings made from such incomes. Photographs of the houses were offered, seemingly in proof of these statements. The contrast between the two exhibits—that of the Bureau of Labor and that of the magazine—are nothing short of amazing.

Notable American Homes

By Barr Ferree

The Summer Home of Ambassador George von L. Meyer
Hamilton, Massachusetts



The Formal Garden from the Terrace



STATELY house, built so close to a public road that there is only space for a garden development before it, offers difficulties in the planning and arrangement of grounds that do not obtain where the house is built further within the inclosing boundary, or when, as it frequently does, it occupies a more central position—an inland site, rather than one directly on the coast.

Ambassador Meyer's house is directly on the coast line of his domain, although the sea itself is nowhere within sight except from the top of the hill. But it is placed at the borders of the estate, just within the outer boundary, although the broad lands of the property roll out on either side most spaciouly and climb the slopes behind the house as far as the eye can see. A wise arrangement this, for the hill behind the house keeps off the strong winds which disport themselves upon this country in the cold season, and form, moreover, a beautiful backing of green to the gray and white house, which, if it does not literally dominate the estate, is clearly the most important structure upon it.

The situation of the house, however, was not one of pure choice so far as Mr. Meyer was concerned. The present building is partly new and partly old, for it is an expansion of an old house that long stood here, an expansion that, so far as the house itself is concerned offers no new note, so carefully have the older lines been followed in the newer parts; but it has been so surrounded with beautiful gardens that the changes in the adjacent lands have been as radical as they are beautiful.

It is no evidence of good planning to devise the shortest

possible roadway between the entrance to a house and the nearest public road. Such a method smacks too keenly of commerce to be warranted in a gentleman's country place, even though his house happens to be directly on the public road and the latter an agreeably constructed thoroughfare, chiefly frequented by his friends and neighbors. The pleasure-grounds that properly surround any country estate are intended for enjoyment; they are meant to be seen and enjoyed by the owner's visitors quite as much as by himself. The longer the drive through such grounds to the house, the more agreeable the sensations enjoyed by the visitor, and the greater the pleasure given to the owner by the knowledge that his visitors are delighting in a handsome park.

One enters Mr. Meyer's grounds, therefore, at some distance from the house, almost before the house is visible, in fact, and at the corner of his land which is nearest the railroad station. A distance that might perhaps have been covered in a few rods had the most direct path been chosen, is now wisely expanded by a private road that approximates the direction of the public highway. Just inside the entrance is a fine old Venetian well-head, and beyond, to the left, a spacious lawn, shaded here and there with grand old trees. The driveway brings one to a modest porch and doorway on one end of the house, for the greater length is parallel with the road.

The house is of a fine old type, built of wood and painted gray with white trimmings and green shutters. Its ornamental front directly overlooks the public road. In the center is a large bay-window, two stories in height. The adjoining walls are treated in an identical manner, although the

end toward the entrance is old and that toward the formal garden is new. Each has a pair of central pilasters supporting a curved pediment which rises above the main cornice. Between these, in the first story, is a small pedimented porch, with a window above it with a rounded head. All the other windows are rectangular, those of the first story having molded frames surmounted with cornices, while those of the second story are slighter in every way and without any ornamental headings. The balustrade which surmounts the main cornice, and which partly conceals the roof, is an essential feature of the exterior. The house stands on a spacious terrace of tiles, supported by a brick wall and inclosed within a handsome balustrade.

This house thoroughly meets every ideal of a comfortable New England home. Splendid its exterior can not be called, for it is a simple, direct, wooden fabric with no external feature of magnificence save the stately terrace before it. This is itself thoroughly distinguished, and is well adjusted to the

other walls are chiefly reminiscences of foreign travel. The merest glance is sufficient to make clear that this is no ordinary room, and that its pictured contents are mementoes of no ordinary type. One hardly looks, in any quiet New England home, for evidences of royal regard nor for affectionate greetings from European sovereigns. Yet Mr. Meyer did not spend four years in Rome as the Ambassador of the United States without making many acquaintances among the royal and great families of Italy, and that he won their regard, and carried with him to his present post in Russia many tributes of their esteem, is apparent from almost every room of his beautiful summer home. Most of these mementoes have been transplanted to this house, and hence it follows that this New England mantel is adorned with an autograph-photograph of the King of Italy and with similar photographs from many members of the Italian royal family. A screen by a window is completely filled with foreign photographs, the gifts of admiring friends, and very precious



The Terraced Front Facing the Public Road



The Fountain in the Formal Garden

house upon it. But if the house is wanting in splendid fronts it has, to a very marked degree, the nobler qualities of home, a quality that more pretentious structures do not always possess, but which here assumes quite penetrating proportions. This characteristic of the exterior is the more marked since, as will presently be apparent, the house contains some fine rooms of genuinely splendid style.

One has scarcely entered the house before one becomes aware that this is a dwelling of no ordinary kind. The vestibule or entrance-hall is small, the woodwork is white, the walls covered with a tapestry-paper; a fine old brass lamp depends from the center of the ceiling, and there is a beautiful old mirror and some good old engravings.

The morning-room, or Mrs. Meyer's den, opens immediately from this hall. The walls are green, the ceiling plain and undecorated, the rugs green in tone, the furniture of red-striped satin, the mantel, over which is an old brass frame mirror, is of black marble. The walls are covered with a multitude of photographs, those on two sides of the room being reproductions of family portraits, while those on the

trophies of a well-spent ambassadorship in the service of his country.

The morning-room is at the corner of the house, and is the first room on the main front from the entrance. Most of the other rooms are placed on this front and are entered by doors that open from one to another. The staircase-hall immediately adjoins it. The walls and woodwork are gray, the stair-carpet of deep, rich maroon. The doorway at the foot of the stairs opens onto the terrace. It is simply a staircase-hall and quite unpretentious in its utility.

The drawing-room comes next. In the center of the connecting wall is the chimney and fireplace; there is no separating wall on either side, but columns and pilasters to uphold the ceiling. The walls are covered with gray paper in two shades, arranged in paneled designs. The beautiful white-marble mantel was brought from Italy. It supports a fine old gilded mirror with blue ornaments. There are curtains of red-damask silk at the doors and windows, and some fine pieces of tapestry are hung on the walls and between the open spaces to the hall. The Oriental rugs are red. The

furniture is somewhat varied in origin, some of it being antique and some brought from Rome. The prevailing colors are red and gold. Some old Roman sofas are of blue and gold with red-damask coverings.

Glazed doors lead to the adjoining apartment, which is known as the Marble Room. One pauses on its threshold with astonishment and delight. Few rooms anywhere, and certainly few rooms in such a quiet New England home as this is, offer such a surprising contrast to the exterior of the house. This point, however, is quite immaterial beside the exquisite beauty of the room. On the floor is a vast mosaic, brought from the Torlonia palace, of yellow and white and red and black marble. The



The Morning Room, or Mrs. Meyer's Den

great central circle surrounds a star-like center, and contains medallions with inscribed emblems of the elements. At each end are oblong medallions with cherubs and other figures.

It is hardly necessary to add that this splendid marble floor gives the name to this sumptuous room. It is a room of marvelous and beautiful light. At one end is the great bay-window of the main front; at the other is a triple window that admits the north light; each is separated from the central part of the

room by columns that form a kind of recess before them. The walls are white; a paneled wainscot below, and larger panels formed by gilded moldings above. The detail of the capitals of the columns are picked out with gold, and a mold-



The Drawing-Room is Walled in Two Shades of Gray. The Beautiful White Marble Mantel Was Brought from Italy

ing of the same pure color is at the base of the cornice. The white-marble mantel was brought from the same palace. It is decorated with a frieze of standing figures dancing, exquisitely carved in bas-relief. Above it is a mirror in a richly carved and gilded frame, and on each side is a credence-table, also carved and gilded, with a top of white marble. The furniture, which, like most of the contents of the room, came from Rome, is pea-green and gold. Opposite the mantel is a gold and white credence-table, with an old mirror above it and large brass side-light standards. There are no curtains at the windows, the brilliant, warm sun streaming in from the south, lighting up every part of the great room, which one leaves with reluctance, so unusual are its contents, so brilliant its walls, so splendid its floor. It is a room whose beauty will long haunt memory, and it is well worth an extended journey to see it alone.

The library opens directly from it, and is the final room on the front, forty feet in length, both forming the chief portion of the newer part of the house. It is a long, rectangular apartment paneled throughout in dark oak, very French in style, but very warm and pleasant in color. The ceiling is plain, but has a deep-coved cornice above the wood paneling, richly detailed in low relief. The fireplace is of pink and white marble from a Venetian palace; above it are the Imperial arms of Charles V in carved wood. Some board-heads on the upper wall were shot in hunting with the King of Italy. There is much splendid furniture in this room—richly carved tables and comfortable chairs, together with many interesting ornaments gathered in sojourns abroad. The windows and doors are uncurtained. The windows on the main front are flat-headed and reach to the floor. At the further end are doors to the terrace overlooking the formal garden; they have oval tops.

Before the later extensions to the house were made Mr. Meyer had a smaller library at the back. It still remains,

and is a rather narrow room, the walls covered with blue paper in two shades, on which are hung the engraved portraits with autographs of all the Governors of Massachusetts. The wood mantel has a fireplace lined with blue and white tiles.

The dining-room is in the old part of the house to the left of the vestibule. The light-brown walls are covered with a Japanese fabric. A red carpet gives the needed note of color. The mantel is of whitewood and has an old mirror over it. There are short white curtains at the windows, and the furniture is covered with dark-green leather.

The bedrooms on the second floor present a greater variety of treatment than is usual in most country houses. Each has its own distinctive wall treatment and furnishings, and each has a definite note of personal interest. One is furnished with old furniture brought from abroad—curious, rare old pieces that seem quite at home in this New England house.

The exterior grounds, as have already been stated, are exceedingly spacious in area. Their chief point of interest is the large formal garden which has been developed at one end of the house. Standing at the head of the steps which descend into it from the terrace, it is seen to be inclosed, right and left, by great borders of hardy shrubs. The further side has a hedge of evergreens with an ornamental gateway in the center; beyond are the tennis-courts. The garden is laid out in a symmetrical manner, with a central circle, in the midst of which stands an exquisite little fountain. Great rectangular beds of flowers, some of solid blooming, some of borders around grass, fill out the remaining space. Two great Italian earthenware vases stand on stone pedestals. It is a brilliant example of garden design, beautifully planted, and, in the summer season, presenting a constant succession of blooming flowers. Happily also it is well adapted to the house and to the quiet New England region in which it is.



The Library is Forty Feet Long and is Paneled Throughout in Oak

The Modern Bungalow

How a Bungalow Can Be Well Built at a Small Expense

By Francis Durando Nichols



THE story of how a bungalow can be built well, and at a small expense, is well defined by the illustrations of a series of bungalows presented in these pages. The term "bungalow" has been so misunderstood that it may not be out of place to define its origin, its form and its construction. The bungalow is classified into two groups—the true bungalow of to-day, which is designed after its prototype, and the modernized bungalow, which is designed after the cottage form. The original bungalow derived its name from banga, the Indian term, meaning in India a species of rural villa, or house of light construction, with a thatched or tiled roof and surrounded by an open veranda, which is roofed, affording a shelter from the sun. The plan consisted of one large living-room built in connection with the service- and sleeping-rooms, all placed on one floor. The bungalow of the second class, developed into the cottage form and while still maintaining some of the original plan by providing one, two or three sleeping-rooms on the first floor, it has a second story, in which sleeping-rooms are also provided, and which is usually reached from a staircase frequently ascending from a living-room or a small lobby.

In the chief cities of India, specially among the Anglo-India people, the bungalow has become really a palatial residence, while in the country they are of the ordinary type, many of which are arranged as public inns, and are called "daks." The usual bungalow is built as it is in America, according to the taste and the wealth of its owner.

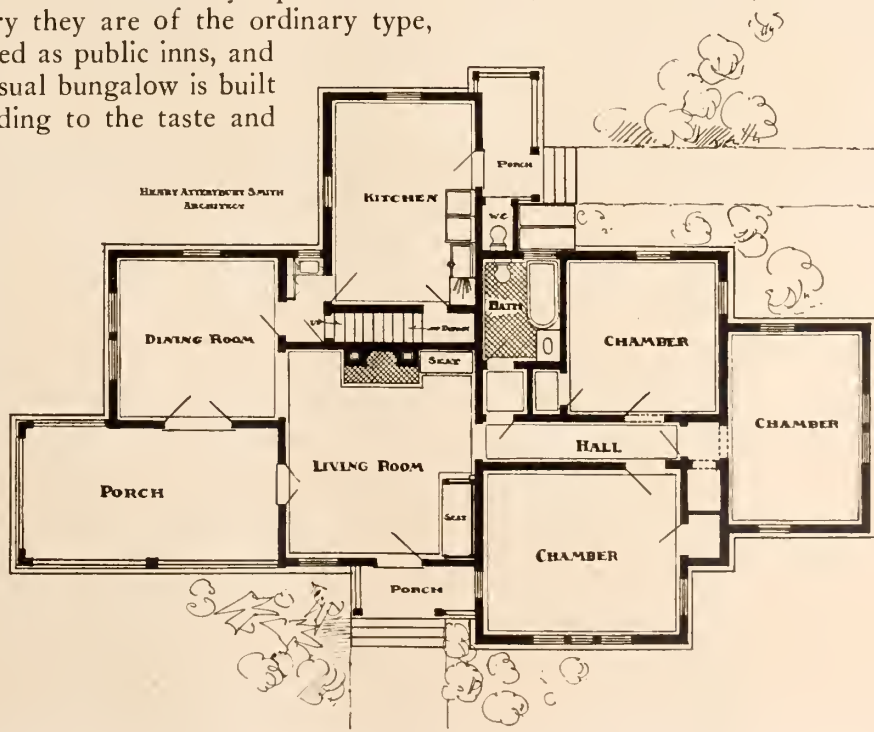
In certain parts of India the bungalow is built on stilts of railroad iron, and is elevated from ten to twenty feet from the ground. This form of building offers a suggestion in the building of a bungalow by placing the first floor, specially when it is a one-story bungalow, on posts some eight or ten feet from the ground, and creating an open veranda between the intervening space, from the level of the ground to the under side of the

floor of the bungalow. A convenient pair of stairs can be built from this veranda, leading up into the bungalow. This veranda could be inclosed with glass and transformed into a sun-room or a lounging-hall.

In the building of the bungalows which are shown in these pages it has been necessary to establish an economical form of planning and designing, and a selection of house finishes and equipment in order to overcome the cost of building, which has advanced so rapidly. If we can thus succeed in



1—A Bungalow Built for Mr. Gate H. Carter at Dongan Hills, Staten Island



2—Mr. Carter's Bungalow Has All of its Rooms on One Floor

getting a solution of our domestic necessities in a proportionally smaller area, and with a more economical arrangement, then we have, to a degree, counterbalanced the undoubted increase in the cost of building-material and labor. These bungalows illustrate the tendency toward economy of original outlay, as well as in future maintenance. It is evident by a study of the plans that there has been an effort made to eliminate hall and passageway, and to throw what space there is into available rooms and closets. This feature, which is quite an important one, has not to any great extent sacrificed any desirable features, but has enhanced the domestic economy by eliminating just so much waste space and



3—The Living-Room is Characteristic of Good Taste



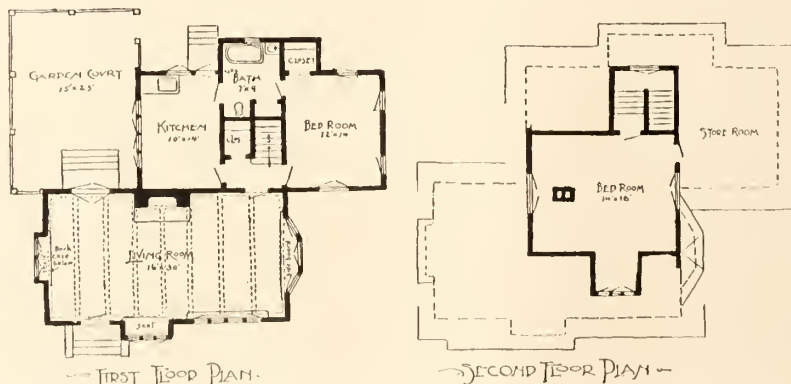
4—The Garden-Court is an Outdoor Living-Room



5—Mrs. Nixon Hopkins's Bungalow at Pasadena, California, Might be Built in Any Section of the Country

by bringing the various rooms in closer relation to each other.

The interior of these bungalows are well proportioned, with each part in proper ratio to the other parts of the house; this applies to the size of the rooms, height of the ceilings, and to the position of each room in regard to its exposure. The



6—The Plans Present the Living- and Dining-Rooms in Combination

bathrooms are distributed in such a way that one is usually convenient for the entire household. In the two-storied bungalows, where an appropriation of space prevents the introduction of complete back stairs, precaution has been taken in some instances to prevent the domestics from being visible from the main part of the house.

The material used in the interiors of these bungalows is not unusual, but a great deal of originality has been exercised in the character of the wood-work, in the projections and shape of the trim, selection of moldings, in the back of projecting chimneys and fire-places, and in the location and number of its window- and door-openings.

Mr. Gate H. Carter's Bungalow
at Dongan Hills, Staten Island

A very interesting one-story bungalow is the one shown in Figs. 1 and 2, and which has been built for Mr. Carter, at Dongan Hills, Staten Island, from the plans of Henry Atterbury Smith, architect, of New York. This bungalow was built for thirty-two hundred dollars complete and well demonstrates what can be done for a small amount of money. The plans, first of all, were drawn with great care, for economy of space was one of the most important considerations; and no room was wasted in unnecessary hallways or improperly proportioned rooms.

The site chosen for this bungalow is a choice one, which is just back of the Richmond County County Club, and being on a hill overlooking the Bay, it was necessary to arrange the various rooms so that a view of the sea might be obtained from the windows.

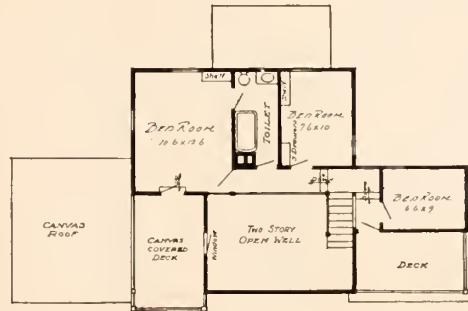
There is a cellar under the house, which has a brick underpinning, resting on a stone foundation. The exterior framework is covered with



7—Mr. Edward B. Stratton's Italian Bungalow at Clifton Heights, Massachusetts
Before and After Its Restoration



FIRST FLOOR PLAN



SECOND FLOOR PLAN

8—A Covered Porch with a Living-Room is Quite the Feature of the Plan

matched sheathing, good building-paper, and shingles, which are treated with a weather-shingle stain on the walls, and a moss-green stain on the roof. The trimmings are painted bottle-green and the sash cream-white.

One of the thoughtful and studied economies of the plan is the single chimney, and a single line of plumbing. The small entrance-porch has a door opening into the living-room. This

living-room has trimmings of whitewood, treated with a forest-green effect, from which the walls mellow into a light-buff color, while the ceiling is of a lighter shade.

The paneled seat at the side of the entrance, and the open fireplace, with brick facings and hearth, and mantel, are the simple features of this room. The dining-room is treated in a similar manner, with forest-green trim and buff walls. These two rooms form the nucleus of the plan. From the dining-room the kitchen is reached, and from the living-room the bedrooms and bathroom are connected by a long, narrow hall.

Between the dining-room and the kitchen there is a small pantry with sink, and from this pantry a stairway rises up to the second floor, which contains the servant's room and ample storage space. The kitchen is fitted with laundry-tubs, sink, range, and all the best modern conveniences. The servants' toilet is reached from the rear porch. The three bedrooms have white-painted trim and tinted walls. The bathroom has a tiled floor and wainscotting, and is furnished with porcelain



9—The Living-Room is Open to the Roof and is Finished in Dark Wood



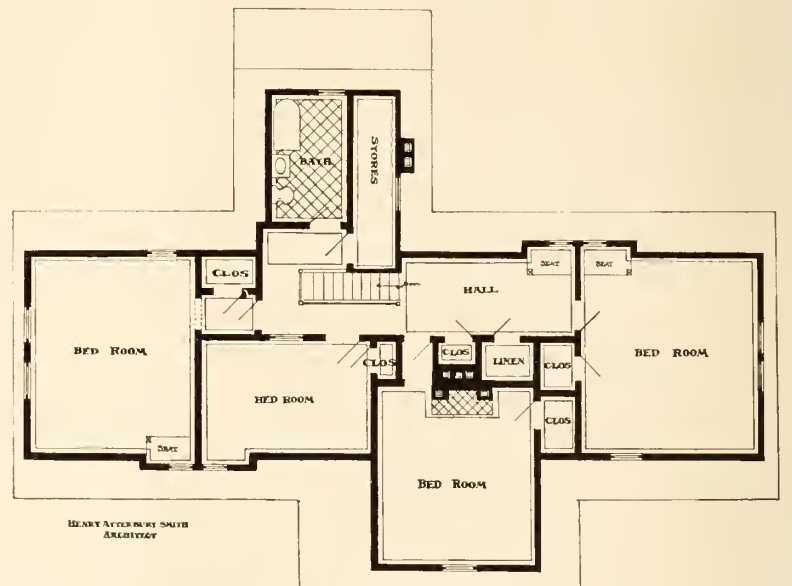
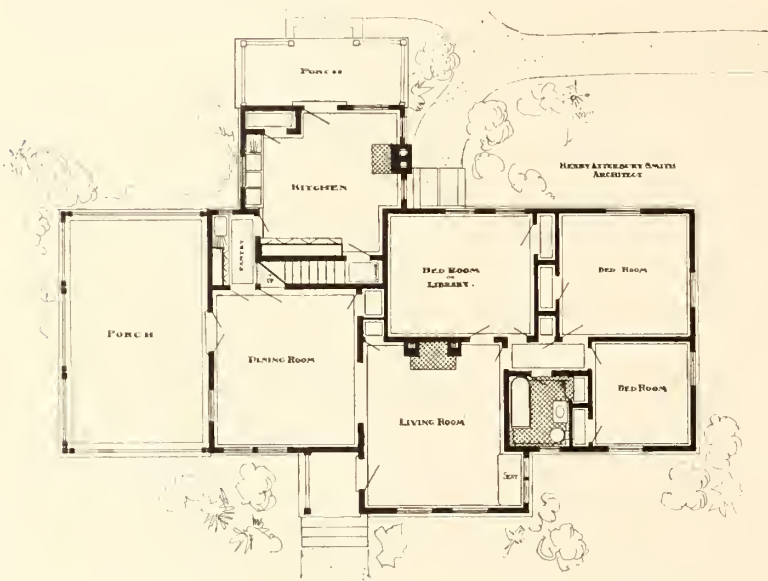
10—Mr. John Morton's Bungalow at Dongan Hills, Staten Island, Has Two Stories with Rooms in Each

The exterior walls of the superstructure, including the roof, is covered with shingles left to weather finish. The trimmings are painted white.

The entrance is from the entrance-porch into the living-room, which is treated with white-painted trim and walls of Muresco green. It contains an open fireplace, with tiled facings and hearth and mantel of Colonial style. The dining-room is treated in a similar manner, and the whole house has a white-painted trim. A broad French window opens onto the living-porch, which, in winter, is inclosed with glass and heated. The ceiling of this porch is plastered. The kitchen and servants' quarters are trimmed

fixtures and exposed nickel-plated plumbing. The cost of this house included fly-screens, light-fixtures, gas-

and inclosed with glass and heated. The kitchen and servants' quarters are trimmed



11—The Plans Show an Elongated Arrangement of Rooms, with Sleeping-Rooms on the Second Floor

coal-range, and also the exterior and interior decorations complete, together with all household accessories.

with North Carolina pine, treated with oil and varnish. The three bedrooms on this floor are conveniently arranged, and

Mr. John A. Morton's
Bungalow at Dongan Hills
Staten Island

Another bungalow from the plans of the same architect is the one built for Mr. Morton, also at Dongan Hills, Staten Island, and presented in Figs. 10, 11, 12, 13 and 14. It is planned on the elongated type, is sixty-four feet in length, and is on the bungalow order of the modernized type, with a sleeping-suite of three rooms and bath on the first floor, and additional bedrooms, four in number, and bathroom on the second floor. There is a cellar under the house with a brick underpinning.



12—A Feature of the Exterior is the Long Gambrel Roof, and the Piazza, which in Winter is Inclosed with Glass



13—An Entrance Opens Into the Living-Room Which is Painted White with Walls of Muresco Green

the bathroom has porcelain fixtures and exposed nickel-plated plumbing. The second floor is treated in a similar manner.

Mrs. Nixon Hopkins's Bungalow
at Pasadena, California

The bungalow of Mrs. Nixon Hopkins, at Pasadena, Cal., as shown in Figs. 3, 4, 5 and 6, might with propriety be built in any section of the country, but it would, to a certain degree, lose some of its charm which is made possible by a climate where the plants and vines are always green. The house occupies a lot which faces mountainward and to the north. It is built with a brick underpinning, and the superstructure is covered on the exterior framework with an eight-inch rough siding. The house is entered from a small porch, and after passing through the door, which is of Dutch character, one enters the large living-room—living-room and dining-room in one—and which occupies the main part of the front of the house. The living-room has three bay-windows with paneled seats. Opposite the front door is a large open fireplace, which is built of brick, with facings rising to the ceiling, and with a shelf of wood supported on corbel brackets. This living-

is a little hall which admits one to the bedroom to the right, or to the kitchen to the left.

The kitchen is treated in blue and white, and is fitted with all the best modern fixtures complete. The bedroom is provided with a large closet fitted up with the usual hooks, placed on strips, and shelf. The bathroom is off the bedroom, and is fitted with porcelain fixtures and exposed nickel-

room is characteristic of the house itself, which is a perversion. The studding was surfaced before being put in place; then came the lath, on the outside of which is placed a rough siding eight inches in width. The lath on the inside is plastered between the studding, giving the room a paneled effect. The plaster is rough, and is in its natural color.

The house is built entirely of California red wood with the exception of the floors, which are of Oregon pine, third quality, and stained to match the woodwork. To the left of the fireplace in the living-room is a French window, glazed with small lights, which forms an entrance into the court. During the heated term this court serves in several capacities—outdoor living-room, breakfast-room, and frequently the evening meal is enjoyed in this protected corner. At the back of the living-room



14—French Windows from the Dining-Room Open into the Living-Porch

plated plumbing. From the hall a staircase leads to the second floor, which contains a large bedroom and storage space.

The living-room is furnished with antiques, with a rug of rags, and here and there a rare old Oriental one. The windows of the house are of the casement order, except those in the kitchen opening into the court, which would be in the way if they swung out.

This particular bungalow is not an economical one for its size, but it boasts of originality. It costs twenty-five hundred dollars to build. Mr. J. J. Blick, of Pasadena, Cal., was the architect of this house.

Mr. Edward Bouman Stratton's Bungalow
at Clifton Heights, Massachusetts

The illustrations shown in Figs. 7, 8 and 9, present a bungalow remodeled from a one-story building. It was Mr. Edward Bouman Stratton, one of Boston's prominent architects, who discovered this little building at Clifton Heights, Mass., as shown in Fig. 7, and who transformed it into the unique little bungalow, as shown in Fig. 7, and which now presents it in its completed form.

The original cottage was a cheap little affair, though snuggling in a delightful situation. The site was a charming one, for it stood on rising land with wild surroundings and from the piazza of which broad vistas were obtained of the ocean, while in the foreground lie rugged gray rocks, tipped with low evergreens and beyond which lay the slope of the shore. When the cottage was first purchased by the present owner, it was a cheap affair, carelessly thrown together, one story in height, with a flat roof defined by a low rail. Viewing it from an artistic point of view, Mr. Stratton saw possibilities for improvement.

The main building was raised from one story to two stories in height, additions were thrown out on three sides, covered and uncovered piazzas were most carefully planned and the whole just given the right architectural touch to the unpretentious home. An unusual feature was then introduced in the formation of an open-air sleeping-room leading from the second floor and formed by an upper balcony. The verandas are broad, affording lounging-places and good

views. They are simply furnished with no attempt at decorative effects, save the low topiary trees which define the veranda line.

The exterior is finished with clapboards. These are painted soft gray, showing shutters of green, and blending well with the rugged surroundings, for here little attempt has been made to beautify the natural wilderness. The entrance has a low, covered veranda. It opens into a large central room, which is living-room and hallway combined. This extends along one side of the house. It is open to the roof and finished in dark wood. The walls are covered in part with marine decorations. They show fish-nets and unique bits taken from sea-life, carefully placed to give the right treatment in relieving the dull monotony of the wood-work.

The staircase starts at one side and leads, by low treads, to the inside balcony above, from which opens the sleeping-rooms. This gives good ventilation during the heated term, and adds materially to the uniqueness of this most attractive bungalow.

A prominent feature of the living-room is the large, open fireplace, built of brick, with wide, white-mortar joints and its mantel of nautical decorations. Here on a stormy night the drift-wood fire flickers on the hearth, lending its cheer to the interior. Opposite the fireplace is an ingle-nook with its brightly cushioned seat; the hangings of the room are of Oriental striped chintz.

At the left of the main room is the dining-room. This is finished in dark wood. In one corner of the room are shelves on which are some old china and Delft ware, a household detail which is always of interest to home-makers. Opening from this is the snug little kitchen, compact, with everything placed for convenience; the fittings were carefully thought out by the owner.

Above are the sleeping-rooms. These are well lighted and ventilated. They open out onto the inside balcony.

Mr. Stratton in the reconstruction of this bungalow has ingeniously solved a problem in home-building which can but be beneficial to those of limited means, for from an ugly exterior, he has created a most happy effect with a comparatively small outlay.



Garden of "Avonwood Court," Estate of Charles E. Mather, Esq.

Haverford, Pennsylvania



AN ESTATE of twenty-nine acres is by no means large as suburban or country estates are counted, yet that it is possible to derive a great deal of pleasure from a domain so modest in extent and create upon it a spot of wonderful beauty has been demonstrated by Mr. Mather in his fine place of "Avonwood Court," at Haverford, Pa. Haverford, as all the world should know, is one of the many suburban places that thrive along the famous "Main Line" of the Pennsylvania Railroad, just outside of Philadelphia. It is hardly a town, for few of the suburban places on that giant thoroughfare have attained to that dignity. Such, doubtless, they were in their inception, or some of them, and for antiquity Haverford is as old as anything within boundaries of the commonwealth founded by William Penn. But the farmer and the local man of business have been all but uprooted from these places to-day; the fair fields, the gentle slopes of hill, the rich, warm forests have been pre-empted for suburban places, all carried to a

high degree of cultivation, and all, without exception, environed with as beautiful a setting as the mind of man has found available for his habitation.

It was in such an environment, and exactly two hundred years after his ancestors had settled in Montgomery County, that Mr. Mather's house was built. This was in 1882, and the house is therefore not new. But it is a charming and comfortable house, distinctly recalling English models in its design, and beautifully situated—ideally situated, for the development that has been given to the grounds.

Than this house there is no more delightful place to visit in the early summer. A fine private road, maintained with scrupulous care, leads to a lane, which, in that season, is closely bordered on one side by a half mile or more of crimson rambler and other roses. Think of it! Roses as far as one can see; luscious, blooming roses for a half mile or more! It is one of the sights of Philadelphia suburbs, and it is well worth a visit to that city to be ravished by this splendid spectacle, which is as beautiful as it is rare.



The House Rises as a Screen, with the Terraces Below. The Vine-Clad Walls Harmonize Finely with the Rich Vegetation of Garden



A Brick Wall, Bordered Below with Plants, Supports the Upper Terrace Next the House

ent on the further side of the house, where the whole of the flower-garden is completely visible from the doorway to the upper terrace or from any of the windows on this side. The first impression is that of a vast sunken garden, for the garden is entirely below one. The next is that of a rich floral pattern spread out on the hillside. Both impressions are correct, although the latter is the true one. A sunken garden implies a certain artificiality in its situation, but the depths of this garden are wholly

These roses do not belong to Mr. Mather, but he has the exceptional advantage of living on the road which is decorated by them. Just at a turn, and somewhat in a hollow, is the brick gateway that leads to his grounds. The entrance-road plunges immediately into a dense wood, which not only utterly screens the house from outward view, but scarcely suggests a habitation at all. These woods are continued almost immediately to the entrance-court of the house. They are wild and luxuriant, left in their natural state and without the cleaning up and manifest care that makes some woods seem almost unnatural. As yet the visitor has seen no garden and scarce a hint of cultivation and arrangement.

The story is very differ-



Brick Steps Descend to the Lower Terrace; Above is a Vine-Covered Archway with Steps on Either Side



Each Terrace Has its Flower Border of Hardy Blooming Plants

natural, since the hillside descends almost abruptly immediately below the house, and if there be the effect of a sunken garden it is only because it has been placed on a slope.

Direct relationship between the house and the garden is effected by means of two terraces, each provided with a central flight of steps. The upper terrace wall is completely covered with vines; the lower is bare in itself, but is partly screened by plants growing at its base. Beyond is the formal garden proper, a vast rectangular space



Stately Trees Beyond the Northern Hedge Screen the Garden Wholly from Without

bounded on two sides by a brick wall and on the third by a hedge. In the center of the formal garden is a sun-dial, on a low raised circular platform, in the midst of broad paths crossing at right angles.

And then flowers, flowers everywhere. And all, if you please, hardy plants! For this is the great distinction of the garden of "Avonwood Court," that it is a garden of hardy flowers. The statisticians of the estate will inform you that there are upward of two hundred varieties of hardy plants within this garden. The information is of moment as expressing the great variety of such plants available for decorative purposes. But as a matter of fact the mere number is a point of comparative insignificance. The real matter of interest is the beauty of the blooming, the skill in the arrangement, the utilization of the various kinds of plants, trees, shrubs and bushes.

All these matters have been well developed here, for a

true succession of bloom has been arranged, so that from earliest spring until latest fall there is never a time without flowers, never a time when the garden, or any part of it, is bare and dead. It has required very good art to obtain this result, an art that must be studied, yet which gives no evidence of the care taken to obtain it.

The boundaries of the garden completely hem it in and surround it, but they do not shut out the beauty without. A beautiful garden is insufficient without beautiful surroundings. These the Mather garden have in abundance. Great stretches of green roll out on every side, bordered in the distance with stately growths of trees. The house overlooks a valley, spacious in size and gentle in its coverings. The garden is, in short, a beauty spot in a beautiful environment, a spot planted with exquisite taste and maintained in fine condition. The charming outlook, it is but simple truth to add, increases charm of the garden.



Ox Pasture Hill

The Home of Edward B. George, Esq., at Rowley, Massachusetts

By Lilian Harrod



"OX PASTURE HILL," the summer home of Edward B. George, Esq., is only thirty miles from Boston, and as we alighted at the little country station in Rowley and noted the river lazily wandering in and out among the marshes on its way to the sea, we thought we had indeed reached a fair and goodly country. We thought so still more as we drove along the elm-shaded roads and up the slope of the hill on which stood this most attractive summer home.

The house is designed to be the home of a gentleman of moderate means, but of artistic perceptions and desires. Simplicity throughout has been the keynote, and the house is neither a suburban residence, nor a farmhouse, nor an adaptation of a city dwelling, but a simple, unostentatious country home.

It stands just underneath the crest of the hill, and the view of the surrounding country is far and unbroken on every side. To the south stretch green meadows, where purple shadows linger and the distant cow-bells tinkle musically across the meadows. To the east is the blue line of the ocean, with here and there a white sail, touched for the instant by the glory of the departing day. To the north the white hills

lift their stately peaks heavenward, all beautiful and serene.

The exterior of the house is of brick. The color is a very dark, dull red, and the selected common brick was used with dark headers. The work was laid up in what is called Flemish bond with Portland-cement mortar, and after the mortar was set slightly the joints were raked out to a depth of one-half inch to three-quarters inch. The consequence is that the wall presents a texture which could not be obtained if the joints were filled and joined in the usual manner. Each brick counts for itself, and the fact that the bricks are rough is an advantage rather than a detriment, giving the wall-surface much the texture of a pencil-sketch. Wide, overhanging eaves and broad, low dormers help to bring the scale of the house down close to the ground, and dignity is supplied by the tall columns and the pediment marking the center of the south front. The driveway leads up to the porte-cochère on the center of the north front, thus leaving the entire south unobstructed and giving an exquisite view from all the rooms, embracing the wide sweep from Cape Ann to the Monadnock Mountain. Every room in the house enjoys a considerable portion of this view, and every room, up-stairs and down, gets a full share of sunshine—the living-room being flooded with it, while the disposition of



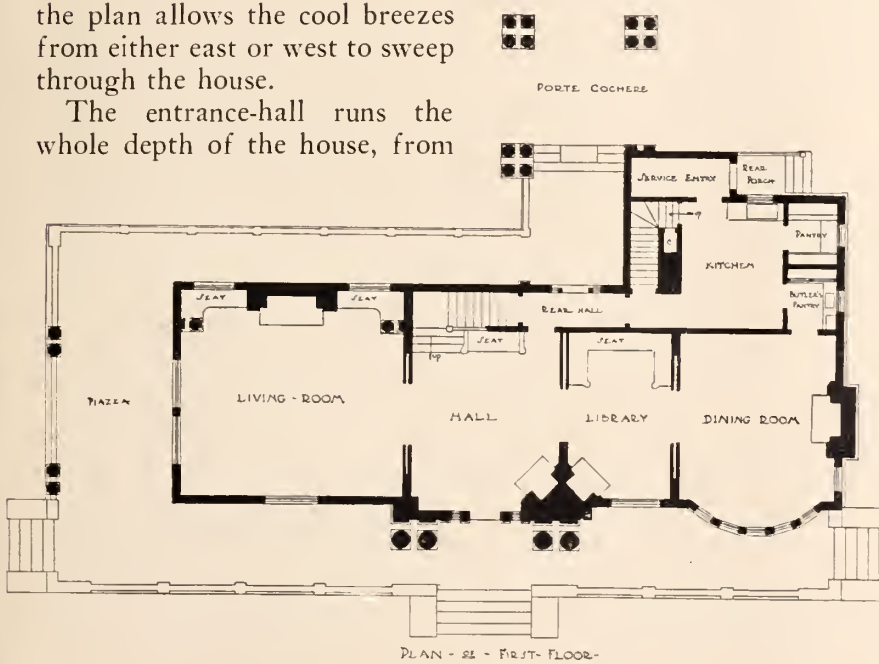
A White Painted Trim and Green Walls are the Prevailing Colors of the Hall



Simplicity is the Keynote of the Design of the House

the plan allows the cool breezes from either east or west to sweep through the house.

The entrance-hall runs the whole depth of the house, from

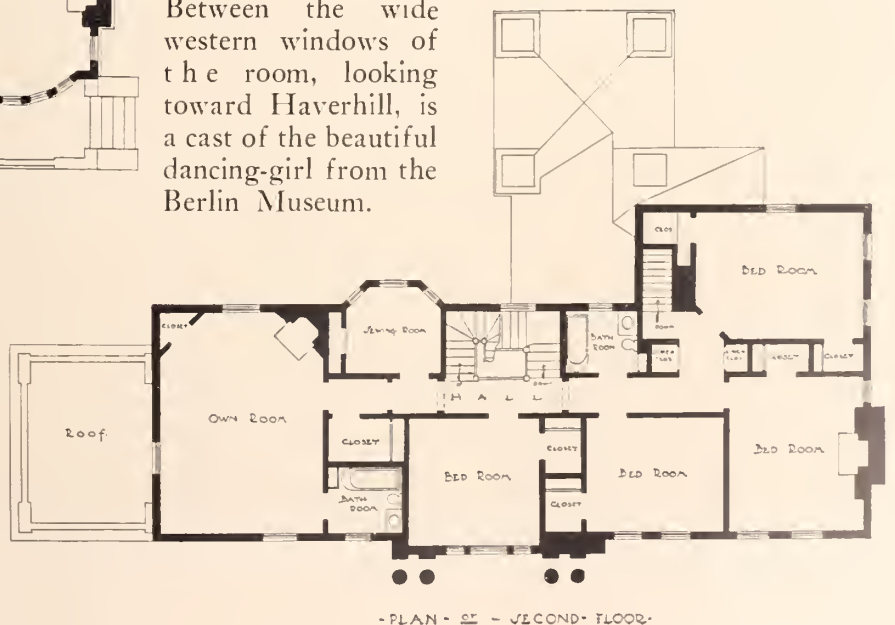


front to back, and is sixteen feet wide. On the left of the entrance is the living-room, twenty-five feet square, with large windows on three sides and a high fireplace and chimney-corner toward the north.

The fireplace is large enough to take a small load of logs, and in the winter time a roaring fire is kept here, which abundantly heats the whole room without any help from the furnace. The fireplace is itself a quaint design, carried out in rough brick, and over the fireplace opening is a clever adaptation

of Poussin's famous painting, representing a group of shepherds with their flocks, clustered about a ruined altar, upon which is the barely decipherable inscription "Et in Acadia ego," ("I, too, have been in Arcady"). The mantel, which is of simple wood paneling, bears over the shelf an old-fashioned convex mirror of Colonial design. Arranged around three sides of the hearth are low stools, upholstered in Spanish leather, where one can sit and toast chestnuts or toes. On the opposite side of the room is a large settee of very similar but most luxuriant design, worked out to accommodate at least six persons, with low extension at the front for foot-rests.

Between the wide western windows of the room, looking toward Haverhill, is a cast of the beautiful dancing-girl from the Berlin Museum.





An Adaptation of Poussin's Painting, Representing a Group of Shepherds and Their Flocks, is the Decoration Above the Fireplace in the Living-Room



A Four-Poster, with its Quaintly Shaped Tester and its Antique Quilt, is the Interesting Feature of the Guest-Room

The walls of the room are covered with burlap stained a dull, clear red color, relieved with a broad stripe. The hall adjoining has a similar striped burlap, but in a clear, golden yellow. The finish in the hall and in the living-room both is white-enameled paint. The hall likewise has a neat fireplace in the corner near the entrance. The fireplace itself is built of concrete, in which are set some small boulders taken from a neighboring hill. In the hearth are set three rounded, polished brass disks, and around the edge of the hearth, continuing up the sides and across the fireplace, is a narrow, quivering band of clear glass mosaic.

cases, in which are stored rare volumes of the world's classics, the poets, the histories, and, in fact, a collection of books such as is rarely found in a country home. The cases are all stained a very dark antique oak, and the furniture is made to match. The ceiling overhead is crossed by heavy beams of dark oak, springing from broad corbels on the sides. On the face of each corbel is painted in clear colors a reproduction of book-marks or coats of arms of the world's famous publishers. There is a broad seat on front of the generous southern window, and here is hung a glass mosaic in tones of deep green and blue, representing a stately old-fashioned



The Dining-Room Has a Green Striped Wall Covering, Mahogany Furniture and a Banjo Clock

Above the mantel-shelf is a broad, simple panel of flowered mahogany, dark and rich in tone, serving in the background for the bust of Donatello's inscrutable, unknown lady, resting on a soft ivory-toned bracket in the center of the mahogany panel. The fireplace opening is carried very high, but filled in from the top down part way with a simple grille of wrought iron, in which are set small panes of transparent mica, so that the eye can follow the flames from the fire clear up to the throat of the chimney. The doors leading from the hall are all of crotch-veneer mahogany, of most beautiful flowered grain in single piece, without paneling or molding.

At the right of the hall is the library, representing the owner's inner convictions and containing his choicest treasures. The walls are lined from floor to ceiling with book-

galleon sailing over the ocean, with the inscription around the outside of the picture paraphrased from Longfellow, "Sail home, my ship, deep freighted with blessings and hope."

Beside the window is a very interesting fireplace, built entirely of beaten copper, treated so as to bring out the iridescent blues, reds and purples. The hearth is built of quaint old Moravian tiles, with black-letter inscriptions, book-devices and other interesting bits on the various pieces. The book-cases are carried across the top of the mantel on a sweep, and the broad shelf is supported by a single corbel carved with a head of a monk reaching out over an open book, the Friar Tuck of Robin Hood, a figure that typifies scholastic learning tempered by a due regard for the more material things of this world.

The Entrance to a Country Place

By John A. Gade



“**S**ALVE HOSPES,” the Roman inscribed on the pavement of his Fauces. He wished to emphasize the character of the greeting which would be tendered the stranger crossing his threshold. This expression, however rendered, of generous admission, of wide and easy access, of unhesitating, open-armed hospitality, is, I believe, an important quality for the owner, architect, or landscape-gardener to mark when considering the entrance to a country estate. The smallest, unpretending latch gate, as well as the most magnificent iron grillage, are equally capable of hitting or missing the expression of this feeling.

The ampler means within reach of the architect and the landscape-gardener for such expression were not known when the little monastic institution was first founded, but the passer-by was none the less pleasantly impressed by the naive inscription interlaced in its gates:

“Where'er thou art, where'er thou roam,
A greeting, traveler, within this home!”

What is now the most fitting and practical manner of expressing the quality referred to in a twentieth century American country entrance? First, I believe it is in making the approach neither too small nor too abrupt. Secondly, in the case of a large estate, the entrance must be in keeping with the grounds and surroundings, and in a small one harmony must be equally sustained. Fifty feet of Newport lawn do not need gateways which look appropriate at the end of Bushy Park or the Cour d'Honneur at Versailles. The

proper relationship of the entrance to what it leads to and from is most vital if there is to be no dissonance. There must be plenty of room for vehicles to pass each other, without any danger of the wheels cutting the lawns at the sides; for this, fourteen feet of driveway is none too much, sixteen to twenty is generous and consequently better. There must, further, be separate paths for pedestrians, for symmetry one on each side of the broad, central axis, of sufficient width for two persons to walk comfortably side by side, and safely separated or raised from the central driveway. The laying out of the drive and paths from the gate to the house is naturally determined, to a great extent, by the lay of the land and site of the house and roads, but the character of the house should also be taken into consideration. The charm of a sudden glimpse of the house, as you abruptly turn a corner of the drive, may linger as ineffably among delightful architectural memories as the dignified Elizabethan courtyard awaiting you from afar at the end of a stately avenue of oaks—old, weather-beaten sentinels, that time the steps of your approach. As a general rule, however, you will not go far wrong, if grades allow, in considering the most direct line from the country road to the front door the best one to aim at. Likewise, the more imposing your architecture the straighter should your avenue be. Put your front door in the center of your home and aim straight for it. Grades are of the greatest importance and especially at the entrance. They should all be gradual and easy. Nothing is more unfortunate in a country place than to have placed your entrance at such a point that you are forced to squirm or shoot



The Entrance Should Be in Keeping with the Grounds and Surroundings



The More Imposing the Architecture, the Straighter Should Be the Road



Roads Should Be Laid Out to Suit the Character of the Surrounding Land

your motor in at its first gear or drive your horses up to the front door all winded and blown. Widen your entrance so that you hardly feel the turning of your wheels. A frequent and felicitous method of doing this is by breaking the angle formed by the entrance proper and the road outside by a semicircular or elliptical transition, flanked perhaps by gate lodges or masonry, or the whole semicircle bordered by a design of gates, posts, wall and buildings, forming a unit converging toward the central feature of the main entrance.

I emphasize the importance of effacing all suggestion of abruptness. By this I mean there must never be too marked a difference between the entrance and the surrounding landscape. One need neither lose importance nor emphasis by an intelligent use of the correct materials and the right scheme. Nothing could be more harmonious or in better keeping with the environs than certain entrances in which the natural materials at hand have been employed in their con-

struction; the rubble wall, with the stones and boulders gathered from the adjoining fields, and similar in character, tone and effect to the walls separating lots of the adjoining countrysides, has perhaps been merely laid up with greater care, often laid dry, without any cement whatever, or capstone, or coping—this built without too abrupt a curve or high a transition into your gateposts or arches—while over the whole creep tendrils from the vines which for centuries have covered the adjoining rocks. If you can thus work hand in hand with nature, trying to blend your efforts with her marvels, the opportunity should never be lost. In a similar way simple and happy effects may be attained by entering an unpretentious place through a gateway of rough posts and sticks, the arch or trelliswork covered with wistaria, crimson Rambler, honeysuckle, or ivy, which will soon disguise all but its own glory.

If your gateway or entrance is so near the house that the two may be comprised at a glance I believe it is often suc-



An Unbroken Avenue of Trees is Better Than a Fence



The Curve Should Not Be Too Abrupt

cessful to make the former recall the material of the latter. Should your house, for instance, be of brick and limestone, of Georgian or Colonial design, strike the note at once, as you enter, and you are not so liable to fail. If it is merely a modest little shingle cottage let the woodwork of your en-

of the gates must be detailed with sufficient strength not to look "spindly" beside the bolder material.

In regard to the borders along your property lines and entrance, I confess that no architect's designs seem to me equal to those formed by nature's own hands. No spiked



The Entrance Should Be Wide Enough for Two Vehicles to Pass Each Other

trance-gate correspond in details, moldings and feeling. What could be more horrible than the Strozzi lanterns straddling, bald and naked, over the woodwork of a Colonial post? Heavy stone or iron work should never be superposed on woodwork. What would have happened to the world had Atlas' shoulders been of sawdust? Wooden gates may be supported by stone or brick posts, because the posts are the points demanding strength, in reality as well as in feeling. They are the *points d'appui*. Even then, the woodwork

and gilded fence can bear comparison with a thick hedge of unbroken yew or an avenue of pine or beech trees. No gateway can inclose or open into a place with the magnificent spread of a well-chosen and banked mass of properly selected trees and shrubs. Who would, for a moment, compare the entrance-gates of the Giusti Gardens to the entrance of the second garden level, through the majestic portal of laurel, myrtle, cypress and olive? In our American country estates, as well as in our parks and public playgrounds, we have



The Natural Materials at Hand May Be Employed with Good Effect

manifold examples of the finest adaptation of shrubs and trees to truly scenic screenwork effects, the character of each growth correctly strengthening, barring, or grading, while the avenues and walks are bordered and friezed with fine trees standing as compact and straight as Prussian soldiers on parade.

If you are not limited by cost in laying the bed of your drive I would advise the following: Thoroughly underdrain the road by open joint drain tile, laid underground, or by deep side gutters. This will keep the roadbed and its foundations dry; a most important factor in road building. First, remove all top soil and loose earth, forming the foundations

still, a gutter of pebbles, carefully laid on edge and closely packed together, or a brick gutter, with sides of single rows of brick slanting toward a third course laid flat and forming the bottom. Best of all is a concrete gutter, made of 300 pounds of Portland cement to three barrels of coarse, sharp sand, finished with one inch of mortar, mixed of 300 pounds of Portland cement to one and one-half barrels of sand. The bed should be nowhere less than three inches in thickness, its grade not less than one-fourth of an inch to the foot, and its drains not too far apart. Where the grade is steep and the wash liable to be heavy the drains should naturally be closer than for a slight incline. The gratings protecting the

drains should likewise be sufficiently close to hinder all possibility of the pipes' becoming choked. Protect your grass as far as possible. You are never safe from careless driving. The butcher-boy may be dozing as he turns the curve of your entrance, where an ugly gash in the sod is most visible.

Protect likewise your gate-posts, if they are not of masonry, or if they have sharp or molded angles and corners. Also protect pedestrians, in case there is no side path. Make the drive sufficiently wide for carriages to pass them in the road without bespattering them with mud or coating them with dust. They should never be forced to take refuge in the grass, which may be soaking wet.

Placing the name of your "estate" on the gates or gate-posts is a more common custom in England than in America, though we



There Must Be Ample Room for Vehicles and, if Possible, Separate Paths for Pedestrians

to a crown of six inches to each ten feet of road width; lay over this a layer, six inches thick, of broken limestone or trap rock, of a size to pass through a 3-inch ring; over this again a layer three inches thick of broken limestone or trap rock, of a size to pass through a 1½-inch ring; cover the whole with clean limestone screenings, free from dust. Where the bottom is soft it is good practice to roll a thin layer of stone. Crown the surface of the road one and one-half inches for each foot in width of road.

The best packed and hardest rolled road needs careful draining if its surface is not soon to be washed away, probably involving the destruction of the bordering grass. A dry sand drain along each side may serve the purpose; better

are, and I believe fortunately, gradually ridding ourselves of the idea that there is anything pretentious about it. The most modest dog answers to some name or other, and why not our fireside, however humble it may be? Should your gates be of iron nothing could be more appropriate than to interlace the name with its scrollwork; on wood it should be painted, but if it is to appear on masonry cut it in or raise it as part of the stone itself. Copper, iron or bronze letters will show stains after some exposure to the weather. A name is as capable of expressing to ourselves and the passers-by our individual fancy or pride as the rampant supporters and arms on European gate-posts and much more sensibly, perhaps, and truly more directly. In arriving in front of your house—and especially

if it has wide, projecting wings—remember that there must be plenty of room for the clumsiest whip to approach and drive away from the front door or porch or platform without feeling cramped. The oval or circle in front of a good-sized house should never have a radius of less than thirty feet. Leave room for the driver to back his vehicle up as well as to approach.

When a house is some distance from the entrance trade-wagons as well as house-traps will probably all enter through one gate. Let there be no doubt at the point where the service entrance branches off, which road leads to the front door and which to the kitchen, but make the turning-off of the inferior as unnoticeable as practical, screening its course with proper planting, thus making it part of the grounds rather than a continuance of the drive, and lessen its width, noticeably from that of the main artery leading to the front door.

Above all, the true purpose of the entrance to a country place should not be forgotten. It should provide a means of ingress worthy of the residence to which it leads, designed in proper keeping with the atmosphere of that residence and



A "Dreamwold" Gateway

with the character of the surrounding country. The architectural fitness of its decorations should be governed largely by these considerations.

The Citizen's Part in Civic Betterment



EVERY citizen has a clear duty to perform in civic betterment: he must do what he can. It is never wise to try to do too much; it is not always an advantage to seek leadership; it is certainly most undesirable to undertake too much. In public work, even more than in private work, it is the wise man who will limit his activities to what he can actually perform; for failure in such work is often more conspicuous than in personal matters, and there are always many men waiting to do, as they think, better than you what you may have tried your best at, and failed in.

Work for civic betterment is work for the whole community. It is work that helps your neighbor just as much as it does you. You in your turn derive valuable returns from his efforts, and so on throughout the whole community. It is not personal work, nor private, but it is public work for the public, work of value to the public of the present and of the future. It is a work, therefore, that combines the personal and the philanthropic. It is work well worth doing, and it is work every one should take part in.

The citizen owes it to himself and to his community to do what he can in this work. If he plants a row of trees along unoccupied property, he will be able to dispose of it, after a term of years, at a greater advantage than if he had not planted the trees. His neighbor across the way gains by this planting. The purchaser of the land gains by it. The whole community is a gainer.

And there is always something one can do. The range of civic betterment is almost without limit. It is concerned

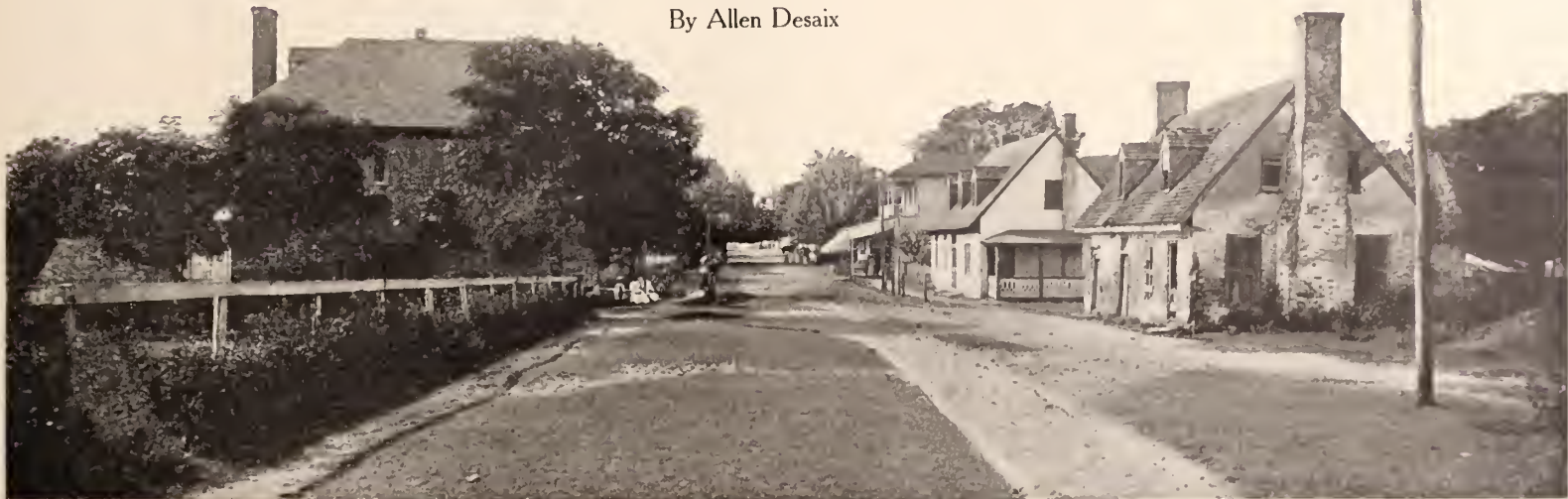
with many activities and with many forms of activities. Its scope is so varied that one can always find opportunity for cultivating one's own special taste or interest while helping one's community, be one's tastes what they may. One's interest can always be maintained in one's personal specialty.

The bettering of conditions is noble work. It is uplift all along the line, for everything and for everybody. The end and aim of all this effort is betterment. It is not one definite object looked forward to, one result sought, then no more labor. It means continuous effort. The successful realization of one plan means the laying of another. The work progresses as a chain, each new link being forged onto an older one, and so on indefinitely.

Hence the work calls for many laborers. Civic betterment is a very diffused subject. It is concerned with plans for the city and with plans for the country. It is concerned with things material and things immaterial. It looks forward and outward in every direction. It needs men and women all the time, everywhere, doing everything, laboring unceasingly, bringing what gifts of service they may to the altar of public improvement. Some will escape this service, some will not know what to do or that there is anything to do. Others will profit by the ideas and the exertions of others. It can not be helped. There always have been such people and probably always will be. The earnest citizen, intent on his own good work, will not be turned aside by such worthless fellows. There is work to do and it behooves all good citizens to do what they can of it.

The 125th Anniversary of the Surrender of Cornwallis at Yorktown

By Allen Desaix



The Appearance of Historic Yorktown Has Changed Very Little During the Past One Hundred and Twenty-five Years



NEITHER the sensational engagement at Bunker Hill, with its ominous significance, the meaning of which was not lost in either England, America or the Continent, nor the disastrous surrender of Burgoyne at Saratoga, nor, in fact, any event of the Revolution could equal in transcendent interest the Yorktown Campaign. It possesses all the qualities upon which to build a dramatic creation of the highest significance. There we find the well-developed plot, all the elements of surprise, military strategy of the highest order and a striking culmination just before the curtain drops. There is no dragging of the plot. The story moves along smoothly, with sufficient element of uncertainty and doubt, and there is no minor climax at the end.

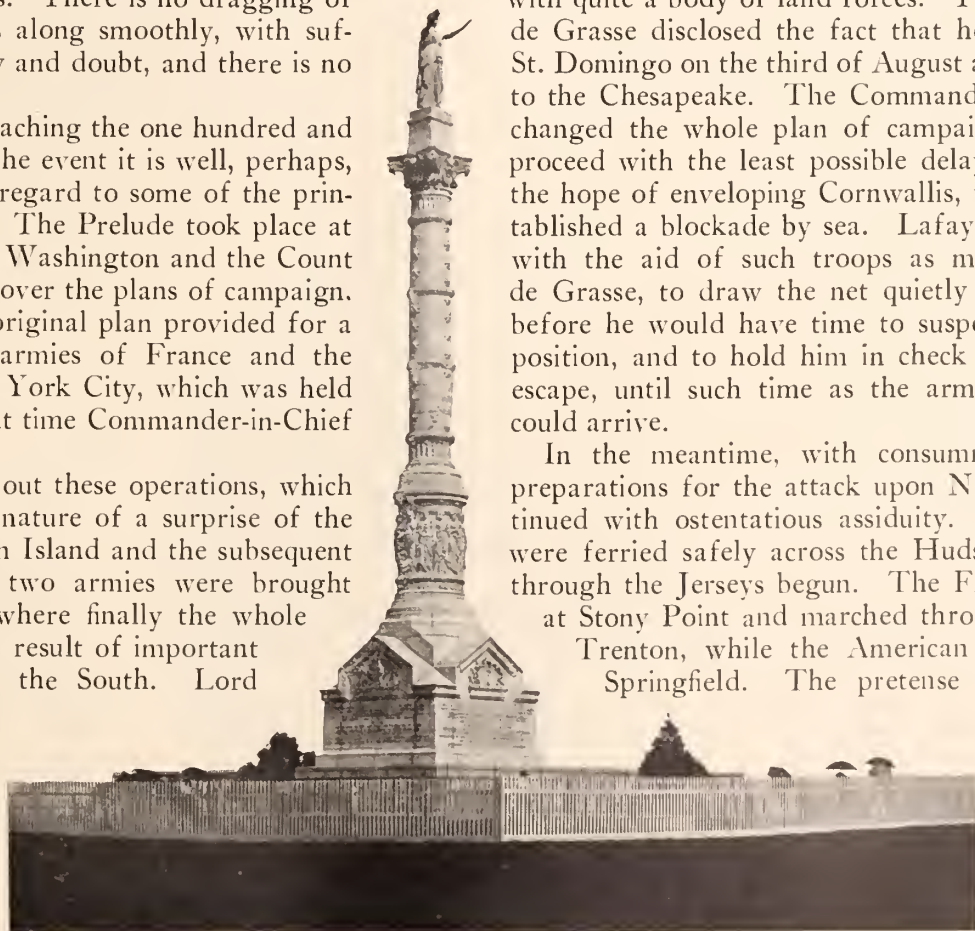
Now that we are about reaching the one hundred and twenty-fifth anniversary of the event it is well, perhaps, to refresh our memories in regard to some of the principal features of the event. The Prelude took place at Weathersfield, Conn., when Washington and the Count de Rochambeau met to talk over the plans of campaign. It will be recalled that the original plan provided for a joint attack of the allied armies of France and the United Colonies upon New York City, which was held by Sir Henry Clinton, at that time Commander-in-Chief of the British forces.

With a view to carrying out these operations, which were intended to be in the nature of a surprise of the forts upon upper Manhattan Island and the subsequent reduction of the city, the two armies were brought together at Dobbs Ferry, where finally the whole campaign was modified as a result of important information received from the South. Lord Cornwallis had been conducting a spirited campaign in Virginia against Lafayette, who was in command of the Continentals, in co-operation with Baron Steuben and Anthony Wayne, and the troops under them. One object of Washing-

ton's projected manoeuvres against New York was to compel Clinton to withdraw from Virginia a part of Cornwallis's forces. The latter had been forcing the game against his youthful antagonist, who had acted with rare discretion for one of his impetuous French nature. Washington's theory proved to be correct. Cornwallis, following instructions from the North, withdrew toward Portsmouth, and later to York and Gloucester, so as to be ready to support Clinton by water in case of necessity. At the same time most important news was received from the sea. Count de Grasse was stationed in the West Indies with some thirty ships of the line and with quite a body of land forces. The despatches from de Grasse disclosed the fact that he was sailing from St. Domingo on the third of August and would go direct to the Chesapeake. The Commander-in-Chief at once changed the whole plan of campaign and decided to proceed with the least possible delay to Virginia, with the hope of enveloping Cornwallis, while de Grasse established a blockade by sea. Lafayette was instructed, with the aid of such troops as might be landed by de Grasse, to draw the net quietly around Cornwallis before he would have time to suspect the peril of his position, and to hold him in check in case he tried to escape, until such time as the army from the North could arrive.

In the meantime, with consummate strategy, the preparations for the attack upon New York were continued with ostentatious assiduity. The allied armies were ferried safely across the Hudson and the march through the Jerseys begun. The French army crossed at Stony Point and marched through Whippany for Trenton, while the American army marched to Springfield. The pretense of investing New

York was carried on by the carrying of bateaux for the re-crossing of the Hudson, and the building of ovens on the Jersey shore, opposite Staten



Monument Erected in 1881 in Commemoration of the Surrender of the British Army Under Lord Cornwallis in 1781

Island, where preparations were made for a great camp. At the same time a road was cleared toward Kings Bridge, as if an attack at that point was contemplated. Letters setting forth the plan of campaign against New York were allowed to fall into the hands of the enemy. The whole farce was admirably played, and none were more deceived than the allied troops themselves. Not until New Brunswick had been passed was the real destination known to the army.

The course followed by the army in its march through Jersey and the subsequent events are quaintly told in an unpublished manuscript journal of Col. Jonathan Trumbull, son of Gov. Trumbull, of Connecticut, who was aide-de-camp to Washington and his military secretary.

On August 24th Washington with Count de Rochambeau visited West Point. On the 25th he made his headquarters at "Ramapo" (Ramapough). On the 26th he moves to Pompton, and reaches Chatham in the evening—a long day's ride. On the 27th he rides to Springfield, where he is joined by General Lincoln and his troops, but returns in the evening to Chatham. "On August 29 the General and family (i. e., his military aides, etc.) leave Chatham, proceed to Princetown (*sic*), where we meet Count Rochambeau and suite, dine together and ride to Trenton, where we sleep." August 30: "Leave Trenton, breakfast at Bristol and arrive at Philadelphia about noon. Alight at the City Tavern amid crowds of people and shouts of acclamation, all wondering



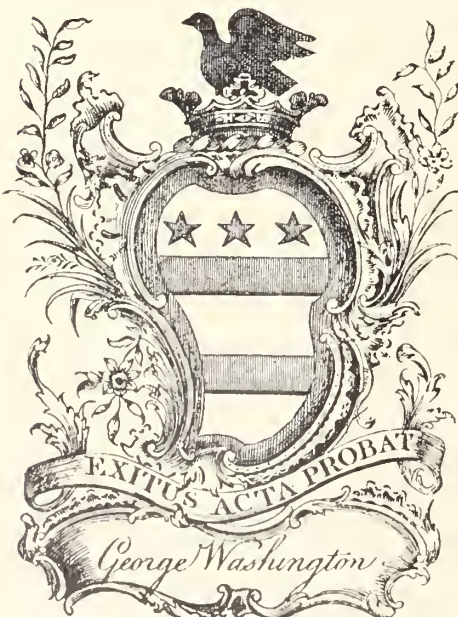
Portrait of Washington, Painted by John Trumbull, in 1780, and Engraved in Mezzotint by Valentine Green in 1781. This Portrait Belonged to M. de Neufville, of Amsterdam, but was Lost for Nearly a Hundred Years, Until Discovered in London Several Years Ago and Brought to this Country. It is Now in a Private Collection in New York City

the design of this visit. We are quartered with Mr. Morris, financier, where we dine this day." August 31: "In Philadelphia. Dine with the Minister of France. Great company and great parade."

There was a wide contrast between the two armies as they marched through Philadelphia. The American army passed through the city on September 2, the officers being in the Continental uniform, but the men were only part of them in uniform, and these were tattered and torn and told the sad tale of the sufferings and privations during the long period of the war. The army extended over a distance of two miles in length and the men marched to the tune of the fife and drum. In spite of their dusty and careworn appearance, they were greeted with enthusiasm by the loyal citizens of the Quaker City. On the following day the same streets were lined by the same crowds to welcome the more imposing array of the French army, with their brilliant uniforms

of white faced with green, and led by a full military band. The scene must have been very impressive.

The brief sojourn in Philadelphia proved to be the occasion for much entertaining, and the General and his staff were kept busy with a variety of social functions, formal and informal. Dinners were given by Mr. Reed, President of Congress. Colonel Trumbull makes note in his journal that he "drank tea with Mrs. Morris at her bower in the country." General Washington was again entertained at dinner by the French minister, while



Book-plate of Washington



The Right Honorable Charles Earl Cornwallis General and Commander of His Majesty's Forces in South Carolina. After C. Knight's Engraving of Sir Joshua Reynold's Portrait



Book-plate of Cornwallis

his staff were received by Robert Morris. Preparations for leaving Philadelphia were in progress, but "much anxiety and speculation" were felt because no news was received concerning the French fleet, while it was learned that an English fleet was steering southward.

On September 5th Washington left Philadelphia, but had only gone a few miles beyond Chester when an express was met, with the news that Admiral de Grasse's fleet had arrived in Chesapeake on August 26th—"news strangely delayed, but welcome." "The General returns to Chester, to rejoice with Count de Rochambeau, who was coming down by water. We communicate the joy to Congress."

At a banquet given in honor of the visiting officers by the French Minister, the Chevalier de Luzerne, on the same evening the glorious tidings of the arrival of de Grasse and his fleet were announced, and it now seemed as if the last link in the complete chain of events had been successfully forged. When the illustrious party arrived

one familiar with the impressive appearance of our old-time warships will appreciate what a sight must have greeted the beholder as he stood by the shore of the York River. On the heights above floated the Union Jack and the redoubts of Yorktown and Gloucester were dotted here and there by redcoats. In most of the important events of the war there was an entire absence of dramatic effects. At the affair of Trenton and Princeton there was, on the one hand, a well-equipped army, but their opponents were only some of them in uniforms and most all of them in rags. Not so, however, at the siege of Yorktown. Not only were there three separate armies, but the fleet in the harbor added a luster to the pageant. It must have been an interesting sight to see the three flags of what were to be the three leading powers on earth floating on the breeze over their three encampments: the red banner, which had been for so many years the emblem under which so many of the Continentals themselves had fought in former days and which had been the flag of

In the arrangements for the American assault, La Fayette had given the honor of leading the advance to his own side of camp, Lieutenant Colonel Pinet. This instantly excited the spirit of the French military pride of Hamilton, who claimed that his own command was superior to that of an English preference, it being his love of duty. The Marquis exclaimed himself by alleging that the command of the arrangement had been entrusted by the Commander in Chief and could not be changed by him. Hamilton forthwith made a spirited appeal, by letter to Washington. The latter, who was ignorant of the circumstances of the case, sent for the Marquis, and finding that he really was Hamilton's own duty, decided that he should be reinstated in it. The arrangement which was made. It was therefore arranged that Colonel Pinet's battalion should lead the way and be followed by that of Hamilton and that the latter should command the whole advanced corps. †

* See memoirs of the war II. 342
† La Fayette to Washington, Correspondence of the Rev. III 420

Wm. H. H. H.

THE
NARRATIVE
OF
LIEUTENANT-GENERAL
SIR HENRY CLINTON, K. B.
RELATIVE TO HIS
CONDUCT
DURING
PART OF HIS COMMAND OF THE KING'S TROOPS
IN
NORTH AMERICA;
Particularly to that which respects the unfortunate Issue of the
Campaign in 1781.
WITH AN
APPENDIX,
CONTAINING
COPIES and EXTRACTS of those Parts of his Correspondence with
LORD GEORGE GERMAIN,
EARL CORNWALLIS,
REAR ADMIRAL GRAVES, &c.
Which are referred to therein.
SIXTH EDITION.
LONDON:
Printed for J. DEBRET (Successor to Mr. ALMON) opposite
Burlington-house, Piccadilly, 1781.

York & Gloucester. This produces
a correspondence the more honorable
to our General, as it was the first
page or letter that had ever
passed between the two Commanders.
It was begun on the part
of the British Hero, the first
responded to subsequent articles of
Capitulation, will speak the History
18th Correspondence kept open for
missions preparing articles—
19th All matters being settled the
Capitulation is now signed
The Troops march out &c.
this

Facsimile of a Page of Manuscript from Washington Irving's "Life of Washington," Describing the Surrender of Yorktown

The Surrender of Cornwallis Led to an Acrimonious War of Words Between Sir Henry Clinton and Lord Cornwallis. This is a Facsimile of the Title-page, "Clinton's Narrative," and is from Washington's Library. "Cornwallis's Reply" is Bound in the Same Volume and also Bears Washington's Autograph

A Page From the Diary of Colonel Jonathan Trumbull, Aide-de-Camp to Washington and Brother of Colonel John Trumbull, the Artist

in Baltimore there was great rejoicing, followed by illuminations and speeches.

On September 9th Washington, accompanied only by Colonel Humphrey, left Baltimore early in the morning and reached Mount Vernon that same evening, having covered a distance of sixty miles, a long day's ride for any one not of powerful mold, especially when we consider the wretched state of the roads in those days. The Count de Rochambeau arrived at Mount Vernon the following evening, and on the 11th "General Chastellux arrived with his aides—a numerous family now present, all accommodated, an elegant seat and situation, great appearance of opulence and real exhibition of hospitality and princely entertainment."

The arrival of the French fleet aroused Cornwallis from his dream of fancied security, and he formed several plans of escape, which circumstances compelled him to abandon, and he was obliged to content himself with urgent despatches to Clinton to send him reinforcements.

When the officers and troops entered the Harbor of York a view presented itself which probably had not been equaled since the breaking out of the Revolution. The fleet of de Grasse comprised some thirty-two ships of the line, and any

circle of thirteen stars, and the magnificent banner of Louis XVI, with its field of blue and its royal arms.

On arriving at the scene of operations the General and staff were entertained at dinner in turn by the Marquis de St. Simon, in command of the troops landed from the French fleet, by the Marquis de Lafayette and by Baron Steuben.

Plans were made for visiting the French Admiral on the 19th. This important event is described as follows:

"Got alongside the Admiral about 12 o'clock. Go on board. Received with great ceremony and military naval parade, and most cordially welcomed. The Admiral, a remarkable man for size, appearance and plainness of address. Compliments over, business is proposed and soon despatched to great satisfaction, after which dinner is served, and then we view the ship and see her batteries and accommodations—a noble prospect—the world in miniature."

As the distinguished visitors leave they are "saluted by the Admiral's guns and the manning of all the ships of the fleet, who, from the yard-tops, etc., give us their

several "Feu de Joyes" or "Vive le Roy."

The story of the siege has been so often told that it is necessary to give only the barest outline now. The first parallel before Yorktown was opened on October 6 by General Lincoln. Five days later the second parallel was opened by Baron Steuben's division, bringing the besiegers within three hundred yards of the enemy's works. The cannonading and firing were almost continuous, and it was learned that great damage was being done to the town. The house of Governor Nelson, of Virginia, was one of the conspicuous landmarks within the enemy's lines which suffered greatly, and principally through the orders of Governor Nelson himself, who believed his mansion to have been the headquarters of Lord Cornwallis, and therefore ordered the gunners to direct their fire especially to that point. Governor Nelson is one of those splendid patriots whose name has not been sufficiently venerated by posterity. In addition to this evidence of unselfishness, he pledged most of his private fortune, which was considerable, to raise a regiment of six hundred troops, which he commanded in person at the siege.

Perhaps the most dramatic feature of the siege was the assault upon two redoubts which had proved very troublesome to the besiegers and had infiltrated their intrenchments and rendered part of the second parallel untenable. The assault upon one of the redoubts was entrusted to the Marquis de Lafayette and his American troops, while the other was led by the Baron de Viomenil. The latter in his assault lost about a third of his men. The American assault was led by Alexander Hamilton, who was the first to mount the walls



The Custom House in Yorktown is Claimed to be the Oldest One in the United States

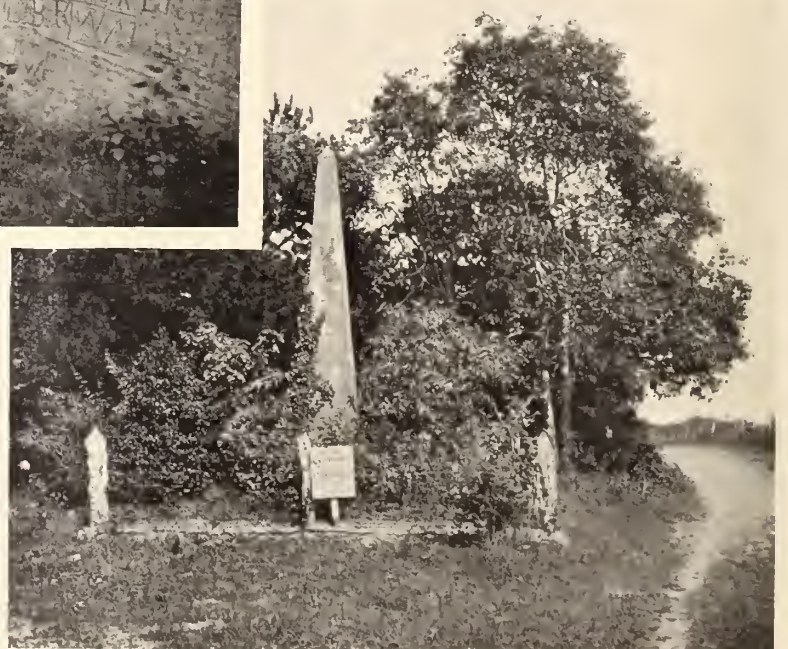
in front of the American army, and Rochambeau with his suite was at the head of the French army. The sight must have been an imposing one indeed. General O'Hara on horseback marched at the head of the British army, consisting of seven thousand two hundred and fifty men and eight hundred and forty seamen, advanced to Washington, bowed and explained that Lord Cornwallis was not able to be present on account of indisposition. The Commander-in-Chief indicated General Lincoln as the officer who was to receive the submission of the garrison. The latter were marched into a field where they left their arms and then marched back to Yorktown, where they were put under guard.

In the evening a banquet was given, to which Lord Cornwallis was invited, but he excused himself on account of his health. General O'Hara, however, dined at headquarters, and the event must have proved an interesting one, as our chronicler states that it was very "social and easy."



Cornwallis's Cave, which, According to Tradition, was Used by Cornwallis as a Shelter During the Bombardment; There is No Historical Evidence in Support of This Theory

of the parapet. The capture of these two redoubts rendered Cornwallis's position untenable, and on October 17th a white flag appeared with a letter to Washington, asking for terms of capitulation. Commissioners were appointed, and, after two days of negotiations, the Articles of Capitulation were drawn up and signed, and at two o'clock on the same day the proud army of Cornwallis marched out of Yorktown with shouldered arms, their colors cased and drums beating, between two long lines of the allied armies. Washington, attended by his staff, stood mounted



Shaft Erected to Mark the Field Where the Surrender Took Place



Sketch Made by Colonel John Trumbull, on the Field at Yorktown, in 1791, as a Study for His Painting of the Surrender at Yorktown

The good news of the great event spread through the country like wildfire, and Congress, in recognition of its deep joy and gratitude, passed a vote of thanks to the great leaders in the allied armies and voted two stands of colors to Washington, two pieces of field ordnance to de Rochambeau and de Grasse, and also decreed that a marble column should be erected in Yorktown to commemorate the event. It seems strange that a century should have passed before this last act should have been carried out.

On the same day that Yorktown surrendered, which, by the way, was the fourth anniversary of the surrender of Burgoyne at Saratoga, Sir Henry Clinton set sail from New York with a powerful fleet of twenty-five ships of the line and ten frigates and an army of picked veterans, seven thou-

sand strong. He arrived at Yorktown five days later, but, finding the capitulation had already taken place, sailed back again to New York and despatched the news of the catastrophe to England.

The significance of the event was well expressed by Lord North, when the news reached him, for he threw his arms wildly in the air and exclaimed, "It is all over! It is all over!"

NOTE.—The various objects reproduced in facsimile in connection with this article form part of a collection of Revolutionary material belonging to a private collector in New York. It may be of interest to note that on the same shelf with the book illustrated above, from Washington's Library, is a copy of "Sir H. Clinton's Narrative," from his library and bearing his autograph.

The Controversy between the two British leaders was of the most venomous character, and as a study of invective nothing could be more illuminating than a perusal of the "Reply of Lord Cornwallis" to Sir Henry Clinton's Narrative.



Nelson House, the Residence of Governor Thomas Nelson of Virginia, Who Commanded the Virginia Militia at the Siege and Directed the Fire of the Gunners at His Own Mansion Under the Supposition that it Was Lord Cornwallis's Headquarters

A New Apple-Tree Pest in California

By Enos Brown



THE Parajo Valley, which embraces portions of Santa Cruz and Monterey Counties, constitutes the greatest apple-growing district in all that part of the country lying west of the Rocky Mountains. Its contiguity to the ocean and the richness and fertility of the soil render the conditions ideal for apple culture. The fruit grows to such astonishing size and attains such surpassing flavor that it is largely exported. In all there are 1,000,000 trees growing on 812,000 acres of land and 100,000,000 pounds of the fruit are shipped every year. The culture of the apple has been extremely profitable. The orchardists reaped large returns until the introduction of the codlin moth from the east, when the orchards became badly infected with the devastating insect. The attempts of growers to extirpate the pest proved futile and the aid of the general government and the University of California was solicited and obtained.

The life history of the moth under California environments was carefully investigated by the scientists and its habits studied with such success that full control of the pest was effectually gained and its ravages controlled. The season for spraying, or the exact moment when the application of arsenical solutions was most destructive to the moth and its progeny, was ascertained and other methods of prevention discovered, so that with reasonable care and industry on the part of the orchardists the dreaded enemy of the apple was divested of its power to harm and its destructiveness almost entirely curbed. The loss to the orchard was reduced from sixty-seven per cent. to less than five.

No sooner, however, had the codlin moth been disposed of than another pest made its appearance upon which

arsenical solutions had no effect and which was more destructive than the codlin moth.

In 1903 the new moth began to be noticed and was recognized as the identical one which devastated the orchards as far back as 1887, sixteen years before, when it appeared for one season only and then vanished after leaving unmistakable traces of its capacity to harm. The reason for its early disappearance after its first visit could not be explained but is believed to have been due to the attack of a natural enemy which the entomologists hope to rediscover.

Scientists have named the new caterpillar the "Hinerocampa-vestuta," though the local name is the "Tussock" moth. Popularly it is called the "California caterpillar." It is said to be not of record in current scientific publications. The new and formidable apple pest is said by entomologists to be a native of California.

The "tussock" moth as studied at the laboratory at Watsonville, by Professor Volk, of the University of California, is described as appearing in limited numbers in the Pajaro District in 1903, when it first attracted attention. A year later its numbers were prodigiously increased and the strongest arsenical sprays were powerless to arrest its ravages. The tussock moth deposits its egg, in May or June, in masses a quarter of an inch in diameter, each containing 200 to 250 each, surrounded by the usual web. These balls are deposited all over the tree on twig and branch and the eggs are hatched in the succeeding February or March. The only effective method found for reducing the numbers of the pest is to hand-pick the egg balls off the tree, and so vast are the numbers that from the trees of one orchard covering sixty acres, one hundred boxes, each holding a bushel were taken. This almost incredible story is vouched for by Pro-



Tussock Larvæ Collecting Under a Tangle-foot Band. A Useless Device



Muslin Bag Breeding-Cage



Laboratory-Cage for Studying Life History and Habits of the Tussock Caterpillar



Tussock Larvæ at Work



Arsenical Spray on Leaves and Fruit

fessor Volck. The tussock moth develops into the caterpillar state in sixty days and remains in the pupa state twenty days. The adult begins laying its eggs as soon as it emerges and lives for a couple of days. Its life as a moth lasts about twelve days.

The extent of the ravages of the tussock moth can be understood when by actual test it has been found that trees from which the egg balls have not been gathered lost 67.5 per cent. of the crop while those which were carefully treated lost but 23.5 per cent. Where care was used, as a test, the loss was only 16 per cent.

Another method was resorted to, extremely laborious but effective, by digging trenches at the base of the trees and

building around the trunk a steep incline which the caterpillar can not surmount. After this was done the trees are violently shaken when thousands of the insects fall to the ground and then, instinctively start to reascend the trunk but are arrested in the trench where they are destroyed in untold thousands by pounding with wooden stamps.

The ravages of the new pest includes the defoliation of the trees as well as the destruction of the fruit and begins just as quickly as the caterpillar emerges from the egg. The fruit is first attacked and consists in "biting" into the skin and eating a portion both of the covering and the substance of the apple as long as it lives. Sometimes the whole apple is devoured. The fruit is attacked until the skin gets tough



The Ravages of the Tussock Caterpillar



The Pupa Stage



Tent Caterpillar Traveling Up the Trunk of a Tree



Earth-Cone Trap Showing Tussock Larvæ

enough to resist, say when about half-grown, when the pest leaves it and begins on the leaves and continuing until the tree is completely defoliated.

Since the tussock moth successfully resists all solutions composed of arsenic, the entomologists have abandoned this method of attack and are cultivating certain flies and wasps

which are believed to be its natural enemy and by the aid of these parasites hope to complete the extermination of the tussock, not discontinuing the methods heretofore employed to reduce its numbers.

Full grown the female tussock moth measures one and a quarter inches in length.

Plant Sensation



ONE of the most recent discoveries gives such a deep insight into the strangeness and (according to our other ideas) foreignness with which the life of plants expresses itself, that it must be of greatest interest to the widest circles. This is the form-perfection (morphæsthesia) of plants. This strange name the Berlin botanist, Professor Roll, inflicted recently upon the fact discovered by him, that the position of their organs exerts a stimulus upon plants. In experiments with sprouts and young specimens of the most varied food-plants, he noticed that on their vertical or bow-shaped principal root the little side roots are always so arranged that they stand only on the convex side of the curvature. This strange behavior can be no accident, for it is found throughout their distribution among all examined plants—ferns as well as trees and shrubs. The layman would probably find in this behavior only an interesting fact; the botanist was forced to say to himself that a phenomenon of such universal scope could only be the expression of a special obedience to law. Roll investigated it also in experimental ways, and forced roots into certain artificial curvatures, with such success that the new-forming little side roots formed themselves again only on the outward-curved side of the principal root.

It thus appeared that the organs of plants are bound to a quite fixed mutual position; and this, all at once, sheds light upon many relations hitherto enigmatical. It had long been noticed that all plants have an appearance highly characteristic of them and exactly determined—i. e., brought about by the fact that, in all variability of size, of leaf-forms of exuberance in the development yet the mutual place of the

branches, leaves and blossoms is fixed with perfect regularity—somewhat as different buildings are obliged to correspond with each other, when they are built in the same style. This was called the habit of plants. It is unconsciously familiar to every one schooled in nature, for this habit it is by which from a distance the woodsman can distinguish, e. g., the fir tree from the pine tree so like it. By the most varied considerations (the discussion of which here would lead too far), attention now came to be given to the question of the single factor by which this habit is governed; and it was found that it is caused, first and foremost, by the arrangement of the side limbs, branches, twigs, leaves, which for every plant produce a mathematically constant type. Within this type, then, the individual variation creates the differences between the single-plant individuals, which otherwise would have to resemble each other as one egg another. This individual variation, however, depends upon the nourishment conditions and the fitness of the individual for its special life conditions. That was a very significant discovery, which first makes the special life of plants comprehensible to us. They possess the capacity in the most wonderful fashion always to make the most of the given circumstances and adapt themselves to them so as to reach the normal life conditions. The best witness thereto is their habitat.

As this capacity was investigated, the most incredible proofs were reached with what exquisite adaptation to plan the forces of Nature act. For example, the leaves of plants stand in a fixed order, so that all may share the sunlight. This is the case even with the thicket-foliaged treetop. This explains why in the growth of twigs and branches there is here no hindrance by foliage and branches.

Old-Time Porches of Salem

By Mary H. Northend



A PROMINENT architectural feature of the house is the porch. This is distinctive of its time of building. We may follow the evolution of the portal from the time when every moulding was necessarily made by hand until the present day, when machinery has supplanted handiwork.

The colonial porches found in seaport towns in Essex County, more especially in Salem, have attracted the attention of architects from all over the country. They range from the doorway which reached its height of perfection about the middle of the eighteenth century, to the more pretentious porches which adorn the brick houses that were erected during the time of mercantile prosperity, when Elias Haskett Derby, one of Salem's most noted merchant princes, was sending his great ships to India and China.

Of these porches, the most elaborate and beautiful were designed by one Samuel McIntire, a noted wood-carver and designer to whose artistic taste Salem owes its finest work. He was a man of wonderful ability, and his carvings have almost world-wide fame. They are shown not only in the capitals of the columns, but across the tops of the doors themselves, and oftentimes decorated the framework of the windows. His patterns were always graceful; they represented fruit, flowers and emblems.

One of his finest specimens is shown on the old Assembly house in Federal Street, now the home of Mrs. John Bertram. It represents a grape-vine. Under this carved porch

passed the youthful figure of General Lafayette, in the latter part of the eighteenth century, for during his stay in Salem he attended an assembly here. Five days later, a man of striking stature, garbed in richest attire, entered the doorway. This was our first President, George Washington, who, a few months after his inauguration, passed a night in Salem. He led the dance with one of Salem's fairest daughters, whose father, General Stephen Abbot, had served under him.

Classic in design, unsurpassed in symmetry of form and rare beauty of carved capitals, is the Salem Club porch on Washington Square. This house, which is of brick, was originally the home of Captain Joseph Peabody, grandfather of Miss Mary Endicott, who married the Right Honorable Joseph Chamberlain, of England. During her life in this historic city she was a daily visitor at the house, being one of the favorite grandchildren, and there is still preserved in the family a fine portrait of her by Captain Peabody's gifted brush.

Two doorways on Chestnut Street, a beautiful tree-arched avenue, have attracted the attention of noted architects. One adorns the first brick house erected on this historic street. It was built by Mr. Robinson and is now the home of Mr. Philip Little. It shows such perfect lines that students from the Massachusetts Institute of Technology frequently come to Salem to make drawings of it.

The Pickman-Little house, built in 1818, is acknowledged by connoisseurs to show one of the best colonial doorways in New England. Its next door neighbor has also reason to be proud of a porch, the central feature of his house, which



The Porch of Mr. David Pingree's House



The Porch of the McMullins House



Porch of Dr. Shreve's House



Porch of Mrs. Kinsted's House

shows symmetrical form and great beauty in its carved Corinthian capitals. These porches are both of McIntire design, the latter being the entrance to Dr. O. B. Shreve's house.

Varying in shape and architectural effects, each portal shows some distinctive feature which distinguishes it from its neighbor. They can be said to represent three periods,

Doorway of the Captain George
M. Whipple HouseDoorway of the Salem Club, Whose House Was Once Owned by
George Peabody, the Great Merchant



The Porch of Mrs. George Lord's House



Doorway of Mrs. Philip Little's House

one following the building of gambrel roof houses, which came to perfection in architecture about the middle of the eighteenth century; from that time to the building of the pretentious brick residences includes the second period, the porches of that time being designed for square colonial houses built of wood. The third type of colonial doorways extends from this date onward and adorns the most pretentious mansions of brick, built by the merchant princes.

It is one of these stately homes on Washington Square that shows an interesting entrance; an expression of early American art, easily taking first rank among the finest specimens of colonial doorways. This house is now the home of Stephen, the nephew of Capt. Joseph White, who was said to have been implicated in the tragic event which ended the old man's life. Daniel Webster was engaged by him to appear in the case, thereby enacting a romance through his son, Fletcher Webster, who met, fell in love with and married Stephen White's daughter.

Hawthorne, whose life was in part passed in Salem, entered through the portals of the doorway at 53 Charter Street, to win his bride, Sophia Peabody. This porch has a heavy box cornice with a dark door that shows paneling. Hawthorne describes this porch in "Dr. Grimshaw's Secret."

Connected with witchcraft times is a porch on Summer Street. A tradition is handed down that in front of this place, in 1692, an old chaise became so bewitched that it literally tumbled to pieces. The witch accused of this evil-doing was one Bridget Bishop, the first victim of those troublous times.

It would be an impossibility to enumerate the hundreds of interesting doorways which are seen on colonial houses in Salem, each one of which is well worthy architectural study. They stand out, clothed in artistic grace and of wonderful symmetrical beauty, mementoes of the time before the great tide of the East India trade had faded away, leaving Derby Street deserted.



Modern Dahlias

By Clarence M. Weed



ONE of the most interesting recent developments in horticultural art is the renewed interest in the cultivation of the dahlia. A few years ago this flower was seldom to be found outside of old-fashioned gardens, where the large, globular flowers of the so-called show dahlias were chiefly in evidence. To most people these artificial-looking blossoms had very little interest and consequently were seldom planted. During the last few years, however, the general introduction of the pompon, the decorative and especially the cactus dahlias has served to increase very greatly the popularity of the flower as well as immensely to extend its range of usefulness.

Five well-marked types of dahlia flowers are now available to any grower. They are the show dahlias, in which the flower is rounded and either of one color or of a pale color marked on the edges of the petals with a darker hue; the

cially desirable for border gardens, where they make a pleasing appearance along fences and walls or the sides of buildings. As cut flowers they do not appeal to the imagination of most cultivated observers, although many of them are extremely beautiful in their coloring.

In a way the distinction between the show dahlias and the fancy dahlias is an arbitrary one. While all the striped varieties are included under the latter name, other bi-colored varieties may belong to either class. If the ground color of the petals is pale and the marginal color darker, it is a show dahlia; if the ground color is darker and the margins lighter it is a fancy dahlia. The marvelous range of coloring is shown in the innumerable varieties of the modern fancy dahlias, which are useful for practically the same purposes as the show dahlias.

For almost a century the pompon dahlias have been grown especially on account of their value in furnishing cut flowers.



Single Cactus Dahlia "Lord Goff"



Cactus Dahlia "Kriemhilde"



A Show Dahlia

fancy dahlia, in which the form is like that of the show dahlia, but in which there are two colors present, either in the form of stripes on the petals or in the form of marginal colorings in which the edges of the petals are lighter than the ground color; the pompon dahlia, in which the flowers are much smaller than those of the show dahlia, although they are of the same general form; the cactus dahlia, in which the flowers are strikingly different, having more the appearance of some of the modern varieties of chrysanthemums; the decorative dahlia, which is sometimes spoken of as the cactus hybrid type, in which for the most part the petals are flattened and recurved; the single dahlia, which is apparently a modification of the original wild type; and the single cactus dahlia, which is one of the most attractive flowers of all.

The show dahlias are too well known to need special mention in this connection. An enormous number of varieties in an extraordinary range of colors have been introduced, while the keeping qualities of the flowers have been greatly improved through careful selection. These dahlias are espe-

On this account they are often called bouquet dahlias, while by the Germans, where these flowers have been very popular, they have been commonly called Lilliputian dahlias. They originated about 1808 with a German gardener who is said to have first obtained the flower as a sport from the single-flowered dahlia. They were largely cultivated in Germany, and when introduced into England were known for many years as German dahlias. A large number of varieties are now offered, the flowers having a great range of colors and the plants being very variable in habit. Blossoms are produced in great profusion and through a long period. This type is very valuable for border gardens as well as for furnishing an abundance of cut flowers, which are attractive for indoor use.

The type of dahlia that is likely to be most important in leading to a widely extended use of the plant is the cactus-flowered form. With the introduction of this wonderful blossom an array of possibilities almost as great as has been seen in the development of the chrysanthemum was at once



Decorated Dahlia "May"



Single Dahlia "Fedora"



Pompon Dahlia "Little Bessy"

opened up. The precise origin of this type is somewhat mysterious. In 1872 a gardener in Holland received from Mexico a box of dahlias, most of which had been ruined through long delay in transit. One of them, however, developed into a cactus dahlia, the first one known to European gardeners. From this single plant numerous modern varieties have been developed, the form being introduced into England about 1880. By careful selection in the hands of many growers the blossoms have been constantly improved, and very soon we may expect a flower which is extremely desirable for many purposes. At present most of the cactus dahlias do not last long as cut flowers; but this quality is being improved, and the flowers are so beautiful for interior decoration as well as for garden adornment that one can afford to renew a supply in the flower-jars at frequent intervals. This dahlia is extremely desirable for growing in borders along fences as well as for the spaces between low shrubbery. There are many beautiful varieties varying greatly in color. One of the best of recent introductions is Kriemhilde, of a beautiful pink color lighter in the center. Another beautiful sort is Countess of Lonsdale, which is a most profuse bloomer and of a glorious pinkish-red color.

The decorative dahlias have not the bizarre beauty of form shown by the cactus sorts, but they are, nevertheless, attractive in a quiet way, and are useful for cutting as well as for growing in a border garden. Although it has frequently been predicted that they would go out of cultivation in competition with the cactus forms, many new and beautiful varieties are introduced every year and the catalogues continue to give long lists of sorts, an indication that they are holding their own in popular favor.

The single dahlias are among the most striking blossoms

produced in modern gardens. The flowers are of immense size, with the broad petals of the ray-florets furnishing a ground for the most lavish display of color. The flowers are so large that they attract attention from a considerable distance, and consequently may be utilized along walls and fences which are too far away from the garden-paths to be adorned by plants with smaller flowers. The variety called "twentieth century" is one of the most striking of recent introductions. The plant is tall, reaching a height of five feet, while the flowers commonly reach a diameter of six or seven inches, presenting an interesting combination of rose color and white.

For decorative grace that renders them of extraordinary value for use as cut flowers none of the dahlias can compare with the single cactus forms. There is an element of beauty about these that reminds one of the orchids, and their long petals display some of the most delicate colors imaginable. Any one who aspires to a representative collection of dahlias should certainly plant some of this type, of which "Lord Goff" is one of the best varieties.

As is always the case with a flower which is leaping into popularity, some types are introduced which have merely the value of oddity, but in which the real beauty of the flower has been sacrificed. In the case of the dahlia this is illustrated in the French collarette dahlias which have lately been largely advertised as a desirable novelty. No one with a discriminating sense of the beauty of flowers would care to plant these monstrosities a second season. We may expect a very different result from the splendid new dahlias which are being introduced from the wonderful gardens of Luther Burbank, and every one will desire to grow a few specimens of these new varieties, which Mr. Burbank says are so valuable. In a year or two we may find them blooming in every garden.



Plant Specialists

By George Ethelbert Walsh



THE owner of a few acres of suburban or country land achieves more as a plant specialist than as a cultivator of general crops—gains more financially, at least, and profits more in practical experience as a rule. Assuming that the tendency is toward specialism in modern industrial life, it may be taken for granted that similar experience is met with in plant-culture. The adaptation of particular crops to particular soils and climates has built up thriving communities of farmers and market-gardeners who are in the strictest sense agricultural specialists. It is only necessary to mention the popularity of Kalamazoo celery, the Rocky Ford muskmelons, Connecticut white onions, and Oyster Bay asparagus to demonstrate the financial value of this method of adaptation.

One of the most interesting and successful methods of specializing in plant culture is a branch of the nursery business which supplies the market with seedling vegetables in the early spring. Very few amateurs and professional growers have the time and facilities for starting their seeds in boxes and cold frames for field culture. Yet if they do not do this, they must either purchase them by the dozen or hundred in the market or expect to find their field crops so late that no reasonable prices can be obtained for them. Millions of plants are purchased in the early spring for field and garden transplanting, and the gardeners who raise them are the plant specialists.

There is always a demand in the spring for seedling lettuce, tomato, cauliflower, cabbage, pepper, and other garden plants. These are purchased all the way from ten cents a dozen or fifty cents a hundred up to twenty-five cents a dozen and five dollars a hundred. The prices depend upon the season, the variety of plants, and the general condition of the young seedlings. In order to secure orders and good prices, the grower must be a specialist, and therefore he cannot raise more than a few different kinds of plants successfully. His lettuce must be famous as the best in the region; his tomatoes popular because of earliness and sturdiness of growth; his cabbages remarkable for their size and quality. It is usually better to make a reputation for raising one vegetable superior to all others than to be known as one who grows "fairly good" seedling plants.

To illustrate, a woman gardener chose cabbages as her special crop because the soil appeared eminently adapted to their perfect growth. She took an old conservatory facing south for her greenhouse, and with a good coal-stove she kept the place warm enough in February and March to raise her seeds. Her first sowing was made early in February, and every ten days new boxes were started until the middle of April. This supplied the demand for early cabbages, and late in May she started seed for late crops. She selected the best Danish cabbage seeds, and her plants brought nearly double the quotations for ordinary domestic cabbage plants. In the markets choice Danish seed cabbages would often sell at \$25 per ton wholesale when domestic white and red cabbages are quoted at \$10 to \$15 per ton. It required only a little comparison of prices to convince customers that it paid them better to purchase her guaranteed Danish seed cabbages instead of the common domestic stock.

After having established her reputation for choice Danish seed cabbages, this enterprising woman took up onions.

There was money to be made in raising onion "sets." She found that most of the onions raised either for garden or field culture were of the ordinary kind, the same that had been raised in the locality for years. She sent for special seed to the different onion-growing centers. She tried some of the seeds herself before attempting to sell sets for transplanting. The average yield of onions in her locality had been from 200 to 300 bushels per acre. In her little experimental garden she raised choice onions at the rate of 500 bushels per acre. That was not enough. She tried the Prizetaker, one of the best field onions, and brought her crop up to 800 bushels an acre. Then she raised plants for the market, using as her argument the yield of her little experimental garden. Studying the agricultural returns of the different State Colleges, she found that crops of 1,200 to 1,300 bushels of onions had been raised on an acre. She purchased seed of the Gibraltar onions, and made her supreme effort. Her little garden yielded at the rate of a thousand bushels per acre. That was a revelation to the gardeners of her locality, and many came to visit her model garden.

There was no difficulty in selling all the onion sets for transplanting she could raise the next spring. Her price for the sets was doubled, but she sold all she could raise. She exerted herself to secure the choicest seed, and in raising the plants to perfection, for she had a reputation to sustain. Of the hundreds of sets sold none of them showed a yield of a thousand bushels per acre, but the average yield was between 600 and 700 to the acre. Certainly no one grumbled at that, for the yield was nearly double what had been raised on the farms in the past.

The plant specialist must, as may be surmised from the above, always be a little in the lead—must, in fact, never let customers quite catch up. When certain plants have been introduced and raised to perfection, it is time to be studying the value and possibilities of something newer. When customers discover "the trick," as it were, they will no longer patronize the plant specialist. Fortunately for the latter conditions of market demand, cultural methods, and popularity of certain varieties, are always changing and shifting, and there is something new every year. But quality and merit must go with newness. Freaks and novelties without genuine merit are to be avoided. They kill the business of a plant specialist. Try experimentally every new variety before offering the plants to customers. If you can not make them a success it is pretty certain that others can not in general field culture.

Most crops of this nature are started indoors in boxes or flats in February and March, transplanted in their boxes to cold frames later, and finally, if not sold beforehand, shifted to the open frames in the garden. Tomatoes, peppers and egg-plants are usually sold in dozen boxes or loose by the hundred. Two crops—an early and late one—should be raised, and the interim is devoted to experimental tests with new seeds in the outdoor garden where every condition for perfect development is supplied. From this experimental garden comes most of the practical information which makes for success. Such a garden should be at least half an acre or more in extent, and in one season upward of twenty different varieties of new seeds can be tested. A space five by five feet is sufficient for a test bed for one kind of plant. The soil may require replacing.

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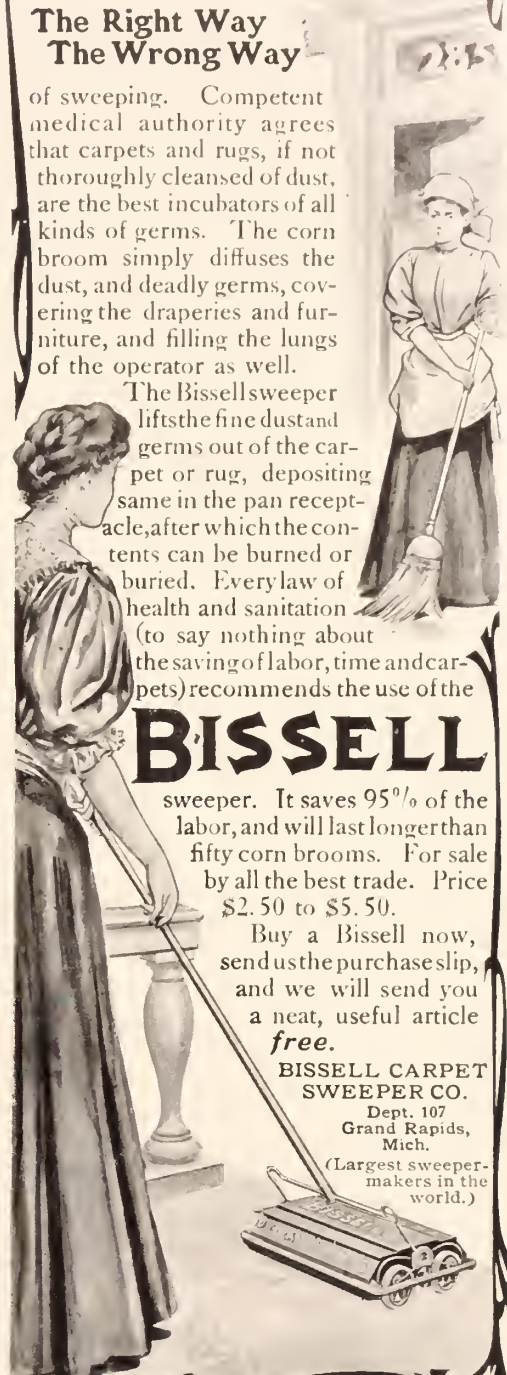
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SEPTEMBER WORK IN THE GARDEN

By Eben E. Rexford

CHRYSANTHEMUMS which have been growing in the garden-beds during summer ought to be lifted and potted between the first and the fifteenth of the month, as along about the twentieth we are pretty sure to have frosty weather. Not severe enough, as a general thing, to do serious damage to most varieties of the chrysanthemum, but it is well to guard against the possibilities of it, keeping in mind the fact that any injury to this plant, at this season, must interfere with the perfect development of the crop of flowers which must be enjoyed a little later in the season, or not at all. Whatever injury happens now can not be made good, as in the case of most plants whose flowering season extends over a longer period of time. Therefore, great care should be taken to give this plant such treatment as will be most conducive to its highest development.

Before lifting and potting it, water it well, that the soil may cling to its roots and expose them as little as possible. Have your pots well soaked if they are new ones.

In lifting a plant, cut all around it with a sharp spade, making the space inside the cut a little smaller than the pot the plant is to go into. Then insert the spade the full depth of its blade at one side of the plant and bear down on its handle steadily. The ball of earth containing the plant's roots will be lifted to the surface without breaking apart, if sufficiently moist, and by placing your knee on the spade-handle, you will have both hands at liberty to lift the plant away, and drop it into its pot. Fill in about it with soil, and press it down firmly with a blunt stick. Then water well, and set the plant away in a shady place where it should be left until it ceases to wilt. It is a good plan to shower newly potted plants every evening. Great care must be taken in handling the chrysanthemum, as its stalks are exceedingly brittle, and lack of carefulness may undo, in a moment, the work of the entire season.

When the plants have become established in their pots—you can tell about this by their resumption of growth—begin the application of fertilizers to assist in the development of the buds which have begun to form. Use whatever kind of fertilizer you decide on at least twice a week, taking care to not have it very strong.

Be on the lookout for aphid and black beetle. These insects are likely to come at any time. They must be met with prompt and aggressive action. Use the infusion of ivory soap of which I have heretofore made frequent mention. See that it reaches every part of the plants, and continue its use as long as an insect is to be seen. Endeavor to have your plants perfectly clean when they are taken into the house. This should be when it is no longer safe to trust them out of doors, under shelter. The longer they can be left outside with safety, the better it will be for them.

Provide each plant with a good support of some kind, and see that it is tied securely to it. This is an item of great importance, as an unsupported plant is always in danger of having its stalk snapped off by an abrupt movement or a sudden wind.

Dahlias almost always give us their finest flowers in the cool weather of early fall. But we must take pains to tide them over the danger of the first frosts, by covering them at night, if we would enjoy them late in the season. These plants are extremely susceptible



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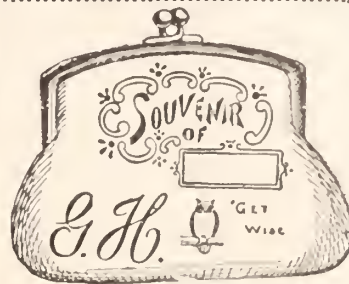
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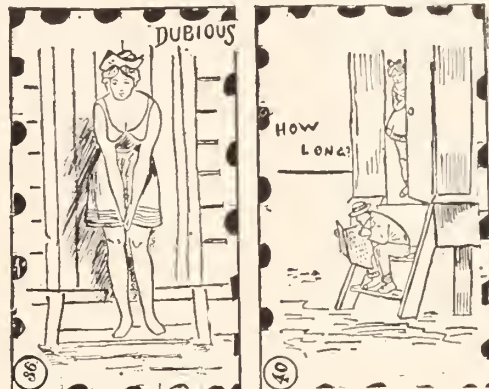
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to injury from frosts so slight that most other plants do not seem to mind them in the least. Even if they are not killed, their foliage will be blackened and made unsightly, and their buds will be blasted. All danger may be averted by covering them with sheets or by pinning papers about them. It is but little trouble to do this. Nearly every season we have a long interval of pleasant weather after the early frosts, and it is during this period that the dahlia makes its most magnificent display. Therefore be sure to protect your plants when the weather indicates a nipping frost.

It is not too late in the season to sow perennials and biennials. They have about two months ahead of them in which to make growth, and the time gained now will advance them just so much next season.

Seedlings of hollyhock, delphinium, and other plants of similar character, ought to be transplanted now to the places where they are to bloom. If care is taken to not disturb their roots when you lift them they will receive no check.

Unless you were sure about the colors of your perennial phlox before you set out your plants it is quite likely you have discovered some discordant notes in their arrangement. Lilac and mauve sorts have found places alongside scarlet and carmine varieties, and the result has been extremely unpleasant to the eye, if you are a lover of harmonious color-effects. Mark all objectionable plants for removal next month. Be sure to use only white varieties with the mauves and lilacs of this most excellent plant. Where this is done, these colors will give most delightful effects. But allow them to grow among the more brilliant kinds and everything will be spoiled by them. Right here I want to say that, fine as the dark colors of this phlox are, when grown in masses, you get only a hint of the superb effects they are capable of giving when white is used generously among them. This relieves their brilliance in such a way as to heighten it, and takes away the monotony which almost always results from the liberal use of dark colors alone. Plant a white kind to serve as a foil for the beauty of each plant of crimson, scarlet, carmine, or rose, and you will be charmed with the result.

If you give your hybrid perpetual roses a good, sharp cutting-back now, and manure the soil about them well, you may reasonably expect a few fine flowers from each plant later on, and what is more delightful than a perfect rose, gathered from the garden just on the edge of winter? Say what we may about other flowers, the rose holds its own at the head of the list, and always will.

This is the month for bulb-planting. In another article I have given quite complete directions for this phase of garden-work. Be sure to arrange for a bulb-garden if you do not already have one. No class of flowers affords more pleasure than these, coming, as they do, at a time when there is nothing to dispute supremacy with them. And bear in mind the fact that they do not have to be planted every year, like annuals. They require very little care, and the expense of a good-sized collection is small.

Peonies can be divided and reset now, if they have completed their annual growth. Do not attempt to pull their roots apart, in a desire to avoid breaking them. You can not

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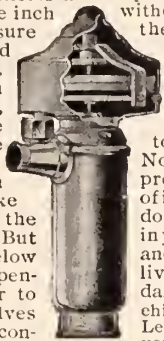
Water boils at 212 degrees, but it would boil and circulate steam through your radiators at a much lower temperature if it were not that air exerts a pressure equal to 15 pounds on every square inch of water surface in your boiler. This pressure must be lifted by steam and the air expelled from the radiators before steam can circulate.

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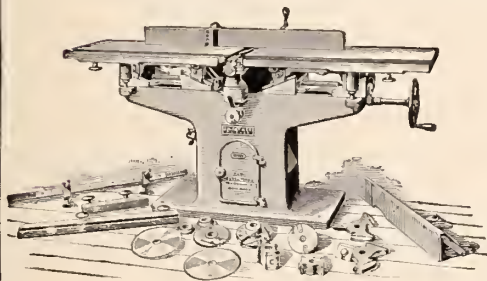
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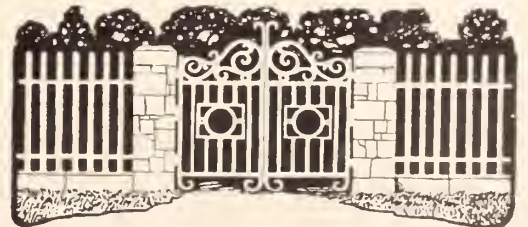
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do this without disturbing the whole clump. It is better in every way to cut the plant apart, with a thin-bladed, sharp spade. Of course, in doing this, you run the risk of cutting in two some tubers, but this will not injure the plant nearly as much as the general disturbance of roots which results from an attempt to divide it without the loss of any portions of it.

Marguerite carnations intended for winter-flowering in the house ought to be potted as soon as you have made sure about the character of their flowers. It is not safe to make use of a plant for this purpose until it has blossomed, because you can never tell what it is going to be in advance. Some of the most promising plants, so far as looks go, turn out to be single and worthless. In potting these carnations, use a somewhat heavy loam. Drain their pots well. Shade them for a week or ten days, showering them daily. Disturb their roots as little as possible in lifting them. It is well to remove all buds they may have on them, as the development of these would overtax the vitality of the plant at this crucial period of its existence. Concentrate all the strength of the plant on the production of new feeding-roots for the first month of its existence as a pot-plant.

Those who have never made use of this class of carnations for winter-flowering will be delighted with it, if they give it a season's trial. True, its flowers are not as large as those of the greenhouse carnation, and not quite as fine in form, but they are equally as fine in color and in fragrance, and there will be a score of them where you will get but one from the greenhouse kinds. What they lack in quality they make up for in quantity. And some of them are really but little inferior in quality to the greenhouse sorts.

Cinerarias, Chinese Primroses, Primula Abconica, the "Baby Primrose," and Calceolarias, intended for winter use, ought to be procured from the florist at once, and got under headway as speedily as possible. Most persons fail with these plants because they wait until late in the season before they get them. They should be given ample time in which to establish themselves before the coming of cold weather. If your plants are strong at the beginning of the winter season you may reasonably expect good results from them; but if they have not recovered from the effect of late planting, the chances are that they will not be very satisfactory.

A correspondent asks me if there is no good winter-flowering fuchsia. To which I reply: yes, the variety sold under the name of Speciosa. It has a single flower, sepals pink, carolla carmine. It blooms in clusters, at the ends of the branches. It is a vigorous grower, of somewhat drooping habit after it begins to send out side-branches, and a most prolific bloomer. It is not as showy as some of the summer-flowering sorts, but it is really a beautiful plant, and deserves a place in any collection. It is one of our best winter-bloomers. I know of no other variety that is worth the room it takes up for winter use.

Tuberous begonias and gloxinias will soon begin to show signs of ripening off. When the production of flowers ceases, and the foliage commences to turn yellow, gradually withhold water. Give less and less, until the plants have lost all their leaves. Then put them away in their pots, in a cool, dark, dry place to remain over winter. It will probably be the last of October or the early part of

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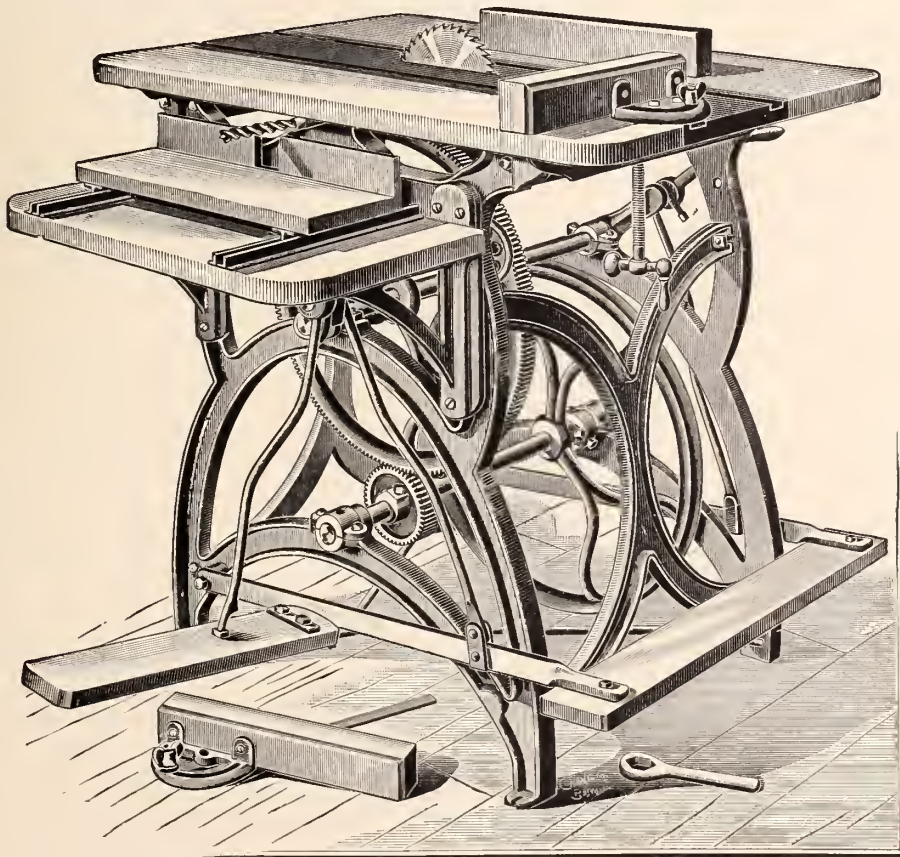


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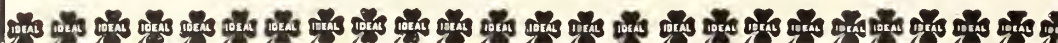
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November before they are ready to go into their winter quarters, but they should be got ready for them in advance, by giving the tubers a chance to ripen their annual growth before they are stored away.

Because the growth of grass on the lawn is not as luxuriant and rapid at this season as in midsummer is no reason why it should be neglected. It should be mowed whenever the grass gets too tall to look well, clear up to the end of the season. The neat and attractive appearance of the home-grounds depends more upon the lawn than anything else about them. It is a good plan to fertilize it well in the fall, thus enabling the roots of the sward to store up nutriment for the coming season. I have found finely ground bone-meal very effective for this purpose. It is prompt in effect, produces a strong growth, and no weeds are ever introduced by its use.

Go over the garden and gather up all plants that have completed their work for the season. If we neglect the beds, now that many of the plants in them are past their prime, a general appearance of untidiness soon dominates everything. Much of the dismal effect of the fall season is due to this lack of attention. But a prompt removal of all unsightly objects will keep the grounds looking well, even if they have lost some of the brilliant show of color which characterized them earlier in the season.

It is too early to do anything in the way of protection of plants against the severity of winter, but it is not too early to begin to get ready for this work. Save the leaves to cover tea roses, pansies, and other small plants. Rake them up, as they fall, and store them under shelter where they will keep dry until the time comes to use them. If plants are to be wrapped with straw, or matting, arrange for it in advance. If we put off work of this kind until the last minute, we are pretty sure to let a good deal go undone, and the quality of that which is done is not likely to be of the best. It pays to look ahead, and have everything at hand against the time of need. And it pays—richly—to do good, conscientious work in preparing our plants for winter. Slovenly work, here as elsewhere, is about on a par with no work at all.

SOME OF OUR NIGHT-BLOOMING FLOWERS

By Ida D. Bennett

A CHARM of mystery and sentiment hovers around those plants that open their flowers as the wings of the night brush their petals with dew and the call of the moth and firefly for sweets is insistent with longing. When the bee, that all day long has flitted from flower to flower on honey laden wings, has folded his wings and crept into the petals of the day-blooming rose and lily, to dream away the night in perfumed sleep, then the great starry-eyed and soft-winged moths hover around the tubes of the night-blooming flowers. The night is full of a soft, tremulous motion of dusky wings and subtle, intoxicating odors, unknown by day.

Curiously enough only deep throated, tube-shaped flowers bloom at night, the flowers beloved by the long tongued moths. The silver winged tobacco moth—Cariolanus—whose flexible tongue frequently measures five inches in length, frequents the deep throated bells of the tobacco plant—Nicotiana affinis, and the night-blooming moonflower; over the evening primrose the Everix Myron waves its wings of olive and brown while

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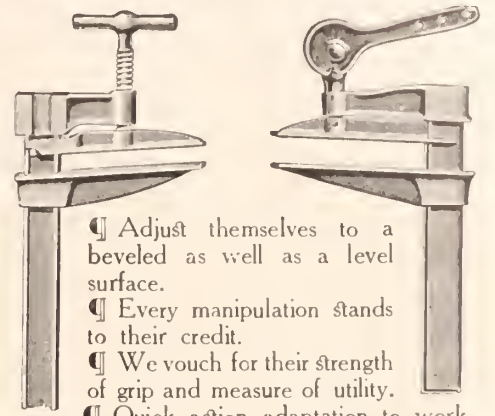
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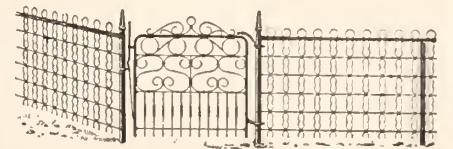
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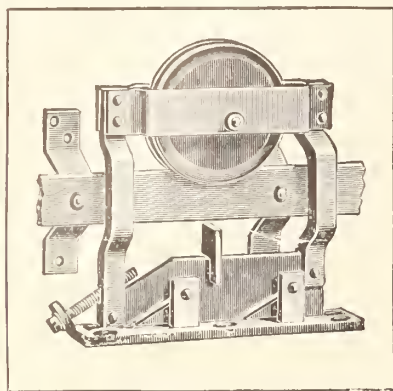
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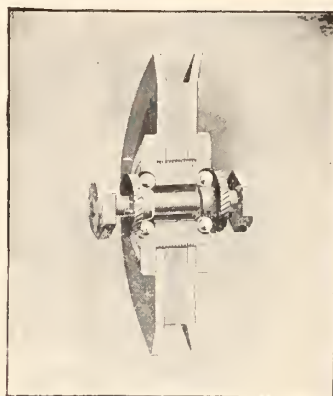
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myriads of lesser moths surround the more shallow tubes of the four o'clocks.

It is to be regretted that so much of old time sentiment has vanished from our gardens, that they have grown to be so much a matter of display and of competitive effort to possess—not the sweetest and best, but the largest and showiest, of flowers. Our gardens should be a place to retire to and dream, to stroll in the dusk of evening and let nature wipe out the wrinkles and the frowns that the cares of the day have written on our brow and heart. Instead, too many of us go into them with a critical eye, and a fretful sense of comparison between what is ours and our neighbors', that, unless the balance is largely in our favor, successfully militates against any real enjoyment of what is best, and tender toleration of those weaklings that are not quite up to exhibition standard, but yet are wholesome and sweet.

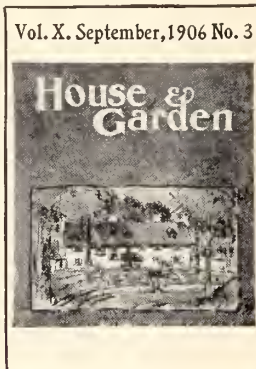
It would be a step in the right direction could we isolate our gardens so that they were no longer a matter of display but of secluded family life, and in no way, perhaps, could one more readily get back to nature, and the simple enjoyment of her gifts than in the construction of a garden of night-blooming plants. These, from the nature of their blooming, their nocturnal habits, preclude the idea of display and invite to pensive loiterings.

The night-blooming garden should not, for the best results, be a conspicuous part of the garden proper, except as where space is limited it may form a part of the hardy border or garden; rather should it be sequestered, to be come upon unexpectedly, happily, in the evening stroll down the winding garden path or through the columns of the pergola, the lattice of the summerhouse. It should allure with its odors, with its fugitive intangible sweetness, to be sought for until its blossoms burst white and shining under the crescent moon upon the sight.

The list of night-blooming flowers is not a long one, but ample for our purpose. That they may be attractive and easily found of moth and insect, nature has chosen to drape them in white that gleams amid the shadows of the dusk like beacon lights to guide the hunter on the way. Few of the night bloomers show more than a faint hint of color, the most noticeable exception being the *Mirabilis* or four o'clocks which show warm colorings of yellow, pink and red, but as these open their flowers to the afternoon light, nature has assured their attractiveness to mankind by clothing them with color as well as fragrance.

Chief among the night bloomers are the various members of the *datura* family; of these the *brugmansias* are notable, their great white, satiny, fluted trumpets, which open about sunset, are exquisite in their purity and fragrance. The double form of the plant is not as successfully grown as a garden plant as the single, its season of blooming being too late in the year. The *datura* proper has a somewhat smaller blossom, lily shaped, lavender on the outside and pure white inside and less fragrant than the *brugmansia*. Both are of the easiest culture; young plants may be procured of the florist in May and planted out where they are to bloom, in good, rich soil, kept clear of weeds and given a reasonable amount of water and nature will attend to the rest. They should be planted near the outside of the beds or garden where their beauty will not be obscured by the encroaching branches of other plants, as the *brugmansias* keep their blossoms somewhat within the shade of their foliage.

The various *nicotianas* are a most interesting class of night bloomers and are also effective on cloudy days when they open their flowers as freely as at night. *N. affinis* is the only true night bloomer and its somewhat



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Fac-simile pages from the magazine 'American Homes and Gardens' for the month of September 1906. The pages are arranged in a grid and contain various articles, illustrations, and advertisements.

- Top Left:** Article titled 'The Rose and Its Culture' by Dan E. Harkness, featuring illustrations of roses.
- Top Middle:** Article titled 'American Homes and Gardens' with a large illustration of a house interior.
- Top Right:** Article titled 'How to Make and Apply Stencils' by Howard Tate.
- Middle Left:** Article titled 'The Garden Altar' by David Nickels, featuring an illustration of a garden altar.
- Middle Middle:** Article titled 'The House' by Charles H. H. H., featuring an illustration of a house.
- Middle Right:** Article titled 'The Garden' by David Nickels, featuring an illustration of a garden.
- Bottom Left:** Article titled 'The House' by Charles H. H. H., featuring an illustration of a house.
- Bottom Middle:** Article titled 'The Garden' by David Nickels, featuring an illustration of a garden.
- Bottom Right:** Article titled 'The House' by Charles H. H. H., featuring an illustration of a house.

Fac-simile Pages of American Homes and Gardens

- SOME OF THE ARTICLES WHICH WILL APPEAR DURING THE YEAR 1906 ARE THE FOLLOWING
- Inexpensive Country Homes (with plans)
 - Interior Decoration
 - How Curtains May Be Made at Home
 - How to Make Pottery at Home
 - How Furniture May Be Covered at Home
 - How the Amateur May Decorate the Room with Home-made Stencils
 - How to Preserve Wild Flowers
 - How a Water Garden May Be Laid Out and Built
 - How the House of a Bygone Day May Be Remodeled and Converted into a Modern Home
 - How To Do Copper and Brass Repousse Work
 - How to Rehabilitate Worthless, Run-down Farms with \$1000 or Less
 - The Use of Statuary for Garden Decoration
 - The Kitchen and How it Should Be Planned
 - Historical Places in America
 - The Entrance to a Country Place
 - The House of the Colonial Period
 - Sun Dials
 - Modern Dahlias
 - Gateways to Estates
 - Nature Study and Its Effect on the Home
 - Old Time Wall Paper
 - Something Concerning Driveways
 - My Garden Without Flowers
 - A Seventeenth Century Homestead
 - Wild Animals in Captivity
 - How a Pennsylvania Farmhouse was Transformed Into a Beautiful Dwelling
 - Electricity in the Home for Cooking, Ironing, Heating, etc.
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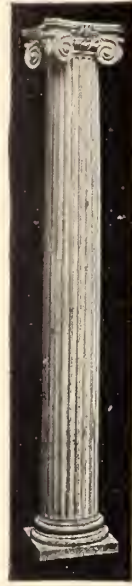
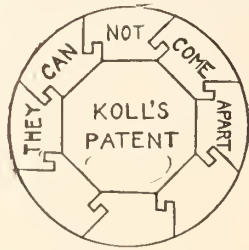
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SCIENTIFIC AMERICAN SUPPLEMENTS 1567, 1568, 1569, 1570, and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

SCIENTIFIC AMERICAN SUPPLEMENT 997 contains an article by Spencer Newberry in which practical notes on the proper preparation of concrete are given.

SCIENTIFIC AMERICAN SUPPLEMENTS 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

SCIENTIFIC AMERICAN SUPPLEMENT 1534 gives a critical review of the engineering value of reinforced concrete.

SCIENTIFIC AMERICAN SUPPLEMENTS 1547 and 1548 give a resumé in which the various systems of reinforced concrete construction are discussed and illustrated.

SCIENTIFIC AMERICAN SUPPLEMENTS 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analyzed.

SCIENTIFIC AMERICAN SUPPLEMENT 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

SCIENTIFIC AMERICAN SUPPLEMENT 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

SCIENTIFIC AMERICAN SUPPLEMENT 1574 discusses steel for reinforced concrete.

SCIENTIFIC AMERICAN SUPPLEMENTS 1575, 1576, and 1577 contain a paper by Philip L. Wornley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of enforced concrete posts, etc.

SCIENTIFIC AMERICAN SUPPLEMENT 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1396 discusses the testing of cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1325 contains an article by Professor William K. Hatt giving an historical sketch of slag cement.

SCIENTIFIC AMERICAN SUPPLEMENTS 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

SCIENTIFIC AMERICAN SUPPLEMENTS 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

SCIENTIFIC AMERICAN SUPPLEMENT 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENTS 1465 and 1466 publishes an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

SCIENTIFIC AMERICAN SUPPLEMENT 1491 gives some fallacies of tests ordinarily applied to Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

SCIENTIFIC AMERICAN SUPPLEMENT 1533 contains a resumé of the cement industry and gives some valuable formulae.

SCIENTIFIC AMERICAN SUPPLEMENT 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

SCIENTIFIC AMERICAN SUPPLEMENTS 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the United States.

SCIENTIFIC AMERICAN SUPPLEMENT 1586 contains a review of concrete mixing machinery by William L. Larkin.

SCIENTIFIC AMERICAN SUPPLEMENT 1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.

SCIENTIFIC AMERICAN SUPPLEMENT 1581 splendidly discusses concrete aggregates. A helpful paper.

SCIENTIFIC AMERICAN SUPPLEMENT 1595 presents a thorough discussion of sand for mortar and concrete, by Sanford E. Thomson.

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straggly growth fits it admirably for massing with other flowers, as it will thrust its heads of lovely white, tube-shaped, fragrant flowers between the branches of other plants and is not, therefore, easily obscured. *N. Sylvestris* is not a night bloomer, strictly speaking, as its flowers are also open in the day, but it makes, from the robust freedom of its growth, often exceeding six feet in height, an admirable center for beds of lower growing varieties, and may be massed with *N. affinis* and *brugmansias*, with excellent effect. The dwarf growing four o'clocks may be used for a border for beds of the taller plants and in the mathiola, or evening scented stock, a sweet and penetrating fragrance is assured.

Who of us have not, in childhood's days, watched in vain for the opening of the cups of the evening primrose—those pale yellow, tantalizing things, and who of us were ever able to boast that we had really seen it done? What was the magic that always tempted our eyes to roam at just the critical moment? Only the moths and the firefly know the secret of their opening.

The night garden may be divided from the garden proper by an arch over which the moonflower climbs and blossoms, or a summerhouse draped with its heart-shaped leaves and snowy blossoms may give upon the garden that woos the moth and the night. It may be used to clamber over the pillars of the pergola where the path to the garden strays, or mask a wall that screens the garden by day from the too prying eye of man and leaves it in sweet seclusion to the bee and bird.

The moonflower, as indeed all the night-blooming flowers, may be easily raised from seed; but as the seeds of this especial plant are hard and slow to germinate, they should be forwarded by soaking in hot water over night, first removing a portion of the outer husk, till the white shows through, and then planted in small pots of earth in the house or hotbed. This should be, if plants for this year's blooming are wanted, not later than the middle of February. As soon as the plants are up and growing and the small pots filled with earth, they should be shifted into larger pots of somewhat richer earth and encouraged to make as rapid growth as possible.

In shifting the plants from the smaller to the larger pots, care must be taken not to disturb the roots or break the ball of earth. The best manner of transplanting is to take a pot of a larger size and place a little drainage material in the bottom and a small amount of earth—about what will be needed to fill in the space between the ball of earth in the smaller pot and this. Work this earth well up around the sides of the pot and press the smaller pot into it to shape it. Slip the ball of earth out of the pot by tapping the pot on the edge of the bench to loosen it when it may be turned out on the hand and slipped into place in the new pot without the least disturbance. Moonflowers should not be planted out in the open ground until all danger of frost is passed and the nights and ground are warm.

The tropical waterlilies afford some delightful examples of night bloom and if to the charm of the garden may also be added that of water and moonlight on the shimmering lily pads the night-blooming garden will be a joy indeed.

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HISTORIC STYLES IN FURNITURE. By Virginia Robie. Chicago: Herbert S. Stone, 1905. Pp. 196.

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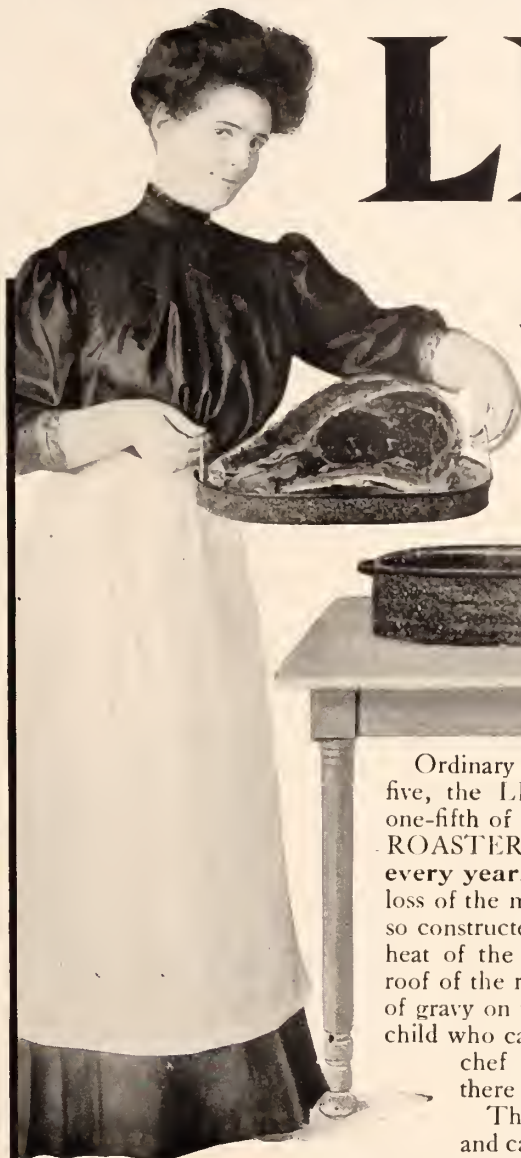
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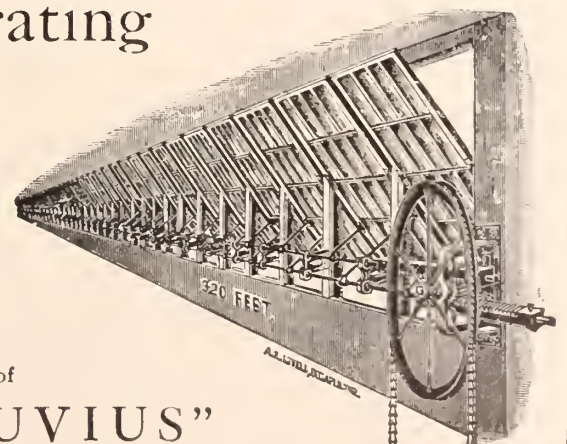
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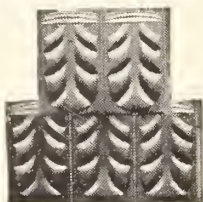
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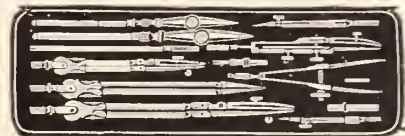
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separate chapters on the furniture of the various centuries to the Renaissance, dealing separately with the furniture of the different Louises, treating of Spanish and German furniture, as well as that of the Low Countries, and concluding with chapters on the English furniture of the eighteenth century, the furniture of the French Empire, and ending with a chapter on Colonial furniture. The book is, therefore, while brief, fairly complete in its contents, and gives such elementary information as most owners of furniture will care to have and perhaps will need most to know. The numerous illustrations are chiefly from photographs. The author, however, seldom gives the original or present location of the pieces illustrated, which is an omission of quite some seriousness. Some of the illustrations of modern houses seem somewhat out of place in an historical handbook such as this aims to be, although they do show modern uses of historic furniture. This, however, is an aspect of the subject quite apart from the more useful purpose of describing the chief characteristics of the leading historic styles of furniture, which is the subject with which the book is primarily concerned.

THE COMPLETE HOSTESS. By Clara E. Laughlin. New York: D. Appleton & Co., 1906. Pp. 14 + 321. Price, \$125; postage, 12c. additional.

There need no longer be occasion for worry as to how to entertain one's guests, for the present book aims to tell the reader what to do in an almost infinite variety of ways and on an almost infinite variety of occasions. Would you know how to conduct a ball, consult page 42; two pages further on you will find some useful hints as to how the guests should behave at such functions. If you have in mind a "Cupid Party," you will find full directions on page 111. If a "Cobweb Social" is suggested as a suitable form of church entertainment, you will learn all about it on page 210. "Doll Millinery Shows," "Living Spelling Bees," "Baby Shows," "Pillow Climbing," "Duck on a Rock," and other titles of like interest add to the appetizing nature of the books and appeal to the very widest circle of readers.

The briefest dip into its numerous pages shows it to be a volume of the most fascinating variety of contents. But it has a perfectly legitimate purpose which it fills very admirably. It is not intended to supply an encyclopedia of etiquette and entertainment, but to gather together a reasonable number and variety of well-tryed formulæ so that a woman who wants to give a birthday party for her five-year-old son, or a lawn tea for her visiting sister-in-law, or who must think up some idea for the church bazaar or "Fete of All Nations," shall be able to find in these pages suggestions which her own clever wit will amplify and adapt and make personal and charming. So at least says the editor in her introduction, and she has carefully estimated the purpose of her book. Various writers have contributed to it, and the book, on the whole, contains much helpful information, suggestion and advice on matters serious and frivolous. It is easy to see that it will soon become the favorite source-book in all well-managed country homes.

SUBURBAN HOUSES. By J. Herbert Pearson. New York: Spon & Chamberlain, 1905. Pp. 12, with 46 plates. Price, \$3.00.

Books on houses of moderate cost, especially those intended for suburban use, appear somewhat more popular in England than in America. That the present book is of English origin, and is, therefore, intended chiefly to meet English conditions, makes it necessarily somewhat insular in scope, but does not detract from its value as a contribution to that

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most difficult of building problems: the erection of a good-looking, well-built suburban house at moderate cost. Mr. Pearson gives no information on the latter point, which is perhaps as well for American readers, since English prices would be of no value in this country. His plans are arranged to meet the conditions of narrow frontage, and his elevations are intended to obtain architectural effects at a minimum cost. These are commendable efforts, and he has set about solving his problems in a direct and straightforward way. The illustrations consist of plans, sections, front and side elevations all drawn to a uniform scale. A singular feature of several of the plans is the placing of the drawing-room at the back of the house, quite adjacent to the kitchen, while the dining-room is on the front and further removed from it. Considerable space in all the designs is given to the kitchen and its dependencies.

PICTORIAL PRACTICAL VEGETABLE GROWING.

By Walter P. Wright. New York: Cassell & Company, Ltd., 1906. 16mo., pp. 152. Price, 75 cents.

As in the other works of this series by the same author, practical illustration is the predominant feature of the book. It is a practical manual for the laying out of the kitchen garden and describes the value and use of manures, advises as to the destruction of pests, and deals practically with the chief tools and appliances. In short, it treats of the culture and the best varieties of nearly every important vegetable.

PICTORIAL PRACTICAL CARNATION GROWING.

By Walter P. Wright. New York: Cassell & Company, Ltd., 1906. 16mo., pp. 152. Price, 75 cents.

As the author says, this book is not intended for ornament, but for use, and the user will doubtless find it an excellent guide in dealing with the culture and propagation of the many varieties of carnations. It practically illustrates all the important cultural items in every class of carnations and picotees worth growing, and the amateur will find it of assistance in avoiding many difficulties and troubles usually encountered in gardening experience of this kind.

PICTORIAL PRACTICAL CHRYSANTHEMUM

CULTURE. By Walter P. Wright. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 128. Price, 75 cents.

The great advance in the culture of the chrysanthemum as an exhibition flower which set in some twenty years ago has led indirectly to the increased use of chrysanthemums for garden decoration. Few books, however, on this flower have given what may be termed the natural system of culture the attention which it deserves. The author of this book, while dealing with every important point in the culture of chrysanthemums for show, also points the way to methods of beautifying flower gardens and amateur greenhouses with this magnificent autumn flower.

PICTORIAL PRACTICAL TREE AND SHRUB

CULTURE. By Walter P. Wright and William Dallimore. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 152. Price, 75 cents.

The authors have in this book presented a practical manual, giving in words and illustrations full directions for the propagating, planting and pruning of trees and shrubs, as well as rules for the selection of trees and shrubs for various purposes, horticultural and otherwise. The arrangement is clear and concise, and the illustrations excellently supplement the text. The chapter on Planting and that on General Cultivation will be found very

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useful by amateur as well as professional gardeners.

PICTORIAL PRACTICAL FLOWER GARDENING.

By Walter P. Wright and Edward J. Castle. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 152. Price, 75 cents.

The lover of flowers who delights in the successful cultivation of his or her garden will find a valuable guide in this work. Not only does the book discuss flower gardening, per se, but it deals concisely and interestingly with the laying out of gardens, making of lawns,

beds and borders, rockwork and arches, and also gives selections of the best hardy plants. The illustrations supplement the text very thoroughly.

PICTORIAL PRACTICAL GARDENING.

By Walter P. Wright. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 157. Price, 75 cents.

As the title of this little book indicates, it is a manual for all classes of horticulturists, and gives in general directions for the culture and selection of the principal flowers, fruits and vegetables. The information is arranged con-



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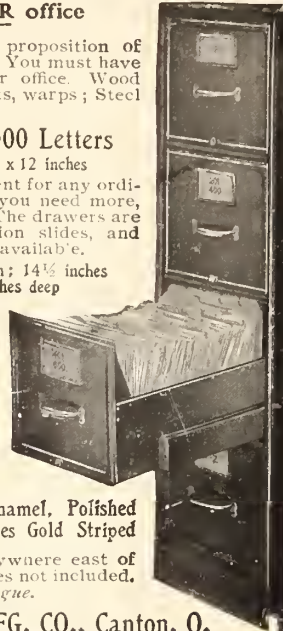
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CEMETERY ART

CEMETERY art probably ranks as the lowest form of public art. If there is anything worse, or less artistic, it is not yet generally known. It is singular that this should be the case, for the cemetery should call forth our tenderest emotions, be to us the most sacred spot on earth. It is the final resting-place of our loved ones, and as such demands our most affectionate attentions and should be the object of our most heart-felt regard.

Doubtless this is true, and painfully true; yet our cemeteries, as a whole, are barren of art effort and are depressing to visit, both from their actual associations and the pitiful efforts we have made to beautify and adorn them. One may not care to visit cemeteries because of their sad associations, but that any one should refrain from entering them because of the artistic horrors with which they abound in is a singular comment on our artistic civilization.

There are two classes of objects used to beautify cemeteries: Flowers and plants, and monuments. The former are the single redeeming feature of these homes of the dead, and their beautifying qualities are apparent at every point. A cemetery is apt to be well planted, both by the owning corporation and by the individual lot owners. And not only well planted, but very beautifully planted, vying with our parks in beauty of coloring and in arrangement.

It is a pity, and more than a pity, that the same can not be said of the monuments. Were these to be taken as a guide to our artistic status it would be necessary to rank us very low indeed. And these monuments are not bad from lack of money spent upon them; on the contrary, a horrible pride characterizes many of them, and a man never heard of in the life will attract attention to his dead body by a colossal granite shaft, by an expensive marble tomb, or by some other pretentious monument which is completely out of place in the narrow quarters of the cemetery, and which is quite needless as a memorial of the late departed.

There is obviously room for a very great improvement in these matters. There is need for a radical improvement that reaches to every interest concerned in the erection of these horrors. If a large and imposing monument is desired it should be good in itself and be a real work of art. This is neither too much to ask nor too much to demand as a matter of right.

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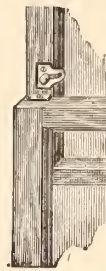
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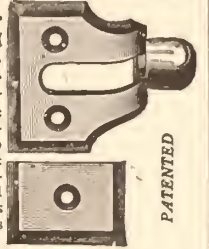
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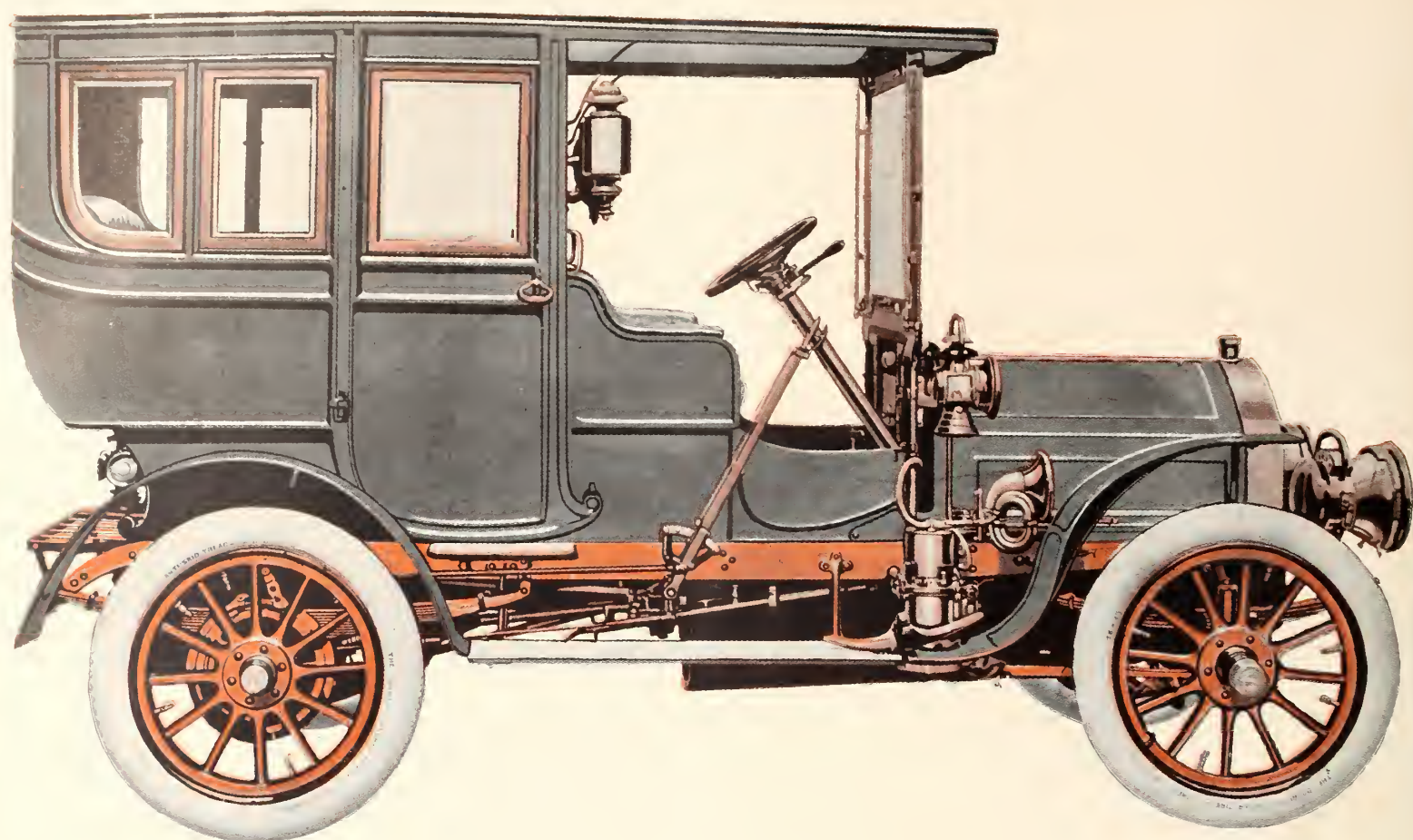
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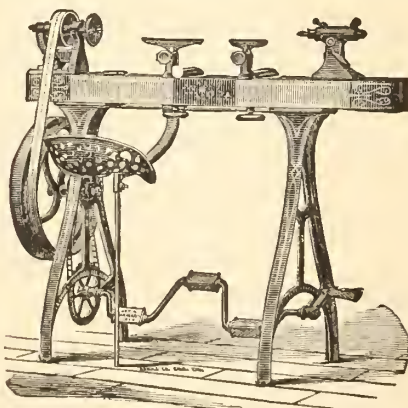
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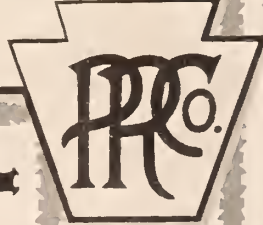
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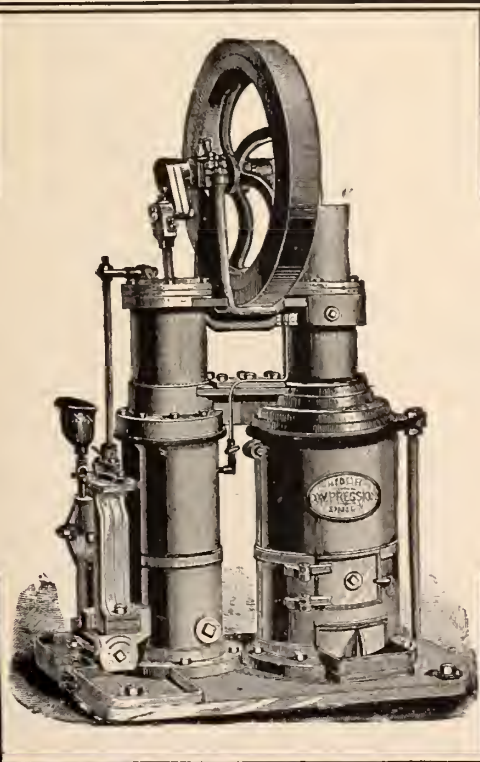
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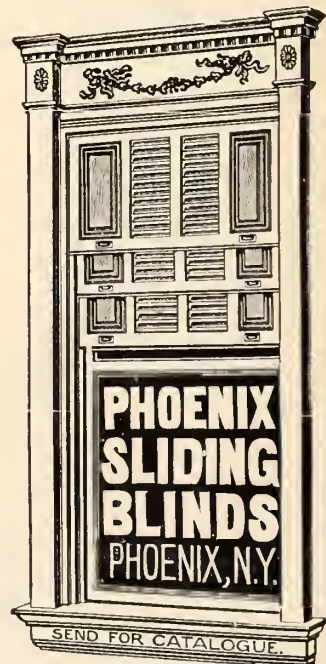
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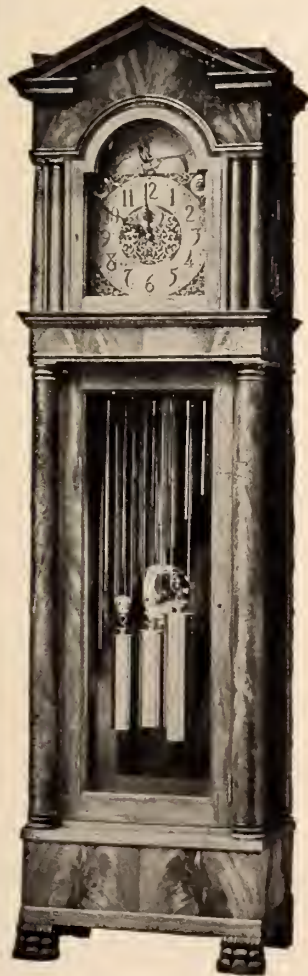
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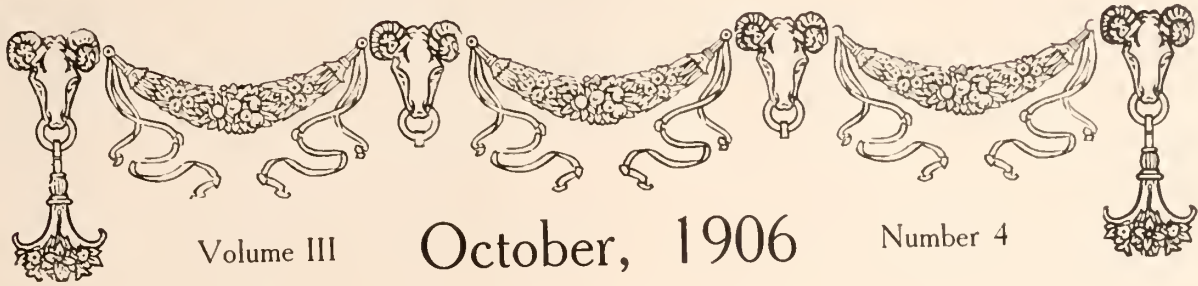
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SEP 26 1906



A Water-side Greeting

AMERICAN HOMES AND GARDENS



The Entrance-front of the Seaside Home of Mr. T. Jefferson Coolidge, Jr., Manchester, Massachusetts

Monthly Comment



THE approach of the fall season, with the winter looming ominously beyond, means the return of a goodly number of people from the country to the city, and the opening of a new season and a new experience to those who have this year taken up their abode in the country for a permanency. The scale on which one lives has much to do with the point of view at this time. With ample funds, a large place, abundant means of getting about and a retinue of servants, one is, of course, independent of the season, and can come and go as one pleases. But there is a host of country livers who are not so situated, and to them their first season in the countryside must have produced many mixed results. The great problem of liking or not liking has not yet been solved, nor can it be until a full year has been put in amid purely rural surroundings. Yet even the first year may not be a true test, nor the second; for there is infinite variety in the country, notwithstanding its inherent dullness to those who yearn for variety and "life." There is a very great temptation, on moving into the country, to undertake too much. The literature of country life is now quite aboundingly rich. For a dollar or two one may purchase an admirably printed book by a thoroughly honest writer telling how to do all manner of things in the country, how much fruit and vegetables one may raise, how many animals one may keep and rear, how much, in fine, one may make from one's own country place, which may readily be self-supporting if one but follow the directions of the aforesaid competent authority. It is dollars to doughnuts that most people who essay country life on this basis are in this present month of grace regretting the ventures they so gleefully undertook. And it is not to be wondered at. All you have read is doubtless true, but a great deal of real personal experience is necessary before one can, let us say, rear sheep and goats, dogs, ponies, geese, chickens, ducks, guinea-fowls, pigeons and calves, all on one place, all at the same time, and keep house and raise and feed a family to boot. A very competent writer, not very long ago, published a most interesting book telling how all these things were done—except the last. It was undoubtedly a true experience, but any other person who would try the same problem would be without the personal equation which, in this particular case, was the real secret of success. And it is the lack of personal experience which has caused most of the failures of the present year. There is but one word of advice to be offered—when you try again, try a bit harder, and don't try to do too much.

INSTABILITY is one of the marked characteristics of American home life. The American, as a rule, has little affection for his house as a house or a home as a home. He seldom remains long in one place. If he has not just moved in, he is on the point of moving out, and he invariably looks forward to a time when he will own a better home than the one he happens to be living in. This is a commendable ambition, and were the new homes always absolutely better than the old instead of, as in most cases, being simply more gorgeous, it would be a feeling warmly to be commended. A bettering of one's condition is unquestionably highly desirable, and in the end the American home unrest may lead to good results, but it produces a totally different impression of the home from that which obtains in England, for example, where the family home is an ancestral residence, where many generations of the same family have lived and died. Such a home undoubtedly produces a very different impression from that which obtains in the rapidly changing homes of America.

There is no wonder that the moving industry in America is a large one, and, from the point of view of the person who pays the bills, an exceedingly profitable one.

It is no new thing to point out that the child is an important factor in the home. This is so true that it may be pertinently asked for what else does a home exist? Yet it is often obvious, and sometimes unpleasantly obvious, that the children have too great a prominence in the home. This is particularly true of America, where the children outgrow home restraint and home rule at an abnormally early age. The American child is more apt to be given license than liberty in the home life, and hence he rapidly acquires an undue prominence in the house. All the members of a family are part of the same family organism, and the family rule that recognizes this fact, the family life that is conducted for the whole family, and not for any single part of it, inevitably yields the most wholesome results.

WALKING as a means of relaxation is rapidly becoming one of the lost joys. Walk we will unquestionably when we have to, but there are now so many ways of getting about without the physical discomfort that many people attach to walking, that walking as a means of pure enjoyment seems to have almost gone out of fashion. Yet there is no more delightful, healthful sport than this. It is one of the simplest of recreations and one of the most fascinating. It brings one closer to Nature than any artificial means of locomotion can possibly do. It gives pleasure and brings health, and is one of the most beneficial of natural tonics. One must, of course, be suitably clothed for walking, and perhaps especially mindful of one's shoes. It may be necessary, on a long tramp, to provide oneself with a simple lunch, for the question of food-supply is sometimes a difficult one in the rural regions. Any jaded, tired soul that takes itself out for a good country walk will return to its own fireside refreshed and benefited immeasurably.

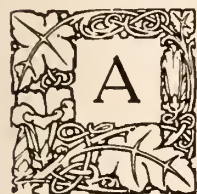
THERE is still much to be learned before the dust generated by the automobile will cease to be a source of public annoyance. Every object moving through the atmosphere drags a body of air with it, whether its own surface be smooth or not. The difficulty of the problem is not limited to the power surface of the car, since it is not clear but the upper part may have some effect as a dust-raiser. It is certain, however, that the form of the lower part of the car is the most important feature. Thus it seems to be true that the higher the bottom of the car is above the road and the smoother its surface, the less will be the dust-raising power of the machine. All recent experiments tend to show that the chief problem of the automobile-builder should be so to construct his machine that it will pull about with it the smallest possible volume of air at the least possible speed. The scientific facts involved in this problem have not yet been completely studied, but some of the basic principles have been sufficiently uncovered to point the way to the right direction. Meanwhile, however, the public continues to suffer from one of the chief abominations of the automobile. It is small comfort to be reminded that the occupants of the rapidly moving car are suffering likewise; they have the compensating advantage of motion, often so rapid that little can be distinguished of them or their vehicle save the clouds of dust in which they travel. Moreover, if it becomes unbearable they can stop it by stopping their machine. But the person on the road, or that most unfortunate person who lives upon it, has no remedy that has yet become effective.

Notable
American
Homes

By
Barr Ferree



The
Seaside Home
of
Mr. T. Jefferson Coolidge, Jr.
Coolidge Point
Manchester, Massachusetts



AT A STONE'S throw from the terrace of Mr. Coolidge's house are the waters that wash the north shore of Massachusetts. A more agreeable outlook it is difficult to imagine and certainly would be hard to find. One instinctively looks straight across the water, where Marblehead sits serene on the distant coast, but so far away as to be but a mere site on the distant horizon. There are nearer points of interest: islands in the glistening water, and, on either side, the tree-fringed mainland behind which one catches many a glimpse of handsome houses.

The land-surroundings of the Coolidge house are quite as charming as the lovely water-view. The road that leads to it passes through a pleasant suburban region, very delightfully wooded. The trees, in fact, are so abundant, that one comes upon the house rather suddenly, standing in a cleared space, and presenting a capacious and majestic front.

It is a house designed in the Georgian style, to which its architects, Messrs. McKim, Mead & White, of New York, have given their best thought and study. It is peculiarly fitted to the New England coast, since many fine examples of it still remain in Salem and Portsmouth, while others, per-

haps even better known, are found as far south as Virginia.

It was designed under the immediate personal supervision of Mr. Charles F. McKim, who has made full use of all available material, and has designed a house at once modern in its application to contemporary life, and yet a thoroughly consistent example of the architectural period it reproduces. The architect designing in a historical style is confronted by the necessity of reproducing his models with pedantic accuracy, or so transforming them that they become an original and modern translation. Mr. Coolidge's house represents a phase of workmanship which involves the intelligent adaptation of older forms to modern uses. It is a house so superbly studied that the very bricks and stones breathe a spirit of the old time; a design beautifully harmonized and proportioned with a loving care that gives it a character of distinction that is as rare as it is delightful.

It is a large house designed in a large way, directly expressed in the quiet dignity of the fronts, in the broad, plain wall-spaces, in the stately colonnade which forms the feature of the entrance-portal, in the great, rounded center of the water-front, in the exquisite portico which is the distinguishing part of the latter side of the house. The archi-



The Stately Water-front Shows the Three Great Divisions of the House, with the Portico to the Left



The Main Living-hall is Oval in Form and Walled from Floor to Ceiling with Selected English Oak

tectural treatment is of the simplest, Mr. McKim having relied on his knowledge of correct proportion to make it interesting. There is no ornamentation, but simply brick and marble built up in the simplest form. The walls are of black and red Harvard brick, and the base-course, the string-courses, the cornices and the columns of the central portico of white marble. The design has a marked feeling of simplicity and strength well suited to the granite coast upon which the house stands.

It is built with two semi-detached wings after the Georgian style. The east wing is used for the kitchen and servants. The west wing consists of a large open portico, open to the water and closed on the entrance-front. These wings are connected with the main body of the house by short passages one story in height.

The Ionic colonnade is the chief feature of the entrance-front. The wall to which it is applied is slightly recessed, giving a brief projection to the end walls, which thus form end pavilions. Each of these pavilions is lighted by a single window in each story, placed in the center of an ample wall-space. They are simple rectangular windows, with the narrowest of frames, but with a large keystone to emphasize the flat brick arch that surmounts them; save for a small stone panel let into the wall above the lower window, there is no ornament applied to these pavil-

ions, except the single straight string below the upper windows and the very restrained cornice that surmounts them.

The simplicity which distinguishes the end pavilions also characterizes the central wall which connects them. Rectangular openings are the rule throughout, save the two small ovals on each side of the portico. The entrance-doorway is thus straightly bounded by a broad, molded frame; it has an ornamental keystone and a carved band let into the wall above it. There is a window on each side between the adjoining columns, and five windows in the second story. With the exception of the central one, all the windows of this part are narrower than those of the end pavilions. Above the cornice is the attic; the windows once more plainly rectangular, but surrounded with bricked frames, with small square upper corners and no keystones. Brick piers, to carry out the column idea and at the ends, complete the design of the front. The treatment that obtains in the center of the

house is carried out in the wings. The windows are again rectangular and placed within generous spaces of wall. The ceilings are somewhat lower than in the main part of the house and the cornices somewhat simpler. The low, sloping roofs thus take a more definite place in the silhouette than the similar roof of the main building.

The water-front by no means reproduces the features of the entrance-front, although thoroughly in harmony with it. The conspicuous feature here is the great rounded center, with plain brick pilasters supporting the main cornice. There are no end pavilions, the house extending in an un-



The Fireplace in the Main Living-hall is of Yorkshire Stone



The Dining-room Has the Quality of a White Room; the Walls are French Gray with White Moldings and White Ceiling



Mrs. Coolidge's Bedroom Has a Paneled White Wainscot with Walls of Light Gray

broken wall on each side of the central semicircle. The windows of the first floor all reach to the floor, but are otherwise similar in design to those that appear elsewhere in the house.

The beautiful feature of this front is the portico, which is placed on the right as one comes from the house onto the sea-terrace. It is a structure of beautiful grace and dignity, admirably studied in detail, a lounging-room of immense attractiveness, and a building complete in itself, yet quite obviously related to the dwelling with which it is associated. And this, notwithstanding the fact that it has an Italian feeling of its own which differentiates this house from any other in this country or elsewhere. Mr. McKim, who knew this part of the coast well, appreciating the superb views to be obtained from this place,



In the Center of the Water-front is a Great Rounded Bay that Gives a Characteristic Form to the Central Rooms

one of the finest sites on the whole North Shore, endeavored to build a house which would fit into its surroundings and enable those living in it to appreciate the beauties of the natural surroundings. His house is eminently successful in this respect, and the portico is the chief means employed to make the eternal advantages available to the owner.

Like the other parts of the house it is thoroughly simple and direct in its style. It is open on two sides, toward the sea and at the further end. Its design consists of a colonnade supporting a plain, brick frieze which carries the upper cornice.

In the center is a round arch, supported by doubled columns, and on either side of this are two slabs of white marble let into plain brick borders.



Below the Central Terrace of the Water-front is the Formal Garden, a Mass of Brilliant Flowering Directly on the Sea



The Beautiful Feature of the Water-front is the Portico



The Portico is an Out-door Lounging-room of Immense Attractiveness and Affords Lovely Views of the Water Just Below It



Mr. Coolidge's Den is a Pleasant Little Room Whose Striped Walls are Almost Covered with Framed Etchings

The whole of this side of the house is supported on terraces. The first of these is of brick and immediately surmounts the basement beneath the house. It is enclosed within a handsome old wrought-iron railing and is provided with stone steps which descend to the lower terrace. This is a spacious and delightful space, supported, on all sides, by a wall of rough stones, carrying a dressed-stone coping and forming at once a retaining-wall and closed barrier to the lower grounds without. The latter are reached by stone steps of ample size. The sea, the beautiful quiet sea that one meets with everywhere on this lovely coast, is just beyond, scarcely further than the base of the lower terrace-wall. At the top of the steps that lead down to it are two great Italian amphoræ, standing like solemn sentinels at the furthest point of the house structures, silently marking at once the beginning and the ending of the home grounds. But on the sea side only; for below the terrace on the right, as one looks toward the sea, is a gracious flower-garden, simply laid out in a formal style, with great rectangular beds of brilliant flowers, and with loftier bushes and denser foliage below the terrace-wall. Still further on is the service-entrance, and beyond that a gain a second flower-garden, close to the conservatories and stables that complete the structures of this beautiful sea-estate.

The entrance-hall is entered from the main doorway without an intervening vestibule. It is a rectangular

room with cut-off corners on the opposite side. The walls are white; the mahogany doors are provided with heavily molded frames, and above each of them is a panel in relief. On each side of the central door is a round arched niche. The ceiling is supported by a triglyphed frieze. To the right is the staircase-hall. It has a wainscot of whitewood, paneled, and green walls. The stairs have a railing with delicately twisted banisters. On the walls are old English paintings, part of Mr. Coolidge's fine collection which is distributed throughout the house. The rugs on the hardwood floor and stairs are Oriental.

The main living-hall is entered from the central doorway of the entrance-hall. It occupies the exact center of the house, and is a beautiful oval room, the far end, which is lighted by three windows, occupying the rounded extension which is the conspicuous feature of the water-front, while the entrance-hall is given a corresponding shape. It is forty-two feet long and twenty-five feet wide, and is treated in the old English style. It is paneled throughout in selected English oak, the richly detailed cornice being carried on channeled pilasters, and the intervening spaces being filled with small rectangular panels of the Jacobean type. The fireplace of Yorkshire stone has no mantel-shelf. The floor is of imported Yorkshire stone, partly covered with handsome Oriental rugs. The ceiling is of plain white plaster. Red velvet curtains hang at the windows, and the furniture is covered with red damask. On the walls are many fine old English portraits.

The dining-room has all the qualities of a white room. The wainscot is of wood painted white. The walls are paneled in French gray, with moldings of white. The cornice is decorated with delicate reliefs and the ceiling is plain and white. The mantel is an old English one of white



The Entrance-hall is White, with Mahogany Doors Within Heavily Molded Frames

marble inlaid with colored marble; over it is a large square mirror in a gilt frame. The floor is of hardwood and has no central rug. The light-fixtures, which are applied to the walls, are of silver. On the opposite side of a connecting corridor is a small breakfast-room, and beyond are the service-rooms and the servants' quarters, both very completely developed, as befits a mansion of this size.

The living-room or library is on the right of the hall. The walls are white and are paneled in wood throughout, with pilasters and a frieze. The mantel is of mottled green and white marble and has no mirror above it. Bookcases are built into the walls on two sides. The color is given by the curtains and furniture, which are of olive damask. The rug is in light tones in harmony with the general colors of the room. The light-fixtures are silver.

Mr. Coolidge's den, which adjoins the staircase-hall, is a pleasant little room with a wood mantel in one corner. The walls are papered with crimson stripes and are almost completely covered with framed etchings. The furniture is red and the curtains white. Beyond the staircase-hall is a vestibule which connects with the portico.

The upper floors are given over to bedrooms and their connecting bathrooms. Colors of delicate shades have been chosen for these rooms, each of which has a distinctive color-scheme of its own, as well as being furnished in an individual manner. Mrs. Coolidge's room is immediately above the hall, and is hence an apartment of unusual size, with a great rounded end at the further extremity. The walls have a paneled wainscot of wood, painted white, and are of a very light gray. The same delicate tone is used for the bed-hangings. A vast rug, in which red is the predominating tone, lies upon the hardwood floor. It is a charming room, beautifully placed in a beautiful house, a house which not only gives ample evidence of painstaking care in its building and its equipment, but a house filled with notable treasures of art, and erected, as has been stated, upon as fair a site as could be desired for suburban living. It is easily one of the most notable houses built by its architects, and is as fine a type of the modern Georgian house as has yet been built in America. Nor should it be forgotten that it is beautifully situated and surrounded. Every natural and other charm adds to its interest and beauty.

The Ornamental Value of Public Waters



NO natural feature is at once so beautiful and so useful to a town as water. And this is true whether the town be built directly on the water's edge or whether it include lakes, streams or ponds within its municipal limits. In whatever form the water is present, it should be sacredly preserved as one of the city's most precious possessions. The ponds and lakes will need cleaning, the sluggish water must be made to flow rapidly, sanitary requirements must be met at all costs, but the water must be preserved as one of the most decorative features and as one of nature's finest gifts to man.

The latter, of course, is precisely the view of water that is not taken by the average American community. If a city happens to be built on a river or directly facing a harbor, it will be because the water-approach has been the most obvious one and is, perhaps, the city's chief source of commercial strength. Witness, on this point, the wonderful harbor in the midst of which the city of New York rears its proud head. One of the most superb water-views in the world is that of New York, with its crown of lofty buildings, rising directly from the waters that wash its shores on both sides. The great city would be fine to look at anywhere from without, but its water-approach gives it the most superb of all settings.

But New York has almost completely ignored its water-front for ornamental uses. The grime and dust of commerce, in their most offensive forms, have taken to themselves the whole of the lower water-front, save the one jewel of Battery Park. Further up the parks on the west side have preserved the water-front for the delight of every beholder; but save for these two exceptions—and they are brief enough—the whole of this matchless front is given up to commerce. Over in Brooklyn, where the river-bank is high, a restricted residential section overlooks the commerce across the water, but this, too, is but slight in extent compared to the vast extent of the city's water-area.

Perhaps commerce needed all this; it is too late to dispute the point, but it surely does not need it in the horrid, ugly, flaunting way it has absorbed all this beauty. They do things better abroad, and many a great European port is fine to look at from its water-entrance, which, even though given up to commerce, has been developed and treated in an artistic way. Much must be done and vast sums spent before New York's water-front can be redeemed and made even respectable when

seen close at hand. It is a reformation that has more than art necessity behind it, for present conditions are unspeakable and cry aloud for remedy.

Few communities are so fortunately situated with regard to water as New York, and few, therefore, have thrown away so much. The river and the harbor may be demanded by commerce, but the inland waters are seldom required for such purposes. The lakes and ponds, therefore, if not unsanitary in condition and effect, should be eagerly availed of as decorative properties of the utmost importance. They give a note of personal beauty and character to any landscape, and afford opportunities for landscape results of a very striking and beautiful character.

Water is, in fact, one of the most decorative of natural characteristics. Its surface is rarely still, for even the most sluggish of streams and the most torpid of lakes portrays a constantly changing view of everything reflected in it. And the very ugliest things have a charm and an unreality when seen in the water reflection; the more reason, truly, for surrounding it with beautiful buildings, for making the approach to it a thing of beauty, for setting it off as best may be, and utilizing its natural advantages to the fullest.

A body of water of any size is a valuable artistic asset if its use but be understood and its value appreciated. No other natural feature gives so much in return for so small an outlay. If the water has a utilitarian value its artistic aspects need not be neglected, but in utilizing it commercially some regard should be given to its art side. The waters of a town belong to the whole people. Every one can not make use of them in a commercial way, but at least every one can enjoy seeing them, enjoy the beauty with which they may be surrounded, enjoy the pleasure they must give to every right-minded soul.

More and more American communities are awakening to the value of this public enjoyment, this public appreciation of parts that belong to the common whole. The civic awakening of which we hear so much to-day is due to exactly this fact. We are beginning to realize, as we never have realized, that there is a real value in beauty. Hence our parks and public places; hence the agitation for a more ornamental public life. Not all of the results of this agitation have been admirable, but the spirit behind them is worthy of the warmest praise. The problems of ornamental water are not easy of solution in commercial localities.

A Home in a Nutshell

By Janet Macdonald



ABSORBED in reflections anent the simple life, enjoyed by the birds of the air, and the beasts of the field, as well as being adopted by modern faddists, I found myself transported to a pretentious edifice, appointed with all the modern conveniences to be found in a first-class hotel, office-building or apartment-house, with the additions and exceptions hereinafter related. The hallways were broad, well lighted, handsomely carpeted, and appropriately furnished, the walls being decorated with fine pictures, and occasional jardinières of growing plants emitted a delightful fragrance. The light, also, was well regulated; not garish, but altogether suggestive of the light in happy homes of culture and refinement.

A door was opened for me by a man, exceedingly polite, who at once introduced me to the interior of a diminutive, but perfectly arranged flat, and I was informed that this was but one of many similar ones under the same roof, the centralization of labor and capital making the possibilities of modern conveniences observed in the construction and maintenance of private homes quite within reach of small incomes—elevator service, gas and electric lighting, steam heat, and elegantly fitted corridors. I was now to witness an entirely new and exceedingly clever device in the way of house-building and fitting, for my guide, after inviting me into an elegant parlor, at once, and with genuine and enthusiastic alacrity, exhibited to my admiring eyes the minute details of a well-regulated home. The parlor was well lighted and commanded a noble view of mountain and stream, the plate glass windows being draped with the softest and whitest of fine lace. Under our feet the soft, yielding carpets; the furniture, in addition to elegance, represented the utmost comfort, a detail often slighted in home furnishing. The walls were hung with a limited number of really artistic pictures, and bits of fine statuary were in evidence to enhance the gentle spirit of home.

My attention was called to a finely beveled plate-glass mirror which instantly, and with no effort, was transformed into a most inviting bed. I have seen all sorts of folding-beds, designed to beguile the unwary, and have, to my unspeakable regret, experimented with many, but I have never before seen a bed that was part and parcel of the very house in its construction. By simply touching a button, this remarkable bed lowers itself into the room and there it stands, a beautiful brass bedstead with a bed all ready for use. This bed was composed of a fine hair mattress, downy pillows, and with comforts of down and sheets and pillow slips of dainty and immaculate purity. The recess in the wall from which the bed is pulled, is closed automatically by a head-board as the bed is lowered into position, and when down it is a moral impossibility for that bed to close accidentally, or to collapse through sheer wickedness. My attention was also called to a simple device at the lower corners of the bed, which grasped the corners of sheets, blankets and puffs, which are held securely in place when the bed is up, and hang separated from each other by about one and a half inches. Then this wonderful bed shuts into a ventilated closet some twenty-five or thirty inches deep, and opposite a window, allowing not only the free air of heaven to circulate through it, but the rays of California sunshine to penetrate and purify it during the entire day. "This," I declared, "is an ideally healthful and perfect bed." As the door closed upon the inspection of the ventilating closet, I observed upon the back of it a bookcase and

writing-desk, with additional drawers at the bottom, all projecting into the ventilating closet, a panel in the door mysteriously unfolding to form the desk.

I was next directed through the living-room (which is a complete replica of the parlor, and separated from it by folding doors), to the kitchen, for people must eat, whether the salary be a princely one or only fourteen dollars per, and I was greatly delighted at the miniature perfection of the dearest little kitchen I ever saw. Walls and floor were artistically tiled, the walls above the tiling were lined with shelves, space having been allowed for a cupboard and meat safe; a porcelain sink and drain for dishes, and a stove—a gas range hung on the back of a door leading into the living-room. This door is hung on a central bearing, so that with the gas still burning, the stove may be turned right about face into the living-room, now transformed into the dining-room, where it is used as a hot buffet from which food may be served piping hot directly to the table, and making the service of a servant entirely superfluous. After the meal is over, the door upon which the range is hung is instantly reversed and the living-room, with no appearance of a kitchen, is restored.

The guide showed me a table quite large enough to serve a luncheon upon. "But," I enquired (having in view the inevitable family), "supposing there be more than two?" "Oh!" he replied, "that is easy. If you will take a seat, I will show you how that may be arranged without trouble." And suiting the action to the word, he quickly rolled the table to the door, and tipping it on end caught two hooks on the side of a table-top, which he found suspended on the door, into the opening in the table prepared for their reception, and again lowering the table he had gained a top of four by six feet quite capable of seating a family of six. I was amused at the transformation, which with all the preceding magical lightning changes, had convinced me of the remarkable possibilities future housekeeping had in store for us.

"To replace it is quite another thing," I said, instantly thinking of the cumbrous table-top. "No!" again asserted the guide, "quite the same thing. See!" He again rolled the table to the door, and again tipping it at the same angle, lo! the table-top remained upon the door, and the center-table was again standing in the living-room, as innocent of the black art as though it were not one of the principal conspirators.

I had now seen a parlor, a living-room, two sleeping-rooms, a dining-room and a kitchen, besides the reception-hall. The apartment-house proper is erected with a double wall, the distance between the outer and the inner wall being about sixty inches. These walls serve a double purpose. In the first place they are sanitary, giving the finest possible ventilation; the building is warm in the winter, and cool in the summer; they allow space for bathroom, storage-rooms and the necessary ventilation-closets for the reception of the beds during the day. The labor in these magical apartments has been reduced to a minimum. Space has been economized but has not detracted from, but rather increased, the comfort. The apartments are furnished complete for housekeeping, including dishes, silver, table-linen, and bed-clothing, with the laundering of the two latter. The electric lighting is free. A private telephone has been installed in each suite for the use of occupants. Should one not desire to live in an apartment-house, he may build a cottage of three rooms, and still have all the comforts of a five-room flat by this system.



Transformation of an Artistic House into an Italian Villa

By Francis Durando Nichols



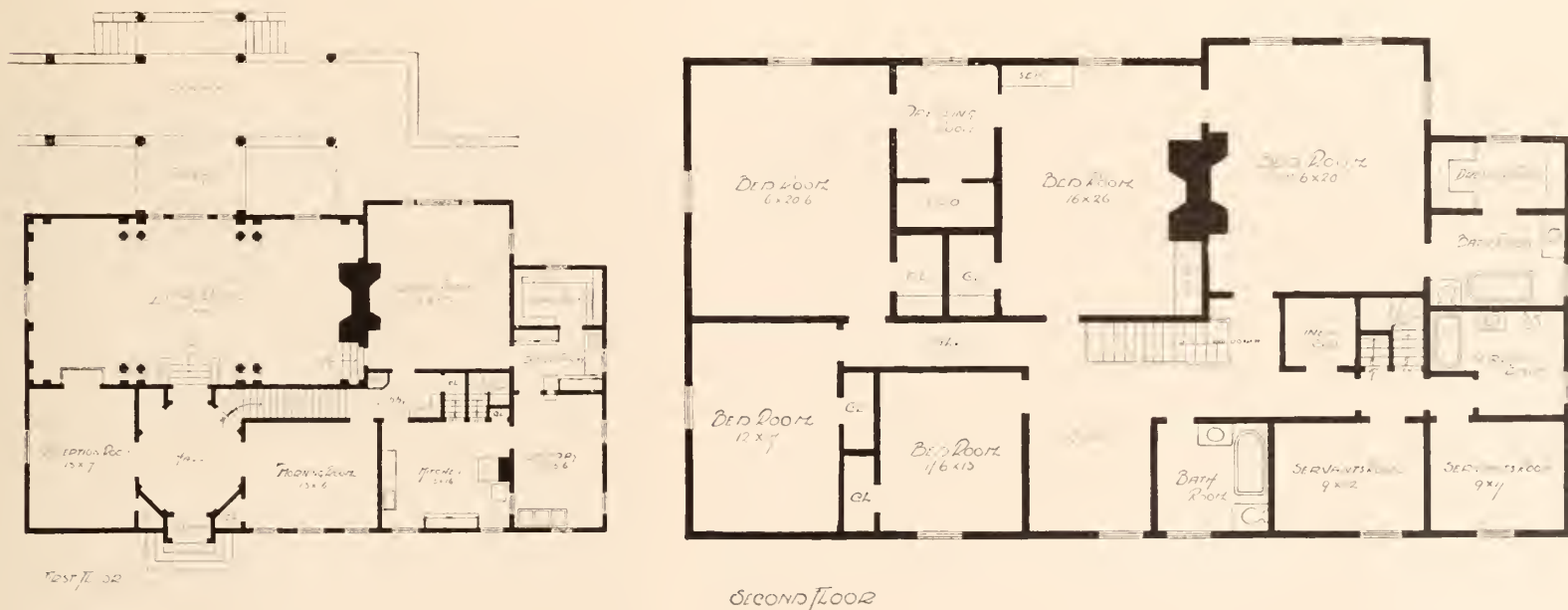
WHEN Mr. John Cheney Platt purchased the simple, artistic house on the Eagle Rock Way, Montclair, New Jersey, he observed in its outlines the possibility of transforming it into a modified "Italian Villa," and the paramount suggestion which was presented to express this scheme was the addition of the tower at the corner of the house, which not only gave three additional rooms, but also added dignity to the exterior. The grounds contain over two acres and the house is placed edge-wise to the street, with the approach quite close to the north line of the property. The main entrance to the house is

which extends around the hall at the intersection of the wall and ceiling.

To the left of the hall is the reception-room, which has paneled walls, ivory-white painted trim and frame-work, and tapestry wall-covering.

To the right of the hall is the old dining-room, which is now used for a study for the children.

The drawing-room, which is also the living-room, occupies the main part of the house, and is built at a lower level than the floor of the rest of the first story. The color-scheme is green and ivory-white. The walls are paneled, with the spaces between hung with green velour, of a soft shade,



from this side, leaving the broad expanse of lawn and garden to the south side, of which broad vistas are obtained from the living-rooms.

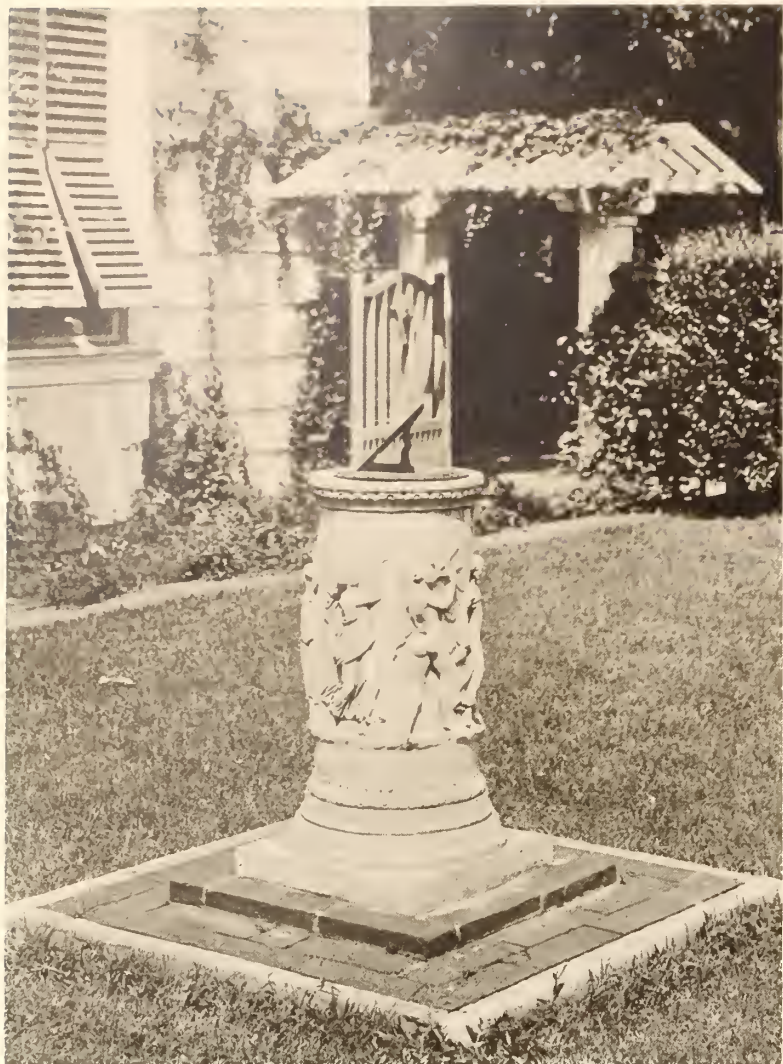
The approach to the house is from the main road, passing in a straight line to the front door, beyond which, separated by a latticed screen, it extends to the service-court and to the stable.

The exterior of the house is covered with hewn shingles of the old-fashioned type, treated with whitewash, while the trim throughout is painted white, except the blinds, which are painted an apple-green. The roofs, which are doubled with air-space between, are covered with canvas, painted gray.

The hall is octagonal in plan. The woodwork is of handsome design, the trim of the door and the parts formed by the octagon rise like pilasters to a massive carved frieze

while the frame to the panels is painted ivory-white. The length of the room is broken into three divisions by the groups of columns placed at intervals along each side of the room. The columns have composite capitals and were taken from one of the beautiful Italian villas near Florence. There are eight of these columns; four on each side of the room. At one end of the room is a broad, open fireplace with facings of Indiana limestone.

The new dining-room, which is in the tower, is reached from the living-room by a short flight of steps. The walls are paneled to the height of eight feet, above which they are covered with a rough-plaster coat, left in its natural state. This panel-work and the beamed ceiling is of butter-nut, a wood seldom used—and is treated with a wax finish, very effective, and brownish in color, like French walnut. The fireplace has Roman brick facings and hearth, and a



A Sun-dial with a Handsomely Carved Pedestal Stands on the Lawn in Front of the House

WHEN Mr. John Cheney Platt purchased the simple, artistic house outlines the possibility of transforming it into a modified to express this scheme was the addition of the tower at but also added dignity to the exterior. The grounds contain over approach quite close to the north line of the property.



The Pergola Covered with Grapevines From Which Steps Lead to the Sunken Garden



An Italian Mantel of the Sixteenth Century, Rare Old Tapestries and Old Italian Furniture Are the Features of the Dining-room

THE approach to the house is from the main road, passing in a straight line to the front door, beyond which, separated by a latticed screen, it extends to the service-court and to the stable.



Italian Characteristics Prevail in the Drawing-room. The Over-

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 "Italian Villa," and the paramount suggestion which was presented
 corner of the house, which not only gave three additional rooms,
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The Stately Columns in the Drawing-room Were Brought
 From Italian Villas



The Alteration was not Excessive But the Tower Adds the Charm
 of Italian Characteristics



The Grassed Lawn and the House Before the Alteration. Contrast this
 View with that of the Altered House



Contains a Copy of One of Puvis de Chavannes' Paintings

THE exterior of the house is covered with hewn shingles
 of the old-fashioned type, treated with whitewash,
 while the trim throughout is painted white, except the blinds,
 which are painted an apple-green.

mantel of Caen stone, and of the sixteenth-century style. It was imported from Italy and when found it rested in an old castle which is now used for a stable, and was black with soot and stain. In the face is inscribed the following motto: "Paciens Gloriabi Tur." The sideboard is an Italian piece of the seventeenth century, with bronze heads and ornaments; the chairs are copies from old Naples designs, and are covered with embroidered red velvet, and are ornamented with bronze heads of Satyrs on top. Upon the walls are some rare pieces of tapestry. The doors are concealed by being paneled in the wainscot. At one end of the dining-room is a large French window overlooking the garden.

The old kitchen remains as in the original plan, but the original butler's pantry is transformed into a lobby from which access is obtained to the dining- and morning-rooms, and kitchen. The butler's pantry, store-pantry and laundry are enclosed in the new addition and each is fitted up with all the best modern fixtures complete.

The original plan of the second floor contained four bedrooms, bathroom and one servant's bedroom, while the completed plan, as now shown, presents one extra suite, containing one bedroom, dressing and bathroom and an extra servant's bedroom and bath.

The garden is quite the feature of this estate and is laid

out in close relationship to the house which is built with all its living-rooms facing it. One entrance to the sunken garden is from the approach to the house, which has a white painted gate and hood with a pergola effect, over which are grapevines and climbing-roses. Near this entrance, and in front of the house is placed a sun-dial, with a handsome pedestal. A brick-paved walk from this entrance lands one at the rear porch, from which one may enter the house. This porch is built in combination with the pergola, on which are now being grown grapevines and wistaria. The terrace-wall is covered with brick; the abutments to the steps on either side are ornamented by old Italian olive-oil jars. Stone steps descend from the terrace to the sunken garden with its broad expanse of well-kept lawn, at the terminus of which is a wall built in a semi-circular form and in the center formed by this circle is a pool, on the waters of which are rare varieties of pond-lilies and lotus.

To the right of the sunken garden, a short flight of stone steps leads to the woods beyond. Flower-beds are built along the terrace-walls, and are so planted that there is a continual bloom from early spring till late in the autumn. The garden, as well as the alteration to the house, was designed by Mr. Platt's brother, Mr. C. A. Platt of New York, and the whole scheme is characteristic of delightful surroundings.

To Preserve Cut Flowers



ALL ladies know that the life of cut flowers is prolonged by periodically recutting the extremities of their stems (by preference slantwise and under the water), and by putting a little charcoal into the water in which they are placed. Certain specialists further recommended the addition to this water of various substances, such as boric acid, salt, camphor, soapsuds, and chlorate of ammonia. They advise also the burning of the extremities of the stem, or sterilizing the same by immersion in alcohol or some other antiseptic. All these methods are inspired by the theoretical principle that it is of great importance to assist the nutrition of the flower and to prevent putrefactive fermentation, capable both of accelerating the decomposition of the cells and of obstructing the tubes that convey the water to the top of the stem. But hitherto no one has thought of systematically studying the action of the various above-mentioned methods. Messrs. Fourton and Ducarnet, professors in the *Ecole Nationale d'Agriculture* at Rennes, have begun a series of experiments on this subject, the first results of which they have just announced.

The experiments were on the following flowers: Violet, celandine, iris, narcissus, aster, fumitory, myosotis, woodruff, marguerite, syringa, catch-fly, snap-dragon, and primrose. There was added to the preserving water, in various degrees of concentration, mineral acids (hydrochloric, nitric, sulphuric); bases (soda, potash, ammonia, lead, etc.); salts (of sodium, potassium, iron, lead, etc.); antiseptics (boric acid, sublimate, sulphate of copper, etc.); wood charcoal; organic matter (acetic, oxalic, tartaric, citric acid, alcohol, glycerin, ether, soap, sugar, gum arabic, tannin, gelatin, camphor, etc.). The wood charcoal aside, all the substances hitherto recommended for the preservation of flowers and mentioned above are unfavorable to that preservation, under the conditions in which the experiments were carried out; to wit, with bouquets of small size in comparison with the quantity of water in which they were placed. Those bouquets, indeed, were preserved without perceptible putrefaction,

but the flowers became faded more quickly than those of the bouquets placed in the pure water. Perhaps, in case the bouquets were very large in comparison with the water for their preservation these substances might have the advantage of retarding the putrefaction. But, apart from that, they are injurious to the preservation of the flowers.

The substances newly tried that have appeared useful are:

Organic matter, in quantities from one per cent to ten per cent: chloral, sugar, glycerin, alcohol.

Mineral substances, in very weak concentrations, a ten-thousandth and less: lime water, potash, etherized water, nitrate of potash, kainite, sulphate of potash, phosphate of potash, phosphate of ammonia, chloride of calcium.

The character of the most favorable substances varied according to the flower. Caustic potash and lime water maintained the preservation of the primroses from fifteen to twenty days; the myosotis lasted thirteen days in unchanged water—seventeen days, the water changed daily; twenty-two days in the water to which ten per cent of saccharose had been added, etc. Finally, the duration of preservation is the greater as the distance from the surface of the liquid to the base of the flower is decreased; and, in the majority of cases, it was noticed that it was useless to renew the water when any substance whatever had been added to it. Messrs. Fourton and Ducarnet will continue their experiments.

It is obvious that these experiments must yield interesting and valuable practical results. Just what these are, and how popularly applicable these preservative methods may be adapted to household uses, it is yet too early to determine. But the outlook is promising. Apart from the effect of various substances which these experiments disclose they seem to establish the fact that some one material will hardly be available as a preservative. This fact, if it really be a fact, will tend to diminish the utilization of such methods in the household. But there are many general uses of cut flowers where a definite preservative will find welcome use, and where its help will be of the greatest possible value.—*From L'Illustration.*

Three
Houses
of
Distinctive
Character

By

Ellis Welch



Artistically
Adapted
to
Individual
Needs



TOO MUCH importance can not be impressed upon the mind of the intending house-builder in the selection of a design for his house, for while the house often does, as it should, present a personal expression of one's taste, it should also meet the necessary requirements, such as are demanded by the site upon which it is to be built. The surroundings and setting for a house form a very strong factor in the selection of its design.

In the planning of the houses illustrated in the accompanying photographs, much care has been given to the arrangement of the various rooms and the utilization of all the available space. In doing this it means something more than the getting of the largest number of rooms in a given area, for the rooms must be properly related to each other and thoroughly adapted to the use for which each apartment is intended. After the plans were settled came the designing of the elevations and the work was done.

Mr. W. K. Benedict, architect, of New York, made a distinct departure from the Colonial house shown in Figs. 10 and 11 and the English half-timbered house shown in Figs. 5 and 9, when he designed the house for Mr. Wil-

liam D. Peck at University Heights, New York, shown in Figs. 1 and 2. The site is a hilly one, receding with rapid descent from the street grade, and, in consequence, it was necessary to build the house in accordance with its site. It has, therefore, three stories in the street-front, and four at the rear.

The building is unusually interesting, presenting, as it does, a foundation of local rock-faced stone with hints of red and green in the gray of the stone, which add a subtle touch to the color harmony of the whole. The superstructure is built of stucco in gray for the first story, and brown-stained shingles for the second story. The porch at the front is an attractive feature with its white-painted balustrade. The house is crowned with a massive over-hanging roof covered with shingles stained a moss-green, and finished with a terra-cotta cresting. Red brick chimneys also add an extra tone to the whole general color-scheme.

The lower floor of the house, Fig. 3, is arranged so as to give a delightful feeling of space and freedom within a comparatively small compass. The square hall, Fig. 1, reached from the front, through a vestibule with tiled floor and paneled wainscoting, occupies the center



1—A Brick Fireplace Adorns the Hall, Which is Trimmed with Oak

of the house, and opens to the living-room on the right and to the dining-room on the left; the openings are very broad and provided with sliding-doors. This hall is trimmed with oak and has a paneled wainscoting. The surface of the ceiling is well broken by handsomely molded beams. The ornamental staircase rises at the front of the hall with a broad landing over the vestibule. The fireplace is built of brick with the hearth and facings of similar brick; the facings extend to the mantel-shelf, which is of oak, and handsomely carved. At the end of the hall is a door with windows on either side, from which broad vistas are obtained of the river below. The door opens onto the balcony which overhangs the cliff.

The living-room, sixteen by twenty-eight feet, is exposed on three sides. It is trimmed with mahogany and has a wall decoration in ivory-white and yellow, the whole of which is finished with a wooden cornice. The fireplace has tiled facings and hearth, and a paneled mantel and over-mantel with mirrors. Broad windows pierce the walls on the front and rear of the room, while at the side are two windows with a broad space between, providing ample opportunity for a piano or bookcase.

The dining-room, seventeen by twenty feet, is trimmed with oak. At one end of the room is a broad bay-window with paneled seat, and at the side opposite the entrance is a fireplace furnished with tiled facings and hearth and a mantel of oak. The butler's pantry occupies the remaining space of this side of the house, and contains the rear stairway in combination with the front stairs, and also the

stairway to the basement, the dumbwaiter to the kitchen, and sink, dresser, cupboards, etc. The bottom of the basement is on a level with the grade at the rear of the house; consequently, it permits placing the kitchen and its dependencies in the basement, which contains a well-fitted kitchen, good pantries, store-pantry, laundry, servants' hall and the cellar containing the heating apparatus and fuel-rooms.

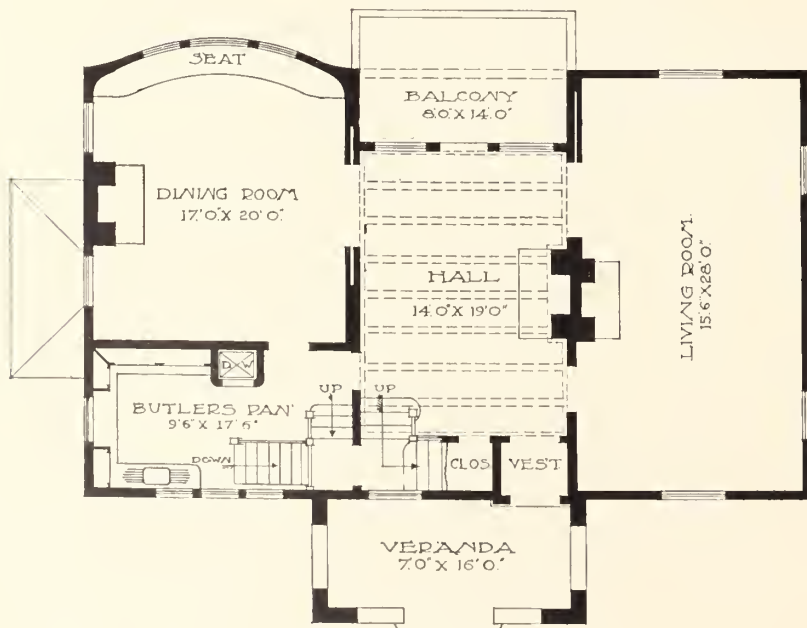
The second floor shows a hall, square in form, and of the same woodwork and color-scheme as the lower hall, and the windows placed at the side of the staircase with the stained-glass transoms shed a pleasant light over it as well as upon the staircase. In all the bedrooms the woodwork is treated with white-painted trim, with doors finished in mahogany. There are four bedrooms on this floor, all of good dimensions and provided with well-fitted closets, and two bathrooms. The owner's suite, consisting of one large bedroom with a combination dressing-room and bath, is quite the feature of this floor. The

bathrooms have tiled wainscotings and floors, and porcelain fixtures and exposed, nickel-plated plumbing. The third floor has three bedrooms, two of which are provided with lavatories, and also trunk-rooms.

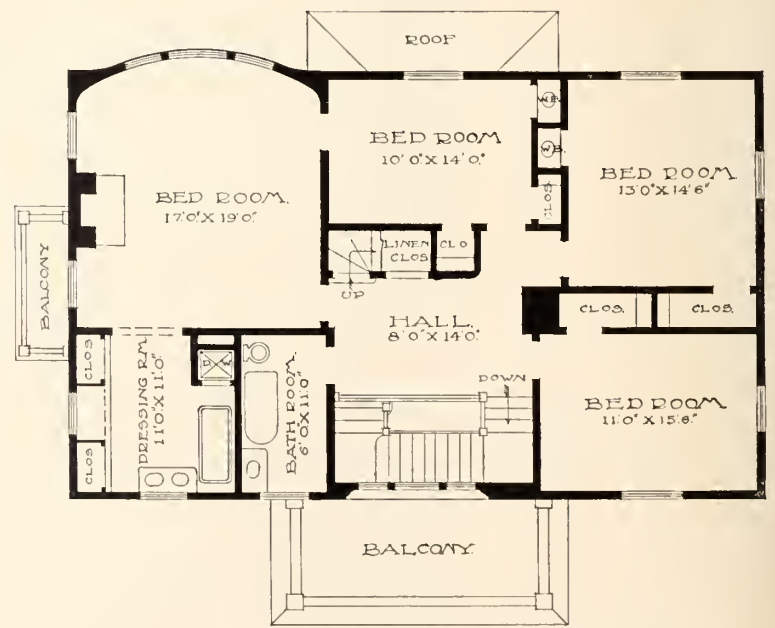
In the designing of Mr. Edward P. Coe's house at Englewood, New Jersey, Mr. Aymar Embury, II, the architect, of Englewood, New Jersey, has accepted the English half-timber house as its prototype. (Figs. 5 and 9.) The house is built of a combination of brick, stucco and half-timbered work. The underpinning is Harvard brick, laid in



2—A Distinct Departure was Made in the Designing of This House



FIRST FLOOR PLAN



SECOND FLOOR PLAN.

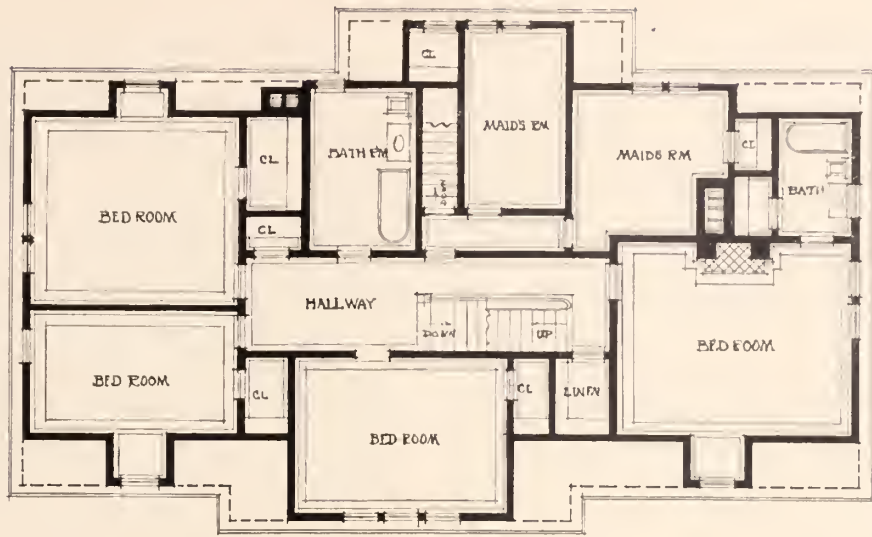
3—A Convenient Arrangement of Rooms is Shown by a Study of the Plans

white mortar with tooled joints. The rest of the building is beamed. The beam-work is stained a soft brown color, and the panels are filled with stucco, left in its natural silver-gray color. The roof is covered with shingles and stained a brilliant red.

Upon entering the house one finds one's self in a square hall with the stairs going up at the back of it. Under the stairs, a door leads to the coat-closet, to the kitchen and to the rear stairs. This is arranged so that the master of the house can go to the cellar without passing through the kitchen, Fig. 6, as is usually the case; this passage also forms an easy access to the front door from the kitchen.

The hall is trimmed with white pine and treated with white-enamel paint. The staircase has a painted balustrade and a mahogany rail. To the left of the hall, and extending the entire depth of the house, is the living-room, Fig. 7, treated in the Colonial style, with white-painted trim, wooden cornice, and a fireplace with facings and hearth of brick, and a mantel placed at one end of the room, while at the opposite side is a broad window-seat over which is a cluster of windows. French windows at one side of the room open onto a broad loggia; it has a brick floor, and in winter is enclosed with glass and heated.

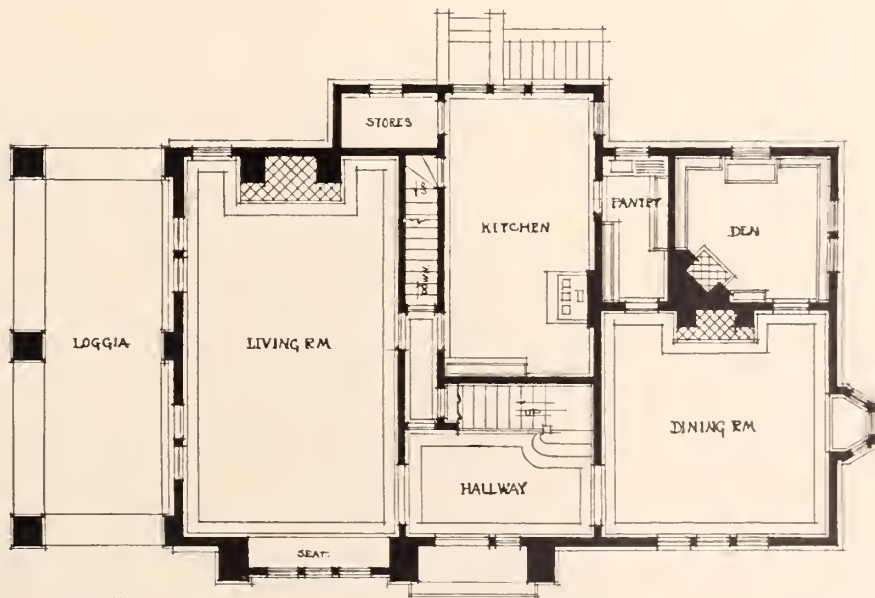
The dining-room, Fig. 8, trimmed with Flemish oak, has a paneled wainscoting four feet in height, above which the wall is covered with a large-figured paper and finished with a wooden cornice. At the east side of the room is a flower-window filled with growing plants. The fireplace has brick facings and hearth, and a mantel-shelf supported



SECOND FLOOR
4—Four Bedrooms, Two Maids' Rooms and Two Bath-rooms Occupy the Space on the Second Floor



5—The English Half-timber Style is the Scheme Adopted for Mr. Coe's House



FIRST FLOOR
6—A Large Living-room is the Principal Feature of the First Floor

on brackets. The small den, opening from the dining-room, is treated with forest-green effect, and has bookcases built in, paneled seats and an open fireplace. The butler's pantry, forming the connection between the dining-room and the kitchen, is fitted with sink, dressers, drawers, etc. The kitchen, of large dimensions, is furnished with all the modern conveniences, and they are so arranged as to leave the window-side of the kitchen free.

There is a large, open hall on the second floor, from which entrance is made to the four bedrooms and bathroom, and to the servants' hall and stairway, which forms access to the two servants' bedrooms. The master's bedroom has a private bathroom attached, and this, as well as the other bathroom, is furnished with porcelain fixtures and exposed nickel-plated plumbing. The woodwork on this floor is treated with white paint. There are two bedrooms and bathroom on the third floor. A cemented cellar contains the laundry, heating apparatus, fuel-rooms, etc. The house shown in Figs. 10 and 11 is after the Colonial style.

and is designed with the detail used in the latter part of the eighteenth century. The second house illustrated, Figs. 5 and 9, is designed in the half-timbered style, with rough beams and plaster panels, while the third house is designed with Spanish feeling.

Figs. 10 and 12 present an interesting and attractive house, designed in a simple manner in the Colonial style and with square outlines. It was built for D. H. Standish, Esq., at Glen Ridge, New Jersey. It is planned to accommodate a fairly good-sized family, and the various rooms are arranged so as to give a maximum of air, sunlight,



7—The Living-room Extends the Full Depth of the House

and a pleasant outlook. The porches are built so that they do not shade all the rooms of the first floor, which is so often the case, and the entrance-porch, placed at the front of the house, is separate from the living-porches placed at either side of the house, thereby affording privacy to the family. The house is placed some distance from the roadway and is approached by a broad walk, hedged with privet on either side, leading to a short flight of granite steps which lands one at the level of the terrace, beyond which the front porch is reached. The terrace-wall is built of field-stone laid up at random, and in such a manner as to prevent the appearance of its mortar joints.

The underpinning is built of red brick laid in red mortar. The superstructure is covered on the exterior with clapboards and is painted white. The blinds are painted bottle-green. The roof, covered with shingles and left to weather-finish, is pierced by chimneys which are also built of red brick.

The entrance-porch is provided with seats at either side, and a broad doorway, on either side of which are leaded-glass windows. Upon entering the house, one finds that the lower floor has been arranged to give a delightful feeling of space and freedom within a comparatively small compass. The central hall, Fig. 12, opens into the living-room and dining-room which are on either side; the openings being broad and arched, and without doors. At the end of the hall an opening permits one to enter the den, which is always a pleasant retreat, for as in the present plan it is especially convenient, as it may be used with equal advantage for a small reception-room, a library or study. The hall, as well

as the entire house, except the den, is treated with white-painted trim. It has a low Colonial wainscoting of plaster, painted white, above which the walls are covered with an old-rose tone. The staircase has oak treads, white-painted risers and balusters, and a mahogany rail. The wainscoting extends up and around the staircase to the second floor.

The living-room, Fig. 13, to the right of the entrance, is sixteen by twenty-six feet and is exposed on three sides, with doors opening on the piazza. Opposite the entrance to the room is an open fireplace with onyx facings, and a mantel of fine Colonial pattern. The walls have a low wainscot above which they are covered with crimson and finished with a molded cornice. They harmonize well with the white-painted trim and the built-in bookcases.

The den is trimmed with oak, finished with Flemish treatment; it has a paneled wainscoting, above which the walls are finished with a green wall-covering. At one end of the room is a bay-window, fitted with a window-seat, and at the side is a door opening onto the piazza.

The dining-room, Fig. 14, also has a low wainscoting, and an open fireplace with brick facings, and hearth and mantel of good design. The walls are covered with a brownish green tone wall-covering. A door at the side of the fireplace opens onto the porch, which is placed at the side

of the house, and another door opens to the butler's pantry, which is well fitted with drawers, dressers and sink complete. The kitchen, which is beyond the pantry, is fitted with all the best modern conveniences, and includes large pantries, dressers, range placed against a brick chimney-breast, and a laundry placed beyond the kitchen and fitted up complete.

The second floor is treated with white-painted trim and delicately tinted walls. The owner's suite consists of one large bedroom, dressing-room, and bathroom; besides this there are three guest-rooms and bathroom, and also ample closets and linen-closet.

Three of the bedrooms have open fireplaces built of red brick laid in red mortar, with facing and hearth of the same, and



8—Flemish Oak and a Paneled Wainscoting are Represented in the Dining-room Scheme



9—Harvard Brick, Beams and Stucco are the Materials Used for the Exterior of the House



10—A Colonial House of Good Type, with a Central Hall and Rooms on Either Side, Beyond which the Living-porches are Placed

mantels. There are two servants' bedrooms and bath on the third floor and also a trunk-room. The heating apparatus and fuel-rooms are in the cellar. The house as a completed whole represents a very excellent piece of Colonial work, and was designed by Mr. Lionel Moses, architect, of New York.

All of the three houses have an interest of their own

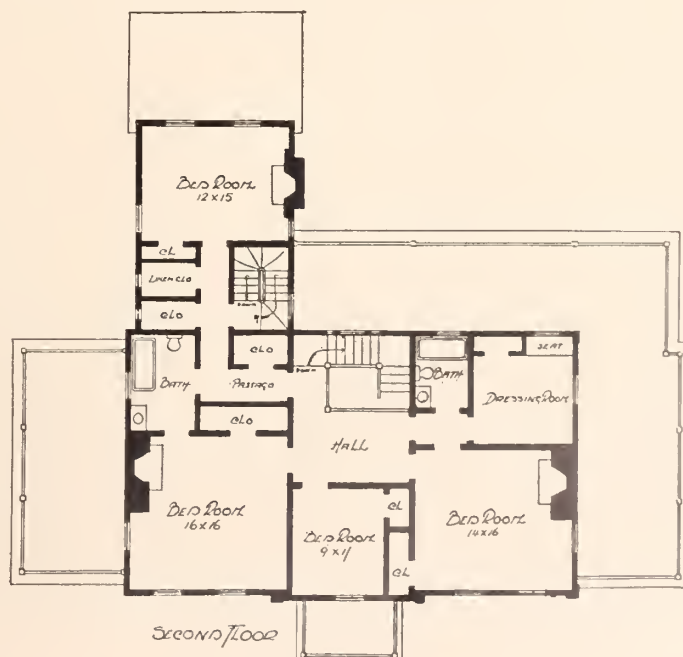
apart from each other. They are houses of good type, are well built and are planned in a thoroughly economical manner. They are designed in quiet taste and are finely adapted to the individual requirements of their owners, and they also well illustrate, to a marked degree, the moderate-priced house of the better class, and are just such houses as are desired by people of refined tastes and moderate means.

Originality, Old and New



OUR or five hundred years hence, when the history of our contemporary American architecture comes to be written, it will be strange indeed if the art historians of that day do not point out that the most significant movement in American building art at the end of the nineteenth century and the beginning of the twentieth was the deliberate copying and transplanting of

the designs of old buildings to American soil. As a matter of fact the readaptation of the designs of existing European buildings to the design of American structures is now so vigorous an industry that the moment a new design is published the first thought, in many cases, is, where did the architect get the idea from? Hence it is that towers of Moorish Spain, Italian palaces, Gothic cathedrals, the designs of modern European buildings, and even the unexecuted



11—The Plans are Arranged to Accommodate a Fairly Good-sized Family



12—A Colonial Wainscot Extends Around the Hall and Up the Staircase



13—Bookcases Built in, and a Fireplace with Onyx Facings and a Colonial Mantel are the Features of the Living-room



14—Colonial Furniture Carries Out the Characteristic Feature of the Dining-room

projects of the students of the great French School of Fine Arts are reproduced in remodeled American designs, to the great wonder of those who know their origin and have some familiarity with architectural history and with the methods of original design.

For to copy is not to design. The ethics of remodeling and readaptation are somewhat nicer and abound in fine distinctions which would require a lifetime in their arguing. But the art of original design seems on the verge of extinction. Our architects are engaged in a veritable debauchery of copying and appropriation. Every facility is offered them. Ponderous volumes of existing details may be had for reasonable sums, in which everything that may be needed in a stately building can be found by the ingenious borrower. All he needs to know is where the desired matter can be obtained. Indicating the required volume to his draftsman, he has little more to do until the completed compilation is presented to him for final criticism and suggestion.

It is delightful work, this architectural compilation. It means the reduction of the art of design to its simplest limits. It abolishes care. It destroys doubt. It saves thought. It increases speed. It adds to time. The time once spent in thought can now be given to mechanical drafting. The time once given to original designing can now be saved for the more congenial task of compilation. No need to wait on inspiration under this system, for no inspiration is needed. All that is required is a knowledge of where the necessary materials can be borrowed, and the rest is plain sailing.

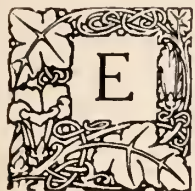
No architect believes a word of this. He will tell you in the most solemn manner that there is as much skill needed in compilation as in any effort of original design. He will tell you that these transplanted designs which are giving so foreign a character to our chief streets, have all been carefully restudied, redesigned, readapted to new conditions; that the modern buildings are not the old ones transplanted, not the old ones made over in a wholly new and original manner. And then some wag will show you a photograph of the old building and the new and calmly ask you which is which, or wherein the one differs from the other. In many cases it will be difficult to answer this question in a satisfactory manner.

The time may come when the ethics of architectural copying may be discussed on its merits, meanwhile it may be pertinent to point out that it ensures, on the whole, work of a very high character. There are many monuments of architectural art of extraordinary beauty and purity, work of a sort that no modern architect has either time or the ability to produce. There is a gain in borrowing this beauty because it is good; but there is a loss in originality and a distinct lowering of the status of architects. Pushed to the extreme it transforms the architect from a designer to a copier; he is no longer an original artist, but a compiler; he no longer invents, but he takes; he is no longer a man of original thought, but a man who allows others to do his thinking for him.

The churches of the medieval period, which epoch was distinctly original, have the same basic idea, but the development of the theme is individual in each case.

"Wiseacre," the Residence of Charles L. Wise, Esq.

East Orange, New Jersey



AST ORANGE is representative of good homes, and among the finest examples of domestic architecture recently built within its limits is "Wiseacre," the residence of Charles L. Wise, Esq.

This splendid house has been designed in the Georgian style and the designs of this particular period have been very carefully carried out throughout the interior and exterior, with finely executed detail and from carefully studied plans prepared by the well-known architect, Mr. Percy Griffin. The site upon which the house stands is a

white enamel. Beyond this vestibule is the main hall, which forms the center of the house. It is treated in the pure Georgian style, and has a white enameled trim, and a classic effect produced with fluted pilasters and Ionic capitals placed at various intervals along the walls of the room, and the whole surmounted with a massive cornice. This treatment harmonizes well with the wall-covering, which is of linen crash, in the tone of corn yellow. On either side of the vestibule are nooks, and opposite the entrance is an arched recess containing an ornamental staircase of fine design. The balusters and risers are of white enameled hardwood, and the treads and handrail are of mahogany.

Upon the landing of the staircase is one large window with two smaller ones on either side, which shed a pleasant light over both the upper and lower hall and the staircase.

To the left of the hall is placed the drawing-room, which extends the full depth of the house. This room, as well as the entire house, is treated with white enamel, while the doors are of mahogany. The walls are covered with crimson velvet, from the floor to the ceiling, and finished with a wooden cornice. The furniture and rugs are in harmony with this color-scheme. The broad open fireplace has facings and hearth of Pavanozza marble, and carved mantel of classic design.



The Comfortably Furnished Porch Affords a Fine Outlook Over the Lawn

prominent one, and comprises something over an acre of land, every bit of which is laid out in such a manner that no part of it is wasted.

The house is placed some distance from the road, and is approached by a broad walk, on either side of which is a hedge of box. A short flight of granite steps lands one upon the terrace which is in front of the house, and extending across the entire front. From the top of the granite steps, the broad walk continues on to the entrance-porch. An approach from the driveway at the side of the terrace also lands one at the front porch. The terrace at either side of the walk is grassed, and is held in place by a brick wall surmounted with a white marble coping. Dwarf box-trees decorate the inside of the terrace-wall. The porch has massive wooden columns, a Welsh tile floor, red in color, and a massive vaulted ceiling.

The house is built from grade to peak with Harvard brick, laid in Flemish bond with white mortar well raked to show the joints. The trimmings are of white marble, except the cornice, which is of wood; this cornice and all woodwork on the exterior are painted white. The roof is covered with shingles and left to weather finish.

Passing through the front door, which is provided with leaded-glass windows on either side, one enters the vestibule, which has a hardwood floor and paneled walls, treated with



The House is Entered Through a Stately Porch Which is the Chief Feature of the Exterior

The den is conveniently placed at the left of the staircase and nearly opposite the entrance. It is trimmed with oak, treated with acid, stain and wax, and harmonizes well with the Japanese grass cloth with which the walls are covered. The alcove with paneled seat, the beamed ceiling and the fireplace with its marble facings and mantel complete the features of this room, while the massive furniture with brown leather upholstery is in keeping with its treatment and also enhances its color-scheme.

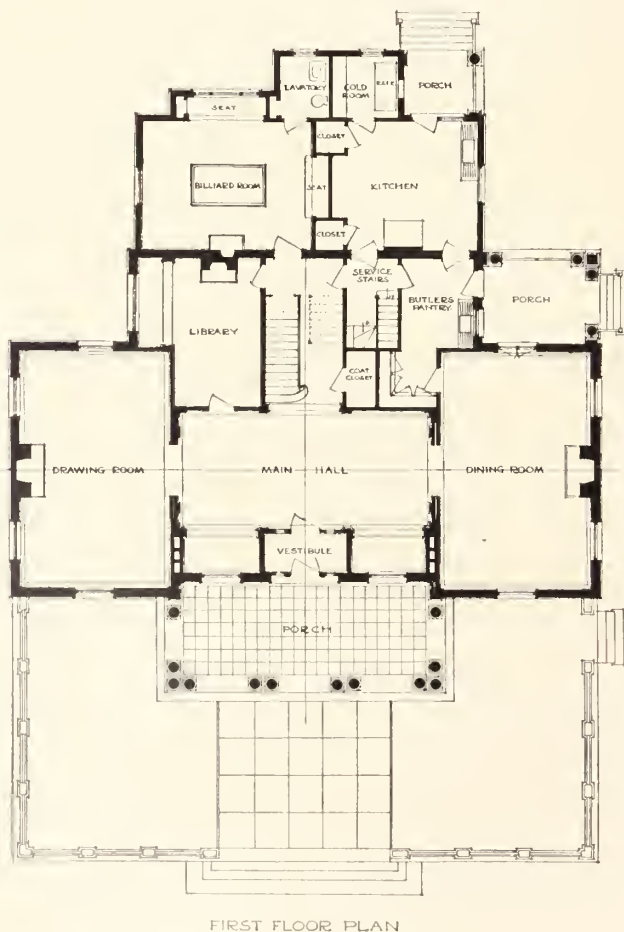


This Splendid House Has Been Designed in the Georgian Style

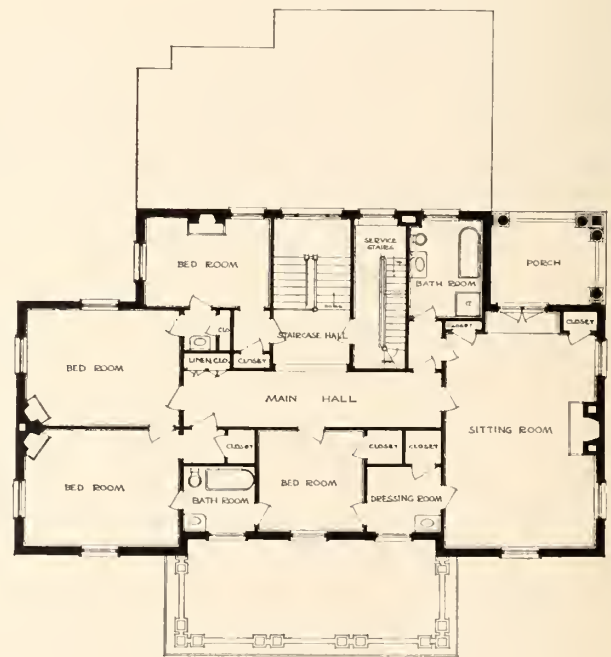
The billiard-room is at the rear of the den, and is finished with an oak trim of a burned gray color. It has a fireplace with marble facings and oaken mantel, and a bay-window with seat. The alcove, which is provided with a raised platform and seat, is quite a feature. The lavatory off the billiard-room is also a convenience.

The dining-room occupies the same space on the right of the hall as the drawing-room does at the left. It has a wall-covering of Japanese burlap in gold and green, and a fire-

place with Pavanozza facing and hearth and mantel. This room connects with the rear porch by French windows, and to the butler's pantry, the latter furnished with cupboards, drawers, dressers and closets, complete. This butler's pantry



FIRST FLOOR PLAN



SECOND FLOOR PLAN.

is trimmed with ash and so is the kitchen with which it connects. This kitchen and its dependencies are fitted with all the best modern conveniences.

The library is placed over the dining-room, on the second floor, and is trimmed with oak and finished with Flemish treatment. The walls are covered with linen crash of a greenish tone. The fireplace has tiled facings and mantel. French windows open onto the second story porch. This room connects with the owner's suite, consisting of dressing-

room, two bedrooms, and bathroom. There is also on this floor a large hall and two guest-rooms, and a bathroom. Each room is treated with white enamel trim and the walls of each treated with artistic paper in one color-scheme and in keeping with each room; the tone, of color used being blue, purple, yellow and pink. All the rooms have fireplaces, except one, which are trimmed with white tiles and mantels.

The bathrooms are paved with white unglazed tiles and wainscoted. The walls above the wainscoting are covered with canvas and painted with white enamel. Each bathroom is furnished with porcelain fixtures and exposed nickel-plated plumbing. There are two guest-rooms, nursery, trunk-room and three servants' bedrooms and bath on the third floor. The laundry, hot-water heating apparatus, fuel-rooms, are placed in the cellar. The grounds at the rear of the house have been very carefully laid out and planted with growing plants and shrubs. The landscape work of the estate was done by J. S. Nickersae, of Melrose, Massachusetts.

The elements which have made this house interesting and given it a character and a distinction of its own are easily manifest. They are, to put it briefly, the care the architect has lavished upon his work and the taste he



Pilasters with Ionic Capitals are Placed at Intervals Around the Hall



Japanese Grass Cloth Covers the Walls of the Den



Facings Built of Pavanozza Marble for the Fireplace and a Good Mantel are the Features of the Dining-room

has expended upon it. These, of course, and very happily, are characteristics by no means restricted to this one house, for they constitute the foundation on which a good building rests.

There is a fine stateliness in the entrance-front that at once attracts and interests the beholder. It is no easy thing to do this, and it is a singular circumstance that many interesting interiors are buried within exteriors of the most commonplace description. Here, however, in this finely modeled silhouette, this strong brick wall, this stately portico, are distinguished elements which at once attract the attention and hold it. And this attention is easily held, and as agreeably, by the interior. This is exceedingly well done. The architectural parts are in good taste, the colors are well chosen, the furnishings are excellent. Nothing, in short, which could be done to make an attractive and beautiful home has been left undone. It is so genuinely good that it may truly be said to be all good. Both owner and architect may well congratulate themselves on the complete success of their undertaking.

Both the house and the grounds were planned and built under the personal direction of Mr. Percy Griffin, architect, New York.

The Weed-Fields

By B. S. Bowdish



ALMOST every country district has its weed-tracts, pests of the agriculturist, but joy of the lover of the artistic and beautiful in nature, and incidentally the home of innumerable forms of animal and vegetable life. In spring and early summer these tracts are the haunts of many birds, as well as of numberless species of insects. Here the vesper, field and grasshopper sparrows and the meadow-lark secrete their nests and rear their young. As the season advances the weed-growth becomes dense and

deserts or gardens rich in nature-lore and pleasure, according to the character of the visitor. If he knows how to see and appreciate, here is an inexhaustible mine of mysteries awaiting his solution, instructive facts on every hand, ready to contribute to his store of knowledge.

Perhaps the early autumn is the most interesting season to visit the weed-fields, and a camera is a most valuable companion. Long after the first frosts have touched the foliage with blushes, the "morning-cloak" and milkweed-butterflies skim the fields and court the goldenrod and aster. Here and



Some Make a Cocoon of Silk



Spangled with Dew, the Cart-wheel Web of the Spider Gleams



Unfolding Fronds of Fern

rank. On the uplands the goldenrod, purple aster and ironweed deck the fields of early fall in glory, taking the place of the white and Michaelmas-daisies and dandelions. In damp places the beautiful cardinal flower blazes forth royally. Even in winter there is beauty in the scene, shrouded in its great white mantle of snow, beneath which the covey of bobwhite burrow out a warm, snug bedchamber for their own use.

At this time the vicinity of the human habitation may take on something of an aspect of desolation, but out in the weed-field one can not so regard it. The flock of redpolls sweeping down to feed on the seeds of the tall weeds rearing their heads above the snow, lend color to the scene, while what could be more charming than the graceful evolutions of a flock of snow-buntings? No wonder they have been called "snowflakes," so like are they to the eddy whirls of wind-driven snow! Then who can wander through the snow-covered weed-fields without admiring the dainty patterns that the tiny feet of the mice have traced? The weed-fields, like all the rest of the world, are either barren

there the larvæ that are to bring forth next year's butterflies and moths are feeding ravenously, storing up the vitality that is to carry them through the pupa period of mummy-like inactivity.

Herein, alone, is a subject full of interest, even to the dabbler in nature-study. There are as many species of larvæ as there are perfect insects, and there are three distinct forms

in which they pass the pupa stage of their existence. There are those that make a cocoon of silk which they spin after the manner of the silkworm. This is usually placed among the twigs of the tree or shrub on which the larva or caterpillar has fed. It is composed, often, of two or three thicknesses of the silky material, and is tough and strong. Sometimes the outside is reinforced with two or three leaves. In this cradle the larva undergoes the change to the pupa, and in time (in this form, usually the next summer), the second transformation to the perfect insect. These caterpillars are smooth, nearly or quite devoid of hairs or bristles. They are all briskly ready for mischief.



The Solemn Toad Whose Big Blinking Eyes are Ever on the Alert for the Unwary Insect

Then there is another form—hairy caterpillars—which construct the cocoon largely from their own hair, usually under some object on or near the ground. The third form suspend themselves, sometimes head downward, by a few silken threads, sometimes by a small mass of threads from the tail only, sometimes head up, with the same kind of tail support, reinforced by a single band about the waist. In this position they undergo simply a transformation in form, becoming chrysalids. When the proper time comes the back skin splits and the butterfly emerges.

The class of caterpillars is also naked, and the complete transformation from caterpillar to butterfly may not occupy more than a few weeks. In these transformations many of the insects die. Some are too weak to effect the transformation; some are attacked by the ichneumon-fly, or other parasitical enemy. The ichneumon-fly stings the chrysalid or pupa and deposits an egg, which hatches in the body of the host. The developing larva eats away the substance of the pupa when, gnawing his way through the skin, he emerges a perfect ichneumon-fly. Thus the chrysalid of the milkweed-butterfly that we find may seem, at a glance, to be all right, but observe the hole in the side. That is where the newly born ichneumon-fly came forth. Again, the novice can not always tell whether the silky cocoons that he finds in winter, hanging to the twigs of the bushes, contain living germs of the cecropia, polyphemus, or prometheus moths, or only black, skeleton-like relics of the caterpillars' forms. Time will tell.

The thought of study or drudgery soon passes out of these pursuits. The observer admires the new and the beautiful as does the visitor to a flower-garden. He takes home from his winter-ramble the deserted summer home of some bird, speculating on the identity of its original owner, and wondering at the marvelous architecture, or the cocoons of a colony of Cynthia moths from the chokecherry-bush, and the next

foliage on which it is feeding. He supplies it with a wire screen cage, earth in the bottom, and a bottle of water to hold the leaves, gathered fresh, each day, and with the pleasure of an original discoverer, he watches the little creature's development.

Most insects are short-lived beings. In the mature state very many of them live only long enough to insure the reproduction of their kind. During one period or another of insect existence a few species are beneficial to man, as the bees which furnish honey and fertilize the flowers, and certain predacious insects which prey upon noxious species, and very many are harmful, consuming or destroying various forms of vegetation. To one seeking a harmless, and at the same time instructive "fad," insect-collecting within reasonable bounds, can be recommended with free conscience, from the humanitarian standpoint, because the life is destroyed but very little before the allotted time; from the economic standpoint, because the sum total of the destruction of the insects involved will be beneficial to man.

When the observer of nature goes afield with the camera, there are thousands of beautiful little phenomena that claim his attention, which otherwise might pass unnoticed. The katydid and the grasshopper on the weed and bush stalks, the dainty thistle and milkweed-down, whose seeds the trim little goldfinches eagerly harvest, the solemn toad, whose big, twinkling eyes are ever alert for unwary insects; the toadstool, which ignorant belief formerly gave the function of a toad's seat, and which figures so prominently in fairy-tales. Just beyond the big clump of purple asters, where the rustic bridge spans the quiet pool, the frogs in guttural tone invite the amateur photographer to essay their portraits. Among the dead leaves on the bank, a belated turtle hustles away to select his winter resort. Spangled with dew, the cart-wheel web of the spider gleams, while in the twigs of the stunted cedar hangs



From the Mummy-cradle Slowly Emerges the Moth with Folded, Crumpled Wings



The Toadstool to Which Ignorant Belief Once Assigned the Function of a Toad's Seat



Still Another Form of Hairy Caterpillar On its Feeding-ground

summer watches with delight the marvelous transformation, when from these mummy-wrappings slowly emerge the moths, with folded, crumpled wings, soon to unfold and spread their glories to the admiring gaze. Then the pursuit becomes interesting. The investigator takes home some summer's day a caterpillar with some of the weed or tree-

the storm-battered home of the paper-wasp. If instead of fall it be spring, unfolding fronds of fern, and innocent-eyed blue violets delight the gaze. At whatsoever season, wander with eyes and ears really open in the weed-fields, those tracts despised by man, and manifestations of life, most wonderful and interesting, greet you on every hand. You make the



A Belated Turtle Plodding His Weary Way

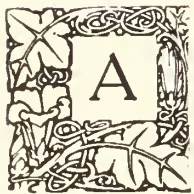


Where the Meadow-lark Secretes Her Nest

acquaintance of innumerable little neighbors you knew not of before; your world is enlarged, your pleasures multiplied, and you come to feel that you have found a veritable garden of Eden in the weed-field. And this is done easily, readily and without real exertion. There is vigor given to a day's outing

when there is some definite end attached to it, something real to do, and something interesting to find. The camera yields no greater joy than when put to nature-study. Lasting mementoes of one's walks, its work is never toilsome and its pleasures always delightful.

Desert-plants as a Source of Drinking-water



A STRANGER left alone in a desert would die of thirst, and yet there is water in all deserts, and both the native animals and the native races know how to find it. This water is gathered and stored by plants, which have built and filled their reservoirs for their own purposes, but which yield it up, when required, for the use of the animal world.

The extent of the root system in desert-plants, by means of which they absorb their water from the soil, is often astonishingly great. In the Mohave Desert of California a branching cactus (*Opuntia echinocarpa*), 19 inches in height, was found to have a network of roots extending over an area of ground about eighteen feet in diameter. The roots lay near the surface, at a depth of two to four inches, a situation which enabled them to take advantage of a single substantial downpour and, before the precipitation had been again absorbed into the parched air, to suck up a supply of water sufficient, if need be, for a whole year's use. Other desert plants send their roots deep into the ground for water, and a certain shrubby species of acacia found about Tucson, Arizona, possesses, according to Professor R. H. Forbes, a double-root system, in which one series of roots spreads out horizontally, close beneath the surface, and a second series, sharply defined, goes directly downward into the soil. Such an arrangement enables the plant to seize upon water either from light precipitation or when deeply percolating under dry-stream beds.

While the devices for absorption in desert-plants are unusual, the mechanical contrivances by means of which these plants are enabled to retain the moisture they have absorbed are still more remarkable. Other factors being equal, the amount of water evaporated from a plant is proportional to the area of its green surface, which, in ordinary plants, is a foliage surface. A specimen of coffee-plant (*Coffea arabica*),

weighing 20.5 grammes, is found to have a leaf surface computed at 164,476 square millimeters, which gives a ratio of 1 to 8,023. A specimen of bisnaga or barrel-cactus (*Echinocactus emoryi*), in the conservatories of the Department of Agriculture at Washington, weighing 77,000 grammes (170 pounds) and without leaves, has a green stem surface of 1,032,320 square millimeters, with a ratio of 1 to 13.4. Thus for each gramme of tissue a coffee-plant, representing the ordinary vegetation of a humid climate, has a green surface 599 times greater than that representing a gramme of tissue in cactus; or, in physiological terms, the coffee-plant, other factors being equal, is provided with means for the transpiration of 600 times as much water as the cactus.

The practical value of such plants as a source of drinking-water is, of course, very great. Life upon many of the American deserts would be wholly insupportable without them, and travel quite impossible. They show, in a very striking way, some of the economical devices whereby Nature undertakes to remedy the evils she herself creates. To the casual observer the part they take in correcting Nature's drawbacks—and the deserts surely rank high in such a list—is unquestionably their greatest interest; but the scientific problems of water-collection and water-preservation which they present have a special interest of the deepest import.

To the scientist it is this practical aspect which is of paramount importance. Here is a group of plants whose economic value in other ways has not been ascertained performing natural functions of a most surprising kind and under most difficult conditions. Nor is the amazement they must create in the human mind limited to the mere preservation of water. They are Nature's reservoirs, not for man alone, but for animals, who have, for their part, discovered their life-preserving qualities, and make as ready use of them as men do themselves.

How to Lay Out a Small Plot Successfully

By Ralph Child Erskine



THE study of home-building is one of universal interest, whether it be of that great army of humanity who live in layers, one family above another, trying to gather into a few small window-boxes a pitiful morsel of the world's nature-beauty; or of the favored ones whose broad lands stretch out in rolling acres of fields and woods and pleasant valleys. But perhaps the most forlorn situation in which a lover of home-beauty finds himself is that of the man of small means who has been enticed into one of the typical villages that lie on the outskirts of any American city. Here the devastations of the real-estate agent confront him. Barren, weed-grown plots, all marked and staked, are his share; and he is bidden to conform his plans for garden and home to the narrow limitations of one or more of these "city lots."

But Mr. O. O. Watson in the village of Lowerre, N. Y., has not only solved this problem but has created a model for the thousands of gardeners in a similar situation. His garden is important for two reasons; although in reality a small piece of ground, it gives an impression of unlimited extent; and it is eminently successful in its use of the classic and antique ornament. Immediately the visitor is given the theme of the place by one of the most remarkable gateways in the country. Six feet of lawn intervenes between the street-walk and the tall English privet hedge that gives an air of quiet and repose which is only increased by the enticing glimpse of garden and curving paths, seen through the heavy wrought-iron gate. While the two large vases of classic design that surmount the gate-posts are in complete accord with what lies within.

The secret of creating in a small garden an impression of unlimited extent is to gain in miniature the graceful curve of roads and paths behind tree masses and through green fields, that is seen in a large estate. This is done by well-proportioned paths winding among dense masses of green, placed at the proper points of the turns.

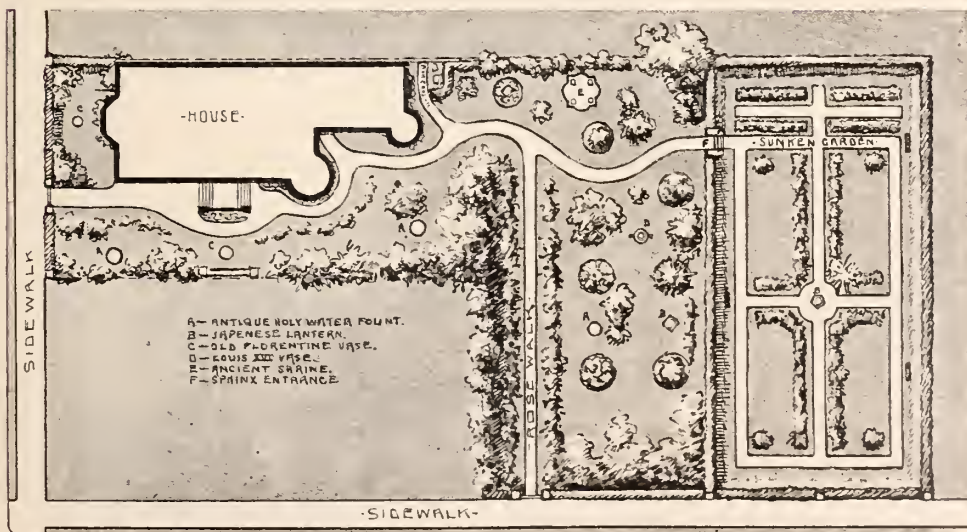
The paths should be not more than eighteen inches wide, clean-cut in the sod and clean-swept. There are a great many flowering bushes and leafy shrubs suitable to create the desired illusion of hidden depths. It is well to choose such as will grow a little higher than a man's head. Mr.



A remarkable entrance; a rose-path continues on around to the right. In winter two red Florentine lions take the place of these vases

Watson has used the white, purple and pink varieties of the old-fashioned Althea, or Rose of Sharon, for this purpose very effectively. As almost every gardener knows, these shrubs are not only of graceful shape and dense leafage, but during the entire summer are filled with gay blossoms. A circular bed of cannas and elephant's-ears, around a plant of the quick-growing castor-bean, whose great star-shaped leaves blend well with those below them, forms a satisfactory screen. It can easily be seen how charming is this last combination of large-leafed plants with the gorgeous plumes of the cannas interwoven.

Fine specimens of the single-flower tree-hydrangeas flank the path within the gate (they are the parent of the less formal common hydrangea), and on the left stands a very large Florentine oil- or wine-jar. To the right a small wing of the house projects somewhat in the manner of a porte-cochère, over a winding rose-path, along which we have gone but a little way when our attention is arrested by a bed of dainty



Plan of the formal garden; three divisions, each fifty by one hundred feet. Notice the isolation of formal ornaments by means of shrubbery



On the left within the entrance stands a large Florentine oil- or wine-jar, a single flower-tree hydrangea, whose perfume is almost as sweet as the honey-locust

Japanese iris against the gray stone foundation of the house. Or we are entranced, if it is the early spring, by a maze of pink and white magnolia - blooms, such as it is a joy to know can flourish in this latitude. Straight ahead is a shady corner with rustic seats, not more than twenty feet from a door leading to the dining-room—a most fitting place for out-of-door meals. Here we are conscious of a delicious

sense of privacy and aloofness, for who can tell to what new depths the hidden paths may lead? The effectiveness of salvia in masses is often demonstrated, but never is it more successful than when it adds its dash of color among the green of the shrubbery of a small garden. Along the southern side of this plot it vies with the Japanese rubrum, melpomene, and album lilies, which thrive in the moist spaces between the bushes. A few trial specimens of hardy jessamine are also gradually winning their way.

Back of the lot on which the house stands are two more at right angles to it, each fifty by one hundred feet. The first is level lawn surrounded by green privet hedges, along the right side of which is continued the rose-path to the side street, two hundred feet in all, affording the ice-man and his confrères a most unusual entrance. These rose-bushes have the appearance of growing directly from the sod,



The sunken garden is made on the natural level of the land. In these narrow beds gay flowers are in bloom from early spring till frost



A shady corner for out-of-door meals. An Italian marble font filled with ivy and a dracaena in the foreground

as do all the little fruit-trees and flowering shrubs of this grassy quadrangle. Thus the scrappy appearance of the bare earth in scattered flower-beds is avoided. Close to the house a small circular continuation of the hedge hides the offensive refuse-cans and ash-sifter so completely that no one save a curious pryer would discover their whereabouts. A Japanese purple cut-leafed maple will soon, if possible, offer more concealment. Here too are inconspicuous green painted clothes-poles, convenient to the laundry. Against the street-hedge of this plot is a confusion of large flowering bushes such as the syringa and althea, which somewhat conceal the fact that there is the end of this part of the garden. Moreover they make a perfect background for one of the first stone Japanese lanterns ever used for a garden in this country. It is said of these lanterns that they are set up by the roadside in Japan and kept burning, like shrines in Italy, by one who has sinned and wishes forgiveness. Nearby the lantern have been planted four varieties of Japanese prune-trees which have successfully withstood two severe winters. A small Mahonia aquifolium also lends the beauty of its glossy green leaves. This little shrub never fails us. In the

snow of winter it is often as brilliant as autumn leaves and in the spring it is one of the first to attract the bees with yellow flowers.

Mr. Watson has the natural gift of collecting what is rare and beautiful, but did he not possess likewise the art of knowing how to place his vases, fonts, and sacred shrine, they would be worse than useless. It seems that these things can be used only in two ways



A stone Japanese lantern beyond a large althea, and bed of cannas, elephant's ears and castor-bean in the lawn quadrangle. Notice how the arrangement of shrubbery to the right gives no intimation of the limits of the garden

—first in a formal garden, and second, when each object has its separate setting. This last is gained in a small garden by isolating each piece through the grouping of the shrubbery, just as in the gaining of an effect of distance. The manner in which a marvelously graceful holy-water font is revealed best after you have passed beneath the projecting wing of the house illustrates this. Turning, you see it beautifully outlined against the hedge, where it was hidden as you entered by the tree-hydrangea on your right. Thus the garden has an atmosphere of surprise about it, for we are ever discovering something new, or, what is more desirable to the owner of a garden, seeing what is familiar from a new point of view and in a new light.

But truly there is no more happy placing of objects attractive in themselves than in the arrangement of two little sphinxes at the entrance to the sunken garden—Madam du Barry and Madam de Pompadour, copied from the originals in the Louvre! Between them are three stone steps—enough of a drop to give a changing view-point by change of level. This little domain of the two French ladies is just dainty and formal enough to be entirely in keeping.

The construction of the sunken garden was comparatively simple. It is made on the natural level of the land, which is



At the entrance to the sunken garden are two busts of Madam du Barry and Madam de Pompadour. In the foreground is one of the four beds devoted to Japanese lilies

about three feet below that of the street. Thus what might have been a disagreeable feature was used to most clever advantage. Beneath the long central path a trench filled with broken stones and covered with earth acts as well as a direct drain to carry off all superfluous water. (This idea is valuable in the making of a tennis-court.) On two sides it was necessary to throw banks of earth up to the street level, and the whole was sodded all around and the hedge planted.

The garden is laid out on the usual lines of a formal garden. The paths are of clean, white builders' gravel in contrast to the dirt paths above. On the left of the entrance four small beds are devoted to certain varieties of Japanese lilies which have been finding favor in this country the last few years. These dainty flowers can be kept blooming from June till frost, and although this is the first year of these bulbs the *Henryi* and *Leichtlinii* make a good showing. It is the owner's aim "to have something in blossom from the time the snow goes away till it comes again." Thus in the



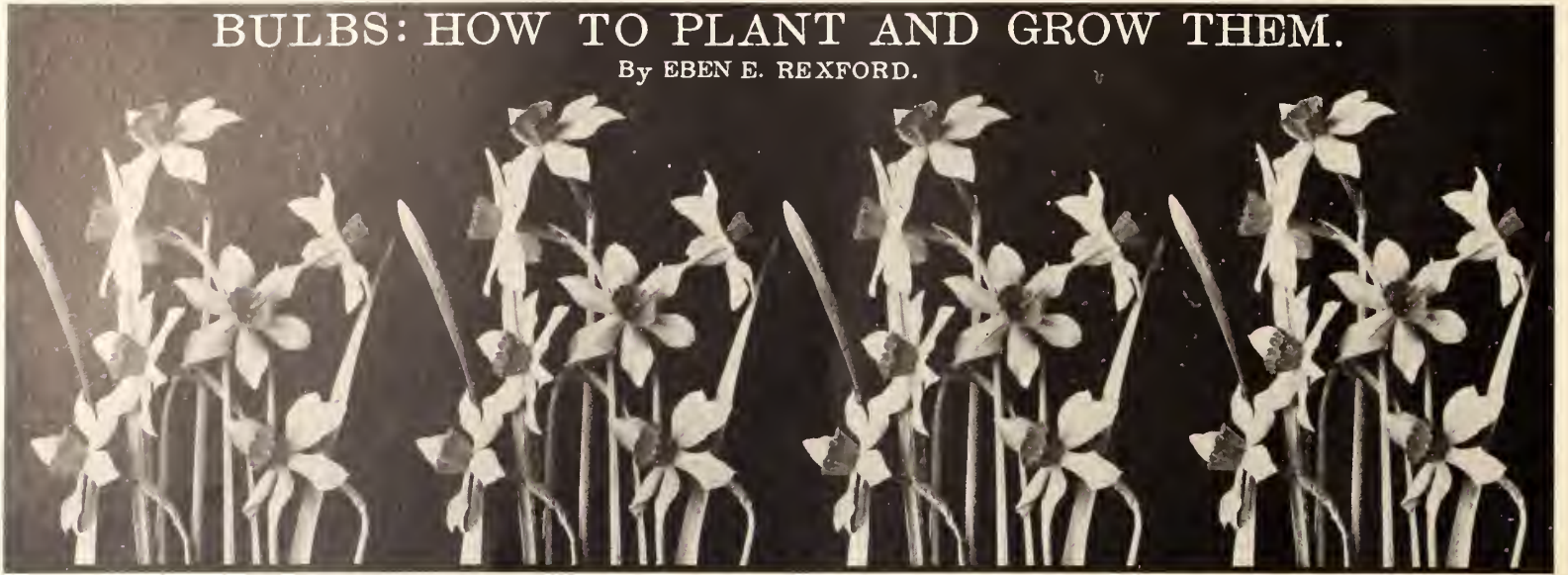
A carved-wood shrine for the adorned figure of the Virgin, carried in medieval processions. An appreciative traveler abroad is able to procure such things for a fraction of what it would cost to duplicate them. On the right is the circular hedge that screens ash-cans, etc.

narrow beds that line the inner walks this idea is carried out. Many varieties of iris, lilies, peonies, phlox, aquilegiae, small rose-bushes, and a graceful confusion of other flowering plants too numerous to mention, successively make of this little place a garden the like of which for grace and charm is rarely seen.

The hedges of English privet are one of the chief characteristics of the place, and deserve special attention. That portion adjacent to the front entrance had attained its present height and thickness of seven feet by four feet when it was five years old. Success in growing these hedges might be said to be directly proportionate to the amount of water the bushes receive when they are young. A striking feature of the hundred feet of hedge along the southern front of the garden is a series of eighteen-inch brick piers, six feet high, at intervals of twenty-five feet. These are topped with stone, and on each is placed a classic vase of terra-cotta, after originals in the Naples museum. These vases can be procured at comparatively little cost and when filled with a plant of the Yucca-like *Dracæna*, form a very unusual and artistic addition to the otherwise severe lines of the hedge. In winter two Florentine lions, also terra-cotta, now at either end of this hedge, take the place of the vases on the entrance gate-posts.

BULBS: HOW TO PLANT AND GROW THEM.

By EBEN E. REXFORD.



ALL bulbs, so far as my experience with them goes, delight in a light, rich, well-drained soil. If a naturally drained location can not be secured for them, artificial drainage must be resorted to. This can be obtained by excavating the soil to the depth of a foot—better, a foot and a half—and filling in at the bottom with from four to six inches of something that will not decay rapidly, allowing the soil above to settle back into its original compactness.

If the soil is heavy with clay, it can be lightened by working a liberal amount of coarse sand into it. Bulbs will not do well in a soil that clings to them tenaciously. A heavy soil injures them nearly as much as one too retentive of moisture. It is a theory of mine that they require a soil so light and open that air is admitted freely to their roots.

Those who think a soil of moderate richness answers all purposes are sure to discover their mistake after a little.

Bulbs are strong feeders, and if they can not find the food they crave, they deteriorate rapidly. We read, frequently, of bulb-growing in Holland, where the soil is literally a bed of sand, and from this we get an impression that they ought to grow exceptionally well in our soil, which is superior, in all ways, to pure sand; but were we to visit Holland and see the great quantities of manure that the florists mix with the sand in which their bulbs are grown, we would speedily revise our ideas about lack of fertility there. No growers of bulbs are more skilful than the Hollanders, and they never lose sight of the fact that in order to grow bulbs well they must feed them liberally with the best of food.

The ideal fertilizer for bulbs is cow-manure—so old that it is black, and crumbles readily under the application of the hoe. If it can not be obtained, bone-meal can be substituted, in the proportion of a teacupful to a square yard of earth, measuring by the surface if the soil is of ordinary fertility. If not, use more. No exact rule can be given, as soils differ



A Bed of Paper-white Narcissus

so greatly in quality. If cow-manure is used, let it be in the proportion of a third to two-thirds the original soil. Mix it in until it is thoroughly incorporated with the soil of the bed.

by the spade, and is not worked over afterward before planting, they will not do well. It is a good plan to work the soil over and over until it is as mellow as it is possible to make it.



Crocuses



Single Narcissus

It is quite important that the soil in which you plant bulbs should be fine and mellow. If you set them out in a bed full of clods, such as will be found where the earth is thrown up

It is not safe to be satisfied as long as there is a lump in it.

While bulbs can be planted any time during the fall, it is never advisable to wait until late in the season. Early-planted bulbs go to work as soon as put into the ground, and form roots upon which the plants will depend for support during the performance of the early work of next season—the flowering period. This development of roots will be completed by the coming of cold weather, and when spring comes all the plants will have to do will be to develop the flowers for which they made thorough preparation in fall. But with late-planted bulbs, it is entirely different. They set out to grow roots, but the coming of cold weather puts an end to the work, and that portion of it left undone this season must be completed in spring, at the very time when the plants are stimulated to the production of flowers. It naturally follows that by attempting to carry out two lines of work at the same time, when one only ought to be expected of them, the plants are at a disadvantage, and none of the work undertaken can be well done. Late-planted bulbs give inferior flowers and make inferior development and are short-lived.

Tulips, hyacinths and narcissus ought to be set at least four inches below the surface and about the same distance apart. Crocuses and snowdrops should be planted closely, in groups here and there, in the grass of the lawn, and be set about three inches deep. Lilies ought never to be planted less than eight inches below the surface. It is a good plan to put a handful of clear sand about each lily-bulb. On no account should fresh manure from the barnyard be used. It will greatly injure all bulbs.



What Can Be Done With Single Late Tulips



Lilium Auratum

I never give designs for bulb-beds, because the most effective bulb-beds are those which have no "designs" about them. The illustrations of tulip and paper-white narcissus, which accompany this article, will make plain my meaning. In these beds the bulbs are simply massed, giving one a suggestion of their having arranged themselves. The effect is vastly superior to any formal arrangement. If contrast of color is desired, it can be secured by using different varieties, as shown in the tulip-bed. But never make the mistake of planting bulbs of different kinds in the same bed. Keep your tulips by themselves, your hyacinths likewise. And give your narcissuses a place where they can scatter their floral sunshine untroubled by any rival. Of the latter flower do not fail to grow several varieties. Have a bed of the single yellow-and-white sorts, another of the magnificent double varieties like Van Sion, or Horsfieldii, or Empress, and a mass of the lovely paper-white kinds, as shown in the illustrations.

In order to carry out the scheme of massings, as shown in the illustrations of tulips and narcissus, it will be necessary to plant a large number of bulbs. By looking over the catalogues, and seeing the prices at which named varieties are sold, one might not feel able to afford the expense of planting on so large a scale. But a further examination of the catalogue will show you that mixed bulbs can be bought at such reasonable rates that almost any one can afford enough to fill quite a bed. These bulbs will give you quite as large, fine flowers as the named sorts will, but because they are "mixed" you can not be sure of what you are going to get from them until they bloom. But you may be sure, in advance, of their giving complete satisfaction.

Before the setting in of winter cover the bulb-beds with eight or ten inches of litter from the barn-yard. This will not keep the frost from penetrating to them, but it will prevent it from getting out once it is in the soil, and, by doing this, it will prevent that heaving of the earth which results in broken roots and loosened bulbs. It is the frequent alternation of freezing and thawing which does the

harm—not the frost itself. If we can keep the ground frozen after it once becomes so, by preventing the sun from undoing what the frost has done, tender plants would survive our northern winters. Covering the bulbs, as advised, is equivalent to shading the soil and keeping the sunshine out, thus guarding against the frequent alternations of heat and cold which rupture the cells of the plants, as well as the tender roots they put out in fall.

In connection with this article on the outdoor culture of bulbs, it may be well to say something about forcing them for winter-bloom in the winter-garden. Properly treated, they are sure to bloom.

A rich, light compost should be specially prepared for them by mixing loam, sand and well-rotted cow-manure in nearly equal parts. One-third manure may seem excessive, but it really is not, for success depends largely upon a vigorous and rapid development which can not be secured by soil of only moderate richness.

Single tulips and hyacinths are preferable, for forcing, to double ones. The best varieties of narcissus for this purpose are Horsfieldii, Empress and paper-white. The only lily I would advise the amateur to use is the Bermuda, or Horrisii lily.

Hyacinths, tulips and narcissuses should be sunk their depth in the soil. Use five or six bulbs to a six- or seven-inch pot. They can touch each other without interfering with perfect development. Keep each variety by itself. After putting the bulbs into the soil water well, and then store them in a cool, dark place—a cellar is preferable, though a shed will do very well—and leave them there until roots are formed. On no account should they be brought to the light until the pots are full of roots. This is an item of great importance. It generally takes six weeks or two months for full root-development.



Tulips

A Rival of the Stained-glass Window

By Benjamin Coleham



ATTENTION has lately been drawn to a scheme of decoration entirely new and interesting.

Marine Mosaic is the name given to a new method of obtaining effects quite distinct from those of stained glass and pigments, in the class of which it may be placed. Its appropriate name is derived from the adaptation of material found upon the sea-shore in connection with stained and chipped glass. It is, in truth, but another means of reaching the objective point for which the arts are striving—that is, to render form and beauty in color, with effect of light, in such a manner as to make a truthful impression upon the retina of the eye. It makes but little difference whether one indulges in the use of oils, pastel, water-color or glass; a variation in the accomplished work with each medium will be perceptible. By the manner in which the materials are used, there will be demonstrated certain individual idiosyncrasies. While each laborer may be struggling for the same end, evidences of a diversity of thought and opinion will appear. The realist will, with honest purpose, render form apparently without light. The tonalist, in the popular method of the day, produces light without vibration, while the impressionist, with his well-defined scheme, partially solves the science of vibration and the effect of light upon form.

Marine mosaic holds the same relation to the art of glass decoration that impressionism does to the art of painting, in supplying a conception of vibration and scintillation in transparent work found lacking in stained-glass decoration, which in a degree the impressionist has rendered in painting.

The claim of a new art is not made for marine mosaic, for the truth of the popular adage, "There is nothing new under the sun," exists in art as in the sciences, but it does seek recognition as an advanced development in the study of the penetration of light through objects so placed as to illustrate in a pictorial manner the beauties of nature.

Before the discovery of glass, it is known that shells were used for windows. At the Louisiana Purchase Exposition at St. Louis, one of the exhibits of a semi-civilized race contained a habitation with windows of transparent shells. In modern decoration shells, and even pebbles, have been combined, but in marine mosaic is to be found the first use of these materials in a skilful and scientific way to secure a long-sought-for effect.

The mechanical process varies from that used in the making of stained glass work. It is only through this newly acquired method that the desired results can be obtained.

The use of cement in place of lead allows a secure application of the variety of small and irregular pieces of which marine mosaic is comprised. At the same time, the play of light and shade as a chief attraction can only be acquired by this new method.

The surface of marine mosaic being a plated cover upon three-eighths inch thick hammered or plate glass, its strength and durability has no rival in the customary leaded product.

In marine mosaic, by careful drawing and the gradation of accents, the movements, sparkle and life of the sea is rendered in a manner quite original and effective. By the juxtaposition of high relief and density of color with variety of materials, there is created imaginary action in a forcible and impressive manner.

Atmospheric effects are obtained by the use of irregular bits of material, and perspective is derived from gradation of size and density, with the same quality of color.

By the use of a succession of undertones of primary colors with a plating above, a prismatic influence secures refraction which is utilized to serve as a truthful representation of reflection.

Foliage, dense or light, is produced in a similar manner, but without the use of undertones. Much of the same scientific methods are applied to the production of landscape, when, with a knowledge of the colors possessed, pebbles, stones and shells are so placed side by side and combined as to give a general aspect of nature. Again, the under-life of the water is pictorially shown by the use of crustacea of the natural dwellers of the sea, such as the crab, scallop and similar mollusca, which are made to appear with a diffusion of their own color, apparently disporting in their native element. A further and more extended use of the harvest of the sea is made in the field of flora,

for it has been ascertained that in form and color nearly every known flower may be represented with sea-shells, whose multitudinous shapes and immense variety of colors and shades adapt themselves to the requirements. In the examples of marine mosaic may be seen the pure white lily, the gorgeous chrysanthemum in its varied colors and shades, the drooping wistaria in its tones of purple and blue, the rose, with its delicate petals and groups of bright hydrangea, with numberless other representations, all in their natural beauty of color and form.

Stones and pebbles are, with the skill and knowledge acquired by the artist, made to appear as representing the fruits of the garden; bunches of luscious grapes are shown in transparency of color so natural as to appear quite edible; the orange, with its hue of gold; the peach, showing its deli-



Decorative Window Made of Sea-shells and Stones

cate blush of color, and the apple displaying its richness, all of which is secured through the divine gift of light, so profusely and liberally bestowed.

A window lately finished for Mr. William Gillette, who has in his unique house-boat several decorative pieces of marine mosaic, is truly an expressive piece of impressionism—a picture in true color.

A landscape with the rising sun, a disc of brilliant red, casts its reflection of refulgent beams across the wide space of sea in the foreground. Iridescent waves of mauve, purples and gray-greens, with the occasional sparkle of a "white cap," is the impressionistic rendering of the combined vibration of undertones.

Out of the broad expanse of seascape rise rough promontories composed of stones, with rich hues of purple and red so placed as to give effect of light upon the rocky crags. Below, in the foreground, are to be seen the natural crustacea, crabs, as if sporting in the deep water.

The dense foliage of trees with huge trunks looms up into a brilliant crimson sky, fleeced with deep purple and violet clouds. The trunks of the trees are the natural razor-shells which give true form and color. This picture is the last of three made to represent in order—sunset, moonrise and sunrise.

A finished piece of marine mosaic possesses a recognized advantage in displaying upon its face a double effect, each of which is artistic and beautiful. One, with the penetration of light from without, shows with rich brilliancy a wealth of splendor in color; the other, with light from within, shows in detail the given lines of the picture in subdued monotonous, harmonious and impressive.

W. Cole Brigham, whose studio is at Shelter Island, Suf-



Memorial Window Typifying the
"Glory of the Cross"

folk County, N. Y., is the maker of marine mosaic. He has for several years made this work a study, and by continued experiments attained a degree of perfection which places this product among the fine arts.

Marine mosaic has been utilized in many ways. Several memorial windows and decorative windows for residences have been executed; it has been used for cabinet and cupboard-doors, fire-screens, lamps and lanterns; also in an applied manner, representing raised carved work in colors.

Undoubtedly this new scheme, which might be styled a discovery, is bound to create an influence upon established rules and secure favorable recognition.

This new art shows, in a very interesting way, that the developments of decorative art have not yet reached their limits. It would seem, indeed, as though the possibilities of most materials in a decorative way had been well nigh exhausted. Marine mosaic, however, shows that this is not the case, but that even the despised shell may be pressed into artistic use and transformed into a handsome decoration. Few natural substances are so beautiful as shells; but shells have, until now, been chiefly retained in the cabinet of the curio collector, where their beauty interest is little understood and perhaps not always appreciated.

Their new utilization in this form may not mean an extended revival of a new art, but it clearly means that the decorator has found a new material which he has put to new use. This in itself is an achievement of no mean order, and when the material is as beautiful as that used in this work it means a great deal. Marine mosaic, at present, is something new, but it has doubtless an excellent future before it.

A Living Sun-dial

By W. A. Mount Stephen



THE accompanying illustration depicts a living sun-dial which may be seen in the grounds adjacent to one of the well-known castles in Lancashire, England. A well-trained yew-tree constitutes the pin of the dial; the closely clipped box the Roman figures. This sun-dial has now been growing for nearly two hundred years, having been planted in March, 1732. This fact is marked on the dial by clipped box in the same manner as the Roman figures. The outer circle denotes the hours, while the inner one denotes the quarters. The correctness of this dial compares favorably with those of modern construction. An interesting development of the clipped yew-tree so characteristic of English gardens.



A Living Sun-dial

Mushroom-culture in France

By Jacques Boyer



THE tourist who for the first time visits the southern and western plains of the suburbs of Paris is sure to be puzzled by certain quadrangular wooden towers which he perceives here and there rising out of the ground, and what still more excites his curiosity are the clouds of smoke that occasionally ascend from these strange structures, which are scattered over waste grounds, cultivated fields and gardens. These structures, however, do not serve as housings for the secret prosecution of business of a criminal or questionable nature, but are simply shafts for the ventilation of old quarries that are at present used for the cultivation of those mushrooms that are so highly prized by the gourmets of the old and new worlds. The *Agaricus campestris*, called the field-mushroom, the only species that it is possible to domesticate, grows by preference on half-decomposed horse-manure. Dr. Repin says, "Its cradle was a melon-bed." But we do not know the name of the bright gardener who took some "spawn" from one of these beds in which mushrooms had grown spontaneously, and sowed it in new manure in order to obtain a second crop. There is good reason, however, for the belief that such culture originated in France in the latter half of the eighteenth century, and that at the outset the kitchen-gardeners who engaged in it in the spring and fall considered it as a natural adjunct to their business. Then, a century ago, a horticulturist named Chambry conceived the idea of devoting the abandoned subterranean quarries to the culture, since in them are found the conditions of temperature and humidity favorable to the development of the fungus. He succeeded thus in making a handsome profit, with the consequence that he had many imitators, who have tried to lease all the excavations abandoned by the quarrymen, so that the mushroom industry soon became one of the most prosperous of the environs of Paris.

At present, the suburban mushroom exploitations are almost exclusively distributed over the left bank of the Seine, in the section comprised between Meudon and Ivry. The most important are situated at Montrouge, Clamart, Vanves, Chatillon, Arcueil and Sceaux, and formerly extended to the Quartier du Val-de-Grace in Paris.

The galleries are excavated in limestone, as at Carriere-Saint-Denis; in gypsum, as at Argenteuil; or in white clay, as at Meudon; and the oldest of them (those from which the architects of the middle ages took the stone and plaster that enabled them to

erect the public buildings of Paris, from a labyrinth of low and narrow chambers in which the workmen can scarcely move about without stooping.

But the more modern exploitations, of which the accompanying engraving gives a faithful picture, consists of spacious galleries, of which the roof is supported by strong pillars carved out of the rock itself. Here the mushroom-cultivator exercises his somber profession at his ease. The peg-ladder perceived in the interior of the ventilating-shaft will allow us to descend into the mysterious cave where here and there sparkle the oil- or kerosene-lamps that guide the cultivator.

Much preliminary work must be done to convert a quarry into a place for mushroom-culture. After providing for the aeration of the galleries, a well must be dug from which to obtain the large quantity of water necessary, and after that a supply of horse-manure must be secured, this being the only material favorable to the development of the mushroom. Moreover, the quality of the manure plays a leading part in the yield. Preference is given to the manure of heavy percherons or other draught-horses which perform a great amount of muscular labor and are supplied with highly nitrogenized food.

After the material has been selected, the mushroom-grower submits it to the following manipulations: It is first arranged in heaps about three feet high called "flows," whose bulk sometimes reaches 3,500 cubic feet, and should be at the least 750 feet. Then the whole is submitted to the action of the air for three weeks, and is turned over from time to time in order to diminish the intensity of the fermentation. In fact, according to Dr. Repin, manure acquires nutritive properties during the course of fermentation, for it is found that if fresh manure is sterilized and sowed with spores of mushrooms beginning to germinate, the fungus never accomplishes its complete evolution in such a medium. It germinates and sends out filaments, but does not fructify. The manure, in fermenting, becomes filled with microbes, which, according to the observations of various biologists, appear to be useful to mushroom-culture only through the products elaborated. Their role is confined to favoring the chemical combustion by raising the temperature at the time of establishing the heaps or "flows." However this may be, at the end of a fortnight, the manure possesses a special odor somewhat recalling that of the field-mushroom itself, and is ready to



Ventilating-shaft of a Mushroom-cave



The Entrance to a Parisian Mushroom-cave



Forming the Beds of Manure

be lowered to the mushroom-galleries. Here the workmen arrange it in beds as regular as possible in the center of the galleries, the rocky walls of which are supported here and there by piles of rubble to prevent them from falling in. In one of the illustrations workmen are seen in the act of forming rounded beds sixteen inches in width at the base and twenty inches in height, which they carefully align side by side along the galleries, like the furrows in a field. Such dimensions and such arrangement are not arbitrary, for experience has shown that under such conditions the manure becomes slightly heated anew and reaches a temperature of from 60 degrees F.

It is then time to begin the insertion of spawn into the beds. The vegetation of this mycelium, as botanists call it, which was suspended by dryness, always resumes its activity under the influence of humidity and heat. The fragments of spawn perform the function of slips. They throw out filaments which radiate in all directions and finally become disseminated through the bed in a length of time that varies according to the condition of the surrounding atmosphere. The copy of a photograph which was kindly sent to us by Professor Atkinson, of the university of Ithaca, shows the ramifications of the mycelium along with the young mushrooms that have developed thereon.

The art of the mushroom-grower afterward consists in rendering the local conditions propitious to the culture. The principal difficulty proceeds from the enormous quantity of oxygen which is absorbed by the respiration of the mushrooms, so that when the latter do not obtain a sufficient supply of air, they stop short in their growth. The galleries must therefore be strongly ventilated, the air therein be kept saturated with aqueous vapor, and variations of temperature be prevented, so delicate are

the young fungi. Moreover, the mycelium, if left to itself, would not fructify well, and so the beds must undergo an operation which consists in covering the surface of the manure with a stratum of calcareous earth or sand and equalizing it with shovels. Finally, at the end of twenty-five or thirty days, during which the beds must be sprinkled, carefully inspected and freed from every bit of parasitic vegetation, the mushrooms begin to pierce the stratum that covers them. They do not, however, grow in a continuous manner. Crops separated by intervals of non-production succeed each other during three months, and the small, grayish white buttons are gathered by the grower whenever they become sufficiently rounded. With a basket under his arm, he walks along the

beds and, delicately grasping the mushrooms with his fingers, quickly detaches them.

As for the varieties of mushrooms cultivated in the Parisian quarries, they differ in color, size and weight. The three principal ones are the white, which are fine and in great demand, but do not withstand carriage very well; the light yellow, which are more vigorous, more productive and less fragile; and the gray, which are fragrant, but acquire a dark color by age, which lowers their value in the market. Moreover, the fungi in a short time lose their character and undergo a degeneration. Consequently, growers rarely cultivate a given species for more than two or three years. They prefer to have recourse afterward to virgin spawn obtained by scientific processes that permit of selecting the mushrooms, or to reproduce the kinds deemed to be the best by direct germination of the spores.

The idea of preparing spawn through the germination of the spores occurred to various botanists a long time ago, but Messrs. Constantin and Matruchot alone succeeded a few years since in obtaining positive results. In order to obtain



Earthing the Mushroom-beds



Sprinkling the Mushroom-beds



Common Meadow-mushroom and Its Spawn

Agaricus spores, they placed a mature mushroom on a sheet of paper and then collected them a few days afterward in the form of an impalpable brown powder. In order to cause them to germinate, they had recourse to the media used in bacteriology—moist air, damp sand or dung, for example. The spores ready for germination become distended in the first place in taking on a light color, and then throw out from one of their poles a very fine tube which enlarges and ramifies in all directions in budding. In this way there is formed a small tuft of mycelium, which, in a favorable medium—manure, for example—will extend indefinitely.

Dr. Repin applies this process industrially in the following manner: After distributing the manure in strata of equal thickness between superposed steel plates, he submits the whole to a pressure of seven hundred pounds to the square inch. On coming from the press the whole is found to be agglomerated into a plate about one-half an inch in thickness and almost as hard as wood. He then sows these plates with spores and places them under conditions most favorable for the development of the mycelium, but in such a way as to protect them from elevations of temperature to as great a degree as possible. The vegetation of the spawn is retarded, although its vigor increases when it is introduced into the warmish atmosphere of the mushroom-gallery.

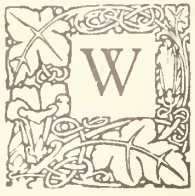
After the plates of manure have become entirely permeated by the mycelium, they are cut by a machine into pieces four inches square, each of which represents an insertion. The mushroom-grower can therefore lay in a supply of the variety that is best adapted to his quarry, for this virgin spawn remains free from the diseases which attack mushrooms, and particularly that which is called "softening," so dreaded by Parisian growers, whom it annually costs more than a million francs. The mushrooms attacked by the cryptogam that causes the disease become atrophied and covered with a rosy down, and, at the epoch of their maturity, become deliquescent.

We shall finish by giving a few statistics designed to show the importance of this Parisian industry. There exist at present in the department of the Seine about two hundred and fifty mushroom installations owned by eighty individuals, not counting a score of other exploitations distributed through the neighboring departments. The number of workmen employed in the industry exceeds a thousand. The total value of the mushrooms annually produced in the suburbs of Paris amounts to twelve million francs, and certain tradesmen of the Halles makes an exclusive specialty of their sale. Naturally the industry therefore ranks as a most important one in Paris.



Fruit and Orchard Work in October

By E. P. Powell



WE WIND up our work in October, in the berry garden, by cutting out all the fruit canes that have yielded fruit; by crowding the new canes between two wires stretched from post to post; and just at the end of the month, or perhaps better in November, we cut off the tops of these canes with long-handled shears, leaving them about five feet in height. The old canes must then be forked out and thrown into a bonfire. This work is pleasant and cheerful, because we do not feel hurried, as we do in the picking time. The sun is rarely over-hot, and the birds, although no longer singing, are winding up their affairs all about us. Occasionally a catbird bids us good-bye with a song, in a minor key. The rattling of wagons, loaded with corn or potatoes, comes up to us from the valley farms. When our work in the berry garden is finished, everything is ready for plow or cultivator. But if your field is on a sloping hillside, you had better not stir the soil nor kill the weeds, but leave them to prevent waste by washing during the winter.

Orchard work begins about the first of this month, although the Pound Sweets should be off the trees in September. The grand Hubbardstons are now fully colored, and if not picked at once, will fall to the ground. The King follows, although it is a good keeper, as is the Hubbardston also. They simply are ripe early, and must be gathered promptly. The Fameuse, and its two children, Shiwassie Beauty and Princess Louise, follow, and their quality depends on their being promptly picked and put in storage. By this time the Spitzenburg and Golden Pippin are loosening on the stem, and must be quickly gathered. You may leave your Baldwins till later. This matter of picking apples in succession is very important. You can not go into an orchard and gather promiscuously without serious loss. The apples should go immediately to a cool cellar, dark, and thoroughly ventilated until freezing weather. Then if your bins have been cleaned and your walls sweetened with Bordeaux mixture or lime, and no taint of must anywhere about, you will find your fruit keeping admirably. Every apple, however, must have been handled with tenderness. If dropped only two or three inches into a basket, you have broken two or three cells, and those broken cells will begin to decay sooner or later. The apple cellar should never be the same as the vegetable cellar, nor should it be under the house at all. It should be under a part of the barn, and with no opening toward the stables. It should be thoroughly ventilated all summer, but not ventilated at all during the winter. It should be absolutely clean, but also moist. Through mine I conduct a brook, in the grouted floor—part of the way in tile. This whole question of apple-growing needs revising. It is a fine art and a poem.

Preparing for winter is the burden of the Northern States. No sooner are we through with our apple harvest than we must cover our strawberry beds, our roses and tender shrubs. Grapes must be trimmed and laid down as close as possible to the ground. Do not, however, bother yourself with too much that needs winter protection. I have found this sort of work such a burden that I am now willing to dispense with a good many fine things. In Florida we go right ahead through the whole year; making garden in November, just as we are beginning to pick oranges; planting potatoes in January, and melons in February, or March. Our strawberries we can not get along without, even if not grown for market. I have been accustomed to covering these with leaves, over which I

scatter a liberal compost, which will be worked into the soil as a fertilizer. Covering with a fertilizer alone does not work as well. At this season of the year also look out for drainage, wherever water can settle during the winter, or can wash the soil during warm spells. On side-hills a few shallow winter drains should be opened—to be plowed out during the spring. These should be arranged to catch the water quickly, and carry it off to larger and permanent drains.

I do not distribute my compost piles, invariably, as early as October. These piles are the secret of a successful fruit farm, or country homestead. They are distributed about the fields, orchards, and garden, at convenient points. I have five of them for nine acres of land. They are composed of barnyard manure, all the coal ashes I can produce or get, more or less wood ashes, dozens of loads of autumn leaves, weeds and waste and street rakings, and every other waste material, which can be utilized as a fertilizer. Old brine, salt, lime, plaster all come into play. Bear in mind that the weeds, which are generally wasted, contain a good deal of phosphates and potash. Considerable nitrogen also is gathered from old sod containing legumes. My house drainage is collected in one of these piles, after running through a pipe drain. Such composts, after being comminuted in October or November, can be applied in the garden or elsewhere, and there will not be a five per cent. loss of fertilizing quality. Barnyard manure as generally applied, loses from fifty to ninety per cent.

I have suggested a use for autumn leaves. These leaves are what nature has worked at all summer, weaving them out of the elements of the air, to add to the soil. Never burn one of them. The wealth of the farmer and gardener lies in the leaves. They should lie where nature places them, sufficiently to protect the lawns; others should be raked for stable bedding; and others placed directly in compost piles. I use them in my hen-house, and in rooms where the hens are fed, to keep their feet warm and induce scratching. All these and those used for covering plants, are gathered in the spring and placed in the compost piles. I assure you that with this sort of care in using what nature gives you, you can fatten the poorest soil. I have made my gardens and orchards extremely fertile in this way. I have never yet bought one pound of commercial fertilizer.

You should have kept memoranda, all summer, in which to put down your needs and suggest your future work. Consult these memoranda now, and you will find that you can work in a great many small improvements, every fall, that will count a long way in your profits, as well as in the beauty of your place. Every October should be notable for the addition of a few fruit trees of the newer sorts. Autumn planting is the best planting—provided the tree or shrub be well mulched and staked. Drive the stake down very tight, and tie with soft twine or basting, quite firmly to the stake. If, however, you find that your ground is soggy, heel in your trees or plants in a dry spot for spring planting, and throw over the roots a liberal supply of coal ashes. I never plant anything, either in the spring or fall, without a mulch of coal ashes. This material is one of the most valuable at our command—I refer to anthracite ash, that from bituminous coal frequently containing a good deal of sulphur, and must be used with more caution. I always wish to jog my neighbors' elbows, about this season of the year, and remind them that substantial success in intensive horticulture consists in getting a lot of spring work done in the fall.

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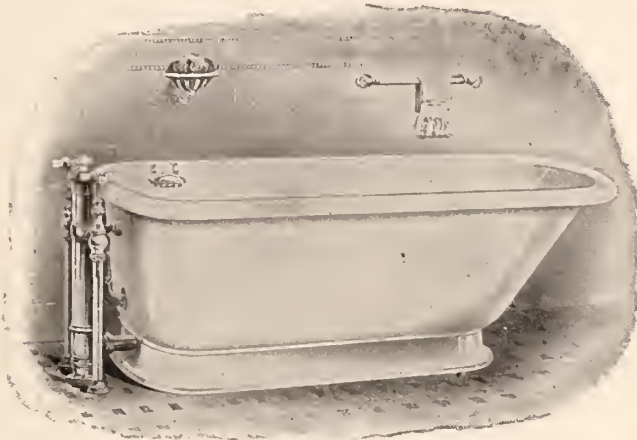
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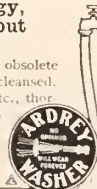
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FLORAL OCTOBER WORK

By Eben E. Rexford

IT IS not too late to move shrubs and hardy border plants. Indeed, most kinds will not have fully ripened their annual growth before the first of the month. In moving, then, do the work leisurely and carefully. A plant that is not well handled will be sure to suffer, if it does not die. A little care will reduce the chances of failure to the minimum, and probably do away with them entirely.

In lifting a plant for removal, take up with it as much earth as possible, and to make sure that it will not crumble away from the roots, apply water in liberal quantity a few hours before you begin work. Then cut about it carefully with a sharp, thin-bladed spade, by running the tool into the ground perpendicularly its full length. Then lift away the soil outside this cut. This will leave the bulk of the roots of the plant intact, inside an undisturbed block of earth. When you have made an excavation all around the plant, work the spade under the block in such a manner as to cut it loose from the earth below. By working in this way, you will have your plant ready for removal without seriously disturbing it. If the block of soil containing the roots is large, do not attempt to handle it alone. Get some one to help you. Take hold on each side of it. Lift it out and put it on a wheelbarrow or a sled, and trundle or draw it wherever it is to go with as little jarring as possible. Have the place made to receive it before this part of the work is done. Let it be large enough to take in the block of soil without crowding. Lift it from the barrow or sled with great caution, and lower it to its place, making sure before you do so that you have it in the right position. Then fill in about it with fine soil, firming it down with a blunt stick, after which water well. A plant handled in this manner will be almost sure to come out in spring as if nothing had been done to it.

Peonies can be set now to excellent advantage, much better, I think, than in spring, because these plants begin to grow very early in the season, and, by the time the ground is in working condition, they will have made considerable headway. At this time of the year they are dormant, therefore removal will not greatly disturb them if the directions given above are carefully followed. Make the soil in which you plant them very rich. Because the peony will live on indefinitely in a poor soil is no good reason why one should starve a plant as fond of good food as this is. Feed it all it can digest and you will be surprised at the difference between it and a neglected plant. It will have a dozen flowers where the latter will have one, and every blossom will be so large and perfect that you will feel sure it must belong to a superior variety. The difference will all be attributable to good care. Never neglect the peony if you want it to do itself justice.

Be sure to provide yourself with a stock of good potting-soil. Some of your plants may need a shift during winter. And whenever a plant really needs attention of this kind it ought to be given promptly. A really fine compost for nearly all plants that are adapted to window-culture is prepared as follows:

One part garden-loam; one part turfy matter, or leaf-mold; one part sharp sand.

Mix well, and add bone meal in the proportion of a teacupful to every half-bushel of soil, and mix again.

The turfy matter spoken of can be obtained by turning over old sward and cutting away that portion immediately below the crown of the grass. This will be full of grass-roots. As they decay, they will supply vegetable matter

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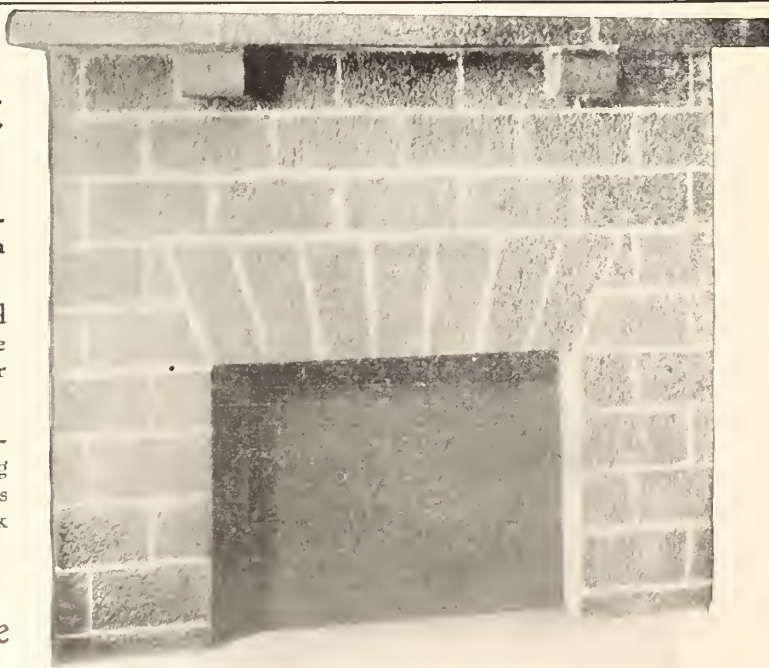
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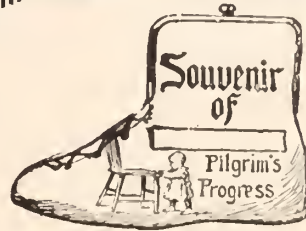
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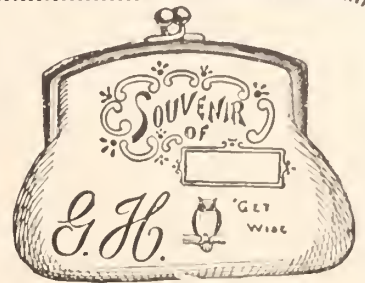
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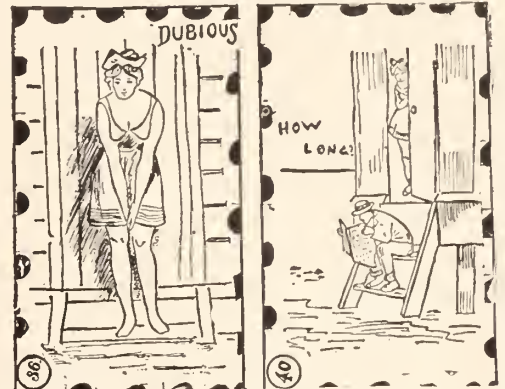
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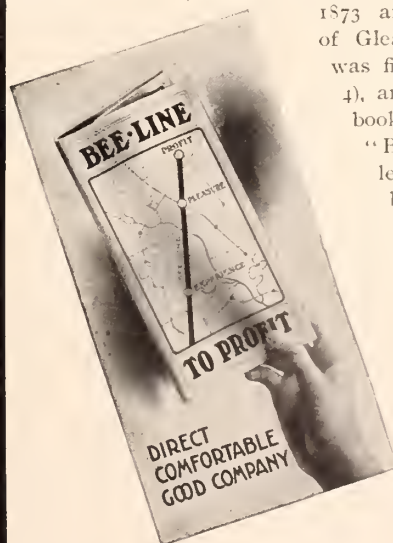
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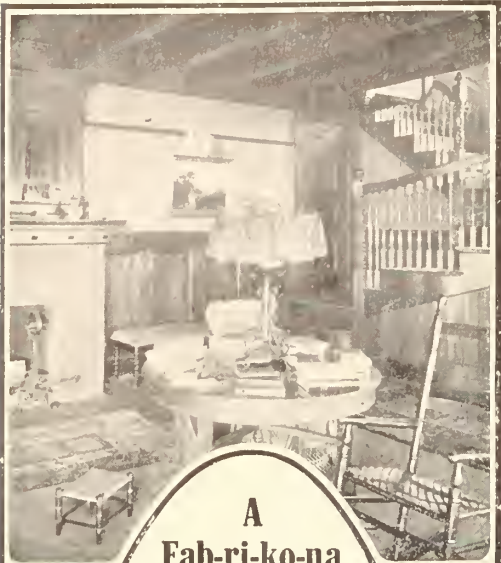
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almost equal to that furnished by decayed leaves. This soil is easily procured, while real leaf-mold is hard to get, unless one lives in the country. One-third sand may seem a large proportion, but it is not too large. It keeps the soil open and porous, allowing water to pass through readily, and admitting air freely, and as long as this is done you will have no souring of the soil, consequently the roots of your plants will be free from the diseases which are almost sure to attack them in a soil unduly retentive of moisture. If I were obliged to choose between sand and manure, I would choose the former. To avoid repeating use chemical fertilizers—the very best to be found on the market—and the plants get all elements of plant-growth from these, instead of from the soil.

There will be plenty of garden-work to do before the closing in of winter. Neatness all the year round ought to be one of the cardinal points in the creed of every good gardener. Because most plants have ceased to bloom is no reason why work in the garden should be suspended. Pull up everything that has outlived its usefulness, and burn it, or add it to the compost heap. Cut down the stalks of hollyhocks, and delphinium, and golden glow. If left to stand over winter, they will make an unsightly blotch on the snow which covers the garden-beds. Gather up the racks and trellises which did duty through the flowering season, and store them away under shelter. If this is done, each year, these helps of the gardener will last for several seasons. But, if left exposed to winter storms, they will soon be worthless.

Eternal vigilance is the price of exemption from weeds. Be ever on the lookout for them. When you see one, pull it up, then and there, or cut it off so close to the ground that it will never start up again. Watch for them until cold weather comes. Then only will they give up the attempt to reproduce themselves.

It is a good plan to do all the pruning you can in the fall. It saves work for next spring. This is especially the case with roses, which have to be laid down and covered next month. Cut away all weak wood. Thin out the old branches. Aim to retain only the strongest, healthiest portions of the plant. In this way, we renew the plants from year to year to a great extent, and keep them up to a high standard of vigor. Hydrangeas can be cut back to excellent advantage now. So, in fact, can all shrubs which make branch-growth in spring, before flowering. But such plants as the lilac, Japan quince and forsythia, whose buds are formed this season, must not be pruned now. If this is done, you destroy next season's crop of flowers. Therefore be careful to confine your pruning operations to the kinds which produce their flowers on the early growth of the coming season. If you have studied your plants as you ought to, you will be familiar enough with their habits to make no mistakes along this line.

Provide yourself with some good, sharp pruning-shears before beginning work. Don't attempt to haggle off hard, stiff bushes with a butcher-knife, as so many amateur gardeners do. Do a neat, clean job of it. This you can not do unless you have proper tools to do it with, therefore add pruning-shears to your gardening outfit, and you will speedily conclude that it was money well invested.

The greenhouse must be put in shape to withstand the cold weather of the winter. Go over the sash, and see that the glass in it is tightly held in place by stout glazier's points and the best of putty. Look to the joints of sash and frame, and make sure that they fit snugly. If they are loose, a strip of concave molding run along the line of contact, drawn down firmly against each post, will effectually

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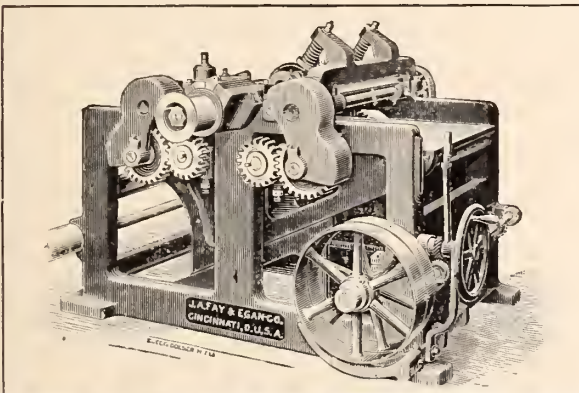
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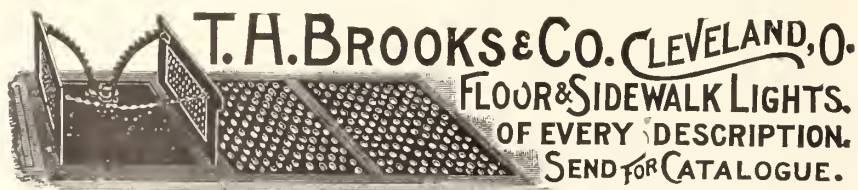
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close all cracks against the admission of cold air and wind. This molding, on account of its concavity, is very flexible, and can be adjusted to fit sash and frame with very little trouble, if nails of sufficient length are used. Short nails will be likely to lose their grip on account of the resistance of the molding; therefore guard against the possibility of failure in this respect, as much depends upon the strips fitting tightly throughout the season. Strips of cloth pasted over cracks and crevices will be found very effective in keeping out the cold, and many amateur gardeners can apply them to better advantage than they could molding. But I would advise the use of the latter, even if you have to hire some one to put it in place for you, as a more thorough and dependable job can be done with it.

Storm-sash will be found of great benefit. Where it is used, plants can be allowed to stand with their leaves against the inner glass, without any risk of their being injured by frost. The air-space between the two thicknesses of glass protects them from the cold. The first cost of such sash is not great, and, with proper care during the season when it is not in use, it will last for a good many years. Many persons claim that the cost of the sash is nearly met, in one season, by the saving of fuel.

When storm-sash is used, cold finds it impossible to pass the space between the two sashes, and less fire is needed to keep the temperature of the room evenly comfortable. Some reader may urge that the use of storm-sash interferes with the daily airing of the plants growing in windows thus fortified against the severities of a northern climate. That it prevents the admission of air at that window I admit. But that is a good thing, for many plant-owners injure them greatly by allowing cold air to blow directly upon them. Use all the fresh, pure air possible, but let it come into the room at some other place than the window where you keep your plants. If this is done, it will mix with the warm air in the room, and all its chill will be taken off before it reaches the window-garden. To allow cold air to blow upon a delicate plant often injures it nearly as much as positive freezing.

Be on the lookout for insects, which breed with wonderful rapidity after plants are brought into the house.

The home-made insecticide of Ivory soap and water, will be found quite as effective as any and it has the merit of being as safe as it is cheap. In addition to that, it is pleasant to handle—something that can not be said of the tobacco preparations used in fighting insects. Spray your plants with this insecticide every week, even if not an insect is seen on them.

FALL WORK IN THE GARDEN

By Ida D. Bennett

BEFORE the first frosts of September, or whenever the frost-king first makes his visits in the different parts of the country, fall work in the garden should be well under way.

Plants that have been plunged in pots in the garden in preparation for winter-blooming should be lifted before the frost has visited them and prepared for the change that awaits them indoors. Protecting in the beds with papers and rugs is not at all the thing if one would have successful plants during winter. The change from the free open life of out-of-doors to the steam, hot-air or stove-heated, breath-contaminated air of indoors is so great that only the plants that come into it in the pink of condition can hope to survive.

Plants, then, that are intended for winter-blooming should be lifted early in September and potted. They should be freely watered the night before lifting that the earth may adhere to the roots, and it will be well if the

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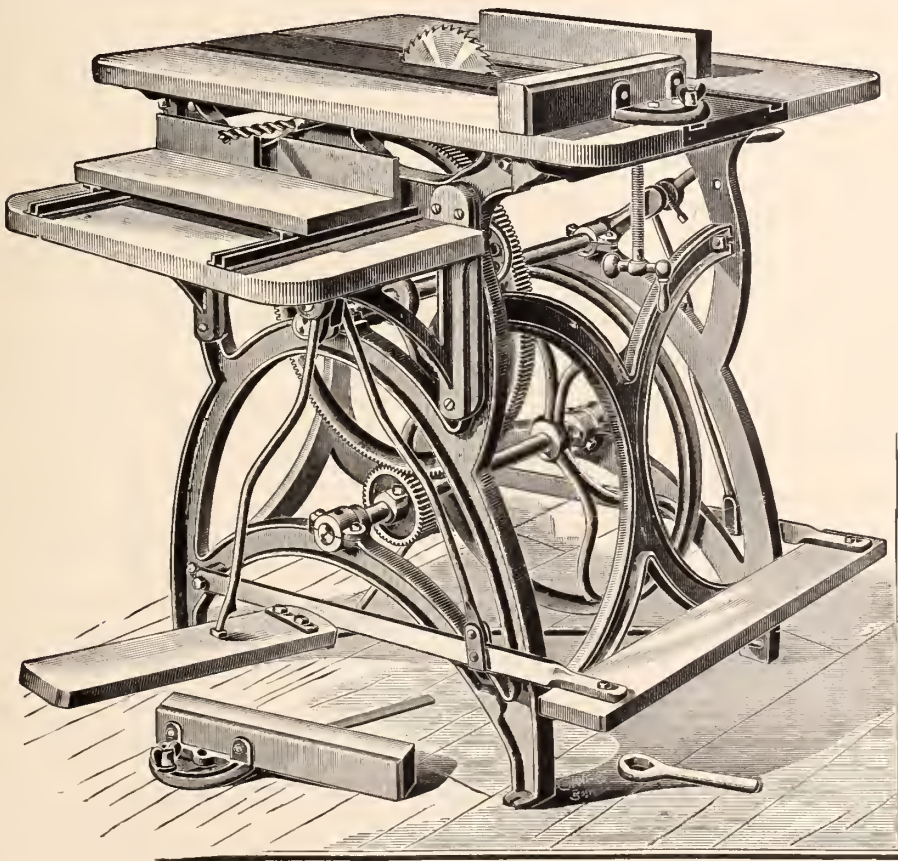


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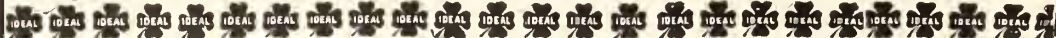
The bread-winner thus gets a right start for the day's work by rising, bathing, dressing and breakfasting in a cozily warmed house. So, too, an evening in a cold house—no matter how brightly lighted or richly furnished—is a sad climax to the day's efforts. Then, there are the vacant chairs in a cheerless room—the genial, cozy warmth of "other places" often lure family members away from what should be the place of all places—*home*.

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plant has had a circle cut around it, of the size of the pot it is to occupy, a week or more before lifting. This will reduce the root-area to the requisite dimensions and the time that elapses before lifting will allow of the starting of new feeding-roots from the severed roots and put the plant in the best possible condition for blooming.

The plants being potted should be placed in a cool, rather shady place for two or three days, and brought into the house before fires have been lighted or doors or windows closed. This will give them time gradually to become accustomed to the change. When the doors must be closed it will be well to admit as much fresh air, always avoiding a draught, for the plants as possible.

Plants which are to be stored in the cellar or under the benches in the greenhouse may be left until later.

Hardy perennials which need dividing, especially those which have finished blooming, may be lifted and divided. Perennial phlox is much improved by this treatment and if set now will become established and make considerable growth before cold weather.

Iris may be planted this month and will make better plants than spring-planted roots which have been in cold storage during the winter.

Seeds of hardy annuals which do better for fall-sowing may be gotten into the ground as soon as the room can be spared for them. Poppies from fall-sown seeds are much finer than those from seed sown in the spring. The digitalis or fox-glove sheds its seeds in midsummer and comes up the following spring and the seed may be profitably sown at this time, though in this case it will be better to sow under the protection of the cold frame.

Most of the hardy perennials which will bear transplanting may with profit be sown in the cold frame at this season. Pansies are especially favored by this treatment.

When the first frost has spoiled the leaves of the caladiums the roots may be lifted and all injured parts cut back and the bulbs stored in a warm, dry place. The caladium requires more heat in storage than most other bulbs and should be placed where it will not be in any danger of being chilled. Gladioli may be left until just before the ground freezes and dahlias are not injured by a frost that does not reach the roots, so that they may be left until the first frost has spoiled the foliage, when they should be dug.

Any work that will have to be done in the spring, but can be anticipated, should be done now. There is always so much more to do in spring than there is time to do it in that every hour's or day's work that can be done now is time well invested. Fences may be put in order, paths repaired and the curbing of beds looked after. Is a trellis-post weakened be sure that the spring will find it prone on the ground and the vine more or less injured; a new post now will save annoyance and loss later on. Does the cold-frame sash need glazing, do it now; do not trust to boards laid over the broken glass to keep out frost and rain; the first stiff wind will displace it and probably land it on some other part of the sash and the result will be another broken glass. Look the insides of the frames over for knot-holes and see that they are closed with bits of tin nailed over; the failure to do this may result in the mice making their nests under the warm leaves or the moles burrowing therein.

All pots that shall be needed for winter use should be gathered together and scalded with soapsuds and placed where they can be gotten at readily. Potting-soil that will be needed should be gotten, sifted and placed under shelter and, if it is first given a thorough heating on the kitchen-range to destroy all insect-life, it will do well. There is nothing more annoy-



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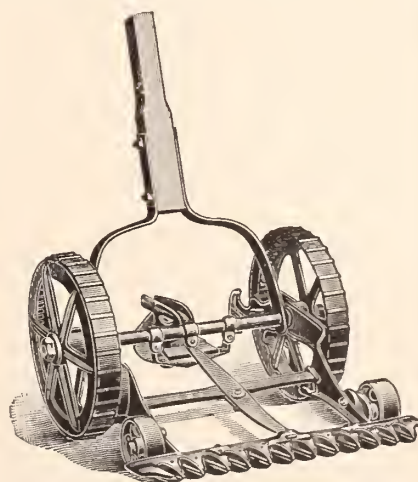
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ing than to need the means for repotting a plant in midwinter and to find that the only earth available is frozen three or four feet deep and that there is not a pot on which one can lay one's hand in an emergency. Material for drainage will be another requisite and this may be provided in the form of broken crocks, charcoal and sphagnum moss.

Stakes for supporting plants and blossoms will likely be needed and these should be procured while it may be done with comfort, for nothing is more annoying than to be running around in the cold in search of something that might as well have been gotten while yet the weather was warm.

All pots and saucers, seed-flats and trowels which will not be needed more out of doors should be gathered up and stored where they will be readily available in the spring. All tools, watering-pots, lawn-mowers and sweepers, rakes and the like should be looked over and if in need of repairs attended to. A watering-pot that has sprung a leak may often be made as good as new by a coat of paint inside and out, and where the leak is a bad one, a bit of cloth laid over the wet paint and given another supplementary coat will renew the life of the pot for a considerable period. A coat of paint on the lawn-mower and a coating of the working parts with vaseline will be a profitable investment. It will probably be found at this time that the carrier, if a canvas one, is in need of repairs, and this, too, may have attention.

All annuals that have had their day and been laid low by frost should be pulled up and consigned to the compost heap. The compost heap should be the goal of one's ambition in this annual clearing-up of the garden and every particle of waste matter should find its way there, to be transmuted by the alchemy of sun and rain and the disintegrating force of nature into that most valuable of soil constituents—humus or leaf-mold. From this will be drawn the material for the potting of all plants which love the black, rich soil of the woods, for the starting of tender seeds in the house in early spring and for the lightening of the heavier garden-soil.

All beds should be raked clear from weeds and empty beds may have the edges slightly raised that they may not leach away, and covered with manure, which will be spaded in the spring. Droppings from the hen-house may be used on the flower-beds if applied on the empty beds in the fall, and may also be used on the iris garden if not too fresh.

Before the ground freezes hard the gladioli should be lifted and placed in a warm, sunny place to ripen the foliage before being stored in bags for the winter. Cannas may be left until about Thanksgiving before lifting if the beds are well protected with leaves. The canna is such a bad keeper that the shorter time they are out of the ground the better.

All other summer bulbs should be lifted and cared for according to their several requirements and such fall-planting of bulbs made as are desired.

All garden-seats should be stored under shelter and if they are in need of painting now or later on will be a good time to do it. I do not fancy the habit of leaving light, movable seats out of doors during winter; they do not add to the cheerfulness of the outlook, indeed they have much the effect of a last year's bird's nest—abandoned, desolate and forlorn.

While clearing of beds of annuals, paths and overlooking the perennial borders one should keep a sharp outlook for insects of various kind. The cut-worm will still be in evidence and may be looked for around the root of plants, under rubbish, around the edges of sod bordering the flower-beds, and whenever found should be destroyed. This precaution will go far to safeguard the spring-planting,



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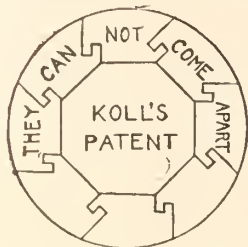
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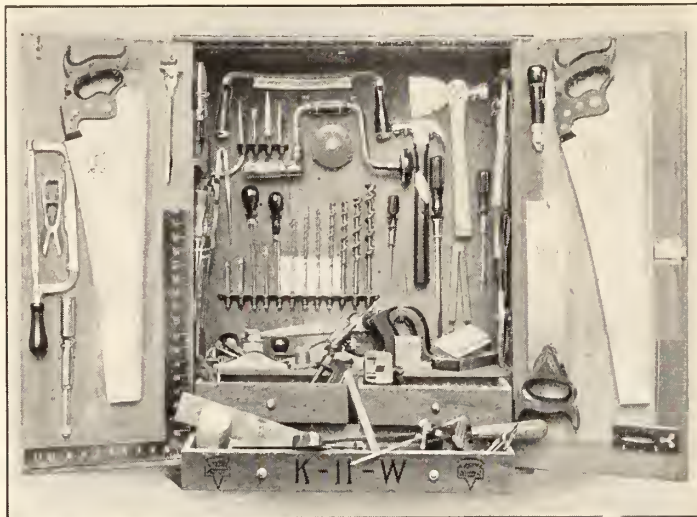
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much of which is annually rendered abortive by the depredations of this pest.

The chrysalids of the cabbage-butterfly, the various borers and many other caterpillars will be found near the surface of the soil, under the siding of the house, the underside of steps and the like and should be gathered up and destroyed.

Fall-spading and plowing is of much benefit in ridding the garden of destructive insect life, and should be practiced whenever practicable.

Where a number of mole-runs converge toward a common center the presence of a burrow may be suspected at that point, and it will pay to dig for it or at least to set traps on the runs leading to and from the spot; it is not of much use to set but one trap, several, or as many as there are runs will do the work speedily and well, while one may remain in the ground for days with no result; the moles meeting the obstruction merely turn back and seek another outlet; close all the outlets and they will force a passage in some direction and so are caught. By this method I caught in ten days, ten moles in one bed, and I have never seen a mole in that part of the garden since.

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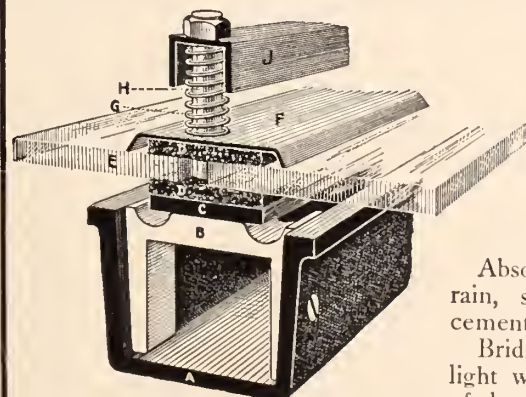
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NEW BOOKS

THE SEASONS IN A FLOWER-GARDEN. A Handbook of Information and Instruction for the Amateur. By Louis Shelton. New York: Charles Scribner's Sons. Pp. 117. Price, \$1.00 net.

This is an admirably conceived and well-executed book. It is exactly the book that every amateur has been looking for, but which hitherto has been unobtainable. Its merits are obvious. It is small and easily handled; its statements are brief and precise; and the study of the garden by months is capitally done. The temptation to write a large garden-book is very great, for the subject is a large one and most captivating. The present writer has planned a book that will be really helpful to those who want a small garden—as most people do—who do not know how to grow flowers and who need definite, concise information. One will not learn everything there is to know about a flower-garden from this little handbook, but one can, with its aid, grow as beautiful a garden as one may wish to see. In some respects it is the most practical, and therefore the most useful, garden-book that has yet appeared.

HOW TO CHOOSE A FARM. With a Discussion of American Lands. By Thomas F. Hunt. New York: The Macmillan Co. Pp. 18+412.

It is quite likely that not a few owners of farms will wish they had had this book before they made their present investment, and it is very certain that had they had it it would have helped them immensely. Professor Hunt undertakes to treat of farms in all parts of America, his scheme including not only the United States and its dependencies, but Canada, Mexico, the West Indies and South America. His book is an extraordinarily useful one, though necessarily very general in its application. One can not, for example, look to it for exact guidance concerning the value of a farm in a given county of any State; but one can learn from it, as one can not learn from any other book, a host of general facts touching on the general conditions of farms and farming in all the vast region covered.

The author wisely points out that a farm has a value as a home and a value for business purposes. It is the latter aspect with which his book is concerned, since the home value must be largely dependent on the personal ideas of the owner. The first part of his book, there-

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fore, treats of the selection of a farm for profit, and the remaining portion deals with the various regions of the territory covered. The special chapters relating to States and countries have, in most instances, been read and criticized by some one at present living or who has lived therein, and sometimes by two or more. No pains, therefore, have been spared to make the text accurate and the book trustworthy. It is an admirable addition to the literature of scientific farming.

AMERICAN INTERIOR DECORATION. New York: Clifford and Lawton. 55 plates. Portfolio.

The present popularity of historic furniture, or rather of furnishing by periods assures a welcome to any publication that undertakes to illustrate such work in a systematic and definite manner. The compilers of the present portfolio have made a selection of fifty-five plates, taken from American examples and presenting as many rooms or apartments decorated and furnished in a consistent style. It is but the simple truth to say that this result—historical accuracy—is not always achieved in the somewhat gaudy manner with which many American dwellings are now often overfurnished, and particularly with what may be called exotic styles, in which what is often enough but a mere characteristic detail is expanded into a whole room treatment. Messrs. Clifford and Lawton have fortunately omitted most of such efforts from their selection.

The illustrations are taken from various sources, including photographs and sketches, exhibits at St. Louis and in furnishing shops. The individual merit of the plates is, therefore, somewhat varied. It is to be regretted that, in most cases, no information is given as to the location of the rooms shown nor the sources of the illustrations. The addition of the designer's name would have been a well-deserved courtesy that should not have been avoided.

THE TALBOT J. TAYLOR COLLECTION. Furniture, Wood-carving, and other Branches of the Decorative Arts. New York: G. P. Putnam's Sons. Pp. 139.

This sumptuous book is a most interesting record of the extraordinary collection of old furniture made by Mr. Talbot J. Taylor, and contained in his beautiful residence, Talbot House, at Cedarhurst, Long Island. It is a collection that represents years of earnest, active effort in accumulation, and the making of which, as well as its present enjoyment, must have given unbounded satisfaction to its fortunate owner.

The acquisition of old furniture not only necessitates a place in which to keep it, but its proper arrangement. There is no criticism to be made of Mr. Taylor on either of these particulars. Talbot House is a beautiful country home, one that has been added to from time to time, but always in a harmonious way and in excellent good taste. The owner's accumulations of old furniture amount, practically, to the contents of a museum, yet his house has no suggestion of a museum in its arrangement. Rare and beautiful as much of its furniture is, it is displayed with remarkable good taste, the various periods, as far as possible, being kept within definite room limitations. The result is obvious, for his rooms have all the aspect of well-furnished, beautifully adorned apartments, a result not always obtained by the owners of old furniture.

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by the King of England while Prince of Wales. The range of the collection is wide; examples of Louis XIV, XV, and XVI are perhaps most numerous, but advantage has been taken of every good opportunity, and there are therefore many fine French and Spanish pieces as well as many English ones. Earlier than the sixteenth century there is little enough, but from that time on the best furniture periods are amply illustrated with many fine examples. The specimens of wood-carving, of metal-work and other forms of decorative art are also of deep interest, while the library includes a number of richly bound volumes that are fine specimens of the best historic bindings.

The book descriptive of these treasures is a handsome folio containing a hundred and eighty-seven illustrations. Many of these are individual views of separate pieces, but they also include general views of rooms, as well as views of the house and garden. It is beautifully printed, and the illustrations are quite unusual in their clearness and accuracy. The text, while necessarily somewhat in the nature of a catalogue, is a running comment on the chief articles in the collection, and is quite sufficient for descriptive purposes.

BUILDING SUPERINTENDENCE AND CONSTRUCTION. PART III. TRUSSED ROOFS AND ROOF TRUSSES. By F. E. Kidder, C. E. New York: William T. Comstock. 1906. Pp. 297. Price, \$3.00.

This volume forms the third part of the notable series of text-books written by Dr. Kidder, and now unfortunately ended, so far as he himself is concerned, by his untimely death just before this book issued from the press. The first volume of the series treated of Masons' Work, the second of Carpenters' Work; a fourth volume completing the present subject, was blocked out by the author and will, it is announced by the publisher, be made public in due course.

Dr. Kidder's books have long enjoyed a wide reputation among architects and engineers for their technical excellence, and the present work is fully up to the standard set by its author in the earlier instalments. It is a technical book, dealing with technical subjects in a technical way, presenting the topics in a truly scientific manner and covering it with practical completeness. No other treatment, indeed, would have been of value in a book of this description. It is a book that those having to do with the technical aspects of building will find of unusual value.

The book contains eight chapters, dealing respectively with types of wooden trusses and the mechanical principles involved; types of steel trusses; lay-out of trussed roofs and bracing of the roof and trusses; open timber roofs and church roofs; vaulted and domed ceilings, including octagonal and domed roofs; coliseums, armories, train-sheds, exposition buildings, etc.; computing the purlin and truss loads and supporting forces; and stress diagrams and vertical loads, including trusses symmetrically and unsymmetrically located. It is abundantly illustrated with more than three hundred diagrams.

HOW TO MANAGE A HORSE; OR, KNOWLEDGE IS POWER. By E. L. T. Edited by Edith Carrington and F. Leigh, F. R. C. V. S. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 99. Price, 50 cents.

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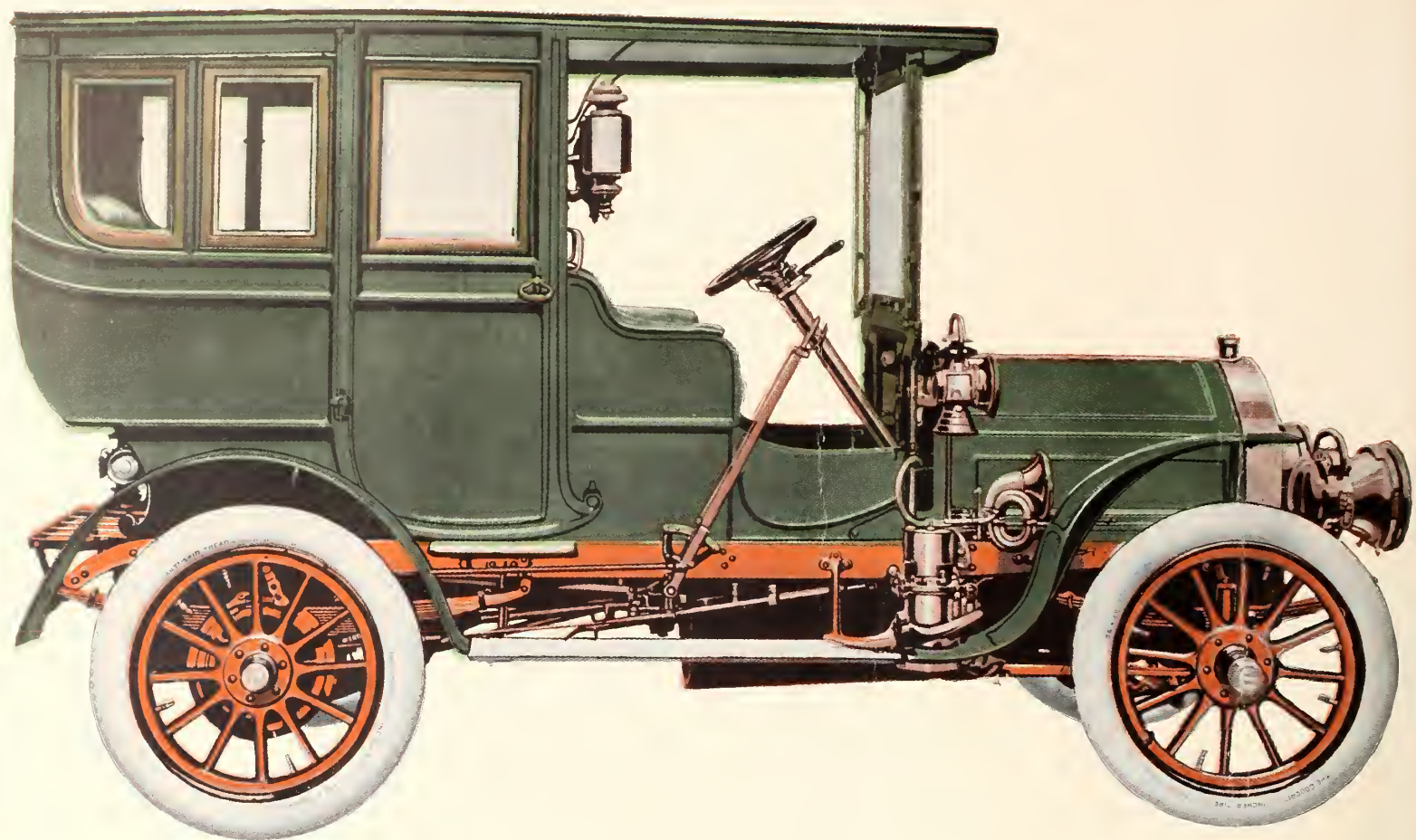
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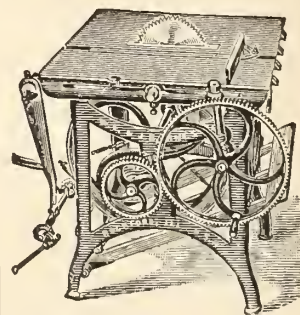
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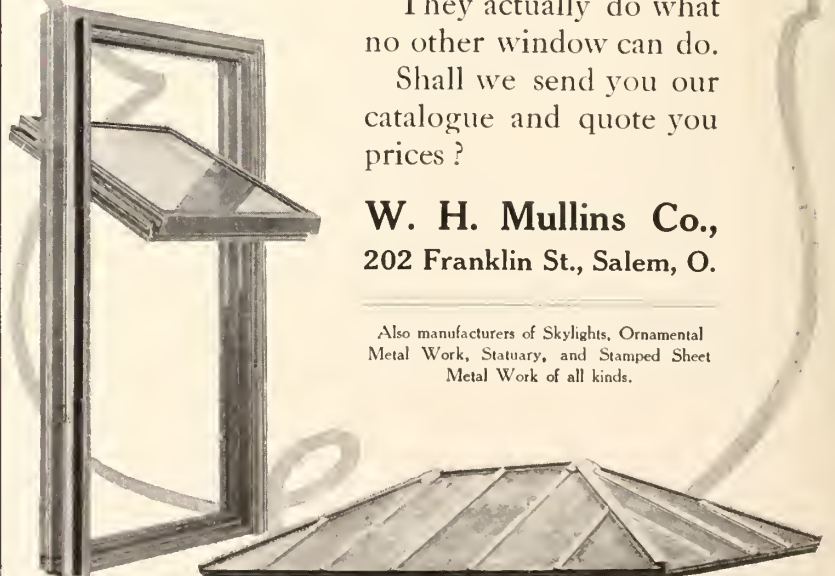
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SCIENTIFIC AMERICAN SUPPLEMENTS 1567, 1568, 1569, 1570, and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

SCIENTIFIC AMERICAN SUPPLEMENT 997 contains an article by Spencer Newberry in which practical notes on the proper preparation of concrete are given.

SCIENTIFIC AMERICAN SUPPLEMENTS 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

SCIENTIFIC AMERICAN SUPPLEMENT 1534 gives a critical review of the engineering value of reinforced concrete.

SCIENTIFIC AMERICAN SUPPLEMENTS 1547 and 1548 give a resumé in which the various systems of reinforced concrete construction are discussed and illustrated.

SCIENTIFIC AMERICAN SUPPLEMENTS 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analyzed.

SCIENTIFIC AMERICAN SUPPLEMENT 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

SCIENTIFIC AMERICAN SUPPLEMENT 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

SCIENTIFIC AMERICAN SUPPLEMENT 1574 discusses steel for reinforced concrete.

SCIENTIFIC AMERICAN SUPPLEMENTS 1575, 1576, and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts, etc.

SCIENTIFIC AMERICAN SUPPLEMENT 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1396 discusses the testing of cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1325 contains an article by Professor William K. Hatt giving an historical sketch of slag cement.

SCIENTIFIC AMERICAN SUPPLEMENTS 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

SCIENTIFIC AMERICAN SUPPLEMENTS 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

SCIENTIFIC AMERICAN SUPPLEMENT 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENTS 1465 and 1466 publishes an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

SCIENTIFIC AMERICAN SUPPLEMENT 1491 gives some fallacies of tests ordinarily applied to Portland cement.

SCIENTIFIC AMERICAN SUPPLEMENT 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

SCIENTIFIC AMERICAN SUPPLEMENT 1533 contains a resumé of the cement industry and gives some valuable formulae.

SCIENTIFIC AMERICAN SUPPLEMENT 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

SCIENTIFIC AMERICAN SUPPLEMENTS 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the United States.

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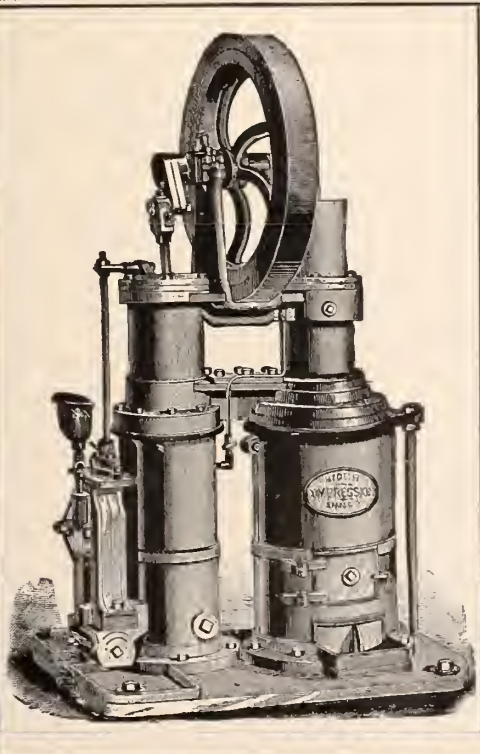
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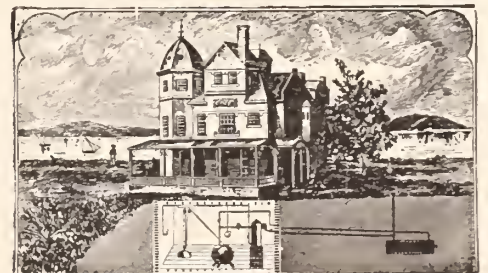
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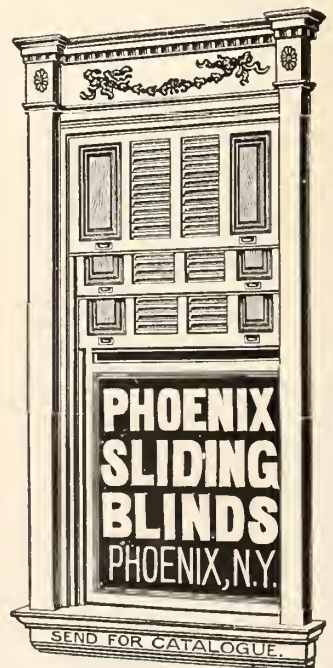
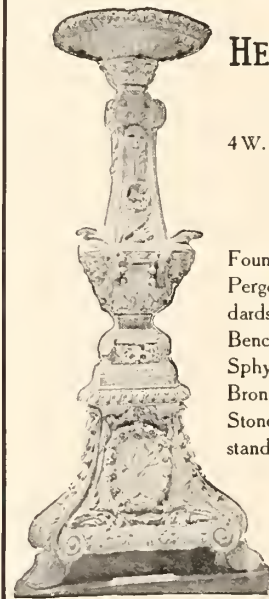
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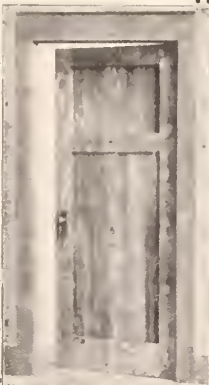
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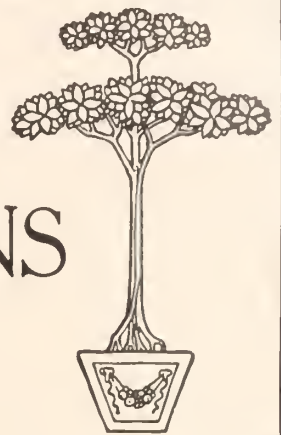
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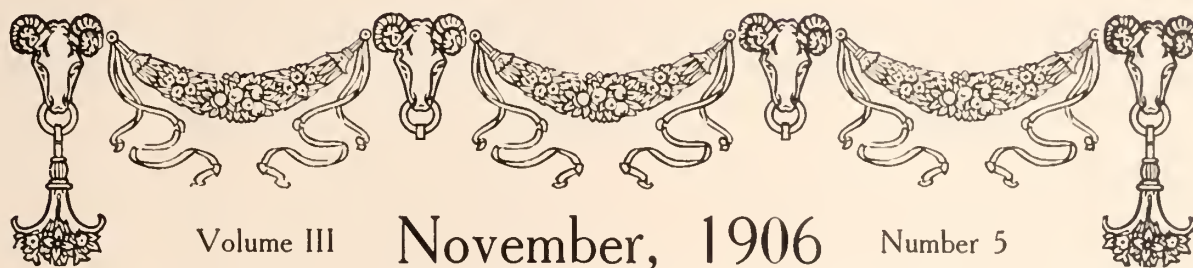
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AMERICAN HOMES AND GARDENS



Volume III November, 1906 Number 5



The Stable of James H. Proctor, Esq., at Hamilton, Massachusetts, Has a Picturesque Tower Rising amid the Half-timber Gables

Monthly Comment



PERSONAL relationship with one's fellow men constitutes one of the most serious problems which beset the newcomer in the country. This is particularly the case when one moves into a region as yet but sparsely settled with city folk, and where the larger part of one's neighbors consist of the original settlers, born and bred upon the soil. One's personal wealth or individual achievements count but little in such communities. The most bloated aristocrat, the most distinguished brain-worker, become persons of very small moment amid the exclusive society of the soil-bred. The newcomer is, of course, a highly desirable person from whom to extract money; his money is not only as good as any one's else, but very much better, since for it has been exchanged land and houses of no particular use or real value to the original owners, and which only obtain a value when a "sucker" appears from the city. The newcomer, established in his new possession, remains there in solitary state. Between himself and the soil-bred is a gulf so vast that no known art or science, no known contrivance or invention, nothing, in short, may bridge it. Hence two opposing forces are immediately created. On one side of the gulf is the native, bristling, as no porcupine ever bristled, with the supreme conceit of his self-importance, which is the keener and the sharper because, until the city folk arrived, there was no one toward whom it could be displayed. There may be no open hostility, there may be even an interchange of views, and an apparently pleasant good-morning; but the gulf is lugged around at all times and spread out before the new arrival upon any and all occasions. On the other side of the gulf is the newcomer. He is as pleasant as you please, and means no man harm, least of all his neighbors. But he finds he makes no real progress in acquaintanceship, while of friendship there is simply nothing at all. So presently he wearies of offers of intercourse, and an armed truce is declared on both sides. The native realizes, too late, that no further advances will be made, and the newcomer ceases to regard the old-timers as persons of any importance whatsoever.

It is a pity that such conditions exist, yet they are very general in all rural and suburban regions. It is a pity because, while we are all common citizens of one great country, we are not all brothers, and not even friends. The man from town is apt to regard such matters as of comparatively slight importance, because he has his own friends where he comes from, and he soon finds that new ones of his liking are scarce in his own region. The native, for his part, does not understand an antagonism he has himself created, and harbors fresh vows of hatred against every available object. The fact is, that with the inroads of the city folk into the country, there is a leavening process needed, which has as yet scarcely yielded visible results. When two people get together who are each impressed with an overweening sense of their own importance, it is difficult for them to separate with any lessening of their individual self-esteem. And this is more particularly the case when neither knows what is really the matter, and hence neither knows what to yield or how much. Thus two great forces in our national social life, which ought to work together, just as they live together, are separating further and further from each other. The amount of personal discomfort that arises from this circumstance is often very considerable.

THERE are, of course, many drawbacks that result from living in the country, although no more, but of a different kind, than result from living anywhere. There are only a very few people who manage to get through life without inconveniences of some sort at some time. There is a vast number of living conveniences in the city which are completely absent in the country, or only to be had there at great expense. On the other hand, there are many delights to be had in the country which the greatest wealth can not obtain in the city. If one is perfectly free as to choice, the problem is obviously the simple one of, which form of life offers the most? If the country delights overbalance the city conveniences, or seem to do so, the vote must invariably be for the country. If, however, the country attractions seem less desirable than the city conveniences, the city should be elected without hesitation. This, surely, is the problem reduced to the briefest limits. But in considering the location of a permanent residence it is necessary to bear in mind that no matter where one lives, or how, there are certain to be drawbacks, inconveniences and annoyances of some kind or another. There will be just as trying things in town as in the country, but the things that are most trying in one place will not be so urgent, and perhaps not present at all in the other.

TAKE, for example, the question of external appearances. The city man who moves into the country has small regard for his personal appearance while in the place of his chosen residence. Why live in the country and wear good clothes? he naturally asks. And why, indeed? Forthwith he puts on his oldest duds, discards collar, necktie and cuffs, gets out his oldest shoes, and gleefully arrays himself in his most dilapidated habiliments. Thus clad he passes a very agreeable Sunday, and puts on his best clothes when he goes to business on Monday morning. How different is the picture presented by the native! If he has sold enough of his ancestral acres to permit his withdrawal from active life, he goes around daily in a business suit—in which no business is ever transacted—and on Sundays treats himself to the luxury of a boiled shirt. On such days he presents an appearance as nearly elegant as his rural frame permits. His neighbor across the way, arrayed in his oldest duds, offers a horrifying contrast, and very obviously is not what he should be; it is apparent he has a "screw loose" somewhere, and should be handled with great care. The newcomer, for his part, is really living in comfort for the first time in his life. His donkey and donkey-cart may excite the risibles of the entire countryside, but he is calmly unaware of it. His horse may not be a presentable animal, but it is the only horse he has, and carries him around in a manner satisfactory to him. But the countryside looks on aghast at such doings. It can not understand how any sensible human being can behave in public in such a way. It fails, and utterly fails, to realize that the aforesaid human being does not for a moment see why he should dress up on a holiday for the benefit of his "hayseed" neighbors, nor for a moment does the thought present itself to him that if his animals or attendants suit him there is any reason why other people should be dissatisfied with them. Yet every hour that one lives in the country his doings and possessions are subjected to rigid unyielding, unsatisfied curiosity, and to a criticism beside which the fulminations of the most practised critic are as the mumbings of a new-born babe.

Notable American Homes

By Barr Ferree

The House of James H. Proctor, Esq., Hamilton, Massachusetts



MR. PROCTOR'S estate at Hamilton has an air of aloofness which is more apparent than real. It is due, primarily, to the fact that it is about two miles from the station; Ipswich is two miles to the north of it, Hamilton about three miles to the west. It is, therefore, somewhat apart from the railroad centers, and enjoys a fine isolation that is at once a distinction and an advantage. The value of this isolation is the more marked since the house is built near the summit of a hill, affording a superb outlook over the adjacent country. It is beautiful rolling country in this region, and the higher one's point of observation the more one can see. Yet there are drawbacks to too great altitude; for if your house happens to be placed exactly on the top of a hill it will be swept with the winter's breezes in a manner thoroughly typical of the bleak New England winter. Hence Mr. Proctor's house does not occupy the precise summit, but is placed somewhat down the slope so as to be protected on the north.

Yet this but adds to the beauty of the site: it gives the house a beautiful backing of green and it in no way interferes with the splendid outlook before it. Standing on the hill loggias or the terrace one overlooks a superb view. Down below the base of the hill on which the house is built is the entrance driveway, a splendid sweep of road, stretching around the base of the hill in magnificent curves, passing the house stables and then curving up to the entrance on the further side of the house. There are no short cuts on this estate, but beautiful roads, finely built and planned with a very keen perception of their landscape possibilities. The house—and its di-

mensions are so generous that it may be rightly termed a mansion—is of red brick with white stone trimmings. Drawing his inspiration from the Tudor style, its architect, Mr. Ernest M. A. Machado, of Boston, has designed a picturesque and stately dwelling that is admirably harmonized with its situation. Its merits are purely architectural; that is to say, it is a house whose charm and interest are achieved by architectural means alone, by the proportions and dimensions of the plan, by the silhouette or general outline, by the walls, windows and window frames, by the roofs and dormers, by the crests and copings. Of sculptured enrichment there is scarce any; none at all, indeed, save the delicate foliage in the spandrels of the doorway and the windows of the vestibule. A balustrade over the latter and a pierced parapet at the base of the roof of the central portion constitute almost the whole of the carved ornament on the building. But it is a house full of life and interest, the mullioned windows, emphasized with hood moldings, and grouped in twos, threes and fours being the chief vehicle by which its effect is produced.

The general plan of the house may be compared to the letter H. It consists of two great wings connected by a central structure. The wings, however, are neither symmetrical nor identical in design, although in thorough harmony with each other. A very delightful variety is given to them by extending one further forward on one front, and the other further forward on the other. It is a clever device, insuring a picturesque elevation and mass at the outset. Both wings have gabled ends, and the long stretch of the side walls is broken by other gables and by dormers, so that the roof scheme is also thoroughly diversi-



A Semi-octagonal Enclosed Porch Contains the Entrance Door Admitting to the Vestibule



The Tower, While Not Central, Dominates the House

fied and very picturesque. Of minor differences in the various parts there are many; the aim of the architect has been to make his building as mobile as possible. He has kept his variations within the soberest limits, introducing changes quite sufficient to give variety, and yet so completely kept in hand that only careful analysis makes them clear. This is real success in architectural designing, for a highly interesting result is obtained without manifest effort.

And there is no lack of interest. Take the hill front, for example. The outer boundaries are the two wings, one projected a full bay further forward than the other. The first story of each is an open piazza, or loggia, of three low Tudor arches. A strong string course, that is carried completely around the house save on the connecting wall between these pavilions, separates the arches from the upper floors, which are built out over them. A pair of triple windows lights the second story, and a single twin window the gable end. The latter are completed with a stone coping, broken, in one, by a corner projection, while the other includes no interruption. The loggia arches include balustrades; on the right each side return has a flight of steps; to the left there is but one side flight, the arch to the right opening directly onto the terrace arranged between the two wings, and which has an inclosing balustrade and central steps to the lawn below.

The connecting wall has a great central mullioned window, reaching the full height of two stories. To the right is a tower, with an octagonal lantern and dome rising clear above the other roofs, and daringly placed to one side. It dominates the whole house, and while it occupies an unsymmetrical position, it seems, and rightly enough, to be the centermost element in the whole composition. But the tower



The Hall is a Magnificent Room Paneled Throughout in Dark Oak

is more than a culminative feature in the design, for its graceful summit conceals the tank from which the water supply of the house is obtained.

The differently projected wings which were the distinguishing feature of the hill front form the basis of the design of the entrance front. The window treatment of the ends is somewhat different, because on this side the right wing is the service wing, and contains a central corridor, while in the other wings the rooms take up the full width of the available space. The service yard is separated from the entrance forecourt by a brick wall, with a gateway formed by two handsome posts. The entrance doorway is placed in a semi-octagonal vestibule, whose cornice is supported on stone pilasters.

The plan of the house is immediately disclosed within, for the whole of the center is occupied with the main hall, a superb apartment rising to the full height of the house, and covered with an open timbered roof; a magnificent room, warm in color, richly detailed in its architectural parts, fine in dimensions, admirably imagined and beautifully carried out. Immediately before you, as you enter, is the staircase, beginning in the center of the room and rising on the two sides, dividing below the great mullioned window of the hill front, and returning to a balcony that surrounds the whole of the second floor. The walls below are completely paneled in oak; above they are treated in half-timber work, with oak beams and gilded panels. The roof has exposed beams supported on open timbers of handsome design.

This bare statement of the chief features of this room is but a meager account of its contents. It is a room whose design and structure are essentially rich. The dark tone of the wood, the gleaming surfaces of the half-timber panels



The Hall Has an Open Timber Roof



The Dining-room is Paneled in Mahogany with a Silk Frieze of Lions



The Day Nursery is Paneled and Has a Gaily Colored Tapestry Frieze

give it a rich ensemble structurally. And the detailing is rich, as befits the materials, and carried out with a very sure hand and with great beauty of design. The furnishings are quite in keeping with the magnificence of its structure. To the right, under the balcony, is an old English carved mantel of black marble; the dining-room—which is entered immediately from the hall—is reached by an adjoining door; on the other side is a service door; the rooms on the left of the hall are entered through separating passages. The rug in the center is pink and blue; the curtains are of red velvet, and there is much handsome furniture, richly carved. Two splendid iron lamps depend from the ceiling rafters, and a handsome piece of tapestry and a richly embroidered velvet rug add to the color of the upper parts. It is a room thoroughly splendid in dimensions, in design and in equipment.

The left wing is occupied by three rooms, a reception-room, library and living-room. The first of these is on the entrance front; the living-room on the hill front, and the library lies between them. Both the first two rooms are apartments of comparatively moderate size. The reception-room is a beautiful little Louis XVI room, treated chiefly in white, the colors being extremely light and delicate. The walls have a paneled wainscot with silk panels. At the further end is an alcove

with columns and pilasters, within which is the mantel, with onyx fireplace and hearth. The coved ceiling is designed in panels with ornament in relief. The inner curtains are of pink silk, very beautiful in tone; the outer curtains are of white lace. The furniture is of gold with pink and white coverings.

The library is completely separated from the reception-room, and, like it, is entered from the end. It is finished in oak, with built-in book shelves and a curved ceiling with geometrical design. The walls are red; the rug is red, and the facing of the wood mantel is square red tile.

The living-room is finished in white and French gray. At present its walls are papered, but it is proposed, at a convenient season, to cover them with

wood panels. At the far end is the mantel of wood, with green marble facings and hearth, and an elaborate over-mantel, supported by coupled columns. On each side is a glazed door opening onto the loggia without. On one side is a bay window with a handsome pilastered framework of wood. The white ceiling is divided into three large panels, with plastered beams and bracketed cornice. The immense rug on the hardwood floor is of soft blue-gray and white.

The dining-room, on the opposite side of the main hall, is a sumptuous apartment, paneled throughout in mahogany.



The Entrance Front Has Two Wings with an Open Forecourt Containing the Vestibule

The wainscot is surmounted by a silk frieze of lions on a pink background, of Italian origin, a modern reproduction of an antique design, which gives a brilliant note of color to the rich dark walls. The beamed ceiling, also of mahogany, is designed in deep rectangular coffers. Over the carved wood mantel is a built-in portrait of Mr. Thomas C. Proctor, the father of the owner of the house. Doors at the end admit to the loggia, which is sometimes used as an outdoor dining-room, and which, in winter, is inclosed with glass for the safe keeping of the bay trees used for external decoration.

The service wing, which adjoins the dining-room, is planned with great completeness. The pantry is arranged between the dining-room and the kitchen; beyond is a second pantry, with the servants' dining-room at the extreme end. On the opposite side of the back hall is a cleaning-room and clothes-closet, a storage-room and a cold room. The latter is floored with asphalt and contains a large ice box.

The main hall, of course, completely separates the two parts of the upper floor, although connection is had by means of the balcony. This adds to the convenience of the house rather than detracts from it, since one wing is thus occupied by the family and the other by the guest-rooms. One end of the latter wing, but completely shut off from the guest-rooms, is given up to servants' rooms. The family wing contains rooms for the owners, with connecting dressing- and bath-rooms, and an extensive children's suite, consisting of a maid's room, nurse's room, night-nursery, day-nursery and children's bathroom. The day-nursery overlooks the hill, being at the end of the wing, and is a delightful room, paneled throughout, and with a gaily colored tapestry frieze. There is an abundance of closets in both wings, closets deep and capacious in dimensions, veritable delights to the housewife, and greatly facilitating the administration of the household affairs.

Mr. Proctor's estate includes a hundred and twenty-five acres. There is, therefore, ample space for outdoor development. A vast lawn lies between the house and the approaching driveway; but the other near-by grounds are

charmingly treated in a formal manner, with splendid beds of flowers. There are, in fact, two formal gardens: one outside the wall of the service yard and the other beyond the entrance forecourt. The latter is inclosed within a hedge and is regarded as Mrs. Proctor's own garden, and is the object of her especial care and attention.

The house-stable, near the base of the hill and below the house, is a spacious and handsome structure, of a style completely in harmony with the house. It is brick below and half-timber above, with a broad, sloping roof, whose somewhat severe lines are broken by large dormers. In plan it is L-shaped, with two wings of different length. It is obviously a place of deep concern to its owner. Its great carriage house contains almost every imaginable kind of trap, carriage, coach and pleasure wagon. The stable contains stalls for twenty-eight horses, blooded stock, most of them beautiful animals, beautifully housed and tended by an army of attendants.

Close at hand are two comfortable houses for the butler and head gardener. The head coachman and his men have rooms in the stable. Across the hill, in another part of the grounds, is the power-house. It is a pleasant little structure of stone, with a low, flatly-pointed roof. Here are the engine and dynamo for the electric light. They are operated only at night, storage batteries affording the day service. Here also is the pump from which water is pumped from the wells and spring close at hand, and which is forced up into the tower of the house. Not far off is the automobile house, abundantly furnished with motor cars. And at quite some distance from these house buildings is the farm-barn and vegetable gardens. Farming is not carried on on the estate save to harvest the abundant crops of grass. But the vegetable gardens are of ample size, and this group of structures rounds out the completeness of this highly organized estate, every part of which gives evidence of its owner's intelligent care and thought, and which must, to him, be a source of constant delight and satisfaction. He has spared no effort to completely develop it.

The Old-Fashioned Flower Garden of M. H. Wagar, Esq.

Montclair, New Jersey



M. H. WAGAR'S garden was started a year ago last spring on a bit of borrowed land just for the love of seeing flowers grow.

Seldom has a garden been started under more discouraging conditions. The only available ground was a vacant lot about seventy feet wide with a dilapidated barn on the rear. The ground was marshy and covered with swamp grass, wild raspberry bushes and the empty bottles and tin cans of two or three generations of picnics.

At the upper end of the lot was a spring which supplies the water for a small lily pond in the center of the garden.

A basin was dug about twenty-five feet in diameter and lined with cement. Pipe was laid from the spring to the center of the basin, from which it leaps like a little fountain. An overflow pipe is connected with a small ditch lined with ferns and forget-me-nots.



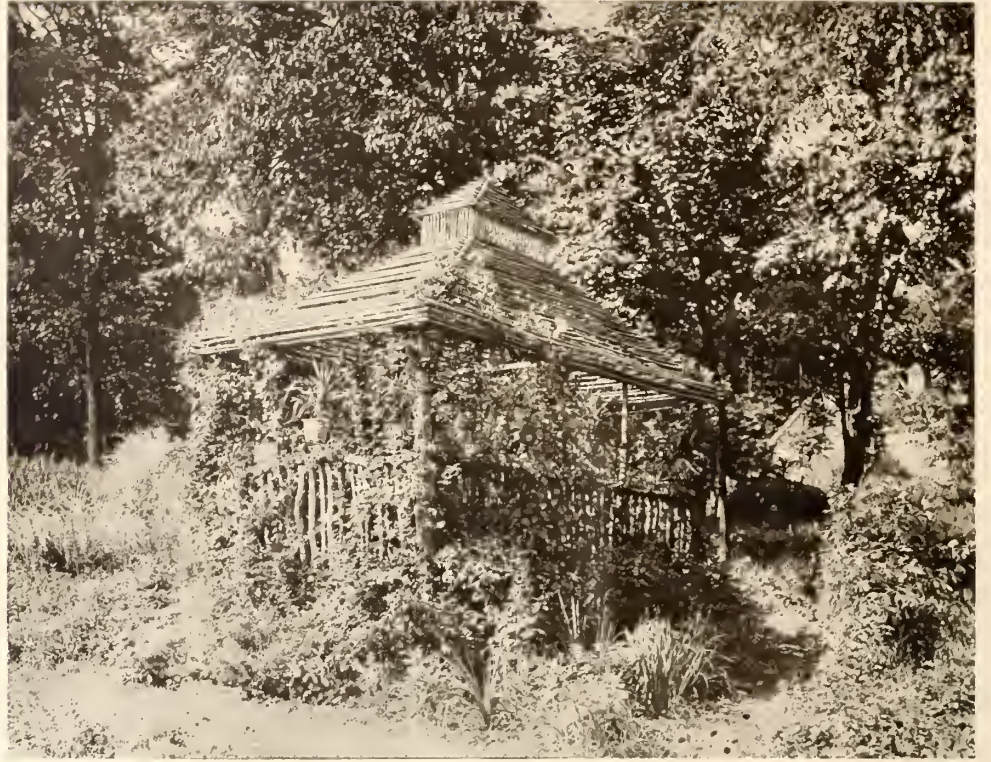
A Look into the Garden

This basin not only provides a place for the water plants but drains the land of the spring water.

The pond and its surroundings are one mass of beautiful foliage and flowers and constitute a feature of the garden. All summer yellow, pink, blue and many varieties of white lilies float on the water. These lilies are planted in boxes and sunk in the pond, so that the tender ones can be easily taken in before the frost. Besides the lilies there are the dainty water poppies and the water hyacinth—one of the most satisfactory water plants, growing as it does very rapidly. Not only is the cluster of pale lavender blossoms very beautiful, but the foliage is quaint in form and very rich in color.

In the early spring the masses of iris on the border of the pond with the long, pale-green pods of the common wood fern encircling make the wonderful colors of the old Japanese embroidery seem crude.

The garden was planted with the idea of growing each plant in the location best adapted to its special need. The pond was made for the water plants, the edges planted with the many beautiful flowers that insist upon always having wet feet. The bamboo summer house beyond was built as a place for the vines to clamber toward the sun. One of the prettiest features of the summer house was the result of an experiment made with nasturtiums. In the fall several of the strongest of the plants were taken into the barn and planted in boxes near a sunny window. The barn was heated just enough to prevent the plants from freezing. In the spring the vines were planted by the summer house and trained up its side. In a few sunny weeks the very straggling and almost leafless vines sent out new shoots which reached almost the top of the roof and



A Summer House Overgrown with Nasturtiums

were covered with gorgeous blossoms of splendid variety.

As far as has been possible the garden has been planted with perennials or self-sowing annuals; for they not only make the labor and expense of keeping up the garden less, but most of the hardy plants increase in beauty every year. Of the self-seeding plants none appeared with more vigor and beauty than the verbena planted on the dry sloping outer bank of the pond. Discouraging as the spot is the verbenas covered it with a carpet of red, white and purple from June until long after most of the flowers were quite frozen.

The garden has no conventional beds and borders, but is a true flower garden, ablaze with color and crowded with beautiful flowers.

Unconventional as this garden is, its very unconventionality is not without form and method. Simple as it may seem to grow beautiful flowers, it is really one of the most difficult arts in the world. It requires patience and care, and above all a knowledge of flowers, their habits, form, colors and growth. All this Mr. Wagar possessed in abundance. There is nothing helps a garden so much as knowing what to do and then how to do it. Here also Mr. Wagar has achieved success. The beauty of his garden is, then, the direct resultant of the fundamentals he employed at the outset, and without which the most lavish expenditure of time and money will fail to achieve satisfactory results.



The Pond and Its Surroundings are a Mass of Beautiful Flowers and Foliage

A Colonial House

By Francis Durando Nichols



SOME ten miles out of Boston, in that quaint New England village of Dedham, with its plain, square houses, set in green yards, inclosed with white painted picket fences terminating with stately gate-posts placed at the entrance ways, is situated the charming home of Francis W. Welsh, Esq.

The site faces a broad avenue, from which a winding roadway starts at either side of the estate and winds up to the terrace at the front of the house, from which the house is entered.

The style of architecture is Colonial, and is quite characteristic of its prototype built in the Colonial period in which Dedham was settled.

The attractive features of its prototype which have been excellently reproduced in the building of this house, are the elongated effects, the quaint, low roof and the little window-panes.

The main feature of the front is the entrance porch which is reached from a terrace raised two steps from the grade. Beyond is a circular step which forms a platform for the columns that support the roof built for a protection to the front door. This door has windows at either side of the entrance and a transom handsomely glazed with leaded glass. The living-porch, a covered piazza, is placed at the rear of the house. It is open on three sides and is quite separate from the entrance porch, thereby precluding any possibility of an intrusion. Being open as it is, it insures good ventilation and offers a charming spot in which to spend a sunshiny afternoon, and when in winter it is inclosed with glass, it forms a very attractive and convenient sun-room. From it a

beautiful view is obtained of the Charles River, which winds itself in a serpentine form from Boston Harbor to and beyond the house.

The pink and white blooms of the peonies placed along the terrace form a delightful note of contrast to the yellow painted clapboards and the pure-white painted trim of the exterior of the house. The entire building is surmounted with a shingle roof, stained a silver-gray color and blending itself into the variegated shades of green of the tall pines on the banks of the river at the back of the house and which form a very excellent setting for the house. The roof is pierced with white painted chimneys with black painted tops. The white painted quoins at the corners belong more to the

later Colonial than to the Puritan period, yet, at the same time, there is no incongruity, for they are quite in harmony with the rest of the house.

Entering the hall, which is Puritan entirely, one faces the broad staircase with a high, white painted balustrade and mahogany rail. The chair rail extending around the room forming a dado, is painted white and so is the trim throughout. This dado is also painted white, above which the walls are covered with a wallpaper consisting of a highly ornate yellow and white decoration. A hat table and a few high-back chairs are arranged against the sides of the walls. To the left is the den, which is trimmed entirely of whitewood treated with a forest-green effect. A huge fireplace is at one side of the room, of red brick, with red brick facings and hearth—and a mantel of quaint design. Opposite is a cluster of small paneled windows and luxuriously cushioned seats. The "Mission" furniture suits its severe yet comfortable lines



The Terrace Before the House is Faced with Rhododendrons



The Library or Living-room is Trimmed with Oak, Finished in Flemish Brown; Japanese Grass Cloth is Applied above the Wainscoting

and generous proportions and its soft green finish harmonizes well with the light-colored furnishings and wall decorations of the room.

The library, or living-room, is placed at the rear of the den and hall, and is separated from both the latter by a combination of doors and arches. This library is trimmed with oak and is finished in Flemish brown, soft and mellow in its color-scheme. The walls have a high paneled wainscoting and a plate-rack. The wall space above the plate-rack is decorated with Japanese grass-cloth and finished with a wooden cornice. The ceiling is tinted in harmony with the autumnal color-scheme of the furnishing and decoration of the room. A large, low window fills one side and is provided with a paneled seat which is upholstered in a soft brown velour, and piled high with cushions of artistic coverings. The broad open fireplace, at one end of the room, built of brick, has a dressed Indiana limestone facing, a hearth of brick, laid in herring-bone pattern, and a plain, simple mantel-shelf supported on carved brackets. Placed between two archways it is quite the feature of one side, while the wall space opposite is utilized for bookcases which are built in on either side of the French windows which open onto the living-porch.

The dining-room on the right of the hall and extending through the depth of the house, is finished in the Colonial style. The walls have a high paneled

wainscoting, above which the space is covered with crimson burlap and finished with a wooden cornice. The whole of the trim is painted white. The length of the room is somewhat lessened by the white painted pilasters with which it is divided—these pilasters support beams which extend across the ceiling. The front wall of the room is occupied by a cluster of small-paned windows, placed over a seat, at either side of which there are built-in china closets with leaded glass doors. A similar treatment of wall space is used at the opposite end of the room, except that the windows are of French style and open onto the terrace and garden at the rear of the house. The fireplace is built of brick, with a hearth and facings of sim-

ilar brick and a mantel of Colonial style.

The butler's closet, kitchen, laundry, and all service quarters are trimmed with North Carolina pine.

The second story is reached from the stairway, placed in the front hall. This floor is treated with white painted trim and attractive and artistic wall decorations. All of the rooms have well-fitted closets, and three of them have open fireplaces, furnished with tiled facings and Colonial mantels. The two bathrooms throughout have a white enamel treatment and are furnished with porcelain fixtures. Messrs. Winslow and Bigelow, of Boston, were the architects of the house.



The Dining-room, Extending through the House, Has French Windows Opening onto the Garden



An Autumn



n in Kentucky

Some Well-Designed Suburban Houses

By Paul Thurston



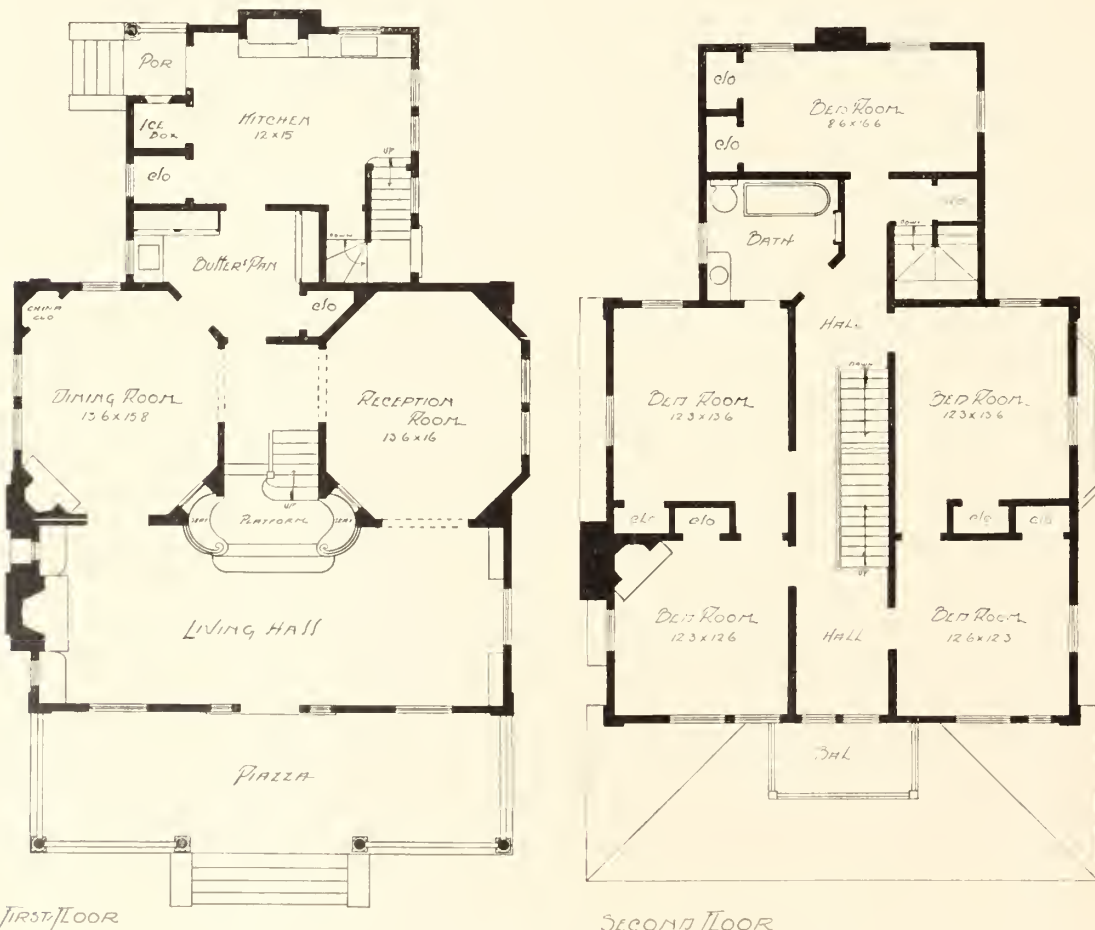
THE first consideration in building a suburban home is to select a design; the next to build a house in harmony with the site and its environments. A house pleasing to the eye and designed in good taste is oftentimes not capable of reproduction, for the reason that it instantly loses its charm from the lack of proper surroundings. The landscape has much to do with the beauty of a suburban site. Select a house of ordinary type and place it in a proper setting of trees and shrubs, and its value will be enhanced one hundred per cent. Very few houses indeed can stand alone without the proper setting. Therefore, it is imperative, if the house is to be built on a plain lot, to select a design to which much care has been devoted, in order to overcome the disadvantages of a treeless site.



1—The House Built for Mr. Dean Alvord of Brooklyn, N. Y., can Stand Comparatively Alone, for it was Designed with That Intention

The house built for Mr. Dean Alvord in Brooklyn, N. Y., as shown in Figs. 1 and 2, can stand comparatively alone, for it was designed with that purpose in view. It has a charm about it, with its excellent harmony of color, that helps to make up for the lack of a large tree setting. The underpinning is of red brick laid in red mortar; the chimneys are built in a similar manner and of the same material. The wooden

superstructure is covered on the exterior framework with matched sheathing, building paper, and shingles stained a dark soft brown color, while the trimmings are painted cream white. The entrance to the house leads into a large living-hall, which extends across the entire front of the house—a hall trimmed with oak, and provided with a paneled wainscoting and a beamed ceiling. At one end of the room is an open fireplace, furnished with yellow tiled facings and hearth and mantel. On either side of this fireplace paneled seats are built in, and at the opposite end of the room the wall space is filled with bookcases. A handsomely designed staircase starts from a broad platform with circular ends. Inviting paneled seats are placed in these circular ends. The parlor has pink walls and white enamel trim. An archway opens into the hall under the stairway, which is also duplicated in the dining-room.



2—The Plans of a House Built for Mr. Dean Alvord of Brooklyn, Designed to Stand Alone, without the Accompaniment of Surrounding Foliage

This dining-room, trimmed with oak, has a paneled wainscoting, a wooden cornice, and a fireplace with green tiled hearth and facings, and a mantel. There is also a china-cabinet built in, with leaded glass doors. The butler's pantry is fitted with sink, drawers, dressers and a store-closet. The kitchen, trimmed with North Carolina pine, is provided with a range, a sink, a

pot-closet and a refrigerator.

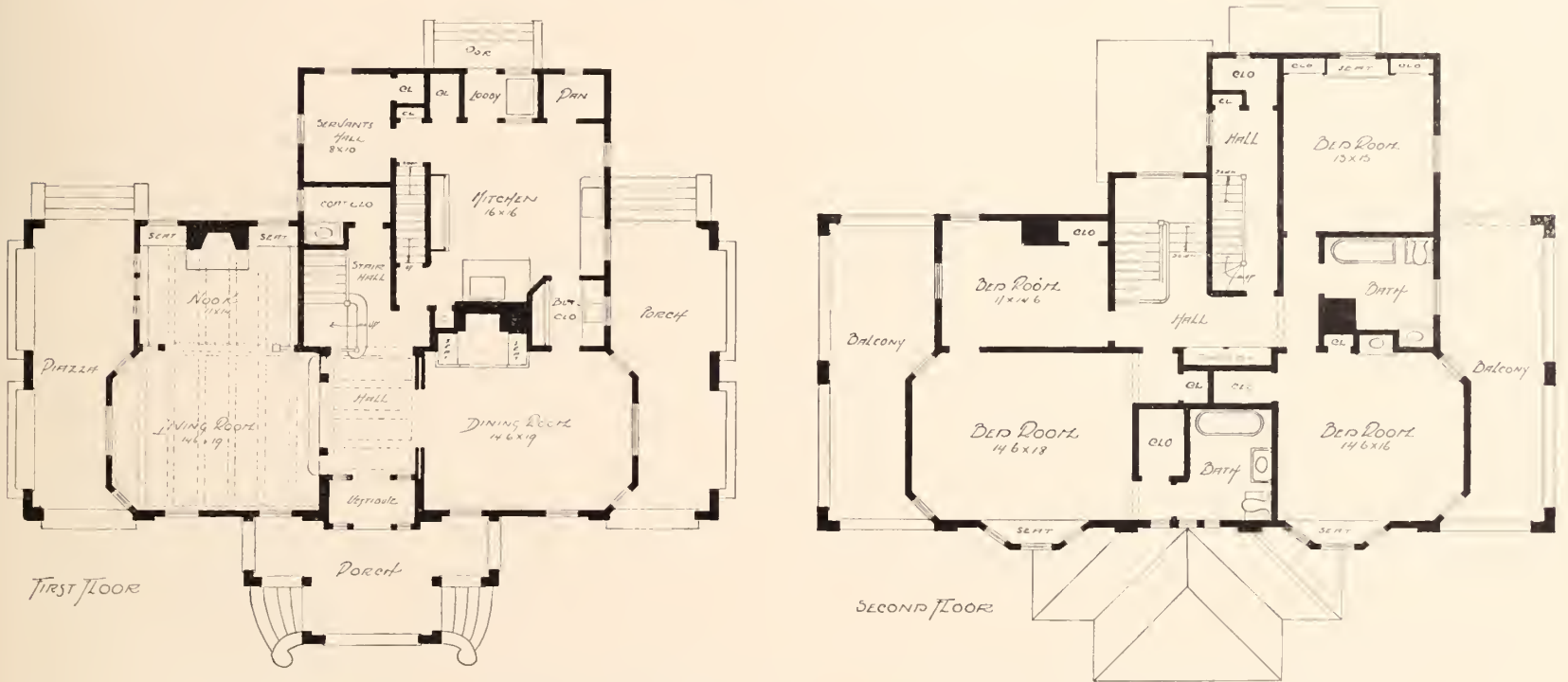
The second floor is trimmed with white-wood, and is stained and finished in mahogany; the doors are painted white. The bathroom on the second floor is wainscoted and paved with tile, and is furnished with porcelain fixtures and exposed nickel-plated plumbing. One bedroom and a trunk-room are placed on the third floor. The laun-



3—Is in Quite a Contrast with Mr. Alvord's House, for It Has a Good Setting

structed of wood from the grade to the peak, and the exterior framework is covered with shingles and left to weather finish. The trimmings are painted white. The roof is also covered with shingles.

A vestibule forms the entrance to the house. The hall, which is trimmed with oak, is treated in the Dutch style. It has a paneled wainscoting, ceiling beams and an orna-



4—A Vestibule Forms the Entrance to the House. The Living-room is at a Lower Level than the Main Floor

dry, servants' toilet, furnace-room and fuel-rooms occupy the cellar, which is cemented. Messrs. Child and de Goll, New York, were the architects.

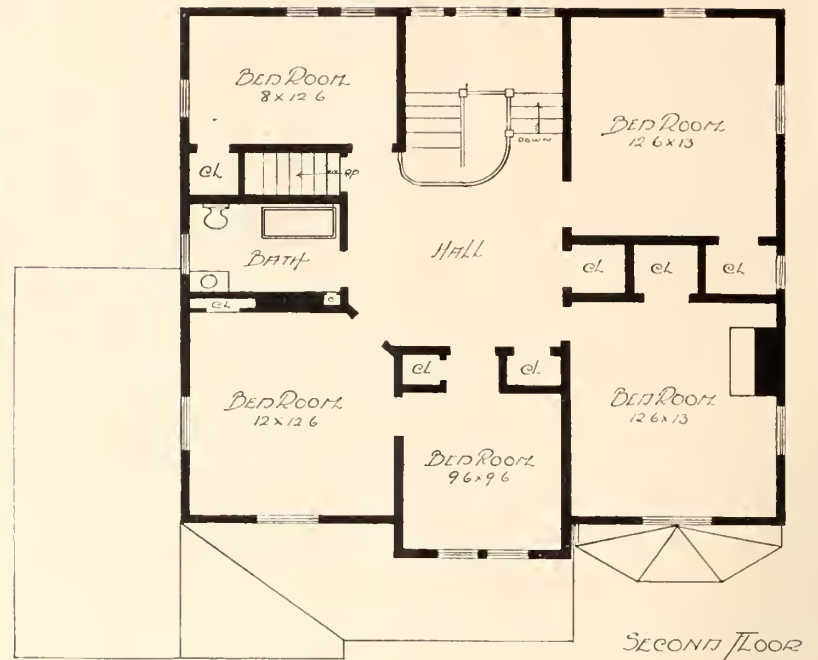
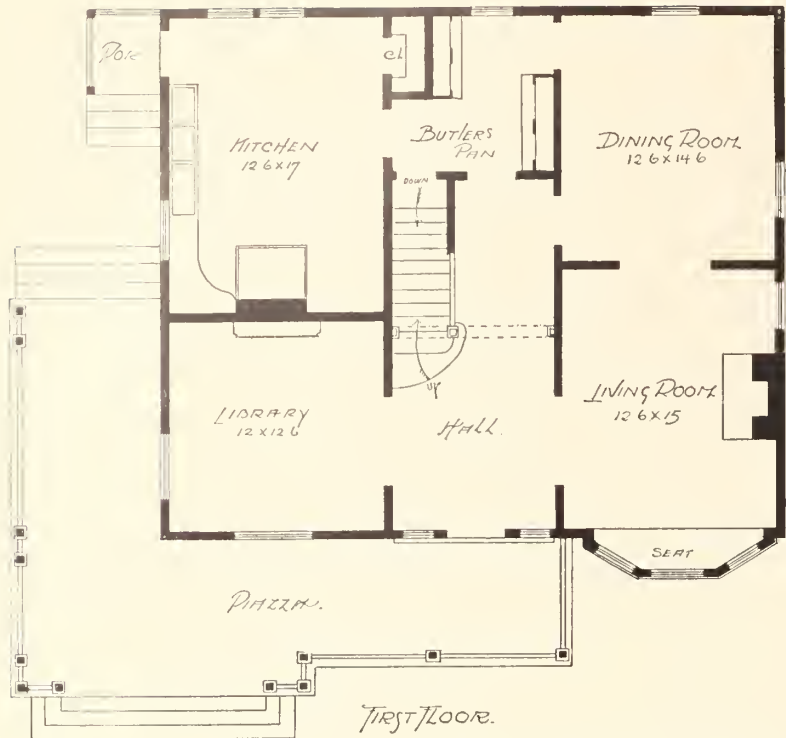
The house of Mr. H. Hoenigsberger at Bensonhurst, Long Island, as shown in Figs. 3 and 4, is quite in contrast with Mr. Alvord's house, for it has a good setting and is accordingly designed.

Mr. Hoenigsberger's house has a stone foundation with a topping of brick. The superstructure is con-



5—Mr. Sellew's House is Distinctive in Character

mental staircase. The living-room, placed at a lower level than the main floor, is treated with a forest-green effect. It has an inglenook, which is separated from the living-room by columns extending from the floor to the ceiling and supporting a cross-beam. A similar treatment is used at the opening into the hall. The inglenook and living-room have a batten wainscoting and ceiling beams. The inglenook has an open fireplace and mantel, and seats on either side.



6—The First Story Plan Shows a Central Hall with Rooms on Either Side

The dining-room, trimmed with oak, is designed in the Elizabethan style with a Haddon Hall ceiling. It has a high paneled wainscoting finished with a plate-rack resting on carved brackets. From this plate-rack springs the arch to the ceiling, which is laid out in a geometrical design of plaster, treated with an old ivory white. The fireplace has tiled facings and hearth and a mantel shelf. There are seats placed on either side of the fireplace.

The kitchen and its dependencies, including the servants' hall, are fitted with all the best modern conveniences. The lobby is large enough to admit an ice-box.

The second floor, treated with white enamel paint, contains four bedrooms and two bathrooms, the latter being fitted with porcelain fixtures and exposed nickelplated plumbing. The third floor contains the servants' quarters and ample storage space. A cemented cellar contains the heating apparatus, fuel-rooms, cold-storage rooms and laundry.

Mr. J. J. Petit, New York, was the architect.

The dwelling built for Mr. Sellev, of Upper Montclair, N. J., Figs. 5 and 6, has a distinctive character, for in its design the English half-timber and

stucco style was accepted. It has an underpinning built of rockfaced field stone laid up at random. The superstructure, of wood, is covered with clapboards for the first story, painted a deep dull red, and half-timber work for the second and third stories; the half-timber work being painted red, and the space between the beams being filled in with stucco work. The roof is covered with shingles.

The cemented cel-

lar is divided into five compartments with a central wall. The division walls are built of stone. This cellar contains a furnace-room, fuel-rooms, laundry and cold-storage room.

The first-story plan shows a central hall and a library, parlor, dining-room and kitchen, all of which are trimmed with cypress finished in its natural state. The floors are of North Carolina pine, polished. The hall has an ornamental staircase with a broad landing, provided with windows glazed with leaded glass.

The parlor has an open fireplace furnished with tiled trimmings and a cabinet mantel. The library has a similar mantel. The butler's pantry is fitted with drawers, dressers, and the kitchen is also complete.

There are five bedrooms and a bathroom on the second floor. On the third floor are two bedrooms and ample storage. Mr. A. W. Simpson, of Mount Herron Road, Upper Montclair, N. J., was the architect.

Mr. E. W. Preston's house, at Hackensack, N. J., as presented in Figs. 7 and 8, is the last subject shown in this series. It has many excellent and harmonious features, and

its combination of rough field stone and shingle work makes a very pleasing contrast.

The first story is built of field stone laid at random, and the second story is covered on the exterior with red cedar shingles. The roof is also covered with similar shingles. The interior of the first story is trimmed with oak. The reception-hall has an ornamental staircase, and the living-room has a large inglenook, which is paneled, containing paneled seats, leaded glass windows, and

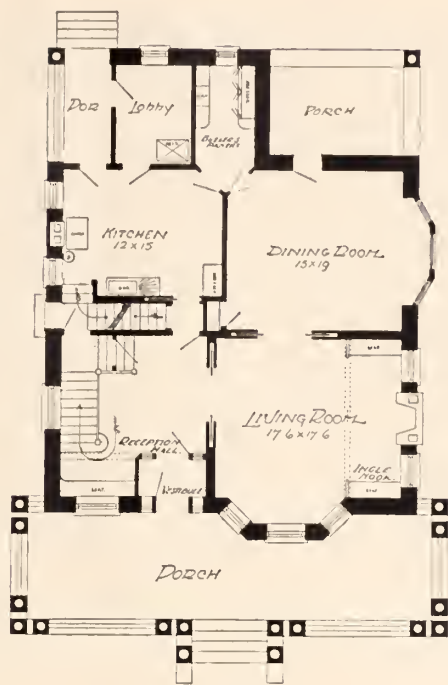


7—Mr. Preston's House Has Many Excellent and Harmonious Features. Is Built of Field-stone and Shingles

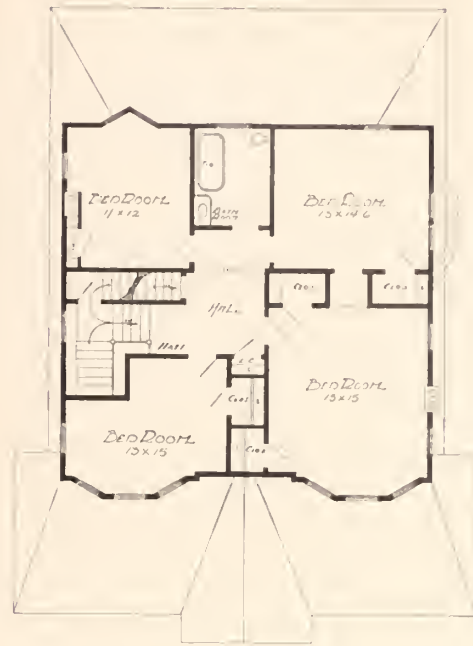
an open fireplace furnished with large dull green tile.

The dining-room has a paneled wainscoting, and a porch, which is inclosed with glass in winter and used for a sun-room. The kitchen and its dependencies are fitted with all modern conveniences. The second floor, trimmed with white pine, is finished with an egg-shell gloss. This floor contains four bedrooms and a bathroom, the latter wainscoted and furnished with porcelain fixtures and exposed nickel-plated plumbing.

The third floor contains the servants' rooms and ample storage space. A cemented cellar contains a laundry, furnace- and fuel-rooms. The Read Company, of Hackensack, N. J., were the architects. Houses of the character presented in this series very



FIRST STORY PLAN.



SECOND STORY PLAN.

8—The Plans Show Four Rooms on the First Floor and Four on the Second Floor
The First Story is Trimmed with Oak

ing. It is indisputably true that cheap houses are sometimes costly in taste, poor in appearance and badly built, but care and thought will do wonders, and if these qualities are drawn on much may be accomplished.

ably demonstrate what can be done with a little study of the conditions surrounding the site, and a little taste on the part of the owner and the architect to conform to these conditions in the designing of their respective houses.

Not that it is an easy thing to design and build such houses as these, or that simple houses of any kind are necessarily inexpensive. Even the smallest of building operations calls for care and thought, for skill and cost. These are the real matters that count in house build-

Soils and Their Nutrition



In order to understand the methods necessary for restoring worn-out soils, Mr. W. J. Spillman, of the Department of Agriculture, has recently published in one of the department's bulletins the principles which underlie the renovation of exhausted soils. In order to consider what occurs in a fertile soil that is growing a large crop he asks us to imagine a cubic inch of ordinary field soil magnified into a cubic mile. It would then present very much the appearance of a mass of rocks varying from the size of a pea to masses several feet in diameter. Scattered among these rock masses would be many pieces of decaying plant roots and other organic matter, resembling rotting logs in a mass of stones and gravel. The masses of organic matter would be found to contain large quantities of water and somewhat to resemble wet sponges, while every mass of rock would have a layer of water covering its surface. The open spaces between the solid masses would be filled with air.

If a crop were growing on this soil, its roots would be found threading their way among the masses of rock and decaying roots, and pushing these aside by the pressure exerted by the growing root. From the surface of the growing root, near its tip, small hollow threads (the root hairs) extend into the open spaces and suck up the water covering the rock particles. The root hairs are not open at the end; they absorb the water through their walls. The plant food is dissolved in this water, but is usually present in exceedingly small quantities. While the plant is growing a constant stream of water flows up through it and evaporates at its leaves. For every pound of growth in dry matter made by the plant, from 300 to 800 pounds of water flow up through it.

The plant food substances dissolved in the soil water may be divided into two classes according to their ultimate source—mineral and nitrogen compounds. The mineral plant foods are phosphorus, potassium, calcium, magnesium, sodium, iron, silicon, chlorine, and sulphur. The amount of plant food made ready for plant use during each growing season through the slow solution of the mineral particles of the soil is doubtless supplemented to a considerable degree by the same kinds of material set free from the organic matter also found in the soil—that is, the mineral matter originally secured from the dissolved minerals, but built into plants during some former season, may again be used by other plants when the old matter is given an opportunity to decay in the soil. These foods derived directly from the mineral matter of the soil and indirectly from it through the growth, death, and return of former crops are also supplemented in many cases by the application of mineral matter in the form of commercial fertilizers.

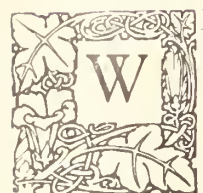
In addition to the nine elements already mentioned, the growing plant requires four other elements, as follows: Hydrogen, which it secures from water (water is a compound of hydrogen and oxygen); oxygen, which it secures partly from water and partly from the air; carbon, which is secured from carbonic-acid gas in the air; and nitrogen.

Nitrogen is in many respects the most important of all the plant-food elements. It is not found in appreciable quantities in the rock particles of the soil. Ordinary plants depend for their nitrogen entirely on decaying organic matter. As decay proceeds nitrates are formed from the nitrogen contained in organic matter. The nitrates are exceedingly soluble, and unless soon made use of by growing crops they are washed out of the soil. Nitrogen is therefore usually the first element to become exhausted in the soil.

Principles of Home Decoration

VII.—The Art of Placing Furniture

By Joy Wheeler Dow



WITHOUT good furniture and a good architectural setting for it all the art in the world about placing our household goods will go for naught. The two conditions must exist. The furniture must be good, both in workmanship and design, and the architecture of the rooms must be good.

In the accompanying illustrations, however, Figs. 1, 2, 3 and 4 are used to show what happens where one condition or

memorable eve of Waterloo, but he was mistaken. But Napoleon's was somewhat of an occult problem, while the elements of good architecture and good furniture, combined as we see them in Figs. 5 and 6, for instance, are quite tangible and readily recognized and noted. Here are two entirely different schemes for a dining-room where it would be quite worth one's while to see whether the arrangement of the furniture could be improved. Marble or onyx clocks and gas-lugs are two false notes which ought to be eliminated

in Fig 6, and then whether we place the chairs about the table or against the wall, as shown, we shall find matters extremely little changed. Fig. 5 is a charming dining-room, and the furniture is admirably placed, with just enough of it; for too much furniture, if Fig. 6 should have too little, is a frequent cause of disappointment in an otherwise creditable interior. Fig. 7.

Fig. 7 presents a most attractive living-room. The first impression from the picture, perhaps, shows a little overcrowding in its furnishings, but, in reality, it is not so, for the room is a large one, is really delightful, and is the expression of good taste. The rugs, the upholstery and wall-covering are to a degree harmonious, and this is heightened by the white-enameled trim. The two davenports are good, and are well placed, the tables and chairs are excellent, the pictures are well hung, and the fireplace, which



1—Good Furniture in a Poor Architectural Setting

the other or both are absent. In Fig. 1 we may see the effect of really good, well-selected furniture in a poor architectural setting. In Fig. 2 we have just the reverse condition—poorly selected furniture in a fairly good architectural setting; and in Figs. 3 and 4 examples where both furniture and architecture are hopelessly bad. Now, it makes no difference whether we place a sofa here and a chair there in any of these four interiors, there is no use in bothering our heads about them, in fact, other than as negative object-lessons, for nothing we could do now would make them successful interiors. The premises are wrong at the start, and the sooner we begin all over again in such cases the better.

The elements must be in accord. Victor Hugo says in "Les Misérables" that Napoleon thought the elements were in accord upon the



2—Poor Furniture in a Good Architectural Setting



3—Poor Furniture in a Poor Architectural Setting

forms the keynote to the room, has a good Colonial mantel, over which there is placed a fine old Colonial mirror, thereby carrying out one of the decorative characteristics of the Colonial period.

Never place a chair after the manner of Chippendale, at right angles to the arm of a davenport. A davenport is a piece of furniture of such incontrovertible importance in itself as to need few accessories in its immediate neighborhood, especially when it is completely covered by upholstery to a valence touching the floor.

The tendency of some people is to have too little furniture, and others too much; but the latter is an aristocratic failing, I suppose, as it is the weakness of royalty. The present Queen of England maintains an accumulation of pictures,



4—Both Conditions Hopelessly Bad



5—The Elements Must Be in Accord

trinkets and mementos in her private apartments to which Fig. 7 would seem empty by comparison; and how any house-maid ever dusts all the objects and keeps them clean is a wonder to the spectator. To sweep, dust and put in order again an interior like that presented in Fig. 7 must consume what Washington Irving was fond of calling an "unconscionable time."

There are several things the matter with Fig. 8, though I am not prepared to say what they all are, which while obvious enough are difficult of enumeration. There is such a thing as making window-seats too long as well as too deep, and that is one trouble. Corner pilasters in conjunction quarrel awfully, and ought never to be so arranged. But the main trouble is that the furniture is too small and

insufficient in quantity for the vast space to be furnished, quite the reverse of the congestion we had in Fig. 7. Never put a piano across the room from the windows. It is too dark over there. The keyboard should have an enfilading light, preferably so as to catch the reflected chiaroscuro of the setting sun. That is the ideal way. The piano in Fig. 8 is very badly placed. Then rugs placed diagonally, except in studios, are always disturbing notes, especially when the architectural treatment of a room is classic, as it is in Fig. 8; and to place a small rocking-chair in the very center of so ample an apartment is a very inconsequent thing to do. To sum up is to say that neither architect nor decorator has grasped "the idea."

Fig. 9 shows us an extremely well-furnished apartment, architecturally good window-draperies—which are rare—a good

sideboard, clock, tables and chairs well arranged. Now compare, if you will, the atmosphere of rest and quiet which here prevails with the insidious discord which jars so in Fig. 8.

Perhaps there are no rules—no exact rules about the placing of furniture that may be applied scientifically. The thing has too much to do with the inner susceptibilities to be treated scientifically. It is something within, like love, that defies analysis while it distinguishes between like and aversion with unerring intuition. It is the cultivation of this art-conscience that enables us to distinguish between what we ought to do and what we ought not, so as to say to ourselves, "This is right" and "This is wrong," without a geometrical equation to refer to.

The elements are again in accord in Figs. 10 and 11. Both are a source of satisfaction to contemplate. The furniture is all good and correctly placed, except for one discordant note—the diagonal rug in Fig.



6—A Studio Dining-room. Good Furniture in a Good Architectural Setting



7—An Architectural Setting Well-suited for its Decorations and Furnishings

11; but clock, chair and sofa are admirable.

A tall clock, either an antique or faithful reproduction (modern hall-clocks are usually monstrosities) is one of those convenient pieces of furniture which will go most anywhere—upon a stair-landing, in a corner of the drawing-room, the dining-room, or flat against the wall of the hallway, as seen in Fig. 11. A sofa is a very different proposition, and needs much thought before its true mission in a given case be discovered. Sometimes it will set before the fireplace, and again it will not. It will fill a corner becomingly, at times, and then again it refuses to do so. It has but one place in a hallway, however, and that place has been correctly chosen in Fig. 11.

Rocking-chairs also are hard to manage, but there are certain orthodox shapes—inviting and comfortable rocking-chairs which no collection of chairs in a room is complete without, even in a dining-room, for thorough homeyness; and these rocking-



8—Faulty in Several Respects



9—A Good Dining-room



10—A Well-furnished Apartment

chairs have no unalterable headquarters in a scheme of furnishing. See the rocking-chair well placed in Fig 10.

If the legacy of a square piano remains with the family, it should be set out in the room rather than against the wall, as was the invariable custom during the "Dark Ages," otherwise the sixties and seventies of the last century. See again observation concerning the piano in Fig. 8.

Many pieces of furniture people have inherited, and, I regret to say, occasionally purchased themselves, are entirely too large and cumbersome for the cottages they occupy—huge davenports and bookcases, ponderous tables and drop-sical-looking sideboards with meaningless mirrors, after the fittings of a "Tenderloin" bar-room. All this kind of furniture can not be placed successfully anywhere, neither it nor its characteristic accessories I have had occasion to mention several times already, such as piano-lamps, gas-logs, grilles over doorways, mantel-scarfs and bric-a-brac generally, except, indeed, with some second-hand dealer.

A gate-legged table drawn to one side of a fireplace in the living-room is a charming device, and if it be actually used for the supper-table upon occasions is more charming than ever. Informal breakfasts, luncheons or suppers served in the living-room, upon a porch or in a generous hall are always delightful repasts, common enough in England but rare in America. The fact is, we have been so busily engaged in trying to make money in America as to have had practically no time to cultivate the thousand and one graces there are about ideal home-living, particularly in the country. Like Joshua Whitcomb in the "Old Homestead," who had not



11—A Successful Hallway

been fishing since he was a boy, we have had no time. But I fancy I can see evidences that we are about to make the time, which, I hope, have given these papers the right to be.

Humus and Air and Their Value



IN ORDER to produce a ton of dry hay on an acre of land it is necessary that the growing grass pump up from that acre approximately 500 tons of water. In order to supply this enormous quantity of water, the soil must not only be in condition to absorb and hold water well, but it must be porous enough to permit water to flow freely from soil grain to soil grain. The presence of large quantities of decaying organic matter (humus) adds enormously to the water-holding capacity of the soil. One ton of humus will absorb two tons of water, and give it up readily to growing crops. Not only that, but the shrinkage of the particles of decaying organic matter and the consequent loosening of soil grains keep the soil open and porous.

Furthermore, humus of good quality is exceedingly rich in both nitrogen and mineral plant food. The maintenance of fertility may almost be said to consist in keeping the soil well supplied with humus. The first step in renovating worn-out soils is to give them an abundant supply of humus of good quality. Perhaps the best source of humus is stable manure containing both the liquid and the solid excrement, especially when the stock are fed rich nitrogenous foods. Even a poor quality of barnyard manure, which has had much of the plant food leached out of it, has considerable value because of the humus it makes.

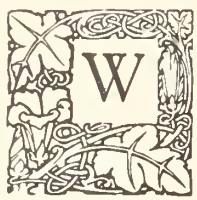
Another cheap and valuable source of humus, but one which must be used understandingly, is crops grown to turn under as manure. The legumes are especially valuable for this purpose because of the nitrogen they contain, but other crops, such as rye, and even corn sown thick, may sometimes be made to supply large quantities of humus of fair quality. Crops thus used are called green manures. They are more fully discussed farther on.

A proper circulation of air in the soil is just as important as any other factor of plant growth. Nearly half of the volume of ordinary soils is occupied by air spaces. The air spaces in the soil wind in and out between the soil particles, just as they do in a pile of larger stones. If the layer of water on the surface of the soil grains becomes so thick as to stop the air passages here and there the soil is then too wet for most crops and needs drainage. Plants have no special breathing organs, the oxygen required in their breathing finding entrance all over the surface of the plant. Plant roots must therefore be supplied with air, and hence the soil must be porous enough to permit of free circulation of air. A good supply of humus and proper tillage will accomplish this result in clay soils. Sandy soils are usually too porous, needing humus to help them retain water.

Another reason why air must circulate freely in the soil is that large quantities of oxygen are required to insure proper decay of organic matter to supply plant food.

The Dorothy Q. House

By
Mary Caroline Crawford.



WITH the single exception of Mt. Vernon there is probably in all America no Colonial house of more intrinsic interest than the Dorothy Q House in Quincy, Mass., which the Colonial Dames of the Old Bay State bought about two years ago and now maintain as a show-place for historical and other pilgrims. Mrs. Barrett Wendell, of Boston, is president of the ladies in charge of the old roof-tree, and Miss Elizabeth W. Perkins is the chairman of the house committee through whose care and good taste the collecting has been done. To these two is due great credit for the well-nigh perfect manner in which the house has been made fresh and attractive without sacrificing in the slightest the traditions of Colonial architecture or doing violence to any one of its romantic associations.

The Dorothy Q House is almost as old as the Commonwealth itself—the rear part was built in 1636—and is associated with many of the distinguished men and women who made the Commonwealth and established its fame. The estate passed out of the hands of the Quincys a century ago; but in Colonial times almost all the eminent members of that race were either born there or lived there part of their days. John Adams and John Quincy Adams frequently visited the inmates of this home, and its hospitable roof has sheltered many others known to fame, such as Sir Harry Vane, Judge Sewall, Benjamin Franklin and Sir Harry Frankland.

Visitors who to-day go to Quincy and seek out this venerable mansion find much of interest to them, even if they be quite ignorant of the historic side of the house. None the less I propose here to discuss the various rooms in the light of the hallowed traditions with which they are indissolubly linked. Otherwise the quaint furniture might just as well be in the show-rooms of an enter-

prising dealer in antiques. Let us begin with the garden, here an integral part of the house, as all Colonial gardens were. Approaching from the street one walks back several hundred yards through magnolia and mulberry trees set off with rhododendron, along a narrow path neatly bordered with a relic of that famous box upon which Dorothy Q dried her laces nearly two hundred years ago. At the left is the brook which the town of Quincy has lately dammed up and over which there will soon be placed a rustic bridge such as was there when Agnes Surriage came to the house with her handsome Sir Harry Frankland, and the whole party fished for eels, which they merrily cooked for supper.

At the left as one enters the noble front door is the parlor, with its renowned Venus and Cupid wall-paper, which was brought from Paris expressly for the wedding of John Hancock and his Dorothy Q. The design shows double panels upon which very natural-looking Birds of Paradise disport themselves. In one Cupid appears to be wooing the shy Venus; in the other she has dispatched him with an affirmative answer, and he is proceeding happily away through pendent wreaths of red flowers. It seems a pity that paper so eminently fitted to nuptial rites should not have graced the Hancock wedding after all. But English spies were keeping a keen lookout for Patriot Hancock about that time, and he was obliged to go into hiding in the Lexington parsonage (now known as the Clark House), where his father had been born. To visit him his aunt, Mme. Lydia Hancock, and his fiancée, Dorothy, took coach April 18, 1775; and it was the resultant happy meeting which Paul Revere interrupted when, having ridden for his life to warn Hancock that the British were approaching, he arrived in Lexington about midnight of that memorable day. Hancock had, of course, to flee again; the ladies meanwhile with-



The Dorothy Q House

and Its Grounds

drew to Fairfield, Conn., the home of Rev. Thaddeus Burr, another kinsman. And in spite of the Cupids trailing their pink and blue wreaths over the parlor walls of the home at Quincy the wedding they were to celebrate very nearly failed to come off; for fascinating



The Butler Room, Which Dates Back to 1636



Parlor Showing Wall-paper Purchased for the Hancock Wedding

Aaron Burr, whom no woman was ever able to resist, came visiting his Uncle Thaddeus just then, and it required all Aunt Lydia Hancock's watchfulness to prevent an elopement as a result of the desperate flirtation which ensued between him and Dorothy Q. On August 28, 1776, the postponed wedding was celebrated at Fairfield, however, John Hancock taking his wife directly to Philadelphia, where they soon set up in a fine house of their own.

The present furnishings for the parlor and the music-room adjoining were supplied by Dr. Francis P. Sprague, of Boston, in memory of his wife, Elizabeth Sprague, for ten years registrar of the Colonial Dames of Massachusetts. A statement to this effect is appropriately in sampler form and hangs at the right of a fireplace set with Biblical tiles, directly over a genuine sampler made in 1700. The room is rich in beautiful historic pieces. A Chippendale looking-glass with a delicate decoration of raised gold wheat on its frame attracts universal admiration. Only one other similar glass is known, and that reposes in the Dedham Historical House. Beneath the wheat looking-glass is a card-table of exquisite design, with corner stands for candles, grooves for chips and a secret drawer. Near by is an old Dutch chair wormeaten with age, and flanking it a six-

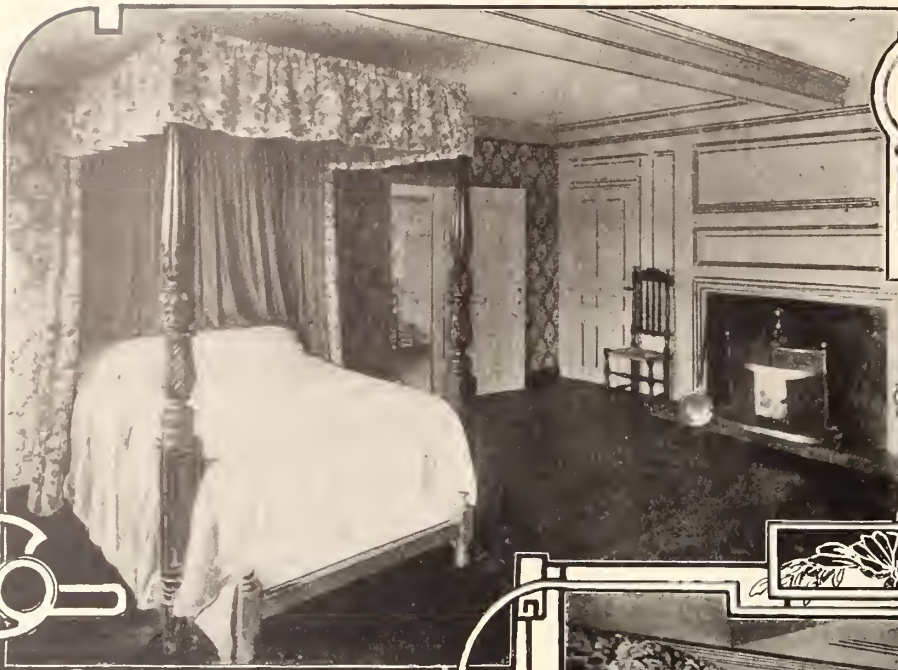
legged table—one of the freaks of Colonial cabinetmakers—which supports the oldest known of hour-glasses.

Why do we not have spinets in these days? This is the question which has been haunting me ever since I enjoyed the privilege, a few weeks ago, of playing the "William Fether, London" instrument in the music-room of the Dorothy Q House. The finest grand piano that I have ever touched yields no such pleasure. The tone produced by the picking of the goose-quills against the strings is at once delicate and satisfying. On the case one is promised, in impressive Latin, "oblivion to cares of life while playing." For once an advertisement does not overstate. Music-lovers, revive the spinet! A Flemish chest, dating back to 1600, a picture of Judge Edmund Quincy, and a mourning ring, once the property of that worthy, which was found recently in the course of a cellar-excavation, are other interesting features of this room.

Adjoining is the study of the famous Tutor Flynt, the eccentric bachelor brother of the first Dorothy Q. For him it was that the two-story ell, including this study and the chamber above it, was built. For fifty-five years Flynt was instructor at Harvard College, and during the greater part of that time it was his habit to recreate in this hospitable old roof-tree. The study now contains



The Kitchen



Bridal Chamber Containing Lafayette Bed

containing a bed built for Lafayette's use and loaned to the house by Miss Blanche Shimmis, of Boston. In this room Washington, Sir Harry Frankland, of romantic memory, President Grant and Benjamin Franklin have all slept. The last-named presented to his host after one of his visits the Franklin stove there to-day.

In the room across the hall was born, in 1709, the Dorothy

the chair in which Hancock was inaugurated, a table which belonged to President John Quincy Adams (a gift to this house from the Daughters of the Revolution of Quincy) and a curious terrestrial globe presented by Miss Edith Dana, granddaughter of the poet Longfellow.

Directly across the hall from the parlor is the dining-room, with walls hung in quaint old paper portraying a Chinese villa. The furniture here is mostly Chippendale, and includes a long table that divides into three, an inlaid cone-shaped re-



The Dorothy Q Room



A View of the Parlor. In the Background is the Music-room Containing an Old Spinnet

ceptacle for knives, forks and spoons (Sheraton?), a genuine old buffet dating back to 1700, and on its shelves dinner-plates which were used by Hancock, a tea-pot from which Washington was often served, and a brick and key brought from the fort at Louisburg when it was taken by the Massachusetts and other provincial troops in 1745. Over the mantel hangs a hatchment embroidered about 1790 by Mary Willard, daughter of President Joseph Willard, of Harvard College.

Upstairs over the parlor is the guest- or bridal-chamber,

Q whose girlish portrait her great-grandson, Oliver Wendell Holmes, described.

Dorothy's room now contains an old sofa which was in Longfellow's family and a pincushion made from brocades which decorated Hancock's home on Beach Street, Boston. On the bed are genuine old chintz hangings and a rare homespun spread over which arts and crafts devotees wax enthusiastic.

It is, however, to the Butler room, so-called, that we must go if we would be in the really old part of the house. Here one sees black beams hewn off the farm away back in 1636. Fittingly are the chairs and china here both ancient and historic. A "thousand-leg" table, such as one almost never comes across nowadays, a cup and saucer used by Daniel Webster for twenty years, and another Franklin grate of interesting lineage, are also here. Perhaps the most fascinating thing about this room, though, is its low roof, so made in order to accommodate a secret room above.

The kitchen is also in the oldest part of the house. Here are huge oak beams, a fireplace of mammoth proportions, a chest which belonged to the brother of William Penn, and curious housewife appliances of Colonial days. Fastened to the table is a "swift," upon which wool used to be wound with a reel which clicks sociably at the end of each forty threads; near by is a piggin with which water was dished up; and there are churns, a tin-kitchen for baking, and receptacles in which to make cottage cheese and sausage meat.

A Woman's Farm in England

By Amelia Roy



TRULY it was such, for the whole of the work, even the heaviest, was done by the bevy of girls whose home it was and whose farm it became in a very literal sense on the death of their father. It was a brave and venturesome thing to do, trying to work a farm of more than three hundred acres, working it completely, engaging in every sort of farm-work that needed to be done, and then, after two years of unremitting effort, realizing that the labor had been successfully expended. The record may not, indeed, be unique, but at least it is an instance of unusual energy and courage unusually applied.

Brockwell Farm is at the foot of the Chiltern Hills, in the Vale of Aylesbury. It includes about three hundred and twenty acres, and originally belonged to a Captain Scott. On

I must yield to the temptation of making a catalogue of these brave young women. First of all is the eldest, Miss Scott—Queenie. She transacts all the business of the farm, attending the markets, and buying and selling the corn and cattle. She is the business-woman of the estate, and the first word of censure or of fault-finding has yet to be uttered by her sister-associates. At home she assumes special care of the pigs, and permits no interference with this branch of her work.

Miss Maggie comes next. She is the dairymaid—and an expert, if you please, for she treasures more than fifteen prizes and certificates for butter-making and milking at public competitions—no slight achievement for a young girl not long in her twenties. And she adds a variety of other accomplishments to her list, for some of the best hay-ricks in her country were built and thatched by herself, and in many ways she has displayed a marked leaning toward mechanical pursuits. The raising of poultry is another department that belongs to her.



Taking Hay From a Hay-rick
Built by the Girl Farmers

his sudden death his daughters found themselves confronted with the problem of earning their livelihood. Accustomed to farm-life from earliest childhood they were familiar with every detail of farm management, and their land seemed to offer the best opportunity for the future. Feeling that familiar work might be more successful in the end than that of which they then knew nothing, they bravely set about their self-chosen task and became farmers in the most literal sense of the word.

Were one making a philosophical study of this interesting estate it would be easy to indicate the elements which have made it successful. First, of course, is long and intimate familiarity with the work to be done. Then comes the unbounded enthusiasm with which each detail of this work was performed. The girls brought to their work broad knowledge and deep interest, and were delightedly interested in everything they did. Not to make the present study too profound it will be sufficient to point out a third reason for their success in the subdivision of labor that was adopted at the outset, and which speedily turned each young woman into a specialist in her own department.



Feeding the Chickens

Miss Mabel is the third sister and attends to the live stock. At the present writing she has five horses and a colt under her care, and she has general supervision of the cows and fowls. The flower-garden is hers also, a spacious plot of ground that she carefully tends early in the morning or in the evening, for there is little time in the middle of the day when this delightful spot may be cultivated.

Miss Winnie, the fourth, makes a specialty of rearing calves, as many as six being brought up in a single season. Very varied, also, are the things she turns her hands to. When occasion needs she is dairymaid or plow-woman, and from early morning until dusk her small figure—for she is the smallest of the family—knows no rest and is as busy as a bee. And so are all of them, for not an hour of the day but finds one in earnest occupation—the occupation consisting of recreation as well as hard work.

Miss Daisy is the fifth, and has immediate charge of the cows, which are never less than twenty in number, and which she has completely under her control. She is proud of being a certificated milkmaid, having won two prizes at Agricultural Hall, London.

Ewart comes sixth on the list, and is the eldest brother to the girls. He is carpenter, wheelwright, mechanic, plumber. "One of the most useful implements on the farm," the girls say, and no doubt with the utmost truth. He gives a helping hand to every one as occasion calls. Norah is the seventh, a tall young girl of fifteen, who makes herself generally useful in all departments, and often enough in every one of them. She is every one's right-hand helper within doors and without, and not the least of her accomplishments is that of cooking, her dinners being admirably prepared and served with the distinction so generally characteristic of English meals, and which even these busy workers do not dispense with.

Alan, the youngest child, still goes to school; but before he sets out in the morning, and again on his return in the afternoon, he cheerfully does anything that is required of him, and this, you may be sure, is always something useful and something necessary to be done in this busy household of workers.

And then there is mother, "just mother," the girls fondly say, who has taught these brave young hands to do so much, and whose own patient work for her children has so long been unselfish and loving. She has general charge within the house, and many of the creature comforts of the farm are due to her thoughtfulness and own personal work.

In springtime an ordinary

day's work on the farm begins at five o'clock. That hour finds the six girls enjoying an early cup of tea in the spacious kitchen of the house. They wear long blue overalls cut tightly to the figure, the skirts reaching to their ankles. Boys' boots, large, shady hats and white lace at the neck, fastened with a neat brooch, complete their working-costume. Once tea is finished they scatter to their tasks. Poultry, calves, horses, colts and pigs are fed; there is milking, skinning and scrubbing dairy-utensils; stables and cow-sheds are cleaned out and left tidy for the day, and a good beginning made by seven o'clock, when the call for breakfast brings them within doors again.

Then the field-work begins. One sister plows the land for roots; another rolls the corn; another hoes. Much cheerful laughter, whistling, singing, the reciting of favorite pieces of prose and poetry, and endless good-natured repartee enlivens the busy scene and turns the hard work into a veritable family festival of good nature. At ten o'clock all hands

knock off for lunch, for which a quarter of an hour is allowed. Dinner comes at twelve, and follows the healthy custom of the American trades-union in permitting a full hour's respite. Tea, that most British of all feeding customs, is taken at four, and wherever the girls happen to be—as likely in the hayloft as any other place.

This cheering episode marks a change in occupations generally, for the animals must be fed again and the cattle,



Homeward Bound after the Day's Work



Rabbit Shooting



Afternoon Tea in the Hay Loft

dairy and poultry attended to. Then, at six o'clock, some more work in the fields, which continues until eight, or, if hard pressed, until dark, which, as all the traveled world knows, comes later in England than in America. And then, to home. The working-clothes are put aside, and work as well, and a group of well-dressed young ladies comes upon the scene. Music, piano, mandolin, banjo, guitar, flute, as likely as not, is at once proposed, and all is harmonious

Friday is the longest and hardest day at Brockwell Farm. It begins at three in the morning, and is seldom over before half after nine at night. This is the day on which the butter is made, and in order that there be no interference with the ordinary farm-work it is begun at an unusually early hour.



Ploughing

Hence it is generally finished at six and the ordinary work proceeded with without interruption.

One might imagine, and quite naturally, that with so much hard manual labor as such a daily programme displays, there would be little enough time for the ornamental occupations of life. Yet each of the girls has her own hobby with which she fills in time otherwise unoccupied. Miss Mabel paints, and has a laudable ambition to become a distinguished artist. Miss Daisy and Miss Winnie have pronounced literary inclinations, and have won some success with London editors.



At Work on a Mound

Thus hardly a moment is unoccupied, and between labor and pleasure each day is well spent.

Sunday is a day of peace, although, like the week-days, it begins at the same hour. Often the girls troop out for long walks to see the sun rise, a grand sight in the wooded hills and valleys. After the cattle and animals are attended to there is housework within doors; then church for those who are disposed to attend, and in the afternoon each one does as she chooses, generally occupying herself with her special fancy.

The daily programme is full of vigorous activity and hard work. Even these girls, who have been engaged in farm-

work of one kind or another from the time they were big enough to learn and work, still find much to learn, still know that there is much risk as well as much labor in the work they have chosen to do. And they do it all, being proud of the fact that they are not dependent for anything on a man, unless it is the "Vet" in case of sickness among the animals.

Even then they have accomplished cures which the "Vet" gave up. They tell with much gusto of a sick mare. She had been foaled ten days. She had been kept in a swing and when let out by the "Vet" had fallen down and lay on the ground



Transplanting Flowers

for three days without seeming possibility of getting up again. He, clever man that he was, had given up the case as helpless. It came on to rain, and the tender hearts of the owners were moved to pity at the helpless creature. They determined to make an effort to save her. Two heavy horses were harnessed to an unhinged gate which was laid down beside the mare. Ropes were slipped around her fetlocks, she was turned over direct onto the gate and dragged into the shed, where, with vast effort, she was placed in the sling and once more hauled upright. The effort was well worth making, as the mare's recovery was complete. It was a hard



A Girl Farmer in the Field

piece of work, very cleverly done, interesting, perhaps not so much for the incident itself, as an illustration of the difficulties that confront every farmer, and the ingenious way in which this group of mere women manage the very difficult work that must be done by every farmer.

“Glenn Elsinore,” A New England Garden

By Ella M. Boulton



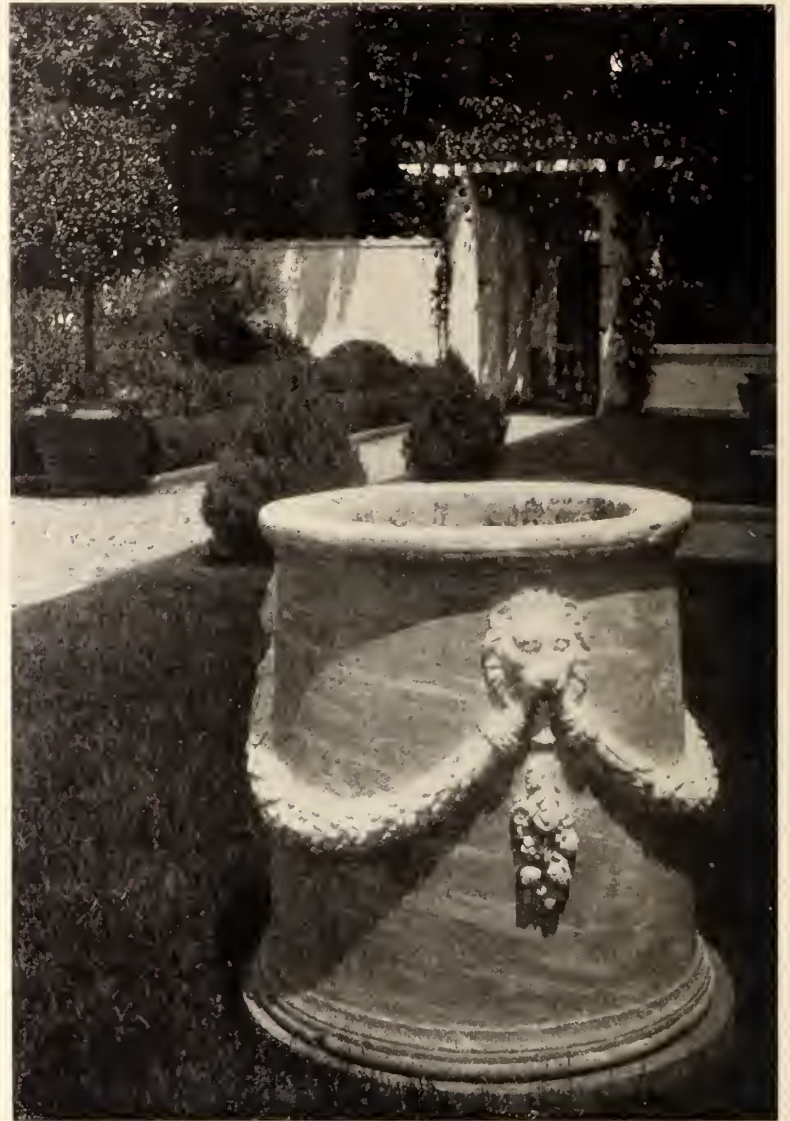
IN THE cozy little town of Pomfret, Conn., there is an estate which combines two methods of gardening in a remarkable manner. It is the property of Mrs. Mary Vinton Clarke, and lies over against “Pomfret Street,” one of those characteristic tree-bordered New England avenues. This connects the old town, dating from the very first year of the 18th century to the railroad station of modern times, two miles distant.

This estate, consisting of some thirty acres, fell an easy prey to the landscape artist's skill. Indeed, it was already a garden, and needed only to be brought into subjection to the architect's ambition. Located on the easterly slope of a line of hills stretching north and south, the outlook is over a thickly wooded valley. It faces a similar line of hills opposite, dotted with charming country places and the less pretentious but always prosperous homes of the village.

The entrance to “Glenn Elsinore” is very appropriately from Hamlet Road, and is marked by no inhospitable gateway, but lies between vine-covered stone towers of simple design. The driveway passes a fine bit of shrubbery massed up at the rear of the house to screen the servants' quarters, and reaches the door direct without the sheltering portecochère that has become the expected feature, but which is here modified into a small vestibule.



In the Vestibule



The Small Well and Vase on the Lawn

From the door the drive makes a circle around a lily pool with a center of palm and aquatic plants, which is hedged about with rose-vines, encircled by various flowering plants, largely coxcombs, and set in a plot of emerald lawn.

The lawn which begins here sweeps to the road on the one side, and far toward the valley on the other. At its foot, for some distance, runs a deep ravine with the inevitable brook in its depths. This is one of the finest streams in this water-threaded country, and adds inestimably to the beauty of the place, to say nothing of its stock of trout. It lies within a stone's throw of the house, and yet the cut is so precipitous and so flanked with trees that it can be seen from the house only as a retreat that must be visited to be known.

Where the brook enters the grounds from the street it has been coaxed into forming a small pond, where an occasional azalea, a few elder bushes, a magnificent chestnut, and banks of fern have been left to form the sole ornamentation. The dam that forms the enlargement of the stream is spanned by a foot bridge adorned with a miniature thatched watch tower.

For the remainder of the way at least the ravine is quite unspoiled. Some of the hardy rhododendrons have been introduced into it to supplement its own laurel, but it is only an accident that this did not already grow here, as it does in many a woods near at hand; a little clearing out has been



Looking Through the Pergola

done, but only to allow of comfortable walking; a few resting places have been made at points of special advantage; and the one necessary foot bridge is a simple structure of logs.

Returning across the lawn toward the house, one looks up at a splendid border of rhododendrons, running along two sides of the terrace which is the house site. This is so thick as to make of the veranda, which it shelters, a retiring-room as secluded as though it were within four walls. On the east this terrace opens on a lower level by means of a flight of steps, high above which reaches the glorious white and rose magenta of the rhododendron, massed against a background of rich green arbor vitæ that serves to screen the rear of the house on this side and the stables. The rhododendrons from here border a path that descends on its winding way through a rose arbor dividing an upper from a lower rose garden, beyond which it joins "the lower garden walk."

This is the main path through the lower part of the place, and is bordered throughout its course with many a hardy shrub and perennial. From its beginning at the far end of the estate it also skirts a ravine—a very tiny one—threaded by the least suspicion of a brook. The ravine deepens and the brook swells as they continue, until they join the other ravine at right angles. This path is in itself a garden. Here a mass of mountain laurel lights the leafy shade of June; a little further on it runs between masses of corn lilies and harebells, with the white day-lily thrusting its old fashioned, fragrant spikes of white among the orange and purple; and now it begins to climb to where it enters a wistaria arbor; and so on, winding, climbing, descending, flanked by beds of heliotrope or pansies or geranium or glowing snap-dragon, and, again, by irregular masses of shrubs—azalea, honeysuckle, barberry, elder, sweet fern—every va-

riety of natural and cultivated bush and tree. There are splendid magnolia, tulip and catalpa trees, and many varieties of evergreen, besides all the common forest trees of the ravine below. Of course this path, in skirting the lower edge of the lawn, makes a turn to the right that carries one eventually to the house, or, by another turn to the right to the stables and servants' quarters. This upward path makes delightful turns and ascents—two steps here, a whole flight there—and is bordered by a wealth and variety of shrubs and flowers.

The charm of all this general garden lies in its diversity and informality. One finds oneself suddenly in the woods walking through an azalea thicket; or, rounding a turn, comes upon a rocky basin filled with pond lilies and pickerel weed; and always, down below, stretches the woodland that forms about half the estate, clothing the hillside with a thick mantle of green, and giving the eye a clean sweep unbroken by building or by highway until the distance of the hills lying opposite have lent all the enchantment necessary.

However, if this were all, "Glenn Elsinore" would have small right to the distinction claimed for it; but it is only the beginning. Like almost every other property of any extent in Connecticut, this estate included a goodly portion of swampland. The miriest bog presents no obstacle to the determined gardener, and this spot has been made to blossom like the rose. It has been converted into one of those elaborate formal walled gardens which have become a feature of our garden making during the last decade. The garden of "Glenn Elsinore" is fashioned after the models of Italy, and is one of the best specimens of its kind in the country. With another decade to mellow its glistening walls and structures (the marbles, generally, have already the exquisite softness of centuries under Italian skies), with a little more growth, a little more rioting, a few more of the thumb marks of usage and enjoyment, this will be a charming example of the Italian garden.

Many tons of our American panacea, concrete, were sunk in this swamp for a substratum on which to lay the soil for planting, but it was thoroughly done and one would never suspect this forest of bloom and verdure to have been superimposed upon a redeemed swamp.

The garden is not large. It covers little more than an acre of space. The path leading to it turns aside from "the lower garden walk," already described, and runs the length of a brick walled vegetable garden of about an acre in extent. This is in itself very interesting. About mid-distance of the path, it is entered through a fascinating old green, brass-knobbed door, picked up somewhere in the surrounding country. Besides the conservatories and hothouses here, there are walled fruit trees, splendid trellises of blackberries, raspberries carefully staked, a magnificent strawberry bed, netted in season, and, of course, all sorts of toothsome vegetables.

Opposite the green entrance door is the entrance to the gardener's place, so hidden by vines and trellises and ornamental trees as to be noticeable only as a pleasant suggestion of guardianship and superintendence.

The broad path between the gardener's grounds and the vegetable inclosure is charming, especially where, in early June, the bridal wreath which flanks it is in blossom. At the end of this path a wrought iron gate gives entrance to the lower end of the Italian garden, a scene of dazzling and gorgeous beauty in its general aspect. It gives one an impression of glistening whiteness, all aglow in its depths with ravishing color.

Advancing to the middle path one has a fine survey of the entire garden. On the left, occupying nearly the whole of the north side, is the casino, with a long pillared porch, and

a red roof; on the opposite side, a pergola of equal length, terminating at either end in a glass-roofed vestibule. The rear of the garden is elevated some six or eight feet, and is reached by a flight of stone steps. The wall here is some twenty feet high, and is entered at the left by a door painted white within and green without. This corresponds in position to the iron gate at the opposite end of the garden, and these two entrances are the only means of access to the place. To be sure the lower end is bounded only by a low balustrade and appears to open quite freely on the wood beyond, but there is so great a drop in the level here that it would require at least the ingenuity of a Raffles to enter at this point.

The middle path, running the entire length of the garden, from the balustrade at the lower end to the terrace and high, vase ornamented wall at the upper is divided into four sections by two wells and a fountain. The first of these is of white marble deliciously mellowed and weather worn with crevices of olive moss, veins of blue, and breaks and bruises of a dull, rosy, earthy tone.

At the opposite end of the path is a terra cotta well adorned with cupids in relief. This is smaller than the white well, but more beautiful, perhaps, in color and design. A large fountain plays in the middle section of the path, and in center of the rear wall, heading the long path, a well head throws a stream into a basin at its foot. Both wells have lilies, and the central fountain shows shoals of Japanese gold-fish sporting among the aquatic plants.

The casino is a rectangular structure some two hundred feet long by fifty in depth. At either end the width is entirely taken up in the interior, but the long narrow bowling alley connecting these portions is entered from a pillared porch of about equal depth. At the lower end the interior is one large room adapted for a reception-room, a card-room, or a theater. It is handsomely furnished with rugs, divans, tables, and ornately ceiled and frescoed. On one side a large French window opens into the garden, and on the other a window of stained glass leads to the wood.

The bowling alley is almost entirely faced with windows from ceiling to floor, which open up nearly the whole side of the room onto the wood. It is equipped for bowling, shuffle board, etc. With the well set out kitchen, the dainty chambers, and ample bathrooms at the upper end, beyond the bowling alley, one can imagine the overflow of a house party thanking its stars at its luck in being quartered in the garden.

The pergola opposite the casino balances it and gives a grateful sense of symmetry in the architecture of the garden. This is trellis-roofed and brick-floored. After a rain, pools of water evade the zealous gardener for a time and reflect the marble pillars and the bloom beyond, with charming effect. The sun sifts in between the overhanging grape-vines, the stalks of which, with a few cool green leaves, make classic designs upon the pillars. In one of the vestibules at the end is a marble table available for tea drinking or cards; the center of the other is occupied by an interesting old font or well carved in quaint pagan design. In the arch opening onto the garden in both vestibules, stand small figures cast in metal, while beyond, at the upper end, is an Apollo in the niche of the wall, facing another figure at the opposite side of the garden, just above the casino.

At the lower end of the garden the architectural features consist of two simple grape trellises on opposite sides of the garden. The arches at the ends are filled in with wall boxes full of pot plants. There is a bit of lawn here between the two trellises, with one or two vases and a small well.

The great trouble in such a garden as this is how to plant. The first rule should be abundance. There must be a riot of bloom and of growth to keep the place from looking empty and artificial. First, from the point of color values,



Grape Trellis-work in the Wall-box in the Arch

this expanse of glittering, trying white must be broken and warmed and not allowed to tyrannize. One very clever step towards accomplishing this in the garden of "Glenn Elsinore" is the paths. These are quite broad, and are all of a warm ochre tone. But of course the chief source of color must be the flowers.

Again, all the rigidity of line established in the architecture must be softened by the graceful lines of growth; and finally the magnificence, the pretentiousness of so much magnificence in design and in material must be lived up to. The soul must be more beautiful and rich than the body. It must never appear that those who made this costly setting for a garden had more thought for the setting than for the gem.

There should be a wealth of bloom and lavish color; and there is, from the time the feathery blushing Japanese cherry opens the ball in May till the asters and dahlias and chrysanthemums and the glorious plumage of the bounding wood close it in November. The wall at the rear is pink and crimson in June with the ramblers, and green all the season with beautiful foliage, a frieze of grape-vine, so to speak, bordering it at the top. Just below the high terrace are peonies and foxglove; about the fountain in the center of the garden is a wealth of cherry-hued phlox; by the grape trellises are great tangles of poppies; against the walls are tiger lilies; flanking the paths are hollyhocks, foxglove, canterbury bell; bordering the pergola and the long pillared porch of the casino are larkspur in exquisite blues and pinks and rich purples; and everywhere are masses of sweet william, zinnias, verbenas, sweet alyssum, geraniums, of course, and nasturtiums. There are pansies, forget-me-nots and grass pinks, flaunting rudbeckias, coreopsis and all manner of gay and boisterous bloom.



Second Gathering in a Six-Hundred-and-Forty-Acre Onion Field

A California Onion Seed Farm

By Walter Garrison



As with so many of our other industries, the tendency in agriculture to-day appears to be to centralize its various phases in certain regions particularly suited for special cultivation. This tendency, too, is aggravated as the means of transportation are improved and increased throughout the farming and agricultural districts. Thus it is, that at the present time California produces almost the entire output of seeds, both veg-

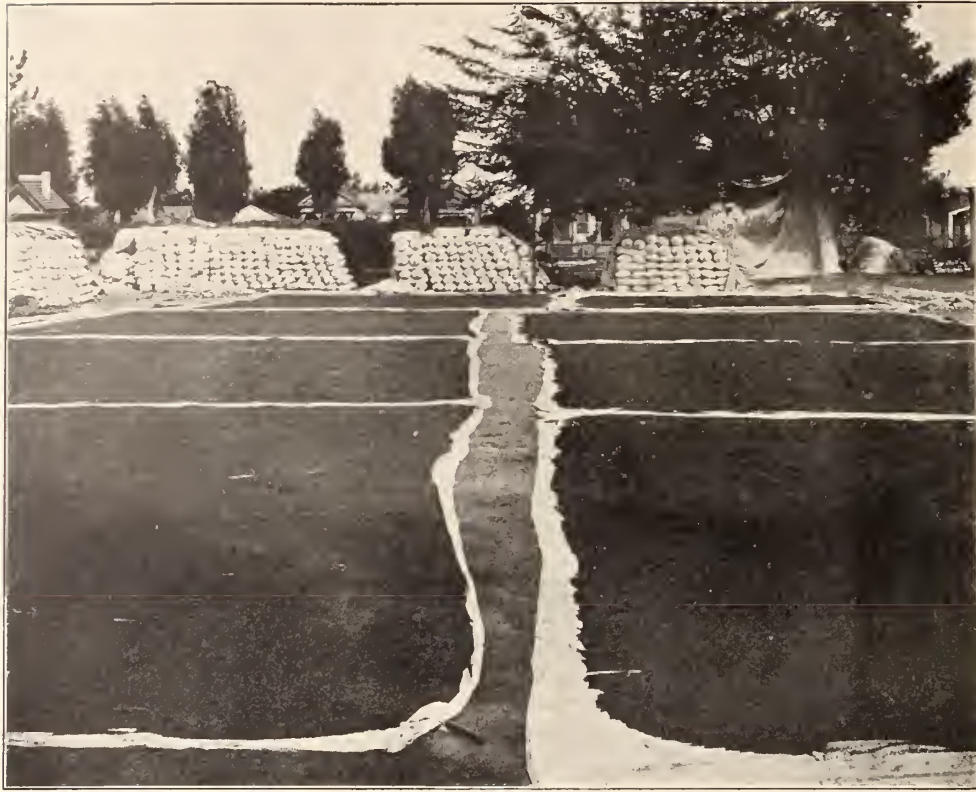
etable and flower, for the United States, and for export as well, which are grown in this country. The seed-raising industry in California has grown to huge proportions in the last few years and in consequence, the numerous small seed farms scattered over the eastern and middle western states have almost disappeared entirely. The main reason for California's leadership in this industry is its climate, which is so admirably suited for this cultivation that it is practically hopeless for other states to compete.



Threshing and Carrying Onion Seed

The Santa Clara valley, south of San Francisco, on account of the high fertility of its soil and the regularity of its seasons is especially well adapted to the production of flower and vegetable seeds, and it is from this district alone that over a million pounds of seeds are annually produced. About half of this number of pounds of seeds is onion seed which is shipped in bulk to wholesale dealers throughout the country and is exported as well to foreign merchants. All the seeds grown in other places

in California are dried entirely in the open air, and there can be little doubt that through this agency of pure air and warm sunshine the resulting product is far more vigorous and germinates more readily than that produced with the assistance of artificial drying. In the Santa Clara valley there are no scorching heats and no biting frosts and while rain usually falls in ample quantity to mature the plants during their growth, the farmer is practically certain of dry weather ac-



Curing Onion Seed

companied by gentle breezes during the harvest season.

One of the larger of the Santa Clara valley seed farms is devoted exclusively to the production of onion seed. The accompanying illustrations are from photographs taken on this great farm, and they illustrate the magnitude of the industry. On this farm the visitor can find a single field having an acreage of 640, covered entirely with onions. It is almost a strain to the imagination to conceive of one entire square mile covered with a thick, rippling

growth of onions—nothing but onions. These include over twenty-five regularly cultivated varieties. Among the most popular of these are the White Portugal, a mild, high-priced plant which is expensive because it yields fewer pounds of seeds to the acre than most other varieties; the Australian Brown, a delicate, reddish-yellow in color, which was introduced from the country whose name it bears; the Yellow Globe Danver, of a bright yellow color and a fav-



Red Wethersfield



Fanning the Onion Seed

orite as it ripens very early; the Prize-taker, a large yellow onion mild in flavor and said to be the best onion in the United States; the purplish-red Southport Red Globe, the Yellow Danver, the Yellow Dutch, the Yellow Strasburg, and many others.

The onions are planted in December and by August and September the seed has generally matured sufficiently to be gathered. The gathering is all done by hand, the laborers generally employed being Chinese. As soon as the seed is ripe the gatherers go out into the fields, cut off the tops of the onions with about an inch of stalk and drop them into large baskets. The seeds are still green when gathered and if cut in the morning while wet with dew it takes considerably longer to dry them than if gathered in the afternoon, and hence this period of the day is usually the busiest one on an onion farm, during harvest time. The seed pods are conveyed in sacks by means of wagons to the drying ground, where they are spread out on large sheets to dry in the sunshine. To facilitate the process of drying the heaps are turned over daily by means of wooden forks. As rain scarcely ever falls during the drying season the operation progresses rapidly in the genial warmth of the sun. When thoroughly dry the pods are conveyed to the threshing machine, of the conventional type, which rapidly winnows the seed from the chaff, the latter flying into the air in a cloud that whitens everybody and everything within reach, while the seed is carried into large sacks. After the threshing the seed is washed in a series of troughs where the dirt and imperfectly developed seeds are removed, the latter floating on the surface of the water

and being skimmed off from time to time. After the washing the seeds are again spread out to dry for a period of from four days to a week and are then raked up and passed through a fanning mill completely to remove the remaining chaff and other impurities. After this they are placed in sacks, each of which contains a hundred pounds, and are ready to be shipped to the wholesaler. After the harvest is over the stubble is burned and then plowed into the ground which is gotten ready for planting the next crop after the early rains. All through the growing season the farms are kept in a high state of cultivation in order to insure the best possible product.

The cultivation of seeds involves the closest attention to detail and almost scientific accuracy at every step. Every rod of all the great tract cultivated is under daily supervision and the condition, growth, and nature of each crop is carefully recorded on comprehensive ground maps. Thus the probable yield of every section is calculated, and weeks before the harvest the product of the entire farm is known with extraordinary accuracy. The ex-

ports of each farm are constantly conducting investigations with the view to producing new varieties by "hybridizing" or by other means, and should new varieties be developed, exhaustive tests of their permanency and character are made in experimental and trial grounds, and thus before their introduction to the dealer six years of close development and observation are frequently required. To determine the percentage of vitality in seeds before they are finally shipped, an average is taken and eighty-five per cent. of the sample germinates, the standard is attained.



View of a California Onion Ranch, showing Irrigation Trenches



Spreading the Onion Seed to Dry

A Study of Street-Trees

By E. P. Powell



NEW study of street-trees is rendered necessary by the general failure of the hard maple, and the elimination of some of our imported trees. The general rule holds good that the best trees for transplanting are generally the natives of the section—although this is not absolute, as I shall show.

THE SUGAR MAPLE.

1. The sugar maple, as noted, is failing over a very extended territory. This is apparently due to insects, but in reality it is owing to a lack of understanding of the tree. The hard, or sugar maple, where it is rightly trimmed, is just as healthy a tree as ever. I can show you fifty lawn and street-maples, of which only two have been even touched by borers. But where maples have been trimmed up, after acquiring considerable size, so that the sun strikes sharply on the bark, you will find blistering, and then cracking of the bark—after which the worms take their chances. This trimming up of old trees overlooks the fact that Nature does not give her foliage for our convenience, but spreads out the leaves to protect the tree itself from heat in summer.

THE NORWAY MAPLE.

2. I do not hesitate to place next to the sugar maple the Norway maple; and where there is not to be common sense and good judgment exercised, I would place it foremost of all trees, both for lawn and street. The juice of this tree is milky and acrid, so that insects rarely touch it. The foliage is much larger than that of any other maple, and the growth is more rapid by at least one-fourth. In fact it is one of the most perfect trees in all ways that exists. The coloring in autumn is a canary yellow without a touch of red.

THE AMERICAN LINDEN.

3. The third tree, and a close rival for the two already named, is our American linden or basswood. The prejudice against this tree has arisen wholly, I think, from the fact that its wood is neither good for lumber nor for fuel. As to form, and shade, and beauty of leaf, it comes well to the front, while we have no other tree, except the catalpa, which gives us such noble floescence. As a bee tree it stands pre-eminent and for this quality alone it deserves to be planted very generally all over the United States. Honey can be made every man's luxury, if we have enough basswoods in our streets, although it should be planted much more liberally on our lawns and in groves. It is a very wholesome tree, giving us abundance of ozone in June. It thrives in Florida nearly as well as in New York and Ohio.

THE CATALPA.

4. The hardy or speciosa catalpa has just begun to win its way among our people. It is a wonderful tree in all ways, for beauty of foliage and of blossom, but above all for timber. Its growth is astoundingly rapid, making from ten to fifteen feet within three years after planting. Care must be taken, however, not to set the less hardy catalpa, that blossoms in June or in early July. This is a spreading tree, rarely attaining any height, and wholly unsuited for street-planting.

THE WHITE ASH.

5. The white ash has special qualifications that give it high rank. In the first place it is very sturdy, and will heal

over where a breakage occurs. If not mutilated by too much trimming, the contour becomes very fine for the street. Still more important is it that the ash develops its leaves very late in spring, and drops them very early in the autumn. In this way it gives shade only during the heated term of the summer. When naked it gives an unusually fine study of limbs. A real tree is the trunk and limbs, without foliage.

THE ELM.

6. For street-planting in river-bottoms and flat lands, the elm is, of course, pre-eminent; and as a rule this magnificent tree, rising with a tall shaft, and drooping its limbs over the street, is the best for city-planting. It can allow the stretching of telephone-wires beneath its lofty foliage, without requiring serious mutilation.

THE OAKS.

7. The oaks, but particularly the scarlet oak, must stand exceedingly high over a large territory. They should be trimmed somewhat high when set; which is the rule also with the maples. This avoids the necessity of mutilating the trees at a later period of growth. The shade afforded by the oaks is very perfect; but, in planting, it must be borne in mind that the foliage is very persistent—dropping only after freezing weather has begun.

THE APPLE.

8. The apple, if grafted high up, makes a noble shade, beside giving a crop of fruit. Some of this fruit will be taken by travelers—rightfully; but experience proves that the bulk of the crop will be left for the owners of the adjacent lots. In some parts of Europe fruit trees constitute nearly the whole of the street-plantings. Perhaps as a matter of public economy, this would be wise in the United States.

OTHER TREES.

9. The list could be very wisely extended by including the persimmon—a charming tree, both in its foliage and fruit, and excellent for shade; the Kentucky coffee-tree, unique in its limbs and foliage, and in the male tree spreading and generous with its shade; the magnolia acuminata, and the tulip tree—both of them erect-growing, sturdy, full of fine shade, and very attractive with their blossoms.

10. A list of trees peculiarly bad for the street, would include the black locust, which becomes very brittle and unsightly; the gleditschia or honey locust—a tree of enormous and dangerous thorns, but beautiful foliage; the Lombardy poplar, and indeed all the poplars because of their roots extending far into our gardens and fields; soft maples, except the swamp maple—because the limbs break easily, and those of many sorts sprawl extensively; and the English oak with the English elm—not liking to be trimmed up, but preferring to sit low down on the soil.

American streets are becoming an important subject of study. Now that the stock laws are enforced in nearly every State, and highway improvement has become a passion, we must be more careful what we plant, and what we do with it after planting. Our roads should become a continuous park, for the equal advantage of those who live along their lines and for the travelers.

Domestic Art Pottery and Its Manufacture

By Jane Stannard Johnson



THE manufacture of art pottery is one of the industries taken up in America in recent years as a profitable business. Its growth has been rapid, and the products from the potteries are more perfect in artistic beauty each year. Skilled artists and workmen expend brain and brawn striving to attain higher goals in the perfection of these wares, and some beautiful productions are now on the market of American manufacture.

That all things were created for a wise purpose one may believe, though but a small part is comprehended of the wonderful laws of creation in their cause and effect. From very common materials beautiful results are often produced, and nowhere do we find a more impressive example of this than in the magnificent and costly ceramics, china and art pottery, which are evolved from the common clay dug from the ground, originally clay, but finished a perfectly colored and blended art jardinière or vase. These wares possess an added charm from the very circumstance of their humble origin, and the work of making art pottery presents a subtle claim, for the process is somewhat mysterious, and anything mysterious is usually interesting.

First, the clays must be procured from which the bodies of the fine wares are made. These are mined in most instances, but in some cases they are obtained by stripping the earth down to the body of the clay. The clay is composed of several ingredients, such as spar, flint, kaolin, and others, together with some foreign substances which must be removed before the clay can be used.

After reaching the pottery, the several ingredients entering into the composition are weighed, and for this process a most ingenious scale has been perfected. These scales are sealed, so that the person performing the work can not

tell just what weight of each kind of material enters into the mixture. The illustration represents the scales as the clays are being weighed out. The projections on the front of the scales which look like hooks are markers. The body of a vase is composed of various clays and substances, and each one of these hooks represents a certain number of pounds or ounces when the scale is balanced at certain weights. A certain kind of clay is shoveled into the box until the first hook comes down and balances. The hook is then locked, and a certain amount of different clay is shoveled in until the second comes down and balances, showing that the right proportion of this ingredient has been obtained, and so on until the entire mixture is complete. The object in keeping hid from the worker the exact amount of all the different ingredients is to preserve the secret of the body, the composition of which is the first thing a successful potter must know.



Shaping Top of
Jardinière

After the weighing is completed, the ingredients are thoroughly pulverized and blunged (washed). The mixture then passes through a filter press, after which it is put into a mixing mill and mixed with water to consistency required for working into ware. The vase may be made by hand or in a mould. If it is to be made in a mould, the clay is mixed to the consistency of thick cream, called "slip," and poured into a plaster of paris mould. The mould absorbs the water, and as the water oozes into the mould, the clay is carried to the sides, where it clings close. When the mould will no longer absorb water, the remainder of the mixture is poured out of the mould. The shell of clay thus gives the form of the vase. From the mould, the vase goes to the finisher, who trims, sponges and smooths up the piece, and removes all defects.

If it is to be an underglazed art vase, it next goes to the blender, who sprays it with a clay liquid containing mineral



Varieties of Shapes and Decorations of Finished Pottery



Weighing Out the Different Clays for Mixing



Pouring "Slip" into the Mould

colors, green, blue, or others. Next, the vase goes to the artist, from whose hands it receives decoration in flowers, animals, or figures. This painting is done in colored clay, and much skill is required as well as experience in its application, for the color of the clay changes in the firing, and must be thoroughly understood by the artist. After having been decorated, the piece goes to the drying-room and re-

fire the ware in a series of small clay boxes, called "seggars." These are filled with the clay vases, standing side by side, and the boxes are then piled in the kiln, one above the other in a tall column, called "bungs." Men place these in position by climbing up ladders. When the kiln is all ready, the fire is started. The heat is gauged by a pyrometer so accurately that the heat may be gauged within ten de-



Showing How Seggars are Packed, and Their Arrangement in Kiln



Removing Vase from the Mould

mains there until the water has evaporated. It is then placed in the kiln and given the first firing. When it comes out it has been reduced to the biscuit state.

The kiln is a wonderful place in itself. Within its rough brick walls are placed immature and fragile things which shall eventually become valuable pieces of art, if there be no accident in the firing. The kiln is cleverly arranged to

grees. The fine glazes require very high temperature, while less heat is needed for what is called the "mat" finish.

When the ware comes from the kiln after the first firing, it is dipped into a solution called glaze, which is really liquid glass. The piece of ware is then fired again. When taken from the kiln a second time, it is a beautiful piece of pottery.

This is only one process of making a vase. Different wares require different processes. If a color glaze is wanted, the result is obtained by another method. The vase in clay form is placed in the dryroom, after which it is burned once, producing the biscuit state. Then the color glazes are applied, which are made by mixing various colored minerals



Spraying On the Colors

in the glaze. After having been burnt again it comes out of the kiln a perfect piece of ware.

In case an overglaze effect is desired, the piece of ware in biscuit state is dipped into a transparent glaze, after which it is fired and comes out of the kiln plain white. It is then taken to the decorating room, where it receives an application of what is known as overglaze colors. These are minerals which melt or fuse at a low heat. After these colors and the gold desired are applied, it is again burned in what is known as a gold kiln at a low heat. This makes the gold bright, and also brings out the other colors to the desired shades.

These are the principal processes by which different kinds of pottery are made. Experiments are constantly being carried on to produce effects never before obtained, and in pottery as in painting, the artists endeavor to secure the rich colors and effects given us by artists of previous centuries.

Many beautiful wares have been placed upon the market by domestic manufacturers. Some of these are made without any attempt at reproduction from any ware, while some very clever reproductions have been made of wares centuries old. A notable one of the latter is the Henri Deux ware. The original of this was made in France between the years 1524 and 1537, and so called because of the frequent occurrence of this monarch's cypher in the decora-

tion. Only fifty-three pieces of the original ware are said to be in existence, valued at \$140,000. The forms in most cases are very elaborate. The ware is a fine white clay to which a delicate tinge has been given by a slight tinge of yellow in the glaze. The patterns, which are very intricate, and seem to have been suggested by the ornate book covers of that period, have been pressed into the clay, whereupon these sunken portions were filled up with different colored clays in yellow, buff and brown. As all these clays had to be shrunk during the firing in exactly the same proportion, the difficulties attending the manufacture may well be imagined. It was an ambitious undertaking indeed to attempt to reproduce a ware of this character.

Another ware, perhaps the most comprehensive of all domestic wares, is called the Gloss Utopian. This is highly glazed in rich browns with the yellow tints and blends so often seen in pottery. It comprises large and small pieces, from the umbrella jar to a tiny vase. One odd piece is a teapot after the old Egyptian shapes, and another is a Calabash whiskey jug. The decorations used on this ware vary, according to the use for which the piece is ordained. Some pieces have animal or floral decorations, while the decoration of more pretentious vases and plaques is often a head of some celebrity or an Indian. No two pieces are ever decorated with the same head.

Perhaps one of the most costly of American wares is the opalescent inlaid ware. In making this, the gold is laid over the clay. Then the vase is splattered with a pure white mineral, through which the gold shows. The decorations of flowers and conventional designs are inlaid in gold.

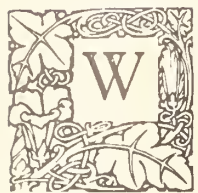
One does not, in these days of beautiful pottery, need to be urged to take an interest in this beautiful art. Our modern potters are making more and more beautiful work daily, work beautiful in form, fine in texture and original in decoration. Moreover, we have all the beautiful pottery of earlier periods to see and enjoy, and the enjoyment is not the less because much of the best of it has found permanent homes in the museums. On the contrary, this is a distinct advantage, since many more people are able to delight in it. The making of modern pottery is, however, becoming more and more an art and less a manufacture. The advantages of this change are many and obvious.



Dipping into the Glaze after First Firing

Eating With Our Eyes

By Day Allen Willey



WHEN Johnny Smith gets up in the class and the teacher asks him to "define the senses" he twists and untwists his fingers a few times behind his back. Then it comes to him. "Seeing, smelling, hearing, feeling, tasting." Ask the fruit-grower and the marketman, however, and they will tell you that the tongue doesn't count for much nowadays when it comes to getting things to eat. In short, according to what they say, we tell more about food by looking at it than by tasting it. Appearance is preferred to flavor.

The man who wants to know how rapidly we are apparently losing the sense of taste need only visit a corner fruit-stall when business is brisk. As apples form one of the staples just watch the apple-buyers. Nine out of ten will "put their money on the red" and will pay a cent more for a glossy than a dull-tinted apple. Next to it may be a greening, which is firmer in flesh, juicier and of a far finer flavor—but it doesn't look as pretty as its red neighbor, and though the latter may be mushy inside and flat-tasting it has the preference. The buyer probably does not know that the polish is sometimes put on the apple by dipping it in the water for rinsing lemonade-glasses and rubbing it with the vendor's dish-rag—but that's one of the tricks of the trade.

At the same stand the housewife pays five cents apiece for unripe oranges, so sour that you couldn't eat one filled with sugar. Delicious ripe ones, just as large, go at two and three cents. Why? Because the yellow oranges appear so attractive that the lady wants them on the table—not to eat, but for ornament. It is a fact that carloads of "yellows" are shipped to New York from California every winter because they sell at a higher price than eatable fruit—just to look at.

That is why at the country fair the judges of the fruit give out the blue ribbon by what they call the "score." Each score is made up of a hundred "points" or credit-marks—so many for shape, so many for color, etc. Now in the case of the apple, one which has a skin free from all bruises or other blemishes gets twenty points on the score-card; but its flavor—its actual eating quality—counts for fifteen—only as much as its form and size. It may have a delicious flavor, far more palatable than the one with the fairer skin, but the other gets the ribbon because it is more pleasing to the eye. Go through "Domestic Hall" and you will see the butter and cheese judged in the same way. Sometimes the judges cut off a bit and put it in their mouths, but the kind that looks nice and is done up in an attractive package often gets the prize, though its flavor may not be up to some which is a little "off color." So it is that butter and cheese often get their rich golden tint by patent colors, which are sold at the "Corners" grocery in packages just like seeds or tacks. One concern in the United States has made so much money out of "butter-color" in the last few years that some of its stockholders have started a magazine—which shows how rich they must be.

Take such fruits as blackberries and strawberries. The countryman will cull out the little ones on the bushes every time, if he is picking for his own table, because he knows they are sweeter and richer in flavor than the larger, which have lost in quality as they increased in size. These he picks for market because he can get twice as much for them from his commission-merchant. He also ships him every red apple in the orchard—windfalls and all—and keeps the

juicier and really finer fruit for the cellar-barrel where he has his winter supply. You can always tell a farmer in the crowd around a fruit-stand, for he skips the shiny, showy part of it and looks for the paler or striped apples. They cost less and "eat" better.

It seems strange that nuts sell largely according to their appearance, but it is a fact that if pecans or any smooth-coated nuts are polished so the shells glisten, they are actually worth about one-fifth more than if the shell is left in its ordinary condition, though the polishing does not affect the food properties one iota. Peanut "factories" in the South are operated solely to clean the shell of this nut and make it look more attractive. Hard-shell almonds sell for about half as much as "soft-shell"—merely because the latter have a little thinner coating and you can crack them with the fingers. This, however, is more of an appeal to the sense of feeling than to the eye, but the rice industry is one of the most remarkable examples of this fascination for the things that look good. The outside portion of a rice-kernel is its most healthful and nutritious part. It contains absolutely nothing which is injurious—but it has a dull appearance. So nearly all of the rice which is eaten in the United States—outside of the Southern States—is "milled." The outside is rubbed off by machinery to give the kernel a glistening appearance. Merely for this reason millions of dollars have been expended in this country for buildings and machinery that do nothing else but polish the grain. They don't eat the milled rice in the region where it grows because, like the farmer who sends his big berries to market, they know the outside is the best of it. Some kinds of coffee sell for a higher price in the grocery because the berry has been "glazed" or polished. It is put up in boxes with glass sides to tempt customers by its good looks.

A story went the rounds not so long ago that a new kind of hen had been bred which would lay an egg with a handle to it so the cook could turn it into an omelet more easily. In Boston it is a question if they would not prefer a hen which lays only brunette eggs. Produce-men save all their brown eggs for this market, as they are worth two or three cents a dozen more than those which have dead-white shells. Perhaps the dark hue is favored because it resembles the baked bean, but there is no doubt that it is given the preference. On the other side of the country the gourmards of San Francisco want white eggs—the whiter the better; so the dealers sometimes "lime" them purposely to lighten the color. In fact, the West favors lighter tints than the East in about everything except chickens. Chicago likes a lighter-colored butter, and buys glucose with broken bits of wax in it because it resembles white honey. It is the plain truth that dark honey, though perfectly pure, sells at a much lower price in Chicago than the imitation article. On the question of chicken-color however we are a unit. Yellow-legged chickens have the first call over any other kind, although the American tourist in France who asks for chicken gets a fowl which is usually colorless. The French chef claims that the yellow-leggers are no plumper or tenderer than the whites, and proves his statement by showing that the yellow does not come from fat under the skin, as some suppose, but from coloring matter in the skin itself.

The Department of Agriculture has been making a study of the curious way in which the eye is taking the place of the tongue in our preference for the things we eat.

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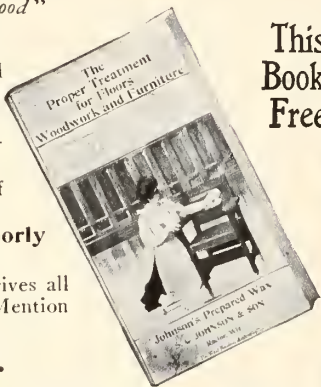
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NOVEMBER WORK IN THE GARDEN

By Eben E. Rexford

THERE should be a general "cleaning-up" in the garden before cold weather sets in. Gather up all rubbish and burn it. Pull up dead plants from the beds where annuals have grown and add them to the general bonfire. Collect racks, trellises and stakes, and store them away under cover. If this is done each season, they will last for several years, but, if left exposed to weather, they are seldom worth much after the first year.

Put rakes, hoes, lawn-mower, and all other garden implements in a place where they will be kept dry. But before storing them away, go over each one carefully, and make it clean, finishing with a wash of oil to prevent rusting during winter. Tools treated in this way will last three times as long as those put away just as last used in the garden.

This is the month in which to get your tender outdoor plants ready for winter. At the north, we must cover our roses if we expect them to come out strong and vigorous in spring. True, there are occasional seasons in which they do not seem to suffer, if left exposed, but such seasons are the exceptions. It is a wise plan to take it for granted that the winter ahead will be as severe as other winters have been and give our plants the best of protection.

Of course, we grow several varieties of roses at the north, which are robust enough to stand even a severe winter—after a fashion! That is, they are not killed by the severity of the season, but in nine cases out of ten, they are so severely injured that it takes about all the vitality they have left to put them in good condition again and hence they are not able to do themselves justice in the production of flowers.

This is not as it should be. Our plants ought to come through every winter in vigorous health, and great vitality. Therefore, I would urge giving all roses good protection every fall. And not only roses, but other shrubs commonly left to "take their chances," unprotected and herbaceous plants, as well.

There are several ways by which rose-growers protect their plants. Some tie them up with straw. This is a difficult method to follow, unless one has had a good deal of experience with it. The bushes must be drawn snugly together and tied. Then you must begin at the base of them, and tie wisps of straw about them, putting it on after the fashion of thatching a roof, until you have reached the tops of the bush. I have never been as successful with this kind of protection as I have with laying the bushes down flat on the ground and covering them with soil.

Before laying the bushes down, it is well to go over them and cut away all weak wood. If the branches are thick thin them out leaving new, strong growth, as far as possible. I would not advise further pruning now. Wait until spring for that—when you see what condition your plants are in.

Provide yourself with a pair of thick, stout gloves before undertaking to lay down your bushes. Rose bushes are ugly to manage and you will not be able to do it successfully unless you are armor-proof against their thorns.

Rose bushes, as a general thing, have stiff stalks, have to bend without breaking, and so brittle that an abrupt bend often ruins the very cane we would like to save most, because of its strength and vigor. It is an excellent plan to remove a shovelful or two of earth from the base of each plant on the side toward which it is to be bent. This allows the crown of the bush to yield considerably, under the strain of

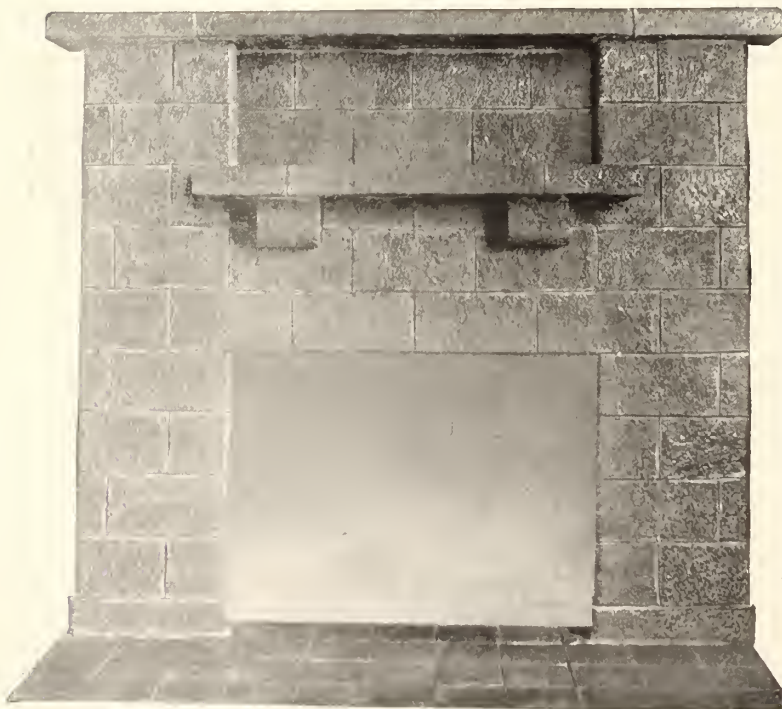
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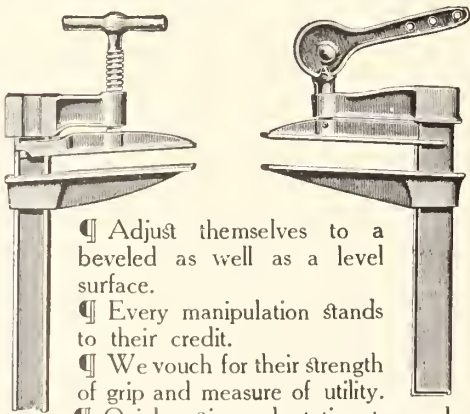
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bending, and prevents fracture of the wood to a great extent.

Another plan is this: Heap some earth against the base of the bush, on the side toward which it is to be bent, and bend the bush over this heap. In this way, abrupt bends are avoided, as the canes adjust themselves to the soil in a curve. This is an easy method.

Before laying the bushes down, provide yourself with some strips of wood, or pieces of sod to hold them in place until you can cover them. When ready to lay down the bush, grasp it firmly with both hands, and bend it slowly and carefully to the ground. Don't attempt to hurry, for that often means injury to the plant. When it is flat, lay whatever you have provided for the purpose of holding it down in place across the branches.

Then cover it with light, dry soil. Three inches of covering will be sufficient for the branches but I would make it five or six inches over the crown or base of the plant. Before cold weather sets in, I would cover each bush with boards, old oil-cloth, or something similar to turn rain. It is desirable to keep the soil with which the bushes are covered as dry as possible, until the covering is removed in the spring. In wet earth they often turn black, from action of excessive moisture. The bark will be found half rotted on examination. This condition must be avoided, if possible.

If one has plenty of leaves roses can be covered with them to good advantage, especially the teas and ever-bloomers which one may attempt to winter in the ground, though the chances are against success, at the north. Make a pen of boards, six or eight inches deep, about the plants. Then bend them down and pack the pen with leaves. After it is full, spread evergreen branches over them to prevent their being blown away. Or, use coarse-meshed wire netting, if branches are not obtainable. On no account cover roses with coarse litter, hay, or straw, under boards.

Snow would be an ideal covering, if it came early in the season, and remained. If the snow falls early, bank up about your plants with it, as an extra precaution against the severity of the coming winter.

Before the ground seems likely to freeze, cover herbaceous plants with coarse litter from the barnyard. Heap it well about them, and spread it over their crowns, to the depth of four or five inches. Be sure to give the beds of newly-set bulbs a good covering. If this is not done, frost will often tear loose their delicate roots and heave them to the surface. A few leaves held in place by branches, or netting, will be all the covering the pansies will need. Covered too deeply, they smother.

For protecting hollyhocks: I cover the plants with a box, or an inverted flower-pot, and bank up well about it with litter. Keep the nest of thick, fuzzy foliage about the base of the plant dry, and the hollyhock is hardy anywhere at the north.

Climbing roses are extremely difficult to handle. Their canes are too stiff to bend to the ground without breaking. But bend them down as well as you can, and cover with straw or hay, putting it on thickly about the roots of the plants. Or, hang straw mats over them, and hold these in place with a covering of burlap, tacked to the wall. It is a good plan to shorten all the canes about a third of their length, before doing this. The ends of them will quite likely be killed, no matter how carefully protected.

I make it a rule to cut back even my hardest clematises to within four or five feet of the ground laying what is left of the vine flat upon the ground and covering it with leaves or evergreen branches. Nothing is ever gained by trying to save the most of the season's growth.

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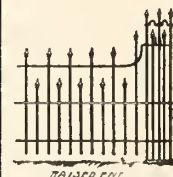
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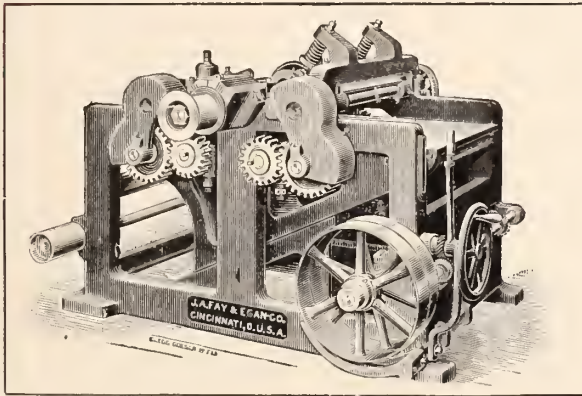
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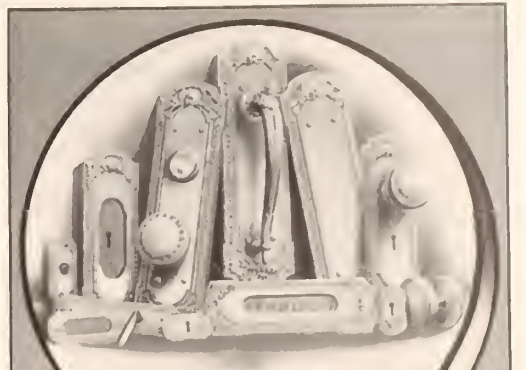
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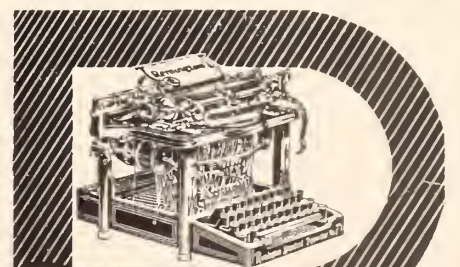
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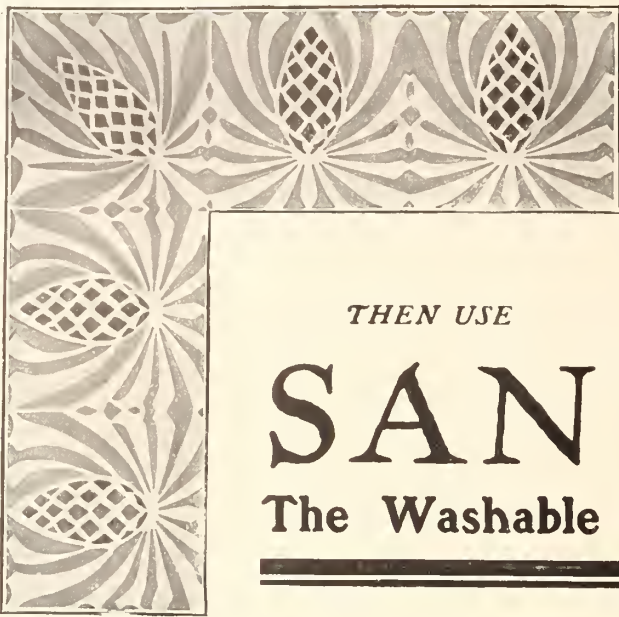


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attention at this season. Give as little artificial heat as possible, and water moderately. A high temperature and too much moisture at the roots will be likely to bring on a weak growth, which ought always to be avoided. If possible, keep all fire-heat out of the room in which your plants are until the latter part of November. Give water cautiously. Few plants will be making active growth this month, and as evaporation will be slow, small quantities of water will be sufficient.

Do not make the mistake of applying fertilizers. So long as the plants show a disposition to stand still let them do so. The application of fertilizers to dormant plants is sure to injure them, because they are not in a condition to make use of strong food. When a plant begins to grow, then fertilizers will be in order—weak, at first, but increasing in strength in proportion to the development of the plants to which it is applied. Be satisfied with a healthy growth. Never try to force a plant. Admit fresh air daily, and all day, if the weather will permit. And take advantage of all the sunshine possible.

Be on the look-out, always, for insects. These breed with wonderful rapidity at this season. Get entirely rid of insects by using the soap infusion I have so frequently spoken of.

Remove every dying leaf as soon as you discover it. Lay in a stock of potting-soil. Look to the windows at which your plants stand while the weather is pleasant. Make them snug and frost-proof. Storm-sash does not cost a great deal, but it keeps out a great deal of cold and saves a large amount of fuel.

ELEMENTS OF HOUSE HYGIENE

SANITARY FITTINGS

THE sanitary fittings of a house may be somewhat roughly divided into two great classes—the apparatus and the fittings and connections. A considerable variety of sanitary apparatus is essential to the equipment for any well-built house, and their cost forms an unavoidable and essential item in the total bill. Sanitary fittings comprise three general groups of objects: 1, water-closets, baths, wash-basins (lavatories), and the like; 2, kitchen-sinks, wash-tubs, refrigerators and other appliances necessary to this department; and 3, apparatus used in the disposal of wastes and garbage.

The fundamental principle of modern sanitation is the free exposure of all parts, surfaces and connections. It is essential that every part be visible. Two objects are thus accomplished; visibility is an excellent dirt-destroyer, for visible dirt is much more likely to be removed than hidden dirt; in the second place defects are much more readily detected in exposed apparatus than in concealed, and repairs can be made much more readily and at much less expense. The most perfect apparatus is liable to give way at any time, and provision for repairs is economical construction. The enclosed apparatus, which was so long regarded as "neat" and "tasteful" has long been discarded for exposed interior plumbing.

The modern bathroom, therefore, is no longer a piece of cabinet-work, but a sanitary apartment, floored with a water-proof and water-tight material, walled, at least to a considerable height, with the same material, and supplied with porcelain and stone-ware apparatus, connected with highly polished nickel-plated exposed pipes, a room thoroughly clean in its constructive parts, and with furnishings that not only add to the apparent cleanliness but actually do so.

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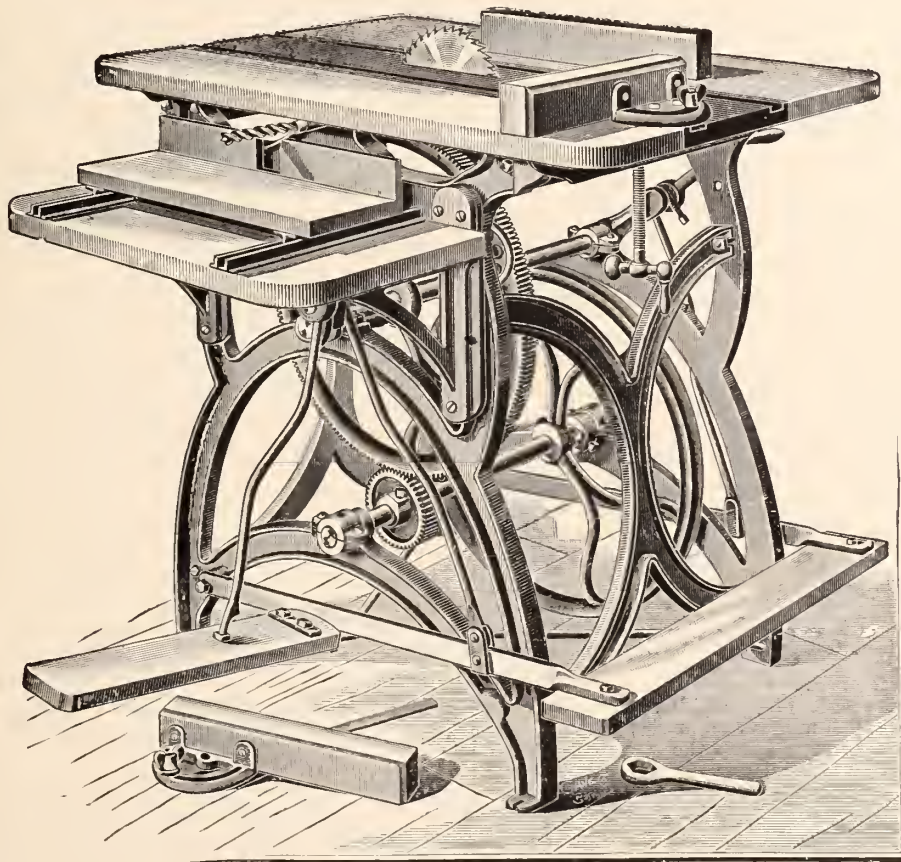


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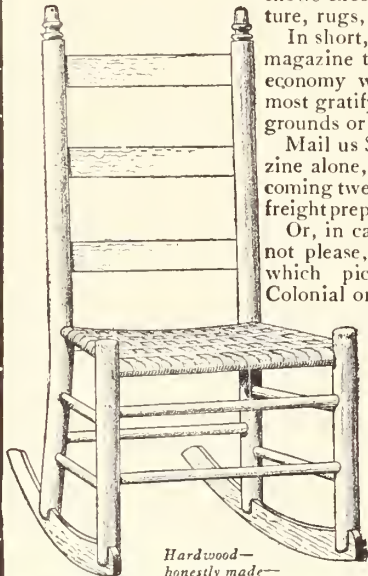
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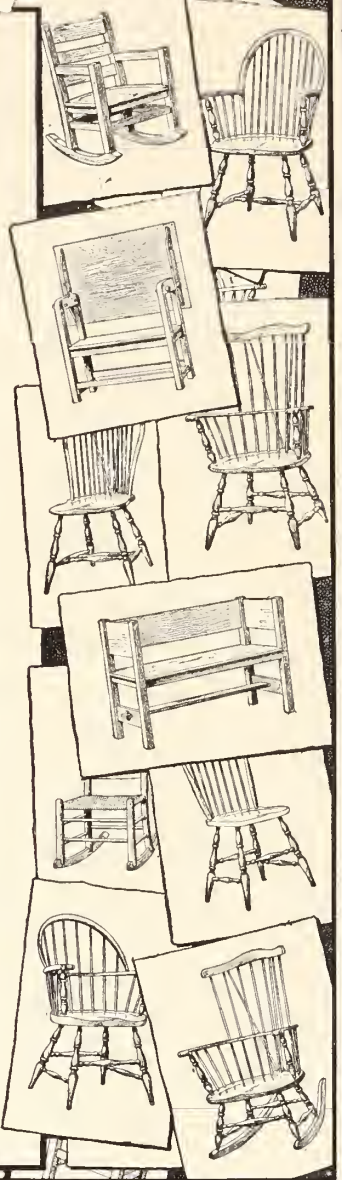
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affords actual ventilation. It is desirable that sanitary fittings be applied to an outer wall, to facilitate repairs, and in order that the house-air be free from any contamination with them. The floors should be of tiles or other non-absorbent material. They can, if desired, be sloped slightly toward the outer wall, so that water falling on them, or used in cleaning, may run off through a waste-pipe supplied with a rain-water head. Damage from overflows is avoided in this way. The walls should be of glazed tiles, either carried to a ceiling or in a high dado.

The most important of all sanitary fittings is the water-closet. A great variety of special makes and forms are on the market, each manufacturer having his own specialty for which special pre-eminence is claimed. The layman is apt to be phased by the various claims that will be put before him, and his safety will be in seeking the advice of an expert sanitarian. The essential requirements of a good water-closet are, however, readily stated. The basin must be so shaped that no part will be soiled through use; every part must be thoroughly scoured by a flush of water; it should be made of glazed stone-ware, formed to retain some water from the after-flush; no working part should be of a kind to get out of order; the trap should be self-cleansing and without angles and corners; it should have an efficient seal; and no portion should be enclosed within woodwork. The old pan-closet is no longer regarded as suitable for use; long-hopper closets are also objectionable; short-hopper closets, if supplied with ample water and given a good flushing-rim can be properly cleaned and are unobjectionable. The wash-down and the wash-out closets are the most usual form of modern closets. The syphonic closet is also much used. Whatever the form of closet the water for flushing must not be drawn directly from the house supply, but from a separate cistern which is a part of the closet apparatus. Nearly every part of the apparatus forming the water-closet can be obtained in many forms, most of which are covered by patents and each of which has some real or imagined advantage over every other form. All the leading manufacturers give special attention to the excellence of their materials, the joining of parts and other essential matters.

The soil-pipe, which receives the wastes from the water-closet, should be of cast iron, from three to four inches in diameter. The joints should be lead-calked and connection with lead branch-pipes made by Y-joints and brass ferrules. It should be placed vertically, preferably within a special three-foot square special shaft, which, when covered with boards, is so concealed that the covering can be readily removed. It should never be placed within a wall nor outside the house, and must be so situated that its entire length is readily approachable. It should be carried above the roof in its full diameter; if less than four inches it should be extended at least a foot below the roof-line. A trap is harmful at its base as well as unneeded. The soil-pipe should always be near the apparatus which feeds into it.

While baths are made of various materials, modern practice recommends only enameled iron and porcelain. They should have a waste and overflow-pipe. The modern tendency is to diminish the size of the bath as much as possible, occasioned, no doubt, by the lack of rooms in flats and hotels in which many bathrooms are built. The individual house owner, who can afford a large bath, will take special satisfaction in it. There is scarcely a limit to the variety of fittings of all sorts which are supplied for baths.

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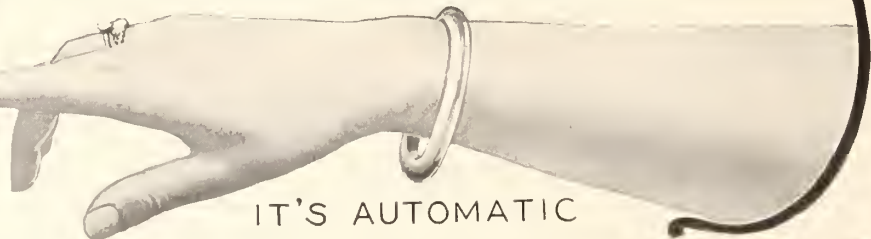
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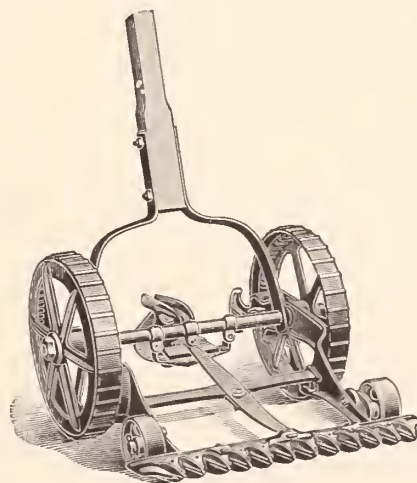
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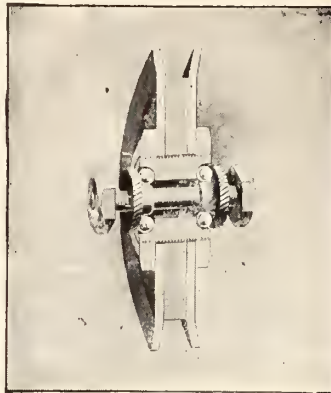
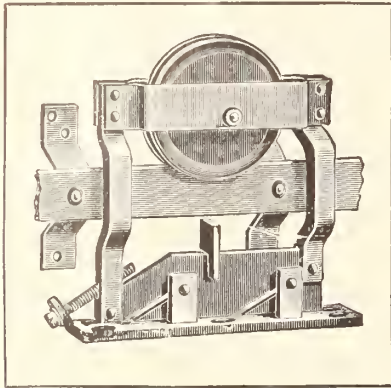
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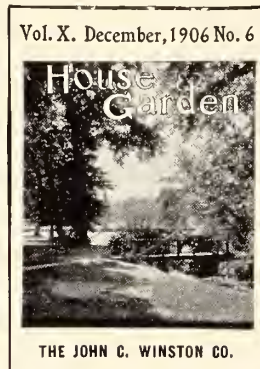
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rooms, but not commonly. The shower-bath is of more frequent occurrence and can be arranged in conjunction with the bath, or, as is sometimes done, arranged with a needle-bath and placed separately. In such cases it is protected with a water-proof curtain.

The lavatory or wash-basin is the third chief article in the bathroom. They are made of porcelain or marble, are properly trapped, and are supplied with very varied apparatus for admitting, retaining and releasing the water. The form of this apparatus has received great attention from manufacturers, and it can be had in many different shapes and styles. The single point to keep in mind is that, like the bath and the water-closet, its structure be thoroughly exposed.

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The sanitary apparatus pertaining to the kitchen may best be considered in connection with the special treatment of that part of the house. It is sufficient to state here, in a general way, that their sanitary requirements are quite as important as those which relate to the bathroom. The apparatus of both departments should be of the best in every case; not necessarily the most expensive, but of high-grade goods which have stood the test of wear, and of devices that have survived long use. The best of household apparatus is liable to injury and carelessness at the most unexpected times, and the careful householder should keep this in mind when providing for his supplies of sanitary fittings. This part of the household equipment has received so much attention, so much thought has been given to it, such a variety of apparatus can be had, that improperly fitted houses are without excuse. This applies to minor matters as well as to more important ones, for one may, if one is so disposed, fit up his bathroom in a thoroughly sanitary manner in which every part and every article has the best of sanitary reasons for its form and use.



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WINTER PROTECTION FOR THE GARDEN

By Ida D. Bennett

THE subject of winter protection in the garden is one about which much may be said, both for and against, so easy is it to overdo the matter or, by the application of wrong principles, bring about just the result that it is sought to avoid. It is not a unique experience to find, after spending several hours protecting a bed of choice roses in the most approved manner and congratulating oneself, throughout all the cold days of winter, that they are safe, to find on uncovering them in the spring that some overlooked plant has stood the winter much better than they with all the care bestowed. Nor is it altogether unknown to find that the protection for some reason has proved a source of danger instead of safety. A florist with years of experience behind him told me one spring that he should never protect a bed of roses again, that he thought it did more harm than good; and another very successful grower of flowers told me recently that the most she knew about protecting plants in winter was that she didn't know anything, which is often the case with all of us, and often a valuable conclusion to come to.

Probably, however, the main difficulty in protecting plants over winter is a failure to recognize the manner of growth of the plants and their need during winter. It is obvious that a herbaceous perennial and a bulbous plant dying down to the ground in the winter must



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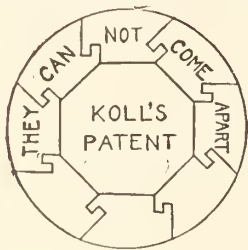


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have quite different treatment; almost any kind and amount of covering may be given the latter while the former must be protected not only against cold but against wet and decay and sudden thawing. Plants that make a fall growth of leaves like the candidum lily, the hollyhock and the digitalis must have dry covering, and if leaves are used they must be protected by boards or boxes that will shed rain and prevent the admission of snow, nor must the covering used shut out the air, as no matter how cold the weather, plants, even when dormant, need an abundant supply of air; this does not, however, mean a draft, which should be avoided, so it will be seen that the matter of winter protection is somewhat complicated. Perhaps the best covering over leaves is a box turned over them; this should have one end removed and the open end turned to the point of the compass from which the least rain and wind is anticipated. Plants which die down to the ground completely as bulbous plants—the Japan lilies, hardy gloxinias, die-lytras and the like, may have any amount of leaves or similar litter piled over them and simply held in place with a little brush; still better will be a heavy mulch of coarse old manure well mixed with leaves, which may be removed in the spring and the finer manure worked into the soil.

The heavy mulch of old, rough manure is especially valuable on the rose beds and around the hardy deciduous shrubs such as hydrangeas, altheas, and the like, and may also be applied to the beds of hardy phlox and no other protection will be needed here. As a usual thing the hardy roses will need no other protection than this mulch of rough manure. The Jacqueminots and a few others are not entirely hardy and a swathing in wheat-straw will be a wise precaution; this should be stood on end around the bush to be protected and tied together at the top and again part way down; it should slant out sufficiently at the bottom to shed rain and to cover whatever protection is placed around the roots.

Climbing roses and clematis are much improved and many times actually saved by tacking sacking, old carpet or matting over them when growing on a wall and on the windward side when grown on a trellis. The covering should extend to the ground and be held in place there with stones or something that will secure its permanency, as it is quite possible to have a plant freeze off just below the shield, in which case the protection might quite as well have been omitted. Such rank growing clematis as paniculata and the virgin's-bower are not much injured by a severe nipping by the winter's frost; my clematis of this variety were killed to the ground last winter and if they had not been would have had to have been cut back severely, so rampant was the growth. On the other hand such varieties as Jackmanii, Mrs. Edouard Andree and the various white varieties seldom get beyond control and should be given protection.

Probably the greatest problem, however, is found in the bed of tender roses, the hybrid teas and perpetuals; for these no form of protection can be considered absolutely safe and satisfactory. Some florists advocate banking the plants with earth to a point where it is desired to save the top growth, and this is, undoubtedly, an excellent way, as the earth protection is complete but must be reinforced with boards laid along the top of the ridge to shed water, which in turn must be permanently secured so as not to blow off in a gale of wind. Where the roses are planted in beds the earth protection must extend over the entire bed, being sufficiently high in the center to shed water in all directions; generally beds protected in this manner will be found in good condition in the spring—the earth drawing the frost from the plants, just as it does in the

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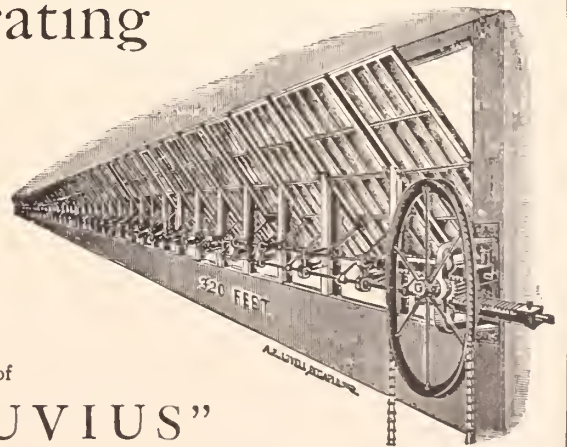
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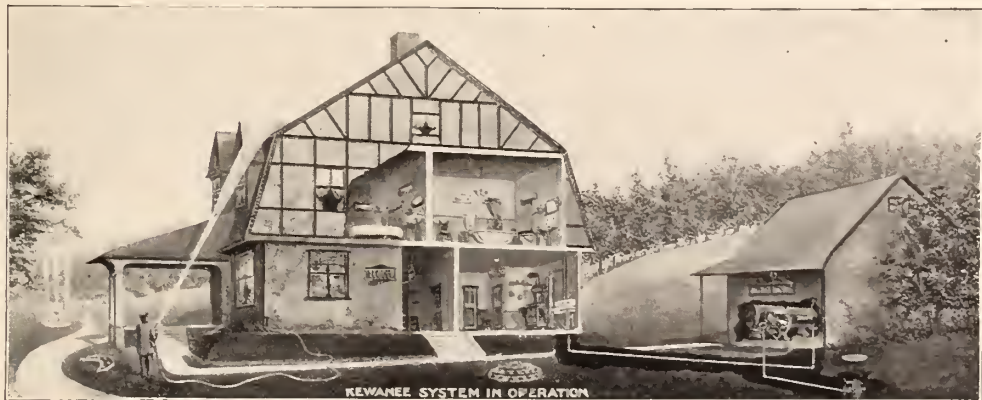
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case of vegetables cached in the earth in the fall.

The next best form of protection, and far less work, is found in leaves or in evergreen boughs; whenever either of these are used it will be necessary to see that each plant has the earth drawn up well around the stem and if necessary more earth added to that in the bed. For several years I have found that whenever my tender roses have winter-killed they have been killed at the surface of the ground; this shows two things, first that there was an insufficiency of clay in the soil, letting it shrink away and that the earth was not drawn up and firmed around the roots as it should have been. Where leaves are used they should be piled lightly around the plants quite to their tips, and well out on all sides and held in place by some sort of a frame—old window-blinds make excellent frames, and covered with boards to shed the rain, as wet leaves are worse than no protection at all.

Evergreen boughs, when obtainable, offer an excellent protection for roses and similar tender plants and should be so placed as to shed water. When used to protect long beds of roses, pansies and the like, I have made excellent use of the ridge-pole principle, this consists of placing notched stakes or narrow boards with pointed ends in the beds at regular distances apart and resting long poles in the notches to form the ridge. Against these the evergreen boughs are leaned, stem up and the tips extending out over the edge of the bed. If the evergreen boughs are in sufficient quantity and heavily leaved it will not be necessary to use any leaves, and in the case of the pansies none should be used. Corn fodder may be applied in the same way, but is too unsightly for any prominent position, while the evergreen hedge is rather attractive, retaining its emerald green all winter.

The cardinal principle of all winter protection should not be lost sight of—these are the prevention of sudden thawing and freezing and the protection from severe and chilling winds, and the prevention of water settling about the roots of the plants; this is nearly always fatal, especially in the case of peonies and lilies. Where the crown of the plant is below the general surface of the land earth should be drawn up around it to shed water; often this precaution alone will be sufficient protection.

Mere cold alone does not greatly harm plants, but the sudden thawing induced by the sun on a frozen plant produces a rupture of the cells of the plant, which is death, hence we protect the plant from the sun as well as the cold.

The artificial lily-pond is one of the easiest problems to solve, for here the conditions are all in our favor; the pond being sunken in the ground below an ordinary frost-line and the encircling walls holding the leaves which must be used to fill it securely, it only remains to protect these leaves from wet to insure the safety of the pond and its contents throughout the winter. However, before placing the leaves in the pond certain preparations must be made, the water must be all let out—that is, to just below the surface of the soil in the bottom of the pond and boxes, preferably those with roomy cracks or one end removed, turned over the crown of the plants to prevent the leaves settling around the plants and inducing decay; then the leaves are filled in and rounded up. A stout pole must be laid across the pond, elevating it somewhat higher than the top of the curb by putting a support under the middle of it and at each end boards must be laid from this to the ground on two sides of the pond, covering it completely so that no water or snow can enter. It will also be well to lay a piece of oil-cloth across the ends of the pole where the boards end, as at this point snow or rain is likely to drift in.

NEW BOOKS

MODERN HOUSING IN TOWN AND COUNTRY. By James Cornes. New York. Charles Scribner's Sons. Pp. 18 + 196. Price, \$3.00 net.

Notwithstanding the fact that architects derive the greatest pleasures of their profession, and the greatest emoluments, from the erection of costly buildings, the small house, both for the town and the country, remains the most important of the architectural problems of the day. It is easy to see why this is so, since the housing of the poor and those in moderate circumstances presents difficulties of an unusual order. This is particularly the case at the present day, when the high price of materials and the high cost of wages has vastly expanded the cost of every building enterprise, whether great or small.

It is scarcely necessary to emphasize the importance of this problem; but it may be well to point out that its significance has been greatly increased by the spread of sanitary knowledge. It is no longer recognized as sufficient that people have a place to live in; it is deemed essential that they have a fit place, one which, if not provided with every modern comfort, must at least be habitable according to modern ideas. It is not so long ago when the poor person had to content himself with whatever could be had; ramshackle buildings became enormously profitable under this system, and only a few years since an extremely wealthy ecclesiastical organization in New York was soundly rapped on the knuckles for deriving a good share of its immense income from the rent of tenements too badly maintained for decent human beings to occupy.

For a number of years an active campaign against such unsanitary living has been carried on in every large city. In New York it resulted in the creation of the Tenement House Commission as an integral part of the city government. This was a direct result of the enlightenment of public opinion on this important matter, an opinion that, once aroused, is tolerably certain not to go to sleep again.

The subject has been even more extensively agitated in England than in America. If the conditions of the working classes as regards housing are not actually worse there they are certainly wider spread. The industrial cities are more crowded than in America, and the supply of old buildings is more abundant. For the last few years, therefore, this question has forced itself upon the attention of many municipalities, and it has become necessary that these municipalities shall see that suitable houses are available for the people. Hence many civic authorities have been, to some extent, compelled to provide dwellings, and many large landowners and great employers of labor have given attention to the housing of their employees. The question in England has, therefore, assumed a somewhat different aspect from what it has taken in America, for while there the actual building of houses has become more or less a government matter with us the initiative has been left to private capital, the government contenting itself with specifying the conditions under which dwelling houses may be built and in what order they shall be maintained.

But the lessons of good housing are equally valuable, whether taken from America or England. The book of Mr. Cornes, therefore, while dealing exclusively with English subjects, represents many of the latest expressions of English opinions on this topic, and contains many valuable object lessons for every one interested in good building, whether directly intended for the working classes or otherwise.

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summed up in a very few words. They must, in the first place, meet ordinary sanitary requirements. They must be well built, and cheaply built; by cheapness is meant built without undue cost; for cheapness is becoming such a comparative quality that its original meaning is rapidly going out of date. And then, finally, and perhaps as important as any, the dwelling must be self supporting if a municipal enterprise, or yield a fair and honest percentage if erected by private capital. All these requirements have been successfully realized time and time again in England and America, and in this country it has been fortunately demonstrated that private capital is sufficiently compensated in such ventures.

Mr. Cornes's book is an ample survey of recent English achievements in this matter. He describes and illustrates many workingmen's dwellings and buildings in all parts of England, illustrating his examples with photographs, and supplementing his descriptions with statements of expenditures. He treats of groups of houses, of tenement houses, of isolated dwellings and cottages, and of houses for the city and country. He covers every aspect of his subject with ample fulness, and concludes his book with an extended description of the Cheap Cottages Exhibition held at Letchworth last summer. As a study in municipal betterment his book has unusual value, and as a record of what has been accomplished in England in building betterment it has remarkable significance. While the living qualities, that is to say, the sanitary significance and the convenience of these buildings has been their first consideration, it is a most interesting fact that, architecturally, very many of them are of extraordinary interest in the matter of design.

HOW TO STUDY A PICTURE. By Charles H. Caffin. New York. The Century Co. Price \$2.00 net.

The preparation of guides for picture lovers is a quite new undertaking in the literary profession. It is an industry that has arisen none too soon, for books of this sort have long been needed. The notion that the understanding, appreciation, comprehension and love for pictures is innate in the human mind is no longer recognized as sound. As a matter of fact it never had any basis in reason, and was only upheld while the cultivated few held supreme control in the picture world. But in these prolific days of artistic reproductions, of glib art lecturers, of art magazines and other means for popularizing art, some standards of judgment are essential and a safe authoritative guide to pictures and their art has a definite purpose and meets a definite need.

In plain words, it is absolutely essential to know what pictures to admire and why they should be admired. One needs to be told what is good in medicine or best in foods. Hence the production of books like Mr. Caffin's, which is a more than usually helpful one. It is sanely written, and while it does not profess to be a history of art as a whole, it so well covers the field of painting that it may admirably serve as a guide to the whole subject.

Mr. Caffin has selected fifty-six painters, who are the pivotal ones by reason of what these artists have accomplished or of their influence upon others. He has not attempted to pick out a list of the most famous names in art, but to unfold the gradual progress of painting, to show how various motives have from time to time influenced artists, and how the scene of vital progress has sifted from country to country. He wisely points out that while the student is buried in the history of one school it is difficult for him to bear in mind what is being done by contemporary artists in other schools. He has, accordingly, as often as possible,



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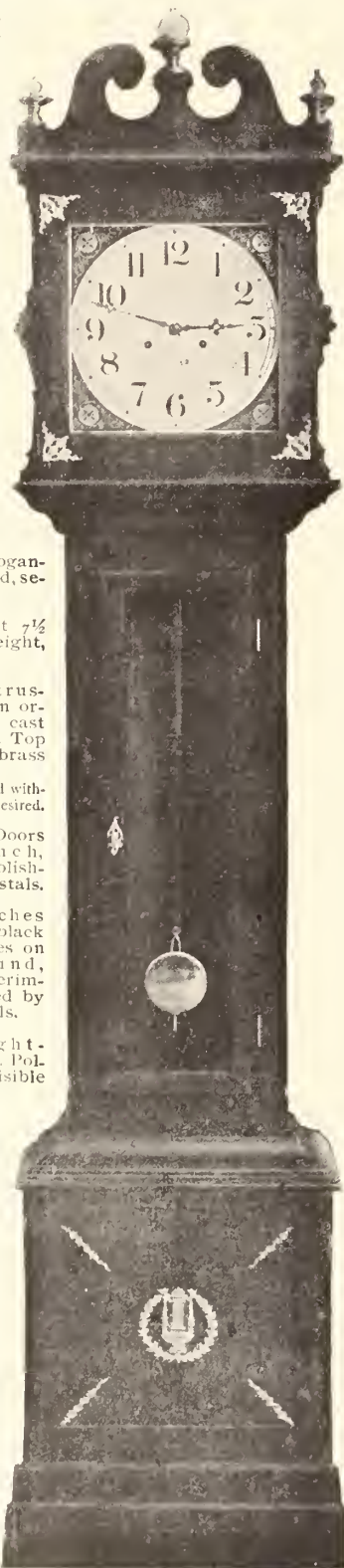
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treated side by side contemporary men of different nationalities, trying to show in each case something of the differences of environment and personality and of motive and method. It is a novel and interesting presentation of the subject. The result is a book admirably adapted to the beginner in the history of painting, and one from which those already possessed of some knowledge on the subject may derive many valuable ideas.

HOW TO MAKE A FRUIT GARDEN. A Practical and Suggestive Manual for the Home Garden. By S. W. Fletcher. New York: Doubleday, Page & Co. Pp. 19+283. Price, \$2.00, net.

This book has been prepared expressly for the amateur, and well deserves the hearty welcome it must receive from that enthusiastic class of growers. As Professor Fletcher well points out, most of the literature on fruit growing circulated by the national and state governments is directed particularly to the commercial horticulturist. The more need, therefore, for a book appealing directly to the amateur, who cultivates fruit for the love of cultivating it, or for the pleasure of having it, rather than for the money he may derive from it. Specializing still further he addresses himself more particularly to the home-maker of moderate means, who wishes to make the garden contribute as largely as possible to the support of his family as well as to their pleasure and comfort.

This interesting programme is carried out in a thoroughly good and quite exhaustive manner. The range of topics is extensive, because there are many fruits to be considered, and the book is made so complete as to cover not only the fruits of the northeastern United States, but those of the extreme south and west. The introductory chapters dealing with general conditions are followed by others treating of various kinds of fruit. The book is practical in a pre-eminent sense, and may, therefore, be accepted by the fruit-grower as a useful and trustworthy guide. Professor Fletcher writes in an interesting way, but without undue expansion. The book is abundantly illustrated with about two hundred photographs.

PICTORIAL GREENHOUSE MANAGEMENT. By Walter P. Wright. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 144. Price, 75 cents.

The greenhouse is undoubtedly necessary not only as an adjunct to the garden, but for the cultivation of such plants as are, of necessity, grown under cover, as well. The practical experience of the author as expert horticulturist has enabled him to compile valuable directions for the general management of greenhouses, conservatories, and other glass structures for similar purposes. The book also includes useful advice on the culture of the chief varieties of all the most important greenhouse and stove plants.

PICTORIAL PRACTICAL BULB GROWING. By Walter P. Wright and Horace J. Wright. New York: Cassell & Company, Ltd., 1905. 16mo., pp. 152. Price, 75 cents.

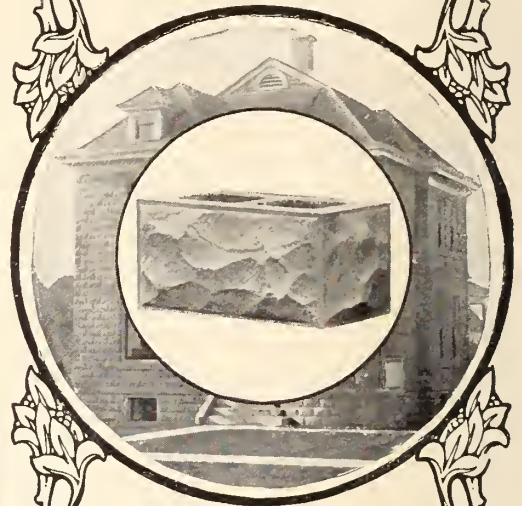
The term "bulb" in connection with this book is given a wide interpretation, and for practical purposes many distinctions with which the great flower growing public is unfamiliar, have been swept away, and, therefore, all the favorite flowers which a broad view associates with bulbs, have been included. Many minor plants which really are bulbs have, on the other hand, been left out as not deserving space in the small handbook. The user, however, will find it a concise guide to the culture of all the most important bulbous, tuberous and allied plants.

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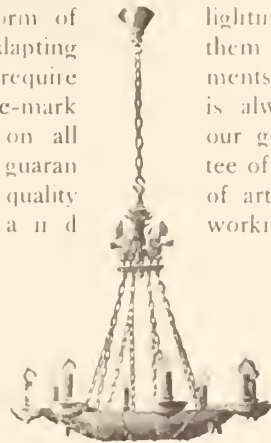
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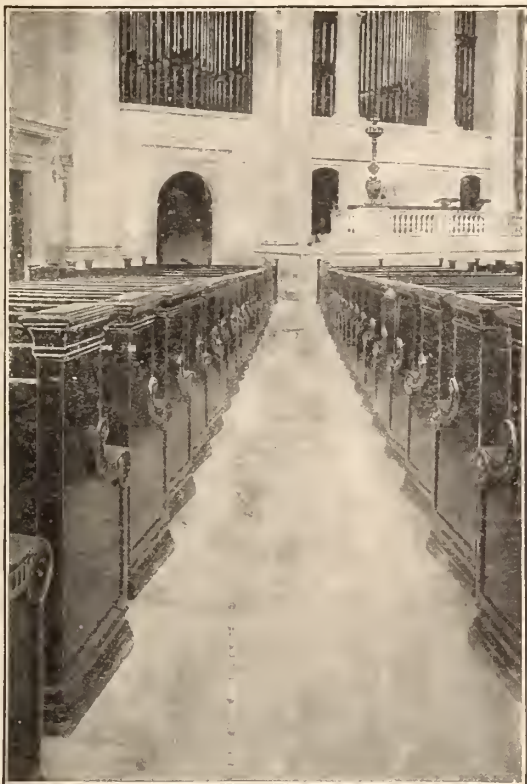


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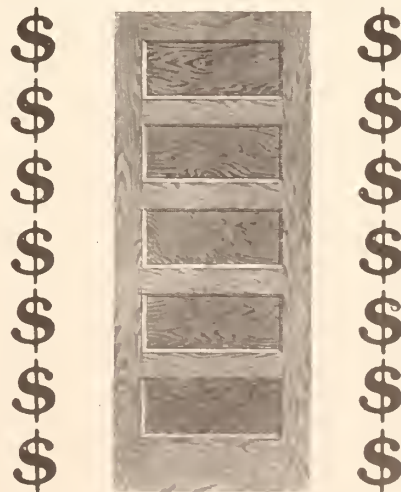
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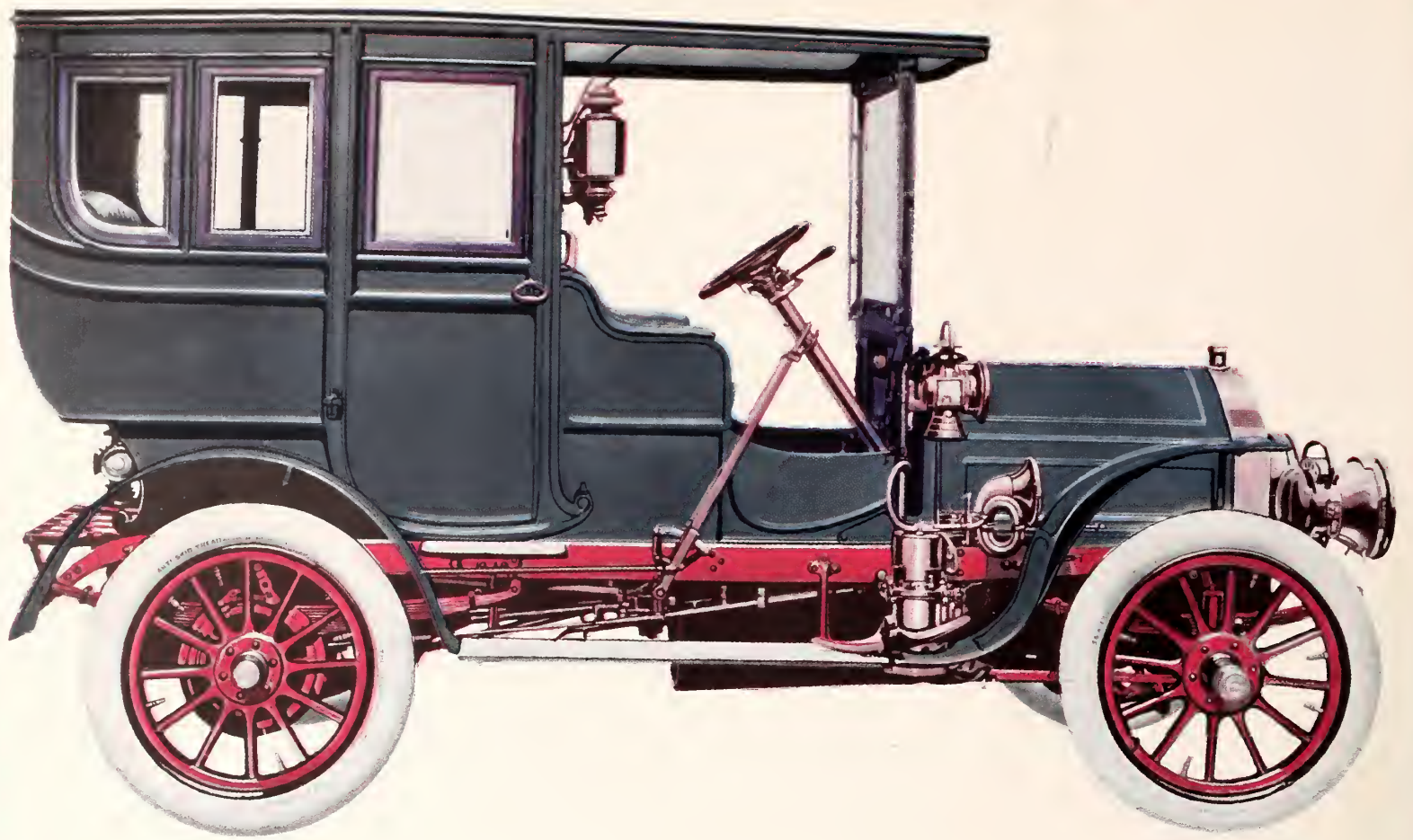
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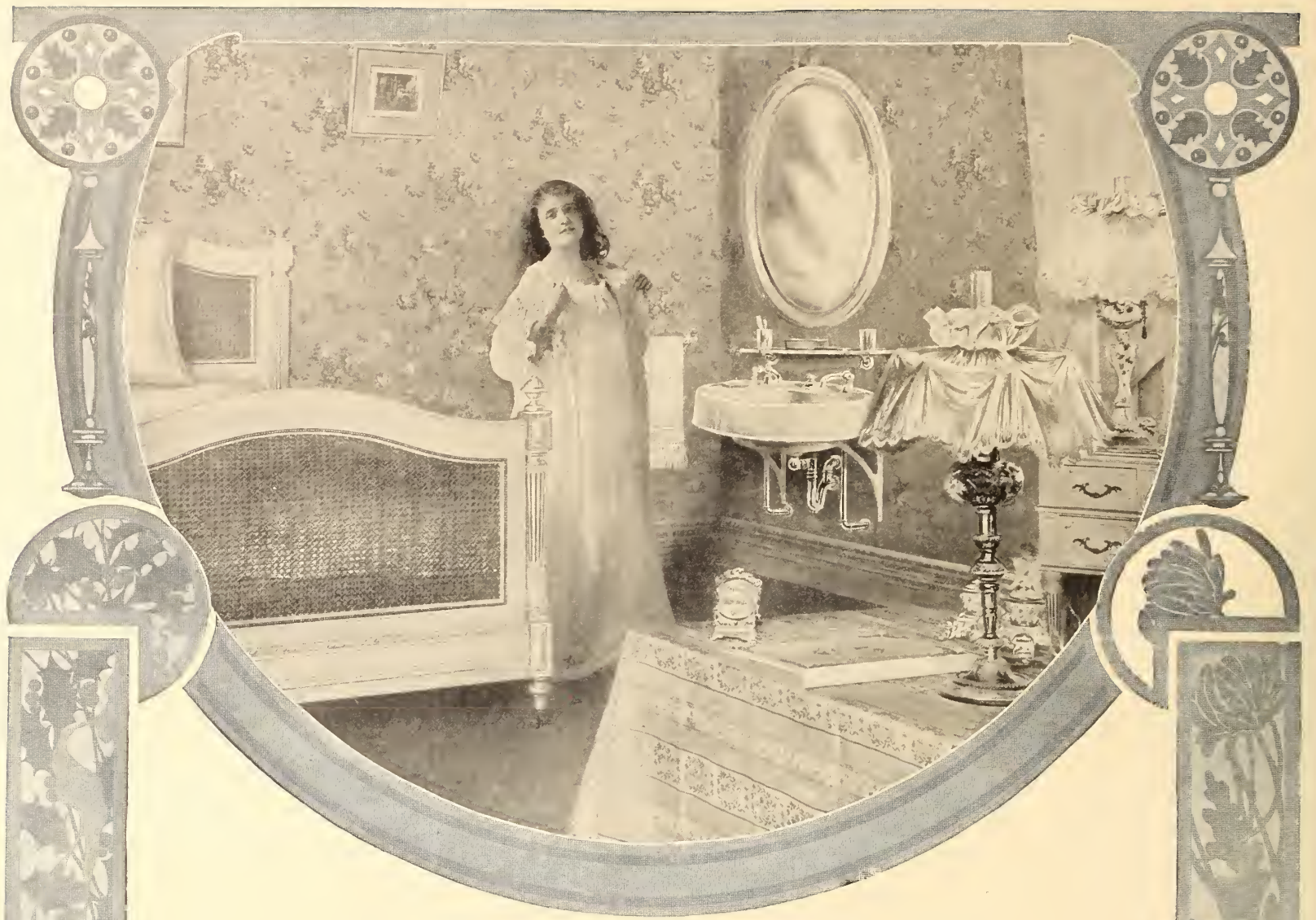
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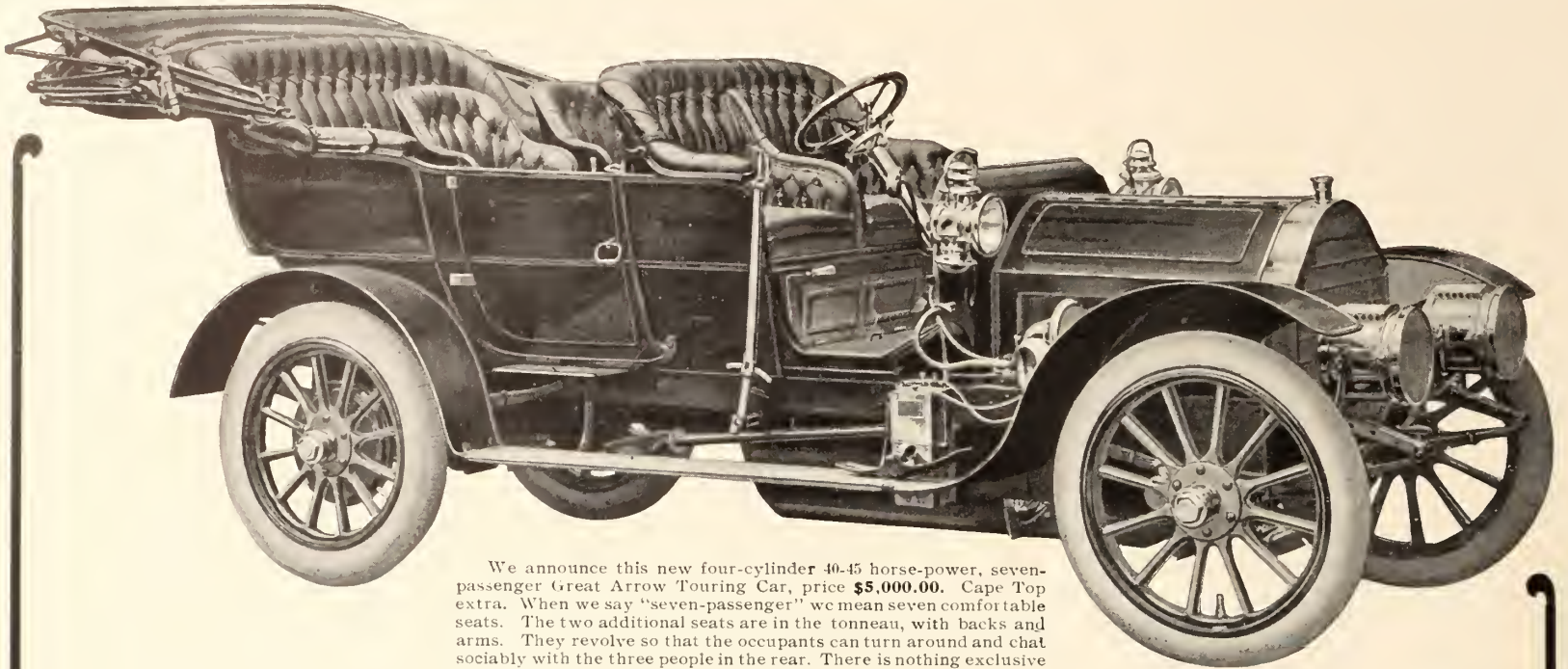
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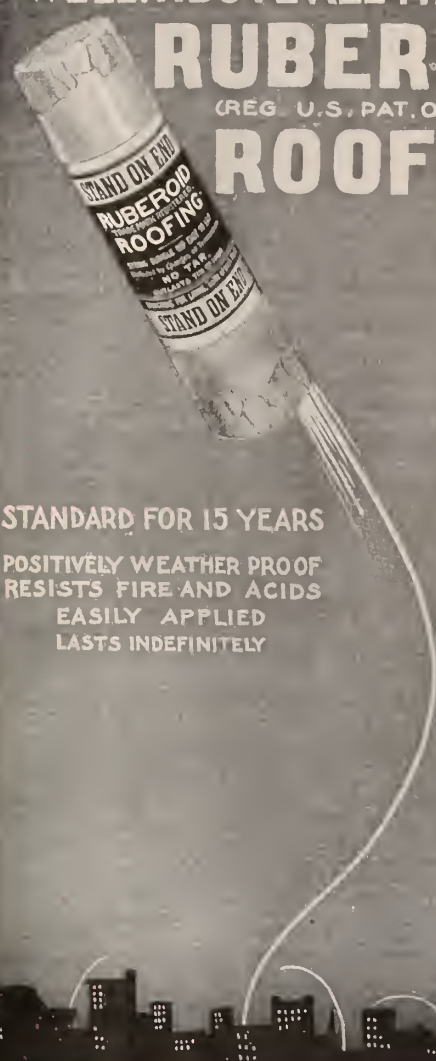
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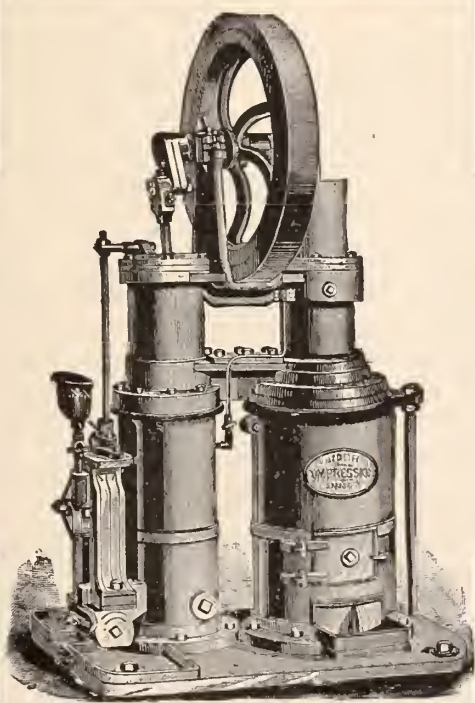


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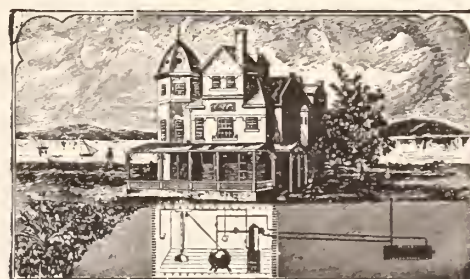
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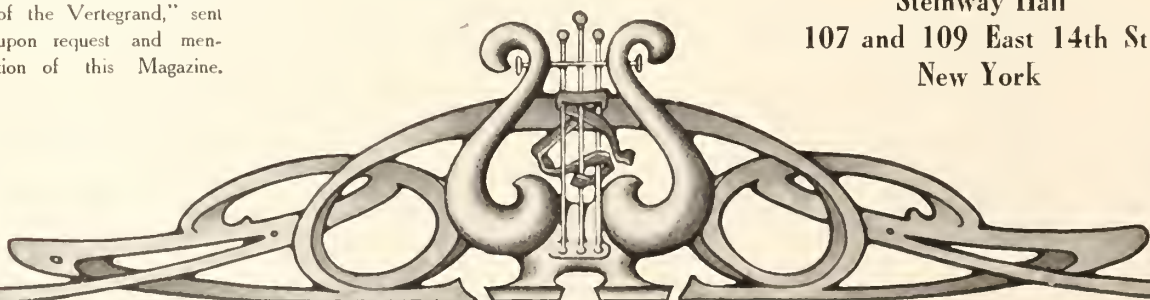
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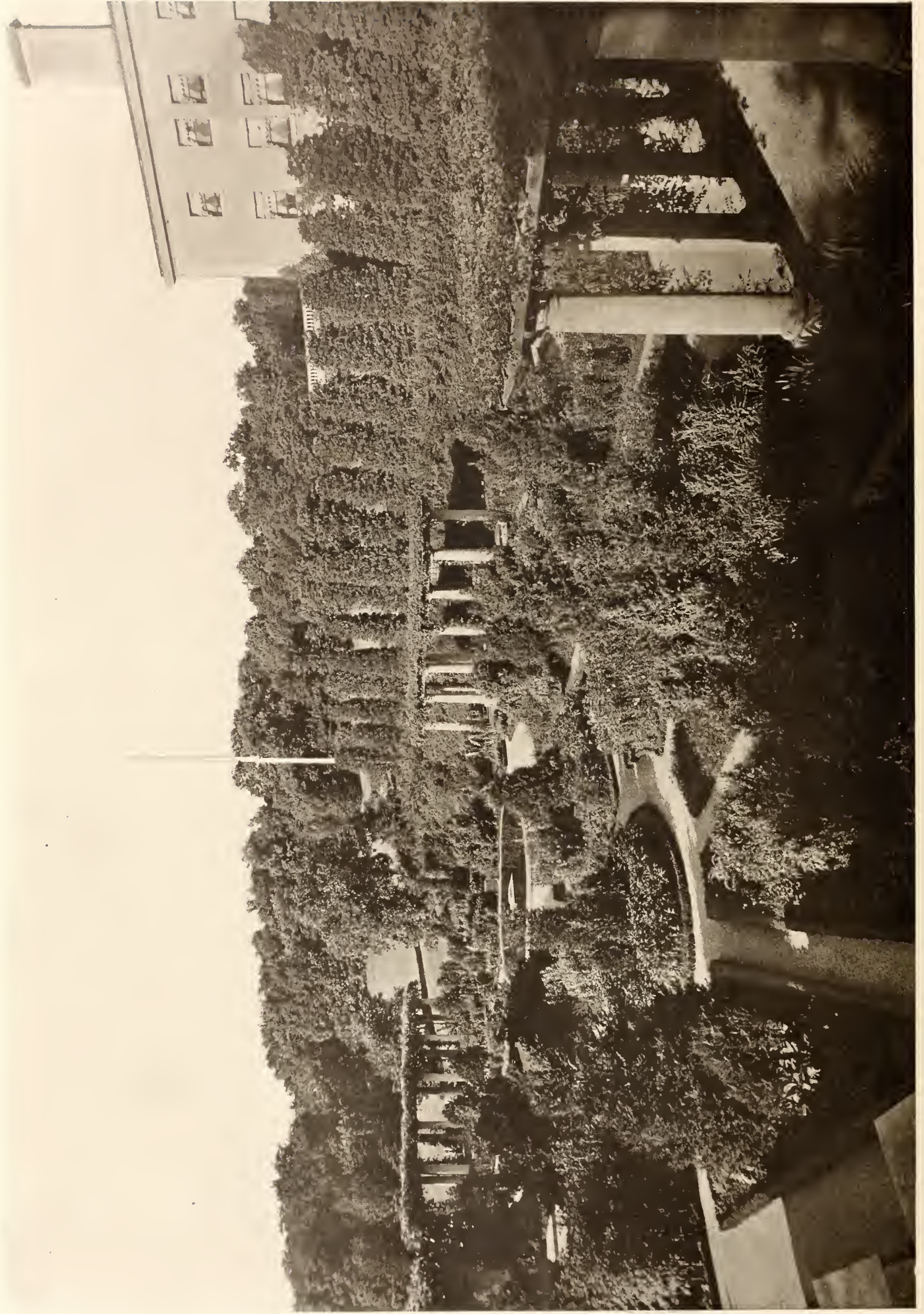
Combined Rate for "American Homes and Gardens" and "Scientific American," \$5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, \$4.00 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

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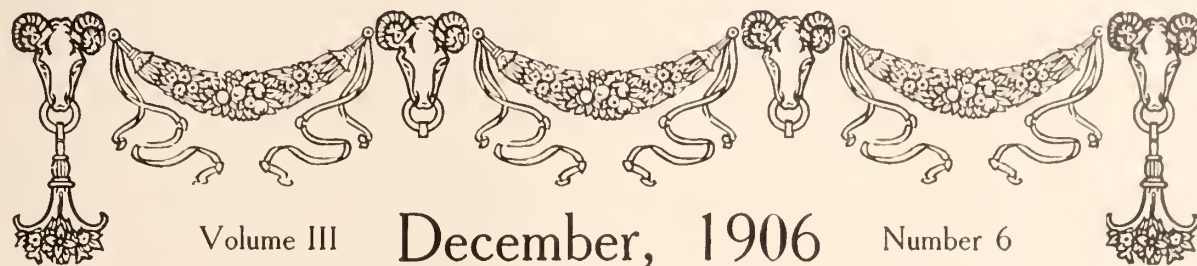
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The Formal Garden of "Woodlea," Mrs. Elliott F. Shepard's Estate, Scarborough, New York

AMERICAN HOMES AND GARDENS



Volume III

December, 1906

Number 6



The River Front of "Woodlea," Mrs. Elliott F. Shepard's Mansion, Scarborough, New York

Monthly Comment



THE establishment of agricultural high schools is coming to be looked upon as a valuable force in keeping the youth of the country upon the farm and thus, in a measure at least, away from the cities. That there is a remarkable trend of the young men of the country from the rural districts to the cities has long been obvious, and the movement has, long since, assumed such proportions that thoughtful men have become aware that some steps should be taken to check it. It has been pointed out, and with much truth, that the present tendency of all higher schools is toward fitting the students for a commercial life; in other words, the schools themselves act as an incentive toward bringing the country boy into the city. To those in serious search for an education this is unquestionably true; but the desire for education among the young is by no means so widespread or so urgent as it should be, and the number of boys who look upon the hours spent in the schoolroom as wasted and useless could probably be counted by the million. This really is the most serious question in primary education, and until this aspect of the case can be generally bettered the relationship of education to the country at large must remain more or less unsettled. The fact is, while the American people undoubtedly regard education as a "good thing"—as evidenced by the immense sums annually disbursed for this purpose—the individual as a whole has not awakened to its value to himself and his children. This constitutes a national problem of the very gravest nature.

The establishment of agricultural high schools will undoubtedly widen the knowledge of scientific agriculture among our people, and hence be a help of the most valuable kind in making the rural population content with the land. When a man knows what he can do with land and what he can get out of it, he is apt to be more satisfied with labor upon it than when he attacks it with half-baked ideas as to what he is doing and what results he may obtain. The place of such schools in the general educational scheme is obvious. The first element is the consolidated rural school; then comes the agricultural high school; and, finally, the State agricultural college. It can not be expected that such a scheme will reach the entire agricultural population, for the expense of sending a boy through this series of schools will be considerable, and many parents will not be able to afford it; but the plan is an excellent one, and its development throughout all the States must, in the end, be exceedingly beneficial.

But will agricultural knowledge, even when gained in specialistic schools, keep the boys in the country and away from the overcrowded cities? That, indeed, is the crux of the whole matter. In some cases it will help to do so; in many it will have no effect whatever; in others it may but whet the appetite for more knowledge which can only be had in the cities' city schools. The attractions of the city for the country lad are quite without questions of education. To the country boy the city stands for everything that seems to him attractive in life. That is to say, it opens a road to possible wealth and it certainly affords an infinity of enjoyments. The latter aspect of the city is apt to have even greater fascination than the former, since it is often supposed that the enjoyments can be had hand in hand with the search after wealth. There are, of course, a few people ready to certify that this is not so, but their very loudest preachments would have no effect on the country lad bound to enter where so many have failed. Without ideas of amusing himself or oc-

cupying himself, the country lad pants for the city where he has but to look about him to see the most wonderful sights or where he may himself meet with astonishing adventures. Dull himself, he attributes his dulness to the quiet surroundings in which he lives. It is true that in the regions near the large cities he has seen the country life adopted by city folk on a new and elaborate scale; but these fortunate people can return to town every day, take their dip into city adventure, and return to a quiet evening in the country. The city with its stupendous fascination is the lodestone that draws all country souls to it. Their own life they know; their own surroundings they are familiar with; but the city is the seat of an unknown existence, of the splendors of which they have a deep rooted and certain conviction. This is the real problem that country schools of every sort have to contend with; it is the situation that they must meet; it is the one thing they must overcome. It is a problem our educators as yet seem scarcely to have grappled with.

A NEW YORK editor has been composing a eulogy on the American boy, and has found words in which to express some very agreeable ideas. The American boy of to-day, he says, "is not only less obstreperous and egotistical, but clearer and cleaner minded than the lad of twenty years ago. His advance physically will be manifest to any one who will compare the figures in a class photograph of to-day with those of yesterday. He is taller, straighter, better featured, finer haired, handsomer and more like a thoroughbred in every way. The exercise to which much of this improvement is attributable may be no more zealous, but it seems to be less spasmodic, more consistent, and better adapted to its true purpose. As an inevitable sequence his habits have become more regular, improving in turn his manners. Altogether he has become attractive."

This is certainly very pleasantly put, and were not the editor's paper intended for grown folk should lead to a considerable increase of circulation among the youngest readers. It would be interesting to know just how many people would agree with this estimate of the youngest generation. No doubt there are many charming young boys; but there is also a prodigious number of boy nuisances; and it is these, surely, that one most meets with in the streets, in the shops and offices, in the cars and in the crowds. We all know them, and we know them with such feelings that we often wonder if their own mothers love them. Perhaps they don't altogether, and perhaps that is one reason why they seem so dreadful. But what kind of citizens will they make?

CO-OPERATIVE apartments, while not altogether new, are being looked to as a help in the solution of that constant city problem, the avoidance of high rents. The plan is comparatively simple. A co-operative society is formed which purchases an apartment house containing, say, fourteen to twenty apartments. Each occupant rents an apartment, paying a rent sufficient to meet interest and other expenses, and pays a share of the first purchase price. It is estimated that the second mortgage can be paid off in five or six years, and the first mortgage then liquidated or interest continued. The promoters of one such scheme have provided for a board of governors chosen from the members of the colony whose function it will be to settle any differences between the tenants, and an overseer is provided to buy supplies and attend to the repairs.

Notable American Homes

By Barr Ferree

"Woodlea," the Estate of Mrs. Elliott F. Shepard, Scarborough, New York



THE hundreds of thousands of persons who annually pass up and down the Hudson River by the railroad that borders its eastern shore, are for the most part completely unaware of the beautiful country that rises sharply above them. The hillsides come down so steeply to the water's edge that for many miles there scarce seems room for the railroad bed. And the gleaming waters of the Hudson and the towering fronts of the Palisades

elers think the outlook from his car window the chiefest of the river sights.

The foot of the hills being cut away for the railroad, there is little to be seen on the land side. One knows, indeed, that there are "Places" far up above, for all the world has heard of the splendors of the Hudson River palaces. But they are so far above the train that one can not so much as catch a glimpse of them, and unless a deliberate journey is made among the beautiful roads of Westchester County they



The "Echo" Portico Overlooking the River

sades beyond in furthest Jersey are so boundlessly attractive that many, no doubt, think these sights are the chief points of interest in the country through which they are traveling.

In a sense this is true, for the overlook here is world-famous and one of the most beautiful in America. It is a scene of wonderful majesty and penetrating beauty, of sharp contrasts, too, for where else is the laughing water so broadly brilliant beneath such a frowning background as the Jersey Palisades? In itself well worth the journey, even though nothing else be seen, it is little to be wondered at if the trav-

are apt to be little more than a name. We know they are there because they must be there; but of visual evidence from below there is none at all.

Yet the train-traveler, as he pursues his journey on the river's edge, has a glimpse of the nature-beauty that the fortunate residents on the river front have always. Surely if it is fine to see this marvelous spectacle of nature at her best in one of her finest settings—to see this but once or twice, it must be incomparably finer to be able to see it always, to look at it daily from one's windows, to nightly watch the sun sink



Each Side of the Garden Has Its Own Stone Pergola Overgrown with Vines

below that ridge of rock from one's portico! It is a spectacle always present, always fine, always beautiful. Even this much can be seen and appreciated from the train; how much more complete, how much more ravishing, must it be when seen from above?

If ever there was a site used for human habitation that justified its use it is the hills above the Hudson River. I will not say that the situation of Mrs. Shepard's house at Scarborough is the very finest on the river; but it is so supremely fine that one may want nothing grander, and many fortunate persons content themselves with less and consider themselves fortunate.

The estate is a large one, having an area of more than five hundred acres. It is beautifully parked in the simplest manner. That is to say, the fine old trees have been left exactly where they have been growing—many of them—before the memorable voyage of Henry Hudson opened his giant river to commerce. There are immense stretches of rolling lawn that rise and fall like waves of green as they climb the hillsides or descend into gentle valleys. There is an immense spaciousness here, for the extent of the estate is very large, and there is ample room for broad ideas carried out in the broadest way.

The scale of the whole property is immense. The driveways—three miles of them—are spacious and superbly made; the trees are the trees of the old forest, proudly erect with the dignity of many years of successful growth; the lawns fairly lose themselves in distant clumps of shrubbery or melt in forest borders at the remotest points; the various parts of the estate—the house stable, the farm stable, the conservatory, the gardener's cottage—are so widely distributed that one comes upon them unawares. And besides the great house there are several others, the charming "Villa," red bricked, a mansion that well conceals its near a hundred years of existence beneath a drab painted brick, all so far removed from each other and the other buildings as to have distinct individuality and to stand, in a sense, quite alone in their own immediate surroundings of trees.

Mrs. Shepard's house is the climax and crown of the whole estate. It stands on a lofty eminence, overlooking a great stretch of country hollowed out below and beyond, and the rock bound shore of New Jersey in the furthest distance. There are many superb points of vantage within the estate, many fine points of view, many wonderful outlooks, but none so fine nor so sweeping as may be seen from the echo portico or any of the windows of the river front.

It is a house of the vastest size. It is immaterial that it contains sixty-five rooms, of which twenty alone are for the use of the help, and sixteen bathrooms. That these are impressive figures may be granted without dispute; but the more essential point is

that it is a mansion to which the word "grand" may be immediately applied. It is not only grand in size, but it is designed and built in a masterful manner that few houses approach. And it is grand in its simplicity, having no unneces-



The Hanging Gardens of Scarborough

sary trimmings, but is designed in an extremely simple and straightforward manner that is exactly the way in which a house of this size, and so conspicuously situated, should be built. It is, in short, a large house designed in a large way.

It has three main fronts. The entrance front is at right angles to the river, and is directly approached by the south drive which comes in at the south entrance, situated near the southern borders of the grounds. The river front overlooks the river, and here the part of the house devoted to the family is completely enclosed within a vast terrace, upheld by stone walls. In a sense this is a side of the house, and the somewhat lower structure that adjoins it—itsself larger than most houses—is the servants' wing. The third front I call the inner front, since it is parallel with the river front. Here is the porte cochère and a minor entrance, and further on an enclosed yard containing the service entrance, a veritable front of entrances,



A Pool and Fountain and Great Beds of Shrubs and Flowers Occupy the Center of the Garden

each of its own kind and grade, individually treated.

The main entrance front is an extremely dignified and stately composition; the middle brought forward the space of one window, with a small square porch in the center, reached by broad flights of steps. The material and composition of this front dominates the whole house. The walls are of buff brick with sandstone trimmings; the columns and cornice of the porch are sandstone; the windows are enclosed within broad carved sandstone frames; with pointed pediments below and flat hoods above. The wall corners are sandstone, and the third story is treated as an attic with a narrow string course at its base. A simple cornice crowns the whole.

The river front is the most ornate of the three; for the house consists of a great family residence to the fourth side of which the servants' wing is applied in so simple a manner as to eloquently proclaim its purpose. The front of the mansion proper overlooking the river has two pedimented ends, containing groups of windows—columns below, with an entablature carrying a balustrade, then simple groups of windows above. The curtain wall between them contains a semicircular portico, built wholly of stone, the entablature upheld by Ionic columns, and supporting a balustrade. A flight of semi-circular steps descends to the terrace and adds greatly to the monumental effect of this structure, which is designed in a palatial scale and carried out in the most sumptuous manner. It is covered by a low circular drum that emits a truly marvelous echo, an echo that responds to the stamp of the foot upon the brick pavement as readily as to the sound of the human voice.

Of the inner front it is sufficient to point out that the wings that project on the river front but slightly are here developed as considerable structures. The part nearer the entrance front is more amply developed than the other and has its own crowning pediment. The other wing is without the crowning feature, but has a central entrance of its own, with a pedimented porch.

Vast as the house appears from without its truly



Mr. Elliott F. Shepard's Hillside Garden



The Drawing-room is Ivory-white and Gold, with Let-in Paintings Above the Doors. The Curtains are Yellow and Gold



The Main Apartments Open on One Side of a Spacious Corridor, Lighted by Windows in Alcoves



The Main Hall Is White with Mahogany Doors. It Has a Coffered Ceiling and Vast Red Rug. The Mantel Is Carved White Marble



The Library Has Its Upper Walls Covered with Leather and a Coffered Ceiling in Red Gold

great size is only thoroughly apparent within. The rooms are everywhere large, many of them are immense; the ceilings are lofty, the windows spacious, the dimensions generous in every way. One may not realize this at once—certainly not in its completeness—but after one has passed through huge room after huge room, the fact becomes apparent that immensity is one of the chief characteristics of this great house. Yet it is a beautiful immensity. There is charm in these huge halls and vast corridors, in these enormous rooms and seemingly endless suites of apartments. Each has its own use; everywhere advantage has been taken of the great size for stateliness of effect; it is not grandiose nor showy, it is simply grandly large, and large everywhere.

The main door opens into a square vaulted vestibule, walled throughout with yellow marble, highly polished. This leads directly into the main hall, which is an immense apartment, extending to the right and left.

Immediately in face are the stairs, occupying the larger part of the opposite wall, and lighted by a great triple window half way up their height. The hall is paneled to the ceiling in wood, painted white, the corners and angles accentuated by pilasters, and the rich mahogany doors encased within monumental frames. All around the summit of the walls is



The Dining-room Is Mahogany with a Tapestry Frieze and Curtains

a beautifully carved cornice, hand carved, like all the woodwork everywhere, and the ceiling is magnificently coffered and white like the walls. On the left is an immense fireplace and mantel of carved white marble, very beautiful in texture; the chimney breast is supported by pilasters that enclose a carved slab above the mantel. There are some richly

carved chairs and a great table here, and an enormous red rug covers most of the floor. On the left of the entrance door, with a single window opening onto the entrance front, is a small reception room in pink and white.

Adjoining the stairs is a great bay where hangs an immense curtain. Beyond it stretches a corridor, that reaches down the side of the house; the principal rooms open from one side of it, while the opposite side contains windows that open onto the inner front. These windows are contained within alcoves or recesses, dividing the corridor into bays. Here again are the pilasters of the main hall, and its coffered ceiling. The openings of the alcoves are hung with heavy velvet curtains, while the windows themselves have curtains of salmon silk, very delicate and beautiful both in color and material.



Mrs. Shepard's Room Is the Largest Bedroom in the House

Three great rooms open from the corridor. The first, nearest the entrance front, is the living-room. The wood is cedar, the wainscot, pilasters, cornice, door and window frames, and ceilings all being of this beautiful wood. The walls are paneled in green silk, which gives the predominating color to the rug and furnishings. The drawing-room adjoins the living-room and occupies the center of the main part of the river front. It is treated in ivory white and gold, the walls being paneled throughout in ivory white, with gilded moldings and ornaments. There are richly interlaced gilded panels over the doorways with paintings inserted within them. The mantel is of mottled purple and white marble, and has a built-in mirror above it. The richly gilt

nounced to be unnoticed. Everything that could possibly be imagined for convenience in serving is here in more than ample abundance. The pantry is almost as large as many New York apartments, with a counter and wash bowls beneath the window and great rows of glazed closets around the other walls. The kitchen and serving-room, the refrigerator and ice box, the various rooms for various distinct purposes, the servants' dining-room—all these and many other rooms are here, with an ampleness almost overwhelming and with fittings that leave nothing to be desired.

Yet the rooms of this great first floor are not exhausted. The breakfast room is green and white, the woodwork painted white, the walls covered with Nile green cloth. There



The Inner Front Contains the Porte-cochere and a Minor Entrance Which Is Scarcely Less Stately than that of the Formal Entrance-front

chandeliers depend from ornamental reliefs in the otherwise plain ceiling. The furniture is tapestry and gold and the rug is of light colors to harmonize with the general tone of the room. The curtains, both at the doors and windows, are yellow and gold.

The dining-room completes this great suite of apartments. It has a high wainscot of mahogany, paneled in rectangles, above which is a broad tapestry frieze. The tapestry curtains of the doors and windows are similar to it in tone and design, and, with it, give the color to the room. The ceiling is beamed with rather closely set beams and the cornice is mahogany like the other woodwork. The room is lighted by the clusters of lights applied to the wainscot.

It seems hardly necessary to go beyond into the pantry and service rooms, yet the completeness of these parts is too pro-

is a wood cornice and a cove below the ceiling. The wood mantel has facings of mottled white marble. Adjoining is the morning-room. It is finished in quartered oak, with walls papered in red stripes of two shades, one being very dark. There is a quartered oak wainscot and a white cornice. The curtains and furniture are red and gold.

The library is a splendid apartment on the right of the hall and is entered directly from it; it is thus somewhat removed from the other great apartments. In a sense it is library and billiard room combined, since a billiard table stands in it. For the most part its walls are lined with bookcases, reaching almost to the tops of the doors. Above, the walls are covered with leather, applied in large square panel-like pieces. There is a richly coffered ceiling in red gold. The curtains are green and brown.

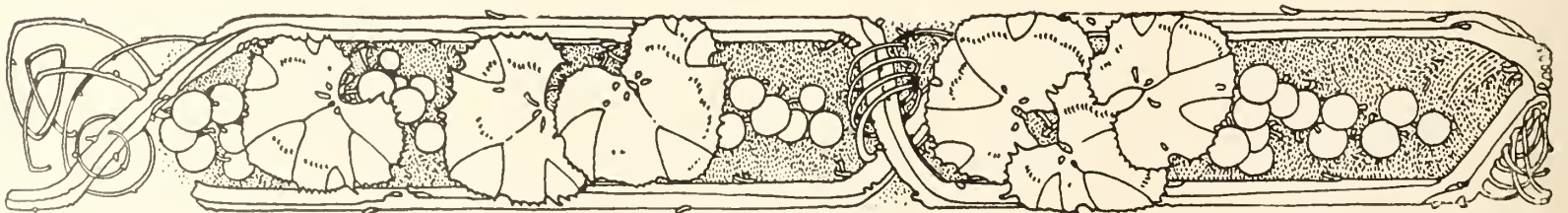


The Lofty Terrace Below the River Front is Upheld by a High Stone Wall, Handsomely Balustraded

Most houses can be reviewed in a survey of the public apartments on the first floor. This can not be said of Mrs. Shepard's house. The suites of bedrooms that fill the second and third floor offer quite as much interest as the great rooms below. The bedrooms are of various sizes, most of them being large, while Mrs. Shepard's own room is actually immense. There is a wonderful variety and singular good taste in the furnishings of these rooms. Each is distinct, each is very well done, and each has a charm of its own. The range of treatment varies considerably, the scale of decoration in some rooms being comparatively moderate while in others it reaches a very rich climax. This is especially so with the Moorish room, furnished in the Moorish style, with mantel and furniture inlaid with mother of pearl. The third story contains a children's suite, with a large playroom.

Mrs. Shepard's estate is so large that the cultivated gardens constitute but a comparatively small part of the grounds. Necessarily they are located in immediate proximity to the house. The formal garden lies to its north and

below the river front. Although built against the hillside it occupies a portion of a slope that falls far below it. Seen from below, therefore, it has all the characteristics of a hanging garden. The lower walls of the house are screened by a row of great cedars planted on the highest part of the garden. A great plateau or terrace has been built on the hillside, and on it the formal garden has been made. It is formed by an immense rectangular space, in the middle of each of the four sides of which is a pergola, thickly overgrown with vines, and in the center is pool and fountain. Walks and beds of flowers and shrubbery, arranged in an interesting manner, occupy the whole of the remaining space, constituting a wonderfully brilliant and beautiful spot just below the house, separated from it, it is true, somewhat by its own individual level, but near enough to be readily visible from the windows of the river front. It forms an integral part of every aspect of the house as seen from this side, and of every outlook from its windows. And that it adds enormously to the effect of this stately house need scarcely be added.



A Small Country House

By Francis Durando Nichols



SMALL country house built for Henry F. Nell, Esq., at Chestnut Hill, Pa., forms the subject of the illustrations presented in these pages.

The house, which is designed in the English style, gives the expression of what an architect can do when he tries to attain the true domestic quality in his work and to give that feeling of home which is seldom found in the modern house. There are so many things to be considered in the planning of a house of this character, and so many problems to overcome which make it more difficult, that its solution is the more interesting. One of the most important of these is the due relation in the house of the family rooms and the servants' rooms. Under ordinary conditions of modern life these two separate communities must be accommodated under the same roof with due regard for the privacy and comfort of each; and so, the kitchen and servants' rooms must be placed in such relation to the family sitting-rooms as to insure isolation and convenience of service; for in this connection it is not enough to consider the position of the rooms alone, but it is equally important that the various routes taken by the family and the servants should become an object of study, and should be kept as distinct as possible.

In such a small house as is now illustrated, however, such a complete isolation of routes becomes impossible; but a reference to the plan will show how far this question has been found capable of treatment under the circumstances. The serving-room isolates the kitchen from the rest of the house, and the serving-door obviates the necessity for carrying dishes through the hall, while the small servants' staircase also adds to the privacy of the hall. The relative position of the kitchen and servants' rooms sufficiently prevents the passage of sound, while the thorough ventilation of the kitchen by a shaft carried up in the flue, as well as the absence of direct communication with the family rooms, will prevent that permeation of kitchen odors so often noticeable in a small house.

Another important feature is the compact form of the house and the relative position of the rooms. In the average house the introduction of much furniture becomes almost a necessity in order to distract the eye from the bare and uninviting appearance of the rooms, but the artistic house, such as this is, with its well-proportioned rooms and simple fittings, will be found to require very little furniture in comparison with the usual house of this character.

The main entrance to the grounds, with its red brick piers and wooden gate surrounded with growing plants and shrubs, gives access to a winding walk by which the front porch is approached. A service-way direct from the roadway to the kitchen door has a privet hedge on either side of the walk, which is of sufficient height to prevent one's being seen in passing from the street to the rear of the house.

The design of the exterior is excellent, and its latticed windows and massive chimney lend character to the whole general scheme. The underpinning and the first story are built of red Klinker brick. The second story is beamed, forming panels which are covered with a rough cement cast of a cream white color, while the beams are stained a soft brown. The sashes are painted white. The roof is shingled and stained a brilliant red color.

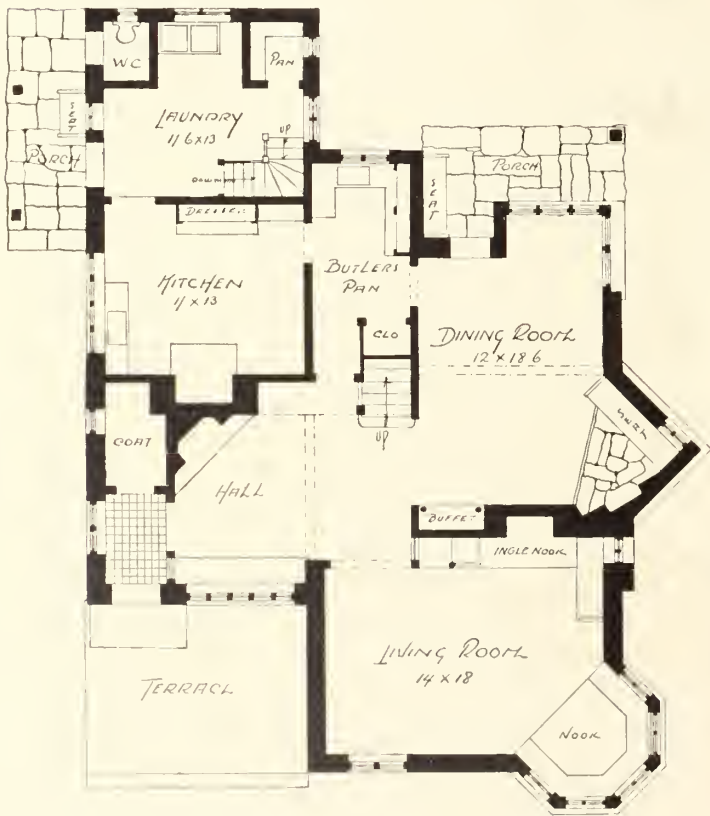
Taking the front door as the starting point for the consideration of the house, one is greeted on the threshold by a vestibule with a Welsh tiled floor, chestnut trim, and windows glazed with glass of greenish blue which sheds a soft and pleasant light. An opening forms an entrance to the hall which is trimmed with old English oak. The walls are covered with a tapestry paper in green and yellow from the base to the height of the plate rack, above which they are treated with a deep buff. The fireplace, in the angle of the room, is built of red Klinker brick laid in red mortar with the facings and hearth of a similar brick, and a mantel-shelf of good design. The staircase is in keeping, and is paneled up the side. At the front side of the hall is a paneled seat over which there is placed a cluster of small latticed windows.



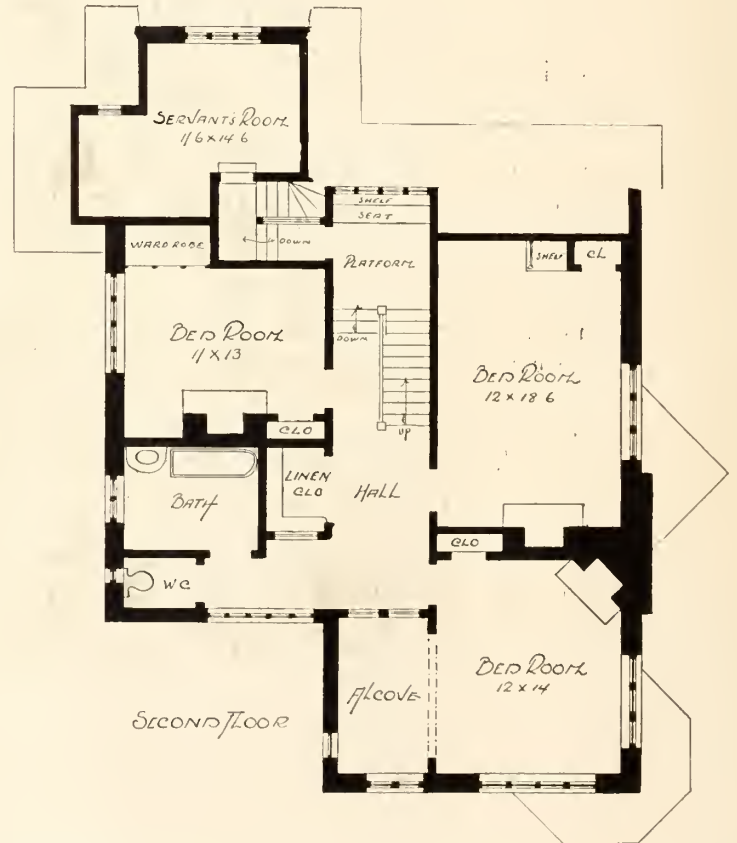
The Service Entrance Has a Privet Hedge Which Separates It From the Rest of the Estate, and Which Is An Excellent Feature for the Small Country House



The English Brick and Half-timbered Style is the One Adopted for This House. The Entrance Door and Its Terrace Are Approached by a Winding Path



FIRST FLOOR



SECOND FLOOR

The Plans are Unusually Fine and Unique in their Arrangement and English Characteristics Predominate



The Brick Chimney and the Lean-to Roof are the Architectural Features of the Side of the House

The living-room is treated with old ivory white. The large bay-window at the corner of the room is surrounded with a window seat which is placed on a platform raised one step from the level of the main floor. The inglenook has a fireplace with green tiled facings, red brick hearth and seats on either side. Cupboards with bookcases built over and under the line of the mantel-shelf are built in and extend around the nook. Small spindle columns and a paneled over-mantel complete the treatment of the inglenook. The wall is decorated with a yellow and white paper with harmonious effect.

The dining-room is trimmed with chestnut, and the walls are covered with a golden burlap. A plate rack extends around the room, upon which are placed some fine old pewter plates and plaques. The chief charm of this room is its simplicity. It has a hard wood floor, highly polished, and without a rug. The furniture is unique, the dining-table being made from a copy of Molière's table. The inglenook, which is thrown out at an angle, has a hearth laid with large flat stones and facings of Klinker brick laid in white mortar to the height of four feet, above which the facings are covered with a blue and white tile representing old Dutch scenes. The old brass hood over the fireplace is quite a feature of its Dutch treatment. A broad seat is placed at one side of the fireplace, above which the wall is pierced by two small windows shedding a pleasant light over the inglenook.

The small bay at the opposite end of the room, with a cluster of latticed windows, forms a very attractive place for a breakfast table. A Dutch door opens on to the porch, which has a floor paved with large flat stones and a seat provided at one side.

The butler's pantry is fitted with sink, drawers, and dressers, complete. The kitchen has an open fireplace with range resting on a red tile hearth, a sink dresser, laundry fitted with laundry tubs, larder, and

a stairway to the cellar and to the servants' rooms in the second story.

The staircase from the main hall rises to a broad landing, which is provided with a paneled seat. A cluster of leaded glass windows in the design of a peacock, in blue and yellow, grace the landing of this staircase.

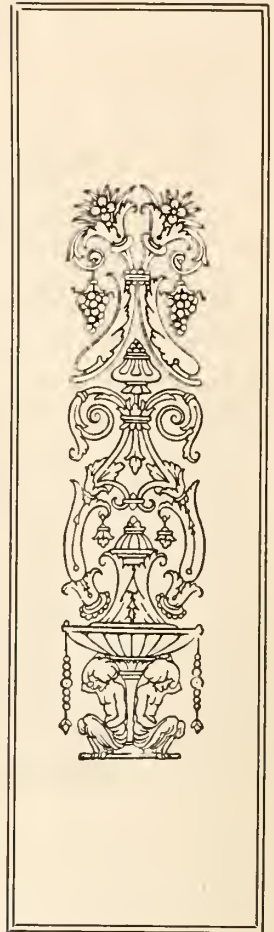
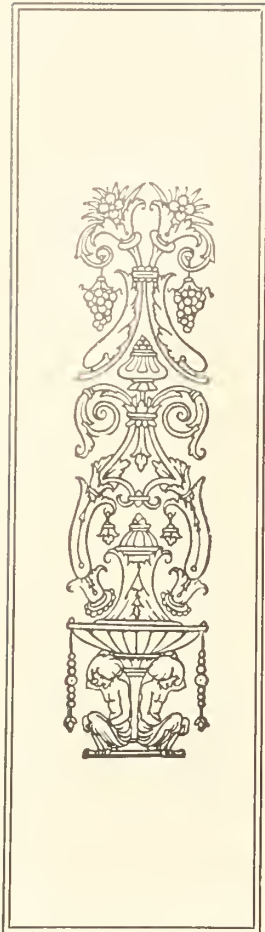
The servants' hall and stairway open from the broad landing and forms the entrance to the servants' room, which is placed over the laundry extension. A short flight of three steps leads up to the level of the second story hall, from which the three bedrooms and bathroom open. Each of the three bedrooms has ivory white trim. The front bedroom has a large alcove for the bed. Its wall decoration is in a mustard yellow, while the rear room is treated with yellow and green walls and is furnished with a bookcase and seat built in. The small room at the opposite side of the hall has a pine tree decoration in white and green on the walls. Each of the bedrooms has an open fireplace furnished with brick facings, tiled hearth, and mantel of quaint design in the Colonial style. The bathroom is furnished with porcelain fixtures and exposed nickel-plated plumbing. There is one large bedroom, trunkroom and

bathroom on the third floor. A cemented cellar under the entire house contains a heating apparatus, fuel rooms, and cold storage. The planting which has been done about the house and throughout the grounds adds much to the beauty of the place and is a very happy and delightful setting for the house of which it forms a part.

The beauty of a house in the country will depend, of course, almost exclusively upon this for the effectiveness of its exterior in relation to the conformation, the layout, and the planting of the surrounding landscape; and the attractiveness of the interior of such a house will largely hinge on the effective and serviceable adaptation of its plan to those features in the immediate surroundings of the building which are of most practical and esthetic interest.



A Quaint Modern Gate with Brick Piers on Either Side Forms the Main Entrance to the Estate



The Hall, Which is Trimmed with Antique Oak, Has a Wall Covered with Old Tapestry Paper in Green and Yellow



The Living-room Is Treated with Old Ivory White. The Inglenook with its Green Tiled Fireplace and the Bookcases and Seats Built on Either Side, Is the Feature of the Room

THE chief charm of the dining-room is its simplicity and its artistic furnishings. It is trimmed with chestnut, and its walls are covered with golden burlap. A plate-rack extends around the room on which are placed some old pewter plates. The furniture is unique, and the dining-table is a copy of "Molière's" table.



THE Inglenook which is thrown out at an angle has a fireplace built of klinker brick. Delft tile are placed over the fireplace. The old brass hood hung over the opening is quite the feature of the Dutch treatment. A broad seat is placed at one side of the fireplace over which the wall is pierced by two small windows.

A Princeton House

The Residence of Dr. David Magie, at Princeton, New Jersey

By Burr Bartram



THE name of Princeton appeals as it naturally does to the average man for its University associations, for it is, of course, the most important feature of the town, as well as one of the foremost dominant forces in American culture. There is, however, another side to Princeton, which the keen observer will notice immediately upon entering it, and that is, the refining influences of the residential side of its life, the atmosphere of which is felt throughout the town, for its charm lends itself with equal delight in its beautiful homes and gardens, as well as the cultured influences which are denominated by the University.

Princeton is beautifully situated upon a high plateau rising from a steep vale at its approach and terminating in a lesser one at the other side of the town. It is a delightful spot, is well wooded, and has broad avenues lined with magnificent trees with their towering heads seeming to rise into the skies

in loving remembrance of those early settlers who nurtured them and who made Princeton possible. Princeton also has her place in American history for it was on this hallowed ground that the battle of Princeton was fought during the Revolution.

These interesting associations, together with the fine estates of which Princeton is also so proud, make Princeton so alluring, not only for the graduates of Princeton who for their love of the University have returned and built their homes there, but for those who are seeking a home site where there is a true domestic quality which is now seldom seen in the modern American home. This is what Princeton is; so when Dr. Magie returned to the place of his college life, he selected a charming site on what is called Library Place, just off the main avenue of the town, and has erected upon it a beautiful house. It is designed and built in the Jacobean style of architecture and is in keeping with its surroundings and environments.



The Charm of the Façade of Dr. Magie's House Lies in Its Simple and Substantial Proportions



The Hall Has Paneled Walls of Oak from the Floor to the Ceiling, and a Very Handsome Carved Mantel
A Facing of Caen Stone Surrounds the Open Fireplace



Fine Old Sheraton Furniture of Mahogany Has a Very Excellent Setting, with the Walls of the Dining-room Finished with
Pilasters and Carved Capitals also of Mahogany



The Library is Trimmed with Mahogany, and the Ceiling of Jacobean Style Has Ornamental Plaster Ribs

It is planned in the form of the elongated type with an entrance front which is divided into three parts, two of which rise up into pediments while the central one contains the entrance porch. The wings on either side of this central portion of the house are recessed from the lines of the front walls.

The exterior is constructed of rock-faced gray stone with trimmings of dressed Indiana limestone. These walls are well pierced with many windows which are glazed with leaded glass. The whole building is crowned with a red slated roof which adds a touch of color to the house and blends well into the general color scheme.

Entering the hall, which is a central one extending through the entire depth of the house, one does not see the staircase as is usually the case, for it is placed in a separate hall, apart from the main entrance hall. Both the hall and the staircase hall are trimmed with oak finished with an old English treatment. The walls from the floor to the ceiling are paneled with similar oak and finished with a massive molded cornice.

The ceiling is beamed and ribbed in a handsome manner. At the rear of the

hall, opposite the entrance, is a cluster of leaded glass windows beneath which is placed a paneled seat. The broad open fireplace, with its facings of Caen stone elegantly carved, and its mantel with over-mantel extending to the ceiling, is quite the feature of the hall. The staircase, which is placed in the stair hall, is built of oak with a balustrade in the Gothic style. Beneath these stairs is a stairway to the cellar. The coat-room and lavatory are conveniently placed.

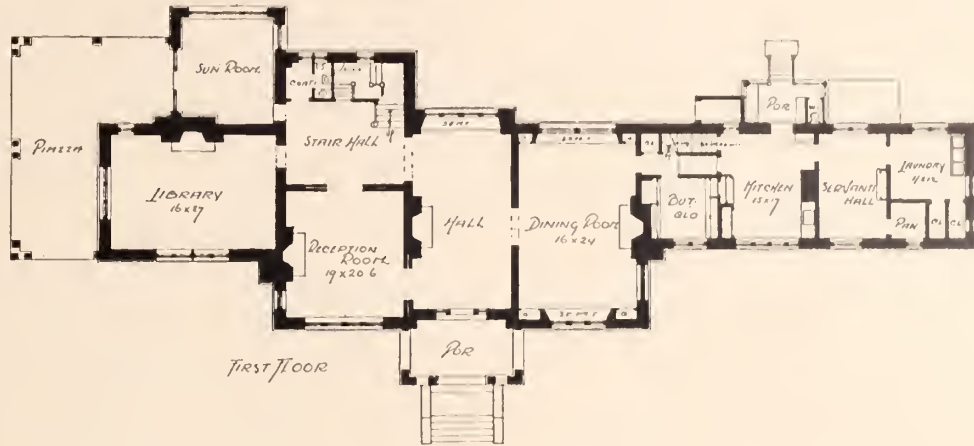
The drawing-room is to the left of the entrance, and is treated in a combination of the Louis XV and Louis XVI styles. The walls have a low paneled wainscoting above which they are laid out in panels formed by plaster moldings; these panels are covered with a Dresden wall covering of dainty design. The whole is finished with a plaster molding of ornamental

character and the ceiling is similarly decorated. The broad open fireplace has facings and a hearth of Siena marble, and is finished with brass trimmings and a mantel handsomely carved, with a paneled over-mantel, in the center of which is a mirror.



The Drawing-room Is Treated in the Louis XVI. Style. The Walls Are Paneled with Plaster Moldings and Wall-covering of Dresden Design

The library is trimmed with mahogany, and has a wainscoting with decorated leather walls above and the whole finished with heavy plaster cornice. The ceiling is of the Jacobean style with ornamental plaster ribs, laid out in a geometrical form. The broad open fireplace has marble facings and hearth and a paneled mantel of simple but elegant design. French windows open onto the family porch which is separated from the entrance porch and affords a private outdoor living-room for the family.



facings and hearth and a mantel of mahogany. The room is handsomely furnished with furniture of Sheraton style, with an old sideboard, center table, and chairs; the latter being copies of the original belonging to Governor Chase, of Baltimore, Maryland.

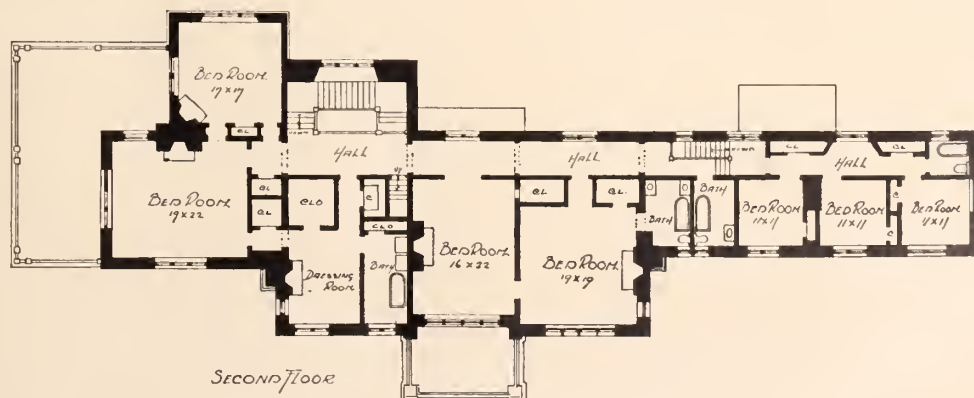
The butler's pantry is fitted with drawers, dressers, cupboards, and sink complete. The kitchen, servants' hall, and laundry have cross ventilation, and are fitted with all the best modern conveniences.



Dr. Magie has Accepted the Jacobean Style of Architecture for His House

The dining-room to the right of the hall, extending through the depth of the house, is a very handsome apartment. It is trimmed with San Domingo mahogany, and its walls, from the floor to the ceiling, are paneled and finished with pilasters with Ionic capitals, supporting a massive wooden cornice which extends around the room. At each end of the room there are clusters of three windows placed over paneled seats, and at either side of which are china closets built in and glazed with leaded glass in diamond-shaped panes. The fireplace has marble

The second floor is finished with white enamel trim and mahogany doors. This floor contains the owner's suite, consisting of two bedrooms, dressing-room, and a bathroom, all well provided with closets properly equipped, and two guest-rooms and bathroom. The servants' bedrooms, three in number, and bathroom are also on this floor and are over the kitchen extension. The bathrooms are furnished with porcelain fixtures and exposed nickel-plated plumbing.



Messrs. Cope and Stewardson, of Philadelphia, were the architects.

Leather for Interior Decoration

By Phebe Westcott Humphreys

Illustrated by S. Walter Humphreys



SCULPTURED leather, tooled leather, embossed and stamped and pyrographic leather are conjuring terms for the interior decorations of to-day. What does it all mean—this flaunting of the magic leather wherever there is a demand for art, oddity, antiquity, or strictly new effects in the furnishing of homes or public institutions? A new state capitol building is erected, and the seals of the state are most elaborately executed in sculptured leather for its mural decorations. A palace is built for the multi-millionaire, and its stately magnificence dazzles one with the leather schemes displaying heraldic designs wherever there can be found a possible excuse for introducing them. Armorial bearings are most carefully and artistically executed in embossed leather for the home decorations of Mr. and Mrs. Newly Rich. A modest home is started in a country village; even here the leather fad penetrates, and the bride numbers among her most treasured possessions that wonderful wedding gift—a sofa cushion in leather pyrography. No college den is quite complete without decorative designs in tooled leather. The antiquarian searches the

The earliest trace of the leather work now called "Cordovan" is credited to the African Moors, who, before the eleventh century, introduced the craft into Spain.

It was during the early days of the fifteenth century that sculptured leather became well known and executed. The monasteries of continental Europe comprised the field of these early efforts. The brothers who inhabited these monas-



Panel Designs for Mural Decoration



An Eighteenth Century Chair Covered with Italian Wrought Leather

teries, though they had many routine duties in their religious life, had also abundant leisure for the tedious, painstaking work required in executing those intricate designs of the earliest sculptured leather. Before the days of Guttenberg—when the monks had the most leisure for these laborious branches of artistic decoration, bookmaking was a popular diversion; and it was natural that the covers of the huge volumes of those days should display the earliest examples of rare sculptured leather.

Quaint chairs were the next to receive the attention of these old decorators. At first the chairs did not show the same careful work as that displayed in the book bindings. There was good reason for this—as expressed by an antiquarian recently who is interested in the newest as well as the oldest samples of the art in leather.

"Connected with the art of illuminating," he writes, "these faithful savants—the Monks—achieved no little success with the binding of their volumes. The enormous labor expended on the contents justified bindings of substantial material, and they selected cowhide as warranting centuries of service. The wisdom of this is evidenced by the thousands of volumes still preserved.

"These times were contemporaneous with the introduction of the Renaissance into England by Henry VIII, through his

world over for a genuine fifteenth century chair of the sculptured leather of Monkish days, or the quaint stamped leather of the sixteenth century.

New? Not at all! Sculptured leather is one of the oldest of artistic decorative materials. The lapse has been so great, however, between its introduction and its revival, that the interior decorators of to-day are probably safer in claiming originality, and strictly new methods of decoration in leather work, than in any other field of decorative art.

architect, John of Padua; with the foundation of the French Renaissance under Louis XII by Fra Giocondo and its development under Francis I, influenced by Seraglio, and also with the best period of Italian Renaissance.

"Like other arts which have been lost through the changes of time, this was allowed to lapse during the unruly days of the Reformation, for the firebrands of religious warfare left no time for tedious employment."

With such explanation to account for the early industry, the long lapse, and its very recent revival in this country, it is not surprising that artistic decorations in sculptured leather are so confidently set forth as an entirely new as well as novel decorative scheme. Imported hangings in leather, various objects in the form of screens and furniture coverings, have for some time past been brought to this country from Germany. Yet the revival of this exquisite art is comparatively new even in Germany, for after the art had remained

recent introduction in this country rapid strides have been made in having it recognized by an appreciative public. In all large cities throughout the United States the revived art is being established.

In studying the effect of sculptured leather for the interior decoration of public buildings, no better example could be cited than that of the new State Capitol at Harrisburg. Not only have the sixty-seven seals of Pennsylvania counties been most exquisitely wrought in sculptured leather, but in the Governor's reception room the immense wall surface shows one of the rarest effects in marvelously executed leather sculpture in this country—this includes eight enormous panels representing the eight chief industries of Pennsylvania.

For home decoration the elaborate designs for wall finishings are simply innumerable. The owner of a palatial home, if he possess artistic instinct, endeavors to have all his wall designs characteristic and emblematic. Panels of sculptured



An Eighteenth Century Chair Covered with Italian Embossed Leather



Big Bronze Nails are Used With the Leather to Complete the Decorative Effect



An Antique Leather-decorated Chair Preserved in Philadelphia's Memorial Hall

lost for centuries it was not until somewhat over two decades ago, from 1881 to 1883, during the period of tremendous developments in the art industries in Germany that the art of leather sculpture was fully revived. Then travelers abroad became enthusiastic over the beautiful results attained through the medium of leather sculpture for interior decoration in many European palaces; and a demand for this art industry was accordingly created in this country. Probably the extreme age of this industry in the United States might be safely placed at ten or fifteen years. It is much more recently, however, that the new industry has been established in this country, sufficiently to warrant the branching out that includes the wonderful scope of leather decoration in vogue to-day.

Philadelphia and New York have taken the lead of American cities in popularizing this art. The first establishment devoted entirely to interior decoration in sculptured leather was established in Philadelphia by a German art student who found the industry tremendously popular and profitable in Hamburg, and realized, from the demands of American travelers, its certainty of success here. Since its

leather are set in place to form a continuous design throughout the entire wall surface, the frieze and ceiling continuing the leather scheme in heraldic or conventional flower design. When the sculptured leather of the wall and ceiling decorations display intricate detail, the leather chairs and other furnishings are magnificently plain by way of contrast. Frequently the greater part of the wall surface of a spacious dining-room or "den" will display rich panelings of choice woods; while the mural decorations in leather will be confined to a great depth of elaborate frieze, representing hunting scenes and woody trophies, and field and meadow flowers will complete the characteristic finish of the ceiling. When adjoining rooms are finished in the same general design in sculptured leather—with only a change in the hunting scenes or the ceiling effects to give desirable variety—embossed leather hangings are frequently used for the doorway portieres. Another popular decorative idea is found in the three-fold screen showing heraldic designs of some famous hunting scene, set before the doorway, while the top is finished in an artistic arch or curve with the beaded effect of bronzy glowing nails holding the sculptured leather in place.

It is scarcely possible to enumerate the varied uses for this art leather work after leaving the field of extensive and massive mural decorations. Characteristic draperies, emblematic mantel panels, tabourettes, waste-paper baskets, book shelves, and screens of every description, and for every possible form of usefulness, are found in a variety of decorative forms displaying the popular finish in sculptured or embossed leather



A Conventional Design for Wall Pockets
in Sculptured Leather

in modern palace homes throughout the land. In the unpretentious homes where all that is newest and best in art is thoroughly appreciated without the means of gratifying all desires in this direction, perhaps only one or two designs in sculptured leather will be found. Quaint chairs in sculptured leather that show unusual merit in artistic finish are usually the choice in selecting these limited household treasures.

Designs executed in the popular pyrography, quaintly drawn tracings of tooled leather, and rare bits of sculptured and embossed and stamped leather, are found among the leather-covered cushions of the modern cozy corner. Even the wall pockets for papers and documents in library or den are finished in clever imitation of the old-time stamped leather, and occasionally a rare piece of genuine antique stamped leather is discovered among these curious antique wall pockets.

A stately country seat in course of erection was recently visited in which the artists were putting on the finishing touches in a leather decorated den. The leather for a small panel was selected to illustrate the method of working out the intricate designs. On a part of the firm skin there was merely a delicate tracery showing the outline. Where the work was a little further advanced this outline had been picked and loosened with a small sharp instrument so that the raised effect could be easily secured when ready for the process of sculpturing. After the design has been entirely finished by the picking process and the outline cutting, the leather is thoroughly dampened and softened by wetting on the under side. Then, with a tool prepared for this purpose, the sculpture design is pushed up and out into relief; the previous cutting of the outline making this possible without

drawing or twisting the background of the figures. The true artistic instinct must be displayed in the firm touch and the individuality expressed in this process of pushing out into relief the intricate design. It is this process that distinguishes the sculptured leather from that which is "tooled" or embossed. The filling in of the background with the usual composition of glue, sawdust, etc., is a mere incidental; any one with true mechanical instincts may accomplish this after the work of the artist is finished.

The entire process seems to offer very few complications as explained and illustrated by the leather worker; but like many other artistic accomplishments, the apparent ease with which the design grows into beauty in the hands of the experienced worker, quickly changes to a discouraging mass of hopelessly intricate and meaningless lines and crude projections in the hands of the novice.

Beyond the mechanical treatment of the experienced leather worker, and the artistic finish of experienced sculpturing, a very high grade of art is required in forming the designs for sculptured leather. A fairly successful artist, with a thorough knowledge of perspective, a stickler for individuality, and one who thoroughly appreciates, and grasps without effort, character studies and emblematic designs, will find these requisites indispensable; but something more will be required of him. He must possess a thorough knowledge of armorial bearings, and a comprehensive understanding of heraldry. In fact he must have all the natural instincts and the cultivated talents of the artist in other lines, and in addition to these requirements a fund of knowledge seldom demanded by the profession of art work with brush or chisel.

It is a matter of frequent surprise to the leather decorator—accustomed though

he may be to strange requests from his patrons—to note the quaint ideas as well as the inspirations that will occur to one in search of novelty, or of something decidedly out of the common in the decoration of his home. For instance, just the other day, from one of the most aristocratic suburbs of a conservative city, came the request from a patron of wealth and true artistic instincts, to have his massive billiard room entirely finished in sculptured leather representing scenes from his favorite hunting club. One huge panel of the massive wall surface displays a ravishing view of the fine old club house fitted out with all the paraphernalia of the huntsman. Treasured hounds, photographed from life, are most charmingly

executed in sculptured leather to form another great panel. A famous charger, with nostrils extended and thrilling action expressed in every line and curve of the body, fills another panel, and so on throughout the great room—panel after panel is expressive of the delights of favorite hunting fields and all beautifully executed.



An Intricate Design in Sculptured
Leather

The "'Dobe" of To-day

By Sarah Comstock



AMPLE and welcoming, basking in the glow of California sunshine, the "'dobe" house of to-day presents a picture that is all warmth and hospitality, and a riot of color into the bargain. The Californian paints as only Nature and her lineal descendants, the tropical peoples, dare to paint. He will top his glittering cream-colored structure with red tiles and trim it with green; build it against an unsoftened background of dazzling blue sky and turn loose upon its lawn a herd of glaring poppies that are a mass of yellow blossom by the second year's growth.

The Gringo, not content with gobbling California from its Spanish inhabitants, must needs gobble their architectural

left for anything so practical and lasting as a roof to cover him. He was accustomed to scatter his silver by the handful at every fandango and wedding, and his bank account never warranted a handsome home. His follower, who, according to our custom, is well content with bestowing a dozen silver spoons or a rose bowl upon the average wedding has often put a neat fortune into his so-called adobe house. The great majority of the wealthy home makers of California are building in this style, and spending in that building sums that would make the old Padres gasp could they see whither their example has led. Los Angeles, the southern city of the Angels, shows Mission homes on every residence street. The famous Orange Grove Avenue of Pasadena, that Mecca of midwinter summer seekers, is lined with these modern



An Altadena Residence Built of Stone and Cement

ideas also—and of course he has done what the American has not always done, improved upon those ideas. The first Spanish monks, headed by the long dead and honored Father Junipero Serra, built the adobe Missions and taught the people to build homes for themselves in like manner. The style was durable, they said, and well adapted to the climate. The American caught the ideas of durability and suitability and proceeded forthwith to carry out the old Mission scheme of architecture in his own way. The result was a wonderful and beautiful array of "Mission" houses as they are called—now the typical homes of the Golden State.

The extravagant Castilian of early days had little money

"'dobes." Santa Barbara, Redlands, San Diego, Monterey, and of late San Francisco, have blossomed into this gay style of building.

The modern architects have long since departed from the severity into which the monks disciplined their Moorish architecture. The Moor taught the Spaniards to build. The principles of that form of construction were brought by the early band of Padres to the Pacific coast, but poverty and their religious beliefs caused them to select the useful principles of that architecture and let the ornamental, or at any rate, the ornate, go. The architect of to-day is not hampered by poverty and asceticism. For his ideas he has gone back



The House of Mr. J. Parkinson, Los Angeles, California

to the Missions, and still farther back, to the Moorish buildings before them.

Sentiment for the traditions of the state and a love of beauty have probably been at the bottom of this "'dobe" uprising. However, for those who want a practical explanation, the architect submits the theory that no style of building is so well adapted to the semi-tropical climate. The Padres realized that brick withstands the summer's heat. It is quite as true that it shuts out the winter's cold, so there seems to be no reason why it should not be as comfortable in any part of the United States as on the coast where it arose.

The original buildings were of adobe, which was a brick baked in the sun. As the new buildings are made of ordinary brick, there is no legitimate reason for their name. Up-to-date cement laid upon the bricks takes the place of the primitive plaster which the Spanish used. The finish is of calcimine just as it used to be, so the modern wall appears an excellent copy. The light color of the calcimine reflects the light and adds to that glaring whiteness for which California is noted—a boon to sun-lovers and to oculists.

The Fathers were accustomed to choose an open spot for their site, probably for the sake of giving a broad, sunny exposure to the olive orchards with which they surrounded their Missions. The modern Californian copies in this point, for it is the fashion to let nothing hinder sun and air from reaching a house in that land where neither cold nor heat are severe. Instead of a mass of shade, it is customary to surround the houses with flower beds, and with lawns that are both expansive and expensive, for grass does not flourish voluntarily in that state.

The characteristic Mission was a series of buildings arranged in quadrangular form surrounding an inner court or patio. Most of the

present-day houses are not extensive enough to carry out this form, but occasionally the patio is found. Casa de Rosas (House of Roses), the home of Miss Alice Parsons, in Los Angeles, is one of these. Its patio is surrounded by a two-story house; a balcony faces the patio and over this wind the rose-vines that give the house its name. Its arcade is charmingly picturesque but incorrect, by fault of the frail pillars that defy the law of massiveness. The pillars of all the old missions were very heavy. Many of the modern structures fail as imitations through their lack of solidity. The monks aimed at massiveness. The Spaniards, their followers, taught by them, achieved a heaviness of proportion even in the smallest and most modest of their adobe houses.

Another prominent feature of the Mission building was the outer corridor which ran the full length of at least one side of the four. Here the monks paced in the sun-

shine which streamed in between the simple, massive pillars. Crumbling San Fernando, snuggled in its valley, shows this design. Stately Santa Barbara, the best preserved and most prosperous of all, shows it. Santa Inez, San Miguel, La Purisima Concepcion, San Antonio de Padua, all have the outer corridor. The best example of this in a modern house is in the Burrage residence at Redlands. The corridor of this runs around four sides of the house and serves as veranda, being broad enough for hammocks, easy chairs and couches. The slope of the ground causes it to be somewhat elevated on one side; from it the terraced lawn slopes away down a miniature hillside set out with flourishing little orange trees that make the air sweet with their blossoms' perfume during part of the year and the landscape gay during the later months when they hang out their bright yellow lanterns among the branches.

The house of the artist Paul de Longpré offers a suggestion of the outer corridor. It is a scant one, however, as the arched walk extends down only a part of one side of the



House of Brigadier-General H. G. Otis, Los Angeles, California

house. What it lacks in extent it makes up in elaboration. The arches are adorned with the most delicate of stucco work. The designer chose the appropriate palm as his model: the pillars are broad at the base, slender at the top, spreading into a curved arch above. He has returned to the Moorish arabesque which the Mission fathers renounced as too worldly.

Beyond the elementary form of the Moorish arch the Missions did not go in ornamentation, and even this did not appear in all of them by any means. San Diego and San Luis



The Patio at Casa de Rosas

Rey, two of the wealthiest, show the arch at its best. It is a feature of many of the new houses. The houses of de Longpré at Hollywood, Harrison Grey Otis at Los Angeles, Stewart at Pasadena and Burrage at Redlands display fine examples of the arch.

The most beautiful feature of the Missions was the inner corridor, built around the quadrangular court and offering the priests a secluded walk in the air and sun. None of the private houses are extensive enough to make this feature practicable, but it has been beautifully carried out in Stanford University. Its inner corridor, extending completely around the court, measures a walk of a quarter-mile.

Very few pretend to put up a Mission house without roofing it with the curved red tiles that are typical of the early years. Without them the gay color scheme would be incom-

plete. Only a few display shingles. The early tile was in U form; modern cleverness has found that it can achieve the same effect by molding a tile in S form and making one tile cover both the upward and downward curve.

Those who cling to historical accuracy insist upon the wide, projecting eaves. The Los Angeles home of J. Parkinson shows a marked example of these eaves.

The true Mission imitator builds his home only one story in height, but few home owners are willing to sacrifice space to history. The one-story idea is being made use of in several public schools, which are not only true to their model but in accordance with the latest theories on school building.

A resident of Altadena has built his home with a first story of stone such as some of the wealthiest missions were fortunate enough to have instead of adobe. The stone walls of Santa Barbara measured six feet in thickness: these were made firm by buttresses of solid stone. An Altadena home has left the stone in view instead of covering it with the cement and calcimine, so that the color effect is unique. Deep chocolate trimmings and brown shingles soften the glare of the light cement. The effect is very subdued as compared with most houses of the school, which show the bright red roof, and, in some cases, the strong green trimmings such as are found in foreign countries.

One bit of realism in the shape of a Los Angeles cottage went so far as to surmount itself with a tiny bell tower and even a swaying bell which peeps through the four openings just as the bells of Santa Barbara and San Buenaventura do. The cottage is built only one story in height, possesses a tiny rose-covered arcade and is surrounded by

palms and orange trees.

Within, those who care for realism are furnishing these Mission homes in the simplest and most severe styles. The demand for Mission furniture for them has been great: some insist upon upholstering the chairs with interlaced strips of rawhide as in the early days.

One San Francisco architect has entered a protest against the introduction of Moorish elaboration in the modern buildings, and has designed several houses according to the rigid severity of the simplest Missions. But there is little sign of this fashion going far. An opposing architect says, "So long as we imitate all the beauties of the Padres' building, why should we not add the lavishness of adornment that wealth now makes possible?" And, as it appears, the great majority of California home-builders agree.





THE revival of the old-time handiwork is no mere fad. It seeks to reproduce by modern fingers the articles that our great grandmothers wrought with greatest care and completed after days and weeks of labor. The twentieth century looks back on the past and what it did with admiring and approving eyes, for true art is found in much that was then accomplished. Often the productions were of the simplest designs, and this very simplicity appeals to those who have the artistic sense not yet confused by the conglomeration of articles turned out by machines in such quantities that there can be no personality and no chance for individuality in any of them.

Some moderns, while able to prate of art, having a command of language yet a scarcity of ideas, are disdainful, for instance, of the blue and white bedspread, that made a part of every girl's wedding outfit a hundred years ago and now acts as couch cover or portiere in some home of her descendants. They will say, perhaps, that the pattern is "so common," the colors merely blue and white, and will prefer the mixture of hues in the fabric the machine has turned out by the gross for the admiration of the multitude.

Such do not know that the blue is unfading, for the old-fashioned dye, made at home after the formula so ancient that its originator is unknown, will last as long as the fabric to which it gives the hue. A hundred years for one of these bedspreads is but a day compared with modern articles of the kind. One such, in the possession of the writer, was made over a hundred years ago. The wool was grown on the home farm; it was spun by the whirring wheel turned by a woman and was dyed and woven by the women of the household all unaided. It

served them in their day and was handed down to one of their descendants until now it is an ornament for the home of the great-great-grandchild. Not a thread is worn, not a stitch is broken, the colors are unchanged and no doubt, unless the careless housewife allows the moth to fret its folds, it will last for three generations more and be a joy forever. Its very simplicity is its strongest appeal for admiration.

The modern critic, accustomed to what he considers more artistic designs, forgets that these early workers copied what they saw about them. The oak leaf, the log cabin, the herring bone, the star, the hexagon and other simple geometrical figures, the rising sun, the goose track—these were common enough and reproduced on various articles became "conventionalized" by people who knew not the word in the way it is used to-day, and are still beautiful. Nobody can improve on the old "blue and white" spread, though when sleeping under its weight "such dreams would come," no modern mortal would wish to repeat the experiment.



A Finished Quilt

Machines turn out lace to-day in a countless number of yards and in patterns as many as the sands on the seashore, but one length of handmade lace is worth a whole year's product of the factory. To-day girls and women have revived the art of lace making and are able to earn a fair wage by such labor. They make it just as did our great-grandmothers in the eighteenth century, as they do in the nunneries and wayside cottages in the old world to-day.

In Ipswich, Mass., they still preserve the lace pillows and the bobbins that were used by the lace makers before the Revolutionary War. Not as a pastime, but as an industry, was this lace work carried on, and some fortunate young women, during the last year, have worn as part of their wedding costumes some of the lace their great-great-grandmothers ordered from similar lace makers, and woven when they too were married.

Among these old laces is the "needle point," but the bobbin or pillow lace was more commonly made. The pillow was round, stuffed with hay, and covered with some dark material. The pattern of lace was pricked out on parchment and fastened to the center of the pillow. The long pins outlined the pattern and the threads on the bobbins were knotted around them according to its varying figures. As the lace was made, its length fell into a little bag at the side of the pillow to keep it clean. The rattling of the bobbins—sometimes a hundred in all, for each separate thread must have one, and each mesh of the lace had its own thread—mingled with the chatter and laughter of the workers, for in the days of the Puritans there was love making and gossip, just as there is to-day.

The patterns were copies of those seen in the lace brought from "over sea," or as in other handiwork weave the reproductions of something near at hand. Jack Frost wrought on a window pane a fantastic picture in which a cunning worker found a pattern. Other simpler designs were known as "the fan," "hen's comb," and "double ten."

In the olden time, the children were taught the easier forms of lace making and their proficiency increased as they grew older. It is said that the best way to learn lace making is to watch an expert. The various stitches had almost as many different names as the patterns, and to learn those was a necessary part of the lace maker's training. It is this old-time lace making that has been revived and with success, adding a new industry for girls and women and one they enjoy.

Everything is embroidered this year and among the patterns is the English open work which is an exact copy of the popular style of a hundred years ago. Much of this is now done by machine, but the woman who can afford it must have the real hand work and this opens a paying industry for deft fingers. Perhaps some of the workers have inherited such from some dead and gone ancestress who adorned her gar-

ments with "eyelet" work and "scallops," and beautified her collars and under-sleeves with the same sort of embroidery as is used to-day. For our grandmothers had no other way of making their "lingerie," as we call it, beautiful, except by their own work, and much of it was so fine and delicate that one wonders how it could have been done by human fingers.

I know one family which has a christening robe and cap wrought by loving fingers for a baby who became a great statesman and passed out of life fifty years ago. It has a delicate scroll work amid flowers, leaves and tendrils and is exquisite, though yellowed by time.

The men in the days of old did not disdain embroidery, as is shown in a handsome linen shirt made for a wealthy Salem, Mass., merchant prince. It is of fine linen with a dainty embroidered ruffle, and with the same pattern on the collar and the cuffs. Not even a skilled worker to-day could reproduce such exquisite stitches, because a hundred years ago the children were taught its first principles at their mother's knee



Teaching the Mysteries of Needlework

and to do it with the greatest care. To hem, even a pocket handkerchief, was a task of no little moment. There was no sewing machine to run them off at almost lightning speed; each stitch was made with the greatest precision. The threads in the fabric were counted in the hemming, one took up two threads for a stitch, then left two and took up two more. The gathers, which are again used on gowns, meant equal precision and care.

"What a lot of time wasted!" exclaims a modern, hurrying woman, who never has time enough for anything. Yes, but the motto of our ancestors was, "Whatever is worth doing, is worth doing well," and the truth of it is shown by the articles they left behind them, many of which are as good to-day as they were a century ago.

Another old-time handicraft is the knitting of stockings by the women of the family, of fine wool and cotton for themselves and of coarser material for the men folks. For their own wear, for Sunday best, they were knit in various patterns, including the "open work" for warm weather.



Rug-making After the Manner of Colonial Times



Lace-making

Often for their wedding wardrobe (the word trousseau was not then used) these were of white silk or imported thread, and if the lover happened to be a sailor boy, a shell pattern was used. A rose pattern was another favorite, or a drop stitch. There is something fascinating about knitting and it takes some skill to shape a stocking properly.

This can never become a paying industry commercially,

as the machines turn out such good work; yet a girl while knitting is most attractive and Cupid is often a good paymaster though he uses needles instead of darts as a medium of exchange. Besides it is quite the fashion to knit golf stockings of coarse yarn for one's best beloved. Physicians often prescribe knitting to relieve nervous patients, so it can not be said that this handicraft is entirely lapsed.

The Poisons of Soils



CONSIDERABLE evidence has been accumulated during recent years to show that the cause of the failure of some soils to produce satisfactory crops may be ascribed to unfavorable conditions produced in the soils by the plants themselves. It is thought that during the growth of the plant certain unknown organic substances are given off which, when they accumulate in the soil to any extent, are harmful to the further growth of plants of the kind that produced them. It is possible that some of the benefits known to arise from systematic crop rotation may be explained on this basis. These harmful substances seem to be disposed of rapidly by certain soils, usually those in which organic matter is readily converted into humus. Other soils, usually marked by a lack of the brown carbonized organic matter, do not seem to possess this property of removing harmful products to such a degree. This idea is in accord with common experience, that dark-colored soils, well filled with organic matter, are very productive.

In connection with the study of these poisonous organic productions, it has been found that they may be destroyed or at least rendered harmless in a variety of ways. Barn-

yard manure or decaying organic matter, such as a green crop of rye or cowpeas, turned under, has a very marked effect in freeing the soil from them. Almost all of the common commercial fertilizing materials act more or less in the same way. Commercial fertilizers for soil improvement have, therefore, another value besides adding plant food. Thorough and complete airing of the soil will often destroy or overcome these poisonous substances. The beneficial effects of plowing and of thorough surface tillage are thus explained, in part at least, on the basis of the thorough aeration secured. When the same crop is not grown oftener than every three or four years on the same land the injurious substances a crop throws off seem to have time to disappear before the same crop is grown again; hence the benefit from crop rotation. When the soil is well supplied with humus there is seldom any trouble from this source, and the same crop may be grown year after year with good yields, though continuous cultivation of the same crop may invite injury from certain insects and fungous diseases which live over in the soil or in the remains of the crop and offer injuries to the soil against which it is not always possible to provide remedies.

The Cult of the Cactus

By S. Leonard Bastin



AFTER all it must be admitted that Cacti together with the allied succulents are plants of more than ordinary interest. Always quaint in their manner of growth, and exhibiting an amazing range of form in the different varieties, many of the Cacti in addition are productive of the most lovely flowers—blossoms which in form, color, and fragrance often surpass anything that could be imagined. Over and above all, almost without exception, Cacti are of simple culture, flourishing under conditions which any gardener can supply. A cool glass-house,

blooms of the Phyllocacti range through all shades of red and yellow down to the purest white, while the flowers are particularly perfect in form.

The Sea Urchin Cacti or Echinocacti are remarkable chiefly on account of their strange shape. Of course in the



Diminutive Cacti. The Smallest Potted Plants in the World

which in winter is heated to a moderate degree, will meet the needs of these plants in northern latitudes, while in more favored climes they will succeed out in the open.

It is generally supposed that Cacti, as a whole, flower only at the rarest possible intervals. This is a great mistake, for as a matter of fact many of the varieties blossom annually, and even twice in the year. Of all the groups, the Phyllocacti flower more freely than any others. These plants are distinguished by their flattened stems, and as all the species have received a good deal of attention from the florist within recent years there are many splendid varieties now obtainable.



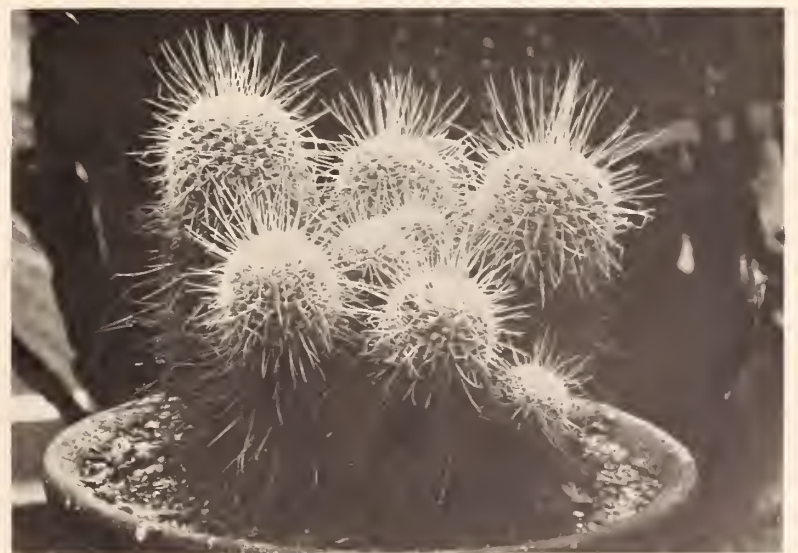
A Typical Cactus Cutting

The thanks of all Cactus lovers are due to the late Mr. John Nicolai, a German enthusiast who made it his special care to improve the Phyllocacti. Some idea of this specialist's interest in the matter may be gathered from the fact that when he died recently he left behind him about twelve thousand specimens of this particular group. The colors of the



A Fine Collection of Cacti Including a Splendid Specimen of the Giant Cactus

different members of the group there is a great diversity, but the general form is somewhat spherical, the plant as a rule being armed with dense masses of prickles. Many Echinocacti bear gaily colored flowers, but these are scarcely so finely formed as is the case in other groups, as for instance the Epiphyllums. All the kinds of this class are exceedingly floriferous, and bear great masses of bloom, each blossom of which is most elegant in design.



A Fine Echinocactus

The Old Man (*C. Senilis*)

West Indian Turk's Cap Cactus

Numbered among the group known as *Cereus* are many interesting species. First and foremost must be mentioned the giant of the whole family *C. giganteus*, a native of the Mexican deserts. As this plant under natural conditions will grow to the height of eighty or ninety feet it may be imagined that really large examples are out of the question in glass-houses. The Old Man (*C. senilis*) is a species always worth growing, as the plant itself is an object of great beauty at all times. A fine example of this variety is thickly covered with silken hair which strongly resembles the white locks of an old man. The most interesting of all the kinds which go to make up the genus *Cereus* is the "Queen of the Night" (*C. grandiflorus*), a plant which in habit is one of the most curious in the world. This species

bears large white blossoms, which are deliciously fragrant, and the strange part about these flowers is that they do not expand until between eight and ten o'clock in the evening, while they are quite over by three the next morning. Thus each particular bloom does not at the most last more than six hours, and is not to be seen except in the dusk or by artificial light.

The propagation of Cacti from seed is one of those things which require an immense amount of patience. Most of these plants are naturally slow growers, and the time needful to produce a flowering-sized plant from seed would in many species be as much as the span of a man's life. Most people will prefer to adopt the method of raising fresh plants from cuttings, and this is a very simple matter indeed. Practically any healthy portion of a Cactus will grow, and at almost any time of the year, if it be placed in some sandy soil and kept in a moist condition. Fairly large plants can be grown in a short time. The writer produced a splendid *Phyllocactus albus*, which blossomed magnificently in three years. Of course this may seem to be a long time, but it is really a very short period in the life of a Cactus.

A charming hobby, and one which is largely followed by German ladies, is the collection of miniature Cacti. As has been mentioned any part of a Cactus will take root, and this habit has been turned to account. Very small pieces of the succulent stem are rooted and then placed in tiny pots, scarcely so large as a thimble. With a little care not to over-water, these dainty plants will not increase rapidly in size, and yet will remain in a healthy condition, although they will not flower.



A Huge Specimen



A Giant "Old Man" Cactus



VENOMOUS INSECTS

· BY ·
RENÉ BACHE



RECENT investigations appear to show that it has been a mistake to suppose that the venom of the cobra was the most deadly animal-poison known. It now seems that there are multitudes of existing creatures much more toxic in proportion to their size. It is fortunate, indeed, that they are so small; for certain species of the warrior-ants of the tropics, for example, if greatly magnified in size, would be among the most dangerous of living things, because of their extreme ferocity, the severity of their bite, and the extraordinary intensity of the poison with which they are armed.

It is only of late that the poisons carried by insects have been studied, and thus it happens that all existing knowledge on the subject is extremely new. But, when the matter is investigated, it is surprising to find how extensively venom is utilized by animals of this class all over the world. Naturally, it is the large and conspicuous forms whose possession of this weapon chiefly attracts attention; and its formidable character may well excite notice when observation is directed, for instance, to such a creature as the tarantula-killer (a

species well known all over the southwestern part of the United States), which by its sting is able to paralyze the largest spider as quickly and completely as though an electric shock were administered.

In speaking of the "largest spider," one should realize that these arachnids—commonly called tarantulas in the Southwest, when referring to the great "trapdoor" species—occasionally attain a weight of three-quarters of a pound. A specimen of such size would easily cover the largest dinner-plate without stretching its legs unduly. There is at least one species in the tropics that catches and devours small birds. And yet the tarantula—which spins no web, but occupies a house built of mud, with a door set on a spring in such a way as to close automatically, showing no sign of the opening—has comparatively little venom.

All spiders are more or less venomous, and one species quite familiar in this country is extremely dangerous. It is commonly known as the black widow, and is occasionally found in outhouses, though ordinarily it lurks under logs and boards. In color it is jet-black, with a red spot on the under side of the abdomen. Though its body is hardly



A Scorpion (one-half natural size)
Also a Curious Bug of Prey (beetle) from Java



Bulldog Ant, Male Leaf-cutting Ant, Bad-smelling Ant, Driver Ant, Female Leaf-cutting Ant—all venomous

bigger than a pea, this arachnid will commonly attack human beings on sight—more especially in the autumn, when, after spinning her cocoon, the female broods over it like a bird over its young, and is very fierce in defense of her eggs.

The typical venomous spider possesses a poison-gland and a hollow tube through which the venom is introduced into the



A Bird-catching Spider of the Tropics—two-thirds natural size

wound made by the fang. This gland is situated much as in the rattlesnake, the poison-sac being attached to the root of the tooth by a small tube which conducts the venom down through the tooth. Such a similarity of structure between two animals so far apart in the scale of creation as the serpent and the spider, the purpose in both cases being the same—namely, to inject poison—is surely most remarkable.

Generally speaking, poisonous insects, like snakes, attain much greater size in tropical latitudes, and secrete venom in larger quantities. Thus, whereas most centipedes—a naturalist would say that a centipede is a myriapod, properly speaking, and not an insect strictly; but let that pass—are quite harmless, a few tropical species are exceedingly venomous. In addition, they emit an unpleasant acid-vapor from pores along the sides of their bodies, which, if it finds its way into a wound, is very irritating. But the notion, so widely entertained, that their legs are poisonous, leaving a trail as of fire when the creature runs over one's bare skin, is utter nonsense.

There is at least one species of tropical centipede, found in Africa, that is a foot in length—a truly formidable creature—and specimens fully two-thirds that size are frequently fetched to this country from Brazil in logwood. These animals, which are predaceous by habit, devouring snails and small crustaceans, are most commonly to be found beneath dead leaves or other such débris in the woods. In the poisonous members of the tribe the venom-gland is at the base of the jaws, which are capable of inflicting a nasty bite. It is suspected, by the way, that some sort of poison-apparatus is possessed by the common household myriapod (related to the true centipedes), which, if caught between bed-sheets or otherwise cornered, will bite, severe swelling and pain following the injury.

Fatal results have in many recorded instances followed encounters with scorpions, which in warm latitude sometimes attain extraordinary size—seven or eight inches in length, with powerful claws resembling those of a crab. Recent study of the subject has revealed the fact that the venom of these arachnids is contained in a small gland at the end of the tail, which terminates in a horny and exceedingly sharp point, called the “sting.” The animal carries its tail curled over its back, and when it wishes to fight snaps with it over its head, seldom misses what it aims at. When the sting penetrates the skin of the victim the poison is emitted through it by a contraction of the above-mentioned gland.

The scorpion is an extremely vicious creature, and its character is well portrayed by an Oriental myth, which tells how, on a certain occasion, one of these arachnids while on a journey came to the bank of a wide river and paused in perplexity unable to cross over, yet unwilling to return. A tortoise, seeing his situation and moved by compassion, took him on his back as a passenger, and was swimming toward the opposite shore, when he heard a noise upon his shell, as of something striking him. He called out to know what it was, and the scorpion answered: “It is only the motion of my sting. I know it can not injure you, but it is a habit which I can not relinquish.” “Indeed!” replied the tortoise. “Then I can not do better than to free so bad a creature from his evil disposition, and secure the good from his malevolence.” Saying which, he dived under the water, and the scorpion was drowned.

In the Tierra Templada of Mexico there is a locality known as the Valley of Scorpions, because of the extraordinary numbers of these creatures found there. It is said to be hardly possible to turn over a stone without discovering three or four wicked-looking specimens beneath. They are not large, as a rule, but are of a pale color and reputed very dangerous—the pale hue, according to popular belief at least, being a bad sign. A pity it is that more is not known about the venom of scorpions, which, it might be mentioned, are often fetched from the tropics to our own seaports in bunches of bananas. Their sting is evidently intended merely as a defensive weapon, and is not employed for killing the insects which they pursue for food.

In temperate latitudes ants, while frequently an annoyance, are never dangerous. Naturally, then, it is difficult for us to realize the perils which occasionally threaten human inhabitants of the tropics when they are obliged to fly for their



Electric-light Bug. An insect vampire said to suck the blood of fishes

lives from such insects, which, marching in great armies, are not to be resisted by any known means whatsoever. The so-called “driver” ants of Africa, for example, move in columns sometimes a mile in length, and they turn aside for nothing. If a house happens to be in their path, the inmates

have no choice but to vacate the premises, else they would be quickly killed and eaten. Cattle and horses are often destroyed, and even elephants and the largest serpents are assailed, their skeletons, picked perfectly clean, being left behind to mark the route pursued by the ants.

The driver ants are quite large—about an inch in length and thick-set. They have very sharp, sickle-shaped jaws, with which they literally bite out pieces of the flesh of a person or animal attacked. At the same time they thrust into the victim a poisonous sting which they carry at the extremity of the abdomen, being “business” at both ends. It is not surprising that, under such circumstances, assailed by hundreds of these formidable insects simultaneously, a human being, or the largest beast, should soon succumb. Indeed, a man, however armed, is absolutely helpless against them. The only good thing claimed in behalf of the drivers is that, when they go through a house, they kill every rat and bug on the premises.

In tropical America there are certain “robber” ants which are equally dangerous by reason of their ferocity, the severity of their bite and the deadly character of the venom they carry. They are vagabonds, occupying no permanent home, but leading a wandering life. Sometimes they move in phalanx formation, a marching army occupying a space of five or six square yards, in which the insects are densely massed. While the main body progresses in this compact order, skirmishers are thrown out, and here and there a small column leaves the phalanx to forage. Every living creature that can get out of the way does so. If a man, on a journey through the tropical forest, happens to encounter an army of these ants, he is instantly attacked. They swarm up his legs, drive their pincher-like jaws into his flesh, and sting with their tails. No creatures more ferocious can be imagined.

In the forests of tropical South America are predatory tribes of so-called “bad-smelling” ants, which are accustomed to attack and devour small mammals and insects. They are of exceptionally large size and glossy black; their sting is severe and poisonous, and their bite most unpleasant, their



The Tarantula-killer. Life size

jaws being big and sharp. In glands on the sides of the thorax they secrete an oily fluid, which, emitted as a means of defense when they are captured, diffuses a markedly disagreeable odor.

The famous leaf-cutting ants, which are widely distributed in the tropics, are poisonous, their stings being decidedly

severe. They live in colonies underground, and are a good deal of a nuisance, destroying cultivated plants and especially fruit-trees. The workers cut out pieces of leaves with their jaws, carry them to their nests, and chew them up to make mushroom-beds. When thus engaged, passing over the ground in numbers, they look as if they carried little um-



A Nine-inch African Centipede

brellas over their heads. The beds prepared in the manner described produce a tiny species of mushroom, which, when it has reached a certain stage of ripeness and succulence, is fed to the young ants. This fungus, by the way, has been cultivated artificially in the laboratory.

In Australia the inhabitants are much afraid of the sting of a certain species of ant, known as the bulldog, which is said to be painful and even dangerous. It is a predaceous insect, found nowhere except in the island-continent, and commonly preys on caterpillars and beetles of various kinds. Its bite is quite severe, and with such determination does it hold on that the jaws retain their grip even when the head has been pulled from the body—whence the popular name bestowed upon the creature.

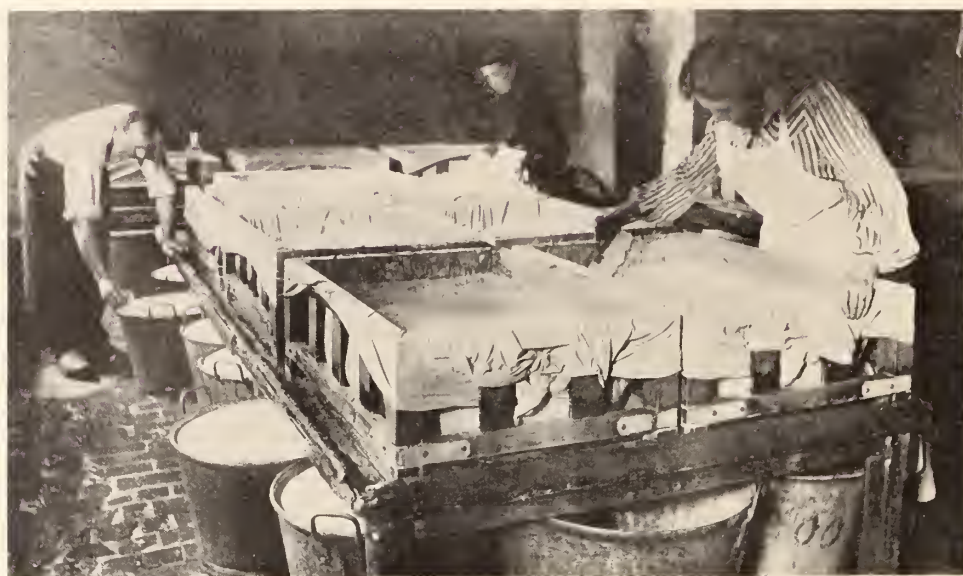
A venomous insect that causes not a little unhappiness to human beings in the southwestern part of the United States is popularly known as the “great, big bedbug.” The term is pretty accurately descriptive, inasmuch as it is to all intents and purposes a bedbug of exaggerated size, nearly an inch in length, with a flat body, a pointed head, a strong beak, and a “buggy” odor even more offensive than that of the familiar household insect. Worst of all it has wings, and flies at night, being attracted to open windows by lights. Coming originally from Mexico and Texas, it is making its way steadily eastward and northward, and has already invaded the Mississippi Valley. Apparently, it is merely a question of time when it will invade the East. It passes the winter under the bark of trees or beneath stones, and attacks human beings only in the spring.

Within the last few years there has been much to-do over the “kissing-bug.” It is not a definitely descriptive name, being applied seemingly to a number of different species of insects which inflict more or less venomous bites. The biggest and worst of the kissing-bugs, however, is reasonably plentiful in Texas and New Mexico. One of its pleasing habits is to crawl beneath the blanket of a person camping out, or otherwise sleeping in the open air, and to insert its beak into his person, thereupon proceeding to suck until its abdomen is distended to the size of a small hen’s egg. This, however, is not the worst of the injury, which is liable to produce a bad sore, difficult to heal.

One of the most remarkable of predaceous insects is the familiar “electric-light bug,” which eats young fishes. It is a huge fly, and before the introduction of electric lights was supposed even by entomologists to be decidedly rare. It is a diver, and its habit is to plunge into a pond, seize a little fish, and suck its blood. The tarantula-killer carries at the end of its tail a sting, which is connected with a poison-gland. It pounces upon the spider, paralyzes it with a blow of its weapon, and then drags it to its burrow, where it serves as food for the young of the captor.



1—Cylindrical Cooler



2—Coagulation of the Milk

How Soft French Cheeses are Made

By Jacques Boyer



PROBABLY as much cheese is made in France as in any other country, and French cheese makers have succeeded in producing many varieties of this article of diet, as a result of competition and the endeavor to meet the varying tastes of their fastidious customers, who hold, with Brillat-Savarin, that "a dinner without cheese is like a beautiful woman with only one eye." In this article we shall confine our attention to the principal soft cheeses which are marketed either in the fresh state or after undergoing the process of fermentation which is known as "ripening."

In order to obtain so many sorts of cheese from the same raw material—whole or partly skimmed milk—it is necessary to subject the milk to various treatments, differing in the temperature at which the curd is formed and the methods of shaping and ripening. Suppose, then, that we visit an up-to-date cheese factory and see what is done there.

Usually the factory collects milk from the surrounding country, either sending for it to the farms two or three times a day or receiving it from the dairymen, who bring it to the factory in tin cans containing about 20 quarts each. In summer, the milk is cooled immediately after its arrival at the factory, as the microbes which spoil milk do not thrive at low temperatures. The simplest method of cooling consists in setting the cans in a tank of cold water, but special refrigerating devices are employed in large factories. These coolers, which are of various forms, are so arranged that the milk flows downward over the outside, while a current of cold water moves in the opposite direction inside of the thin wall. The cylindrical cooler, shown in Figure 1, has a spirally corrugated surface of tinned copper and the water flows between this and an inner smooth cylinder of sheet iron.

As the milk leaves the cooler it is caught in vessels which are emptied into a great mixing vat in order to secure uniformity of the raw material.

If the so-called "Swiss" or double cream cheese is to be made, cream is added to the milk in proportions varying from one-sixth to one-third of the total volume. The milk and cream having been thoroughly mixed in a tinned iron

vessel the curd is formed at a temperature of 59 or 61 degrees F., by the addition of rennet, a substance obtained from the fourth stomach of young calves (Fig. 2). For double cream cheese the rennet is diluted with water and the formation of the curd occupies about twenty hours. In consequence of the slowness of coagulation the curd is very rich and creamy. Very little rennet is required—about one part to 10,000 parts of milk.

When the coagulation is complete men lift the curd with large tin ladles and lay it on clothes, which are then folded so that they resemble oddly shaped pillows, laid in a row on a draining table and covered with a board on which large iron weights are placed in order to press out the whey (Fig. 3). This draining process usually occupies fifteen hours. The clothes, or bags, are then laid on a table and opened and the curd is removed with small wooden scrapers.

To give the paste the desired consistence, it is next kneaded, either with the hands, or (with the addition of a little cream) in machines with smooth rollers, one of which is shown in operation in Fig. 4. The kneaded mass is collected in vessels lined with cloth and paraffined paper, allowed to dry for a time and then molded into the desired form. The mold (Fig. 5) is composed of a number of small cylinders of tin, open at both ends, and soldered to a tin plate. The mold being set in a perforated board the molder lines the cylinders with strips of paper, presses the mass into their open mouths and then lifts the mold, leaving the little cheeses, wrapped in paper, on the board. After they have drained sufficiently they are packed and shipped. "Swiss" cheeses made in this particular manner are called "Gervais" cheeses from the name of the manufacturer who first made them at Ferrières-Gournay in the department of the lower Seine.

"Bondons," "Malakoffs," and "Petits-Carrés" (little squares) are other varieties of "Swiss" cheese, produced by a similar process, but of harder texture due to the greater pressure to which the curd is subjected.

But these double cream cheeses, which are sold chiefly in summer and contain a large proportion of fatty matter, soon become rancid. They may be preserved by applying two per cent. of salt, with the hand or salt shaker. There are also

"half salt" cheeses (Fig. 10), which keep and ship well. Whatever the quantity, the salt should be perfectly dry in order that it may be distributed as uniformly as possible.

A great deal of attention is now given in French commercial dairies to the manufacture of "ripened" cheeses with superficial molds. The most popular sort is "Brie," which has long been in high favor with all classes of consumers.

As long ago as 1407, Charles d'Orleans used to present his friends with Brie cheeses, and at the end of the sixteenth century, according to the chroniclers, Henri IV relieved the

called "dressage," is the shaping of the cheeses in tinned iron molds (Fig. 6). With a skimmer the workman cuts horizontal slices, thin and uniform, from the curd and deposits them unbroken in the molds. The latter are placed on rush mats which rest on wooden planks.

Twelve hours later the cheeses, now considerably diminished in thickness, are transferred from the molds to "éclisses." These are wide bands of sheet zinc, perforated to permit the escape of the remaining whey. One of these is placed around each mold and its ends are fastened together by means of a button on one end and one of a number of slits in the other. When the mold is lifted the cheese remains securely clasped by the zinc band. On this a dry mat is now laid and covered with a plank. The cheese, with its band and both planks and mats, is then inverted and the wet mat and plank, which are now on top, are removed. Ten hours later the cheese is turned again in the same manner and is salted by removing the band and sprinkling salt over the top and side. Ten or twelve hours after the first salting



4—Kneading the Mass with a Roller-kneading Machine

tedium of the siege of Paris with this "royal cheese" of which he was especially fond.

The manufacture of Brie cheese comprises six operations; renneting, shaking, draining, salting, drying, and ripening.

As curd is made only once a day it is usually necessary to heat the milk in wooden or copper vats, with steam pipes, to a temperature of from 91 to 106 degrees F. The milk is then siphoned into tinned iron troughs for curdling; sometimes the farmers add 10 per cent. of skimmed milk from the preceding milking. This addition facilitates draining and consequently increases the hardness of the curd and it also favors the growth of the superficial mold. Three teaspoonfuls of rennet suffice to coagulate 500 quarts of milk in two hours.

The making of the curd is a delicate operation and one which greatly influences the quality of the finished product. If the coagulation is too slow the cream rises to the surface and if it is too rapid the result is a dry cheese.

The morning's milk, which was frothing in the pails a few hours ago, is now transformed into a white gelatinous mass of curd, mixed with whey. The next operation, technically



3—Removing the Whey from the Curd by Pressure

the cheese is turned once more and when the whey has ceased to exude the band is finally removed and the second face is salted. The cheeses are then laid on shelves, on dry straw mats, and are turned night and morning for two days, after which they go to the drying room, a large and well ventilated cellar kept at the temperature of 12 degrees C., and furnished with wooden shelves on which the cheeses are laid.

Here the ripening process commences. In a short time a downy white mold, *Penicillium candidum*, appears on the surface of the cheese. This fungus destroys the lactic acid and prepares the way for other organisms which complete the ripening process in the ripening cellars to which the cheeses are transferred two weeks later (Fig. 7). Here the cheeses



5—Compound Molds Used in Making "Swiss" Cheese



6—Shaping and Draining Brie Cheeses

soften under the influence of *Bacillus firmitatis*, which has been studied by M. G. Roger. The colonies of this highly colored bacillus appear first as yellow, later as red spots and its secretions check the development of the white *Penicillium*, which ceases to grow while the red colonies become diffused through the entire substance of the cheese, which they convert into an elastic paste of deep cream color. Finally a third marauder, the *Micrococcus meldensis*, discovered by M. G. Roger, comes upon the scene and stops the work of the *Bacillus firmitatis*, which, but for this intervention, would soften the creamy cheese too greatly and would ultimately cause "runing," that nightmare of cheese makers. The work of these infinitesimal organisms, therefore, is divided into three stages. The first germ destroys the lactic acid; the second, more vigorous, drives out the first; and the third, in consequence of its production of diastases, plays the part of moderator and preserves the cohesion of the mass. But these industrious micro-organisms have an enemy, the *Penicillium glaucum*, or common green mold, which sometimes disturbs their mysterious operations (Fig. 8). The green or

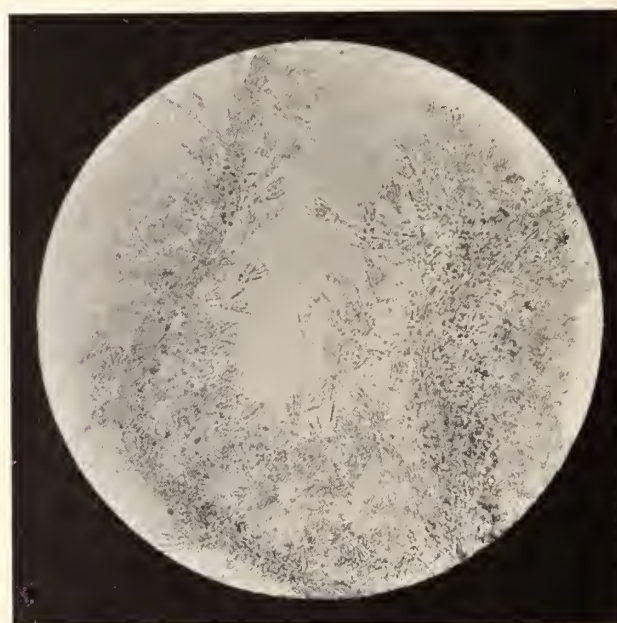
the ripening cellar and all the utensils employed. Tubs, molds, zinc bands and skimmers are washed with boiling soda lye; the cellars and drying rooms are whitewashed and fumigated with sulphur.

The principal wholesale market for Brie cheeses is at Meaux (Seine-et-Mame) where sales take place weekly, on Saturdays. Brie cheeses are of various sizes; the "grand moule" (Fig. 7), averaging 16 inches in diameter and weighing 6½ pounds; the "moyen moule," 12 inches and 4 pounds, and the "petit moule," or Coulommier, the diameter of which varies from 5 to 10 inches according to locality.

To the same class of products belongs the cheese first made at Camembert, in the department of the Orne, which differs



7—A Brie Ripening Cellar. The Workman is Shown Turning a Large Cheese and Transferring It to a Fresh Mat

8—*Penicillium glaucum*, Enlarged One-hundred and Eighty Times. This Fungus Causes "Blues" in Brie Cheese

from Brie only in being smaller. The curd is made and shaped and the cheese salted and ripened almost exactly as described above (Fig. 9).

Finally, mention should be made of washed cheeses, which differ from the foregoing varieties by being ripened without the aid of fungous growths. The principal types are Gémomé, Pont L'Évêque and Livàrot.

In the manufacture of Gémomé the milk is curdled at a temperature of from 81 to 90 degrees F, so that coagulation is completed in two hours. The curd is then cut into pieces measuring three-quarters of an inch every way and allowed to stand for half an hour, after which the whey is removed by means of a colander with small holes. The curd is then put into tinned iron molds which rest on wooden gratings supported by planks. When the curd has settled well down in the mold five or six hours after filling, the mold is inverted on a dry mat. In the evening this operation is repeated and on the following day the cheeses are transferred

black spores of this fungus give the crust of the cheese a tint which lowers its market value. Brie which is affected with this malady, which the manufacturers call "the blues," also acquires a bitter taste. To resist the invasion of this dangerous cryptogam it is necessary to disinfect thoroughly



9—Salting Camembert



10—Shaping "Half Salt" Cheese by Hand

to forms of less height. At night they are turned again and on the third day salt is applied to the rim and one face and, twelve hours afterward, to the other face. The Gémomé cheeses are then sent to the drying-room where they remain two or three days, after which they are turned once more and taken to a cellar kept at a temperature of 54 or 55 degrees F. Here they are turned and wiped with a cloth wet with warm brine every other day. They gradually acquire a reddish tinge and at the end of two months the ripening is complete. According to M. Charles Martin's excellent work on *The Dairy* (1904) the size of Gémomé cheeses has been reduced in recent years. Originally they weighed from 4½ to 11 pounds each.

The best Pont L'Evêque cheeses are made in the valley of Ange. Coagulation is effected in twenty minutes at from 85 to 104 degrees F. The whey which covers the curd is then removed and the curd is cut with a wooden knife and placed to drain on reed mats called "glottes." The curd is covered with cloth to keep it warm. It is then put into square molds which are turned ten times during the first half hour, after which they are placed on fresh and thoroughly dry mats and turned five or six times more in the course of the day. At the end of forty-eight hours, the cheeses are

taken from the molds, salted, and placed on gratings covered with straw in the drying room, where they remain four days, and are turned daily. Then they go to the ripening cellars, where they are placed on edge, in contact with each other, in order to prevent the development of fungous growths. They are turned every second day and become ready for market in three weeks.

Livàrot cheese is made from partly skimmed milk, coagulated in an hour and a half at from 85 to 104 degrees F. The curd is cut with a wooden knife and placed either on clothes or on reed mats where it is allowed to drain for a quarter of an hour. During this time the curd is broken up with the fingers into particles of the size of a grain of wheat. It is then put into tinned iron molds, 6 inches in height and diameter, which are turned at intervals until the cheese has become solid. The cheese is then salted and is allowed to drain for five days longer. After a sojourn of a fortnight in the drying room it goes to the cellar, where it is turned three times a week and wiped, each time, with a cloth saturated with brine. Finally it is wrapped with sedge leaves to keep it in shape. The ripening process occupies from three to five months, according to the size of the cheese. Before being shipped, Livàrot cheeses are colored superficially.



Renovation of Worn-Out Soils



POVERTY in soil may be due to poor texture, unfavorable structure, lack of humus, deficiencies in the amount, form, or proportion of plant food, and to the presence of harmful mineral and organic compounds. With the exception of nitrogen, most soils, even those that are very poor, usually contain an abundant supply of plant food, though sometimes other elements are lacking or are present only in those forms that plants can not use.

To increase fertility we must improve texture and add plant food and humus. Tillage may do much to improve texture, but tillage alone will not suffice. We must add humus. In doing so we add plant food, and make the soil more permeable to air and water.

There are three general methods of supplying humus to the soil. The first and best is the addition of stable manure. When properly managed it adds large quantities of both plant food and humus. But manure is not always available. When such is the case, the best thing to do is to make it available. Raise more forage, keep more stock, and make more manure. But this takes time and capital, so that other means are sometimes necessary. When stable manure is not to be had, we may plant crops for the purpose of turning them under, thus adding large quantities of humus at comparatively little cost. Plowing under green crops is called green manuring. Under certain conditions this is an excellent practice. Crops adapted to this purpose and the method of using them are discussed farther on.

A third method of adding humus is to grow crops like clover and timothy. These crops are usually left down for two years or more. During this time their roots thoroughly penetrate the soil. Old roots decay and new ones grow. When the sod is plowed up, more or less vegetable matter is turned under. This, with the mass of roots in the soil, adds no small amount to the supply of humus. Another advantage from the cultivation of clovers and alfalfa is found in the fact that they are deep-rooted plants, and when their roots decay they leave channels deep into the earth, thus aiding in the absorption of rains and letting in air to sweeten the soil.

Properly handled, stable manure is by all means the best remedy for poverty of the soil. Very few farmers handle manure so as to get even as much as half the possible value from it. There is probably no greater waste in the world than in connection with the handling of manure by the American farmer. Five-eighths of the plant food in manure is found in the liquid part of it. This is usually all lost. Not only is this the case, but the solids are piled beside the barn, frequently under the eaves, where rains wash away much of their value. Fermentation in these manure piles also sets free much of the nitrogen to escape into the air.

W. J. Spelman, of the Department of Agriculture, states that he has seen few farmers who had no apologies to make for their methods of handling manure. He has seen one, however, who believed he was getting every particle of value

from the manure it is possible to get. The farm in question was a dairy farm, and the methods used are not applicable to all types of farms. The cows were kept in their stalls the year around. Every day in the year they had either silage or green stuff from the fields. They also had enough dry hay to keep the manure from being too washy, and what grain they needed. Behind each row of eight cows was a ditch eighteen inches wide and eight to ten inches deep. This ditch was cleaned thoroughly every morning after milking hours. After the cleaning, a small quantity of wood ashes was sprinkled in the ditch to dry it; then a layer about one and one-half inches deep of rotten sod or leaf mold was added. Next morning the contents of the ditch were lifted into a cart by means of forks, and the cart went immediately to the field where the manure was scattered. In exceptionally bad weather the ditch was sometimes left for two days. This farmer always had a place to put manure.

This method may not be applicable to all dairy farms, but it is the ideal to be followed as closely as circumstances will permit. If there is no sod on which to haul manure in wet weather, it is well to have a cemented pit under cover, in which to place the manure until it can be hauled to the field. When the ground is frozen in winter, manure can be spread on almost any field. Generally speaking, it should be spread on the field next to be plowed. The above method of handling manure gets both liquids and solids on the land. If any leaching occurs, let it be into the soil where the leaching will do the most good. Recent investigations indicate that when liquid manure is applied to the soil, the plant food in the manure is absorbed and held in the soil, and is not immediately washed out if not made use of by the plants.

The practice of plowing under green crops as manures is not very general, and we do not know as much as we should like to know of the value of this method. Some crops do not thrive when sown on land into which a green crop has recently been plowed. This is particularly true of those crops that like a solid seed bed, or which are sensitive to acids. When a heavy green crop is plowed under, it goes through a fermentation not unlike that which occurs in a barrel of kraut, resulting in the formation of a considerable amount of acid.

Alfalfa is particularly sensitive to acids, and it also requires a compact seed bed. It is unwise, therefore, to green-manure the land just before seeding to alfalfa. The cereals, particularly wheat and rye, do not do well after a green manure. On the other hand, potatoes and corn are not seriously injured by green manures. In fact potatoes are benefited by them, since the resulting acid condition of the soil prevents the development of potato scab. This, of course, is a consideration of positive value.

Generally speaking, when it is desirable to plow in a green crop before fall-sown crops, it should be done a month or six weeks before planting time, and the soil should be harrowed frequently or otherwise compacted. A few good rains will wash out most of the acids and aid in compacting the soil. The acid may also be counteracted by adding lime.



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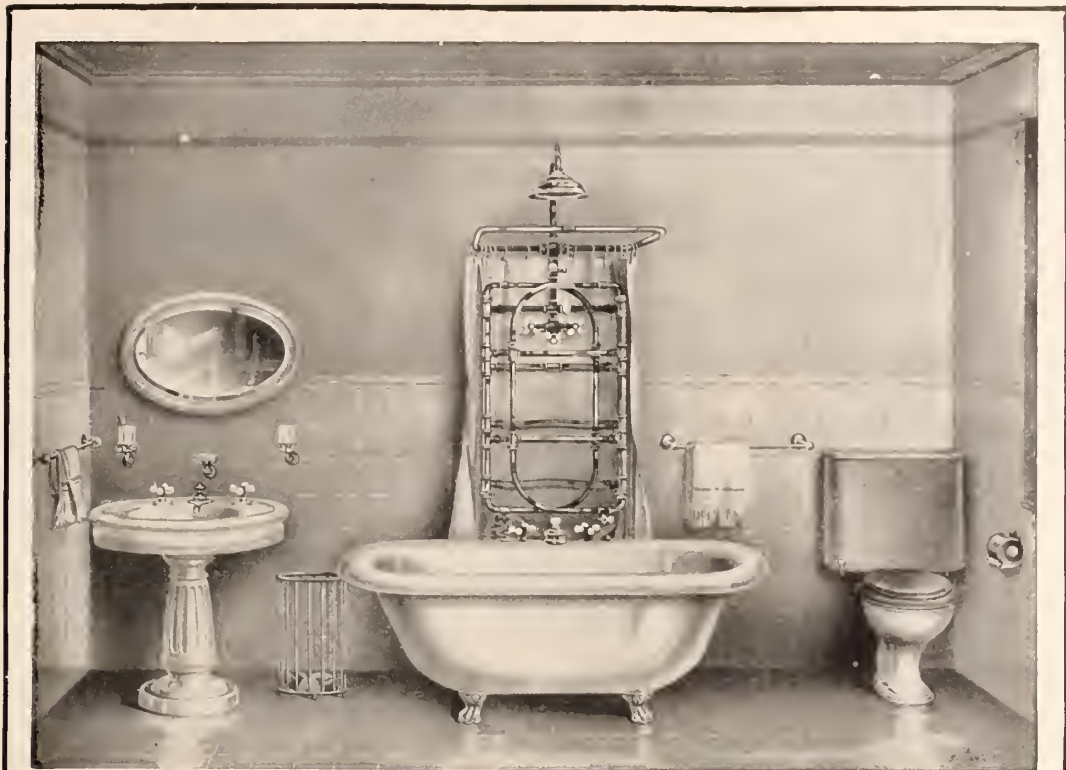


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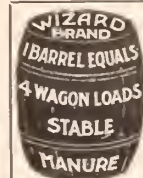
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By Eben E. Rexford

SUCH plants as have completed their work for the season, like the chrysanthemum, and the fuchsia, should go into cold storage for winter. If the cellar is cool and dry, and a portion of it can be made dark, it is the place for them. The aim should be to keep the plants dormant. If heat, moisture and light are given, they will keep on growing, and the result, next season, will be a plant that is lacking in vital force.

Before putting chrysanthemums away, cut off all the top; no portion of this will be of benefit, hereafter, as the growth for next season will all come from the sprouts sent up from the roots, in spring. Do not cut back fuchsias now, as most of the new growth of another year will consist of branches sent out along the old stalks.

Water these, and other plants of similar habit, when they go into the cellar, but give none thereafter, unless they seem to be getting very dry at the roots. It does not matter if they lose their foliage. This is what deciduous plants do in the open ground and we are trying to imitate natural conditions, as far as possible.

Tuberous begonias, gloxinias, and achiemenes, are most safely wintered by drying off the roots in the pots they grow in during summer. Withhold water until their foliage ripens and falls off. Then set the pots away without disturbing the roots in any way. Keep them away from frost. Give no water. It does not matter if the soil becomes as dry as dust. The tubers will remain plump and firm, and be much less likely to decay than would be the case if they were taken out of the soil and stored away in boxes or drawers. Those kept out of the soil generally dry up and wilt, if they do not rot.

Most window-gardens are injured by trying to grow too many plants in them. Grow only as many as you can give ample room. A few plants, well developed, will afford vastly more pleasure than a large number of inferior ones. And a few plants, so disposed that they can display themselves effectively, on all sides, will always attract the attention of plant-loving visitors.

Geraniums will be coming into flower this month, if given proper care. They should be kept on the dry side. Too much moisture will induce souring of the soil, and that means, later on, diseased roots. Give them plenty of light. Turn at least once a week, to prevent them from becoming one-sided by being drawn toward the glass. If any branches seem inclined to get the start of others, nip off the ends promptly. It will be necessary to do this from time to time, if you would keep your plants shapely and symmetrical.

As the growth of your geraniums increases, give frequent applications of some good fertilizer. Do not overdo matters and give enough to force a rapid, weak growth. If your plants are sturdy and vigorous, be content with that. There is sure to be a reaction from a forced development.

If the leaves of any of your plants turn brown at the edges, or show yellow spots on their surface, and, after a little, become dry, and crumble readily under the hand, you may suspect the presence of a fungoid disease. Insects will not affect plants in this manner. Some plants, like the ivy-leaved geranium, will show marks on the under surface of the foliage that looks as if an insect had eaten into them, and left a scar. This is simply one phase of fungus effect. The remedy for the trouble is Bordeaux mixture. This fungicide can be prepared at home, or it can be bought in cans or jars, of seedsmen, ready for use by diluting

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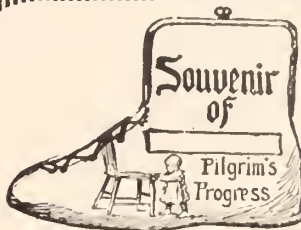
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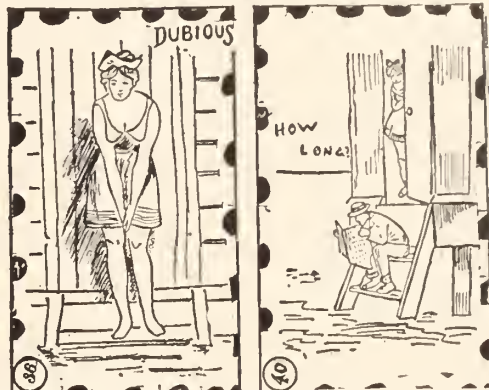
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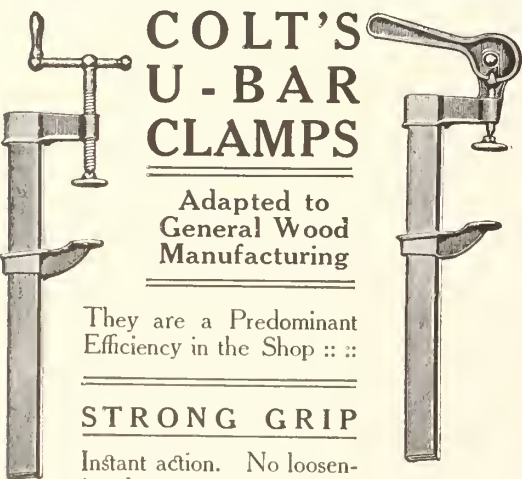
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it with water. Begin the application of it as soon as you have reason to suspect the presence of fungus, and keep up its use until your plants are free from it. This can be told by their leaves taking on the old, healthy dark-green color, and showing no signs of blight about their edges. It is well to go over the plants daily, and remove every leaf that begins to show discoloration. All diseases of a fungoid nature spread rapidly in the dry, warm air of our living-rooms. Burn the foliage taken from the plants.

Look at your potted bulbs from time to time. Turn some of them out of their pots to be sure roots are being developed. If the soil seems pretty dry, give enough water to moisten it evenly. Keep the light away from the place in which your bulbs are stored, as this will have a tendency to encourage top-growth.

If aphides annoy the plants, make use of the solution of ivory soap frequently advised in this department. If the mealy-bug is found make an emulsion by adding kerosene to soap, melted, and agitating it rapidly until union takes place. A white, jelly-like substance will be the result. Here is my formula for the preparation of this insecticide:

- Ivory soap 1/4 pound
- Kerosene 1/2 gallon
- Soft water 1/4 gallon

Shave the soap finely, and put it into the water as soon as the latter comes to a brisk boil. When the soap has liquefied, remove it from the fire, and add the kerosene. Churn the mixture with a large syringe, such as florists use in spraying plants, or a force-pump. There will be a perfect union of soap, oil and water if the mixture is churned rapidly enough. For the mealy-bug, use one part of this emulsion to twenty parts water.

For scale, one part emulsion to nine parts water.

Apply with a sprayer, taking great care to have the mixture get to all parts of the infested plants. Be sure, before making an application, that there is no free oil on its surface, as this will injure the foliage. If any is found, dip it off with a spoon.

This insecticide can be kept for an indefinite time, by putting it into bottles and keeping them well corked. Keep them away from the light.

A correspondent asks if I would advise the application of castor oil to the roots of palms, to increase growth, and to their foliage, to secure glossiness.

I would not. There is no element of plant-growth in the oil. If you apply it to the roots of a plant, it repels moisture and disease is almost sure to set in, as a natural consequence. If you apply it to the leaves, their pores, their breathing-surface will be clogged by it, and very soon you will see the effect in yellowing foliage. To encourage growth, make use of reliable fertilizers. To give the foliage of smooth-leaved plants a glossy look, wash with water containing a little sweet milk.

Another correspondent asks: "Which is best for plants, hard or soft water? Should it be warmed in winter?"

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"Would you repot plants in winter?" is a question I have been asked to answer in this department. Certainly, if they need it. A plant should have the same attention in winter that is given at any other season of the year. When a pot becomes full of roots, and the plant must receive a check unless it is given more space for development, then is the

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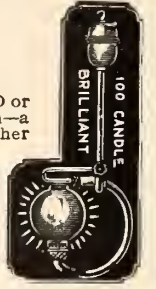
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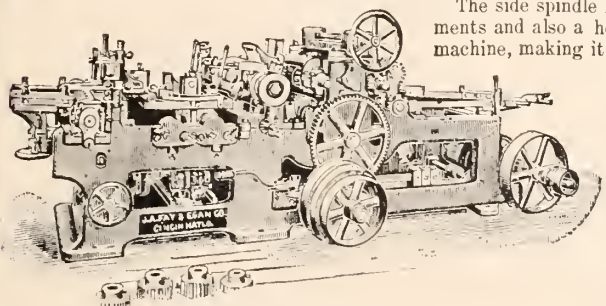
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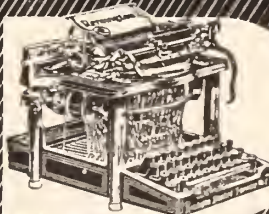
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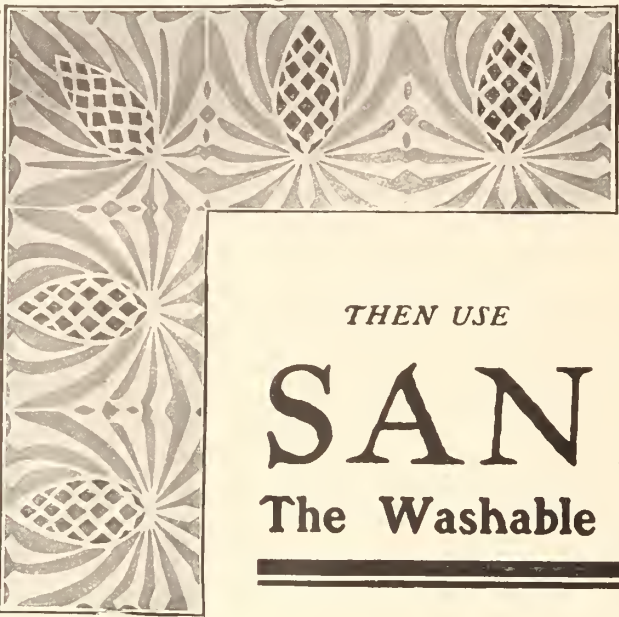


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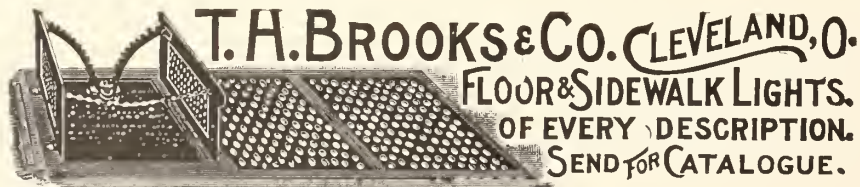


time when a shift should be made, be it winter or summer. And the sooner it is made the better.

In order to be prepared for work of this kind, every owner of a window-garden ought to lay in a supply of potting-soil, in fall. It is not too late to do this now. Turn over some sward in pasture or roadside, and scrape away that portion of it which is filled with grass-roots. Add to this about one quarter its bulk of good garden loam, one quarter old, thoroughly decomposed cow-manure, and one quarter coarse sand. Mix well. You will find that nearly all plants adapted to culture in the window-garden will grow finely in this compost.

Those who are fond of plants with fine foliage, but who have tired somewhat of palms, from seeing so many of them, generally in varying degrees of ill-health, will find the araucaria, or Norfolk Island pine, a most attractive plant, and one which can be grown well in the window if care is taken to keep the red spider from injuring it. It is an evergreen, having foliage something like that of our native hemlock, and something like that of the balsam—a sort of combination of both, yet not exactly like either. Its branches are produced in whorls, generally numbering five to each whorl, but sometimes having eight or ten. A vigorous plant will grow about three whorls in a season. Where the branches in a whorl number five, the effect, as you look down upon the plant, will be that of a perfect five-pointed star, hence one of the popular names of the plant, star-pine. It grows well in a soil of loam and sand. Water moderately, and do not use fertilizers very generously if you want to keep your plant from outgrowing the window-space. Shower it at least once a week—three times a week would be better—to keep the red spider from injuring it.

Those who have never grown the hibiscus for winter flowering, have made a serious mistake. True, it blooms most freely in summer, if you allow it to. But if you keep it pretty nearly dormant then, and cut it back well, you can reverse the natural order of things, and force it to bloom in winter. I have two varieties, one a crimson, the other a soft peach-color, which bloom for me from November to May. They have not been repotted for several years. In spring I cut away nearly all the old growth. I keep them rather dry until mid-summer. By that time, many new branches will have started. Then I remove as much of the old soil as I can without disturbing the roots, and replace it with a fresh loam into which some bone-meal has been mixed. The plants grow sturdily until fall, on this food, and will have completely renewed themselves by the time it is necessary to take them into the house. As soon as buds show, I begin the use of liquid fertilizers. Treated in this manner, my plants are excellent as winter-bloomers. Their flowers are short-lived, it is true, lasting only for a day—but there are so many of them that the effect is always satisfactory. The rich, glossy foliage of the plant greatly enhances its beauty. The flowers of the crimson variety are as large as those of the garden hollyhock, which they closely resemble in form. The peach-blow variety has smaller blossoms, but they are more double than those of the other, and are generally more admired on this account. A great many persons have complained to me that they "had no luck" with the hibiscus. It was always dropping its buds. Mine never do so. I feel sure there need be no trouble of this kind if perfect drainage is given. Without good drainage, the soil is likely to sour, and when this happens, you may expect your hibiscuses to drop every blossom before it is fully matured.



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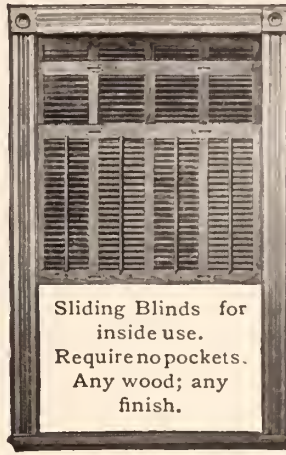
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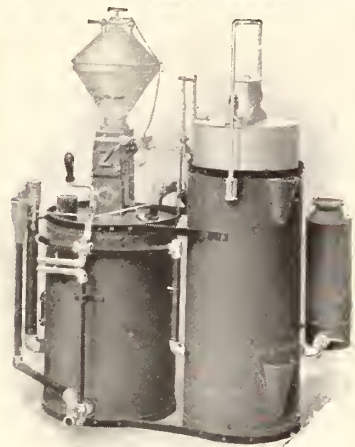
This must have been apparent from a perusal of the preceding papers in this series. There is no place for decoration in a kitchen as it is understood in the other parts of the house. Neither walls nor ceiling, windows, doors or floors offer any opportunity for decorative applications such as are made as a matter of course elsewhere.

Yet the kitchen should have a certain decorative effect. It should be a pleasant, cheerful apartment. Much work and heavy work is done within it, and the burden of all labor is lessened by being performed in agreeable surroundings. The room must be pleasant to go into and be pleasant to stay in. It must be pleasant to work in and, if possible, a pleasant place to rest in—the cook will use it for that purpose from time to time, and perhaps the other servants. In many houses it is a composite room, used for many different purposes, used all day and every day. Everything which tends to make it agreeable is a help in every way, and will greatly repay any expense incurred in obtaining this effect.

A dainty, delicate, refined room a kitchen can rarely be. The work to be done there is too various and too heavy for any such qualities to be desirable or possible. It is a room which must not only be kept clean, but which contains every possible aid to cleanliness. This is as far as it is possible to go toward refinement, and it is quite far enough, as those who have labored with refractory servants in dingy kitchens will be aware.

If the room is not agreeable by position and construction it behooves the mistress to do what she can to relieve these drawbacks. If the walls can not be white and bright they can at least be clean and covered with a material or coating that permits ready cleaning and which entails no especial hardship in washing them down. If it has been built under personal supervision it should have rounded corners, the windows should open freely from top and bottom and should be ample enough to freely light the room. It should be a part of the required work that the range or stove be kept well polished, and porcelain sinks and well-constructed, well-covered tubs will add greatly to the desired effect. There is no opportunity and no need for graceful furniture; there are other rooms in which such pieces have their proper place; but such furniture as is used should be well made, plain and straightforward, and thoroughly adapted to its use. With all these things duly considered a very considerable step will have been taken toward giving the kitchen a decorative effect, speaking kitchenly.

The dresser and cupboards, the closets and racks should be of the same wood and should be neatly hung and placed. The various utensils should be kept in an orderly manner, the different sorts together in one place and separated from those of another sort. It will be found an advantage to keep as many as possible within doors or in drawers. Every exposed vessel means another object to clean and dust,



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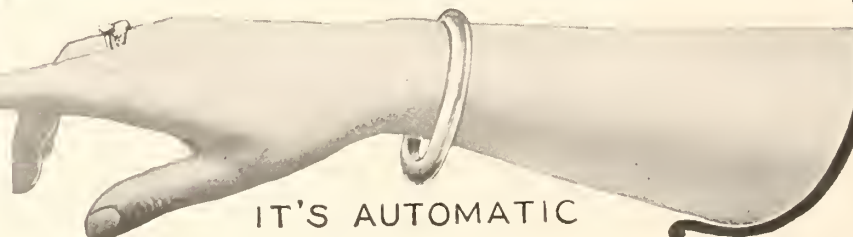
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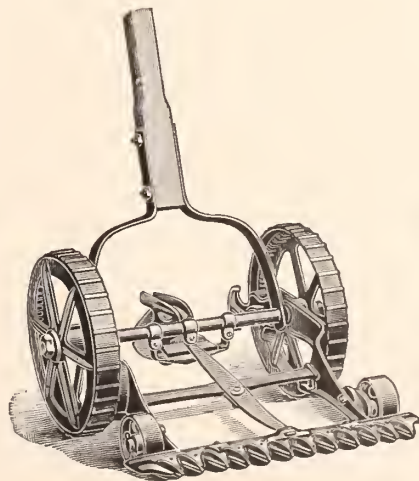
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There are kitchens and kitchens. There are real kitchens and theoretical kitchens. There are kitchens of real life and kitchens of fiction. There are old-time kitchens and kitchens of modern days. The single common point of all these rooms is their intense difference. The kitchen of real life is something very different from the fictional kitchens with which our lady novelists beguile the attention of their readers. The old-time kitchen we know of in reality because a few have survived to our own day. The real kitchen we have always with us in amazing variety; the theoretical kitchen we read of with wonder and wish it could be realized.

The kitchen hung with brass pots and jars; the dressers lined with rare china-ware—there may be such rooms but they are not the kitchen of the every-day house. There are mistresses that rejoice in their kitchens and spend much of their time in them—but the women one knows would rather leave them to their servants and spend their time in a more agreeable fashion. As for the "model" kitchen every one knows that it is for exhibition purposes only; no food is cooked within it, no labor is done there; perhaps half the things no one ever hears of.

The more's the pity; for these "model" rooms are highly useful as object-lessons, and may be profitably studied by almost every one, even if half the devices are unknown and are never out into practical use in one's own kitchen. And so the tale runs on; the adviser occupying a different position from the actual worker, and she in her turn having a different point of view from the mistress.

A problem is immediately presented whose solution can be found only in the points where all these persons come together in common. A kitchen can never be a cut-and-dried apartment, in which everything is prepared according to rule and in any number of which an identical equipment can be found. There is not only room for individuality here, but individuality is demanded and necessitated by the necessities of the case.

The decorative aspects of the kitchen form some of the problems which come under this head. A good deal can be done by using utensils of one color or of one of a series of related colors. The use-value of these things, in a general sense, is identical, but the decorative value is variable, and the appearance of the kitchen will, in a large measure, depend on what is put into it. If that is good and seems good a good result will follow, and when that is reached about as much has been done in obtaining a decorative effect as it is possible to do.

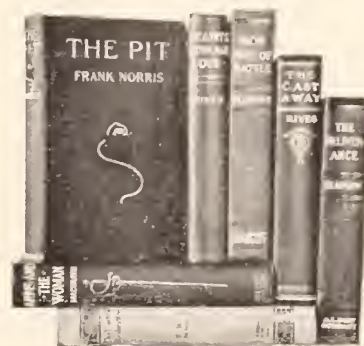
A final point, and one of some difficulty, is the costume to be worn in the kitchen. If the mistress does any work herself there she must solve the problem in her own way, and will probably use very large aprons to cover her dress. The cook may be less amenable to suggestions on this point, and the command to wear white dresses only is likely to excite rebellion, the more especially if she must change them on the slightest appearance of soiling and wash and iron them in her own time. White dresses have long since come into general use as the regulation costume for nurses, and it is possible that they may come into general use for cooks and housemaids. Such costumes mean more labor for the laundry department, and they may mean more expense in any event. But a servant neatly clothed in white, working in a pleasant, bright kitchen, neatly furnished, kept scrupulously clean is the final note in the decorative effect, and very likely the greatest treasure in the house.

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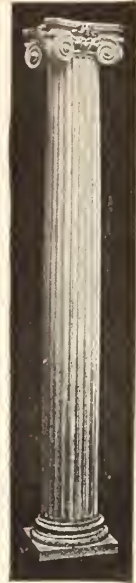
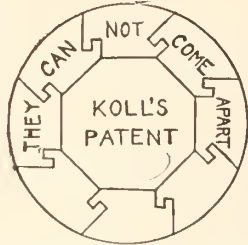
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A WOMAN needs to know enough of architecture to intelligently criticize her own home. She should know that her house is good, not because her architects tell her so, but because from her own knowledge she is aware of it. She should not only know her house is good, but she should know why it is good. She should know enough of related subjects to discuss styles of furniture intelligently; she should know how to arrange her furniture, know how to bring articles of one style together—if she affects historical styles in furnishings—know enough to avoid errors, know enough to discern whether the statements made by the furniture-man are correct or not. She should know, really know, something about colors and their combinations. She should be able to choose wall-papers and have them in harmony with her furnishings and in harmony with adjoining apartments.

None of these things are matters of intuition as is commonly supposed. Intuition will help, and help amazingly, any one who sets out to learn architectural and artistic facts by process of study and under competent guidance. But intuition goes only a small way; about as far, to borrow a comparison from another art, as ability to improvise makes one a consummate pianist. Natural gifts of any sort are always to be highly prized, but most of them require cultivation and training to produce practical results. Some women, perhaps many women, take naturally to the work of household decoration, and can arrange a charming room without the slightest knowledge of architectural history or of artistic laws. If such results are satisfactory they are brought about by pure luck, and by no means represent the rewards of genius. Knowledge is quite as necessary in the arrangement of the house as in the cultivation of the garden or the carrying on of the farm. If one gets good results without trained knowledge it is safe to say that better results would have followed had this knowledge been availed of in the beginning.

The esthetic aspect of the house is more interesting than any other. It is the aspect that shows results and which gives the greatest charm. It represents the personal equation, the personal appreciation of one's own home, and depicts the personality of the occupant in true and unmistakable colors. It is because the woman's house is her home that she concerns herself with its decoration and adornment, applies her taste to it, arranges it as suits her best, makes it, as far as possible, her own work.

A good many circumstances and conditions will make this work more difficult than it should be. Her means may be limited, and she will not have sufficient materials in the way of furniture, curtains, hangings and the like, to obtain the result she wishes. Her means may be too ample and she will be overburdened with a wealth of costly furnishings that she is quite unable to handle herself, and the professional furnisher is called in. A very excellent procedure, no doubt, but such a house simply reflects the owner's ability to buy, and is very apt to be wanting in any note of personal individual interest. She may have things she does not want—wedding gifts and other articles that can not be disposed of while they remain intact, and which she is too conscientious to break or otherwise dispose of. The furniture at hand may have been intended for other houses and other rooms; and be quite unsuited to different places. Obviously, therefore, any knowledge which will help in bettering such conditions is a welcome boon.

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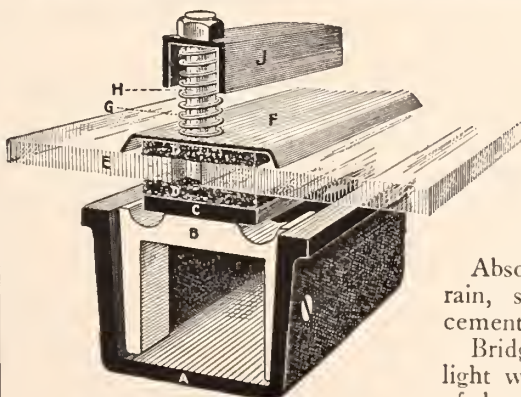
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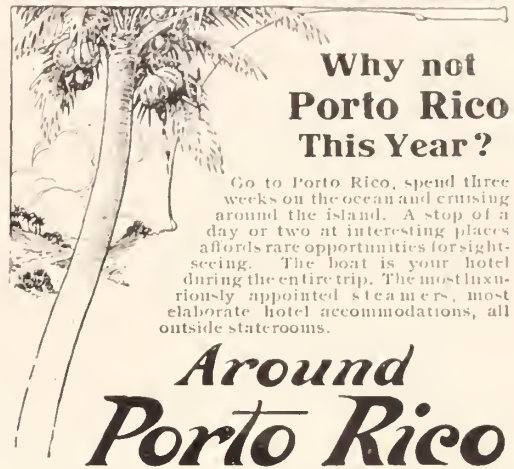
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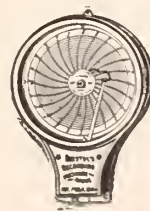


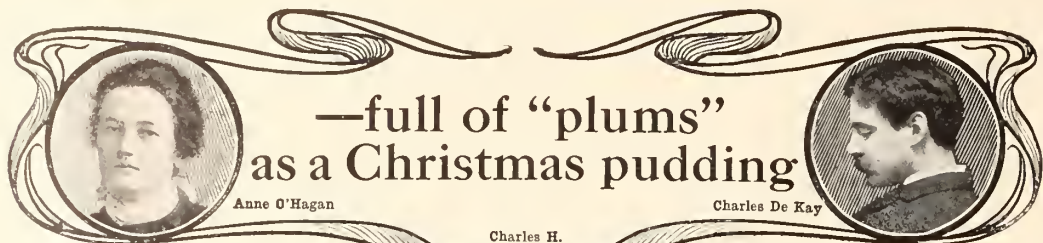
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A knowledge of architecture and a training in household decoration constitute the most available aids to all difficulties in household esthetics. Mere knowledge alone will not solve the problem; mere intuition will not solve it; but good, natural taste, properly trained and aided with some knowledge of architectural forms and principles, since architecture is the basis of all household art, will help more than anything else, and will equip the woman as well as she can be for meeting the difficulties she is sure to encounter in the arrangement of her house.

The esthetic aspect of the house is, however, but a single side. There is the practical side which is represented by sanitation, hygiene and similar topics, and which, for living purposes, is more important than the esthetic. It is better to live in a sanitary house rather than an artistic one; an artistic house may be unsanitary, but a sanitary house may be artistic; and when these two phases of the household are fully developed the best possible sort of a house is obtained.

But one needs to know when a house is sanitary and safe to live in. The subject is a broad one, with many ramifications into practical affairs which few women concern themselves with, but with which they should be more or less familiar. So a knowledge of construction, some definite ideas as to the principles of sanitation, some familiarity with hygiene—all these things will help the women in housekeeping, and help her more than she may be inclined to realize. There are numerous textbooks on all these topics which should be carefully read and studied. Intuition is of little help here, even if a clean house is the most natural kind of a house for a woman to keep. Sanitary evils are both visible and invisible, and the invisible are the most dangerous sort. Knowledge alone will reveal these matters and point the way to remedy.

The study of architecture is, therefore, a matter of grave importance to the woman. It will tell her many things she ought to know and direct her attention to many related facts which will both beautify her housekeeping and make it more sanitary and healthful. In some senses this study is of more practical value to the woman than to the man; for the woman is constantly in and about the house; she is the housekeeper whose business it is to conduct its affairs; she is, in most instances, the responsible party on whom the labor of administration rests; and the more she knows of houses, their construction, their arrangement, their decoration and their esthetic qualities, the better home she will create and the greater will be her own happiness and that of those dependent on her.

But she is not, because of this, the better qualified for the work of the practicing architect than the man. One of the most modern ideas is that women are better adapted than men to architectural work, especially in the designing of houses. The most serious argument advanced on this head is that women have such a keen appreciation of closets! Architecture is not a lady-like art, and is no more suited for women as women, than for men as men. If a man is a successful architect it is because he has ability to practice his profession and has been properly trained for it. A woman with the same qualifications will be equally successful if she can obtain the necessary clients. But she will not succeed simply because she is a woman. It is not necessary to urge the study of architecture upon women with a view of their becoming architects; that will follow as a matter of course if this profession is chosen; but architecture will help many women in their household cares, help and lessen them, brighten the home, and make it at once more beautiful and more healthful.

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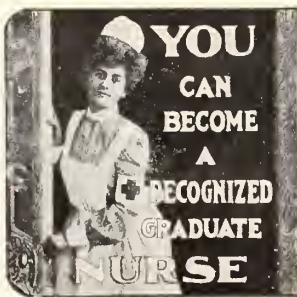
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LAWNS AND HOW TO MAKE THEM. Together with the Proper Keeping of Putting Greens. By Leonard Barron: New York: Doubleday, Page & Company, 1906. 16mo, pp. 174. Price, \$1.10 net.

This is a book that deals with the digging and plowing of the lawn, the selection of a site, the seeding and turfing, and all the other facts that in the aggregate mean a sward of refreshing green. The book is illustrated by 32 practical "How To" photographs which are both inspiring and instructive. They are reproduced in duotone, giving a photogravure effect. The book is an eminently practical one, and should appeal to many of our readers. This volume is the first that has ever been written treating the making and maintenance of the ornamental lawn from a purely practical standpoint. Its purpose is to enable any one to establish a respectable and adequate green sward in any sort of soil where grass can be made to grow. The book is uniform with "Roses" and "Ferns and how to Grow Them."

THE NEW AGRICULTURE. By T. Byard Collins. New York: Munn & Co. Pp. 374. Price, \$2.00.

Mr. Collins has produced a book that unites, in a very unusual way, the qualities of entertainment, instruction and novelty. That there have been great changes in agricultural methods in the past few years has been a matter of somewhat general knowledge; but heretofore there has been lacking an authoritative statement of what these changes actually are and what their effect has been upon the economic and agricultural conditions of America. That the book deals almost exclusively with American themes is but an expression of its breadth of view, since much of the most notable of recent progresses in agriculture are of American origin. The book, moreover, is especially intended for American readers. Fortunately the methods and developments of American origin are world-wide in their application, and the student in seeking for information as to the latest steps in agricultural progress will here find them recorded in an admirably concise and readable manner.

The latter point touches on what is by no means the least important aspect of the book. It is a book to be read, and is intended for the inquirer in other fields than those of agriculture alone. It has, therefore, a useful purpose in making agricultural progress familiar to every one who cares to be informed on that subject, and having been given an attractive dress by the publishers, and abundantly illustrated by fine engravings, it has all the qualities of a successful handbook in its particular field.

Mr. Collins has divided his book into ten chapters. The new call to the farm, the cry, as he eloquently remarks, not of social economists only, not only of preachers, teachers, and statesmen as distinguished from politicians, but of seers, of men who look into the future and see the good things that are there and the better things that are coming, is discussed in the opening chapter. Then follow chapters on "The New Soil—Irrigation;" "The New Fertilization;" "The New Transportation;" "New Interests;" "New Creations;" "New Varieties;" "New Practice;" "New Machinery;" and "The New Inspiration." The whole field of the latest forms of agri-



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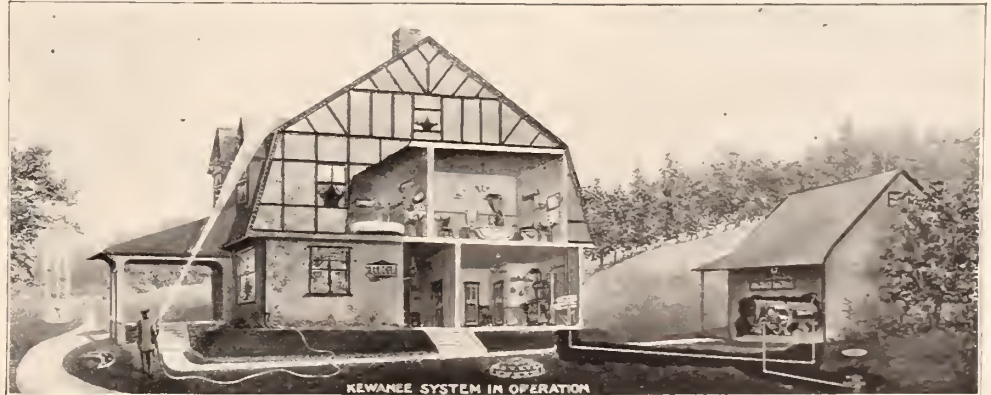
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THE ART REVIVAL IN AUSTRIA. Edited by Charles Holme. The Studio Special Summer Number, 1906. New York: John Lane Co. Price, paper, \$2.50; cloth, \$3.00.

This sumptuous volume is a remarkable record of a remarkable art-revival in Austria. To many persons, particularly in America, the form of this revival, its wide extent, and especially its remarkable results, will come with all the quality of novelty. Fortunately it will not be the less interesting nor the less valuable because of this. It is an interesting fact that the modern art movement in Austria had its origin in architecture. This is the one field, strangely enough, where the American student of architecture will be likely to view it with the smallest interest. Much of modern European architecture is without interest to Americans, and the Austrian, in its external aspect, is no exception. But in the treatment of detail, in the furnishing and decoration of rooms, in the designing of furniture, and the harmonizing of furnishings, the contemporary art-revival in Austria—to limit the subject to the present volume—has the widest possible interest and value.

This book, like others in its series, is illustrated in the most sumptuous and charming manner. The illustrations are so numerous as to seem almost countless, and they relate to every phase of art including painting, sculpture, architecture and the minor decorative arts. As a review of the contemporary art of one country this gathering of a multitude of illustrations would have exceptional value, but this is heightened by the fact that all the art here illustrated, together with the very adequate accompanying text, represents related phases of art, of an art that, as a whole, is comparatively little known in America, and which must be known as a whole to be appreciated as it should be. No better guide could be had than this beautiful book.

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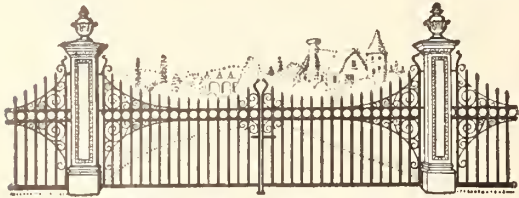
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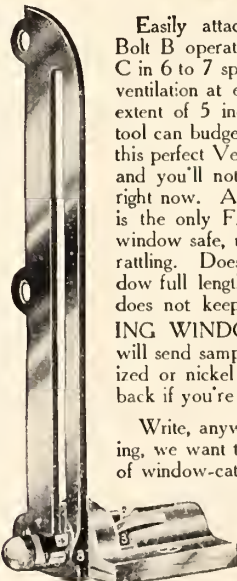
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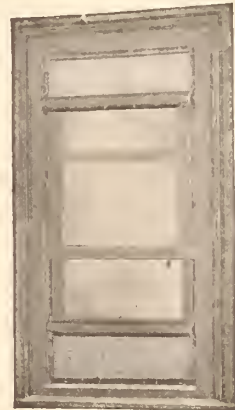
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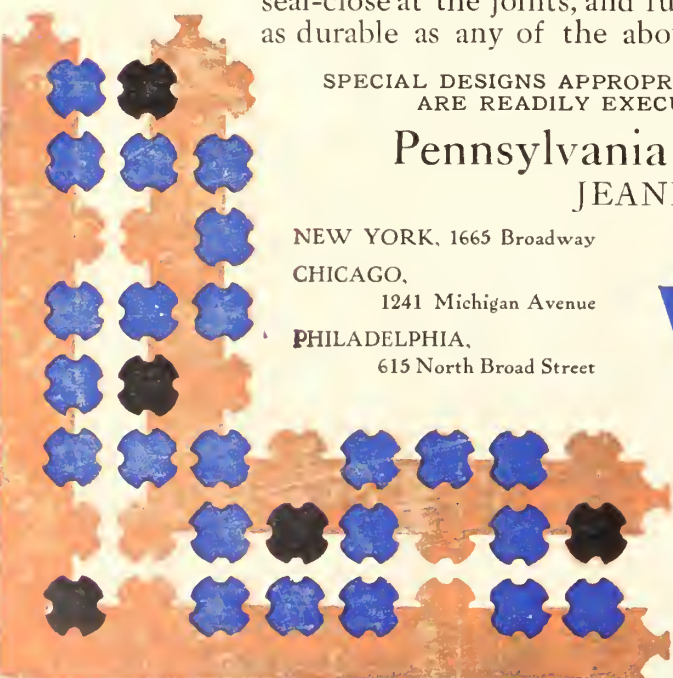
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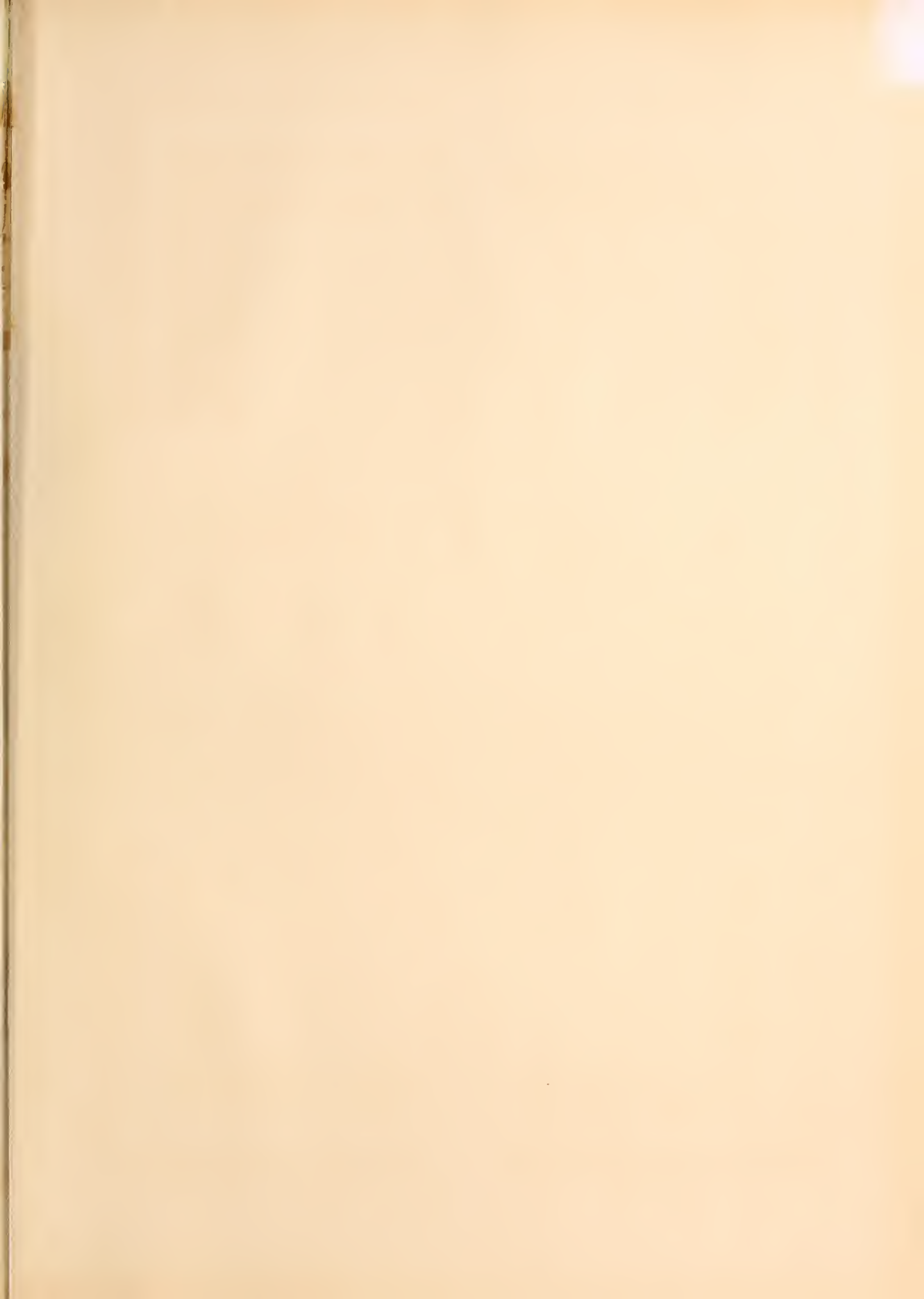
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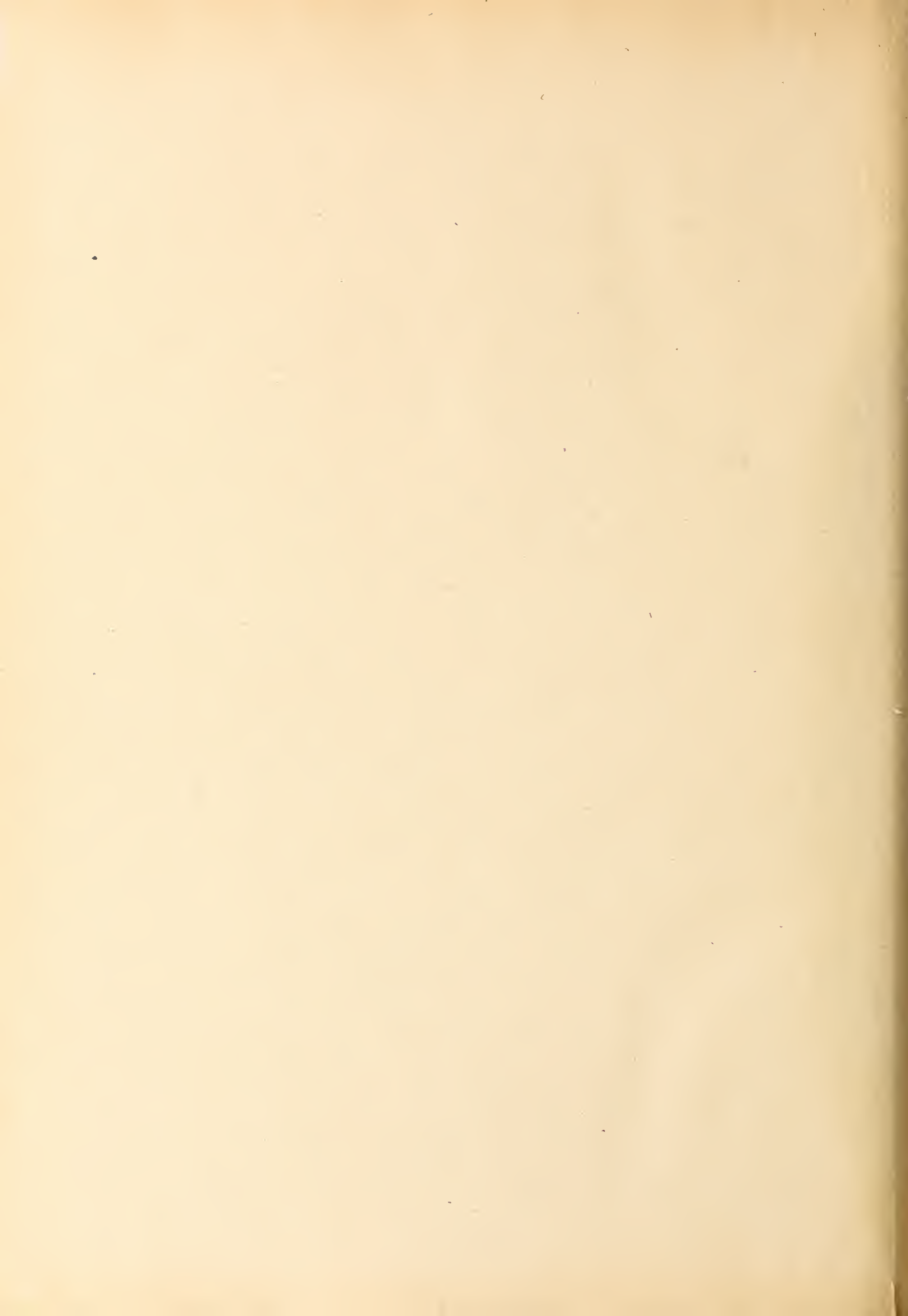
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