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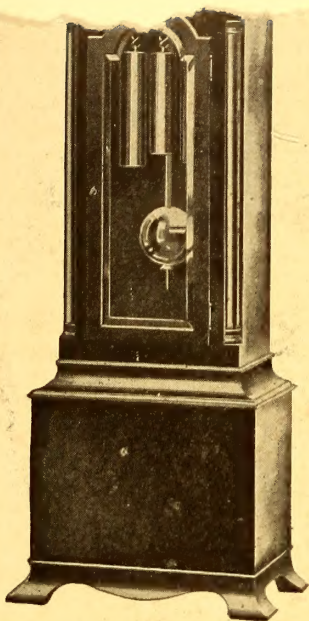


JAN., 1911
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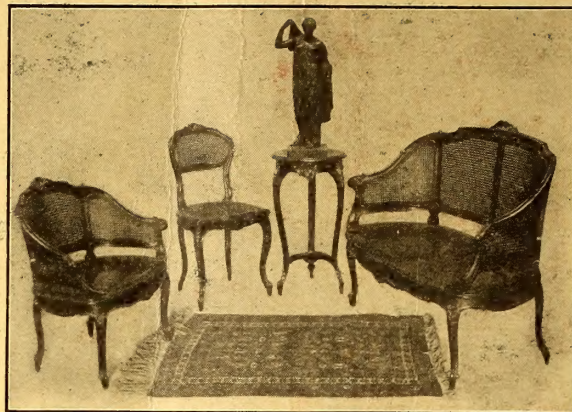
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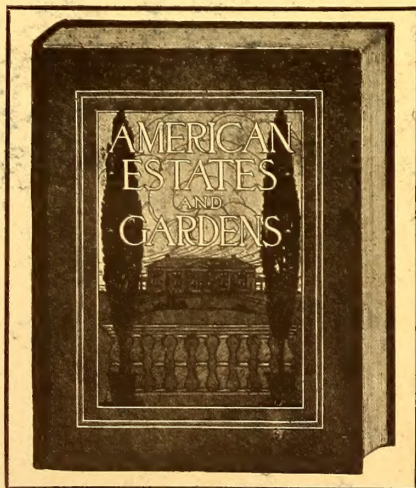
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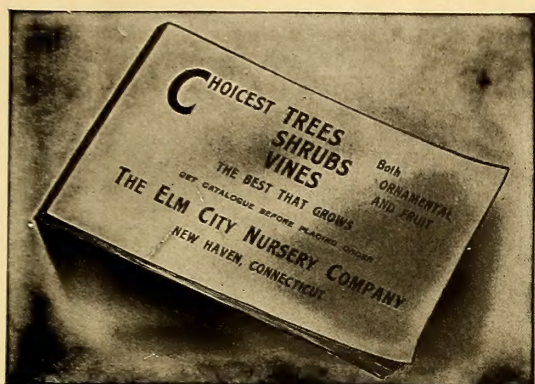
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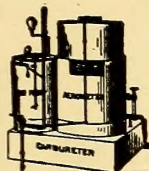
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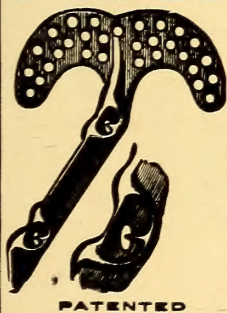
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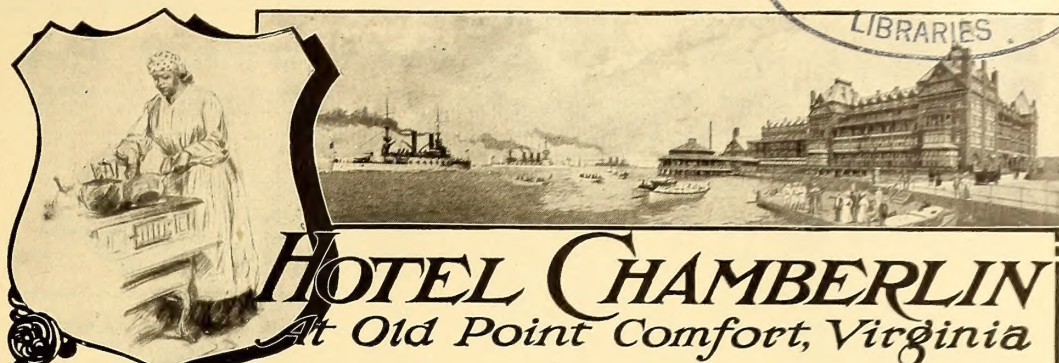
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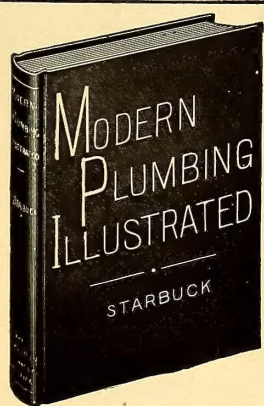
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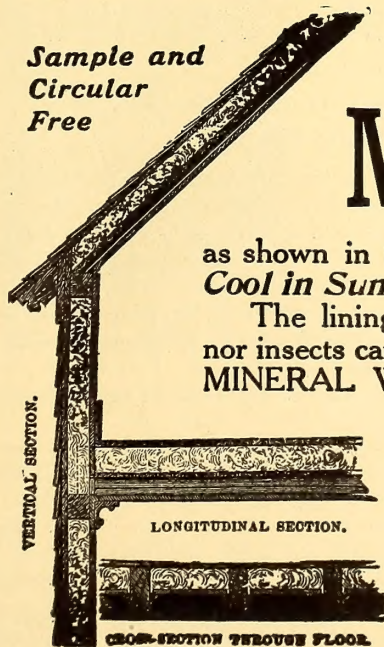
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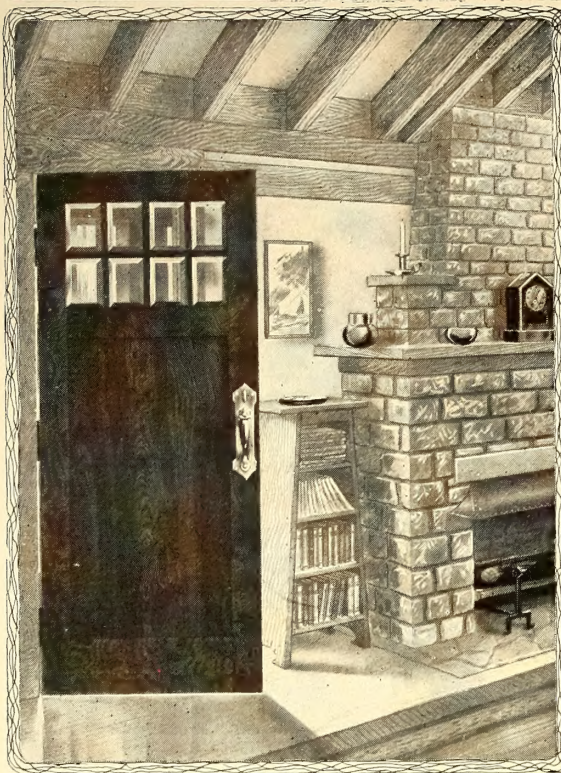
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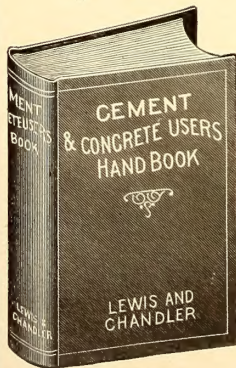
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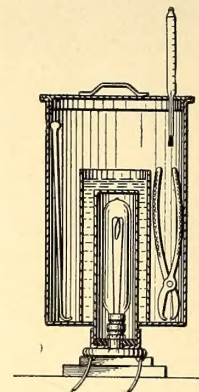


Fig. 1.—INSTRUMENT STERILIZER.

ment lamp of 4 watts per candle, of low lighting efficiency, say about 5 per cent., and of high heating efficiency of about 95 per cent, a simple, cheap, and efficient electric heating and cooking apparatus may be made at home, whereby food may be cooked and materials heated to temperatures of 300 deg. F. or thereabout, with the least possible loss in heat.

The utensils used with the apparatus may be removed from the lamp and be placed in the dish pan and washed with the other dishes in a home without injury. In fact, a dozen different utensils may be employed in turn, with only one or two electric lamp

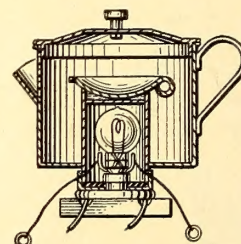


Fig. 2.—SHAVING CUP.

heater units, thus reducing the cost of electric heater units, and keeping the cost of the electric heating equipment at a very moderate sum for a large number of very serviceable and convenient devices.

In the barber shop the electric tubular lamp heater for sterilizing razors (Fig. 1) and the shaving cup (Fig. 2) may be used to advantage. The curling-iron heater (Fig. 3), as well as the sterilizer and elec-

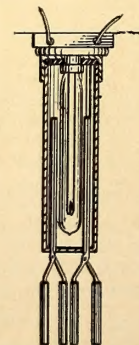


Fig. 3.—CURLING-IRON HEATER.

tric shaving cup, may be utilized on the same base if desired. The dentist or surgeon may sterilize his instruments at slight expense, the same heater being utilized for other purposes.

The cost of construction is low, as ordinary tin utensils can be employed, with dredge cans inserted in the bottom as a heat-absorbing shell, and the whole then either nickel plated or copper oxidized if desired.

It is well known that water is a good insulator of heat when circulation is interfered with, and it is also a great absorber of heat. For instance, a test tube several inches long, filled with water, may be held in the hand without discomfort at the lower end, while the water in the upper portion may be boiling at 212 deg. F. from the heat of a Bunsen burner flame.

In ordinary steam cookers and other similar devices, where a considerable quantity of water is heated in order not to boil dry, a considerable amount of heat is wasted when the cooking has been accomplished, by throwing away this large amount of water which has absorbed an enormous

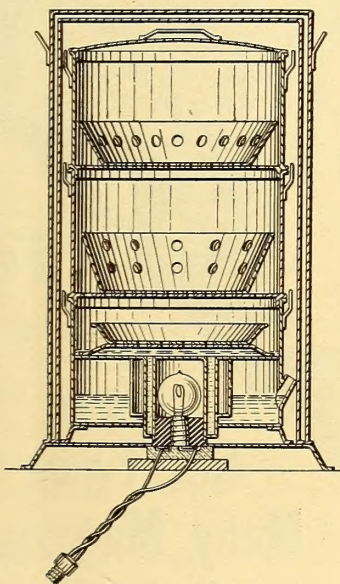


Fig. 4.—ELECTRIC VAPOR-COOKER.

amount of heat. Again, all of the water must be heated to the temperature of 212 deg. or thereabout before any of it will boil, when the heat is applied from the bottom in the ordinary manner.

For cooking itself the actual amount of heat required is very small as compared with the heat lost by radiation on a stove, and absorbed by the water, which is discarded after the cooking has been accomplished. In the electric steam and vapor cookers, with incandescent lamps, as seen in Figs. 4 and 5, it is only necessary to heat

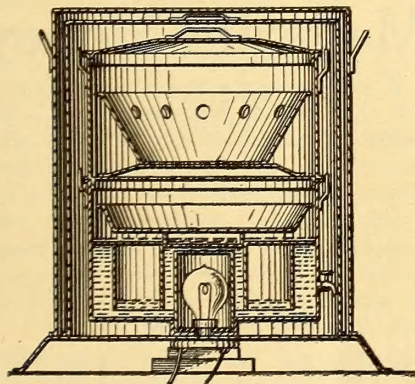


Fig. 5.—ELECTRIC "FIRELESS COOKER."

a small film or thin layer of water to the boiling point, or thereabout, the vapor or steam arising from this small amount of water doing the cooking in the steamer, while the rest of the water is at a much lower temperature, and is utilized as a source of supply or storage, while it is, at the same time, absorbing heat that is ordinarily wasted by radiation.

The principle utilized in the ordinary fireless cooker is that the vast amount of heat

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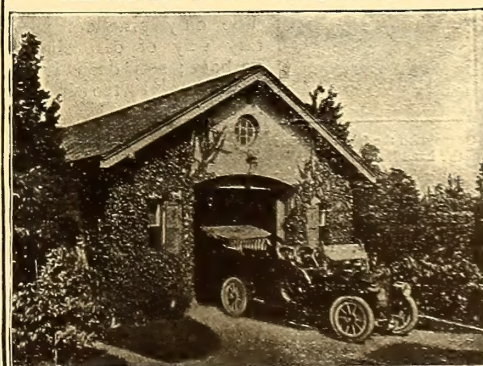
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absorbed by a body of water, when brought to the boiling point, is given up to the food to be cooked, when the whole is inclosed in a chamber well insulated by straw, asbestos, or other material, which prevents the heat from escaping to the outside of the cooker. It is well known that dead air space is one of the best heat insulators, and this is taken advantage of in the electric fireless cooker here shown by providing air chambers and outer shells with air spaces between the same for retaining the heat, the water boiling in the center, while the outer shell is comparatively cold. While with the ordinary fireless cooker the heat is all first absorbed by the water heated on the stove, and then given off to the food during the night, the electric cooker applies only a

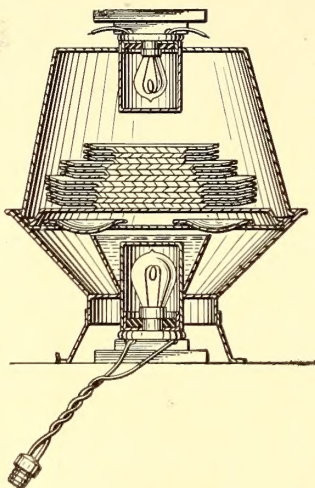


Fig. 6.—DISH WARMER AND EGG POACHER

small amount of heat electrically, and continuously, for a considerable length of time, the food being hot and ready for service immediately in the morning. With the ordinary fireless cooker, not only must outside heat be applied to boil the water in the first place, but the food, while thoroughly cooked, must often be reheated a trifle in the morning before serving. This is a great annoyance, and the food might almost as well be directly cooked at once by ordinary means.

The electric vapor or steam cooker illustrated in Figs. 4 and 5 consists of a heat-insulating slate base, on which is mounted a porcelain electric heating lamp support, with electrical connections, the novelty of

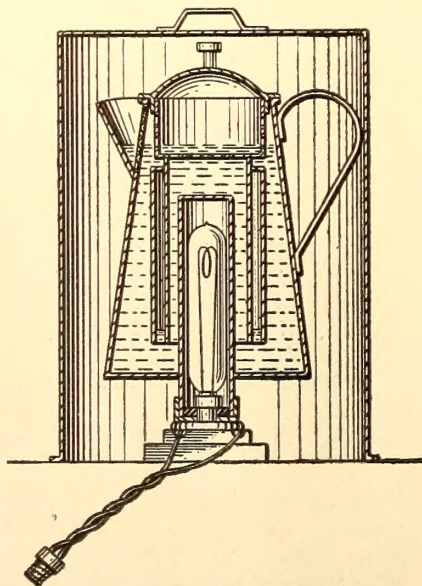
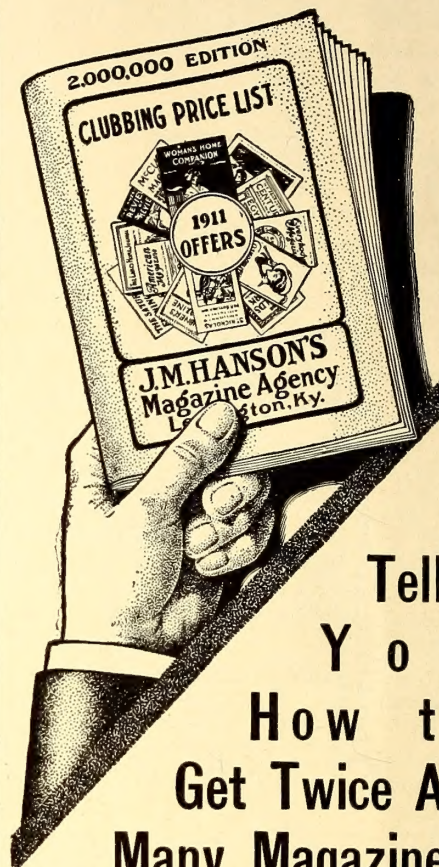


Fig. 7.—COFFEE PERCOLATOR.

which consists of a porcelain cylindrical support, with a white surface for reflecting the rays from the heating lamp to the black-lined metal heat-absorbing shell which it supports. On the outside of the base the heat from the electric lamp is absorbed by

(Continued on page x)

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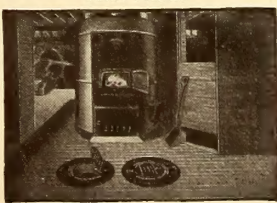
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AMERICAN HOMES AND GARDENS FOR 1911

THE publishers extend a Happy New Year greeting to the readers of AMERICAN HOMES AND GARDENS.

They welcome the approach of the New Year for it presents every promise of being a most successful one. The scope of the paper will be continually broadened in order to meet the needs of the various tastes of its readers, and will present everything progressive in house and ground development.

A brilliant program for the next twelve months has been arranged, which will introduce many new features, while the departments already established will be strengthened and enlarged. New problems centering in the home and in the garden will be prepared by experts who have given their best thought to the subjects which are to be presented. Many practical and stimulating suggestions will be found in each month's issue. The aim of the magazine will be to help the home builder and the home maker, and if this is accomplished the publishers will feel that their object has been realized. While they appreciate the interest which the readers have shown in AMERICAN HOMES AND GARDENS, they desire to ask a further co-operation in order that the class of articles published may be of greater service.

CEMENT SHOW

THE greeting extended to the many cement industries represented at the "Cement Show," which is now being held in Madison Square Garden, was one that demonstrates the interest manifested by architects, builders and laymen by their presence at the opening of the exhibition.

While the object of the show is to bring together all the facilities for the use of cement in the building of the small working man's home, as well as the more pretentious building, it is also its purpose to present in a practical and instructive way the great utility of cement as a structural material.

The exhibition serves to show how broad is the field that is embraced in the term, "cement construction," and to teach how to practice economy in every type of building.

With the advent of the use of cement for building small houses economically, a problem arose difficult to solve, but the idea has now been conceived of using standard shapes in order that they might be manufactured and assembled at a minimum cost.

The substantial character of concrete construction is no longer a question, but the cost entailed on account of the lumber wasted and the labor required to make the forms for the molds, has made it prohibitive in competition with the building of frame houses.

The experiment of erecting workmen's small houses by the use of the Atterbury sectional shield has made it possible to build a house in five working days. This is an important result in comparison to the time usually required to build a modern wooden house of the same size and proportions.

The "Morrill Mould" also makes the building of concrete houses much cheaper. The equipment and method is, of

course, new, but it has been tried out, and the system has proven most satisfactory. The forms are made of steel, 24 inches by 24 inches, which are easily joined together, and almost any size and style of building can be made with one outfit.

A demonstration of Edison's method of building a house with poured cement is exceedingly interesting.

With the invention of these devices, there has been brought about a great saving in the cost of construction. This being accomplished, there is no reason why the small house can not be built for less money than has formerly been the case, and prove a much safer and a better investment in maintenance than could possibly be secured under any other method of construction.

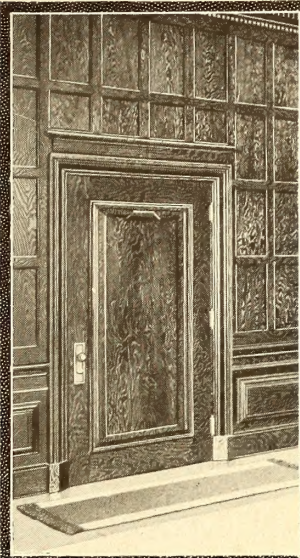
THE SOCIETY OF CRAFTSMEN

THE annual exhibition of the National Society of Craftsmen, which is now being held in the galleries of the National Arts Club of this city, shows the progress which has been made during the past year by the Society in craftsmanship. Some of the work of the members includes tiles with delicate landscapes, vases of purple iridescence, and a case of forms with gray-green mat glaze, lent by Charles Binns, the Director of the New York State Ceramic School. A corner of the exhibition is devoted to frames, hand carved and gilded, and to other pieces showing the wood carver's art. The display is distinctly American, for though there are objects of the ancient art shown, they are introduced chiefly for the purpose of contrast. A fine collection of Chinese pottery from the Han dynasty (202 B. C., 220 A. D.) serves as an incentive to the craftsmen of to-day. The beauty of form and the delicacy of color are two of the elements which make the collection so delightful. This exhibition ought to be of service to all those interested in the expression of simplicity in house decoration and furnishing.

EXHIBITION OF THE FURNITURE OF THOMAS CHIPPENDALE

IT is a long time since there has been exhibited in this city so rare a collection of Chippendale furniture as is now being shown at the Hotel Plaza. The rarity of the pieces of furniture exhibited demands the attention of all art collectors and those interested in the antique, and this collection is certainly worthy of serious consideration.

One of the most excellent pieces is a Chippendale mahogany cabinet from the Dean collection; another from the same collection and also one of the rarest models presented, is a Chippendale mahogany settle, whose open back work is of triple design in ribbands, and reverse C-shaped scrolls. A grandfather's clock, also from the same collection, is of the Chinese lattice work and design, and is carved in an exquisite manner. A carved circular table from the Lord Foley collection, a pair of arm chairs from Bradfield Hall, an exquisite old cabinet from the Spottiswoode collection, and a suite of mahogany furniture from the collection of Lord Clifton, represent some of the best pieces, though everyone exhibited is a work of art.



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- | | |
|--|---|
| I. Making Wire Forms or Frames. | VIII. Selection of Aggregates. |
| II. Covering the Wire Frames and Modeling the Cement Mortar into Form. | IX. Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid with Colored Tile. |
| III. Plaster Molds for Simple Forms. | X. Concrete Pedestals. |
| IV. Plaster Molds for Objects having Curved Outlines. | XI. Concrete Benches. |
| V. Combination of Casting and Modeling—An Egyptian Vase. | XII. Concrete Fences. |
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Compiled and Edited by A. RUSSELL BOND

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A Collection of Ideas and Suggestions for the Practical Man

EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is adverse to making public his methods of procedure. After all, he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

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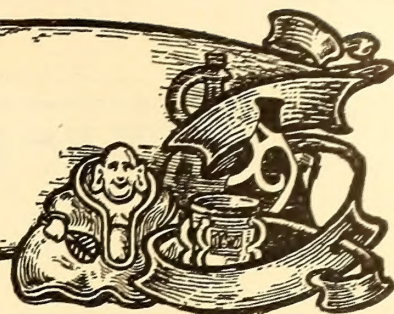
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American Homes and Gardens for February



Notable American Homes

The country seat of R. R. Colgate, Esq., at Sharon, Conn., forms the opening article for this issue. The estate is a splendid one, comprising an area of over three hundred acres which is thoroughly cultivated and developed. The article, prepared by Barr Ferree, is well illustrated by many fine engravings of the mansion, the garden and the various buildings erected on the property. It is a subject that will be of interest to those who would like to take a look into one of the palatial homes of America.

Lemonade-Well for a Winter's Party

The success of a social entertainment depends in a large measure upon the decorations. A pleasing suggestion for a Valentine party, or any other home entertainment of a Winter's evening, is made by A. R. Van der Veer. Out of a sugar barrel and a soap box a unique lemonade-well may be made, in which lemonade is hauled up by means of buckets from a pail placed within the barrel. How to make this odd well curb and the best method of disguising the wooden parts with crêpe paper, bricks, cotton snow, glass icicles, etc., is described in sufficient detail to enable anyone to duplicate the work.

Quaint Dessert Dishes

All mothers realize the difficulty which attends the preparations for a children's party. Percy Collins has prepared an excellent article on the subject which is illustrated by many designs for quaint dessert dishes suitable for the amusement of a party of youngsters. The designs are quite easily made, and the shouts of delighted laughter which greet their appearance at the table amply compensate one for the small expenditure of time and patience involved in making them.

China Embroidery

One of the latest novelties in the art world is the copying of the designs found in the old china plates and pitchers for the decoration of linen cloths for table use. Monica Bastin presents some excellent examples of this kind of work and tells in a very interesting way how it may be accomplished.

The Fascination of an English Cottage

There is an immutable art principle in domestic architecture which few people appreciate. It is in the devotion to the fundamental truth of all that is best in that which has been done from generation to generation, and which is representative of all the parts which go to make good domestic architecture of the present day. Joy Wheeler Dow has prepared an interesting paper on the subject, which is illustrated with many excellent drawings.

An Indoor Garden of Moss and Fern

Modern gardening is always difficult by reason of the fact that it is only a certain number of plants which can stand the trying conditions of room culture. The formations of the moss garden is very simple, and S. Leonard Bastin tells in his article and also by illustration, how to grow plants in a nearly air-tight case with effective results, for those who would like to

have something green in the house during the Winter months.

The Small House

The small house is always interesting to the home builder, and the group of houses shown on a double page are representative of some of the best designs in small dwellings built in this country. A study of the houses will show a varied assortment of styles in home architecture.

Flower Preservation

One of the most distressing sides to botanical study is the transitory beauty of flowers. Those who have felt that the usual method of preserving plants by pressure between paper is unsatisfactory, will be interested to learn of a German treatment whereby it is declared that many kinds of flowers may be dried so that they retain a good deal of their natural form and color. S. Leonard Bastin has prepared an illustrated paper on the subject which will be of service to those who are interested in the preservation of plants.

Dutch Furniture

Collectors of furniture and students of decorative art rarely realize how much is owed to the Dutch in the development of form and ornamentation. It is interesting to follow the progress of the Renaissance in the Low Countries, and still more to trace the advent of the curve and the adaptation of the jar and dragon and other fantastic forms and devices of decoration that have their birth in the far East. Esther Singleton, who is an authority on the subject, has prepared an interesting and instructive paper which is properly illustrated by engravings of the pieces of furniture belonging to the famous Clarke collection, recently sold at public auction in this city.

Houses of Moderate Cost

Paul Thurston, who is well known to the readers of this magazine, has prepared a paper on houses of moderate cost, which is well illustrated. The engravings show exterior and interior views, as well as floor plans of the various houses presented, and the text gives a comprehensive idea of the treatment of each of the houses.

The Lone Pine"

This is an interesting little house built of hollow tile, containing one large room with an ingle-nook, and two bedrooms provided with ample closets. Mabel Tuke Priestman has prepared a paper telling how the building was constructed, and has illustrated it by engravings of the exterior and the interior of the building, and also of the floor plans, showing the arrangement of the rooms.

Garden Notes

Charles Downing Lay, who conducts the department of "Garden Notes," will devote it to the planning of a small place. This is an important subject and is one that ought to appeal to the owners of small properties who desire to improve their surroundings. Improvement of this kind not only enhances the value of one's estate, but it also creates a beauty in the development of all property of which it is a component part.

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Concrete Reinforced Concrete and Concrete Building Blocks

Scientific American Supplement 1543 contains an article on concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives results of elaborate tests.

Scientific American Supplement 1538 gives the proportion of gravel and sand to be used in concrete.

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 resume in which the various systems of reinforced concrete construction are discussed and illustrated.

Scientific American Supplement 1564 contains 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.

Each number of the Supplement costs 10 cents.

A set of papers containing all the articles above mentioned will be mailed for \$1.80.

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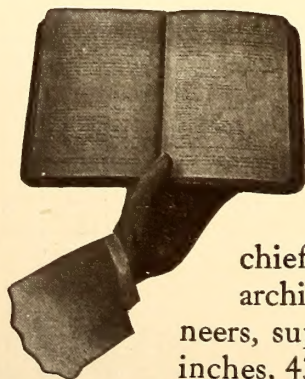
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Doric columns support the beams of the pergola

AMERICAN HOMES AND GARDENS



Volume VIII

January, 1911

Number 1

An Interesting Application of Swiss Architecture for American Use

By Charles Alma Byers



IHAT the American architects borrow suggestions from the architecture of nearly every country and every period is a fact that has been admitted for a long time. Were the architectural styles adopted in their entirety our architects could only claim commendation for showing good taste, but that does not constitute the extent of their service. They have learned sometimes to adopt styles merely as suggestions, and then to convert such suggestions into creations so diversified in character as to seem almost original. It has been said that America has no architectural style of its own, just as it has been claimed that we have

no school of individuality in art, but since it is so difficult to trace the various recognized styles of architecture to their real and undisputed origins the intended accusation can be easily forgiven. It should be sufficient satisfaction to realize that from borrowed suggestions the architects of this country have created styles, possibly a score of them, that unquestionably belong more to America than to any other country, even though they retain more or less of their foreign prototypes' characteristics.

The very attractive house illustrated by the accompanying photographs and floor plans represents an Americanized interpretation of the Swiss chalet. The style in its interpretation, however, has undergone many changes—



The characteristics of the Swiss chalet are revealed in this house

changes that leave to the creation only little more than a suggestion of the real chalet of the Switzerland mountains. It is in the roof lines and in the use of the split shakes for the siding that the suggestion is most pronounced; in nearly every other respect the creation shows marked deviations. The result of the combining of originality with the suggestion borrowed from the Swiss chalet, however, is highly satisfactory, the general appearance of the house being both harmonious

and attractive, while suited to numerous localities.

The house, which is located at Oak Knoll, near Los Angeles, California, is the home of Dr. F. K. Ledyard. It stands on a fairly large plot of ground, and is embowered in a gracefully arranged setting of trees and shrubbery, which materially enhances the beauty of the home. One view of the house, presented on the cover, reveals it as



The redwood pergola

if in a frame formed by the arching branch of a picturesque old oak, while the more immediate setting consists of black acacias, English walnuts, orange and lemon trees and dwarfed palms.

The color scheme of the house is strikingly attractive, and is such as to be pleasingly emphasized by the green of the surrounding foliage. The flat chalet roof with its broadly projecting eaves is of white asbestos, which, in color, harmonizes with the white limestone of the two wildly mas-

sive chimneys and the gray cement of the walks and pergola porch flooring. The siding, which is composed of split redwood shakes, is stained a deep russet orange, harmonizing beautifully with one of the conspicuous natural colors of the bark of the redwood poles and logs which are used for the finishing timbers and in the construction of the fine pergolas of the porch and of the garden.



Detail of chimney and of pergola

The house derives a large portion of its charm from the use of the redwood timbers, a carload of which was used in the creation. They are employed exclusively in the construction of the pergolas, and constitute the major portion of the material used in the creation of two second-floor sleeping balconies, in addition to the part they play in the remainder of the exterior finish. Careful attention has been given to their selection, and their relation to the structural lines of the house deserves more than passing attention, a fairly good study of which may be made from some of the accompanying photographs.

The logs, contrary to common custom, are not split, but are whole. In fact, it is not advisable to attempt to use split redwood, if it be desired that the bark be not removed, as the bark of redwood will eventually loosen and fall off if the timbers are split. The diameters of the timbers used vary from about three inches to nearly twelve inches. In regard to color, the logs are untreated, possessing their natural colors of deep russet orange and rich browns.

The house has a frontage of fifty-four feet and a depth of forty-six feet. The porch pergola, exclusive of the porte-cochere, extends for forty feet across the front, while the garden pergola, projecting into the garden from one of the front corners of the house, is thirty-five feet long. The latter is entered from the foot of a short flight of rustic steps which ter-



The pergola as seen across the front

minates a branch of the walk leading to the front entrance of the house. The split redwood shakes which constitute the siding for the house are nearly uniformly four inches wide, are spaced about one-half inch apart, and are laid with fourteen inches of their length exposed. The chimney at the front is built on the outside from the ground up, and supports on its side a small redwood-log window box of interesting design, while the rear chimney only makes its outside appearance through the roof.

A careful study of the floor plans of the house should prove highly interesting to the prospective home builder. On the first

floor are hall, living-room, den, dining-room, kitchen, maid's room, and a screened porch, and on the second floor are four bedrooms, two sleeping balconies, two bathrooms, and a sun room. Entering the house through the hall, the dining-room lies to the right and the living-room to the left; a broad arch hung with portieres forming in



A window picture from the living-room



The living-room and the den beyond

each instance the only partition. From the dining-room French doors open into a small pergolaed fernery, on the north side of the house.

The dining-room is seventeen feet and nine inches by sixteen feet and one inch, and possesses a broad, artistic buffet, with a plate glass mirror and leaded glass doors with a casement window on either side. The woodwork is of Peruvian mahogany, and the walls are tinted a

rich chocolate color, while the ceiling is done in buff. The rug and the draperies of the room are of a rich brown color, blending in handsomely with the general color scheme.

The living-room is twenty-seven feet and nine inches by sixteen feet, and is provided with a small alcove, with a slightly elevated floor. It contains a built-in bookcase at one end, a window in the other and a built-in seat extending its entire length. As in the dining-room, the woodwork of the living-room is of Peruvian mahogany, and the walls and the ceiling are similarly tinted.

Sliding glass doors separate the living-room from the den, which latter is on the front of the house, and French doors lead from the den into one end of the pergola veranda. An important feature of this room, size fourteen feet by fourteen feet, is a spacious fireplace of olive-green tile, with a built-in bookcase on each side, above which are two small windows. The woodwork is of dressed redwood left in its natural color, and the walls are tinted a dull red, while the ceiling, which is beamed, is tinted a light cream color. Oak floors are used for every first floor room, except the kitchen.

On the second-floor, the sun room occupies the same position as does the den on the first floor. This room possesses a fireplace also, and is liberally provided with windows on three sides. Its woodwork is of Oregon pine, except a floor of oak. The four bedrooms, as well as the two bathrooms, are finished in white enamel, and are provided

with numerous built-in closets, wardrobes and window seats.

The most admirable features of the second-floor arrangement are the two sleeping balconies. There is one, size thirteen feet three inches by sixteen feet one inch, on the north side, over one end of the dining-room, and one, size nine feet three inches by nine feet nine inches, on the south side over one corner of the living-room. The balconies have canvas decked floors and are covered by roofs. Bannister railings of redwood poles extend along the unenclosed sides, and porch shades are provided which can be lowered in sections to regulate draughts.

Although located in southern California, the house is substantially built throughout, and should withstand the weather of almost any climate. It is provided with furnace heating apparatus; the fireplaces being used only to give the rooms a cozy and cheerful appearance, and to suffice on chilly evenings when furnace heat is not essential. The den, which can be entirely closed, can always be sufficiently heated from the fireplace, however, and on winter evenings it becomes the family living-room.

From all points of view the house presents an attractive and home-like appearance. In a sense, it is of rustic architecture, but it is far from being extremely so. It has been thoughtfully designed in every detail, and the creation *en masse* is harmonious and pleasingly effective. The Milwaukee Building Company of Los Angeles, California, was the architect of the house.

Economic Value of Wild Birds

By H. A. Crafts



CALIFORNIA has just established a State bird farm near Hayward, Alameda County. Its first object is to breed game birds for the stocking of the forests, ranges and covers of the State, for the benefit of sportsmen; but it promises to have other and more far-reaching effects.

The species at first to be propagated consists of pheasants, partridges, bob-whites and wild turkeys, but it is the intention of the State in time to breed song birds as well.

As the State has an area of more than 153,000 square miles, and the bulk of this area being wild land, it may be plainly seen that the field is very large, and offers great possibilities in the line of bird culture.

Next to the sportsmen the farmers of the State will become interested in the movement. In the first place it is the intention of the promoters of the scheme to have the game laws amended so as to permit the farmers to raise pheasants and other birds for commercial purposes.

But far and away beyond this interest comes that of a possible conquest of the insect-pest evils that afflict the State. By reason of its mild and equable climate California is a very favorable field for the rapid increase of insect life, and the wild birds being scarce the injurious insects have in the past become a host, and have caused millions of dollars damages to the fruit growers.

And in order to keep these insect pests under anything like reasonable control the State is obliged to maintain one of the most extensive horticultural quarantine departments in the world; to use vast amounts of sprays and fumigants and to maintain a parasitic system that is a wonder of modern industrial history.

Yet, with all the repressive measures employed, the losses from insect-pests are very large annually, and the

propagation of wild birds should be hailed by the farmers of the State as a hopeful sign for the future.

Briefly, the bird farm is supported by funds derived from the State treasury, and is under the general supervision of the State Game and Fish Commission. It consists at present of forty-two acres, but will soon be enlarged to one hundred.

The breeding of young birds was begun last year, and it is expected that by another year the farm will be in a position to turn out from 4,000 to 8,000 annually. The young birds will be distributed over the State as evenly as possible, and will be given out to approved applicants, in bunches of fifty to one hundred. No applicant will be given any birds until his reliability has been established and not before he has pledged himself to care for and protect the fledglings previous to becoming established in their new abodes.

The farm has been fitted up with necessary buildings, including superintendent's residence, barn, water tank, etc., besides fifty pens in which to keep the breeding birds.

The pheasants used for breeding purposes were all imported from Europe, and the bird that seems destined to become most popular in the State is the Hungarian pheasant. The wild turkeys used are obtained from Old Mexico and consist of two species, one a small kind, not much larger than a common grouse, and another of the ordinary size.

The breeding females of the various species under care lay their eggs in the pens quite promiscuously, and the eggs are gathered by the keeper and placed under common hens for hatching. Of these hens the farm has a flock of 225, and they are of the white and Barred Plymouth Rock strains.

After hatching, the chicks are allowed to run with their foster mothers for a period of two months. Then they

are taken away and placed in pens by themselves until ready to liberate.

Great care has to be exercised in the rearing of these young fowls. At first they are fed on maggots, and the grubs have to be propagated on the farm. They are also fed on milk curds.

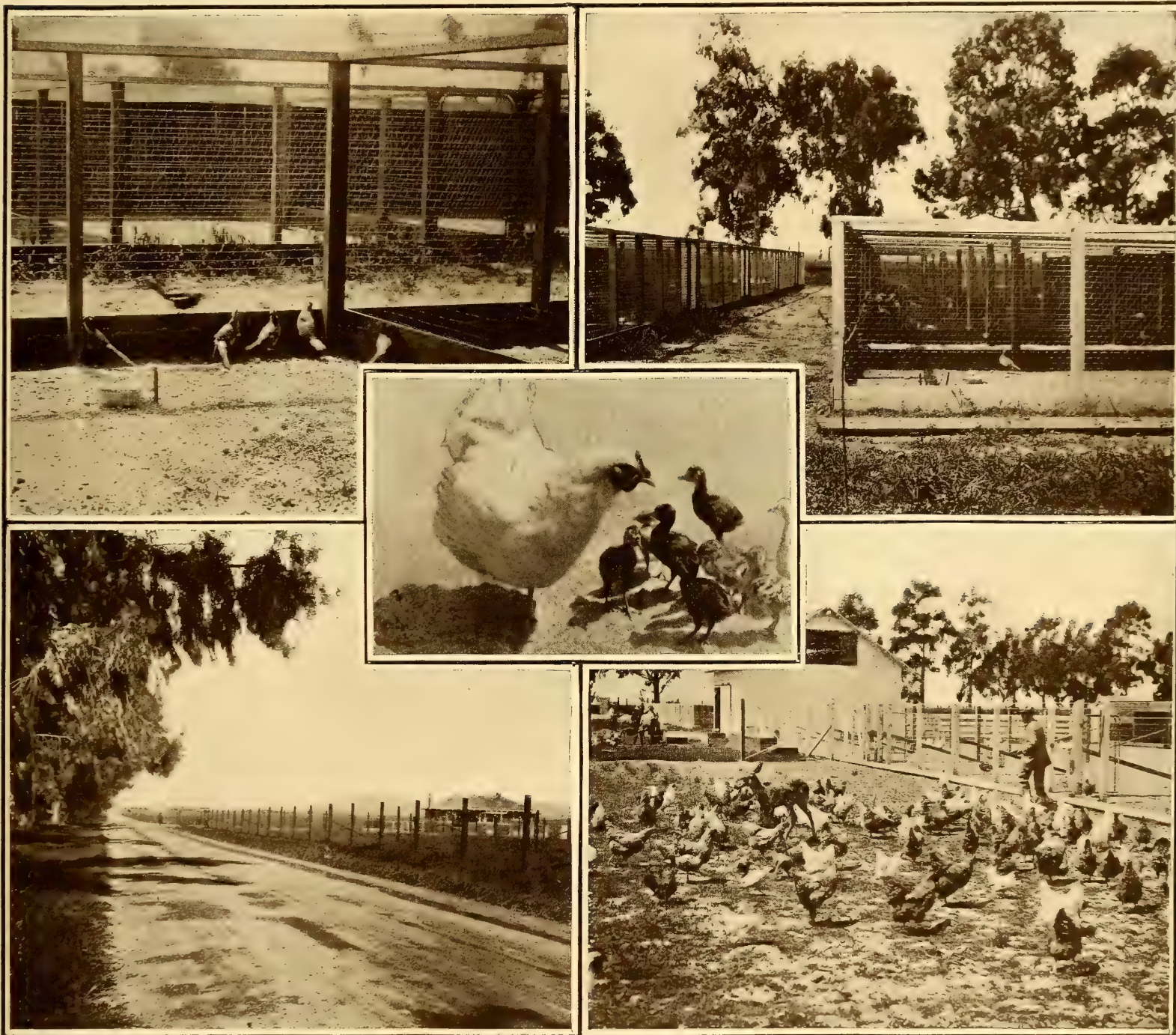
Brooders with outside runs are used and the former are moved every day in order that strict sanitary rules may be observed. The birds, both young and old, are given fresh water daily, and plenty of it. But the California climate

"Nowhere in the material universe do we find a more interesting and beautiful law of balance and harmony than formerly existed in the lives of insects and wild birds. Insects are justly regarded everywhere as the enemies of agriculture. Their destroyers—the birds—must therefore be the farmers' best friends. So long as nature held undisputed sway our friends kept our enemies in check, and small damage resulted to growing crops, and the husbandman was fairly secure in his calling.

In the destruction of the home of wild birds—the for-

Group of pheasants in a pen

View showing arrangement of pheasant pens



Bird farm on right. Eucalyptus trees on left

An old hen mothering wild turkeys

Hens used for hatching game birds

is very favorable to bird life and it is expected that the work of stocking the State will go rapidly on.

Possibly a few farmers and gardeners will get the idea that so many wild birds will be a menace to their crops, but when the benefits to be derived by the farmers and fruit growers at large, in the way of insect-pest control, are weighed against the possible damage, it will be found that the latter becomes comparatively insignificant.

This truth has been no clearer shown than by a paper read by W. R. McIntosh, of Fresno, during the session of a recent fruit-growers' convention. Among other things, Mr. McIntosh set forth that:

ests—by ax and fire, and the wanton and cruel slaughter of birds in the name of sport, the relations and harmony of nature have been undermined."

The accomplishment of this scheme to restore the economic value of wild birds, will of course be harder to perform if the needed conservation in the matter of forestry is allowed to lapse into indifference, or to spread its present rate of havoc. The farm's establishment is more than a hint to the law givers of the fast increasing State of California, that carelessness can be amended in various directions, whether it be in that of pastime of agriculture or of breeding of song birds.



The Two Hundredth Anniversary of the Invention of Porcelain by Boettger

By Charles A. Brassler



THE little town of Meissen, near Dresden, was very recently the scene of a unique celebration. Founded and fortified in 928 by Henry I, of Germany, as an outpost of the Empire, a bulwark against its turbulent Slavonian neighbors, Meissen, one of the oldest towns in the kingdom of Saxony, is famous for its exquisitely beautiful Gothic cathedral, reputed to be the finest place of worship in that style of architecture in Germany. But a fame, even more world-wide, attaches to a spacious range of buildings, with towering chimneys, in which the interest of the votaries of the ceramic art have of late centered, for near here, 200 years, ago, Johann Boettger invented, for Europe, the process of making porcelain, and here, in a frowning fortress overlooking the Elbe, assigned to him for that purpose by the King of Saxony, he instituted and carried on for several years the manufacture of the artistic and decidedly beautiful ware that has made the old Saxony city famous in the art world. The anniversary has just been appropriately celebrated in royal and official circles and by the people of Saxony in general and Meissen in

particular, and many prominent people have journeyed to Meissen to participate in the celebration of the two hundredth year-day of the institution of an art-industry that has taken a leading position among the most important art interests of Europe. The personage and his discovery, which the celebration commemorates, are of sufficient interest to all ceramists, and those interested in the development of the useful arts, to merit the devotion of a brief space in these columns to a story of Boettger, and what he accomplished for European pottery.

Centuries before potters in Europe had any knowledge of the manufacture of porcelain, its production and elaboration were practiced as familiar arts in the far East and traders to India and China brought back with them, specimens of Chinese and Japanese ware, that excited the admiration of the European manufacturers of white faience and stoneware, and stimulated their emulation. Among the wealthy classes, the finer porcelains of the Orient were valued, often at their weight in gold, and the accumulation of choice specimens, was a "fad" in which the wealthy, of artistic tastes, expended fortunes and was indeed one of the ways in which they demonstrated their superior



Three exquisite Meissen vases of the Eighteenth Century period

culture. One of the most enthusiastic of these connoisseurs and collectors was August II, King of Saxony and of Poland. He is chronicled as importing these articles from the East in fabulous quantities; certain it is, that in his castles and palaces, he surrounded himself, regardless of expense, with the choicest specimens of the potter's art. It was, indeed, to his interest in ceramics that is due the discovery in Europe of the art of making porcelain, and its establishment in the Occident on a commercial scale, recently celebrated as the two hundredth anniversary of the foundation of the royal porcelain works at Meissen. With the celebration of this establishment of the famous porcelain works, from which the secret was afterwards carried to others, it was necessary to celebrate the two hundredth anniversary of the perfection or re-invention in Europe

the baser metals into gold, and in the course of his researches, was in the habit of combining all sorts of elements, minerals especially, and accustomed to employ in his operations, such high temperatures as the use of the retort, crucible and alembic made possible. Bearing in mind that his subsequent operations in search of a porcelain composition, were wholly gropings in the dark, and that he had no real scientific knowledge of the materials he employed, the value of this early experience of Boettger will be recognized without difficulty. As an apothecary's apprentice, he established a reputation as a visionary student, a ne'er-do-well dabbler in things outside of his business, and he enhanced it by his boasting of his knowledge of the gold making processes. This was brought to the ears of the Saxon monarch, who being, thanks to his costly



The old Albrechtsburg, the seat of the Royal porcelain works from 1710 to 1863

of the art of making porcelain by Johann Friedrich Boettger, born in 1682 at Schleiz, Saxony, and bound apprentice in 1696 to Apothecary Zorn, in Berlin. Thus the celebration bore a double significance.

Boettger was by turns pharmacist, alchemist and potter, and while the combinations of the three callings may now-a-days sound somewhat incongruous, there is really nothing remarkable about it when the conditions at that time prevalent in Europe are considered. The pharmacist—apothecary was his title in those times—was the only person possessing the least practical knowledge of drugs and chemicals; the alchemist, regarded as an uncanny individual and feared, and oftentimes persecuted as a practitioner of the "black arts," was constantly dabbling in these materials in the hope of discovering the "arcanum," the philosophers' stone, the elixir of life, or some means of transmitting

art tastes, and for other reasons in an advanced state of impecuniosity, conceived the idea that a successful gold-maker would be a welcome addition to his establishment. About the same time Boettger had decided to transfer the scene of his activity to Wittenberg, in the Saxon territory, and although the Prussian King objected strenuously to the loss of a subject in whom might be vested such important possibilities, the subject of our story moved over to Saxony, a troop of cavalry being sent to guarantee him safe conduct, by his new protector. He was installed on his arrival in Dresden in the "gold house," a chemical laboratory attached to the royal castle in that city and enjoined to lose no time in turning out the gold, of which his royal master had such urgent need. Here he remained from 1701 to 1702, when he was transferred to the castle of the sovereign, Prince Anton Egon von Fürstenberg, still

under surveillance, and with strict injunctions if he valued his personal well-being, to go ahead and make gold. His researches were pursued under the stimulus of his dread of having his career suddenly terminated by the public executioner, but although he did not succeed in making gold, he finally produced, as a residual product of one of his experiments, a substance of a red color, closely resembling porcelain, but more nearly a very fine grade of stoneware. In the possibilities of this discovery, August II was at once interested, as next to gold it was likely to prove at that epoch the most profitable discovery he could have expected, and one likely to redound to his own credit, so he encouraged Boettger to proceed. In 1709 he had succeeded in turning out some really creditable articles in his redstone ware, for which he managed the following year to perfect a fine glaze, and specimens of the ware he produced at this period, although scarce, are yet to be seen in ceramic collections, notably in the museum at Dresden. Some of them, including teapots, teacups and saucers, were shown at the great fair in Leipzig in 1710.

with silver, gold, platina or colored enamels, it was exceedingly attractive, as specimens still in existence prove, so much so that the King used the choicer pieces as gifts for his most esteemed friends and favorites, often mounting them in the precious metals.

But the production of this stoneware, or "Boettger" ware, successful as it proved, did not satisfy Boettger. The artistic instinct aroused in him spurred him to further achievements, and he aimed at the production of ware that would compare in fineness, originality and delicacy, with the creations of the Oriental artists. With the best materials the country furnished, at his command, supplemented with others that he discovered or pressed into his service, the Kaolin he found in his hair powder, being according to some accounts utilized for these purposes, and, in the King's collections, the choicest specimens of Oriental porcelains as models and incentives he unremittingly pursued his investigations and constantly improved in the design, execution and finish of the goods he turned out.

The King, recognizing the progress he was making, en-



The present Royal Meissen factory

This was really nothing new, red stoneware made in China and Japan being already known in Europe; but this was home-made, and although described as somewhat crude in form and finish, at once attracted attention. To improve its form, the King commissioned the famous court goldsmith, Irminger, to make patterns for the new ware, in which he embodied Baroque ideas, and with this difference, and certain changes in the composition of the mass which Boettger introduced, he was able to produce an article differing broadly from the Chinese ware, and which for many years retained its popularity.

One of the ingredients of the mass, the composition of which, like all the operations conducted by these early ceramists, was a jealously-guarded secret, was iron-oxide, and the proportion in which it was present and the chemical changes it underwent in the process of firing, consequent on the temperature maintained, and whether the firing was done in a muffle or in open kiln, enabled the maker to vary its color, from copper red to deep brown, so that with decorations in simple relief, picked out with gold or painted

couraged him in his efforts and foreseeing in the results something infinitely superior to the best efforts of the faience and earthenware factories of the times, resolved to take part in the work and incidentally to share whatever credit and profit might result from it; under royal decree, dated January 23, 1710, he ordered the establishment, in Dresden, of a porcelain factory, which for convenience' sake was removed, a few months afterwards, to Meissen, on the banks of the Elbe, fifteen miles from the residence city, where it was installed in the practically abandoned and internally inadequate royal castle or fortress of Albrechtsburg. This castle, Boettger immediately began to put in shape for his work, the "Venus baston," which is still in existence and in a fair state of preservation. This, then, was the birthplace, in Europe, of the porcelain industry and this the event so appropriately and happily celebrated recently in Meissen.

As was to be expected, on account of the interest the reigning Saxon monarch had taken in the development of the industry, royalty took a conspicuous part in the cele-



A teapot of Boettger ware



Saucer of Boettger ware



A cup of Boettger ware



A sugar basin of Boettger ware

brations of the 200th anniversary. The King distributed among the officials and veteran employees of the works, a number of orders and other personal distinctions, alike commemorative of the event and in recognition of the faithful and efficient services, while the festal programme carried out was at once appropriate and highly interesting. In the morning of June 6, 1910, in the great court of the works, there was a festal performance; at noon divine service in the city church; later a banquet in the Albrechtsburg for the dignitaries and in the Burgkeller for other guests, general social intercourse, reception of the King and royal family, greeting of the King at the place of festivities, and artistic representation by members of the court; and final general conviviality, concert, choral music, dancing, etc.

But to resume the thread of our story of the rise and progress of the famous establishment, to which, after 200 years, the world still looks as academically connected with the rise and progress of one of its favorite arts, Boettger, who occupies in his relation to the development of the Saxon porcelain industry a position comparably only with that held in France by Bernard Palissy or in England by Josiah Wedgwood, was installed, with Mining-Councillor Nehmitz as his associate, as director of the Royal Porcelain Works at Meissen, an office he continued to hold until his decease in 1719.

For some time, the manufacture of the redstone ware chiefly occupied his attention, and here were turned out many creditable specimens of his work, including mugs, bowls, tea and coffee pots, cups and saucers, knife-handles, figures and some more pretentious articles in the shape of large vases. But the production of this ware, successful as it proved and remunerative as it was to his royal patron,

did not satisfy him. Having frankly acknowledged his lack of knowledge, in regard to gold making, he was allowed to continue his researches into the manufacture of porcelain, and they were finally rewarded with a considerable measure of success. Towards the close of 1709 or the beginning of 1710, he had produced his first real porcelain specimens, crude, it is true, in form, but having the delicacy of substance and the semi-translucent quality characteristic of the finest Oriental porcelain and the attainment of which had been, for so many centuries, the despair of the European potters. In 1713 he produced his first fired goods, with underglaze decoration, and in 1715 followed his first hard porcelain.

Very soon, the original Boettger redstone ware, gave way to the really artistic products the new process made possible and on the development of which, the fame of Meissen, as the Royal Porcelain Factory rests. The most artistic Oriental models were at first closely followed in style and effect, if not in many instances actually copied and so successfully that it was and is impossible to distinguish, without the closest scrutiny, between choice specimens of Meissen ware of this period and the finest productions of Oriental potteries. Fine table services, ornaments and purely artistic creations won fame for the royal potteries on the Elbe under Boettger's direction, although the commercial results of the enterprise were decidedly handicapped by the constant demands made upon the establishment by the royal founder, who imposed upon it the most exorbitant commissions for the ornamentation of his residences, presentations to friends and allies, etc.

At this time some of the choicest and most unique specimens of Meissen ware originated, mostly in response to royal commands and some of the leading plastic and



A bird (Toucan) of Boettger ware



Types of Eighteenth Century porcelain



A brace of falcons (kestrels)

color artists in Europe, were called in to assist in the perfection of what Boettger's discovery had made possible. It was recognized early in the development of the Meissen factory, that while the technique of the potters art under Boettger's direction left little to be desired, there was room for improvement in the coloring and, in 1720, the famous enamel painter, Johann Gregorius Herold, was induced to go to Saxony from Vienna, to bestow his attention on this particular branch of the work. His influence was at once perceptible; from this period dates the perfection of coloring that distinguishes Meissen porcelain to this day. Herold was not merely a colorist, in the ordinary acceptance of the term, he was a genius in the discovery and origination of colors and color schemes, that lent brilliancy to his creations. One of the colors he contributed to the Meissen resources, was a superb glazed blue, the secret of which the Chinese originators had lost centuries before and never had been able to re-discover. This was, indeed, the most wonderful period in the history of Meissen porcelain, it attained a de-

gree of perfection it has never since exceeded and some of the choicest and most artistic of the productions of the establishment date from this time. The influence exerted on the productions of the now flourishing establishment was further enhanced when in 1731 the services of Joachim Kändler, one of the most famous plastic artists of the century were secured for directing the molding and modeling branch. With his deft hands and with Herold directing the color work, Meissen entered upon the most successful epoch in its existence. Kändler created for Meissen what has been described as the European classical style in porcelain, as distinct from the Oriental, which had hitherto dominated or influenced more or less the best productions of European potteries. From now on, Meissen had a style of its own, the day of imitations of the French, the Vienna and other schools was past, and the royal porcelain works established a style entirely original, which other schools and porcelain factories have been only too glad to imitate, for after a while porcelain works sprang up elsewhere, the secret having been sold by deserters from Meissen.

That a demand arose for Meissen porcelain, was only to be expected and for the first time in its history the works developed, from a drain on the royal treasury, into a very appreciable source of income, so that Boettger's work proved indirectly a gold making undertaking. From all quarters of the globe, even from the distant Orient, orders for Meissen porcelain were coming in and the amount of work the factory turned out, under the indefatigable energy of Kändler and his assistants Zuegel, Walther, Blochmann, Wiegand, and others, almost surpasses belief. The fact that porcelain had come into its own, as a feature in the decoration and furnishing of the apartments "de luxe" on which the monarchs of the seventeenth and eighteenth centuries lavished fabulous sums, increased, not only the volume, but the importance of the commissions intrusted to the Meissen works, and its products are to be found in

every civilized land, in many instances unexpected finds of porcelain from this famous factory having been made. All this, of course, brought "grist to the mill," and in 1746, when nearly 400 people were employed in the factories, they turned over a profit of almost 110,000 thalers (\$80,300), and enjoyed the fame of being the most extensive establishment of the kind in existence.

The seven years' war, during which Saxony was overrun with rival armies, saw the works more than once in danger of destruction. Fortunately Frederick the Great, who liked to be considered a friend of the liberal arts, displayed unexpected consideration for the famous factory, contenting

himself with laying it under heavy contribution, for the gratification of his personal tastes, although it is even said that he paid for some of the wares that pleased his royal fancy. Be this as it may, Meissen's loss, through the war, was purely of a financial character, and from this it speedily recuperated, for we find, in 1765, that there were 731 people on the factory payroll and that the receipts for the following year totalled 221,500 thalers

(\$161,133). At the same time the staff of experts was constantly undergoing augmentations, an important addition being the famous court painter, Dietrich.

In 1774, with the advent of the Graf. Marcolini at the head of affairs, another period of extraordinary prosperity commenced for Meissen, known as the Marcolini period, which lasted forty years, until 1815. It included two distinct style periods, the "Zopf" (Louis XVI) and the "Empire," and while they may not have exercised so significant an effect on the development of Meissen ware, as the less restrained "Rococo" style that Kändler encouraged, and to which the color work of Herold so admirably lent itself, they are none the less characteristic and have served perhaps better than any other Meissen products to familiarize

us with the productions of the famous factory. To this period belong most of the "figurines" representing characters from family and every-day life, especially children, which, while lacking the brilliancy of the figures of the rococo period, being for the most part uncolored, biscuit figures, have a style that is entirely their own and leave the works at the close of the eighteenth century al-

most where they stood when Boettger took them in hand at its commencement.

With the introduction of this colorless ware the progress the ceramic art had displayed during the preceding period appears to have been arrested. Without color the interest in ceramic productions declined, and the cold uncolored reproductions of classical figures failed to arouse the enthusiasm the richly colored ware of Meissen's most famous period had created. It was fortunate that at this period the factory could find profitable employment in the reproduction of the most famous productions of its rococo period, for which there appears to be a never-failing demand. Of course, what was created were copies, and copies are always lacking in the price and freshness of the original, but the public accepted them.



Fine specimens of Meissen porcelain ware, Royal figures and group of children



Two fine groups representative of the Rococo period



Banjo clock



An original four-poster bed



An old time-piece

Decorations and Furnishings for the Home

By Alice M. Kellogg

XI.—Old-time Bed Room Furnishings



COLLECTING antique furniture is a phase of home making that touches the theoretical more than the practical needs of life. One may be a discriminating critic of form and line, a competent judge of material, an expert on dates and periods of manufacture, but without the ability to create a harmonious setting for articles, priceless for their antiquity.

In the historic mansions scattered throughout our country and maintained for patriotic societies as object lessons of Colonial life, we find in more or less perfection of detail the accurate surroundings for antique furniture of that period.

The picture charm is convincing, and makes especial appeal to those who have been accustomed to the uninteresting furnishings of the nineteenth century. To realize a similar ideal the hunt for old furniture is begun, with its rich yield of many-sided interests.

Amateur collections of old furniture naturally tend towards the pieces originated for bedrooms, bedsteads, chests of drawers,

mirrors, washstands, chairs and tables. With any or all of these in possession, complementary fittings are requisite and desirable to maintain their standard of interest.

In the accompanying illustrations various conditions have been met more or less successfully. The Colonial feeling is apparent in all, although it is only completely attained in two of the examples.

A careful analysis of the problem brings to its solution the simple question of suiting the old-time fittings to modern requirements. For the home is not a museum of historic antiquities to be exhibited for educational benefit, nor a shop for the profitable disbursement of rare articles,

but a place for comfortable living, enriched whenever possible by whatever will contribute to its beauty and interest.

The four-poster bed, with an upper valance of lightweight texture, placed in a room of good size with plenty of windows, is not at all unsanitary, even in our up-to-date conceptions of the word. Yet even this slight drapery may be modified, while retaining its picturesque feature, by leaving off the canopy at the top.

As the choice of material and manner



A stately room

of its hanging varied under different conditions in the old times, it is only a matter of artistic fitness to make this feature contributory to the general quaintness of the room.

For the double-sized bedstead, with the top of the mattress often thirty inches from the level of the floor, a lower valance is almost essential to give foundation to the structure. On a single bed with the short or medium-height posts and the canopy omitted, a spread that falls to within eight inches of the floor may be substituted. The shield drapery at the back and sides of the head-board should correspond with the texture of the upper valance, but the spread and lower valance, for obvious reasons, may match each other, and while they may be different from the upper

ton crepe, with the spread showing the colors of the wall paper border on a ground-work of gray.

In another room an opposite treatment was wrought by making the valances for the bed of a cretonne that matched the wall paper and using a white dimity spread.

A chest of drawers formerly took the place of our modern bureau, or dresser. A small mirror fastened to a box with drawers was placed on the top of the chest of drawers, or, a looking-glass of more ample size was hung against the wall. Sometimes the lower half of a high-boy (the tall variety made in two parts) was utilized as a dressing-table.

In clothing the tops of these pieces a hemstitched strip of fine linen may be given the preference over fancy ma-



A four-poster bed without a footboard

trimming they should still be related to each other in color effect.

The treatment for four-poster beds may be classified in a general way as the (1) white and (2) colored. In some rooms the first scheme is the only possible way to balance discordant notes in floor and wall coverings, or bring in the needed element of light. In other places, a chintz effect on the bed may be a happy relief from plain walls and floors.

So much attention has been manifested in this important item of bedroom furnishing, that reproductions of the old trimmings in white and colored effects as well as the materials themselves are now on the market.

In a room where a gray-and-white striped wall paper with a narrow border under the cornice in tones of mulberry and sage green, bed hangings were made of gray cot-

terials trimmed with lace edges and insertions. The pin-cushions with covers done in cross-stitch, and a brush tray and powder box of English ware decorated with tiny sprays of flowers, are attractive fittings.

Even with a bathroom adjoining a bedroom, it is considered quite essential to fit up a washstand with toilet requisites, and the selection of pitcher, wash basin and slop jar may confirm the old-fashioned appearance of the furniture if the pattern is selected with care. The chintz designs (costing about sixteen dollars) are particularly well-suited to plain wall coverings, but a set in ivory colors, with or without gold band (at seven dollars and a half) is better for a room with walls showing a decided pattern.

In papering a bedroom fitted with old-fashioned furniture the choice will be affected by the conditions of exposure,



Ample spaces suit the old furniture

amount of light, the personal preference for color and the outlay to be made. In a guest room, a figured paper is often chosen for its decorative effect, where a room in constant occupation is treated to a plain paper, one that is printed in two tones of one color, or a self-toned pattern.

Wall papers need not be actual reproductions of the old ones to be distinctive accompaniments to antique furniture, nor, are they necessarily of high price or fine quality. Some charming chintz effects of domestic manufacture may be bought for twenty-five and thirty cents a roll, and the narrow stripes in two tones cost forty cents a single roll.

The floral borders that are so freely employed now in wall decorations should be used with restraint in connection with old furniture, although in many instances they are exactly the right note. The border with edges cut out is a modernized adaptation of the old border with straight edges which took the place of a picture molding as a finish to the top line of the walls. In rooms with an uneven ceiling the narrow border may be used in the place of a picture molding.

With the woodwork correctly finished in white paint, a bedroom furnished with antiques finds the curtain question definitely fixed in the same color—cream, ivory or pure white. The material may be muslin, organdie, dimity, scrim, madras, grenadine, net or lace, the more simple the effect the more in keeping with the general scheme of the room.

For a bedroom that is used in the cold weather, a long over-curtain that can be easily swung across the window is a cosy note of comfort. This may be made of linen, chintz, cretonne or taffeta, and lined with sateen; or the material may be of heavier weight and put up without a lining. Some of the Scotch fabrics that are guaranteed to be incapable of fading are especially desirable for the latter use.

There are so many kinds of rugs to choose from at this time, that those suitable for the old-fashioned bedroom need not be difficult to determine upon. Color, texture, design and size are all of moment, and if the supply in stock does not meet the requirements, a special order can often secure it. The woolen rugs made in Scotland in vege-

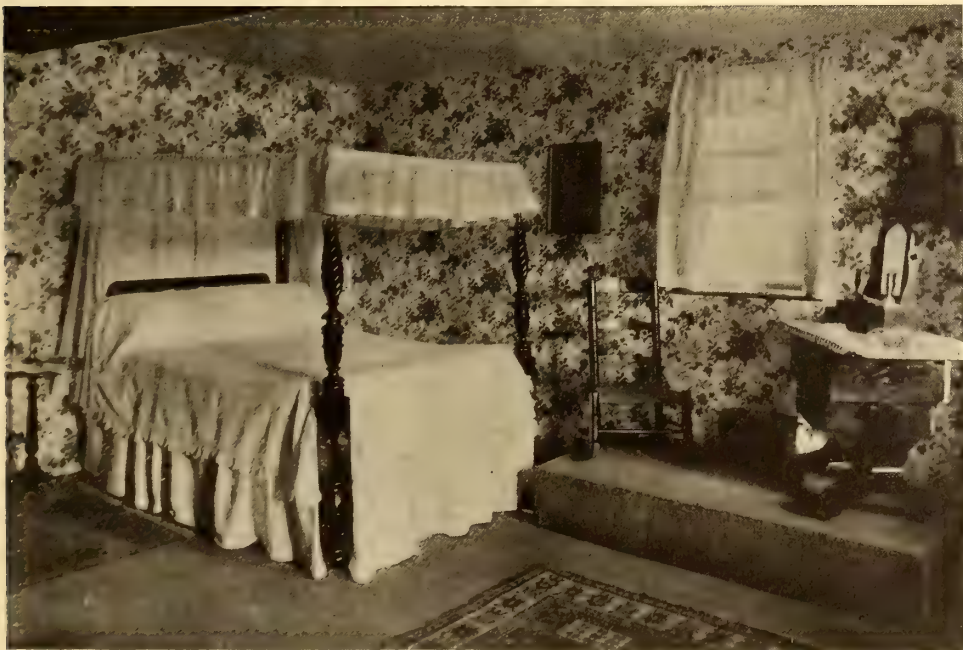


Some excellent furnishings

table dyes, at the moderate cost of three dollars a square yard, can be had in a variety of colors in plain or figured effects. These are the ideal floor coverings where Oriental rugs of fine quality are out of the question.

Rugs made of cotton strips woven on a hand loom may be of real charm when the colors are skillfully assembled. This usually means the special dyeing of the material, which increases the cost considerably.

A lounge, an armchair and a rocker are modern concessions for the old-fashioned bedroom, but these need not be out-of-keeping with the older furniture if built on simple lines. For their coverings one may find in the printed linens, linen taffetas, cretonnes, or two-toned jute materials the colors that will unite harmoniously with the wall hangings and the floor coverings. When pictures are to be purchased for this room, engravings and etchings from Dendy Sadler's eighteenth century scenes, and the mezzotints of Charles Bird may be remembered.



Authentic in every detail



A lamp of bronze and of plaster



A lamp and an electrolier



A statue

The Home of An American Sculptor in California

By Burr Bartram



UPON reaching the Pacific Ocean by a comparatively new road from Los Angeles to Santa Monica, one comes upon the studio of Felix Peano, an American sculptor. It is a striking structure, built on a beautiful ridge known as the Palisades, and is one of the most unique of California's beautiful homes. It is finely situated; not so near the edge of the bluff as to expose the outbuildings in the green valley on the one side, nor so close to its brink as to catch a view of the railroad which extends along the shore. The building is kept close to the earth, and seems to be exactly adapted to the equable climatic conditions of southern California. The

house is an expression of harmony, the result of the designers' conception and execution of an ideal home.

The building is one story in height with the exception of a second story over the central section of the building; a construction which gives height to the dome of the reception hall. The roof is extended over the main part of the building, and is devoted to the uses of a garden. The entrance to the house is reached from a sloping porch built at the north front of the building. A medallion is placed in the center of the terrace wall which encloses the ascending walk and forms the outer balustrade immediately in front of the entrance door. At one end of the porch is a bronze foot scraper, in the form of a maddened cat with arched back,



A house of striking design built of concrete



Steps lead to the terrace

its head and tail erect in air of defiance, while in the frieze below the porch is an eager hound in the act of attacking the feline yet held at bay by the latter's menacing attitude.

On the west side of the building there is another terrace which leads from an automobile garage direct into a court, the feature of which is a fountain built at the side of the



The terrace, showing some of the sculptor's work in settles and tables



The living-room

house, representing a cupid filling a vase for a woman reclining at her ease beside a pool of sparkling water. To the rear of the terrace is a large garden, and a pergola, both connecting with the first, on the east side of the building. The last is walled in to the height of four feet, and has a floor of mosaic laid in cement. Artistic settles and tables



The dining-room

built of the same enduring material are placed along this terrace as shown in one of the accompanying photographs. A frieze of terra cotta sculpture decorates the interior of the wall, dealing mostly with childhood and nursery scenes, one of which is in the form of a medallion showing an infant and a kid butting heads in play. The house is built of terra cotta, cement and concrete, and is practically fireproof. The elaborate portal at the front doorway is supported on two bronze figures standing on metal columns. Before the front door there is a small bronze figure of an Italian artist with his back toward the visitor standing apparently before an easel on which is painted "Salva," the Latin word for Welcome. The reception hall has a high panel wainscoting which is hand carved in a plain but artistic manner. From the ceiling in the center of the hall, is suspended a handsome, hand-made bronze chandelier. At the top of the wainscoting at each corner of the hall, there is a decorative structure of Abalone shells, ground to transparency and set before a group of electric light, which shed a soft and pleasant glow over the entire room. Shells of the same kind are also set in the double walls, with light behind, producing an artistic effect. To the right of the hall is built the living-room some forty feet in length, a view of which accompanies this article.

On the north wall of the room is an elaborate clock representing some of the aspects of ideal home life, with the hour and minute hands consisting of little cupids which revolve about the ornate dial, each hour being marked by two doves instead of the usual cuckoo. The woodwork of the room is colored and finished in a subdued dark brown tone, produced by the staining and the scorching of the material. To the left of the hall is a music room of almost equal dimension, which has the same decorative effect, except that there are no high wainscotings. The walls of this room have semi-precious stones, such as the opal, and the matrix, matrix-turquoise, and the



A sea-nymph discovering pearls in a shell

where the general scheme of the house is repeated. This bedroom connects with a private bathroom in the rear part of the house by a separate passage. A staircase rises from one corner of the living-hall, to the gallery, which extends about the dome, where accommodations for another bedroom are provided. From this gallery, doors open onto the roof-garden, which is provided with growing plants

and vines, which form a screen for the enjoyment of out-door life. These rooms create a circle about a small interior court or patio, which is uncovered except by the arbor on which there are growing vines. This court has settles and an ornate table of fine cement and bronze work. On its south wall there is a fountain which depicts the allegorical birth of Venus, and shows a beautiful woman rising from the sea on a huge



Lamps of artistic design, and a card tray

shell, from which the water still drips. At one end of the shell is a diminutive cupid handling an oar in the navigation of the strange craft. This beautiful vision can be seen from the interior by means of the large French windows which open into the court.

The views and the details show the adaptability of this delightful home to its surroundings and the fulfillment of the ideals evoked by the artist for his studio.





The patio

A House of Spanish Character

By Henry Hawley



BEAUTY in any form is one of the essentials of the expression of a strong and sincere idea, therefore, anything that is worth copying must be in the original a work to which a serious thought has been directly given, and in the simplest manner; consequently, in the selection of the old Spanish type of dwelling as a prototype for the handsome house built for Joseph F. Williams, Esq., at El Paso, Texas, and illustrated herewith, the architects, Messrs. Trost and Trost decided, after considering the site and setting of the proposed house, that this style of building was more appropriate than any other under the existing conditions.

The building is an oblong one in form, has square lines and is built of cement stucco, tinted a soft cream color. The entrance is provided with a porch constructed of a series of circular headed arches, with the exception of the one directly in front of the entrance which has massive columns supporting a pediment. The roof is covered with red Spanish clay tile, which adds a touch of color to the sombre tone of the cement walls.

Porches provided with similar arches are built at each side of the building, giving it a greater breadth than would have been accomplished by any other design. The main wall surface of the second story front is pierced by a group of circular headed windows in the center, while a pro-

jected wall surface at each end of the building has an ornamental panel, in the center of which there is a leaded glass window.

The gargoyles shown in the wall surface of the battlemented roof give the appearance of an armored cruiser, and is the only feature in the design that is grotesque. If these were eliminated, the general effect of the exterior would be very much enhanced.

The entrance is into a square reception hall, containing an ornamental stair case. This hall and the entire house is trimmed with Texas pine stained and finished in imitation of Missouri oak.

The living-room occupies the remainder of the front of the house, and it contains a large open fireplace built of St. Louis buff mottled brick. Book cases are built along the sides of the room. Large French windows open into the patio built at the rear of the house, which is the important feature of the place. It is 23x33 feet in dimension, and it has an enclosure of columns between which there is a cement walk extending around the court. The ceiling of the living-room is beamed, as is also the hall.

Directly back of the hall and opening on the patio is the dining-room, fitted up with a paneled wall and ceiling.

The service end of the house is complete in all of its appointments.

The second floor contains five bedrooms and two bathrooms. The latter have floors of tile and porcelain fixtures, and exposed



The entrance porch



A house with Spanish feeling

plumbing. A screened sleeping porch is built at one side of the house overlooking the patio.

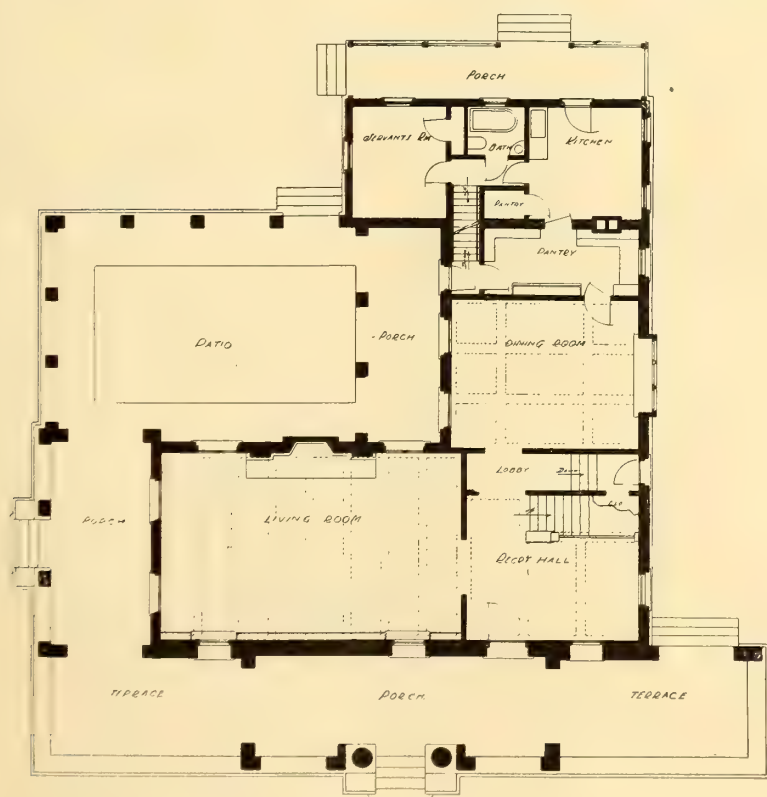
The house is provided with a basement under the entire building, and is furnished with a heating apparatus, fuel-rooms, laundry and storeroom.

Here, then, is a very simple dwelling, unpretentious in its structure and development, yet a very charming house to live in, and amply equipped with every essential convenience.

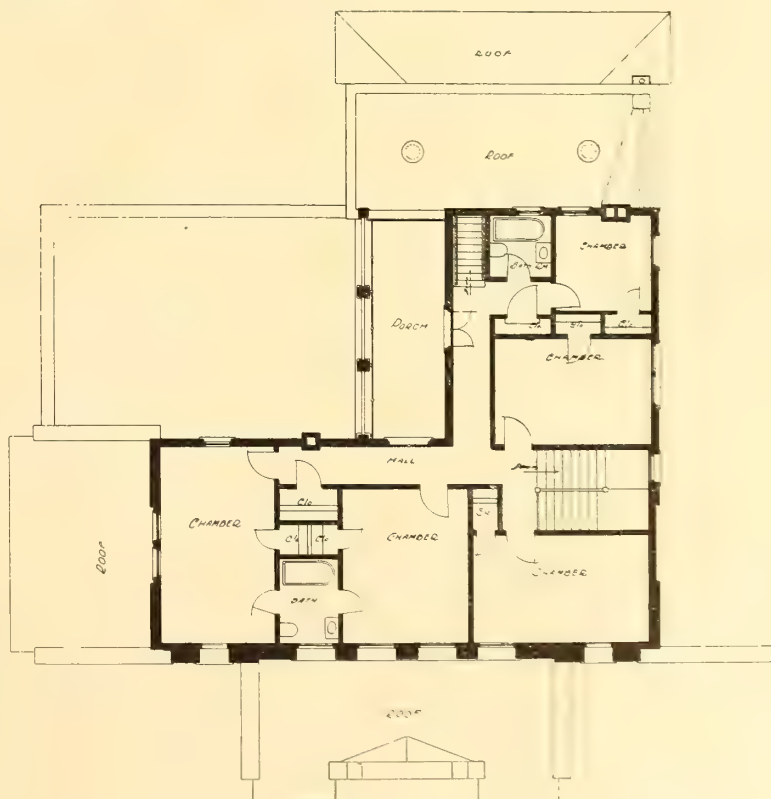
The design is an extremely happy one for the situation, the house and the site having that direct relationship to each other which characterizes every good house and which,

when combined with fine artistic treatment, as in this instance, sums up about all the requirements that can be demanded of a dwelling place.

Apart from the plan and the arrangement, the qualities of this house which particularly call for consideration and which most decidedly assert themselves, are its simplicity and its charm. The charm of the house is due to circumstances. The surroundings are, of course, interesting, but it took the skill of a trained architect to create a design that would be harmonious and in keeping, not only with the site upon which the house is built, but also with the requirements of the family who are to live in it.



First floor plan



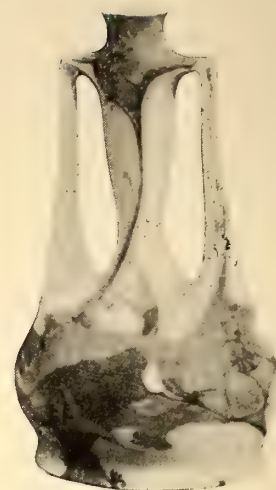
Second floor plan

HANDICRAFTSMAN

Conducted by A. Russell Bond

Home-Made Pottery—II.

By W. P. Jervis



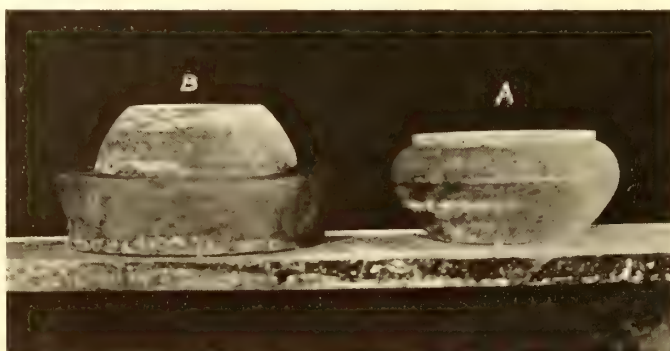
As a pottery producing method, casting from plaster molds is often decried by the ultra-artistic as lacking in individuality when compared with the work of the thrower. This is only relatively true, because, except in rare instances when the artist is embodied in the thrower, the work of the latter does not reach us as it leaves his hands. In America the thrower is not infrequently, though erroneously, called a turner. The thrower takes a lump of clay which he places on the center of a revolving disc and then by the skillful manipulation of his fingers or a few rude tools the clay, obedient to the pressure and direction he gives to it, assumes the desired form. It is probably the most beautiful process in any of the industrial arts. But the piece as it leaves his hands is not suitable for an article of commerce, it shows the marks of tool and fingers. So when it is sufficiently dry it passes into the hands of another workman, the turner, who places it on a horizontal lathe and with a sharp tool turns it smooth and even, and the result as it reaches you is no longer the individual expression of the thrower, but a piece of "thrown and turned" ware. Many pieces from their shape cannot be thrown on the wheel and molds are then resorted to. These molds were originally made of metal, later of pottery and finally of plaster of Paris. If you look at the illustration of the Rosenberg vase, in the head-piece of the page, you will see what beautiful results can be obtained by casting. The idea of the designer was that the handles should form a component part of the whole, and by no other process could this have been so well effected. To cast pieces of similar shape to this in a body lacking plasticity is no mean achievement.

The first requisite to make a mold for a cast piece is a model. This may be of any material strong enough to resist the pressure of the plaster. If the shape is to be created, the model can be carved by hand from a block of plaster, or made from templates on a revolving rod. Formerly the molds

themselves were carved by hand. Do not fail to remember that on account of the shrinkage a mold twelve inches high, if the shrinkage is one-eighth, will yield a piece ten and a half inches when fired.

The simplest is the one piece mold, applicable only to a few shapes wider at the top than at the bottom, and having no projections on the sides to interfere with the mold's "drawing."

On a well greased plaster bat, a piece of glass or wood, place your model, top downward. Surround this with a piece of thin zinc or iron, such as is used to make stove pipes, or a strip of oil cloth serves equally well, tie it well together with a stout cord, and plaster round the bottom and joints with clay so as to prevent leakage of the plaster. The frame should be higher than the model and allow about the same space, according to the size of your model, for the side of your mold. Mix the plaster, having first well greased every part, and delay pouring as long as possible, as it should be thick enough so that it will just pour smoothly and fill until it is flush with the top of the frame and it will give you a mold like that shown in Fig. 3. A two-piece mold is not much more complicated. Some pieces are best made in diagonal, some in horizontal parts. A bowl for flowers similar to the cut of model (A) is best made in horizontal halves. Having found the point of extreme diameter, carefully mark it with a good strong line all around and then place it on a bat top downwards. Build up with clay from the bat to the line making an absolutely even plane all around the model (B).



Making a two-piece mold for a bowl

So that the two parts shall not move, a lock is necessary, and this can be made by rolling a morsel of clay into a sphere, cutting it in half and placing the halves, moistened with a little water, on the built-up clay. Four or five of these buttons should be so placed, or on a plaster bat cut over several sizes of these hemispheres, and this will serve as a mold. Fill the depressions with clay and smooth down to the surface of the plaster. By pressing a damp knife on them they

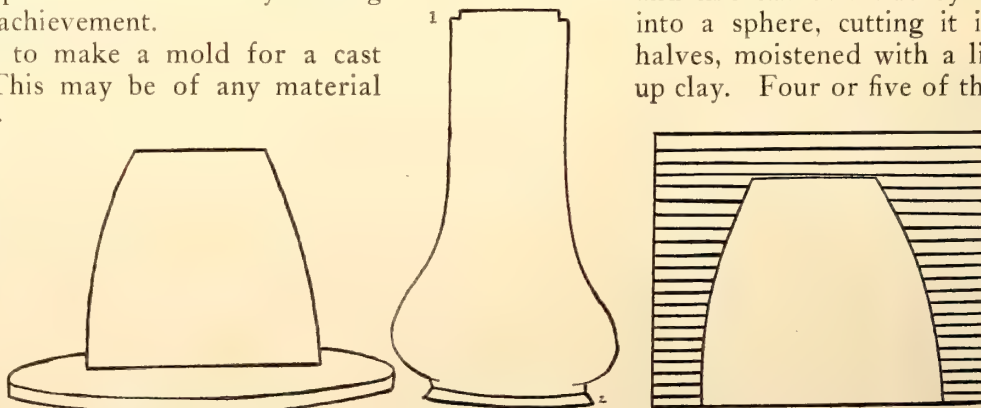


Fig. 1—Model on a plaster bat. Fig. 2—Model for three-piece mold. Fig. 3—A one-piece-mold.

are easily removed. Proceed as directed for the one piece mold and this will give you the first half of the mold. Reverse the model. Remove the clay, fix your frame (not forgetting to grease the plaster), pour plaster to the top of the spare and this will give you the other half of the mold.

The only difference between a two- and a three-piece mold is that the bottom of the latter is made separately. So below the bottom of the model an extra piece must be provided from which to form the foot. This can be made of almost any material, clay answering very well, but it must be removable. In form it is a truncated cone, the top the exact size of the bottom of the mold, the bottom a little wider. In the outline sketch, Fig. 2, the part is called the "spare," which enables the thickness of the clay which has formed on the walls of the mold to be determined. Notice that the spare is a little narrower than the top of the model.

Although a little troublesome to make, thin plaster slabs cut to the outline of the model, to replace the building up with clay, give a perfectly smooth surface, a great desideratum in molds, as the cleaning after use is reduced to a minimum. These must be well backed with clay so as to withstand the pressure of the plaster. Surround with a fence and make the two halves as before explained. Having obtained these, reverse the whole, take out the false bottom, cut notches on the bottom of the two halves and having fixed the fence so as to project from one to two inches, according to the size of the piece, it is then ready for making the mold for the bottom.

Before using, these molds must become thoroughly dry. This being attained, take a large brush or sponge and paint over with slip the whole surface of the inside of the mold. If the halves are perpendicular tie tightly with strong cord. The notches are not sufficient to hold them.

Your slip should be fairly thick and without lumps. It is best to strain it into a large jug or can through a colander. I find an ordinary watering pot a convenient utensil. Having your mold properly fastened and painted inside, the slip in good condition, pour the slip steadily



Pouring the slip into the mold

into the mold until it is quite full. The plaster will absorb some of the water, indicated by the fall of the slip in the mold. Fill this up as many times as is necessary until sufficient thickness of clay has formed on the sides of the mold. This is ascertained by taking a tool or piece of soft wood and scraping away a morsel of the clay at the top of the spare. Having arrived at this take the mold in your hands, being careful to handle it so that the bottom mold does not move, and empty out the slip that remains. Put it aside to dry and in a few hours the "cast" piece can be removed from the mold. Turn it upside down and take off the bottom mold, lay it on its side and remove the two halves, being careful to lift straight, or the edge of the mold may scar the piece. Place the clay piece on a plaster bat and allow it to dry.

When dry enough to handle, with a sharp knife cut off the spare and trim evenly, and also trim down the seams, smoothing to a finish with a silk sponge. Keep this free from

clay by constantly rinsing it. Do not use the sponge more than you can help, relying more on the knife.

If you cut out a section of one of these cast pieces you will see an absolutely uniform thickness, whilst the spare section is uneven because at times the absorption by the plaster was checked because the mold could not be kept full the whole of the time. So necessarily the one-piece mold being made without a spare will be a little thinner at the edge. Cast pieces shrink more than those made by hand, but will stand a harder fire.

If the piece is to be fired without decoration it must be bone dry before putting it in the kiln. If intended for decoration it can be kept in good condition for quite a time, by

wrapping a damp cloth round it and keeping in a damp place. This clay decorating is extremely fascinating and will be dealt with later.

If in removing the piece from the mold it does not separate freely, the latter is probably too hard, that is, it contains too much plaster. First mold impressions are usually failures, because the mold has a certain amount of grease on it and this prevents absorption by the plaster. But the first casting removes this grease.



Preparing to build up the two halves of the mold about the model.



A rustic fence and gateway

A Picturesque Ranch Bungalow amid Attractive Environs

By Scott Waverly



EARLY every city dweller, sometime, has expressed the wish that he could get away from the noise and bustle of the city to some quiet retreat in the country. He has indulged in day dreams from which he has built a cozy country home amid a profusion of trees and flowers—

close to Nature, as he has expressed it, where he could own some chickens and a cow, and could raise his own garden truck. A few of such dreams have materialized, but the majority of the dreamers, no doubt, still call a flat or an apartment house home. Among the minority of the dreamers is Dr. C. R. Benney, the owner of the picturesque ranch bungalow illustrated by the accompanying photographs.

The home is located near Los Angeles, California—within a short distance of

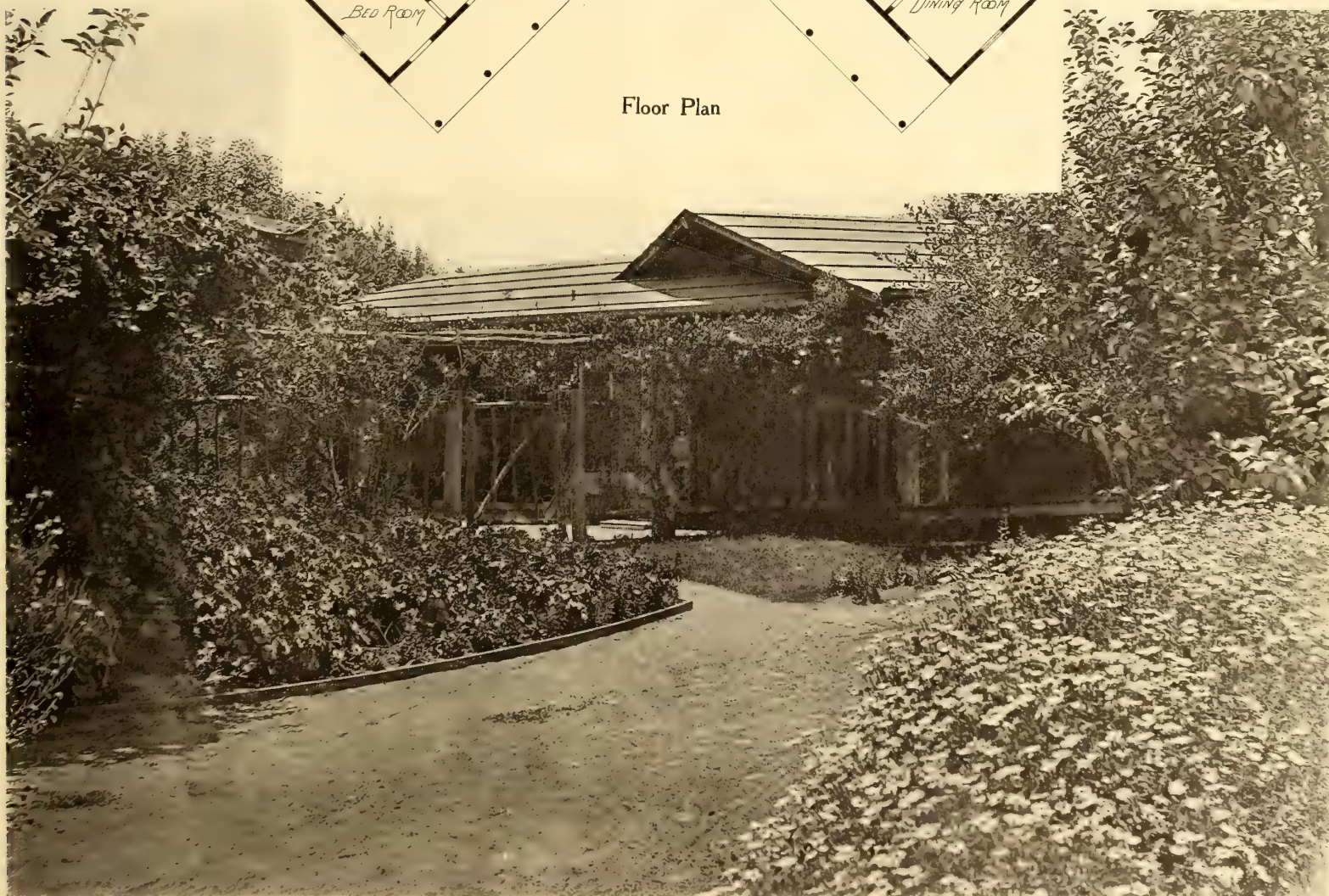
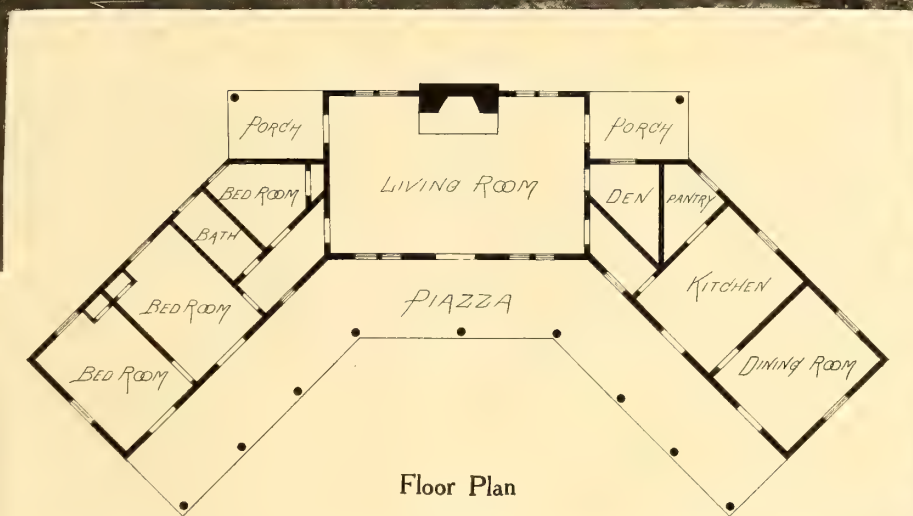
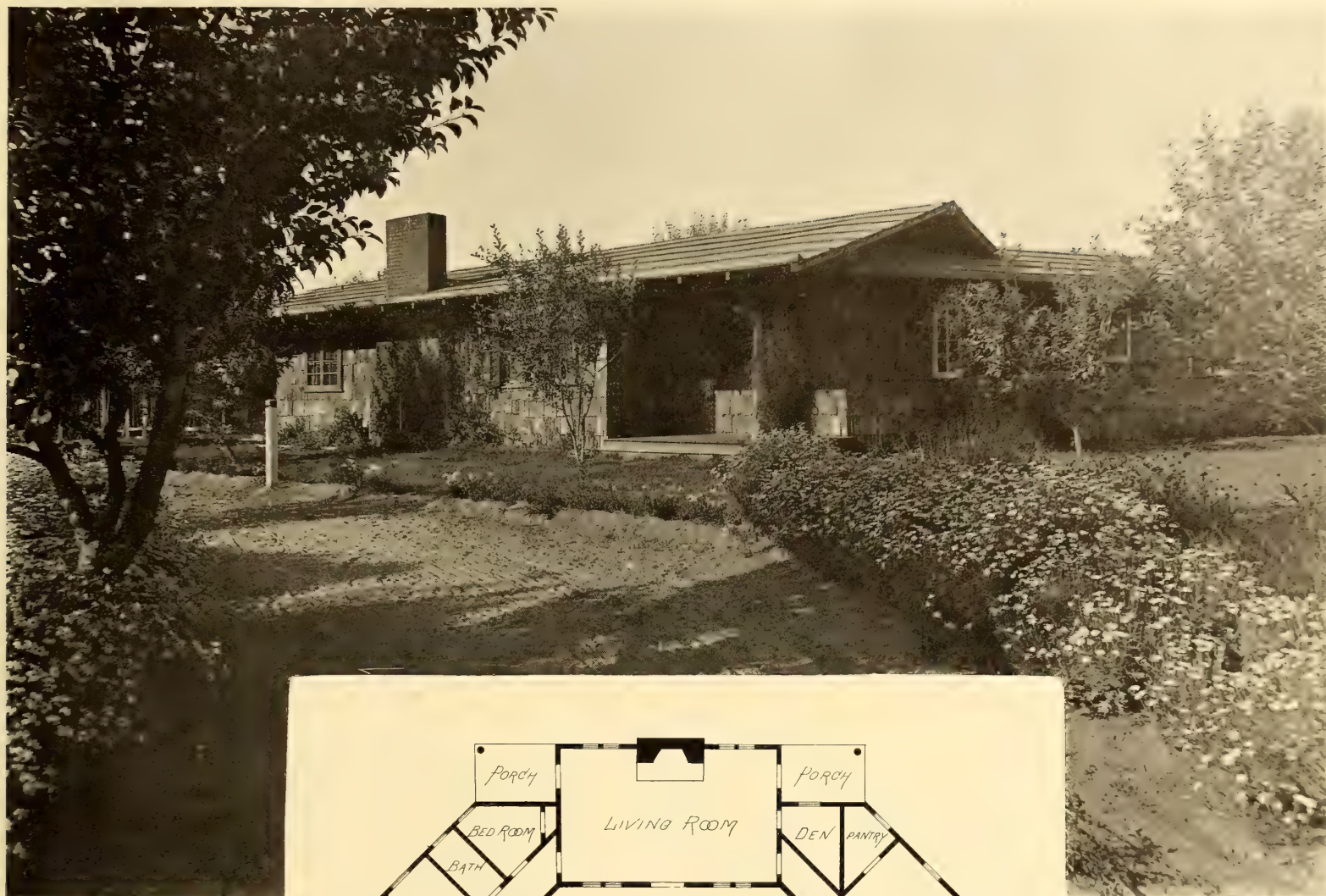
an electric car line, and near enough to the city for the owner to motor to his office in about thirty-five minutes. It occupies three acres of ground—a plot large enough to meet all the requirements of the ordinary dream of the city dweller, and sufficiently improved to satisfy the most exacting. The bungalow is of picturesque architecture, designed with particular care to harmonize with its setting, and the profusion of trees and flowers in which it is em-

bowered has been selected and arranged so as to create a general effect that is truly and ideally rural.

The house is but one story in height and contains six rooms—living-room, breakfast-room, kitchen and three bedrooms, besides the bathroom. It is shaped like a letter "A," minus the top, which creates a large court or patio in the rear, open at the broad end. A broad veranda borders the court on the three enclosed



The living-room



California redwood split shooks are used for the siding of the bungalow



The entrance porch

sides, and into it lead French doors from the living-room, breakfast-room, kitchen and one of the bedrooms. On the front of the house are two small corner porches, and back of one of these is the usual screened porch.

The woodwork of the bungalow consists of Oregon pine for the roof and framing, California redwood split shooks for the siding, and eucalyptus logs for the porch and the veranda pillars. The roof is comparatively flat, the pitch being but thirty degrees, and is constructed of broad ship-lapping boards running length-wise, with broadly projecting eaves. The shooks which compose the siding are about twenty inches long, and laid so as to leave sixteen inches of their length exposed to the weather. They are spaced rather irregularly, and no particular care has been taken to get them to line at the lower edge. The eucalyptus logs used for the porch and the veranda pillars are of varying sizes, and are still in possession of their smooth, leather-like bark. The rules for building a bungalow, particularly for one designed for a ranch or a mountain home, require that the structure be of low, rambling appearance, and that the timbers be uniformly rough. The builder of the one here described has conscientiously complied with such requirements, and as a result the bungalow is an excellent example of this style of architecture.

The windows are mainly of the casement style, arranged in groups of twos and threes. On the front of the house there is a massive brick chimney of excellent lines, with a double window on each side. French doors are used throughout.

The floor plan arrangement places the large living-

room, which on special occasions is also used as a dining-room, in the center, while one of the wings is devoted to the kitchen, breakfast-room and pantry, and the other to the bedrooms and the bathroom. The living-room and the breakfast-room have hardwood floors, and the walls of each are paneled entirely to the ceiling, with a plate rail at a height of four feet and eight inches. The ceiling of the living-room follows the line of the rafters and consists of broad boards with the cracks battled. The room contains a large fireplace with a brick mantel, into the corners of which are worked upright eucalyptus logs. All of the rooms are well lighted from the numerous windows and the French doors.

The color scheme of the bungalow, both inside and out, is unusually attractive. The redwood shooks are simply oiled, which leaves them in possession of their natural color and the roof and the trim are stained a light olive green, while the eucalyptus pillars have been left without either oil or stain. The woodwork of the living-room and the breakfast-room, which is of Oregon pine, is stained with a specially prepared chemical solution which has given the boards a copper-greenish cast. The woodwork of the kitchen and the bathroom, as well as of the bedrooms, is coated with white enamel. The walls of the bedrooms are plastered and tinted in delicate colors.

The garden work around the bungalow is simple in character, but well suited to such a home. Many sorts of fruit trees abound, and enough fruit is raised to supply the family. A feature of the garden work is the fences constructed entirely of eucalyptus timbers.



A broad veranda borders the court



A living-room showing appropriate hangings for the windows



New Cretonnes and Taffetas

By Mabel Tuke Priestman



A DISTINCT stride in advance of previous years can be noticed this season in the wealth of unusual and beautiful cotton fabrics. There is a gradual falling away from the French ribbon and rose cretonne effects that have so long been popular and a more compact and all-over effect is shown in nearly all the materials. Among the new fabrics is a unique pattern in tan colored linen; it is partly covered with a strong design of brown nasturtium leaves and copper flowers; four broad stripes almost entirely cover the yard wide material. It is being much used for covering cushions for brown wicker chairs, and for loose covers on furniture; but, perhaps, it is most attractive when employed as hangings in a bungalow or summer cottage. It is often very difficult to find a fabric strong enough in feeling for a man's bedroom, but this brown and copper nasturtium fills a long felt want in this direction. It is sold for a dollar

a yard. A varied selection of imported cretonnes can be purchased from forty-five to seventy-five cents a yard. These are particularly attractive when used with the new jasper stripes or plain papers; a bower of color is introduced by the use of these decorative cretonnes. Most of them have birds of one kind or another; one of our illustrations, Fig. 1, shows a cretonne partly covered with birds and butterflies, while a tree yielding roses, peonies and fruit on the same branches introduces a brave array of color and shows to what lengths the conventionalizing of flower motifs can be carried. In a large room with a four-post bed, white paint, and mahogany furniture, it is charming when used for hangings, couch cover and bed drapery.

Another of these cretonnes, Fig. 3, shows peacocks waiting by a fountain, other lordly ones strut among the foilage; a trellis gate-way balances the fountain, while butter-cups, iris, and every other imaginable flower, are dotted about at intervals. Such a cretonne would have to be used in a large



Fig. 1—A cretonne with birds and butterflies



Fig. 2—A foliage design in chintz



Fig. 3—Peacocks drinking from a fountain



Fig. 4—A fruit tapestry suitable for a dining-room

room and in the same way as the conventionalized pattern.

Pastoral effects are also seen in the new cretonnes and are much used for bed-rooms and nurseries. A pretty nursery cretonne is covered with designs of children see-sawing and leading sheep, while a fox carrying off a lamb all mixed up with trees, castles and wind-mills are marvelously grouped at irregular intervals. With ivory woodwork and furniture, and blue hand-woven rugs, this cre-

tonne in Delft blue would help to make a dainty bed-room for a girl. It is yard wide and costs seventy cents.

Another of the all-over designs, costing forty-five cents a yard, shows a shepherdess on a medallion, while beaux reveal themselves from behind the flower motifs, which almost entirely cover the back ground.

A yellow English print, Fig. 5, costing fifty cents a yard, is covered with an inch stripe of bright blue; trees and tubs are the motif introduced in the intervening stripe; the ground work of cream forms an alternating stripe with a trefoil pattern. All of these cretonnes could, of course, only be used with a simple wall treatment of plain paper or jasper stripes. Some of them can be used in a dining-room, in fact, it is one of the new features in decoration that cretonnes and taffetas, of original and strong design, should be used as dining-room hangings. We have long been familiar with their charm for country living-rooms.

Very pretty borders in wall paper are supplied to form a square panel in each side wall and there are several beautiful cretonnes that match these borders, making very dainty and attractive schemes for bed-rooms. One of these cretonnes has a cream ground containing three stripes about six inches wide; bouquets of flowers and birds are dotted about; dividing these broad stripes is a three inch stripe decorated with a rose and ribbon design. It is very Frenchy in its effect, but quite different from anything that has already been on the market. This cretonne costs seventy-five cents a yard.



Fig. 5—A yellow English print is covered with a blue ribbon

Another cretonne designed to go with the new wall papers has a large pattern of roses and ribbons and can be chosen with yellow, blue, pink or green ribbon to suit the color scheme of the room; the roses in each case are pink.

Very unusual designs are shown in the linen taffetas. One with a group of jonquils growing at the side of a pond; warm touches of color give relief to the white jonquils and

green verdure. It is fifty inches wide and costs two dollars and sixty-five cents a yard. It is one of the prettiest of the dark materials and is especially well suited for cushions for wicker chairs or for hangings in dining- and living-rooms. There is a freshness and charm about this taffeta that makes it one of the most popular of the season.

Yellow larburnums on a cream ground is another of the new patterns that is having much favor. There is a brightness about the arrangement of the foliage that makes it a particularly happy choice for a bedroom. With plain yellow walls, mahogany furniture, and white paint, it adds the piquant touch so necessary to well furnished rooms.

A year or two ago, very little difference was noticed from season to season in these kinds of materials, but it is quite remarkable the diversity of pattern and the novelty of ideas that are shown in the new cottons.

Among the new fabrics are the fruit tapestries intended for dining-room curtains as shown in Fig. 4. These are designed to go with the new tapestry wall papers, which are quite different from anything we have seen in other years. The side wall shows a mottled appearance in two tones of green, gray, or blue, and terminates with a Dutch frieze of fruit and flowers repeating the motif in the curtains.

With such a varied choice of cretonnes and taffetas at our command, there is no reason why the most original and unusual patterns should not be selected, choosing, however, those which will be beautiful in themselves and will be of lasting enjoyment as long as they are in use.





Fig. 1—The materials used in this house are combined in an artistic manner

Houses on the Pacific Coast

By Paul Thurston

THE houses to be found along the Pacific Coast are representative of the most unique and artistic forms of house building in this country. Many of these houses are no more than bungalows, but no matter whether they are two-story houses or one-story bungalows, they possess so much artistic merit that the enthusiasm of the Westerner is no more than that of the Eastern home-seeker.

The climatic conditions of the Pacific Coast enable the architects, who provide shelters for the inhabitants, to give free rein to their own individual tastes, without instructions from the owners as to the design or the plan.

There are great possibilities, and an unlimited scope permitted in the building of these houses, and prac-

tically every known type of material is used in their erection.

The construction of each of these houses is simple and direct, and while they are designed to meet the requirements of the families that are to occupy them, the combination of materials of which they are built is unusual, and the manner in which these last are put together is most daring and startling, but when the result is analyzed, it will be found that the whole is most striking and beautiful.

In most cases there is a general tendency to treat the outside of the houses with a dark stain, which is no doubt due to the perpetual brilliancy of the sunlight, and this circumstance may be attributed to the seemingly universal disposition to provide broad, well shaded porches, the

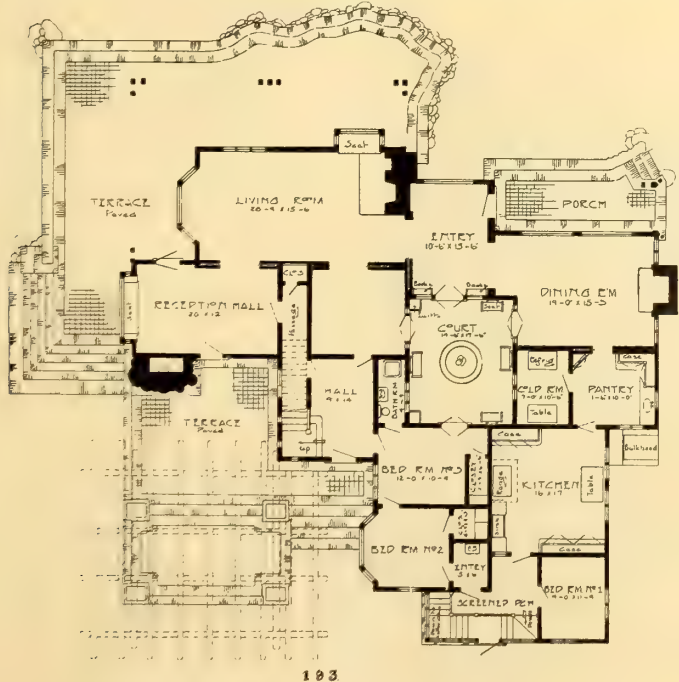


Fig. 2—First floor plan



Fig. 3—Second floor plan

roofs of the porches, in most instances, being extensions of the roof of the main building.

One of the most important houses in Pasadena is the one built for Mr. Theodore Irwin, from the plans of Greene and Greene, architects, of the same place, and shown in Figures 1, 2 and 3. In design the house has a feeling of the Japanese, which is prevalent throughout the exterior. The low sloping roofs, the balustrades to the porches, the paneling to the bay-windows, and the topping out of the massive chimneys are all characteristic of this style.

The masses of brick and stone, worked in together produce a most artistic effect. A Japanese lantern placed on the buttress of the entrance steps, lights the way to the terrace built at the front of the house, from which the front door is reached. The remainder of the building is covered with split redwood shingles, finished in their natural color, while the trimmings are painted a soft brown tone. A study of the plans will give a comprehensive idea as to the arrangement of the various rooms. There is a central court provided with a fountain in the center, with seats at each end, and it is ornamented by growing plants in profusion.

The first story is trimmed with white cedar stained and treated with an oil polish, producing a natural effect, which is toned to match the color of the furniture and the walls. The main hall has a paneled wainscoting and a beamed ceiling. Both the reception hall and the living-room have



Fig. 4—An adaptation of the Swiss chalet

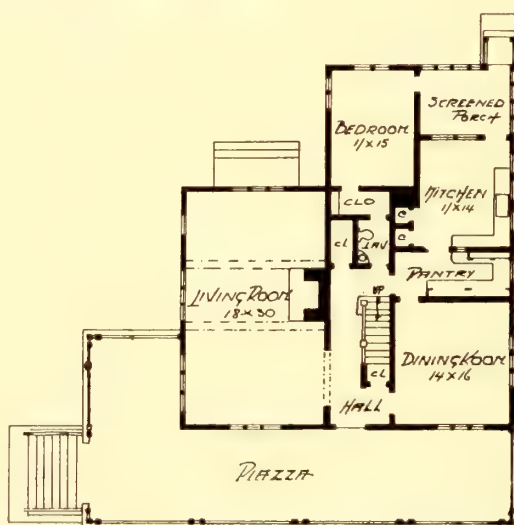


Fig. 5—First floor plan

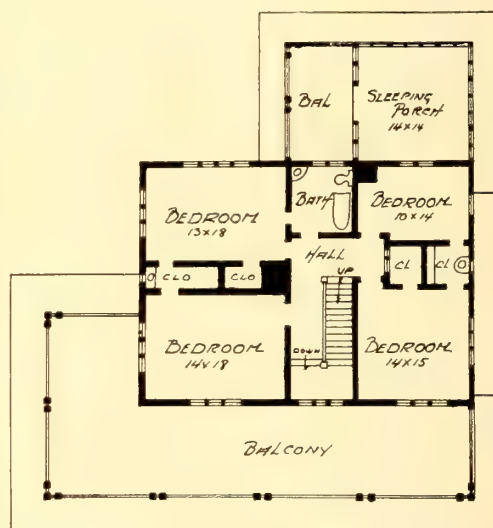


Fig. 6—Second floor plan

stained glass, and is finished in Jade green to harmonize with the Circassian walnut furniture. The remainder of the bedrooms are finished with white cedar, stained and

open fireplaces built in harmony with the treatment of the respective rooms. The dining-room also has a fireplace. The service end, including the pantries, kitchen and servant bedrooms, is complete in all of its appointments.

One of the bedrooms on the second floor is finished in a soft gray blue, with enameled woodwork, and a Grueby tiled mantel of special design, and another has a high beamed ceiling with clerestory windows of

The billiard-room has an open timbered ceiling and paneled walls. The part of the room facing the court is filled in with glass.

Another house by Greene and Greene, architects, is the one illustrated in Figures 4, 5 and 6, and built for Mr. F. W. Hawks, at Pasadena.

It is a picturesque looking house and has been adapted from the Swiss chalet, a style that is frequently seen on

the coast, and is one that seems to suit its environments. The entrance steps lead to a broad piazza which extends across the front of the house.

There is a central hall with a large living-room at one side, which extends the entire depth of the building, and is provided with an open fireplace. The dining-room is built at the opposite side of the house and connects with the butler's pantry, which forms an access to the kitchen;



Fig. 7—The Swiss chalet is best adapted to the side of a hill

the last being fitted up complete. The servants-porch is a feature of the house, as well as the servants-room, built on this floor. By this arrangement the service part of the house is kept intact from the main part of the building.

The second floor contains four bedrooms and a bathroom fitted with porcelain fixtures and open plumbing. A feature of this floor is the sleeping-porches which are

built of pebble-dash gray plaster. The exterior of the house has been given a coat of oil, which has darkened the wood somewhat, giving it the happy appearance of being weathered. Owing to the position of the house on the hillside, a large basement was possible. Opening from this basement into the lower garden, and out through the lower part of the great cement chimney is a door with a cir-

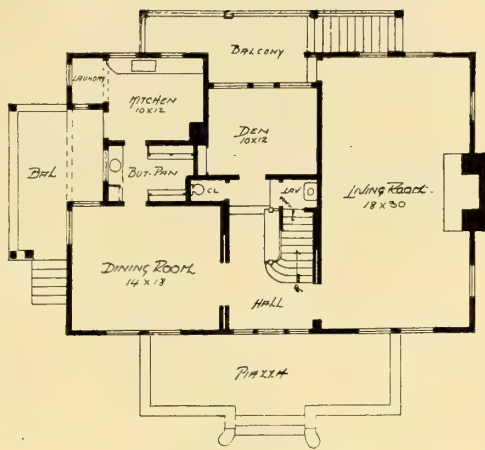


Fig. 8—First floor plan

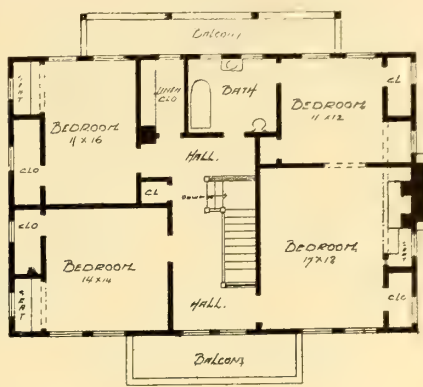


Fig. 9—Second floor plan



Fig. 10—A bungalow type of house has many advantages

built over the kitchen extension.

The house, Figs. 7, 8 and 9, built for Lewis N. Merritt, Pasadena, is perhaps, designed more after the Swiss chalet type than is usually the case, for the reason that the site selected for it is on the slope of a hill, which permits of a better adaptation of the style than any other class of dwelling. The overhanging eaves present a comfortable and restful effect to the general architectural form of the building.

It is constructed of the best materials, shows expert workmanship throughout, and the floor plan is admirably arranged. The exterior is constructed of 8-inch finished pine siding. The roof is shingled. The eaves have a 6-foot extension which is lined with a narrow tongue and groove beading, and they are supported by heavy timber brackets. Foundation and chimney are

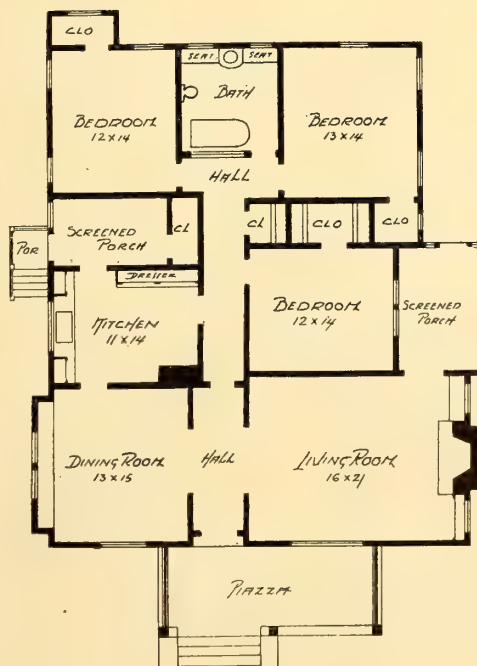


Fig. 11—First floor plan

cular top, the architectural effect of which is odd and striking. The floor of the spacious front veranda is cemented. It is roofed over the center, having been left open at either end, so that the choice of sun-bath or shade may be had. The lower portion of the walls of the entrance-hall are handsomely paneled, and the space above is finished with a frieze of art linen in a dull rich red. The ceiling is supported by eight by ten inch box beams, with the spaces between filled in with red linen. The spacious living-room, to the right of the hall, is finished in polished redwood, and the effect is especially one of elegant taste. The walls are paneled to a height of five feet. The boards used are of beautiful grain, and most of them are eighteen inches wide. Underneath, and running the length of

each window in this room, is a carved, polished scroll of redwood. Above the paneling, is a frieze of moss green linen, which color harmonizes admirably with the red of the wood. The ceiling is really the climax of this delightful room. It is entirely of redwood, and so highly polished that it is full of reflections. Eight by eight-inch boards extend from one end of the room to the other, and these are supported by ten by twelve-inch box beams. The mantel is of square green tiles, the whole framed in redwood. The mantel shelf is of a heavy solid slab of the native wood. The hearth is of green tile, finished around the edge with a narrow strip of white oak.

The scheme of decoration in the dining-room is somewhat original. The plastered ceiling is covered with delft blue linen, and below this, set two and one-half feet apart, are ten by ten-inch box beams of fine grain Oregon pine. The walls are wainscoted to the plate rail, above which there is a frieze of delft blue linen. Woodwork in this room has been left in its natural golden-tan color, and thoroughly rubbed and polished.

The little den, in a quiet space at the end of the entrance hall, has a six-foot paneling of Oregon pine, stained black, and a frieze of tapestry showing shades of tan, red, green and delft blue. The plastered ceiling is tinted a delicate cream. Two diamond lattice windows and a wide French door open from this room to a bracketed balcony. The bedrooms, especially the two at the front, are large, excellently lighted, and most artistic and dainty in their scheme of decoration. The walls are papered in rose designs, and the woodwork is white enameled. The chief



Fig. 12—The hall in the house of Fig. 10

charm of one of these bedrooms, centers in an ingle-nook fireplace. The mantel is of white tiles, while all the frame, as well as the mantel shelf and the built-in seat, is white enameled.

The bungalow built for Charles B. Ingram, at South Pasadena, Figs. 10, 11 and 12, and designed by Frank Tyler, architect, of the same place, is perhaps one of the best kinds of houses to build where it is desired to have all the rooms on one floor. This house is an unusually large and roomy one. It contains seven rooms and a bathroom. The underpinning and the balustrade to the porch are built of brick, while the remainder of the building is covered with redwood clapboards; the whole of the building is painted a dull shade of brown, and the roofs are covered with shingles and stained a similar tone.

The living-room has an open fireplace with tiled facings and hearth, and a mantel supported on large brackets. Book-cases are

built on either side of the fireplace. The ceiling is beamed. The dining-room and the kitchen are on the opposite side of the house, while the sleeping-rooms and the bathroom are built at the side and the rear of the building. Cost, \$3,000.

The house illustrated in Figs. 13 and 14 is of the bungalow type and is planned with all its rooms placed on one floor. There are six rooms and a bathroom. The entrance is direct into the living-room at the front of the building. It is a large room furnished with window seats and an open fireplace. The dining-room adjoins it and this room has a combination china closet and buffet built in at one side of the room. The kitchen and the service end of the house are most complete. Cost \$2,200.



Fig. 13—The long sweeping roofs give repose to a house

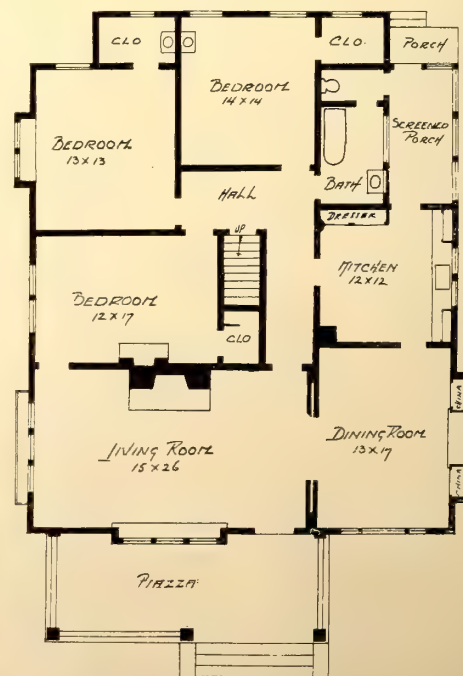


Fig. 14—Floor plan



Garden Notes

Conducted by Charles Downing Lay

The Gardener's Vacation in California



SOME knowledge of the flora of a new land is always a great help to the traveler, because to be forewarned is to be forearmed, and the traveler sees, usually, only what he is prepared for. Hence it is that uncultivated travelers see so little in a foreign land.

The climate of California varies as much as the climates of New York and of Florida, with a greater difference in humidity, due to the effect of mountain ranges, so the visitor to California may be prepared to see vegetation of all degrees of hardiness from the alpine plants in the high mountains to the orange groves in the southern valleys, and he will see, too, vegetation of all degrees of drought resisting capacity, from the same alpine plants to the cacti of the southern desert.

It is a climate with local adaptations so great that one may see in the mountains the apple trees, hemp, flax, rye of the north, and passing down the slopes the grapes and prunes of southern France, and in the lower valleys the olive, oranges and lemons, figs and pomegranates and melons of the Mediterranean shores, cotton and tobacco and the acacias and eucalyptus of Australia, all perhaps in the space of a few square miles. In fact the number of different species successfully grown in California is almost as great as that of all the rest of the country.

To the traveler who is also a gardener and therefore a collector of plants, it will be fascinating not only because of the remarkable growth of plants we in the east only know as pampered specimens in greenhouses, but also because of the seed farms where our garden flowers are grown by the acre for their seeds. Bulbs, too, are grown in quantities as in Holland.

The native flora of California is perhaps more interesting than the exotic. The Sequoias and Redwoods we have all heard of and marveled at, but one must live with them for a time to appreciate their grandeur. The temptation to transplant these trees to the east is hard to resist, but they will not grow here because of our extremely hot and humid summers and because of our cold winter fogs. Few of the California trees will grow here, the White Fir (*Abies concolor*) being the best of the California firs in the east. The red fir (*Abies magnifica*) is not very hardy

here. The Sugar Pine (*Pinus Lambertiana*), which reaches a height of over 200 feet is hardy as far north as Massachusetts. The Nut Pine (*P. edulis*), is also hardy to Massachusetts, but the other Nut Pine (*P. Parryana*) will not grow nor will the Monterey Pine (*P. radiata*).

One of the most interesting of all California species is the calochortus, the star tulip or Mariposa lily. They vary greatly in their liking for soils and climate. They grow on the summits of the Sierras, the clay lands of the valleys, the volcanic soils of the foot hills and on the desert.

They will all endure extreme cold, but alternate freezing and thawing kills them. The drainage of the bed where they are planted must be perfect, both on the surface and under ground. They are white, rose, yellow, blue, orange, purple, lilac and deep red, with many other shades and varied markings.

They have globular or bell shaped flowers, either erect or drooping and varying in height from a few inches to two feet. They should be planted in the autumn.

The traveler might easily secure an interesting collection of these and other plants which are little known in the east and seldom found in seed stores. The sentimental value of such collections is very great and a garden planted with the gleanings of a winter trip to California might be very beautiful. It would also be well to establish ones credit with a San Francisco seed house so that one could afterwards order more of the plants that prove successful here.

The shook barrels with twisted bamboo hoops which make such good plant tubs are easy to buy in San Francisco, though the cost of bringing them east is excessive.

BIRDS

For the sake of our gardens if for no other reason the birds should be cared for and encouraged to feel at home around our houses, and January, February and March are the times to help them most.

They should be fed regularly in a quiet spot free from the danger of cats. The best feeding place is a platform three or four feet in diameter on top of a post about six feet high. On this platform should be placed their daily rations of cracked corn, oats, rye, buckwheat and chopped meat and bones. This is for the smaller birds. The

larger and shyer birds such as quail and blue jays should have a more secluded spot with a platform nearer the ground.

In the trees near the house should be hung rib bones, ham bones, and bacon rinds which the chickadees, nuthatches and woodpeckers will feast on.

It is not wise, however, to feed the birds too far from the house or to give them more than they will eat for one may then be helping unawares their enemies the rats, mice and squirrels.

In Germany they make many patent feeding boxes for birds which discharge a small amount of seed whenever the bird alights on the perch. These, of course, need little attention.

Now is a good time to make bird boxes to be put up on poles or on the house. They should be six by eight by six inches square and if intended for wrens should have a hole

not larger than a silver quarter of a dollar. For other birds they should, of course, be larger.

For chickadees, nuthatches, woodpeckers, blue birds, etc., nothing is better than a knot hole in a rotten tree. Many of these should be left in woods and orchards and more might be made out of partly decayed logs and branches.

To help the birds in summer, nothing is better than tangles of thorny shrubs interspersed with others bearing fruit that the birds like. The mulberry tree, eleagnus, wild cherry, pepperidge, blackberries, cornus, viburnum and many other shrubs have seeds which are eagerly eaten by birds.

If birds must be kept they should be caged in the nesting season, say from Memorial Day to mid July, because cats yearly destroy more birds than are killed in any other way. at this extra dangerous season for the young.

The Romance of Orchid Hunting

By P. Harvey Middleton



TO ENDURE miseries and untold hardships, to cross yawning chasms upon flimsy bamboo bridges, to swim swirling, wide rivers, to spend nights in tree tops for protection from floods, to brave wild beasts and perilous landslides, just to pluck a pretty parasite from a tree trunk in some fever-stricken haunt—surely this is madness. But if so, it is a form of insanity that never lacks followers among the reckless adventurers still to be found in many parts of this prosaic world.

The primeval forests of Central America, the desolate table lands of Mexico, the jungles of India, the swamps of savage Africa, and the Dead Heart of Australia, these are a few of the fields explored constantly by the hunter after the aristocrat of flowers, the Beau Brummels of blossoms. Scores of men have perished in the pursuit, and millions of dollars have been spent in the acquisition of these fantastic flowers, that mimic radiant birds, and gorgeous butterflies.

Twenty-five years ago the orchid was practically unknown in America except to botanists and collectors with very long purses, but during the last decade its cultivation in this country has grown into an important industry. Within a few miles of New York there are seven or eight orchid growers who cut from the plants in their hothouses about three hundred specimens a

day to meet the constant and increasing demand for this beautiful and fascinating flower as a suitable decoration at millionaires banquets and other important functions. At fashionable weddings it is coming into evidence more and more, gradually stealing away the glory from other members of the floral kingdom. Nor is its supremacy to be attributed solely to its cost, but rather to its own exquisite grace of form, beauty of color and its subtle fragrance. A dozen dollars will buy a dozen American Beauties. A dozen dollars will buy as many orchids, too, at some seasons of the year, but they may all spring from a single stem and form a mere nosegay. Twelve such often enter into a bouquet before it assumes the conventional proportions for the boudoir or the dinner table. And these are bargain prices, for it is no uncommon thing to pay five dollars for a single blossom at certain times of the year.

The quest of the orchid by the American collector began some seventeen years ago in South America—which is the great supply source. John E. Lager, of Summit, N. J., went to the Republic of Colombia, whence come the most beautiful varieties. The news of his arrival in the orchid country spread like wildfire, and the natives flocked to him from miles around, all eager to start with him on an expedition into the mountains in search of the precious flowers. Soon a picturesque cavalcade of men and youths, three hundred strong, started from



Orchid, *Cattleya Hardyana*, one of the rarest orchids of South America

the village, each with a small wallet hung across his back, and at his side a machet to notch the trees in order that he may find his way back through the pathless forests. The mules with their wicker panniers and gay blankets added animation to the scene.

Payment was to be made for the plants at so much a hundredweight. The natives assumed that the senior wanted the plants either to eat, or for medicinal purposes, in which case it made comparatively little difference in what shape the goods were delivered. And so the gatherers blightly hacked and tore the lovely plants from the trees in fragments and stuffed them into the sacks. When the pile of sacks was emptied out on the banks of the Magdalena, the expectant American was horrified. He spent nearly two days sorting out the plants, and out of the entire consignment only about one hundred were found intact! From that moment a scale of prices was agreed upon per plant. For the commoner varieties twenty cents a piece was paid and twenty-five cents apiece or more for the rarer specimens.

The element of chance makes the income of the gatherer exceedingly uncertain. The orchid, which is fed by air, not earth, always attaches itself to a tree, frequently so tall that it cannot be climbed. Nor is tree climbing a very popular method of securing orchids, for the trunks are covered with a thick vegetation in which lurk scorpions, poisonous ants and deadly snakes. And so the tree must be chopped down. More often than not the orchids are so smashed by the fall as to be worthless, or else maybe there are only



Orchid, *Cypripedium Brownii*

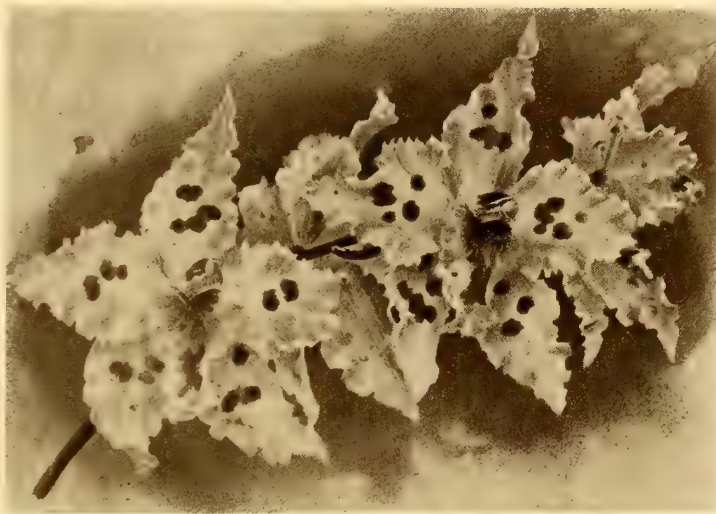
three or four; but in other cases, the whole trunk, from a height of three feet to the top, and all the boughs and branches, are fairly covered with blossoms with the most exquisite color, so that the tree looks for all the world like a lavender, pink, or yellow column capped with a gorgeous hanging garden.

But it is with the adventures of the professional hunter after the rarest of orchids that we have to deal—the man who sets out with a number of natives on a search that will end either in success or death. You may cease to wonder, perhaps, at the fabulous sums paid for orchids when you learn the price paid in human lives in the gathering of that rare and beautiful flower. Falkenberg in Panama, Klaboch in Mexico, Endres on the Rio Hacha, Wallace in Ecuador, Schroeder in Sierra

Leone, Arnold on the Orinoco, Digance in Brazil, Brown in Madagascar—all these orchid hunters met tragic deaths through wild beasts, hostile savages, fevers and accidents.

George Barrault is a typical example of the kind of stuff that orchid hunters are made of. He was employed by Mrs. George Wilson, of Philadelphia (whose collection of orchids is worth considerably more than a million dollars) to search for rare South American orchids. For four years he dared death in many forms.

He has been near death's door with the fevers of the tropics and tropical swamps, he has been robbed and deserted by his guides and left alone to starve in Andean mountain forests, and has been attacked, tormented and



Orchid, *Odontoglossum crispum*, from the high mountains of the Andes, Colombia. Valued at \$4,500



Orchid, *Cypripedium*



Orchid, *Paphiopedilum Chamberlaini Rothschildianum*



Orchid, *Arides virens* from India

all but eaten by hundreds of big, black ants. He has had to fight treacherous guides for his life, and has had escapes too numerous to describe.

It was while engaged in hunting orchids in Colombia for the Philadelphia Orchid Queen that a revolution broke out. Barrault was seized by Colombian soldiers and forced to fight for them. As a Frenchman he had seen military service, and philosophically accepting his fate he led a regiment of the Colombians to battle, and was engaged in seven stiff fights. It was on the last occasion, when the slaughter of his men seemed imminent, that Barrault seized a flag and rallying a handful of soldiers about him charged straight at the line of popping guns ahead. The rest of his regiment—who worshipped their apparently invincible leader—followed excitedly. On they rushed until almost hand to hand with the enemy, when suddenly Barrault staggered and fell severely wounded, and panic seized his followers, who turned and fled.

And so Barrault, the orchid-hunting soldier, was thrown into prison by the rebels and there left to get well as best he could. Slowly, but surely, his fine constitution pulled him around, and one night about six months later he floored his guard and got away. Two days and nights brought him to the forest, where he knew rare orchids were to be found.

Living on roots and herbs that former experience had taught him were good for food, Barrault gradually worked his way through the forest until he came to a lonely village

caught in a tree growing out of the side one hundred feet below, and after his guides, peering cautiously down the chasm, had recovered from their dismay, a rope was lowered and he was hauled back to safety none the worse except for a few scratches.

They arrived without further mishap at their destination two weeks later and were soon hard at work collecting the orchids, which grew in great profusion. Then swamp fever struck the camp, and one after another the guides fell ill, so that Barrault had to give up his beloved orchids and turn nurse. Then he, too

caught the fever, and was prostrated for days. Some of the guides recovered before he did and taking advantage of his helpless condition, stripped him of his posses-

off the track of the opposing armies. Here he secured another set of guides and started off on the trail of a wonderful snow-white orchid which had been graphically described to him by a half naked Indian in the streets of Bogota—"An orchid so big," said the native, clasping hands and rounding arms, "and as white as snow on the mountain tops. I will take you to it."

Barrault headed an expedition to the mountain haunt of the marvelously big flower—an expedition that was fraught with many adventures. Hardly had he started before the first of them occurred. Barrault's saddle-girth broke as his mule was stepping gingerly along a narrow mountain path at the edge of a two thousand foot precipice, over which the orchid hunter promptly disappeared. He was



Orchid, *Cattleya Schroederiana* from the Upper Orinoco, rare and extremely difficult to obtain



Orchid, *Cattleya Percivaliana*, from Venezuela, flowers in the late fall



Orchid, *Dactyloctenium*



Orchid, *Cattleya Mossiae*, from Venezuela, flowers in the spring



Orchid, *Cattleya Speciosissima* from Venezuela

sions, including the orchids, and left him alone in the forest. In his weakened state it took Barrault a week to work his way out of the dense gloom of the forest, guided to some extent by the almost overgrown path his expedition had hacked through the undergrowth. But at last he reached a cluster of huts and rested for a week. Then, with the determination of a man who never knows when he is beaten, he set to work organizing another expedition. "It was during this trip," wrote Barrault, "that with two guides I stumbled into an army of big, black ants. Before we could escape they swarmed all over us from head to foot. It was half a mile to the nearest forest stream—a half mile covered with dense undergrowth. Frantically we clawed our way to the water, suffering agonies from the bites of the infuriated ants, and when, after what seemed years, we reached the stream's brink, we barely had strength left to fling ourselves into the water."

Barrault's heart was still set on the possession of that beautiful snow-white flower. He had the remnant of Mrs. Wilson's gold in belts strapped to his body, and the party had not proceeded far when half a dozen of his redskin followers conspired to kill him in order to secure this money, which he had been forced to show them in order to obtain

the Erastus Corning collections, the latter of which was gathered through a period of forty years and at an expense of \$500,000. Mrs. Wilson engaged for her head gardener Alphonse Pericat, who had been head gardener at the orchid farm of Baron Alphonse de Rothschild in Paris. Her collection therefore represents about fifty years' work, and includes two thousand unique specimens with duplicates nowhere in the world. The best of her South American orchids, the white cattleyas, are worth from \$200 to \$1,000 a plant.

Some idea of the prices obtained for rare orchids may be gathered from the fact that at a London auction a few months ago \$4,500 was paid for a garden hybrid, the *Odontoglossum crispum* (Roger Sander). Last year the garden hybrid *Cypripedium* went for the equivalent of \$1,500; and a Brussels buyer paid \$4,360 for a wild *O. crispum Cookroniæ*. Count Apponyi of Budapest paid \$5,000 to a Venezuelan for a species so gigantic that oxen were required to convey it and the section of the tree to which it was attached. H. T. Pitt paid \$6,000 for a small plant which he christened *Pittianum*, and also \$6,500 for the celebrated imported *O. crispum "Persimmon."* A remarkable fact in connection with this plant is that it had been bought



Fig. 1—Orchid, *vanda lowii* from Java. The two top blossoms, one on each side, are a deep yellow, and those below are white with brick red spots. Fig. 2—Orchid, *vanda sanderiana* from the Island of Mindanao, Philippines. Fig. 3—Orchid, *Cypripedium insigne sanderæ* from Burma. Fig. 4—*Cypripedium fairieanum* the lost orchid found in Thibet after a world-wide search when the British expedition opened the forbidden land.

their services. Just before sunrise on the following morning, he, who was always on the alert for trouble, heard a slight noise outside his tent. Peeping out he saw six of his guides, armed with the long knives they used in hewing their way through the undergrowth, stealthily advancing on the tent. Without waiting a moment Barrault seized the sword he had used to such good purpose in his fight with the rebels, and sprang out. The Indians, although surprised, relied on their superior numbers and returned the orchid hunter's sword-thrusts with murderous lunges of their long knives. Barrault skillfully parried their blows until he had backed up against a huge tree, and then the real fight began. With the dexterity he had acquired in the French army he beat down the guards of the Indians, severely wounded three of them, and put the others to flight.

There was no more trouble after this incident, and Barrault and his remaining natives—now thoroughly subdued—returned safely with one thousand choice orchids, which were soon dispatched by raft on the Magdalena for Barrinquilla, whence they were forwarded without delay to the hothouses surrounding Mrs. Wilson's palatial home in West Walnut Street, Philadelphia.

About how much money Mrs. Wilson's love for orchids has cost, we have already estimated. She has more than twenty thousand of them, and is continually increasing her possessions. She began by purchasing the A. R. Smith and

in open market, before flowering, for thirty-six cents. The good fortune of orchid buyers is sometimes extraordinary. Bulbs which have not flowered and give no signs of peculiarity are often treasures in disguise. An amateur once gave three francs for an odontoglossum. It proved to be an unknown variety and was re-sold for a sum exceeding \$1,000. Among a lot of the commonest orchids some years ago was found a plant similar to the rest in other characteristics except the color of its stem. When it flowered the bloom should have been green, but it was golden, and the value of the plant became in consequence difficult to estimate. It was divided into two parts and one was sold for \$4,000, and the other for \$5,000. The latter piece was several times divided, selling for \$500 each time, but the first piece was never mutilated and is now worth \$6,000.

Probably the most famous orchid in existence is the *Cypripedium Fairieanum*, which was for many years known as the Lost Orchid, from the fact that its place of origin was unknown. A few specimens had found their way into the London market many years ago and whetted the curiosity of the collectors. It was known to be a native of some part of northern India, and immense sums were spent in fitting out special expeditions to re-discover it. Wealthy orchidists offered \$10,000 reward to anyone who would find a healthy wild specimen of this beautiful plant.

Owing to tribal wars, many districts had of necessity

remained unvisited. In 1905, however, the British government sent its famous military expedition to the Dalai Lama in the remote Potala at the sacred city of Lhasa. Among the officers of the expedition was an enthusiastic botanist, and one afternoon several thousand feet above sea level in one of the almost inaccessible Bhutan passes that lead into Thibet, he came upon the orchid which had been sought for forty-six years in every nook and cranny of the world. With gentle, but eager hands the military botanist gathered a number of the plants and dispatched them by special courier to Calcutta, whence the glad news of the recovery of the dainty little "lady's slipper" was cabled all over the world.

It is the plant that has demonstrated how it can bloom, that costs dear. For the spotted *O. crispum* "Frederic Sander" Mr. Pitt of London after seeing the bloom paid \$10,500. These are just public, not private prices, and were paid mainly because of the spots on the specimens—the signs of individuality.

But there is little cause for surprise at such prices when such terrible dangers have to be faced in order to bring them to civilization. Some years ago a collector for an English firm was sent to New Guinea to look for a *dendrobium*, then very rare. He went to the country, dwelt among the cannibals for months, and found about four hundred of the plants. He loaded a little schooner with them and put into a port in Dutch New Guinea, where the ship caught fire and was burned to the water's edge. His firm ordered him to go back for more. He went. He discovered a magnificent collection of the huge crimson flowers growing among the exposed bones and skulls of a Papuan burying ground. Some were actually nodding gaily between the ribs of a skeleton. He was about to gather some of the orchids when the natives, resenting this disturbance of their dead, menaced him with their knives, and it was only by the exercise of the utmost tact, supplemented with presents of beads, brass wire and calico that he was able to appease them and to gain their consent to his removal of the orchids from their ghastly retreat. In one or two cases he was compelled to carry away the skulls to which the precious specimens clung, and the Papuans insisted on his taking along a little idol to watch over the spirits of the departed.

Talking of idols reminds me of Brown. An orchid hunter named Brown, in dark and mysterious Madagascar, while in pursuit of a rare specimen was unfortunate enough grossly to insult a much venerated idol. The enraged priests soaked him in paraffin and burned him to a cinder. Another collector was known to wade up to his middle in mud for a fortnight looking for a specimen of which he had heard.

Two collectors seeking a single plant died one after the other of the fever. A collector detained at Panama went to look for an orchid and the Indians brought him back from the swamps to die. Many orchid hunters come back to the sea-coast from the interior stricken with jungle fever, or beriberi, or yellow fever, or some other of the terrible diseases which are the penalty of searching for riches in the tropical regions of the world. Often their hair and nails drop out and they are incapacitated for work for the rest of their lives. If they escape disease and the treachery of their guides they may fall a prey to the wild beasts of every kind that abound in the orchid country. There is a certain species of the plant, very popular in America, which is bell-shaped and collects dew, for which reason snakes lie in wait nearby and kill birds when they alight on the flowers. When the orchid hunter stretches out his hand to tear the treasure from its tree he is constantly exposed to the deadly bite of these snakes. But why, you will probably ask, can we not breed from the plants which are acquired at such awful cost, and thus in time make this foreign exploration unnecessary? For the simple reason that it takes from twelve to eighteen months for the seed to ripen, then three months for it to sprout, then from five to ten years for the plant to yield a flower. And when at last perhaps the hybrid does bloom it is something that is hardly worth looking at. The winds, the birds and the insects all in their several ways carrying the pollen from one specimen to another of different varieties combine to produce rare and expensive flowers in the orchid's native habitat.

When the plants arrive in New York there is little in their appearance to tell of the glories which they will later put forth. They are simply dried, shrivelled up looking things with possibly a few yellow green leaves attached to them.

The quest of the orchid is not likely to diminish for many years to come, for there are probably several thousand varieties waiting to be found in remote corners of the world. A few varieties have been developed in hothouses in America by cross fertilization, but nothing like enough to begin to supply the inexorable demand of Fashion, and so the death-dealing pursuit of the wild specimens must go on. But it is probable that if the debutante who accepts with a murmur of thanks the tribute of orchids could realize the many dangers they had involved, she would invest the delicate flowers with additional romance, while it is pretty safe to assume that if the gilded youths who pay for the orchids had to gather them, there would be a wonderful increase in the demand for American Beauty roses.

Springtime in Winter

By S. Leonard Bastin



THE gardener, the cold months of the year must always mean a cessation in the active work of plant culture. Any scheme which will enable the enthusiast to pursue his pastime during the winter is sure of a welcome. The new method of bringing the branches of trees and of shrubs into flower at this time, is one which promises to make a valuable addition to the resources of the indoor gardener. Its very simplicity must appeal to everyone, while the decorative possibilities of the system cannot fail to attract all flower admirers.

In order to understand the purpose of the treatment, the consideration of a few natural science points may not be out of place. It is well known to botanists that all deciduous trees and shrubs bring their next season's growth to a very advanced stage during the fall. Indeed all the leaves and flowers are quite ready for the spring, folded up on a

very small scale beneath the protecting bud cases. Now the resumption of growth, when it does take place, is largely due to the fact that the plant starts to draw water from the soil, and the fluid rising to the buds swells out the undeveloped tissue and the tree comes into foliage and blossom. The purpose of the present method is to imitate as nearly as possible this natural process in mid-winter, at which time the fresh growth will have a special value.

Nowadays when flowering trees and shrubs are so common in our gardens there will be no difficulty in finding subjects for the treatment. All the ornamental plums, apples, cherries and currants to mention only four kinds, are perfectly adapted, whilst the wild species of these fruits which are to be found in the hedgerows may be made equally useful. Bright green foliage is always very acceptable, and branches of trees with large buds, such as chestnuts and sycamores, may be included in the collection.

The season of the year when the system may be most

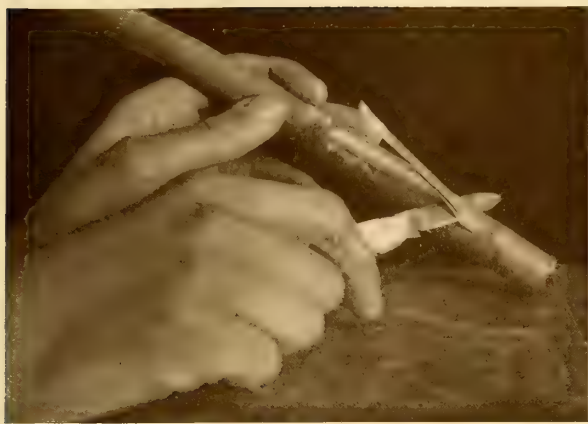


Fig. 1



Fig. 2



Fig. 3

Fig. 1—Strips of the bark should be cut off the lower part of the stem. Fig. 2—Before the branches are placed in water the lower part should be cut off like this. Fig. 3—The branches should be placed in a sunny window.

successfully practised is during the months of January and February. Strange as it may seem the buds always expand more readily if they have been subjected to a week or two of frost, so during a spell of severe weather is a good time to secure the boughs. It is, of course a matter of importance to be able to select the boughs of the trees which are well budded for blossom. Mostly the flower buds will be fatter than those producing only foliage. Another distinguishing feature is illustrated in an accompanying photograph showing two pieces of ornamental plum. The spray which would throw a goodly show of flowers is that bearing the large buds on the short shoots. This method of judging a branch is one well known to fruit growers.

In cutting the branches from the trees it is a matter of some importance to make a clean severance, seeing that torn or ragged fractures prevent a free development on the part of the twigs. The most shapely branches should be selected and all along it should be borne in mind that the sprays are to be used in vases for decorative purposes. In order to enable the boughs to absorb water as freely as possible it is a good plan to remove some of the bark on the lower portion of the stem. This is best cut away with a sharp knife in alternate slices as is shown in the illustration. Now secure a number of large bowls into which some hot—not scalding—water has been poured. Tie all the branches to be treated into bundles and place the ends of the boughs in the water, at once removing the whole thing to a dark cupboard. This immersion in hot water seems to have the curious tonic effect of stirring the sleeping buds so that when brought out into the light they will be able to commence

active growth. Of course the method is one often followed by florists when they wish to revive drooping flowers.

It is just as well to leave the branches in the dark cupboard for twenty-four hours, although naturally the water will have become cold long before this interval has elapsed, but this does not matter. It is a question for the individual to decide whether the boughs shall be grown to perfection in the vases, or whether they shall only be placed in the ornamental receptacles after they have fully developed. Some people do not find the leafless branches inartistic, and these are of course soon adorned with expanding buds which give a delightful "spring" feeling to the apartment. Whichever course is adopted the boughs should be placed at once in pure water, which it is very necessary should be kept in a fresh condition. To this end it is not a bad plan to place a lump of charcoal in each vase or bowl, although this is not essential if the water is changed about every two days.

It is now desirable that the branches should be placed in a fully light position, if possible in front of a window where they will get all the sunshine. The speed of growth will be entirely dependent upon the warmth of the room; if the temperature is high the buds will commence to swell very rapidly. Soon the expanding flowers and leaves will be plainly visible and at this stage dust is harmful to the young growth. If possible, the boughs should be protected when any sweeping is going on in the apartment, and in any case the shoots will be benefited if they are sprinkled occasionally with luke warm water. It should be pointed out in conclusion, however, that the directions emphasized in the foregoing lines should be followed if the best results are desired.



Fig. 4



Fig. 5



Fig. 6



Fig. 7

Fig. 4—It is important to learn to distinguish between flowering and leafing stems: The one with the short thick buds contains the flowers. Fig. 5—Branches of wild plum with plenty of flowers. Fig. 6—Wild cherry will come out beautifully in a few days in mid-winter. Fig. 7—In the case of the wild plum the foliage will expand as well.

Substitute for Potatoes

By William Atherton De Puy

THE Department of Agriculture at its experiment station in South Carolina last year raised a ton and a half of aroid tubers on a sixth of an acre of land. These tubers are the foundation for the poi of the Hawaiians, the malanga of the Cubans, the oto of the Panamans—foods that are the main sustenance of the peoples named. The aroids are the staff of life for many millions of people the world around dwelling in the tropics. Numerically they probably support as many people as does rice or wheat. Not only this, but they support these millions at a cost averaging less than five cents a day.

The Department of Agriculture has begun the experiment of determining whether or not the aroids may be grown in the United States to the benefit of the people. They have been raised experimentally and have produced promising crops in practically all the Southern states. It has been demonstrated that crops amounting to fifteen and twenty tons to the acre may be grown on practically any of the lowlands of the South. It is believed that they may be produced in quantities at less expense than may potatoes, and that they provide a food that is in every way equal to that staple and furnishes an agreeable substitute and change. The experiments will be carried forward on a much larger scale next year, the special varieties that thrive best in this country will be selected, and when decided upon will be placed in the hands of numbers of intelligent experimenters who want to take further steps toward developing the crop.

The aroids, having been grown for centuries in various parts of the world, have differentiated and there are hundreds of varieties. The plant representing them with which Americans are most familiar is the "elephant's ear," used as an ornamental plant in many American gardens. The taro of Hawaii is probably the best known variety that is

largely cultivated as a food yielding plant. These plants grow abundantly on low and wet lands. They require little cultivation and yield prodigiously. Because of this large yield and small amount of labor required, the aroids came to be cultivated in the tropics in the early centuries when man first began to take thought and to plant food-bearing crops. They are among the oldest cultivated plants in the world. They grow abundantly in Central America, South America, the West Indies, equatorial Africa, Malaysia, Japan, China. In this last country they are largely cultivated in latitudes that correspond with that of Washington, D. C., in this country. From these facts and from the experience already had it is believed that they offer great possibilities in the United States and that their introduction might add a new food that would not only give greater variety but cheaper living here.

The tubers grow on the roots of the aroids much as potatoes grow. They thrive under such conditions of mois-

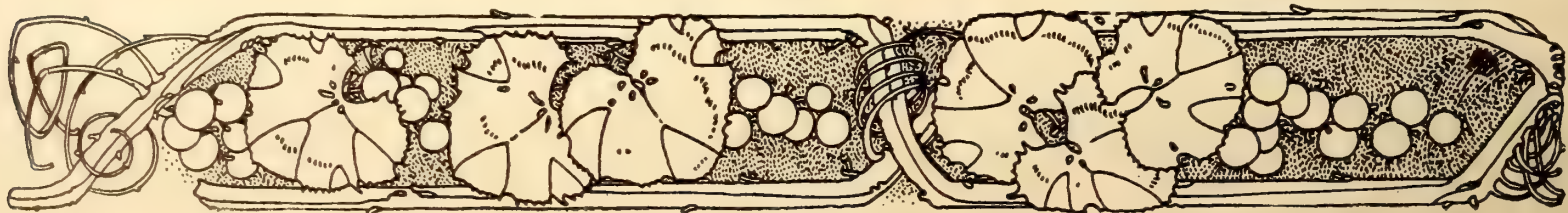
ture as are favorable to rice. In a moist, loose soil the plant may be taken by the top and lifted, roots and all, from the earth. The tubers are as large as the fist and covered with a somewhat rough skin. When baked they come out of this skin with even more readiness than does the potato. They may be peeled easily before cooking and they lend themselves to frying, boiling, baking, and all



These are the aroid tubers that promise cheap food for the nation

manner of combinations. In flavor they are entirely individual but attractive. There is more flavor to them than to potatoes and a wide variety among the different kinds. This flavor may be described as being somewhat nutty. It appeals to most tastes. The aroids offer great possibilities as a food for the millions of the temperate zones. Their coming into general use is not at all improbable.

They will be an important addition to food products that may be a substitute not only for potatoes, but a means of meeting deficiencies apt to obtain even in the near intensive cultivation of crops in this country.





CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishings

WINDOW TREATMENT IN CITY HOUSES

"MOVING into the city, after living for a good many years in a country town, we are confronted with the problem of how to correctly treat the windows, especially in the front of the house, and more particularly the glass panels of the double sets of hall doors. Our principal objection to the conventional treatment that we see in neighboring windows is that it complicates the machinery of living and shuts out the light and air. Next door to us the windows are shrouded with two sets of shades; two pairs of lace curtains, one pair of thick curtains with lambrequins, besides shutters and awnings.—L. E. S., Brooklyn, N. Y.

The conditions of city life naturally demand different arrangements in the home from those exacted by a house in the country. For the former, a uniform appearance should be given the front of the house by the window shades and lace curtains. Cream or buff-colored shades may be put up in winter, and dark brown or dark green in the summer. As a screen from the street a thin curtain may be hung across the glass under the shade and allowed to hang to the sill. The outside pair of double doors that open into a vestibule are usually filled with large panels of plain glass. These doors receive so much dust from the street that they are not covered with drapery on the inside, but the inner pair of doors with half-panels of glass requires curtains. As the hall receives most of its light from the glass panels, they should be covered with a lace panel fitted over the glass on a steel frame, or by widths of lace shirred on brass rods at the top and bottom. The choice of the material should follow that selected for the other front windows.

As the special mission of the lace panel is not to exclude the light needed for the hall, it will not serve the double purpose of screening the hallway after dark when the lights are turned on.

To provide this necessary protection a silk over-curtain may be put up on a top rod, with pulley cords at the sides to make the adjustment easy. The hem at the bottom may be weighted by brass chains of medium sized links.

A COLLEGE GIRL'S ROOM

"A College Girl" asks how she can best expend fifty dollars in making her room (used for sleeping and studying) more attractive. She writes:

"The woodwork is dark and ugly, but does not show very much except at the two windows. I need rugs, curtains, a cover for my divan, an arm chair, and a screen."

As the woodwork is dark an ecru net or muslin may be hung at the windows to the sill and looped back at the sides. A long curtain to the floor, with a valance filling the space at the top between the two lengths,

will relieve the room of some of the dark woodwork. The same material may be used for covering the divan and its pillows, a seat cushion and back pillow for a willow chair, and also for a three-panelled screen.

An American rug called the Kazak comes in good wearing colors at a very moderate cost. A size six feet by nine feet can be bought for \$8.50, and three feet by six feet for three dollars.

Rugs, (2)	\$11.50
Cretonne, (40 yards at fifty cents a yard)	20.00
Willow arm chair.....	10.00
Net curtains (10 yards at 45c a yard)	4.50
	\$46.00

TRIMMING FOR VELOUR CURTAINS.

"Our old terra-cotta colored portieres of double-faced velour we have just had dyed, and they have come out a very successful brown. We would like to trim them in some way if you will suggest something that will look well on the parlor side, which has a wall paper of mixed colors, and something for the hall side where the walls are covered with brown burlap—Mrs. B. H., Sandusky, Ohio.

For the parlor side of the portieres one of the metal galloons may be used, and if the gold threads are too fresh-looking they may be dulled a little.

For the hall side of the portieres a tapestry border introducing green, brown, tan and blue in the color combination, is suggested.

WALL DECORATION FOR A DEN.

"In remodeling our home," writes "A Constant Reader in Elmira, N. Y., "we have added a new room that opens out of the dining-room. The conditions are these: Some old wood has been utilized for the trim and this necessitates paint instead of stain. We do not wish white woodwork as the dining-room is dark oak. The door that opens from the dining-room will probably always be open. For this reason the wall covering and wood finish seem to be most important. Can you help us with these?"

The best treatment for the woodwork is a bronze green—the tone so often seen in a bright finish on the outside of railroad cars. A picture border of the proper width to suit the proportions of the room (this was not mentioned in the letter) in colors that blend into the woodwork. For the space below the picture border a fabric paper in two tones of green with some suggestion of gray may be used, and the joining of the upper and lower decorations covered with a picture molding.

CANDLE SHADES.

A single item in the furnishing of a room often becomes a matter of perplexity.

An inquiry from a Richmond, Va., correspondent relates to candle shades for a dining-room.

"The four silver candle sticks with their

(Continued on page x)

Garden Work About the Home

R. F. D. GYPSUM in the pure state is a sulphate of lime (CaSO_4). In the commercial form it is called land plaster and is more or less adulterated with carbonate of lime and worthless insoluble matters.

It is used in hen houses and in cow barns and horse stables to fix the free ammonia in the excrement.

It is also applied to the land at the rate of one to two bushels per acre when its effect is very beneficial, because it is believed to act on the double silicates of potash, liberating and making the potash available. It also frees phosphoric acid and makes nitrogen more soluble.

It has the further but not understood effect of conserving moisture.

Its beneficial effects are in no way due to the lime in its composition, so if your soil needs liming, as you suggest, the gypsum will not do.

Gypsum is always present in the commercial phosphates because these are made by treating insoluble phosphates of lime with sulphuric acid, which combines with the lime, forming a sulphate of lime.

It is doubtful if your soil needs fertilizing as much as it needs good tillage.

The supply of fertilizers in any ordinary soil is nearly inexhaustible, though it may be entirely unavailable for the plants to use as food. Thus, as we have seen above, the gypsum makes the potash and phosphoric acid available. Lime breaks down the insoluble nitrates making the nitrogen available.

It often happens, however, that the mineral constituents of the soil are unavailable because of poor tillage, and before you spend much on fertilizers you should do everything you can to put the soil in good tilth.

Tillage, which includes all the operations of fining the soil, whether ploughing, or harrowing, or hoeing, or raking, not only puts the soil in the best condition mechanically but also has other effects.

Ploughing turns the sods over and if done in the fall the frost and rains act on the soil particles, breaking them up and exposing them to the air, hastening the chemical changes which liberate plant food.

Land which has just been ploughed holds the rain better and the later tilling by making a blanket of fine soil on top prevents evaporation, thus saving more water for the use of the plants, if the soil is dry.

By ploughing and cultivating the land can be made warmer and dryer if it is too wet.

Deep ploughing brings up some of the subsoil and contrary to the general opinion the subsoil has as much potential fertility as the topsoil and this is made available by bringing it to the top for aeration.

A chemical analysis of the soil will be of little benefit because it takes no account of the mechanical state of the soil which is often of more importance than its chemical composition.

Now is the time to get ready for early spring vegetables

Eggplants, tomatoes, parsley, peppers, radishes, cabbages, cauliflower, must be started in four or five weeks. Get some Sunlight Double Glass Sash NOW and be ready.



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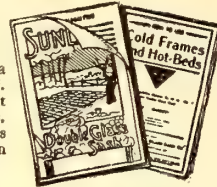
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Some of the things you can grow

Fresh lettuce and radishes any time you want them. Violets all winter; pansies in bloom in February or March. Cabbage, cauliflower, beets, tomato, pepper and sweet-potato plants to set out earlier than under the single glass sash.

Get these two books

One is our free catalog. The other is a book on hot beds and cold frames by Prof. Massey, an authority on the subject. It tells how to make and care for the beds, what and when to plant. 4c in stamps will bring Prof. Massey's book in addition to the catalog.



Write to-day

The double layer of glass supplies the protection formerly obtained with mats and boards.

Between the two layers of glass is a 5/8 inch layer of dry still air. This transparent blanket permits the plants to get all the light all the time—which means earlier and better crops, and moreover you eliminate all mats and boards because

The Sunlight Double Glass Sash Co., (Inc.) 943 East Broadway, Louisville, Ky.

As Prof. Roberts of Cornell says in his wonderful book on "The Fertility of the Soil": "Increased production on good land is more cheaply secured by superior tillage than by the purchase of large quantities of fertilizers."

Green manures which go by implication with excellent tillage are enough to supply the ordinary deficiencies of the soil, either in humus or in nitrogen. A little phosphoric acid and potash may be needed, but it is most likely that lime applied at the rate of a ton and a half per acre will correct the acidity of the soil and at the same time make available the phosphorus, potash, and nitrogen that it contains.

(Continued from page ix)

open-work silver shades stand on the sideboard during the day, but the pink linings do not look well with the tapestry paper, dark oak woodwork, heavy oak furniture, Oriental rug and velvet hangings. On the table, with pink or white flowers these linings are appropriate, but I need them to dress up the sideboard in the day-time.

Two sets of linings are required to meet the double need, a buff set for the day-light use on the sideboard and also as a change from the pink set which may be kept in the closet until it fits in with the flower decoration of the table.

(Continued from page iv)

the inner black surface of the metal shell, and is communicated by conduction to the water surrounding this shell, which is in a cylindrical or cone-shaped chamber, containing only a thin layer of water, that may therefore be quickly brought to a steaming temperature. As may be seen in the drawing, an additional air or steam chamber is provided, surrounding this layer of water which is acting as a heat insulator, to prevent the rapid transfer of heat from the steaming water to the storage water in the outer surrounding chamber. Water from the reservoir is admitted through a hole into the hot-water chamber, and is forced in by the heated air in the upper part of the reservoir, also by the passage of heated air or vapor through the hole near the top of this chamber surrounding the hot-water cylinder.

Outer shells are provided to furnish heat insulation and to retain the heat within the

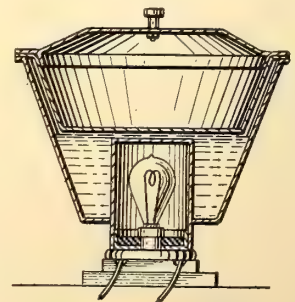


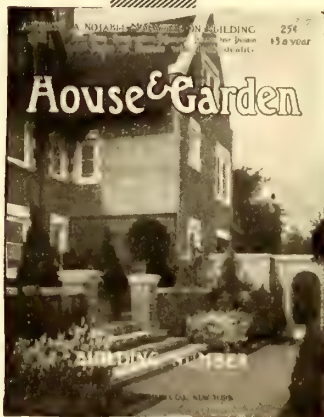
Fig. 8.—CEREAL COOKER OR GLUE POT.

cooking apparatus; and as the water is vaporized in the hot-water cylinder, it is continuously replaced on account of the increased pressure in the water storage chamber.

Another arrangement of the electric cooker steamer retains the principal feature of a thin shell, an insulating air, steam, or vapor shell chamber, and an outer storage chamber, the last three being formed by a removable double cylinder, pressed down into the water, and forcing the same into the space between the cylinders and into the steaming water layer. An electric cof-

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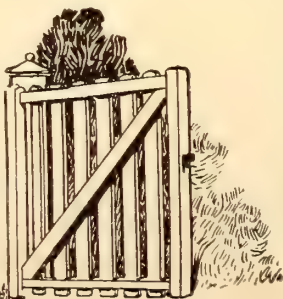
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GROW IDAHO ONIONS

and Make \$600 Profit per Acre

Offer the Seed of Wonderful Prize-Winning Onions at \$1.60 per lb.

From my Idaho seed ranch I have just received a limited quantity of seed of the pure strain **YELLOW GLOBE DANVERS ONION** grown on the virgin soil. This seed took first prize at the Inter-Mountain State Fair at Boise City, Idaho, last November. It is absolutely free from rust, smut or mold. The bulbs from which this seed grew were from 3 to 5 inches in diameter and weigh from 1 to 1½ pounds each. Southern Idaho is noted for the strength and vitality of its onion seed. These onions are so large they sell everywhere for "Yellow Spanish" at 100 per cent. advance over prices of ordinary onions. They retail in the cities at 5 cents each. Growers of Yellow Globe Danvers Onions clean up \$600 profit per acre. Price per pound \$1.60, charges prepaid. Special price on 20 pounds, sufficient to plant 5 acres, \$25 delivered. Where else can you make \$2,000 clear profit on a \$25 investment? Order promptly as my supply of seed is limited.

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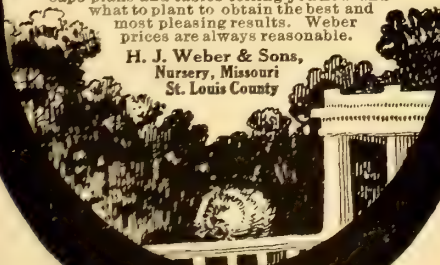
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fee pot has been designed along the same lines, the lamp heating the thin film of water, which rises through the coffee in the perforated receptacle at the top, and circulates down along the outside wall of the coffee pot.

As only a small amount of water is required for poaching eggs, a novel combination egg poacher and plate warmer has been developed, as shown in Fig. 6. For warming the plates, such dry heat may be supplied as is necessary, and for poaching the eggs, a thin layer of water is utilized for a few minutes only.

Some of these cooking and heating devices are provided with resistance heat-regulating sockets, mounted between the

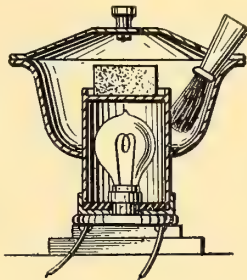


Fig. 9.—EGG POACHER AND TEAPOT.

supporting receptacle and the heating lamp, when found desirable, and another construction utilizes a thermostat plug between the porcelain receptacle and the tubular heating lamp for controlling the temperature as desired.

The electric sealing-wax heater is similar to the shaving cup, the wax receiving the heat by conduction from the shell itself, and when protected by an outer shell, a 4 or 8 candle-power lamp will keep the sealing-wax continuously hot and ready for use in a bank, shipping or express office.

Another application of the incandescent lamp is that of the electric oatmeal cooker or glue heater (Fig. 8). An inner receptacle is heated by steam or water in the outer shell. In Fig. 9 will be noted a unique little tea steeper and egg poacher combined, for use in a sick room.

COLD STORAGE EGGS IN FRANCE

ACCORDING to Dr. Bordas, of the French council of public hygiene, the cold storage of eggs is rapidly increasing in France, and will soon supplant liming and the other processes now employed for preserving them. Dr. Bordas insists on maintaining a rigorous distinction between fresh eggs and cold storage eggs, although the latter are very superior to limed eggs. Five, six or even seven months of cold storage do not appreciably alter the appearance or odor of eggs, while lime water, acting for a much shorter period, makes the albumen slightly yellow and gives the egg the characteristic odor of lime. An egg which has been kept three or four months in cold storage is still in perfect condition to be eaten, soft-boiled, from the shell, but a limed egg of the same age is unfit for this use. After the fourth month of cold storage the air space of the egg becomes enlarged by evaporation, but the egg is still perfectly fit for pastry making and most culinary uses. In recent years, especially in the districts of Lyons and Bordeaux, French preserved eggs have suffered from competition with preserved yolks of foreign origin. For hygienic reasons it is desirable that cold storage eggs should be used by all bakers and pastry cooks.



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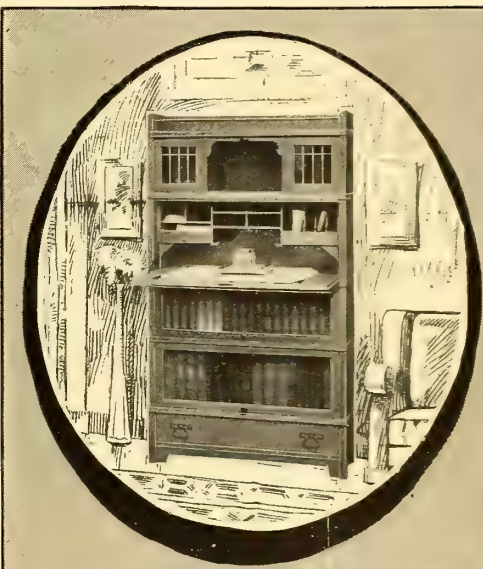
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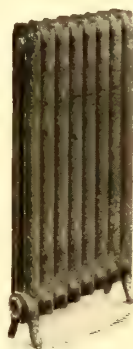
Then, too, the coal-hod kind of heating means ash-dust, embers and soot spread through the living rooms, which in turn means incessant toil to make the rooms clean. No woman is ever happy to see her efforts wasted. Women love cleanliness and if this is impossible then the house is not a home. No architect or manufacturer would think of heating a factory by grates, stoves or hot-air furnace. Why should men expect their wives to put up with such old-style methods?

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SARDINE BAIT

FRENCH sardine fishers use, as bait, the roes and other waste products of the Norwegian cod fisheries. This bait is expensive and its price is continually rising, owing to the increasing demand. An artificial bait, which is much cheaper, has recently been employed, but with only partial success, as it sinks too quickly and often lures the sardines downward, instead of drawing them up into the nets. Attempts are now being made to remedy this defect. The success of these attempts would bring joy to the fishermen, but not to the dealers in Norwegian bait who enjoy a very lucrative monopoly. The question is one of burning interest and has nearly led to open war between fishermen and bait dealers on the French coasts.—Cosmos.

AT first thought, one might be inclined to consider it incongruous to use an electrical vehicle as a hearse, but as a matter of fact the electrical hearse, moving with stately silence, is really more dignified than one drawn by horses. Such a hearse was recently constructed for a Chicago firm, and has been in continuous service ever since. Power is communicated from the motor to the rear wheels by means of silent chain drive. The battery is supported under the main body of the vehicle in a compartment between the front and rear wheels, and is adapted to furnish sufficient current to propel the hearse for a distance of fifty miles.

WHAT a beautiful tone that bell has!" is often heard. There are few, however, who know how a bell receives its joyful or solemn tones. All bells after they are cast and finished must go through a process of tuning the same as any other musical instrument before they respond with a clear, true tone. Every bell sounds five notes, which must blend together in order to produce perfect harmony. The tuning of a bell is done by means of shaving thin bits from various parts of the metal. It is as easy for an expert bell tuner to put a bell in tune as it is for a piano tuner to adjust his instrument to perfect chords. At first thought it would seem that a bell would be ruined should the tuner shave off too much at the last tuning, or the fifth sound, but such is not the case. He would, however, be obliged to begin over, starting again with the first tone, and shaving the bell till it gave forth its harmonious sound at the fifth tone.

SOME of the smaller European towns of economical habits have been complaining because they are obliged to light their streets all night for the benefit of a few belated citizens, and have been trying to discover a method whereby the citizen who needs to have his pathway lighted in the small hours of the night shall pay the costs himself. On one of the streets of a small German town, such a system has actually been put into operation. The street is a little over half a mile long, and is provided with nine lamps. At each end of the street is a penny-in-the-slot machine, and whenever anyone wishes to light up the street, he has merely to drop in a ten-pennig piece, which turns on the current for twelve minutes. This allows him ample time to walk the length of the street. The street is normally lighted until 10 o'clock. Thereafter the prepayment meter must be resorted to.

A NEW VEGETABLE

M. AUG. CHEVALIER gives an interesting account of a vegetable of the bean variety which grows in Africa in the Dahomey region. The grains, the size of a very small pea, are formed underground and appear in pods. There is no evidence that this plant is known in Europe. Previously we knew two plants of this kind in Africa, one of these being an archide which resembles South American plants and the other is the Voandzon, this latter being the only species of the genus *Voandzeia*. The third plant which we mention here is cultivated for its edible grains. M. Eugene Poisson, who is familiar with the Dahomey region, pointed out its existence in the interior of the country. Such grains are sold in the markets of Abomey under the name of *doï*. The author observed the *doï* plants both in flower and in bearing young fruits, and examined the dry grains which the natives obtained for him. The *doï* plant is a new species of *Voandzeia*.

The pods which are found at the root of the plant carry only one or two grains. When there are two grains these are separated by a complete partition and the pod is narrower here. From this description it may be supposed that the pod is somewhat like the American peanut, in form, at least, although it is of smaller size. As we find for the bean, the *doï* has several varieties, differing by the color of the grains, and these are oftenest white, but can also be black, red or variegated. The area occupied by the plant is very limited, being only a restricted region in the central part of Dahomey. It can be eaten in the same way as the bean, and has a very agreeable taste. Owing to the small size of the grain, the production is very limited, and it is reserved for the chiefs or other favored persons. For this reason the Dahomey usage forbids the eating of the grains by women.

A MAMMOTH cave has been discovered in German East Africa in Mt. Nangoma, about an hour to the south of Nandembo. Though discovered in August, 1909, it was not explored till February, 1910, when the police officer, Weckauf, and a missionary named Ambros Mayer made a partial investigation of it. The entrance is 43 meters (141 feet) wide by 21 meters (68.9 feet) high, and the whole cave has a length of 329 meters (1079 feet). It is of pipe-like shape and has a funnel-shaped opening, caused by a cave-in. It is in a chalk mountain and made by water erosion. The natives had long known of it, but concealed its existence from the whites. During the uprising of 1905-06 they used it for a hiding place for thousands, completely baffling the enemy. It contains a spring of fresh water, which gives it additional value as a refuge. Its entrance lies in the primeval forest. Evidence is strong that it has been the habitat of thousands of bats through untold years. It is hoped that funds will be forthcoming to provide for a thorough exploration, since this can hardly fail to yield prehistoric remains and antiquities of great interest and value.

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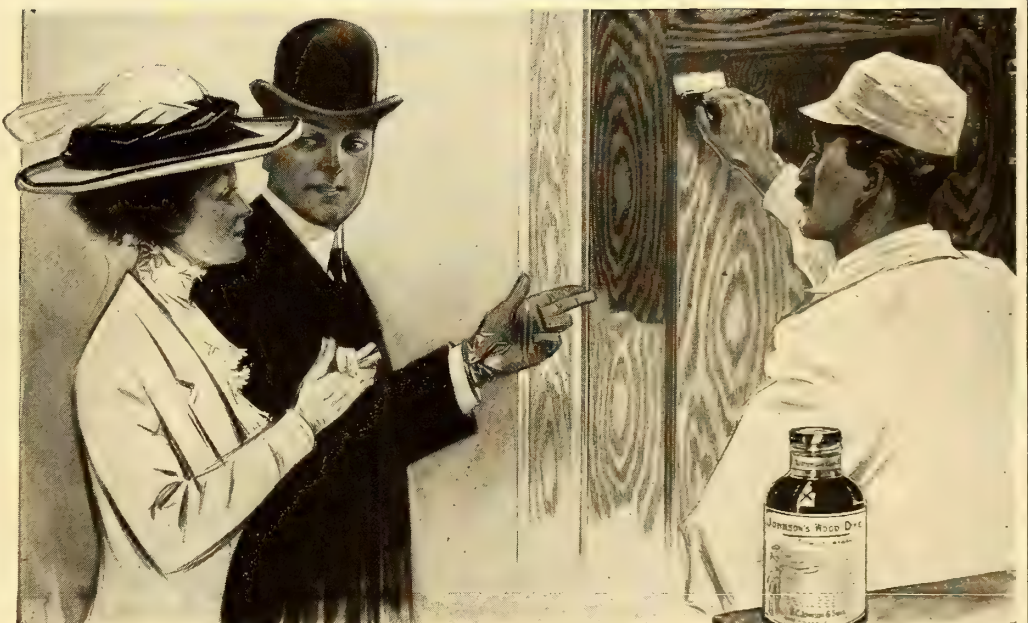
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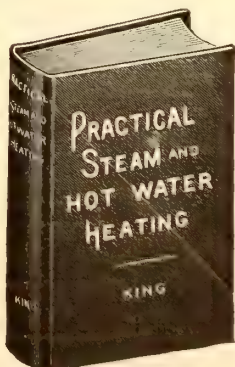
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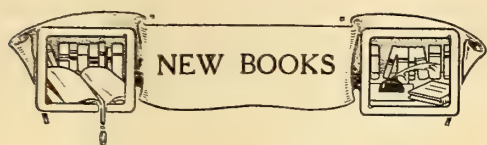
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NEW BOOKS

ORNAMENTAL CONCRETE WITHOUT MOLDS.

By A. A. Houghton. New York: Norman W. Henley Publishing Company, 1910. 16mo.; 132 pp. Price, \$2.

This book treats of the forming of concrete objects in cement by the means of templates. This method is not new, as it involves practically the same methods as used for years in running plaster moldings, center pieces, etc. It has also been explained in detail, in "Concrete Pottery and Garden Furniture," by Ralph C. Davison, published by Munn & Co. The use of templates in concrete work is good for certain classes of work, but the field is limited, inasmuch as plain surfaces only can be produced; that is, no bas-relief work can be reproduced, such as is possible with either glue or plaster molds. This work contains 124 pages, including thirty full-page line drawings, and twenty chapters, many of which are only from one to three pages in length. Several of these chapters are superfluous, inasmuch as they only repeat dimensions which are clearly shown in the illustrations. The larger portion of the work treats of the various architectural orders rather than of how to produce concrete ornaments. If as much space was devoted to the proper ingredients to use in the concrete mixture, and the proper proportions to use in the same, as well as to the all-important question of curing the casts—points which have not been touched on at all—the work would be of more practical use to those for whom, the author states, it is intended, as there are very few who understand the great importance of the proper mixtures to use, or the time and methods to be used for producing a perfectly cured cast. The proofreading could be improved on, also the index is not above reproach, as for example the reference to *Crazing*, page 23. The circular states: "The process of making ornamental concrete without molds has long been a secret and is now given for the first time in this practical book." This statement is misleading and not warranted by the facts. There is no secret about this process.

ITALIAN HIGHWAYS AND BYWAYS FROM A MOTOR CAR. By Francis Miltoun. Boston: L. C. Page & Co., 1910. 12mo.; 380 pp. Price, \$3.

The author has written a number of books dealing with travel in Europe. Among his other writings are "Rambles on the Riviera," "Rambles in Normandy," "Rambles in Brittany," etc. The present volume contains a number of illustrations from the pen and brush of Blanche McManus. The maps are particularly valuable, as they are on a good scale and give the distances in kilometers. The book is printed on a delicately tinted paper, and it is appropriately bound.

PATTERN MAKING. By H. Willard. Chicago: Popular Mechanics Company, 1910. 12mo.; 214 pp. Price, \$1.

This book contains chapters on core making and molding. It is written by a practical pattern maker of long years' experience. The information given appears to be of a very practical nature, and the book will undoubtedly prove of value.

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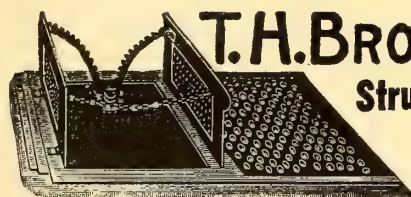
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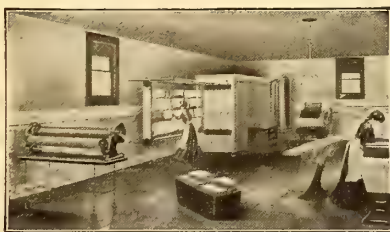


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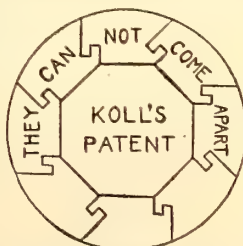
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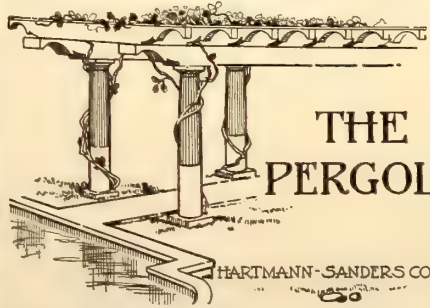
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ENGINEERING CONSTRUCTION IN STEEL AND TIMBER. By William Henry Warren. London and New York: Longmans, Green & Company, 1910. 8vo.; 472 pp. Price, \$5.

The development in the science of testing materials, and the various researches undertaken during the last fifteen years, have supplied an enormous amount of data on the physical properties of the materials of construction. Wrought iron has been replaced by structural steel. The safe intensity of working stresses in structures subjected to moving train loads is now considered to be best determined by means of an equivalent dead load, equal to the live load increased by an amount representing the impact effect, added to the dead load, in preference to the so-called fatigue formulæ for working stresses. It has therefore necessitated rewriting the first two chapters of the book. A cursory examination gives the idea that it is a thoroughly valuable treatise which will be of the greatest assistance to engineers, particularly for the design of roofs, bridges, viaducts, beams, columns, etc. The book is very well made and has a number of excellent folding plates.

THE BOY AVIATORS IN NICARAGUA. By Captain Wilbur Lawton. New York: Hurst & Co., 1910. 12mo.; 336 pp. Price, 35 cents.

This book is nothing if not up-to-date. It takes up a most exciting story of a most impossible nature, in which two boys who have built an aeroplane become involved in the revolution of Nicaragua. Their exciting adventures with a general of the Nicaraguan forces who is bent on their destruction, and also that of a newspaper correspondent, should give boy readers many a thrill.

SICILY, THE GARDEN OF THE MEDITERRANEAN. By Will S. Monroe. Boston: L. C. Page & Co., 1909. 12mo.; 405 pp. Price, \$3.

The author deals in an interesting way with the history, people, institutions, and geography of the island. The aim of the author has been to interest the general reader of travel and description, to inform prospective tourists to the Garden of the Mediterranean, and to refresh the memories of those who may have already made the tour. In this, as in his other books of travel, the author has placed special emphasis on the distinctly human side of the subject, and, while not including the discovery of the island and its diverse physical features, it has been, after all, the Sicilians themselves—their manners, customs, habitations, and institutions—that have received the lion's share of the book.

SELF-TAUGHT MECHANICAL DRAWING AND ELEMENTARY MACHINE DESIGN. By F. L. Sylvester, M. E. With additions by Erik Obero, Associate Editor of Machinery. New York: The Norman W. Henley Publishing Company, 1910. 12mo.; 230 pp. Price, \$2.

This treatise conveys the first principles of geometric and mechanical drawings, workshop mathematics, mechanics, strength of materials, and the calculations and design of machine details, including cams, sprockets, gearing, rivets, bolts, belting, couplings, screws, pulleys, clutches, flywheels, etc. The book is well made, but a criticism which will be quickly made on it is that it devotes more attention to elementary machine design than it does to mechanical drawing. Perhaps if the title had been reversed, the true contents would be disclosed more accurately.

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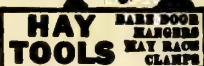
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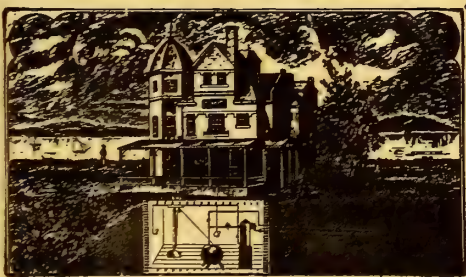
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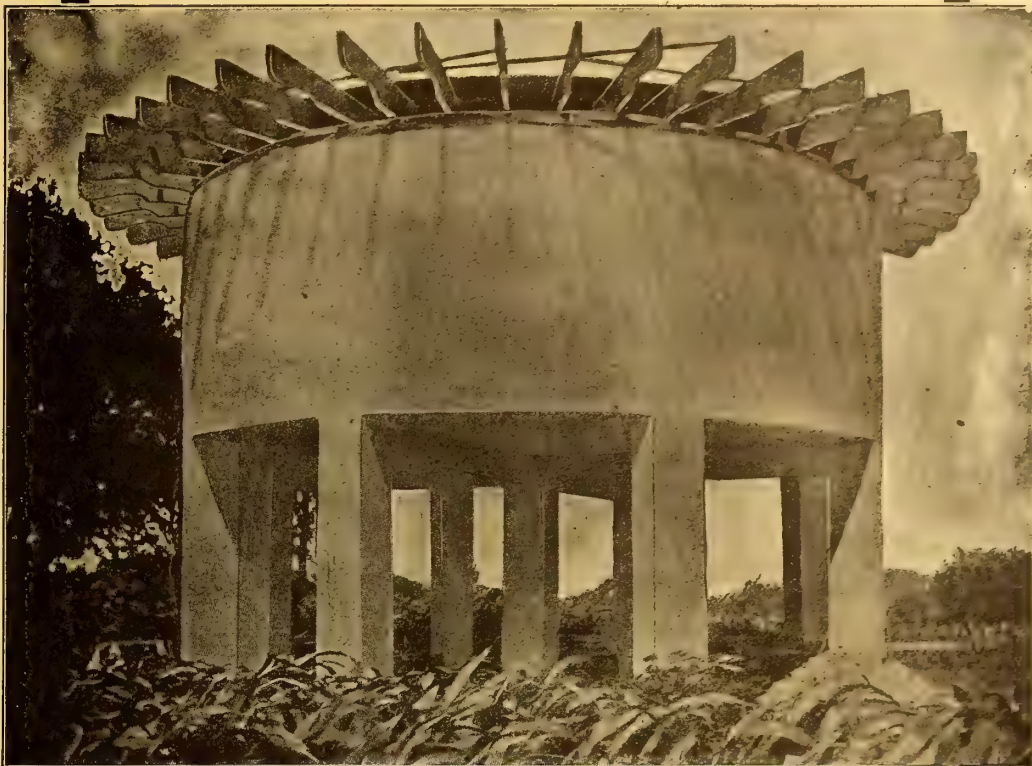
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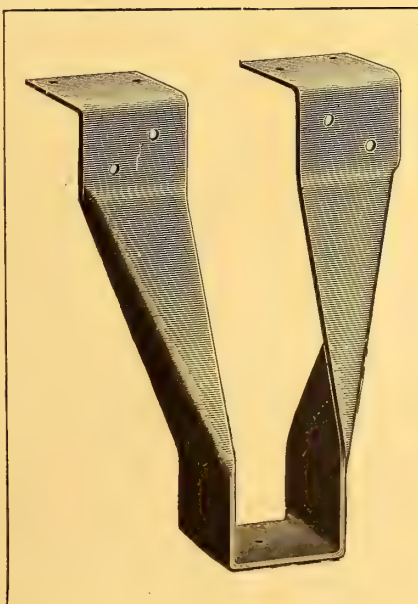
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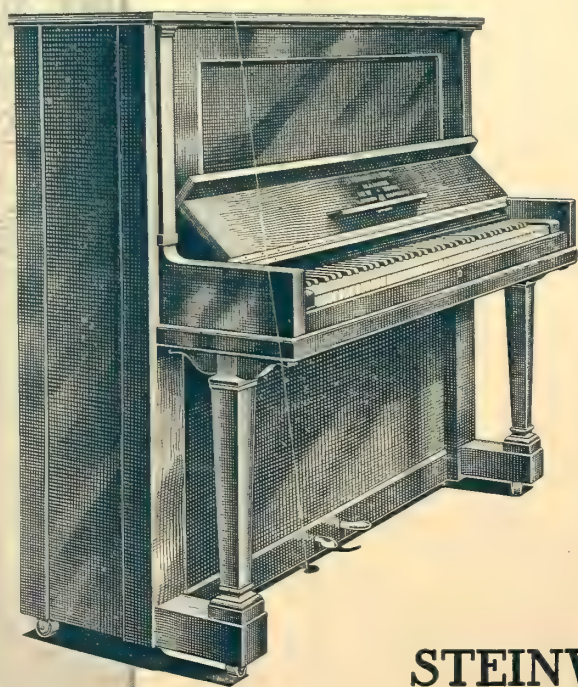
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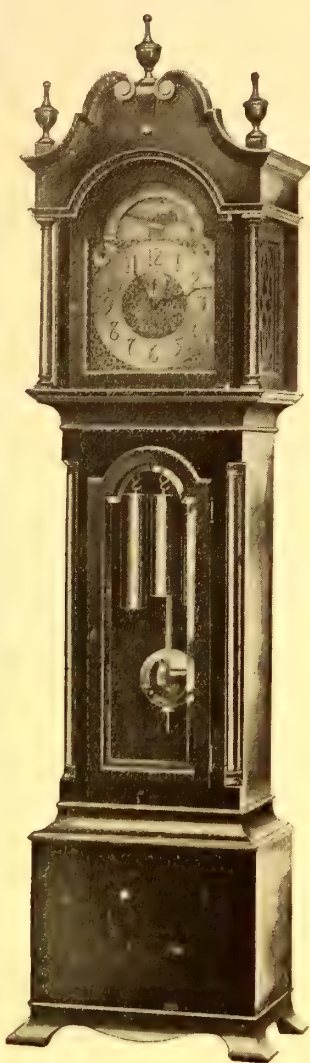
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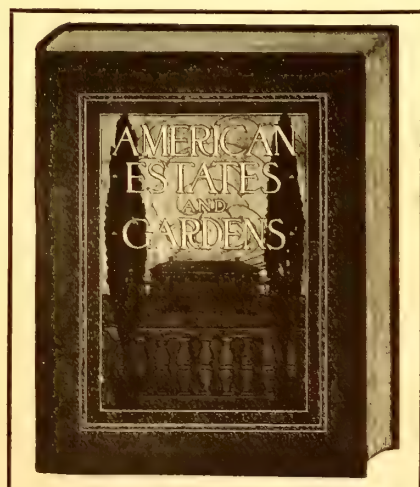
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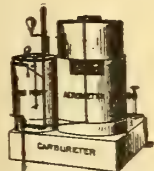


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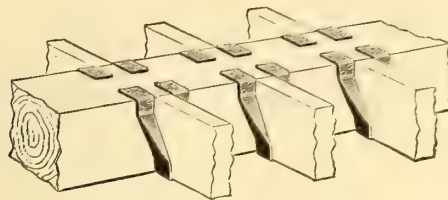
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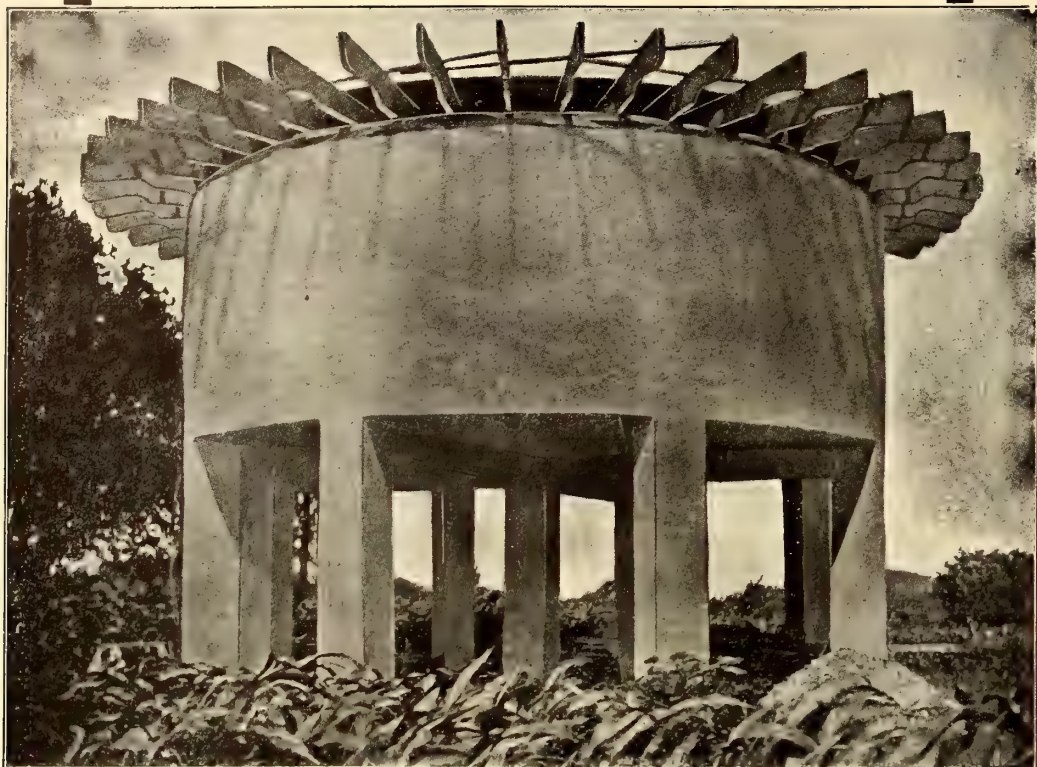
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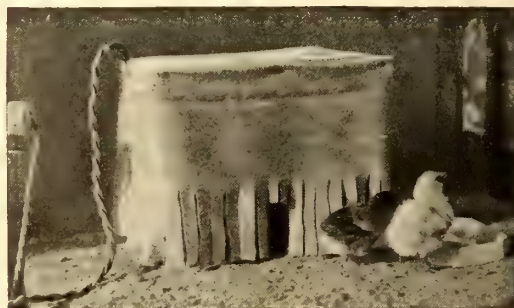
ELECTRIC INCUBATORS AND BROODERS

By Frederick E. Ward

THE advantages of an electrically-heated incubator over those making use of kerosene lamps and the like are so great, that as rapidly as cheap, reliable power service becomes extended throughout the country, the hatching of eggs by electricity bids fair to displace all other methods.

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The photographs show the first incubator built by the author, while the drawings give details of construction, drawn to scale, for a similar machine of fifty eggs capacity. Briefly, it consists of an outer and an inner wooden box, having the space between them packed with wool or other heat-retaining material. The eggs are placed in the inner box, which is warmed with incandescent lamps controlled by a thermostat.



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The boxes should be made of well-seasoned lumber about 1/2-inch thick. Old soap boxes furnish good material for the purpose. For a fifty-egg machine the inner box needs to be 11 inches wide, 17 inches long, and 11 inches deep, all inside measurements. This box is to be left without any top or bottom except a slatted bottom which is to be put in half way down, thus dividing the box into an upper and a lower compartment of equal depth. On top of the slats a double thickness of woolen blanket should be tacked, to support the eggs, as shown in Fig. 1.

Eight electric lamps are required for the heating units. These are best mounted in porcelain receptacles as shown, four lamps in each compartment near its top. For 110-volt circuits use ordinary 16-candle-power carbon filament lamps made for 230 volts, and connect them as shown in the diagram, where REG means regulator, or thermostat, and SS are snap switches to be placed on the outside, as shown in one of the photographs.

It is hardly worth while to make a thermostat at home when one suitable for the purpose can be bought from a dealer in electrical supplies for about seventy-five cents; but it is not a difficult job for anybody who takes pleasure in doing such work. Fig. 2 shows a simple form of thermostat attached directly to the inside of the egg chamber. The essential part consists of two strips of metal riveted together as shown in the top view at A. Zinc and steel (or iron) make the most effective combination; brass and steel (or iron) come next. The strips should be about

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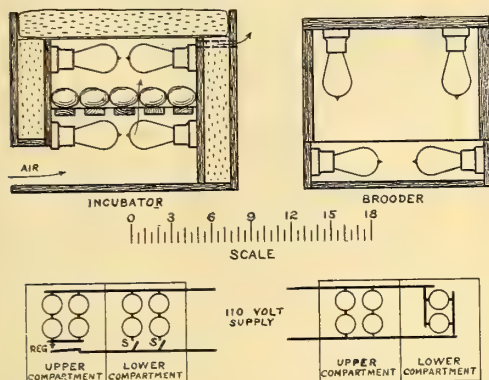


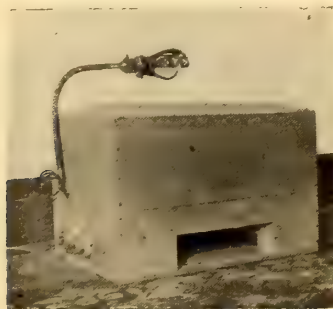
FIG. 1—CONSTRUCTIONAL DETAILS AND WIRING DIAGRAM OF THE INCUBATOR AND BROODER

ment from the outside. It is highly important that the tip of the screw *C* and the spot on the zinc (or brass) strip be protected by pieces of platinum soldered on, or the electric arc which appears between them will soon destroy them. If the thermostat be purchased as advised, it must be mounted in such a position that the adjusting screw can be reached by a screwdriver or wire passing in from the outside through small holes in the boxes.

The inner and outer boxes are to be joined at the bottom by a passageway or tunnel three inches high, forming a doorway through which chicks may enter the brooding compartment under the egg chamber. The inner and outer boxes are to be joined near the top by three or four half-inch tubes for ventilation, as shown at *V*, Fig. 2.

The top of the egg chamber is best covered over with a pane of glass, on top of which is laid a small pillow or several thicknesses of folded blanket.

Next in importance to the thermostat comes the choice of a thermometer and its proper location in the egg chamber, where the bulb should occupy a central po-



INCUBATOR WITH BROODING COMPARTMENT OPEN

sition rather than one near a corner. It is not necessary to buy an expensive instrument in order to get accuracy; an ordinary ten-cent thermometer can be made to serve the purpose very well provided that its scale be properly corrected or "calibrated." This may be easily accomplished by taking advantage of the fact that the internal temperature of a normal, healthy person is just a trifle over 98 degrees. Tie a thread around the tube at the place marked 98 degrees on the scale, and remove the

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tube from the scale, to which it is usually attached by two bits of wire. Place the bulb under the tongue at the side of the mouth and hold it until the mercury column does not rise any higher. By observing with a mirror it will then be possible to determine quite accurately how much in error the marking on the scale may be, and due allowance for this can then be made by assuming that the same error is present at the 104-degree mark, which is the temperature of incubation.



PLAN VIEW WITH COVER REMOVED

The machine must be run a few days before any eggs are put in, to give time for carefully adjusting the thermostat. When the latter is once set right it will automatically maintain the heat at the desired point by "winking" the lamps on and off. With all eight lamps in use, the apparatus as described is capable of maintaining a temperature of 104 degree in the egg chamber when the room temperature is only 40 degrees. If used in a warmer room, one pair of the lamps in the lower compartment may be turned off by means of the snap switch.

Each pair of 230-volt 16-candle-power carbon lamps, connected in series as shown, will, when used on a 110-volt circuit, burn with a dull red glow scarcely visible in daylight, and with a power consumption of 5½ watts. A fifty-egg machine operated in a room where the temperature is 65 degrees consumes about 16 watts, making a total for 22 days of about 8 kilowatt hours, which, where the rate is 10 cents, costs 80 cents. This cost looks high at first sight, but it is materially lower than that of a kerosene-burning machine if one stops to consider the saving in interest on first investment, the saving in oil, the absence

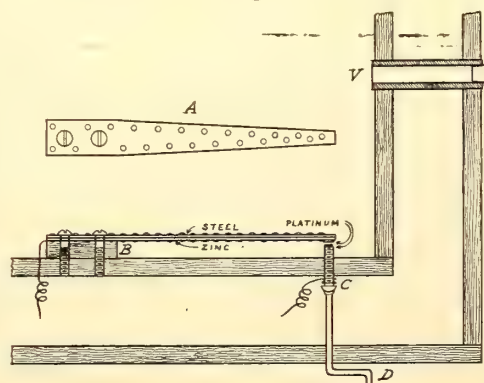


FIG. 2—METHOD OF APPLYING THE THERMOSTAT

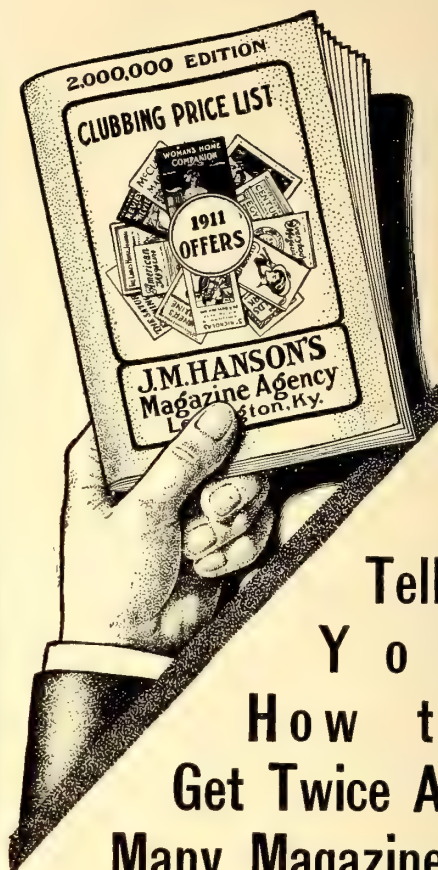
of depreciation and repair bills, and the saving in labor of attendance.

In the practical operation of the incubator, the following points should be borne in mind:

The eggs need to be turned partly over every day. A good way to do this is to take out the row of five eggs at the left-hand end, roll the remaining ones toward the left, and replace the five at the right-hand end. This progressive movement serves also to even up the different times of hatching that might result from some

(Continued on page vi)

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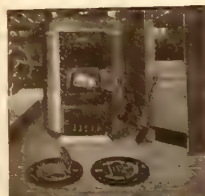
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THE EDITOR'S NOTEBOOK

THE REAL ESTATE MART

OWING to the constantly increasing number of inquiries received from our readers, regarding suburban and country property, the publishers have decided, in order to be of greater assistance to their subscribers, to open a department of real estate.

This new department will be entitled "The Real Estate Mart," and will embrace everything in the buying, selling and renting of all classes of real estate, including suburban properties, country estates and farm lands. It will be a valuable guide—a real "directory," and will list property, reproduce photographs and give detailed particulars.

"The Real Estate Mart" will be a money-maker for the real estate dealer, for the owner and the agent who are shrewd enough to realize its possibilities. The superb illustrations of American homes and estates of all kinds attract just the class of readers that are desirable for prospective purchasers of real estate.

AMERICAN HOMES AND GARDENS is eagerly consulted by intending home-owners as well as by real estate dealers. The letter sent to the Editor by Grant Parish speaks for itself.

December 21, 1910.

Editor AMERICAN HOMES AND GARDENS, New York.

My Dear Sir:

It is sure a delight for an old experienced journalist to be able to read a periodical of such profound merit as AMERICAN HOMES AND GARDENS, both as to its text and illustrations, and as the magnificent exponent of country homes and landscape gardening in America.

Being particularly interested in the international real estate proposition, it is but natural that I read and observe all publications of note coming under that class of literature. So appreciative am I of the high standard of AMERICAN HOMES AND GARDENS that I recently purchased all of the back numbers of this publication and have had them bound for the sole purpose of use as a library of reference for my office which I use not only for my pleasure in reading, but as a valuable asset in the conduct of my business, particularly for the matchless usefulness it gives my clients, who come from the four corners of the world.

Yours very truly,
(Signed) GRANT PARISH.

ANNUAL HORTICULTURAL NUMBER

THE readers of AMERICAN HOMES AND GARDENS will be glad, no doubt, to know that in March we shall issue our Annual Horticultural Number.

Our readers should all be interested in this month's issue, as it appears at the festive season of the spring and undertakes to meet those requests of our subscribers which have been expressed in many communications to the Editor for

information as to the best methods of developing and beautifying the home grounds.

The issue will be full of helpful and timely suggestions in response to many inquiries that refer to plans for spring planting, and many new and interesting subjects will be taken up by experts who have devoted their time and their best efforts to the work. The aim will be to cover all interests in the different fields which affect the surroundings of a home, and, if this is realized, the publishers will feel that they have aided in securing a better and more beautiful America.

ARCHITECTURAL LEAGUE EXHIBITIONS

THE twenty-sixth annual exhibition of the Architectural League will be held in the building of the Fine Arts Society, from January 29th to February 18th, inclusive.

The annual dinner of the time-honored League will be given on Friday evening, January 27th, and on the following afternoon a reception will be tendered by the members to their friends.

The exhibition will be illustrative of architecture and the allied arts. It will consist of drawings and models of proposed or executed work in structural, decorative and landscape architecture; sketches and finished examples of decorative painting; sketches, models and finished examples of decorative and monumental sculpture; drawings and models of work in the decorative arts; and photographs of executed work in any of the above branches.

The committee has extended an invitation to all the members of the profession of architecture and the allied arts to send drawings with models and cartoons illustrating in combination the architectural, sculptural and decorative scheme of a single important work.

It is to be hoped that the committee will see the wisdom of paying more attention to the class of domestic architecture which may be submitted for hanging this year than they have during the past few years, and by showing a consideration for this class of work, add a greater interest to the exhibition from the layman's point of view than could possibly be accomplished in any other way.

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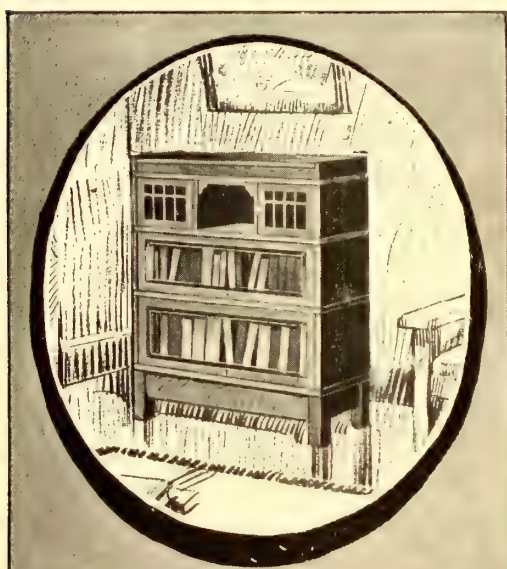
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(Continued from page iv)

eggs remaining in warmer spots than others.

Increasing ventilation is required as incubation progresses. Practically no air is needed the first two weeks, and all ventilating tubes and the door to the lower compartment may be kept closed with considerable economy in power. During the third week, and especially when the hatch is due, plenty of air must be allowed to filter up through the eggs, as shown by the arrows in Fig. 1.

No moisture is required during the first week. Thereafter it is best to keep a small pan of water in the lower compartment and a small glassful in the egg chamber. These serve to prevent excessive evaporation of the eggs by too dry air.

The newly hatched chicks should not be taken out or fed until they are 24 hours old. After this they may be kept in the lower compartment for a time provided all four lamps be kept burning. As soon as convenient, however, they should be transferred to an electric brooder, two forms of which will now be described.

The first and simpler form, suitable for use only in a well warmed room, is shown in one of the photographs. It consists of a small wooden table carrying on its under side four lamps, and surrounded by a fringe made by slitting a piece of old blanket. For use on the ground or where the floor is not warm, bottom heat must be provided as shown in Fig. 1. Forty chicks can be accommodated by such a brooder having the following dimensions: Top, 14 by 20 inches, supported by legs 8 inches long. Bottom box of wood, 14 by 20 inches outside, 3 inches deep inside. Box-cover of tin 14 by 20 inches, protected on top by a sheet of paper and a sprinkling of sand. Four lamps are required in the upper part, one near each corner, and two in the bottom heater. It will be observed in the diagram of connections that the last lamps are connected in parallel and not in series, which causes them to burn more brightly. The power consumption is 33 watts, or about twice what is required for hatching. No thermostat or thermometer is needed for the brooder. It will not get too warm if the current is left on all the time.

Where any form of bottom heater, such as that just described, is used it is necessary to either sink it level with the floor or to provide sloping boards by means of which the chicks may get up on the raised platform.

The following bill gives a list of all materials needed and their present retail prices:

For the Incubator.	
8 230-volt 16-candle-power carbon lamps	\$1.60
8 porcelain receptacles	.48
1 thermostat	.75
1 thermometer	.10
2 single-pole snap switches	.30
1 piece 12x18 window glass	.20
Lumber, etc.	.15

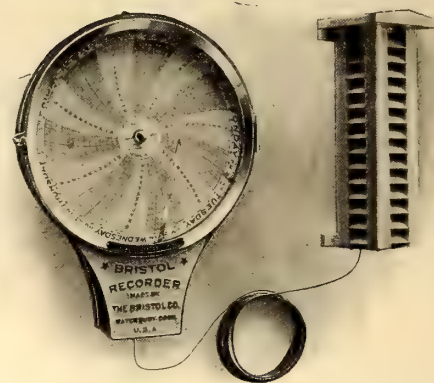
Total\$3.58

For the Brooder.

6 230-volt 16-candle-power carbon lamps	\$1.20
6 porcelain receptacles	.36
1 sheet 14x20 tin	.15
Lumber, etc.	.05

Total\$1.76

The foregoing bill does not include the shaded lamp and fixtures shown on the outside of the incubator in Figs. 1 and 2. An ordinary 4-candle-power lamp so mounted is a convenience, but not essential.



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American Homes and Gardens for March



A Woman's Two-Year-Old Hardy Garden from Reeds

An interesting paper by Adaline Thomson tells a pleasing story as to how she planned and planted a hardy garden. It is a paper worth while reading, for it intimately describes how the work was undertaken and carried on. The illustrations of the plan and photographic views interestingly present the results. There are many helpful suggestions given which ought to be of service to any one who wishes to develop a similar garden.

Chickens and the Camera

Young animals are always amusing and interesting to watch, but the most wonderful for their age, perhaps, is the very young chicken. Miss Carine Cadby tells a pleasing story of how chickens, with only twenty-four hours behind them, can be found very busy playing the game of life in a manner somewhat difficult for the handler of the camera.

The Small Suburban Home

The rapid progress which has been made in the building of the small suburban home, during the past few years, is not more marked than is represented in the article by Paul Thurston. The subject is properly illustrated by engravings showing plans and elevations of the exteriors. A study of these small houses will be of interest to the home-seeker, for the many practical suggestions offered in them.

Appropriate Mottoes for the Home

House mottoes add in a delightful way to the appearance and interest of the home, and when they are carefully selected and applied, they prove a very attractive feature from the standpoint of art. An excellent paper has been prepared by Dorothy Tuke Priestman, and it is properly provided with mottoes in the text and illustrated with photographic views showing various rooms and the appropriate positions for the maxims.

Perennials from Seeds in One Season

It is surprising how few are the flower lovers of small experience who know that perennials can be had without buying, begging, or exchanging plants. Miss Gladys Hyatt Sinclair will tell you in her paper, of the large number of perennials that can be grown from seeds as readily as from annuals. If this can be accomplished, there is no reason why any one should not have a garden that will be a delight from early spring till the late autumn.

Planting Table for 1911

This tabulation of planting was made by Charles Downing Lay, a landscape architect who is familiar with the subject. It will aid in perfecting all forms of planting, from the growing of trees, shrubs, and flowers to the more prosaic planting of the vegetable

garden. It will be of great service to the amateur and will be helpful as a guide in planning and planting for this season's work.

Furniture of Our Forefathers

There is no more fascinating study than that of the antique, and when a paper on the subject is prepared by an authority so competent as Esther Singleton, it requires no extended introduction. The readers of this magazine may be assured that the article contains something worth knowing about furniture. Miss Singleton's subject for this issue is "The Early Georgian Furniture," and gives an historical résumé of the period, with illustrations.

Poultry House

This is the season of the year when one should plan his poultry house. A practical paper on the subject has been prepared by James G. Newland, telling by text and also by detail illustrations how it may be planned and how it may be put together.

Seeds and Their Planting

In planting, the most important things to consider are the selection of the proper kinds of seeds and the correct way in which to place them. A timely and practical paper has been written by Mr. Robert Conover, on the subject, which is illustrated by many excellent engravings.

Planning and Planting a Small Water-Garden

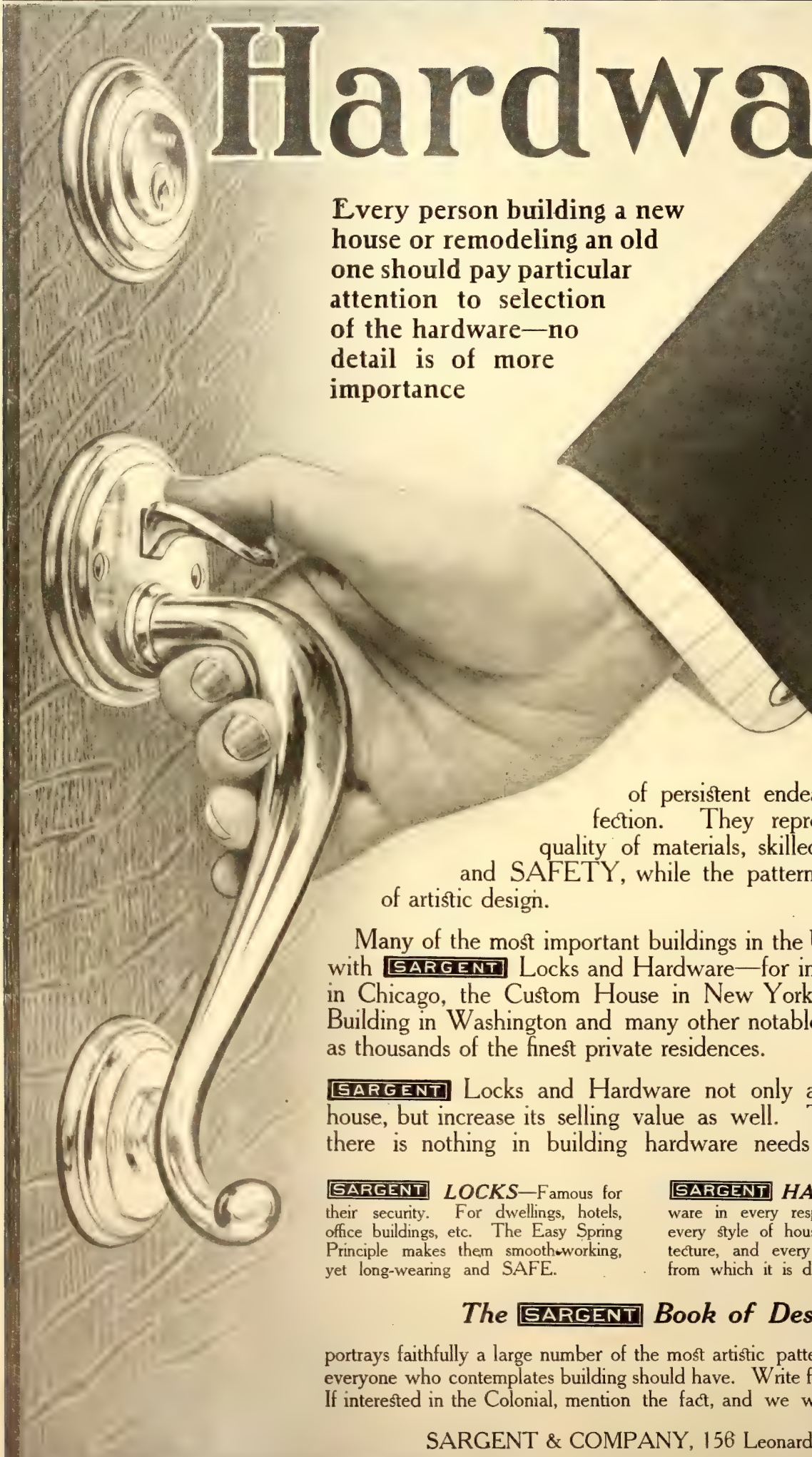
There is nothing so pleasing and delightful in a country place as water, and a water-garden is the most fascinating solution of the use of various streams and brooks which are so frequently found going to waste in the average country districts. Martha Haskell Clark has prepared a plan, and a paper on the subject which will assist those who have the opportunity to develop a water-garden.

Planting a Frost-Defying Flower Garden

Much energy is wasted in sowing tender annuals that are rendered unsightly by the first frosts, when the same time might be given to planting a bed of frost-proof ones that will keep their decorative qualities long after sensitive varieties have been destroyed. I. M. Angell will tell you by his paper and by illustrations how this may be attained.

How to Make a Japanese Lantern of Concrete

The Japanese stone lantern is an ornament which no garden in Japan would be considered complete without. Ralph C. Davison shows by detail drawings and by illustrations in his article, how an amateur can duplicate a Japanese lantern in concrete with a result that is quite equal to the antique stone, and one that is now finding increasing favor in the American garden.



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AMERICAN HOMES AND GARDENS for March

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The portico at the front of the house

AMERICAN HOMES AND GARDENS



Volume VIII

February, 1911

Number 2

“Filston”

The Country Seat of R. R. Colgate, Esq., at Sharon, Connecticut



One who has visited the hills of western Connecticut needs to be reminded of their charm. They are beautiful enough to hold their own with scenery of similar class anywhere, and they are lovely enough to be always cherished by those who live among them, or who seek them out as havens of rest and recreation. One may indeed wonder why Sharon should have developed into a prosperous village, but one cannot be surprised that Mr. Col-

gate should have chosen it as a site for his country home. Here he is a landed proprietor, with an estate of about three hundred acres and occupying a site that is so generally beautiful that one has but to look from any window of his house to see as much of nature beauty as one may need for any day in a lifetime of search for it.

Here, on the hillside, with the land sloping down below him on every side, and then rising up beyond in the distance, with hills and hills moving off into a seemingly endless distance, he has built a fair white house. Mr. J. R. Crom-



Victory of Samathrace at the end of the water garden

well of New York was its architect, and Mr. Hamilton Bell of the same city was the designer of the gardens, which were planted by a Boston firm. Each artist contributed the full quota of his ability to the creation of a notable dwelling and the embellishment of its environment. The house is a stately structure of white cement stucco, designed in the Italian style, in a symmetrical and somewhat formal manner yet forming a truly splendid center to the superb gardens by which it is surrounded and which are really an integral part of the house itself. It is three stories in height, with a cen-



The terrace

tral colonnade of Corinthian columns on the entrance front. On either side is a monumental window, spacious in width, two stories in height and surmounted by an elliptical arch in the second story. On the sides are two-story porches, in the center of each front, for the house is completely exposed, and presents four handsome fronts to the main points of the compass. On the left or west this is a double porch, the lower serving as an outdoor sitting-room, while the upper fulfills a similar function in connection with the bedrooms of the second floor. On the right or east the



The main front of the house



The gardener's cottage



The garage

space of the lower porch is enclosed and forms a part of the service rooms; but the upper porch is here identical with that on the west. The angles between these porches and the corners of the main front are occupied by terraces, floored with white marble, and enclosed with balustrades.

The colonnade is not only the chief feature of the entrance front, but is the chief ornamental feature of the whole exterior. The doorway in the center has a narrow window on each side, and is enclosed with a magnificent wrought iron grille, glazed within; there are wrought iron lanterns here, held out on sturdy arms of the same material. The awnings are green and white, and above is a loggia-like treatment, of an elliptical arch supported on Roman Doric columns, a triple opening with small upper circles

in the spandrels. At the base of the great steps are two immense vases of white marble. On each side of the door is a superb *Retinospora Obtusa Nana*, an extraordinary fine pair of specimen trees, said to be the most perfect in America. There are smaller plants in small marble jardinières here and similar decorations in the bases of the upper central windows. All the windows, it may be added, have outer Venetian blinds, painted green, and those of the second story have wrought iron base grilles. The roof is flat, with a balustrade all around.

While structurally this façade encloses the front of the house, it is equally valuable as a screen to the sumptuous garden spread before it. In the nomenclature of "Filston" this is the south garden. It is rectangular in form, and wide



The north garden



The approach to the house



The



The balustrade and steps to the water garden



The formal garden



The sou



pond



The entrance to the north front



front of the house



arden



Steps ascend to the terrace at the front of the house



The approach to the house



The lily pond



The entrance to the north front



The balustrade and steps to the water garden



The formal garden at the front of the house



The south garden



Steps ascend to the terrace at the front of the house



The walk along the terrace

enough to embrace space for an ambulatory completely around the house. You drive right into it in approaching the house, after traversing a considerable roadway from the public highway, for the house and the gardens stand some distance back and are completely sequestered from the outer boundaries. The entrance is effected through two lofty piers, amply covered with ampelopsis and with outer groups of evergreens. It is a sunken garden, with a lowered central space and outer borders and boundaries at the normal level of the house grounds. It is actually built out upon the hillside and is supported by stone walls that, at the farthest end, rise some distance above the outer land. It is enclosed within balustrades, all of which are overgrown with ampelopsis, rambler roses, clematis and other vines. Of the four corners, one is occupied by the carriage entrance; the other three are provided with trellised pergolas, built of wood, and stained green. Each is surmounted with a trellised dome.



The tea house on the terrace



The stable

The two outer pergolas are square in plan and are identical in design; the third, nearer the house, is rectangular in form and slightly smaller in dimensions.

The floral planting here is very beautiful and abundant. Immediately within the enclosing balustrade is a brilliant border of the gayest description. It is edged throughout, as are all the beds, with *enonymus radicans*. Then comes a lusty border of sedums, and then a brilliant growth of phlox, behind which are Farquhar roses, mallows, hardy asters and the like. At the south border the planting is changed, and consists of *heuchera*, *achillæ*, *lythium*, *bocchina* and other free blooming plants.

Stone steps, in the center of the four sides, lead to the sunken garden, the slopes and surface of which are grassed, with paths around the beds. Here, in the midst, is a colossal vase of white marble; here, also, are two great circular flower beds, bordered with Japanese barberry and thickly planted

with peonies, platycidiums, hyacinths and several other flowers. On each side are two beds of formal shape, bordered as before, and planted with *achillæ*, Japanese iris and larkspur.

The balustrade is dismissed, in the center of the southerly side, for a flight of steps. The pedestals here carry stone urns, and the lower wall is almost completely veiled with an ampelopsis that rises to the summit of the balustrade where it is overlaid with a crown of scented clematis. The pergolas here are decked with boxes and tubs of hydrangeas, while the one nearest the house has evergreens in marble buckets standing in trellised niches. There are no trees to overhang or enclose this garden, but some fine groups are just beyond it, giving beautiful notes of green and shade, and leaving the open space within free to the growing warmth of the uninterrupted sun.

The west garden is of a wholly different

type, and is actually a water garden. It lies immediately below the west porch to which, in a sense, it is a pendant. The balustrade makes way, here, for steps, which descend in two separate flights on the right and the left. The pedestals at the top are surmounted by great cement vases, while a larger, flatter one in the middle is filled with water. The design is extremely fine and effective, the walls that support the upper path being faced with blocks against which is the double stairway. There are boxed hydrangeas on the intermediate platforms, and small white marble vases on the lowest pedestals. In the center is the pool, a majestic body of water, filling the whole of the garden space save for the paths. Water lilies bloom peacefully on its stilled surface, and at the far end is a full sized reproduction in cement of the Victory of Samathrace, on either side of which, and before it, are great palms and elephant's ears growing in pots, a novel use of this familiar plant, and a highly effective one. As in the other gardens there is an enclosing balustrade, overgrown and overhung with the usual ampelopsis. All of this fine arrangement is built out on a high retaining wall, that carries the garden well out over the sloping hillside.

The steps on the right, as you descend, lead to a pergola which is built along the west wall of the north garden. It is constructed of wood, with square piers and rafters. A wild border of Japanese barberry grows between the piers, and in the center of each bay is a large cement vase. The pergola supports grape and hop vines, and on the retaining wall of the north garden a substantial beginning has been made with English ivy. The path beyond leads out in the open grounds of the estate and into the beautiful woods with which much of it is covered.

The north garden offers a still different form from the other two, and is rectangular in shape with a vast semicircular ending. It is distinctly an old-fashioned garden, the space being pathed and bedded in a simple manner and alive with the beautiful old flowers that are always so glad to grow when given an opportunity, and which never seem so happy as when giving pleasure to those who crave them. A rose garden is arranged in the beds in the half circle in the center of which are steps to the lower grounds. The house front here has a low vestibule in the middle, with steps that rise to the garden level; they are guarded by sphinxes with female heads. All of this side of the house is enclosed with evergreens, mostly specimen plants of low growth.

The house gardens of "Filston" are completed with the north garden, but neither the floral beauties of the estate nor its general interest is exhausted by them. The grounds immediately beyond and below the gardens are maintained in the most careful manner. The grass is cultivated right up to the trees, and is mowed and cultivated as a lawn. The tree growth everywhere is attractive, with many fine and impressive examples of forest growth, and much newer

planting that has been so well done that any sense of newness has been quickly lost. In short, the outer grounds are so beautifully kept that the formal gardens are not simply spots of beauty at the house, but rather the crown of a superbly maintained estate.

An estate of this size contains, of course, many other buildings than the great house. The disposition of these minor structures has been so widely spaced as to give each an individuality and an environment of its own. The telephone and electric service obviates any necessity for the proximity that was once universal.

The stable is the most considerable edifice other than the house. It is one of the axioms of architecture that a building should express what it is, and yet the most striking characteristic of the "Filston" stable, and perhaps its greatest charm is its absolute unresemblance to a stable. A slight examination will instantly disclose the purpose of this very successful building, but it surely marks an individual type in structures of this sort. It is a large rectangular building of white stucco, covered with a high pyramidal shingled roof, stained green. The two octagonal domed louvres on the ridge immediately disclose its function, as does also the carriage entrance in the center. But this is beneath a small covered porch that might be that of a private dwelling. There are many signs to point that this cannot be the purpose of this building, but it surely offers a most agreeable change from the type almost universally recognized as appertaining to the stable, and it is, in many ways, a most agreeable and interesting structure.

Not far from it is the garage, a small square building, quite identical in type with the other outbuildings, save that its roof is enclosed with a wood parapet of classic form. There are some fine trees in immediate proximity to both these buildings, and some effective planting of evergreens.

Far off from the stable, and in an environment completely its own, is the gardener's cottage, a tastefully designed white house with green shutters partly embedded with an overgrowing of vines. Beyond it is the conservatory and greenhouses, a great group of glass buildings chiefly used for forcing and the care of plants during the winter season. An immense vegetable garden has been developed between these buildings and the house, but displayed on such low ground as to be quite out of sight from the last. That the floral resources of "Filston" are not exhausted by the house gardens is amply established by the brilliant border of the market garden.

This is, indeed, a complete and useful garden in itself, a rustic arbor in the center, and many beds of the most brilliantly blooming flowers stretching away on either side. Here are grown the flowers used for decorative purposes within the house, but so rich and splendid is the blooming that it would seem as though the most generous depletion would never exhaust the supply or even so much as hint at any possible diminution.





The Fascination of an English Cottage

By Joy Wheeler Dow



HERE is an immutable art principle in domestic architecture which few people, even cultivated people appreciate, and the public at large, not at all.

Now, whoever designs a cottage that expresses generations of family devotion and sacrifice, creates successful domestic architecture; while he who follows fashion or tries to invent something, simply strays farther and farther from his aim.

If there is something in the little English cottage proposition herein set forth that appeals to the reader, it is not my cleverness of invention, believe me. It is simply that I have expressed a certain amount of family tradition by the aid of building blocks. I mean the traditions of devoted mothers watching like lynxes over their offspring, or if they have seen it when they were children (some girls have not) the traditions of devoted wives looking after the comfort of their liege-lords and bread-winners as though they were race horses. Or I mean the traditions of devoted fathers going through fire and water daily that the inmates of the cottage may remain safe and snug at home. Or again, it is the story of some little prodigal kneeling upon the doorstep of the English cottage for forgiveness and affection, or that of a good little son or daughter giving up everything pleasant to mind the baby of a Saturday afternoon. It is scenes of this character that animate every nook and

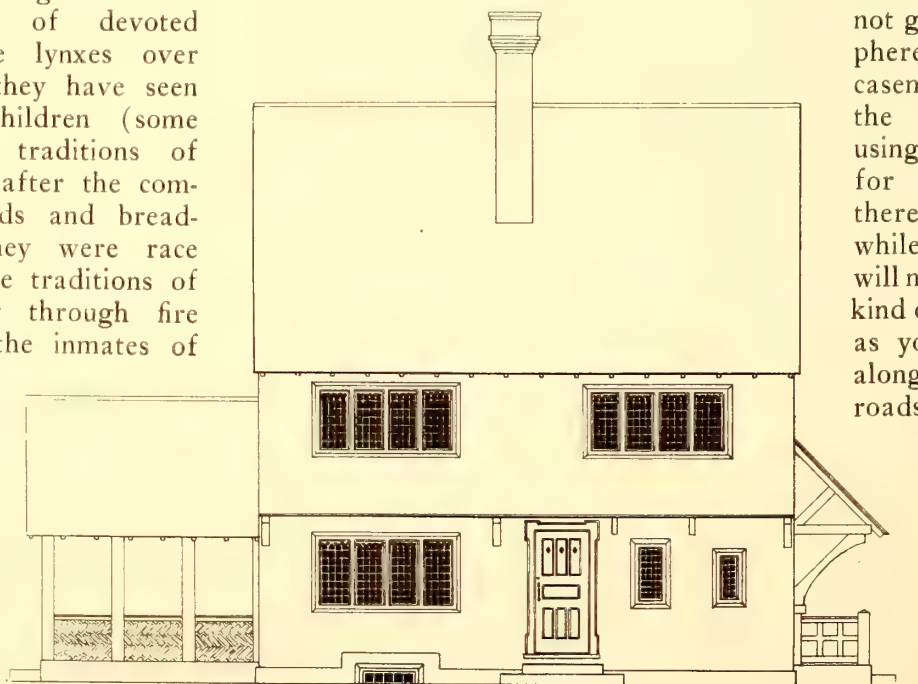
cranny of the quaint Cotswold cottage I have re-created for American Homes and Gardens, and strange to say—especially strange to people who believe only in the apotheosis of selfishness—give to it its commercial value and availability in the real estate market. We need, we crave this personal companionship in our home architecture, without suspecting it, perhaps, without being able to say just why we prefer one architect's work to another's.

I can sell these cottages at a profit as fast as I can build them. People will pay for atmosphere where they will object to the cost of materials whereby the atmosphere is produced. If I said "your cottage should have this and this material which will increase its cost five hundred, perhaps one thousand dollars," the commercial spirit would assert

itself, and you would say "No." But just go inside the doorway of this Cotswold cottage, and see what happens!

The lay-out is perfect, the mechanism is perfect, the economy of space is perfect. It may be built of wood, with stucco outside floated upon mason's laths, or it may be built in a semi-fireproof manner with hollow-tile and a slate roof. Slate roofs, they will tell you, cost no more than where shingles are used, but do not believe that, because if you want the right sort of a slate roof with texture and atmosphere, the slates have to be one quarter of an inch thick. Then you will need, imported from England, special ring handles of metal for the doors. None of our hardware factories makes them for economical cottages. Why, they simply have not arrived there yet. And it goes

without the saying that you cannot get the right sort of atmosphere without the English steel casements. I am told that I am the only American architect using them at the present time for economical cottages, but there will be others after a while, no doubt. Of course, you will need suitable furniture. The kind of which you have glimpses as you whirl past apartments along the line of the elevated roads, will not do. Jacobean highboys, Elizabethan chairs and gate-legged tables are not to be purchased at the bargain counters. Even the unregenerate know the value of these pieces of cabinet work, and there is no bargaining about it. But do not let this side of the question ob-



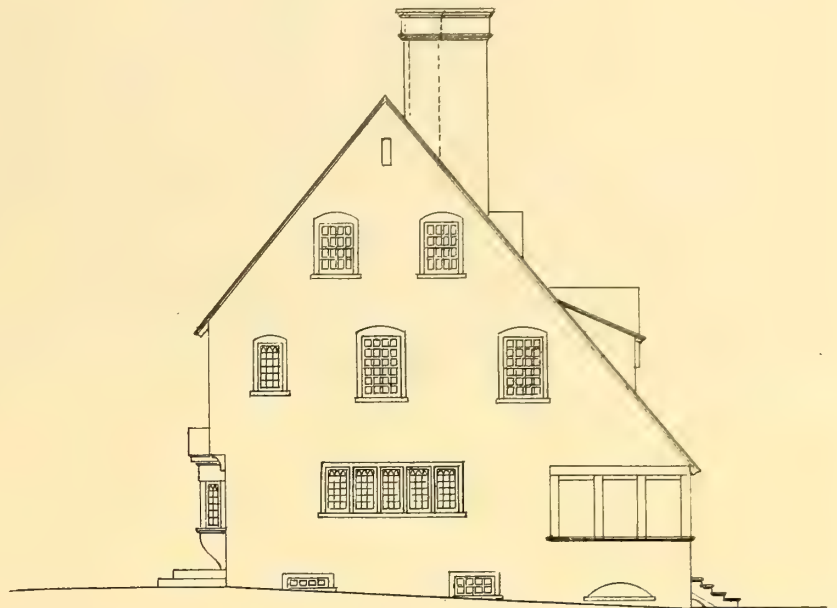
Rear elevation

scure the main thing. Acquire your Cotswold cottage, first, even if you have no furniture to put in it. It will be half furnished by the very details the architect insists upon—the leaded metal casements, the heavy ceiling timbers, the Elizabethan chimney pieces, the built-in features and the admirable proportions generally. Acquire one piece of furniture at a time, but let it be a good piece.

The porch should be paved with red quarries, that is, red paving tiles. Yes, they are more expensive than a wooden floor. There is no use in my deceiving you. But get the red quarries! Wear your old clothes, if necessary, the quarries are for life. Omit the tiled bathroom—a tiled bathroom is not historic, and not necessary. There are composition floors and linings for the bathroom walls that will answer all purposes. You may also omit nearly all the

"trim." By returning the wall-plaster with a Gothic bevel to the window frames, as they finish the interiors of Gothic churches, for example, you add a lot of life-giving oxygen to your atmosphere to say nothing of one hundred or more

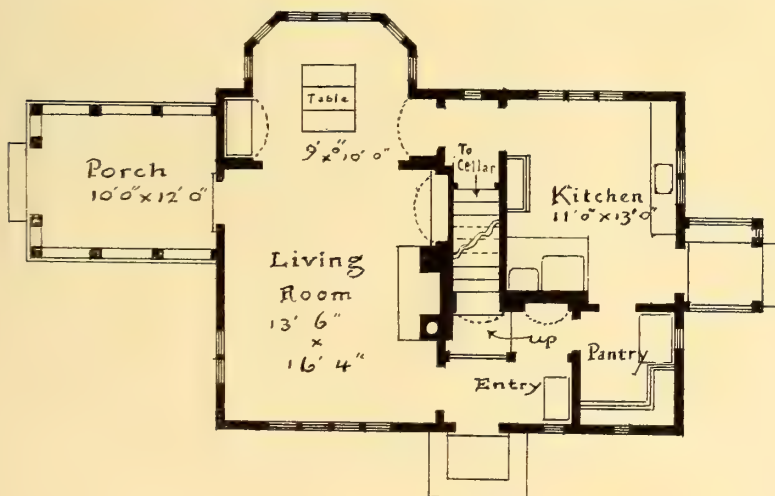
these respective lines. Your local builder will buy of the local yards, and you can fancy the result, in your house, of kiln-dried material which never saw a kiln, if you permit it to be used. Avoid this whenever possible.



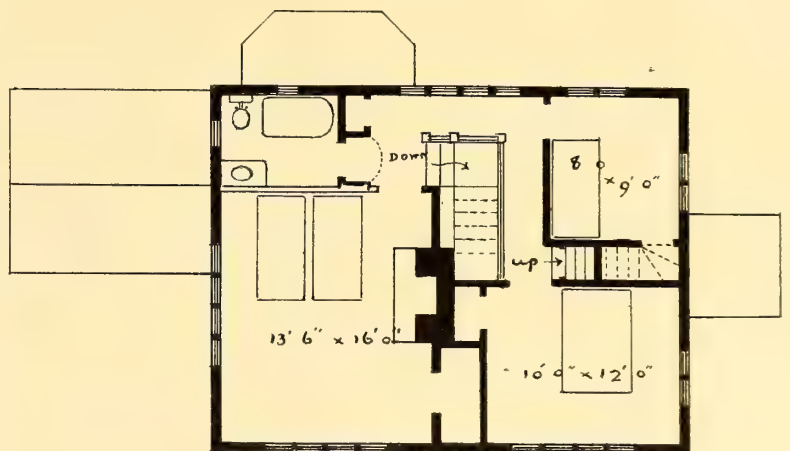
Variation of the exterior.

dollars saved, the cost of the usual wood trim, and with this saving, perhaps, I will not say "for sure," perhaps, you can find an oak cabinet of the time of Charles II or

And all this, let it be understood, for the incredibly small outlay of forty-five hundred dollars. I can guarantee that, for I have already been over a similar cottage propo-



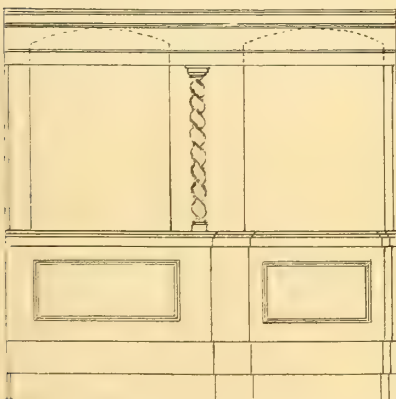
First floor plan



Second floor plan

Oliver Cromwell, that will just fit in the arched niche I have designed for it in the recess of the dining-room. And if that would not make you happy, you must be hard to please.

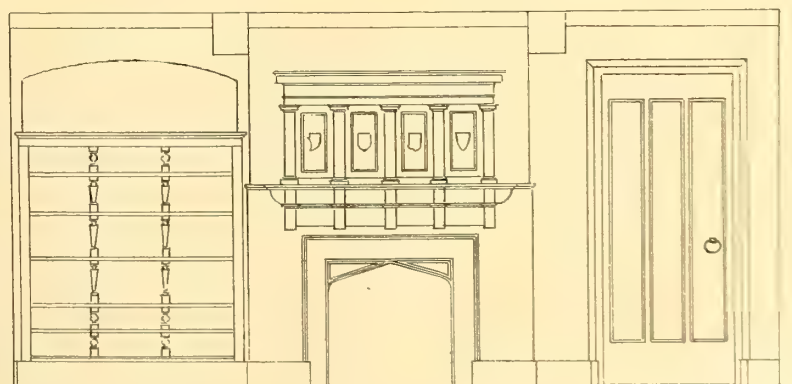
sition. But buy your land in the open country, the free country. Do not be led astray by the flaming advertisements of free tickets and restricted parks! The whole scheme of



Sideboard



Door



Side of living-room

But never let your local builder supply either trim, hardwood flooring, wainscot, doors, chimney-pieces or any cabinet work. Always obtain sub-estimates from specialists in

cutting up farms into twenty-five foot lots is highly inimical to Anglo-Saxon home development, and in some cases it amounts to barefaced robbery of the unsophisticated.



The bungalow as it was first built



The bungalow after the extension was built

“The Lone Pine”

A Bungalow Built of Hollow Tile

By Mabel Tuke Priestman



THE illustrations accompanying this article and representing “The Lone Pine” show the bungalow as it was the first summer; larger extensions having been recently added. The owner built the entire bungalow. It is made of dark red, hollow tile bricks, a most practical and inexpensive material for building. The bricks do not need any studding as they are reinforced with rods in the same manner as blocks are used for reinforced concrete houses. They have the advantage of keeping a house cool in summer and warm in winter.

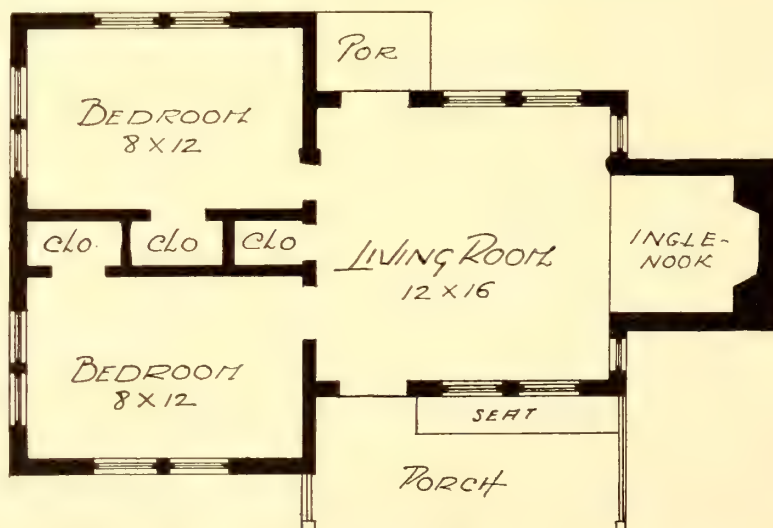
In looking at the illustration of the interior it will be noticed that the bricks are left in their unfinished state on either side of the fire place, while the walls of the living-room are plastered.

Two good sized bedrooms have been added within the last few weeks. The construction of the stone chimney is a remarkable feat for an amateur, and the building of the bungalow has been and still is a most interesting occupation for a Harvard University graduate.

All sorts of improvements are gradually being added to the interior. The living-room has been stained a soft brown, toning well with the brown burlap curtains which are finished at the bottom with a touch of coarse needle-work. The divan in the living-room

did ample duty as a bed before the extension was added. “The Lone Pine” is a novel summer home and with the generous fire place will allow the owner to be able to remain until somewhat late in the season.

Plenty of attractions are in the neighborhood as a club house is within easy reach, and a country inn is at hand where excellent meals by the week can be obtained. The owner will be able to entertain his friends when the bed rooms are completed, and the pure air and charming country should make a visit to this bungalow in Delaware a keen delight.



Floor plan



The living-room

Cost of Building “The Lone Pine.”

Excavating and	
Masonry	\$ 50.00
Lumber and Mill	
Work	250.00
Plastering and	
Painting	50.00
Roofing	50.00
Miscellaneous ..	50.00

Total \$450.00

As there is still some more work to be done inside, the cost has been approximated, so as to give the figures at completion.

The greatest expense in building, is the labor required to assemble the various parts of materials together in their proper form, and, when one has the ingenuity, there is no reason why a duplicate of this little house could not easily be made, thus having a home for the small amount of four hundred and fifty dollars.



The artificial mother or brooder

Duck Farming as an Industry

By Howland Gasper

AMONG the large and lucrative industries which have had their growth within the past score of years is the raising of Imperial Pekin ducks. Its inception and progress are alike interesting and instructive. Eastport, situated on the south side of Long Island, may be considered the cradle

of the business which has grown to such proportions, while William C. Pye, whose place in that village has, during little more than a decade, developed from a few scattered sheds to a magnificent ranch, embracing the most modern type of buildings and scientific equipment, was its pioneer.

Mr. Pye was a bayman when he conceived the idea of starting a duck ranch. Being without funds, he was obliged to secure credit for the lumber with which the first buildings were erected. His friends attempted to dissuade him from his object, but without avail. The resultant surprise of these friends may be therefore imagined when, at the end of the first season, his returns enabled him not only to pay all indebtedness, but afforded a substantial profit in addition. The capacity of the ranch was increased, a proportionate increase in profits being realized, and a few years later the output of one season exceeded 25,000 ducks. Mr. Pye's experience led many other parties to adopt the same occupation, and ranches of more or less pretentious dimensions arose throughout that section. Overproduction, as might be expected, was the result, and a number of ambitious raisers were practically ruined. The business was then, however, reduced to a substantial basis, and those now engaged in it are receiving an adequate profit.

The success of Mr. Pye and others who have achieved the most gratifying results has been due in no small measure to the kindly encouragement and able assistance afforded by their wives, who superintended all the more delicate details of the business.

On the duck ranches the most thorough system is maintained; an expert being assigned to each branch of the work, to which he devotes his exclusive attention. For example, one man assumes charge of the incubators, another of the breeders, while another attends to the mixing of the feed

and its proper allotment to the various sized ducklings. The requirements of these men are very exacting, both as to skill and to time, and considerably higher wages are allowed them than for common laborers.

Attending the incubators constitutes one of the most important as well as interesting lines of work on a duck ranch, and the best experienced and trustworthy men employed are assigned to it. A lack of attention for only a few hours during variable weather, or neglect to properly

refill or light the heating lamps, might prove disastrous and result in the loss of the whole season's profits. During extremely cold weather the attendant sleeps in the incubator house, where an alarm clock, set to ring at short intervals, enables him to properly maintain the uniform temperature in the machines. The incubator house contains between a dozen and fifty machines, according to the capacity of the ranch. These usually contain 300 eggs apiece, 100 eggs being laid on a tray. These trays require turning at least twice a day, to prevent the germ touching any one portion of the shell too long a time. Trays containing water afford the necessary moisture, and prevent the egg becoming dry too rapidly. At the expiration of four or five days the eggs are tested by a strong light, to determine the presence of a germ. Those appearing clear, thereby indicating infertility, are shipped to the



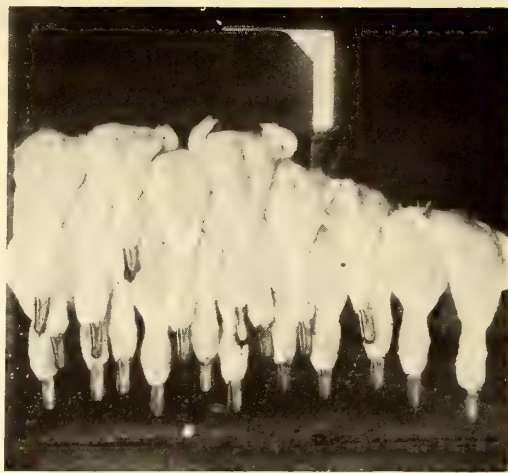
Turning the eggs

city markets, and sold by unscrupulous dealers as fresh eggs. The only apparent difference between them and the fresh ones is noticed after breaking, when the tested egg's yolk will run. The test results usually in almost one-third of the original 300 being removed. About 150 of the remaining 200 will hatch, the proportion depending on the vitality of the germ. Many of the little ducklings, who do not possess sufficient strength to break the confines of their shell after protruding their bills, are assisted in this direction by the owner, who breaks it and draws the head out. Great care must be exercised against rupturing a tiny blood vessel, which would invariably produce death. The incubation of a duck requires twenty-eight days, just one week more than a chicken. The little ducklings are allowed to remain in the incubator several hours to dry before removal to the brooder house. A temperature of between 101 and 103 degrees is main-

tained during the process of incubation, being slightly higher at the last stage of hatching than during the first few days.

The brooder houses are divided into sections, each one of which holds between 25 and 200 ducks, according to their size. Hot water pipes run the entire length of the building, being raised a few inches from the ground and covered by boards to radiate the heat below. During the night the ducks roost beneath them, where the temperature of the air is considerably higher than outside.

Feed in the form of a mixture of corn meal, bran, wheat middlings, and meat scrap is fed, and while as large a quantity as will be eaten is furnished, none is allowed to remain in the pens. Fish, when obtainable, is introduced into the feed, and greatly accelerates the growth of the stock. Owing to its



Ducks prepared for early morning work of feather picking

dollars are distributed every season among the young women of the village where duck ranches thrive, the money in many instances contributing materially to the family support.

The picking of the ducks is a most disagreeable task. It is necessary to rise at 3 or 4 o'clock in the morning to prepare the ducks in time for the afternoon express. Then the nauseating odors are extremely repellent to uninured olfactory nerves, while the uproarious quacking of the ducks is almost distracting. One of the most objectionable features, however, connected with the work is the soaking through one's clothes of water from the ducks.

When the industry was new, keen rivalry existed among the raisers in the endeavor to supply the first of the season's ducks to the market, as high as sixty cents a pound being then received for early shipments. The transferring of



Shore front of a duck ranch



Ducks ready for marketing—ten weeks old

tendency to impart a strong flavor to the flesh, it is withdrawn after the first month. Fattened by this diet the ducklings grow rapidly, and in a few weeks will weigh more than six pounds, when they are considered marketable. A selection of the most robust and healthy is made to be used for breeders another year, the others being picked and packed in ice for freighting to the city. The picking is accomplished by girls, who receive five cents for each duck. While inexperienced hands are satisfied to earn one dollar a day, those who have gained strength and expertness not infrequently pick forty and fifty ducks at a single sitting. Thousands of

ducks to cold storage in latter years, however, has practically ruined the profits from this source. The middle of April generally marks the first shipment of ducks to the city markets.

Each successive year witnesses an increasing deterioration in the Pekin ducks as respects fecundity, a condition due probably to the interbreeding of the birds. Practically all the Pekin ducks in the East were obtained from the same original breeders, and to introduce new strains it will be necessary to import fresh stock from China, the home of the variety. This deterioration, as well as the decline in spring



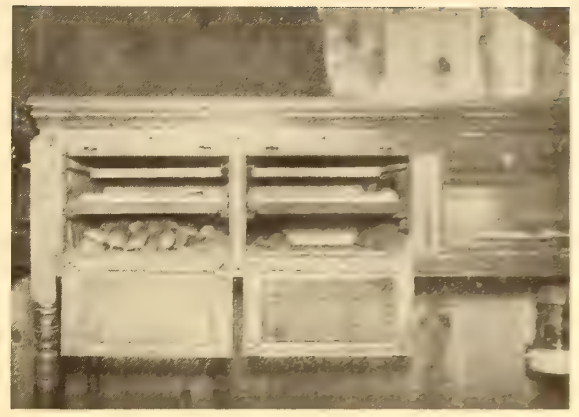
Method of killing ducks. Weights hanging from the bills prevent violent movements



A reservation of breeding ducks



A tray of Duck eggs



Ducks hatching out in incubator

prices for ducks, may account for the smaller profits being realized by the raisers.

The profits on a duck ranch depend in no small measure upon the character of the breeders, which are the choicest birds obtainable. About 200 of these are kept in an ordinary-sized ranch. One drake is allotted to every six or eight ducks. During the season each duck will average 100 eggs, their timeliness, fertility, and vitality being more important than the quantity.

There is, perhaps, no feature of the business more interesting and replete with suggestive instruction than that representing the young duck through its various stages of development. The fresh egg exhibits the future duck as a little germ spot, no larger than a wheat grain, which does not acquire the power of receiving nourishment

hours the germ assumes a curved shape, resembling a maggot in its general size and appearance. The second day shows the heart, while on the third the blood vessels appear for the first time. The developing process proceeds until perfect bodily structure is attained, the feathers appearing about the twentieth day. A week later the little fellow may be heard quacking through the larger end of the egg, which it has pierced with its bill. Nourishment during confinement in the shell is received from the yolk through the abdomen. The duck picks the shell in a circle, which is supposed to correspond with the course of the air vesicle and emerges as it were from the trap door thereby produced.

Some of the illustrations show a general view of the shore front of a duck ranch and a pen containing a group of ducks of the right size for marketing.



Selecting ducks for the market of the required standard



Power oyster-shell grinding machine for duck food is always in use

with the mouth, or breathing atmospheric air, until a considerable period has elapsed. The little germ spot may be most satisfactorily watched by removing a fragment of the upper portion of the shell, when the germ will appear directly under the aperture. The development of the duckling renders the manipulation easier, a few hours of warmth produces the first idea of the duck, which assumes the form of a little whitish streak lying across the egg and less than a tenth of an inch in length. During the course of 24

Illustrations show another pen, where breeding ducks are kept, a young man conveying a tray of duck's eggs to one incubator, and an incubator illustrating the hatching of young ducks. They break through the egg-shell on the upper tray, and drop through the netting to the compartment underneath, where they are observed huddled together. It is necessary that the breeding ducks be well fed with lime-producing material for eggshells, so a power oyster-shell grinder is kept continually in use.



Flock of half-grown ducks



Feeding small ducks



Lemonade Well for a Winter's Party

By A. R. Van der Veer

THE empty soap box or wooden crate is ordinarily thrown down cellar to be hacked to pieces and chopped into kindling wood, but the handy man about the house uses the utmost care in opening a box to avoid splitting the wood, and then he stores the case away against the time when he can

convert it into a unique and attractive piece of furniture. Much has been written on home-made furniture built of such lumber as comes from the grocer, but in these writings very little, if any, attention has been paid to the common barrel. Yet it almost seems as if the barrel and kindred

wooden receptacles, such as small casks, nail kegs, paint kegs, and the like, possess possibilities in excess of those of the soap box. A comfortable upholstered armchair cut out of a barrel is quite commonly seen in a country home. Sleds and snow shoes may be made out of barrel staves, as any boy knows. Among the more unusual applications, I have come across clocks set in a small paint keg as a case, a cradle made from a barrel sawed in two

lengthwise, a fireless cooker, in which the barrel figured prominently, and a number of other useful articles about the house, made in part or wholly from barrels. One of the most novel applications, however, was that of a lemonade well recently seen at a winter's party in the home of a friend. The well was ingeniously constructed out of a barrel and a soap box, and was covered with crêpe paper printed to represent bricks, while a heavy coating of cotton represented snow on the roof that covered the well. The barrel used was a well-shaped sugar barrel and a large square opening was cut in one of the heads. The other head of the barrel was knocked out. To prevent the head in which the square opening was cut from falling apart, it was braced with cleats nailed along the border of the well opening. These provided a good nailing surface, to which four uprights of wood were attached.

Two cross-pieces were nailed to the uprights, as shown

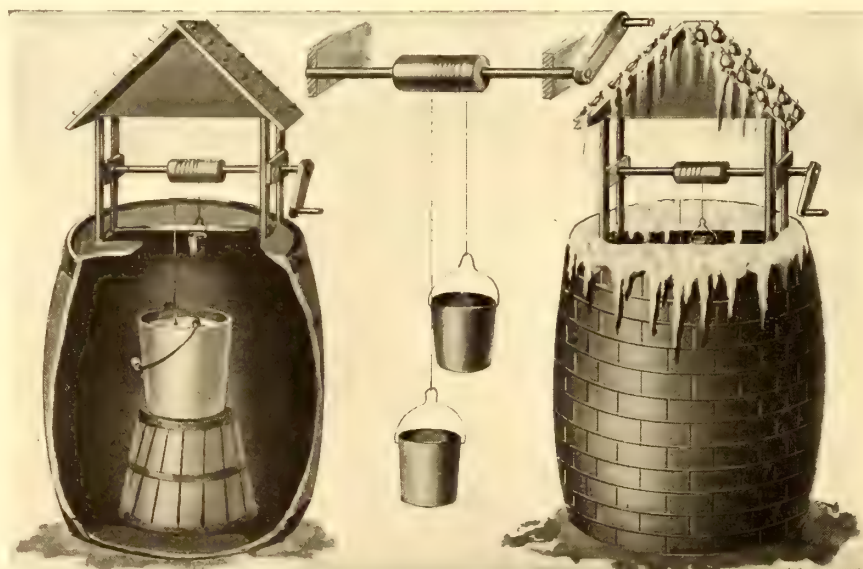
in the accompanying drawing, and in these cross-pieces holes were bored to receive a wooden shaft. The shaft consisted of a wooden umbrella stick cut down to the proper dimensions. To prevent it from slipping out lengthwise from the bearings, a nail was driven through the shaft at each side of one of the cross-pieces, and the projecting nail ends served as stops. Mounted on the shaft were two small disks of wood that were nailed fast with long wire nails. These disks formed the end of the rope drum, which was made out of Bristol board coiled about the disks and tacked fast to them. The lapping edge of the Bristol board was glued down, thus forming a neat cylinder. The shaft was provided with a crank handle

consisting of a stick of wood bored to receive the end of the shaft, and attached to it by means of a nail, while in a similar manner at the other end a small piece of the umbrella stick was secured to serve as a handle.

The roof of the well was made by cutting a soap-box diagonally so that the corner served as the peak. The gable wall of the roof was set back a trifle, so as to form eaves. This roof was set over the uprights and nailed fast,

both through the slanting roof-boards and through the gable board. The entire roof and the framework were stained a dark brown to cover up all printed matter on the boards. The Bristol board was also stained, and looked very much like a wooden cylinder, instead of one made of paper. The cylinder might have been made out of a paper box, or case, of the kind fitted around a dry battery, or such as is employed as a container for salt and other commodities used about the house.

The barrel, with the framework built upon it, was set over a peach basket, upon which was placed the pail containing the lemonade. The object of the peach basket was to bring the pail near the opening in the top of the barrel, and to prevent splashing the liquid over the floor as the well was operated. The buckets for the well were made out of two half-pint measures, selected from a tin shop because of their shape. Any other tin receptacle of similar



Lemonade well in the making and completed.

shape would have answered. The handles of the measures were twisted off with a pair of pliers, and then two pieces of stiff brass wire were bent to the shape shown in the detail view in the accompanying engraving. The ends of the wires were inserted in holes punched in opposite sides of the buckets. The weight of the brass wire was sufficient to tip the light tin measures when the buckets were lowered into the well, so that they would fill readily. A piece of twine was coiled around the drum, and attached to each bucket. The twine was fastened midway of its length with a tack, and it was so wound that as one bucket came up to the top of the well, the other one was lowered into the pail below.

The crêpe paper with which the barrel was covered was stretched to show no wrinkles, despite the fact that the barrel bulged at the center. To do this, care was exercised to press out the paper at the center, so that it would round out to proper form. Crêpe paper as ordinarily sold is not wide enough to cover the barrel in a single breadth, but with a little care to match the bricks printed on it, two breadths were used and the joint between the two breadths was unnoticeable. The head of the barrel was thickly covered with cotton and tufts of cotton were placed at all points where snow would be liable to collect in real life. The roof of the well was also covered with cotton, and glass icicles were hung from the eaves. Glass icicles are sold in various sizes, as Christmas tree ornaments. They are us-

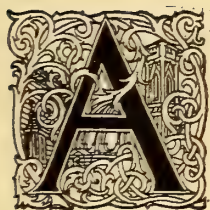
ually made of twisted glass with an eye at the upper end which may be hooked upon a braid or pin. The cotton snow was drawn down over the eaves to cover the braids and at the same time to give the roof a very life-like appearance.

As the company at this party was quite a large one, a large number of lemonade cups were provided, and these were hung on screw eyes screwed into the roof of the well. Each screw eye bore a tag, on which was written the name of the person who was to use this particular cup. Each individual could help himself as often as he pleased, but was requested to return his cup to the hook which bore his name.

No doubt many handicraftsmen could improve on the construction shown in the drawing. If desired a conical roof can be constructed, giving the well a quaint Oriental appearance. Such a roof should be made of a large sheet of heavy cardboard slit with a single cut running from the center radially to the periphery. The cut edges must then be lapped one over the other, sufficiently to bulge the center and form a rather flat conical peak. In this position the cardboard should be glued, after which it may be treated in various ways either by covering with crêpe paper, by painting to represent shingles or by thatching with straw. Decorated with corn stalks the thatch-roofed well would be most appropriate for a hal-low'e'n party.

Quaint Dessert Dishes

By Percy Collins



ALL mothers know full well the difficulties which attend preparation for a children's party. Not the least of these is the problem of what shall be provided for the little ones to eat. The dishes must, of course, be attractive. They must constitute a "treat": In other words they must be quite different from those which the children are accustomed to see upon the nursery table. But they must on no account be rich or unwholesome.

To meet all these requirements is by no means easy, and often the professional cook is quite at a loss. Much, however, may be accomplished by means of a little scheming, with the most simple materials, and the children themselves (much to their delight!) may be encouraged to take part in the preparations.

The photographs reproduced on these pages show some quaint dessert dishes which were prepared specially for the amusement of a party of youngsters; but it is a noteworthy fact that the "grown-ups" took their full share of the fun when the dishes came to the table. These dishes are, in most cases, quite easy to make up; and the shouts of delighted laughter which will greet their appearance at table amply compen-

sate one for the small expenditure of time and of patience involved.

Take, for example, the quaint little snow-covered cottage shown in the accompanying picture. It is a good instance of what a child's party dish should be, for it is at once wholesome to eat and attractive to the eye. The importance of the latter quality, by the way, should never be lost sight of in the preparation of children's dishes. Even simple, every-day fare will prove attractive when presented in a

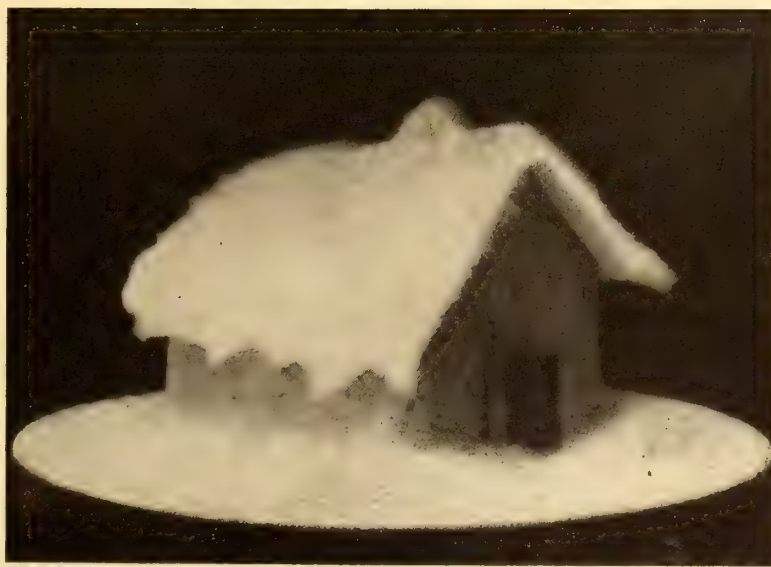


Fig. 1—A cottage of sponge cake with icing sugar and whipped cream

novel guise—adorned, perhaps, with a little colored sugar or syrup. Thus the snow-clad cottage is actually built up by means of slices of sponge-cake—the door being a slab of some darker confection, such as chocolate cake or gingerbread. Over all, to represent the snow, a little whipped cream is poured, while a little jam may be added to give color and flavor. Such a dish will give an infinity of pleasure to the little ones, while they may partake of it without running the risk of unpleasant after effects.

Fruit may be arranged in such a manner, that, in the eyes of children at all events, it becomes vested with a marvelous importance and interest. To the child mind, two bananas served upon a plate are just what they appear to be and nothing more. But let the



Fig. 2.



Fig. 3.



Fig. 4.

Fig. 2.—Bananas. The old Irishman taking his pig to market. Fig. 3.—The elephant is made from a big pear and a small apple skewered together and mounted on two pieces of banana. Fig. 4.—Banana pigs. The legs are matches, while the eyes are indicated in icing sugar.

fruit be converted into a mysterious pair of porkers by the simple expedient of adding broken matches for legs, paper tails and ears, and eyes painted with Chinese white upon the yellow rinds, and it will be changed at once into an object of desire. Let the reader prepare a few such "banana animals" and arrange them upon plates with a little colored paper shaving, and she will be surprised at the wild delight which her handiwork will call forth.

Bananas adapt themselves favorably to this kind of treatment, as several of the accompanying photographs bear witness. The old Irishman taking his pig to market "to pay the rint" is always a great favorite. The manner of rendering the pig has already been described. His master is simply a banana with a small portion sliced off one end so that it will stand erect. A little piece of colored tissue paper makes an admirable cloak, to which may be added a scrap of ribbon to play the part of scarf. The old gentleman's hat requires a word of special counsel. It is formed from a small cork, gummed upon a circle of cardboard for the brim, the whole being duly blackened.

A top-hat is invaluable in the preparation of the Welsh woman and her cat, which together make an attractive dish. The lady's body is simply a banana appropriately garbed in colored tissue paper. Her head is a filbert nut, the crown of which is flattened by means of a penknife in order to support the hat. The cat is also formed of two filbert nuts joined together and supported by pieces of matches. Holes are carefully bored through the shells of the nuts in order that the matches may be accommodated, and when a touch or two

of the paint brush has supplied eyes and mouth, a very weird creature results.

Other fruit besides the banana may be pressed into service with considerable advantage. In the dish entitled "The Red Indian," the body of the noble savage is a good sized Turkey fig. His head is a filbert nut with the outer husk intact; his arms are pieces of almond; while the river upon which his canoe or banana sails is rendered by means of some pale colored jelly.

The "Old Tramp" dish explains itself, being produced by a combination of filberts and bananas. The Elephant is a little more complicated, and calls for a word of special description. His body is a pear, and is joined to the head (a small apple) by means of a little wooden skewer. He is supported upon two pieces of banana, which act as legs; while his trunk is a piece of orange peel. His tail is a straw; his eyes are of glass, purchased at two cents a pair from a neighboring bird-stuffer's establishment (ordinary glass-headed pins serve the purpose equally well); while his ears and his trappings are of colored paper.

The strange "booby bird" was prepared in a similar manner. The body is a pear, to which, by means of a skewer, is fixed a banana to do duty for the head and the neck. The beak is a piece of bleached almond. The legs are skewers fixed into the upper halves of two small pears. The tail and top-knot are made from colored tissue paper, some of which also does duty for the nest, in which a few grapes ("eggs") repose. It is obvious that the few brief descriptions which have been given by no means exhaust the list of possible dishes.



Fig. 5.—An old Welsh woman made out of a banana with a nut for her head. The cat is made from two nuts and some matches.



Fig. 6.



Fig. 7.



Fig. 8.

Fig. 6.—This old tramp is made from a banana; his fire being a few filbert nuts; his hat a blackened cork on a small circular card. Fig. 7.—The Red Indian. A banana, a fig, a filbert nut, and some jelly in plate. Fig. 8.—This booby bird is made from fruit, skewers, and tissue paper plumes.

Some Modern Homes

By Paul Thurston



DURING the past few years there has been a great improvement, architecturally, in the designing and treatment of the small and inexpensive house. The picturesque quality of the English house, in many instances, has found a hearty welcome in the building of many of the modern American homes. The first house as illustrated in Figs. 1, 2 and 3 was designed after this kind of architectural form. It was built for Mr. Simon Gittleston, at Minneapolis, Minn., and from plans prepared by Mr. Cecil B. Chapman, architect of the same city.

The first story is constructed of red brick laid in Flemish bond, with white mortar, while the second and third stories are of half-timbered work. The beams are stained a dark soft brown tone and the panels of stucco have a pebble dash finish. The roof is covered with brown stained shingles.

The entrance is through a broad vestibule to the hall, to the right of which is the reception-room. The inner wall surface of the reception-room is formed in combination with the staircase, the columns of which extend from the floor to the ceiling, supporting a beamed archway. Similar columns and arches are placed at the opening from the hall to the living-room. The latter has an open fireplace with tile facings and hearth, and a mantel. French windows open at the end of the living-room to the sunroom built at the rear of the house.

The dining-room is separated from the living-room by sliding doors. One side of the former is devoted to the sideboard in the center of the wall space, with a china closet

built at one side, while a corresponding door leads to the butler's pantry.

The kitchen and its dependencies are complete in their appointments.

The second floor contains three bedrooms, a bathroom, a large den and a screened-porch for sleeping uses. The bathroom is tiled and is furnished with porcelain fixtures and exposed nickel-plated plumbing.

A private staircase leads to the servant's quarters and to the trunk rooms in the third story of the house.

The heating apparatus, fuel-rooms, laundry and cold storage-room are placed in the cellar.

The house illustrated in Figs. 4, 5 and 6 was built for Mr. Peter S. Burghart, also at Minneapolis, and from plans prepared by Cecil B. Chapman.

The design of this house is another adaptation of the English house. The first story is built of red brick laid in white mortar. The second story is of frame construction, with the exterior covered with stucco finished with a pebble dash. The third story is beamed,

forming panels, which are also filled in with similar stucco. The trimmings and beams are painted a dark bottle green. The shingled roof is stained a moss green.

There is a central hall terminating in a den built at the rear of the house.

The living-room, to the right of the entrance, is provided with a large open fireplace, with a mantel made from a special design.

A feature of the plan is the living-porch built at the rear of the house and facing the garden. It is enclosed with wire mesh in summer and with glass in winter.



Fig. 1—A house of brick and stucco

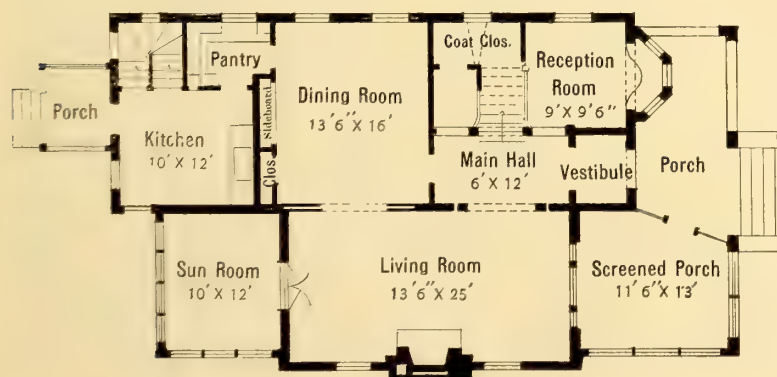


Fig. 2—First floor plan

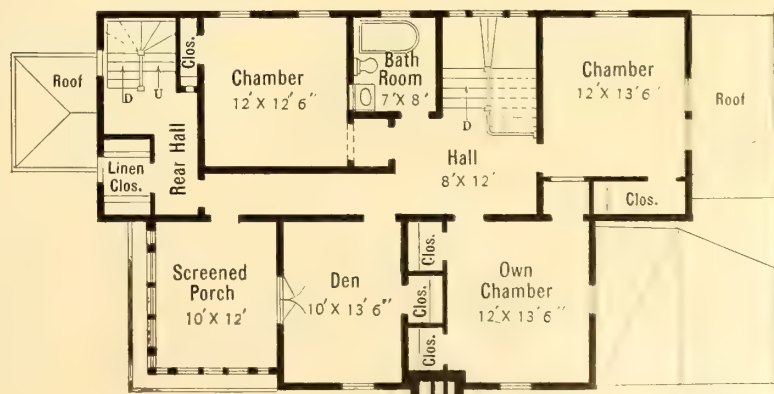


Fig. 3—Second floor plan

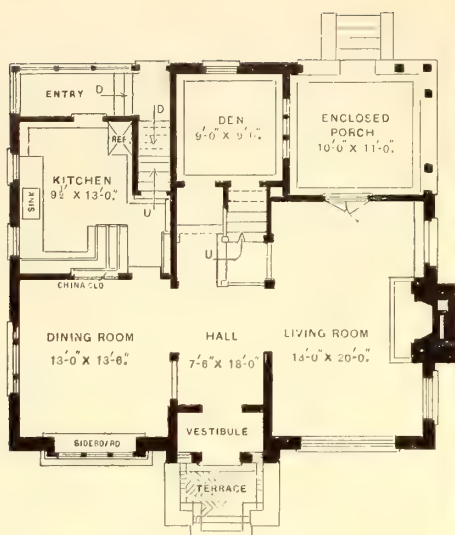


Fig. 4—First floor plan



Fig. 5—An English house

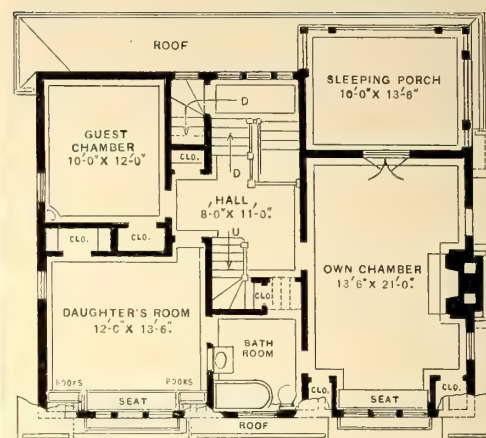


Fig. 6—Second floor plan

French windows open from it to the living-room.

The principal feature of the dining-room is the sideboard built in a recessed bay window at the front of the house. It is a low sideboard and does not affect the light of the room from the three windows built in over the counter shelf.

The kitchen is built on the "buffet" plan, with dressers extending around the walls of the room. These dressers have glass doors above the counter shelf and drawers and cupboards below.

The second floor is divided into the owner's room with attached out-door sleeping porch, daughter's room, and one guest room. The bathroom is

reached from two of the bedrooms and from the hall, and is furnished with porcelain fixtures and exposed plumbing.

The servant's bedrooms and the trunk rooms are placed in the third story.

A heating system, fuel rooms and laundry are provided in the cellar.

A house of unique distinction is the one illustrated in Figs. 7, 8, 9 and 10, and built for Mr. Arthur S. Strang, at White Plains, N.Y.

The house is of frame construction, with the first story covered with stucco and the second story with shingles laid with double rows, and stained brown.

The trimmings are painted brown and the sash ivory white. The shingled roof is stained and finished with a moss green

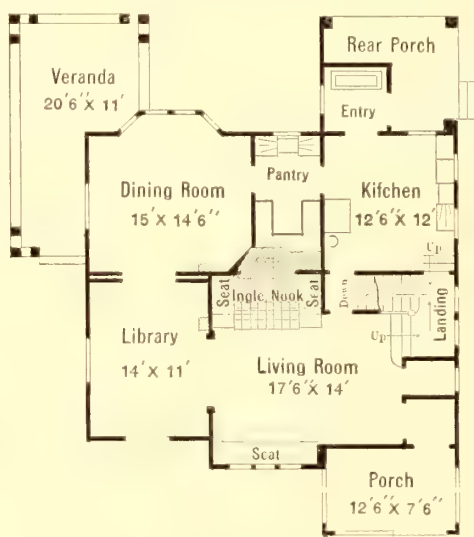


Fig. 7—First floor plan

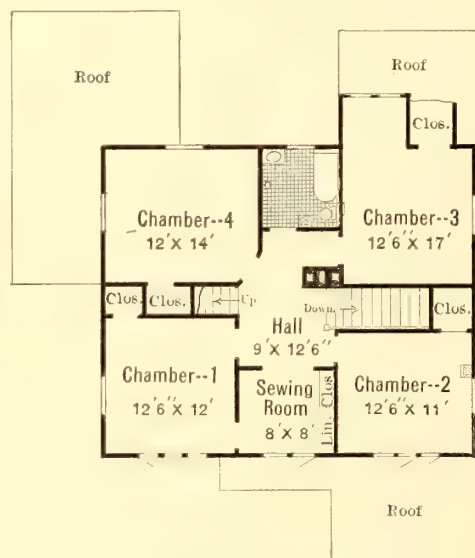


Fig. 8—Second floor plan



Fig. 9—The fireplace in the living-room



Fig. 10—A house of stucco and shingles

effect. The entrance is direct into the living-room, from which the stairs to the second floor ascend.

The ingle-nook has an open fireplace, a floor laid with Welsh tile, and seats built in at either side of the nook.

The library is reached through a broad archway. Sliding doors separate the library from the dining-room. The veranda, built at the rear of the house, is reached from the dining-room. The butler's pantry and the kitchen are fitted up complete.

Four bedrooms, a sewing-room and a bathroom occupy the floor space of the second floor, while the servants-rooms and the storage-room are provided on the third floor. Mr. Frank L. Brown, of White Plains, N. Y., was the architect.



Fig. 11—A house of stucco and half-timber wood

This house is built of stucco for the first story and half-timbered work for the second. The plan is an elongated one, with the broad side facing the highway. There is a central-hall with the living-room to the right, extending the entire depth of the house, and the dining-room to the left. All three rooms are trimmed with cypress stained and finished in a soft brown tone. The living-room has a beamed ceiling and an open fireplace built of red brick with facings extending up and supporting a plaster panel at the ceiling.

The kitchen and the service part of the house are trimmed with

natural yellow pine treated with a hard oil finish. The second floor is trimmed with white wood and is painted white. It contains four bedrooms, three of which

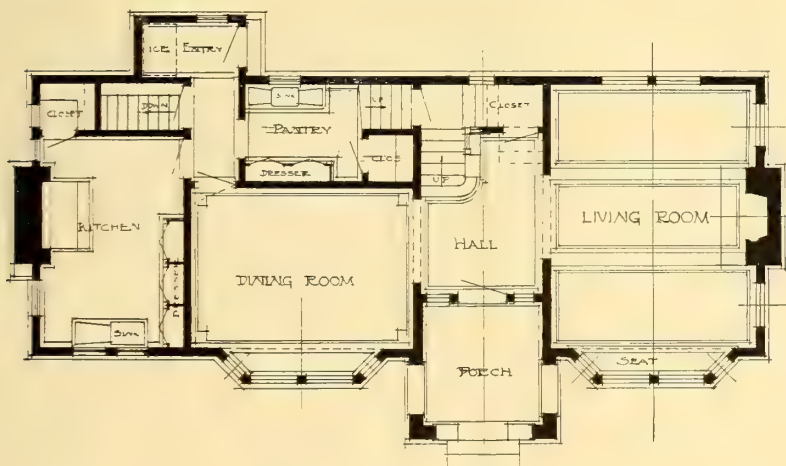


Fig. 12—First floor plan

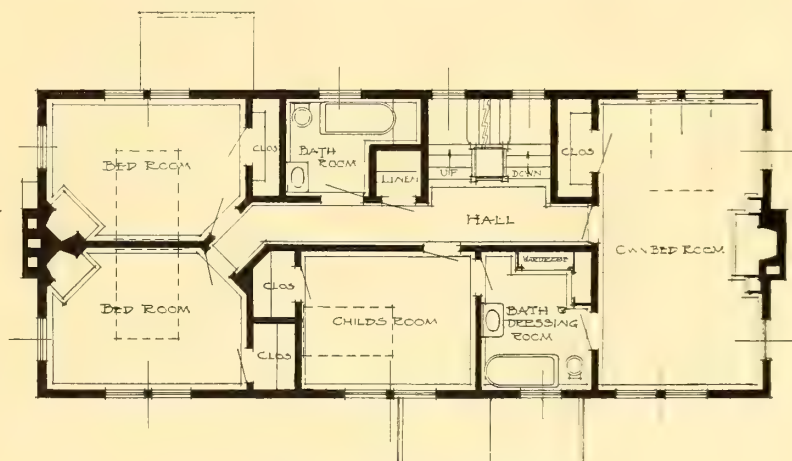


Fig. 13—Second floor plan

The house illustrated in Figs. 11, 12, 13, 14 and 15 was built for Mr. A. C. Lamb, at Bronxville, New York, from plans prepared by Kenneth G. How, of New York city.

have open fireplaces and two bathrooms furnished with porcelain fixtures and exposed nickel-plated plumbing. The servants' quarters are provided in the third story.



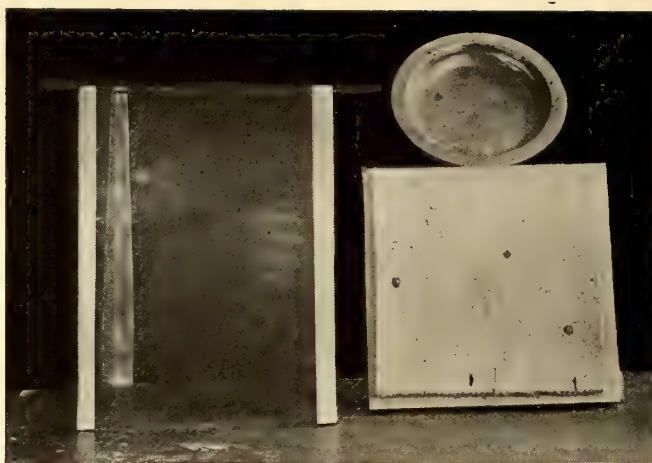
Fig. 14—The living-room



Fig. 15—The dining-room



A case for a moss fern garden



A shelter for a moss and fern garden made out of plain glass



A home made moss garden

An Indoor Garden of Moss and Fern

By S. Leonard Bastin

INDOOR gardening is always rather difficult by reason of the fact that it is only a certain number of plants which can stand the trying conditions of room culture. The dry, dusty atmosphere of the average apartment is fatal to the well being of most ferns, and their near relatives, the mosses. Yet these plants are especially desirable for room culture in that their fresh greenness is very attractive to the town dweller. To this end has been devised the indoor garden of moss and fern, whereby these and similar plants may be grown in conditions nearly allied to those which they enjoy naturally.

The formation of the moss garden is very simple, the idea being to grow the plants in a nearly air tight case and in this way to maintain for them a distinct atmosphere which shall be saturated with moisture. Several contrivances are well adapted for the purpose. A glass shade fitting well into a grooved metal stand answers the purpose admirably. An infinitely cheaper and quite as effective a device can be formed out of pieces of glass which can be obtained anywhere for a few cents. Four of these should be of the same size, the actual measurements depending upon the fancy of the individual although it is not desirable to make the shade too large. A fifth cutting of glass is necessary to cover the top when the sides are assembled. The glass is well joined together with linen, or other non-tearable

material on the lines indicated in the illustration; a strong adhesive which is not greatly affected by moisture being used. A wooden stand made of two slabs should now be prepared; the uppermost portion must be of such a size that the pieces of glass, when joined together, fit quite tightly over the outside edge. Some metal receptacle of a non-rusting material is necessary to stand in the case and it is in this that the moss and ferns are to be planted.

Very little soil is required in starting the moss garden. First of all it is a good plan to spread a number of clean pebbles over the floor of the metal tray, and in between these a small amount of mold may be sprinkled. It is quite essential that everything should be in a very moist condition before anything in the way of planting is attempted. Almost any kind of moss may be used, but, of course, some sorts are much prettier than others. Well established pieces of the growth should be selected and those which have a plentiful supply of the hair-like roots. These should be fitted in between the portions of stone, the roots being buried with mold. When everything is in place a further sprinkling of water should be given and then the shade may be put into position. The moss garden should be placed in front of a window or in some situation where plenty of light will fall on it. At the same time a great deal of direct sunshine is not especially helpful. When once fully started little or no additional water will be necessary, as, if the arrangement is nearly air tight a perfect little atmospheric



The shade in readiness for planting the moss ferns



A moss fern garden under a glass shade

system is established in which the natural processes go on quite independently of the outside world. The moist exhalations from the mosses settle on the glass of the shade and trickle down to the vegetation again, thus keeping everything in a perfectly healthy condition. Of course the shade should always be kept in position save on those occasions when it is desired to examine the little garden. After a few weeks it will be found that the moss will grow most luxuriantly, sending out bright green shoots more vividly colored than those usually found under natural conditions.

Success with the simple moss garden will probably give

nature of the object by piling stones round the border and sprinkling sand over the floor of the pool. When all the framework, so to speak, of the landscape has been designed it is time to put in the plants.

It is not at all a difficult matter to cover the little garden with verdure. Only small ferns should be selected but these if tucked away in the rock crevices will grow luxuriantly. Here and there pieces of some low growing mosses may be placed on the level country and these in a very short while will cover the surface with a green carpet. The spores of the mosses which will be freely produced in the



Planting the moss in the prepared bed



A pretty little moss and fern garden

rise to a desire for something more elaborate. Most people must have been charmed with the miniature gardens prepared by the skillful Japanese artists; these are beyond the skill of the western horticulturist but with the aid of a case such as that described above it is possible to design something nearly as clever. For this purpose will be required a rather large stand with a shade of appropriate size. The floor of the stand must be covered with pebbles and soil and the setting for the garden must be supplied with small pieces of rock disposed in such a way as fancy dictates. In one part one may form a little mountain, while with a small saucer or some such receptacle it is possible to devise a miniature lake. It is quite easy to hide the true

moist atmosphere will float about, settling in all manner of places, and giving rise to the vegetation on the slopes of the little mountain. As time goes on the fern growth may become too great and it may be necessary to clear away some of the plants and to substitute smaller ones. This will not be a difficult thing to do, for after the garden has been running for some while baby ferns will begin to appear in all sorts of unexpected places and these can be taken up and put in the place of their overgrown parents. One very satisfactory feature of this gardening under glass shades is that practically everything one puts in will grow, a circumstance which does not always fall to the lot of horticulturists in other directions.

Flower Preservation

How the Transitory Beauty of Flowers may be Obtained



ONE of the most distressing sides to botanical study is the transitory beauty of flowers. Those who have felt that the usual method of preserving plants by pressure between paper is unsatisfactory, will be interested to learn of a German treatment, whereby it is declared that many kinds of flowers may be dried so that they retain a good deal of their natural form and color.

The flowers should be gathered as soon as the blossom has fully opened. It is important that they should be quite dry, and in order to free them from drops of rain or dew they may, with advantage, be suspended head downward for a few hours in a warm apartment. It is well to begin with some simple form of flower.

A large strongly made box of wood, or better still, one made of tin will be necessary, and a sufficient amount of sand must be used to fill it. If possible, the sand should be

of the kind known as "silver," which is ordinarily very fine. The best that can be procured will be found to be far from clean, and it must be thoroughly washed. A bowl of fresh water must be obtained, and the sand poured into it. Much of the dirt will float on the surface, and this may be thrown away, clean water being added. At least a dozen times the sand should be washed, however, until nothing remains but the pure white crystals. The clean sand may now be spread out in a thin layer to dry, and when quite dry it should be placed in some thick crock vessel and put into a hot oven. There it may well remain for some hours until it is so thoroughly warmed through that one can scarcely bear to bury the hands in it.

Next obtain a piece of stout cardboard, such as will easily fit into the bottom of the box, mentioned above. Through the bottom of this insert a number of long and very strong steel pins, one for each of the flowers to be preserved. Now get the dry blossoms and press the stalk of each one

down on to a spike, so that it is held in an upright position. When the card is full it must be gently placed into the bottom of the large box.



The most delicate part is arranging the petals so that they will not bend or be crushed out of shape by the sand

The warmed sand should now be put into a paper bag, or some receptacle from which it may be easily poured. With a steady hand start to pour the sand into the box, letting it trickle slowly in, so that it spreads evenly. Keep on, taking note that all the flowers are well supported in a vertical position, until the heads of the flowers are reached. Now comes the delicate part, and that is to see that the arrangement of the petals is in the right order. Remember that any crumpled flowers will be pressed into whatever position may be assumed by the weight of the sand. When the box is full it should be covered and placed aside in a dry cupboard.

The box should be left alone for at least forty-eight hours. After the first day, if only a small amount of sand

gently poured off. This must be done with extreme care, as the flowers are in a highly brittle condition, and anything in the way of rough handling will lead to serious damage.



The impaled flowers are placed in a box and dry hot sand carefully poured around them

When all the sand has been emptied out the card should be removed from the box and each blossom taken away from the pin. In the case of succulent specimens the stems will have shrunk considerably, but the thinner petals will be in an almost natural condition. Moreover, the colors will be bright and attractive; some tints will be kept better than others, but mostly the results will be surprisingly good. Whatever state the flowers are in when they are taken from the box, if the drying process has been thorough, they will keep for an almost indefinite period.

Flowers preserved in this manner are admirable for the decoration of houses. If they are exposed to the light, however, care should be taken to see that they are not allowed to stand in the direct sunshine, as this would tend to



As soon as the flowers are dry they are impaled on pins which have been pierced through a sheet of stout cardboard

has been used, the material may have parted with more heat than is desirable, and the box may be put into a moderately heated oven for a short time; but no great amount of warmth is advisable. At last the time will have arrived when the box may be uncovered and the sand very



When gathered the flowers are first suspended in a warm room to ensure their absolute external dryness

fade them. Sprigs with leaves attached may be dried in this way, but it is found that much of the intensity of the green is lost in the process. Still, carefully preserved foliage often adds to the beauty of the dried flowers—beauty of the kind that helps the embellishment of a home.

Furniture of our Forefathers

By Esther Singleton

Dutch Furniture—I.



Fig. 1—Transitional chair



Fig. 2—Caned-back chair



COLLECTORS of furniture and students of decorative art rarely realize how much is owed to the Dutch in the development of form and ornamentation. It is interesting to follow the progress of the Renaissance in the Low Countries and still more to trace the advent of the curve and the adaptation of the jar and dragon and other fantastic forms and devices of decoration that had their birth in the Far East.

In the Middle Ages, Dutch furniture resembled that of France and England in form and only differed in the carving and ornamentation. The great Dutch carvers were as much appreciated and as largely employed as the French at the magnificent court of Philip the Good, Duke of Burgundy; and when the Renaissance came, the famous Dutch designer, Vriedeman de Vries, had as much influence in introducing new styles of furniture as the celebrated Frenchman, Androuet du Cerceau.

In beauty of decoration and excellence of architectural construction the enormous Dutch *Kas* (a sort of wardrobe or press) held its own with the French *armoire* and the English court-cupboard.

As is always noticeable in the charming interiors

of the Dutch Masters of the Seventeenth Century, the great *Kas* always occupies a conspicuous place in the room. Tall porcelain vases generally stood upon the broad slab of the top, and in it were kept valuable linen, heirlooms of silver, jewelry, wedding and christening gifts, etc., etc. The *Kas* was carved, as in the accompanying example (Fig. 3), inlaid, paneled, or decorated with porcelain plaques. It was always an expensive piece of furniture and every Dutch housewife longed for one; and was more than delighted when one was left to her by bequest.

The façade of this piece is particularly fine. The two lower doors and small upper doors are divided by Doric pilasters, and lions' heads break and end the two lower drawers. It will be noticed that the *Kas* stands on heavy ball feet, often called "knots" in the past.

Another and earlier example of the best workmanship of the Low Countries is a species of buffet, or court-cupboard (Fig. 9). Its place was in the hall, or general living-room; and its drawers and interior shelves contained linen, plate and choice earthenware. The lower shelf also served for the display of massive plate, which also often adorned the top. The panels of this piece of furniture in the early period of the Renaissance were usually carved with biblical,



Fig. 3—Great Kas



Fig. 4—A mirror



Fig. 5—A settee



Fig. 6—A dressing table

or mythological figures and subjects. The wood used in the construction of these pieces was oak, walnut and chestnut.

An oak table of this period is shown in Fig. 15,—literally the family board, at which all the family sat and also the servants. Here we find the handsome acorn bulb used as a decoration for the six legs. A form or stool was placed by the side of the table as a seat for one or two of the children or servants, for the chair was still the seat of honor for the heads of the house.

The bed, which appears in every living-room from the kitchen to the upper chamber, is usually the box-shaped, or domed four-poster, always closed in with curtains. Curtains adorned the windows, the glass of which was charmingly leaded in geometrical patterns. In the center was often a colored lozenge with the family arms.

The wide chimney-piece often had shelves on which plate and earthenware were displayed; and sometimes the space above the opening was occupied by a picture, or a piece of tapestry.

The walls were painted or whitewashed, and frequently hung with tapestry, or pictures, charts and mirrors, the frames being of oak, olive, or ebony, plain, gilded, or richly carved.

During the Seventeenth Century, the tendency of Dutch furniture was to break away from the heavy carved oak chairs and tables and massive bedsteads and constantly to become lighter in form, turnery supplanting carving in the posts of bedsteads and in the supports of tables, chairs and cabinets. The Spanish chair held universal sway in

the Low Countries long after the Dutch had shaken off the Spanish yoke. With this chair everyone is familiar. It has a leather back and seat, the leather being fastened on with large ornamental brass nails. The back posts and sometimes the arms terminated in the heads of lions or other animals. The other common leather chair was perfectly plain and square, with leather covering about two-thirds of the back and a leather seat, also fastened with nails. The legs were connected with one or more rows of stretchers. Following these, came the cane chairs with carved and turned legs connected with straight or curved stretchers. Sometimes, as in the caned-backed chair (Fig. 2), the stretchers were diagonal. This chair is an excellent type of the period still preserving the "Spanish foot" and showing the tall narrow back that many people like to call "Queen Anne." The back of this chair is not unlike the mirror frame of the day. The diagonal stretchers with the spindle ornament at the point of the intersection are also characteristic of the period and are frequently found on tables and cabinets, where, at the point of intersection, a round flat space is left for a porcelain ornament to be placed.

Towards the end of the Seventeenth Century, the great influx of Oriental carved wood, lacquer, porcelain, Chinese and Japanese silks and embroideries and India muslins, chintzes, calicoes and hundreds of varieties of products from Eastern looms entirely changed the character of the Dutch home. China-mania and the craze for *singerie* in Holland were quite equal to similar fashionable modes in France and in England. The walls were covered with brackets for



Fig. 7—A double chair



Fig. 8—A double chair

porcelain; the chimney-pieces were supplied with a multitude of little shelves, each one holding a cup, bowl, bottle, or vase; the hearth itself, in the summer time, was loaded with big vases and bowls artistically massed; and chinaware occupied every available nook and corner and perched all along the cornices and over the doors. In one of Marot's designs for a chimney-piece we may count three hundred pieces of porcelain of various shapes and sizes. A Dutch poet of the day sings of a "Porcelain Room": "His whole house, even his small parlor, shone like a diamond; a thousand small cups decorated this parlor. How many Japanese figures and curios of amber, sea coral and pink mother-of-pearl filled also the great room!"

The Dutch exported thousands of their home manufactured panels to the East to be Japanned, and supplied the patterns with which they required the Oriental workmen to decorate the surfaces.

The complaints of the native workmen were loud and bitter. In 1700 a petition recites that the manufactured cabinet-work of the East Indies had of late years arrived at such a grade of perfection as to exceed all Europe. The guilds complain further that the importers had sent to the East Indies patterns and models of all forms of cabinet goods and had annually received such vast quantities of cabinet wares, manufactured after the home fashions that the native workmen were approaching a condition of utter ruin. The same bitter cry went up in England, where one complaint states that in 1672, several artificers were sent over by

the East India Company with a great quantity of English patterns, to teach the Indians how to manufacture goods so as to make them vendible in England and the rest of the European markets. The bills of lading of the ships in 1700 alone represented the following amounts in pounds sterling:

Lacquered sticks for fans	£13,470	(\$65,330)
Lacquered trunks, escritaires, bowls, cups, dishes.....	10,500	(50,925)
Lacquered inlaid tables	189	(917)
Lacquered panels, in frames, painted and carved for rooms	47	(228)
Lacquered boards	178	(863)
Lacquered brushes	3,099	(15,030)
Lacquered tables (not inlaid).....	277	(1,343)

Lacquered bellows	174	(843)
Lacquered boards for screens	54	(262)

It is therefore evident that the paneling of a room *à la chinois* was, as a rule, imported and set up by native workmen. The tall clocks, of which the Dutch were so fond, were now nearly all Japanned, as were also many of the sconces, trays and other metal ware.

We must not forget another striking beauty of the opulent Dutch home—the marquetry work—native woods inlaid with beautiful exotic wood of various colors making life-like imitations of flowers, fruits, birds, etc.

In a typical well-to-do Dutch house of the Seventeenth Century, the first apartment entered from the front door

was the front-room, or *voorhuis*, where visitors were formally received. This was a sort of hall and was somewhat coldly furnished, with chairs, a table and a clock. A stairway led to the second floor, where the "show-rooms" were situated. In many houses these were kept for exhibition and were opened only to be cleaned and on great occasions. The most important of these was furnished according to the means or class of the owner. The walls were paneled, tiled, or hung with tapestry, or gilded leather, and adorned with paintings and rich mirrors. The chairs were handsomely upholstered, or supplied with luxurious cushions and the cupboards and cabinets were carved, or of marquetry, and contained rare porcelains and rich specimens of plate and many curios.

The kitchen was frequently entered from this room.

Here the tiles shone like glass, the pewter and silver gleamed from the racks and dressers, the china closets and shelves were gay with Oriental and Delft plates, cups, dishes and teapots, and the rose-red table and the yellow framed rush-bottomed chairs contributed to the general cheerfulness. But was cooking ever allowed to desecrate this kitchen? No. All the food for the family was prepared in a small cooking-shed, called "*snuiver*," built for this purpose back of the kitchen.

Passing upstairs to the bedroom of the master and mistress, we find that the floor is of highly polished wood and that family portraits adorn the walls. The furniture consists of chairs with tall backs and low seats, a carved table with a rug over it, a large oak cupboard, or *kas*, a cabinet, a treasure chest, a wash-buffet and a toilet table. A heavy



Fig. 9—A buffet

green damask curtain hangs before the bed, which is so high above the floor that it must be entered with the aid of a small stepladder that stands in one corner of the room near the brass, or copper warming-pan, that hangs on the wall. The bed is enclosed in the panels of the wall. The room of an Amsterdam bride of the same period shows a different bedroom. The floor here was covered with fine "Spanish matting"; and the walls were lined with tiles painted with small figures. In one corner stood a large four-posted bedstead with twisted posts and green serge curtains, each post surmounted by a bunch of plumes. In another corner was a heavily-carved *kas* of oak, on which stood several blue porcelain vases. Similar vases adorned the wide mantel. Chairs with leather seats and *sacredaan* frames were ranged around the wall at regular intervals. Near the mantel-piece stood a small bookcase filled with religious and other works. A large Venetian mirror in a crystal frame hung above the dressing-table, on which stood a jewel casket and a toilet case filled with all the articles that a lady needed to make herself beautiful. Portraits in ebony frames adorned the walls.

When the house was once furnished, the Dutch housewife took such pleasure in it that she spent half her life in keeping it clean. De Parival wrote:

"The wives and daughters scour and rub benches, chests, cupboards, dressers, plate-racks, even the stairs until they shine like mirrors. Some are so clean that they would not enter any of the rooms without taking off their shoes and putting on their slippers. The women put all their energy and pleasure in keeping the house and the furniture clean."

In the old comedies, the women constantly talk of their housecleaning. Godewijck makes the daughter of an alderman say:

"My brush is my sword, my besom is my weapon, I know no rest; I know no sleep. I don't think of my room; I don't think of my throat; no labor is too heavy; no trouble is too great to make everything tidy and without blemish. I will not let the maid touch my pretty things; I, myself, will rub and polish; I will splash and scrub; I will hunt the speck of dust. I do not fear the tub like a fine lady."

The house was, therefore, "their world, their toy, their god" to the Dutch; and some of them went so far as to have their homes reproduced in



Fig. 10—A crown-backed chair



Fig. 11—Chair with jar-shaped splat

The Stores of the Indies in Amsterdam became the recognized headquarters and travelers used to go to Amsterdam for curiosities from the east.

Naturally, too, the china-cabinet to exhibit such wares became of the greatest importance as a piece of furniture; and judging from old wills and inventories, furniture and beautiful textiles were imported as well as other articles.

The Earl of Northampton, who died in 1619, had among other splendid treasures "a China 'guilte cabonett' upon a frame; a large square China work table and frame of black varnish and gold (lacquer of course); one fair crimson velvet chair richly embossed with copper and spread eagles and blue and white flowers China work, the frame painted with gold, one small table of China work in gold and colors with flies and worms, a little gilded couch carved and cut, an ebony cabinet inlaid with mother-of-pearl; a very large bedstead with wreathed pillars for head, sides and feet all colored black and gold; a folding Indian screen; a China cushion embroidered with birds, beasts and flowers; and a field-bedstead of China work black and silver."

The Orient exercised as powerful an influence on French as it did on Dutch and on English taste. It became very noticeable towards the end of the reign of Louis XIV, and during the Regency and days of Louis XV, that the taste for Oriental goods became a rage and the influence of the East is seen in every form of decorative art.

Indirectly, then, as well as directly, the Dutch had a great deal to do with popularizing Oriental forms and motives. It is also said by some authorities that a Dutchman, named Huygens, who became famous for his "japanned work," went to France, and that to him the Martins owed much in perfecting their superb varnish made in imitation of the Eastern lacquer.

When the Huguenots were driven out of France by the Revocation of the



Fig. 12—An arm chair with hoof-foot



Fig. 13—A crown-backed arm chair

Edict of Nantes, there was developed, principally in Holland and in England, what is known as *le style réfugié*, the most important designer of which was Daniel Marot. As is natural, the characteristics of the style have much in common with that of Louis XIV. Heavy carving and gilding and sumptuous upholstery are the striking features of this particular period.

Marot was appointed chief architect and designer for the Dutch palaces of William, Prince of Orange; and when the latter became King of England, Marot accompanied him thither.

Under William and Mary, London swarmed with Dutch merchants and refugee Huguenot arts and craftsmen. The queen, who was a china-maniac, carried the Dutch taste for porcelain and manufactures of the Far East into England.

In Holland Marot had designed much interior work for palaces and noblemen's seats, including chimney-pieces, staircases, paneling, cornices, china shelves, and also ornamental gardens. Nor did Marot stop here: he designed all kinds of domestic furniture and beautiful textiles for upholstery and hangings. The work of remodelling Hampton Court was given to him and Sir Christopher Wren; and the old Tudor palace soon became characteristically Dutch in appearance. The furniture was designed chiefly by Marot, and the comparatively small amount of furniture to be seen there to-day, consisting of chairs, stools, beds, card-tables, mirrors, and chandeliers, are in the Marot taste. The accompanying mirror (Fig. 4) is in the Marot



Fig. 14—An oak table

shelves, chairs, settees, and stools, therefore exemplify the Anglo-Dutch style that prevailed in England till the Georgian Era. The chair (Fig. 1) shows the heavy scroll front legs of the transitional period between oak and mahogany. The scroll soon turned into a hoof, or a ball-and-claw, at the foot; and this lasted all through the Georgian period and with the spring of the knee is characteristic of one of the best known types of the Chippendale chair. Fig. 10 is an example of the transitional period, showing a crown-shaped back with a Greek vase-shaped splat. This is the chair that appears in the early Eighteenth Century inventories as the "crown-back" chair. If this is compared with Fig. 11 and Fig. 13, the development is readily understood. Fig. 12 shows an arm-chair in which the splat is carved but not pierced. The legs are earlier than the claw-and-ball foot though they are cabriole in spring. On the knee is carved the shell, and the old hoof foot lingers.

Placed together, chairs of this type were developed into the piece of furniture known as "double chair," Fig. 7 and Fig. 8, and settee, Fig. 5. A dressing table is represented by Fig. 6 and small oak table by Fig. 14.

The illustrations are from the Thomas B. Clarke collection, recently sold at the American Art Galleries.

style. Here we have a square frame of walnut or some dark wood with gilded border and gilded ornaments. The pediment is of the graceful swan-neck, and between the scrolls is carved a cartouche in the center of which is carved a bell-flower.

The looking-glasses, beds, chimney-pieces with receding china-



Fig. 15—An old Dutch family table



A gambrel-roofed house



A house of Colonial style



A house covered with clapboards



A house of stucco and shingles



A house of brick and shingles



A house built of clapboards and stucco

EXAMPLES OF THE



A house of modern style



The chimney is the feature of this house



A house for a narrow lot



A house with a pergola porch



A hipped-roof house



A house of clapboards and shingles



Decorations and Furnishings for the Home

Conducted by Alice M. Kellogg

China Embroidery

By Monica Bastin



TO make the dwelling place beautiful in every detail and to endow it with an air of fitness and harmony is the desire of every true devotee of the picturesque. For this purpose, any work which is done by hand has a value and a certain personal touch which must of necessity give it the advantage over all machine made productions. Thus the clever needlewoman would fain arrange and carry out her own schemes of decoration and is glad when she has the opportunity for so doing. Among other interesting ideas, that of copying effective china ware for the embroidered et ceteras of a room is original and decidedly worth consideration. The excellence of the designs shown on many pieces of old pottery for instance is unquestionable, and often the shades and the blending of colors may be copied exactly and with delightful results. A very good example of the way such work may be adapted is shown in a scheme of furnishing which might well suggest itself to the possessor of a collection of old willow patterned china. The soft blue and white would of course be taken for the principal coloring and considered in the choice of rugs, matting and carpet. The willow pattern, or as much of it as may be thought suitable, is exactly reproduced for borders of casement curtains of cream or Paris colored cloth. It is also repeated on cushion covers of holland or muslin and it can still further be shown on the table centers and cloths.

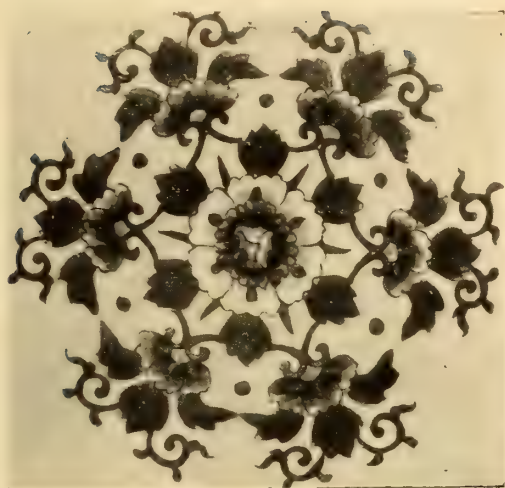
A "Willow" room, thus carefully thought out and arranged, will be a charming apartment with a tone of coloring which will at once please the fancy of all admirers of old china. On the same lines a room may be arranged in harmony with any quaint or beautiful variety of ware.

The china patterns are equally effective for decorating single articles and they are useful for almost all branches of fancy needlework. It is as a rule easy to trace the design straight from the china piece and then transfer it to the material to be embroidered. The pattern, more often than not will be found convenient to reproduce in its original size. If, however, it is to be enlarged or reduced, or the shape of the article makes it impossible to lay the tracing paper flat, it is sometimes an advantage to take a photograph of the part of the pattern which is to be copied. A tracing can then be easily made from the finished print. Of course another way and quite the most simple for those skilled with a pencil, is to make a direct free-hand sketch onto the material. It will be found impossible to copy all the finer points in line, so it is



A May flower pattern taken as a copy from an old plate

principally important to have the most striking features of the design clearly set forth. The remaining details must be filled in by eye at the actual time of working. With the copy at hand, ready to be continually consulted, it will be comparatively easy to carry it out correctly both in line and in shading. Of course whether the coloring is reproduced exactly must be purely a matter for personal taste, but where varia-



A symmetrical design taken from the center of a fine china plate



The pattern on quaint old services can be effectively copied for table tray cloths



This centerpiece is accurately reproduced from an old plate

tions are made in this respect the work loses some of its distinctiveness and ceases to be strictly speaking "china embroidery." Also as a general rule it is better to adapt rather than to alter when placing the pattern on the article to be decorated. Thus only those should be selected of which in any case the principal part can be used intact. It is in this matter of arrangement that much of the skill and discretion of the worker will be required and it is worth while taking some pains to do it to the best advantage.

Tablecloths embroidered to match china are very handsome. One of these or a set of small tray cloths would make a most acceptable gift to the possessor of a valuable service. A large plate might be copied for the center, while the pattern on a cup or a smaller piece of the ware may be taken to fill the corners.

In order to decide which is the best method of finishing the edges of the embroidered materials some consideration

is needful. More often than otherwise a simple hemmed or hemstitched border will be found the most suitable for an elaborate piece of work, the embroidery itself being quite sufficient from a decorative point of view. Some-

times, however, should the china have a pretty border, it may be effectively copied at the edge of the cloth.

Good silks and those that are dyed in fine, clear colors, should be used for the embroidery. The thickness of texture must depend a little on the size and working out of the design, but as a rule the best results are obtained if fine threads are used. In the more complicated designs several shades of color may



Old willow pattern copied for a border to a casement curtain

be required for one section alone and great care must be exercised both in choosing and in blending the shades, if the copy is to be exact. It is a good plan for the first trial to choose a pattern which may be quickly and easily followed, though with a little practice one will easily become proficient.



House of Mr. E. A. Crenshaw, Germantown, Pa.



MR. CRENSHAW'S house is typical of the Dutch Colonial period, and was designed by Wilson Eyre, of Philadelphia. The first story of the house is constructed with a wooden framework covered with metal lath and stucco. The remainder of the building, comprising walls and roof, are covered with shingle left to color in a natural silver gray.

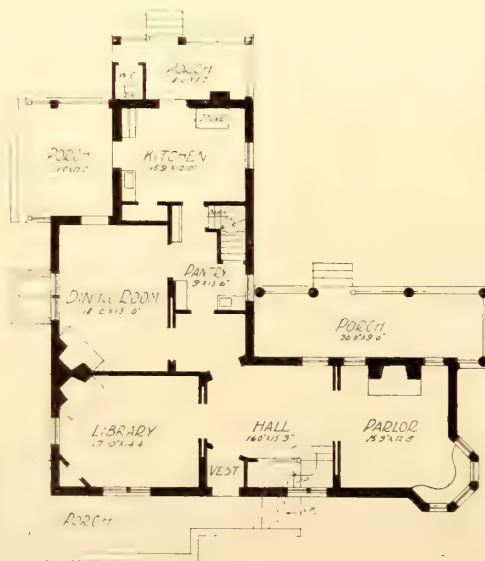
mantels. The living-porch is placed at the rear of the house overlooking the garden. The dining-room is stained and finished in mahogany, and has a brick fireplace, and facings of brick, and a mantel. The butler's pantry contains servants' stairway and also sink, dressers and drawers. The door from the butler's pantry leads into the kitchen, which last is provided with a large closet, dresser, and sink. Doors open from the kitchen to both the side porch and the rear



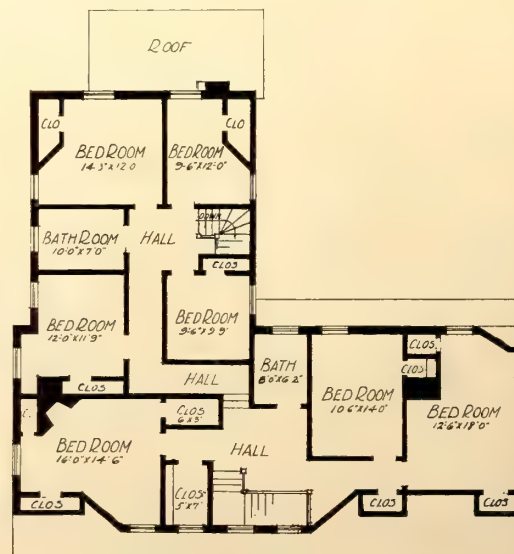
A gambrel roof house of stucco and shingles

The trimmings are painted bottle green. The foundation is built of stone. Its interior is trimmed with pine. The hall, square in form, and placed in the center of the house, is provided with an ornamental staircase. To the right of the hall is the parlor, and to the left is the library. All three rooms are finished in a dark brown tone. The fireplaces in both the library and the parlor are built of brick and are provided with

porch. The second floor contains four bedrooms and a bath, and a large linen closet; and for the servants, three bedrooms and a bath, built over the kitchen extension, the last named rooms being reached by a private stairway. The main rooms of the second floor are treated with a white painted trim. The bathrooms have white enameled tiling and floors, and are furnished with porcelain fixtures and exposed nickel-plated plumbing.



First floor plan



Second floor plan

House of Mr. H. M. Gardiner, Wilmette, Ill.



THE house illustrated in this article was built for a home—a home in every essential feature. The plan of the main part of the house, being nearly square, is widened by the addition of a living-porch opening off the living-room.

The front entrance is protected by a smaller porch, with a roof supported by two white painted

The site upon which the house is built, is well surrounded with many handsome trees, which enhance the value of the situation and create a beautiful setting for a delightful home: A charm that could not possibly be attained in any other way.

It is a difficult matter to design and build a house which will meet all the various requirements of the family that is to live in it, and to fully supply the necessary num-



A house of modern design covered with shingles

Doric columns, which stand out in startling but effective contrast with the soft brown stain of the shingles which are used to cover the entire walls and roof of the building, making the whole extremely attractive.

The hall is a central one with a living-room to the left, extending the depth of the house. A large open fireplace, on either side of which is built a paneled seat, occupies the end of the room, while a bay window opposite the entrance has also a seat of the same style. The dining-room is provided with a china closet, and the kitchen is fitted up complete.

The den is conveniently located at the end of the hall.

There are four bedrooms and a bathroom on the second floor the latter being furnished with porcelain fixtures.

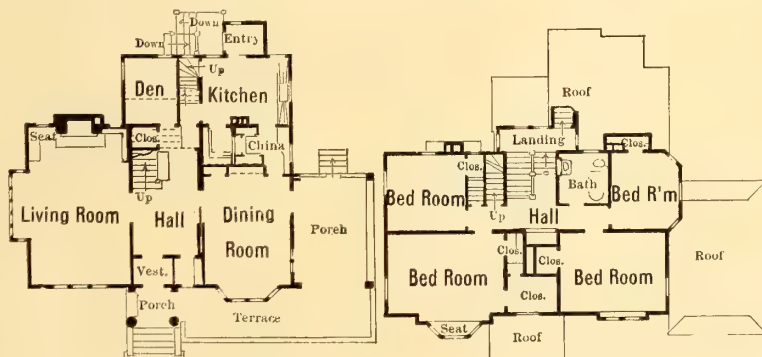
The servants' bedrooms are built in the third story.

ber of living- and sleeping-rooms, all fitted up with the best modern devices for a systematic and helpful house-keeping, and, at the same time, enclose the entire proposition with an exterior that will merit just criticism of its design and execution as presented herewith in the illustration.

The heating apparatus, fuel-rooms, laundry-rooms, and cold storage-rooms are placed in the cellar, which is cemented and extends under the entire house.

A feature of the exterior is the connecting of the entrance-porch to the living-porch by a terrace which is

left uncovered so as to permit the sunlight to enter the dining-room. This is a very important matter and is one that should receive full consideration. This the architect, Mr. Arthur G. Brown, of Chicago, Ill., has accomplished.



First floor plan

Second floor plan



Garden Notes

Conducted by Charles Downing Lay

THE location of a small bungalow on a lot 125x250 feet does not seem a difficult problem at first, yet there are many things to consider, and it grows more absorbing and more difficult the more one studies it. The problem came to me as a plan for the bungalow drawn in pencil on an excellent topographic map, but with no indication of the owner's desires in the way of its development.

In general the location of the house was good, but it was wrongly oriented. The living-room was on the northeast corner, the kitchen southeast and the two bedrooms were on the west; the bathroom, however, being between one bedroom and the kitchen.

I have changed the plan, therefore, so that the bedrooms and bath are en suite, and so that the kitchen and living-room have a southern exposure. The living-room being southwest, which is the best location, and in this case commands the best view.

From the size of the house it is fair to suppose that the house work will be done by the ladies of the family, assisted, perhaps, by not more than one inconstant maid. It

is, therefore, reasonable to have the kitchen on the best side of the house. If the maid were a constant and objectionable factor I should be inclined to put the kitchen on the northwest corner where she would not be always overseeing the intimate pleasures of the family as they go on in the garden.

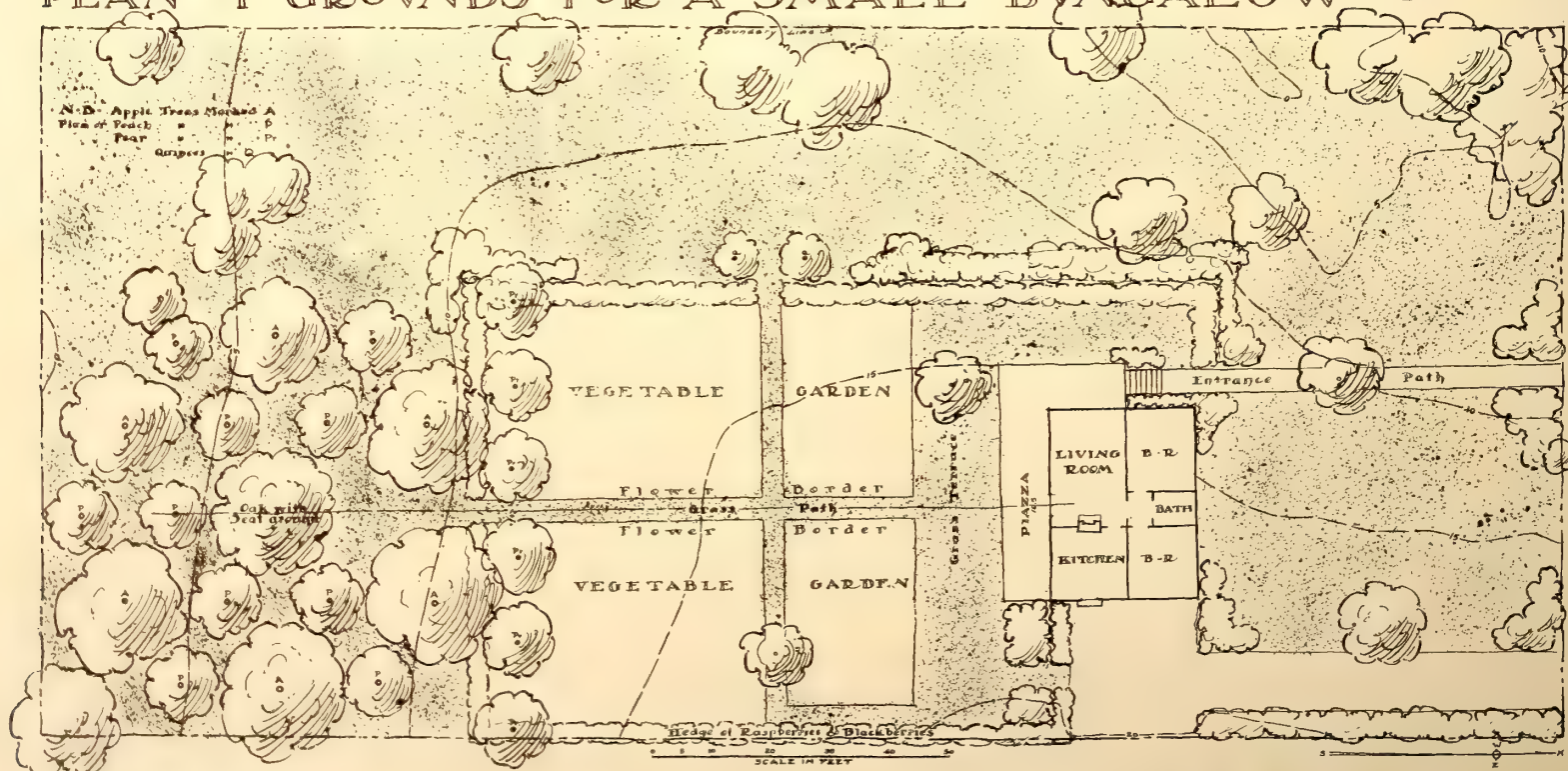
The front of the place is kept simple, with straight roads and paths, no showy planting of tender annuals, but a few good shrubs such as *Berberis Thunbergii* to soften the corners and give a little sense of seclusion in an unfenced lot.

The driveway to the kitchen door is for the marketmen and the coal and ice. Visitors will, of course, use the path to the piazza.

If it were necessary to have a garage, then the living-room might be in the southeast corner, and the kitchen in the northwest corner, with the path leading to the kitchen door. The road would remain as it is, being prolonged to the garage in the southeast corner of the place, and would be the foot and vehicle entrance to the front door. A garage in the southwest corner would be more out of the way, but a road on that side does not seem advisable.

At the rear of the house I have tried to combine beauty

PLAN OF GROUNDS FOR A SMALL BUNGALOW



and utility in an old fashioned garden for flowers and vegetables.

The grass path is straight from the front door to the oak tree back of the garden, and when the door is opened one will see a charming vista of flower bordered path ending at the seat around the oak tree.

Such a garden as this, if it is properly managed, is large enough to supply all the vegetables which the family living in this bungalow will be able to use, with the possible exception of potatoes.

It should have an asparagus bed, a strawberry bed, and along the east fence some raspberries, blackberries and currants. On the other sides the hedge had better be of privet.

Back of the garden and surrounding the oak tree are planted apples, pears, and peaches, which will do nicely while the oak tree is small, say for fifty years or so.

The grass terrace between the house and the garden will be the tea lawn and out-door living-room. A bed of perennials should separate it from the garden.

The earth removed in excavating for the cellar will be used for the terrace at the west of the house.

The planting of the vegetable garden should be considered with care. If the tall things, such as lima beans, corn and peas, are put at the sides of the garden and the low ones like radishes, peppers, dwarf peas and string beans near the walk, the effect will be very good. Many vegetable plants are, of course, very beautiful and all have a happy appeal to several of our senses.

Correspondents who wish suggestions about locating their houses and about the development of their grounds will do well to send very precise descriptions of their needs and desires. Thus we should like to know by whom the work of the house is done, how much labor is to be employed in the upkeep of the place, how many animals and what kinds are to be kept, and whether there is an automobile or not.

Information about the surrounding property is much desired as it is important to know whether it must be hidden or whether it is a pleasing part of the landscape.

The nature of the soil, the owner's taste in gardening, his pleasures while at home, the number of his friends and children all have a bearing on the problem.

Starting Seeds in the House

By Gladys Hyatt Sinclair



WITH the first loosening of winter's grip our thoughts turn eagerly gardenward and the days before active outdoor growing begins seem to lag with heavy feet.

But if annuals are to be part of our garden this year we can gratify our itch for mother earth at once—for it is time annual seeds were started in the house for early bloom. The season for annuals, north of Mason and Dixon's line, is short at best. Many, especially the choicer sorts, must be started indoors or in a hotbed to get anything like their value. Of these, the best are asters, salvia (scarlet sage), cosmos, penstemon, lobelia, verbenas, annual pinks, Marguerite carnations, single dahlias and stocks. A few of these are not annuals, strictly speaking, but are best treated as annuals, in places having short summers.

Of the sturdier sorts that will stand more hardship, Drummonds phlox, petunias, clarkia, annual chrysanthemums, four o'clocks, zinnias, scabiosa and snapdragon, with Japanese variegated hop and *Cobea scandens* for vines, can all be given four weeks more of garden life by starting them in the house about the fifteenth of March.

Nothing elaborate as to place or equipment is necessary. A kitchen or cool room upstairs is better than an overheated living-room. Light cellar windows are excellent places. Any exposure will do, but south windows should be shaded when the sun shines very hot through them.

Boxes or pans three or four inches deep, with holes for drainage, are better than pots and easier to manage. If "potting soil" or clay loam is used, add sand to it if possible, to keep it from caking. Good rich garden soil will grow all ordinary seeds well.

Make the soil fine and press it down hard. Sow the seeds a quarter to half an inch apart, in rows two inches apart. Cover with a quarter inch of earth or sand and spray very carefully with warm water. I like a whisk broom as a sprayer. Lay newspapers, flannel or burlap on the earth to keep the moisture in. When the seeds begin to sprout remove the covering and sprinkle thoroughly with warm water whenever the earth looks dry.

It is not wise to use bottom heat with seeds that must live in an ordinary room, unless they are more than ten days coming up. A slow, steady, sturdy growth is what we want, not swift, spindling, weak plants ready too soon to go outdoors and die.

If a cold snap or some accident chills the room and the earth seems really cold, warm it gradually and return to its place. Turn the boxes every second or third day, so that the little plants may grow straight.

When the second or true leaves are well developed the plants will usually be crowded. Soak the earth well, lift each plant carefully and transfer it to another box or to a tiny pot. In boxes they can stand from an inch and a half to two inches apart. Set so that about half the stem is buried, and press the earth firmly about each plant. Some of the swifter-growing ones may need transplanting again, but most of them will grow on contentedly until the middle or last of May when they will go into the ground and blossom quickly.

Many who try raising plants in the house fail because they do not understand that plants, especially baby ones, must have fresh air. They will thrive on air surprisingly cool if it be fresh and clean. Open the window a few minutes each day unless the weather positively forbids. Then open those in an adjoining room, getting clean air without a draft. Plants treated thus will be short and stocky, not tall, lippy and pale.

By the first or middle of May, according to the spring, they should go out on the porch or the ground. Set the boxes in a group so that they may be easily covered if cold nights threaten.

When danger of frost seems past, transfer the plants to rich ground, on a cloudy day or at a time when the sun is low.

Have the earth wet at the roots of the plants and dry on top and they will not wilt. After the first work of planting (which is play because it seems to open the door to spring) only a very few minutes occasionally are required to raise plants in the house; and one is amply repaid by the pleasure of watching their growth and early bloom.



Mammillaria bicasand



Phyllocactus flowers



A splendid mammillaria

Cacti that will Flower

By William R. Ludlow



OF LATE years there has been a tremendous stimulus given to the cultivation of Cacti owing to a wider knowledge of the interesting nature of these plants. Hitherto much of their attractiveness has been held to lie in the quaint shapes of the specimens; garden books have been careful to point out to the beginner that Cacti only produce their blossoms at rare intervals and only then under the influence of very favorable conditions. The grower of today whilst he admires the strange forms of the succulents is very naturally asking if it is not possible to have a collection of Cacti most of which may be expected to flower with reasonable treatment. The answer is certainly, if in purchasing the examples one is careful to obtain special kinds, known to be regular bloomers, and faithfully follow a line of treatment which it is intended to outline in the present article.

A goodly number of species which figure on the catalogue of the Cactus dealer has never been known to flower in captivity, while others cannot be expected to throw bloom until they are of great age. Other kinds will blossom but only at irregular intervals, which may mean a wait of more than a few years. On the other hand there are a large number of sorts which will flower freely every year and sometimes even more often than this if they are really happy in their surroundings. It is these last which it is proposed to bring to the notice of the reader in the hope that still more people will be induced to take up the very delightful hobby of Cactus collecting.

It can hardly be insisted too often that no great amount of heat is necessary or is even desirable for the Cacti in

general cultivation. Of course, none can be really called hardy in the sense that they will flourish out of doors where the winter experienced is of any severity, but the heat required in a glass house need not be more than is necessary to keep the temperature just above freezing point. Still better, nearly all Cacti are most excellent room subjects and in England, where the culture of these plants is fairly general, some of the finest examples are to be seen in the windows of cottages. There are really no subjects so well fitted to withstand the inevitable dust of the living apartment as are these accommodating succulents. For the best results a south window is really a necessity as a very great deal will depend upon the amount of sunshine which the plants receive.

One very important point to bear in mind concerning the flowering of Cacti is that it is a grave mistake to put the plants in large pots. A short while ago the writer had brought under his notice a large plant of the Red Phyllocactus; the owner of this specimen had never been successful in inducing the example to flower. A pot half the size of the one in use was suggested, the advice being duly carried out. The following spring the Phyllocactus developed forty great blooms, each five inches in diameter. The average collection of Cacti will show an indifferent amount of bloom, and more than half the reason is that the pots of the plants are too commodious. Another cause of failure to bloom is to be found in an improper mixture of mold. This, if of a rich moist nature, encourages a very luxuriant growth of the succulent stems and keeps the whole plant in a very green condition. The stems do not ripen properly, and in such a state will never produce



Phyllocacti



Philicereus



Phyllocacti



A pink phyllocactus

out being watered but there is no cause for anxiety; it is natural for most of the species to rest during this season.

In the forefront of those Cacti which may be relied upon to flower if proper treatment is accorded to them, are certainly the Phyllocacti. Of late years a large number of magnificent hybrids have been introduced and some of these may be fairly classed as the most showy plants which we possess. A delicate pink variety possessing all the robustness of the common red kind is illustrated, and is yet further to be recommended on account of its rapid growth. A small cutting developed into a good sized plant of flowering size in a couple of years. The number of varieties of which *Phyllocactus albo superba* is the type, are all well worth growing, and present an additional charm in their flowers in that these are sweet scented. One great feature in the culture of Phyllocacti is that the plants should be accorded the sunniest possible position which can be accorded to them. It is the habit of these plants to make their growth for the next season after their blossoming time, which usually falls about April or May. It is just at this active period that the specimens should be allowed simply to roast in the sunshine, so that the new shoots may be able to become thoroughly ripened. A rather unpleasant habit observed in some Phyllocacti is that of dropping the buds just as they begin to develop. This tendency may be checked if a little weak liquid fertilizer be administered every three days for a fortnight, just at the time when the buds are emerging from the flattened stems. With careful treatment it is possible to make the Red Phyllocactus bloom in the autumn as well as in the spring; the great feature being that of allowing a maximum amount of sunshine.

Perhaps next to the Phyllocacti in their freedom of flowering one should class the Cereus group. The most interesting sections are those which blossom during the hours of darkness, a typical example being the famous "Queen of the Night" (*Cereus grandiflorus*). The flowers of this class are so very transitory and are only on show at so awkward a time, generally between the hours of about eleven onward to the early hours of the next morning, that most people will probably be more attracted to the Cereus

flowers. In an ideal compost for Cacti there should be very little loam, but plenty of coarse silver sand and a liberal allowance of old mortar or some such material. Give great care to the drainage of every pot, and let the soil around each plant become quite dry before water is applied. In the winter this may mean that the Cacti will go for months with-

which are of more permanent worth. In an accompanying photograph is shown a plant of *C. luvilupinus*, an exceedingly handsome species which repays the careful cultivator with a wealth of large rose colored blooms. A variety which has smaller but very showy flowers is *C. flagelliformis*, commonly known as the Rat's Tail Cactus from its singular manner of growth. This kind is one of the easiest of all the Cacti to grow and will flower profusely even in a dwelling-room. All the species of Cereus like a very light position, and also plenty of ventilation when the air is warm. They can hardly be allowed to become too dry during the winter, at which time their growth is entirely suspended. A curious feature of many Cereuses is their ability to flower under the most adverse conditions. A short while ago the writer was taking some cuttings from a number of specimens, and one of these a well ripened shoot, fell down between two pots. Here it lay unobserved for four or five months until one day attention was directed to it by reason of the fact that it had a large pink bud. This rapidly developed until it expanded fully! All this was accomplished although the shoot had no roots of any sort and was not even planted in the soil.

Of late years the very interesting genus of Mammillaria has come into popularity. These are certainly amongst the

most interesting of Cacti, their quaint shape and complex arrangement of protective thorns causing them to be peculiarly attractive. In many of the species the flowers are relatively small, but they are often brightly colored and are nearly always produced with great freedom. The *M. bocasana* kind bears quantities of delicate flesh colored blooms and these as a rule develop in succession so that the specimen is an object of great beauty for a long while. Another sort which is also illustrated is *Mammillaria centricirrhha*, a species which bears good sized flowers of a peculiarly rich shade of carmine. An additional point of value in the Mammilarias is that many of them after blooming time is over develop berry like fruits which quite frequently rival the flowers in the brilliancy of their coloring. All the Mammilaria delight in a dry warm atmosphere and cannot be grown successfully unless they receive plenty of sunshine. Most of all the Cacti are those plants im-



Echinocactus

patient of a moist soil, and they will speedily show their resentment by starting to rot in a manner difficult to check. In order to prevent such a calamity it is well to fill the pots in which they are planted at least half full of crocks and thus ensure a perfect drainage. This will not matter on account of the roots as all the Mammilarias are very shallow rooted.



A handsome philocereus

Six Neglected Fruit Trees

By E. P. Powell



WE have half a dozen or more fruits in the United States, capable of general culture, and of which we ought to make a good deal more use. Each one of them is suitable for home consumption in its present form, while capable of improvement along the lines of cross breeding and selection. I have found improved sorts of native persimmons in Missouri, Virginia and Indiana, and having procured cions have been able to grow them after grafting in central New York. One of these has come into some notice, and is being propagated by Mr. Munson, of Dennison, Texas, as the Josephine. It was sent to me by Mr. Miller, the enthusiastic secretary of the Missouri Horticultural Society. As a rule our wild persimmons are of little value—containing large seeds and little pulp, but the five or six varieties that I have collected, give delicious fruit. To my surprise I find the tree entirely hardy in northern New York. In Florida we graft the wild sorts to the Japanese introductions, and get magnificent fruit. The government is just now introducing a variety from Manchuria, which is almost seedless and tolerably hardy. I do not think it at all improbable that we have already in this country Japanese or Corean sorts that will prove hardy as far north as Cleveland. If our fruit lovers and home makers would look out for something of this sort, testing half a dozen of the later importations, and growing seedlings, we should soon have throughout the whole North, as a garden fruit, persimmons two to four inches in diameter and most delicious for eating from hand. I recommend also the trial of this native sort, Josephine. A single tree gives me two bushels or more every year. The tree is about twenty-five feet high when fully grown, and needs only moderate space in the lawn or yard.

A small tree, sometimes only a bush in the Middle West, and along the river bottoms as far north as Michigan, gives us a fruit much like a banana in shape, and about half as large. We can grow this tree almost anywhere in the United States, if it is planted in moist land. I have it growing very successfully in Clinton, New York, and find it equally thrifty in Florida—below the frost line. We call it pawpaw, which I think is the Indian name for it. Here again we have to select among trees that vary largely in their fruit. I have one delicious sort from Indiana; its fruit being high flavored and much like clotted cream. The skin is delicate, and long shipments would not be possible. The large seeds are our chief difficulty, and these we can probably remove by scientific culture—propagating from those which have the smallest seeds. The flower of this tree is conspicuous and very interesting, being two inches across and chocolate colored. Every way we have here a beautiful and a profitable fruit that should no longer be overlooked. It grows about twelve to fifteen feet in height, and the foliage closely resembles that of the persimmon. If not disturbed by trimming, the tree inclines to take a weeping form.

The high bush cranberry is a common name for *viburnum opulus*. It blossoms in May, in large corymbs of white flowers. The flowers are followed by large bunches of berries, which latter become about half the size of a cranberry. In summer the color is yellow, but in autumn a rich crimson. I found not many years ago that these berries are an almost perfect substitute for the swamp cranberry of our market. The bush will

grow anywhere on uplands, and is frequently found in choice shrubberies. The fruit, however, has been overlooked, and in the winter has been taken by the pine grosbeak and cedar birds—who are very fond of it. A half dozen well grown bushes would easily supply any family with its winter cranberries—wholesome and of a sprightly flavor. The surplus would be very acceptable to the birds, and for that reason I should recommend planting a few bushes at the rear end of our acres or along the fence lines.

The barberry of New England is fairly well understood by our friends who winter in Maine and New Hampshire. The common sort that grows along the roadsides furnishes material for jellies and sauces, and I found in a few cases that selected sorts were grown in yards. I have the English variety, and from that seedlings, which are decidedly preferable to the native variations that I have seen growing wild. I do not mention the barberry because it is entirely novel to the American housewife, but because outside of New England I hardly ever have seen it put to any use by housewives. The jelly is sparkling and liked by almost every one. The seeds will, of course, prevent any large use of this fruit as a sauce.

The elderberry was not neglected by our early settlers, but of late it has fallen out of use. It is not only one of the most beautiful of our native shrubs in blossom, but the enormous mass of berries is specially adaptable for puddings and pies. The seed is small and smooth, and can be used by those who find strawberries and raspberries injurious. This bush grows from the northern lines of our territory to the very southern, and Nature seems to say that it is one of her favorites. I name it here because I have come to be very fond of the cooked fruit. I am afraid that the only prejudice against it is just this fact that it is very common. Farmers have looked upon the bush as an intrusion on their pasture lands. It takes to all sorts of soil, and does not mind wet feet. If you have a swampy spot you can do nothing better than plant elder bushes and pawpaws.

I am inclined to put into this list the mulberry, although I am not sure that we can make a success of the better sorts in our Northern States. We can at least grow the Downing, which has been so highly praised by Beecher, and the Russian sorts of recent introduction are entirely hardy. Stark Brothers have sent me a white variety. Beside these I find that the birds are bringing seed and dropping them over my acres. The seedlings that spring up vary a good deal in value, and one of them only is worth preserving. There is one draw back. A mulberry tree takes a lot of room, so that we cannot afford to give a poor sort space in our garden. It makes a splendid lawn tree, full of shade, and always calling the birds into its arms. In Florida there is no fruit to surpass the mulberry, giving loads of large fine berries, which are equally attractive to fowls, birds, animals and men. The mocking bird sits in the limbs and scolds you for taking your share. I think that by persistent growth of seedlings we can get some of these large fruited sorts started that are entirely hardy.

I should like to add one or two more fruits which are almost always neglected by the common home builder, but will omit them for the present. We have here at least half a dozen sorts of delicious and wholesome fruits, that ought to be in the common home gardens all across the country, and from the Lakes to the Gulf.



CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Hints for the Housewife

By MARGARET SEXTON

"CAN you tell me of some way by which I can cook prunes and eliminate the sweetness asks a constant reader of Connecticut."—W. A. T.

Many people object to the sweetness of prunes and yet object to the watery quality of the juice if the sugar is left out. A skillful cook declares that the very proper way to cook prunes is in a bean pot in the oven. Wash and soak the prunes and put them in the pot with a very little water. Let them cook slowly for a long time. They will be found delicious, thick, and rich without any of the objectionable sweetness. Thinly sliced lemon from which the seeds have been removed is a great addition if cooled with the prunes.

"A subscriber writes from Chicago and asks what can be done with the discoloration which takes place on the wall paper where pictures are continually hung in one position. Any information on this subject will be highly appreciated."—M. A. R.

Plain papers on the walls are most artistic and are a fine background for pictures or ornaments of any kind, but wherever a picture has been placed, if left there for any length of time, the paper will be marked. It either changes color or else becomes discolored from a collection of dust behind them. This trouble can be remedied in a very simple way by driving a brass-headed tack into each lower corner of the picture frame. In this way the picture will be held out from the wall a fraction of an inch, thus allowing the air to circulate and so prevent ugly marks on the paper.

"I would like to have a recipe for making a good lemonade. Will you kindly supply me with one?"—J. D. S.

Grate one juicy pineapple. Add the juice of six lemons, two cupfuls of granulated sugar and one pint of water. Boil the sugar and water until it becomes a syrup. When cold add the juice of the lemons and the grated pineapple. Add a quart and a pint of Apollinaris water and a small bottle of Maraschino cherries for flavor.

"Will you kindly give some information to a young mother as to how to bathe a baby?"—J. C. B.

All too frequently the infant is frightened by its first bath, and for a long time after it is difficult to bathe the baby without its becoming alarmed and screaming and crying, which is most distressing. If when the easily-frightened baby is put in the bath a Turkish towel is first laid on your lap and the baby laid on that, take all four corners together, two in one hand and two in the other, lift the towel gently and lower the baby into the water in the tub, and it will feel so secure in the towel and the water will steal so gently about it that the baby will not be frightened, it will soon become accustomed to the bath and be delighted when it is bathed. If this

is done a great deal of trouble will be saved and the baby spared a fright.

"Will you please inform me how I can keep the juice from boiling out of a fruit pie into the oven."—L. A. T.

A fruit pie will often boil over or leak its juice and so make a very dirty oven, besides wasting much that is very good in the pie. This can be prevented if, when you are making pies, you put tiny pieces of butter around the outer edge of the crust before putting on the upper crust. The size of the pieces need not be larger than good-sized peas. These small lumps of butter should be placed two or three inches apart and about two inches back from the edge of the crust. The butter not only keeps the pie from boiling over, but adds to the richness of the flavor of it. A small piece of butter put in rice when it is boiling, or, in fact, any cereal, will keep it from boiling over.

"I am very anxious to learn of some simple means by which I can keep dishes of food on ice from slipping off."—M. A. R.

All housekeepers have experienced how difficult a thing it is to place on the top of the ice with perfect surety of its staying there, dishes of dessert or any other thing placed in dishes and necessary to keep on the ice. A very simple remedy for this trouble is to place a newspaper on the ice first; that is, one or two sheets of the newspaper, and then the dishes on top of that. There need be no fear of tipping if this is done.

"I would like to know of a simple method to use in cleaning gloves, cloth, and lace."—Miss Ellen.

After thoroughly cleaning in the usual way with gasoline, rinse the gloves well in a dish of perfectly clean gasoline. While they are still wet sprinkle thickly with talcum powder and rub all over the gloves. Rub them until they are perfectly dry and the powder has fallen from them. Then pull in shape and hang in the air. In cleaning any kind of cloth or lace with gasoline a soiled ring will not be left if talcum powder is sprinkled over the spot while wet and allowed to remain until the article is dry, when it brushes off very easily. Unless the garment or article to be cleaned is immersed in gasoline it is almost a surety that a large disfiguring ring will be left where the gasoline leaves off.

"Can you tell me of some way by which cold butter can be cut without crumbling?"—E. H. W.

During the cold winter weather it is often very hard to cut butter in even slices or small cubes. There is a very simple and easy way of doing this. It consists in folding a piece of the waxed paper in which the butter is wrapped over the knife, and with the knife covered in this way, the butter may be cut without breaking or crumbling it. The result will be nice, smooth cubes of butter, with no ragged edges.

(Continued on page xi)

Garden Work About the Home

By CHARLES DOWNING LAY

P. F. L. The long terrace wall 6-8 feet high, which is such an eyesore to you now, can be made very useful and at the same time beautiful without planting vines. There are many trees such as dwarf apples, pears, peaches, and apricots which can be trained to a wall when it is properly wired. The wire on the wall should be not more than 12 or 18 inches apart, about an inch out from the face of the wall. They should be supported on expansion bolts every 6 or 8 feet. The trees when bought should be cut back to a single whip leaving spurs with one bud where it is desired to start a new bunch going along the wires. All other shoots must be cut off as soon as they appear, sending the strength of the plants into the horizontal limbs which are trained to the wires. The trees that can be used in this way are *Magnolia stellata*, *M. Soulangeana* or *umbellata*, and varieties of the last two. *Amelanchior* might easily be trained to such a wall and of course *Pyrus coronaria*, *Ionensis*, *Parkmanni*, and the apple. All in time become too large. Any of the *Crataegus* family which has ornamental fruit may be used in this way and give a stunning effect in winter. *Cercis canadensis* can be trained to the wall without difficulty, and will flower soon after the shade bush. *Eleagnus longipes*, which has rather inconspicuous yellow flowers but has pretty and edible fruit in July, can also be used. Some care must be taken in planting the mixed lot of shrubs, unless you choose one or two of them, to avoid a spotty effect, which will be produced more by the texture of the foliage than by the actual color. All these trees are perfectly hardy, and are not likely to suffer from late spring frosts, even if the wall faces the south, which we have often pointed out is the worst exposure in this country. We should be glad if you would take photographs of the wall every season for a year or two as we should like to illustrate it in *AMERICAN HOMES AND GARDENS*.

M. L. C. Your idea of a gateway as shown on the sketch submitted seems, if I may be permitted the use of slang, "too noisy" for the rest of the place, although the main entrance gate in comparison to the front door of the house should be a little dressy, just as we dress up the front door. It is a great mistake to have it outdo the rest of the place in grandeur. Neither should it be an isolated enrichment with the boundaries, but it should be played up to for some distance on either side by some slight ornamentation as a boundary wall. It may be that you can subdue the effect of your entrance by different planting, and have the iron work and masonry as it is. A mixture of spruce and red leaved Japanese maple is not what a cultivated person would select for this entrance.

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HYBRIDIZING AND IMPROVEMENT BY SELECTION

L. of Connecticut is planning to try some experiments in hybridization this summer. It will take a great deal of care and patience to get any results, and even then it may be disappointing. True hybridizing to be of any value should be carefully recorded, so that the parentage of a seedling is known to a certainty. In most cases it is better to do the work under glass because the conditions are controlled more easily.

The process is a simple one, and all that is necessary is to cut through the petals of an unopened flower which is to serve as the female parent and remove the stamens with a scalpel and apply to the stigma the pollen taken on a camel's-hair brush from another flower which is to be the male parent. The fertilized flower must then be tied up in a bag. There will be many disappointments because many flowers, even of the same species, are frequently sterile.

A more promising field for experiment is that of the improvement of species by selection. In this work great numbers of plants are grown. The seeds of those showing strongly marked or desirable characteristics are saved for future planting. I believe that much could be done in this way with many of our native plants, especially those which show considerable variation in a wild state. Thus *Viola pedata*, which is ordinarily small and blue, has a form called bicolor—two blue petals and three pale blue petals. I think it would be easy to increase the size of this form, and it might very probably have its delicate fragrance strengthened. Such a result is much to be desired, for the flower would far surpass the ordinary violet. Other natives which suggest themselves for improvement by selection are the blood root and trillium as to size and lasting qualities; the prickly pear, the silenes, and the phloxes.

The work should be done on a large scale. A thousand plants the first year might give some results but five thousand would be better. In a thousand seedlings there might be three or four worth saving. Seeds and plants should both be saved so that in a couple of years there might be another to choose from again. In four or five years one might in this way get an improved form that would be unusual and also a valuable addition to our gardens.

THE season of fresh mushrooms is near at hand and the likelihood of poisoning through ignorance in gathering lends interest to a report recently made to the Académie des Sciences by the French scientists, MM. Radas and Sartory. Selecting two of the most dangerous varieties of mushrooms, the amanita phalloides and the amanita mappa, for experiment, an extract of their toxic principle was made. Intra-peritoneal injections of this virus were then made, using rabbits for the experiments, in the manner usual when preparing antitoxin serums. At the end of four months the rabbits were found to be completely immunized, and could eat the most poisonous mushrooms without ill effect. This indicates that persons suffering from mushroom poisoning may be cured by a serum prepared in a manner similar to that of the diphtheria and rabies antitoxins.

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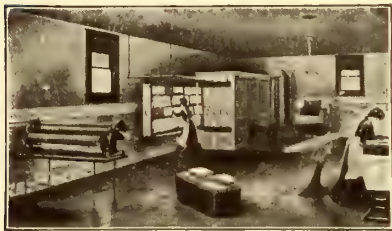
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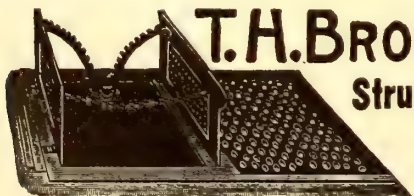
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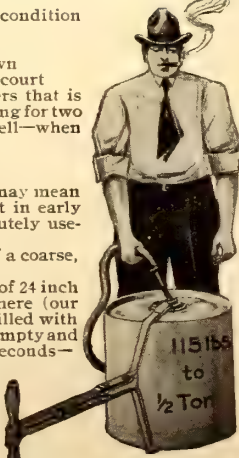
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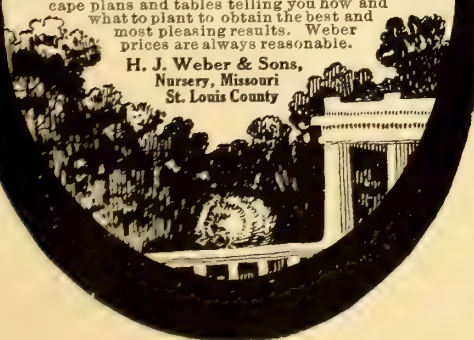
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(Continued from page ix)

"I am renewing the shades in my house. Can you tell me what use I can make of the old ones?"—Mrs. W. J. D.

There is scarcely a household but that has a goodly quantity of old shades in its possession, seemingly there is nothing that can be done with them. The utilitarian says that shades that have outlived their usefulness as protection at the windows can be used, and to good advantage, as ironing board covers. A shade that is to be used for this purpose should be soaked for a short time in cold water. When it has become softened in this way, put it on to boil in cold water and shaved-up soap. When the shade has come to a boil, wash it in the usual way. When dried, iron smooth and tack on the board. Shades make most durable covers, and it is such a satisfaction to put to good use something which apparently is useless. A last suggestion to the above is to use brass-headed tacks with which to tack the covering on the board, they are so easily removed when re-covering is necessary. They are not apt to rust and because of the smooth heads of brass, tacks are not likely to tear dainty clothing which is put over the ironing board.

One of our subscribers writes and asks for a recipe for something cool and refreshing to serve at an evening company, when a more substantial supper is not desired.

Grape fruit sherbet is delicious and most refreshing to serve in the evening when guests have become hot and flushed over an exciting game of "bridge." Roll and press the grape fruit so as to soften it, then cut in half. Extract the meat and juice free from every bit of seed or any of the bitter part. Put this in a bowl and allow one pound of sugar to every pint of the grape fruit and juice. Err on the side of too much sugar rather than not enough. Stir thoroughly and pour into the freezer. Freeze like mousse, that is, "mushy," but not firm like ice cream. A little rum is a great addition, and can be put in just before freezing.

"I admire the beautiful candle-finished mahogany, but only those to whom the care of it falls know how difficult a matter it is to dust and leave no lint upon the furniture. Can you suggest some method to use to eliminate this difficulty?"—R. A. D.

If in future the first dusting is done with a very slightly dampened clean cheese cloth duster, and then gone over with a duster of Turkey red, the result will be all that is desired, the Turkey red having oil in it during the process of manufacture, retains a portion of it, which is sufficient to gather up all the lint left by cheese cloth. But the cheese cloth and the Turkey red should be kept very clean.

"A request for information about what use can be made of a discarded linen hat came from a reader in Vermont."—R. A. H.

If you have an old discarded linen eyelet embroidery hat, don't throw it away. The brim will make a berth for a chemise or a yoke for a child's dress; a rounding yoke, of course. To make the yoke fit take up the shoulder seams, open the round and fasten in the back. The crown will make cuffs. With a very little bit of work you can make an eyelet work collar. Thus your old, despised hat will take on a new and lovely form, and you will have the consciousness of having practiced a very nice economy.

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A NEW VIEW OF THE MIGRATION OF BIRDS

THE still unsolved problem of the migration of birds has recently given further incentive to interesting investigation. The most salient feature of the latter is the origin of the paths of passage. To the directions of migration which birds of passage take when going to and from their winter quarters they hold with most obstinate faithfulness, even when such directions describe greatly circuitous routes, making every effort to reach very far abodes for the winter, though equally favorable places may be found much nearer to their brooding regions. So it happens that delicate singers, and weak flyers like the quail, do not shrink from flight over great stretches of sea, and that summer-birds of the high north wander regularly every year in the fall to the extreme south, to the Cape and to Australia. Precise proof of the tenacity with which many birds cling to their old paths of migration is afforded by the conduct of the white wagtail, for instance. While in winter it passes to the very interior of Africa, it may be found in summer anywhere in Europe and Asia, even in Greenland. From the latter country it never wanders in winter into North America, which, of course, can be reached with greater ease, but always follows the old road over which it first must have reached Greenland, that is, by way of Iceland, the Faroe Islands and England, which were once connected with one another by bridges of land as were still at the time of the Deluge, the three peninsulas of Southern Europe with Africa. In these habits may be observed phenomena of heredity in deference to which, during the winter, every individual seeks, if not the locality which was the site of its origin, at least the regions that border the line of migration along which its progenitors either expanded their sites of residence or founded new homes. As migratory birds usually, from preference, pass from one station of rest to another and therefore must follow, in a measure, the outlines of the country, it may be assumed that when they wander across the ocean, though elsewhere paths of migration overland are at their disposal, they follow in accordance with old habit lines of coast which disappeared long ago.

In this way may be explained the fact that the hawk that broods in Eastern Siberia and Manchuria passes the winter in India and South Africa. Likewise wander the hoopoe and the crookbilled strand-snipe to Madagascar, while both are unknown in Africa south of the Equator. They follow the long chain of islands along which the migration of their ancestors toward the southwest occurred, and we can assume nothing other than that this migration was effected along a northern territorial connection, it may be by way of Syria and Arabia, along the eastern coast of the black continent, or perhaps along the chain of islands, which, as relics of a former continent, might have been present in far greater number in the past than at the present day. It is, therefore, a valid conclusion that in the course of time the flight overland, over a path of bridges of land, has become a migration across the ocean. The birds, however, did not choose the bridges of land especially to avoid passage across the sea and ocean; rather their path of migration was the result of the fact that the former ter-

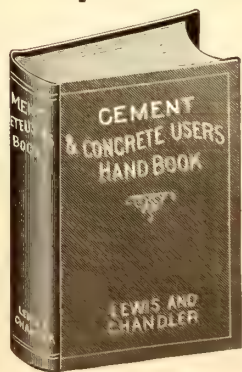
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ritorial connection afforded them the sole possibility of scattering themselves toward the north or of a retreat to the south. Their lines of passage of the present day, consequently, are nothing other than the stupendously old paths which the birds have followed from time immemorial.

IMMUNITY IN PLANTS

SINCE plants have nothing that corresponds with the blood corpuscles, the conclusion was reached by many botanists that the principle of phagocytosis had no application to the plant world. But now the French botanist, Prof. Noël Bernard, of the University of Caen, has pointed out an obvious analogy between the process described by Metchnikoff and a process that takes place in certain plants.

Most of the diseases of higher plants are caused, not by bacteria or protozoans, but by filamentous fungi, related to the molds. In the roots or underground stems of many of the higher plants—including all the species of the orchid family, the heath family, and many others—there is always present a colony of such fungi. The presence of the fungus does not seem to cause permanent injury to the plant, but does not seem to be of any use to the plant, either. Many theories have been advanced as to the significance of this association or symbiosis between the higher plant and the fungus. Prof. Bernard points out that some of these fungi are known to cause diseases in certain plants, and infers that in the orchids, for example, they produce no injury, because when the fungus has penetrated into the interior of the cells, the protoplasm of the latter begins to digest it, in the same way as the white corpuscles of our blood digest invading bacteria.

This view is supported by the fact that there is a progressive degeneration of the fungus within the cells of the host in practically all such associations that have been examined. By means of careful experiments, Dr. Bernard has further shown that in a given orchid a certain fungus will do no harm whatever, being digested and reduced to dead clumps, whereas closely related species of fungi will act in every way like disease-producing invaders.

He concludes that while plants have no moving cells corresponding to the phagocytes of animals that are capable of attacking and devouring invaders, many of the cells in most plants still retain, to a certain extent, the ability to digest any invaders that may get into them. To the extent that this ability is retained, the plants will be immune from disease. This brings the curious mycorrhiza or root fungus into harmony with Metchnikoff's theory of immunity.

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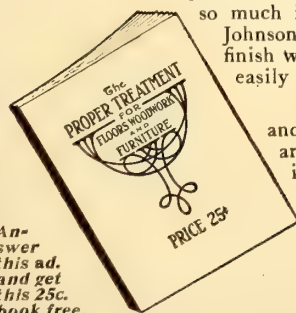
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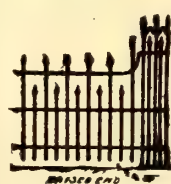
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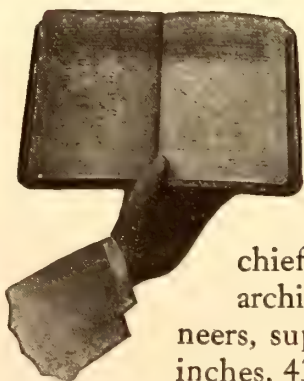
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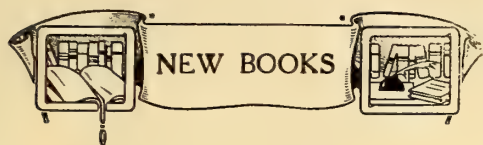
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THE PASSION PLAY OF OBERAMMERGAU.
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Montrose J. Moses. New York: Duf-
field & Co., 1910. 12mo.; 118 pp.
Price, \$1.50 net.

The volume before us is printed on delightful light-weight paper, so that we have no hesitancy in recommending it as an ideal text for visitors who are going to have the supreme pleasure of witnessing the Passion Play. The text which is sold in Oberammergau and Munich is apt to be bad and very dear, and it is really good economy to take along a book like the present volume with its black-faced readable type. There is a number of important features. The list of *dramatis personae* is contrasted with various years, such as 1890 and 1900. The history of the Passion Play is given with valuable notes referring thereto. The four ancient texts of the Oberammergau Passion Play are then examined. The description of the play house, etc., follows together with the statement issued by the Burgomaster showing the ratio of expense to receipts. This shows that in 1890 the salaries of the 747 players were only \$48,000, or an average of \$64 each, which is not very large pay for an all summer's work which interferes very materially with their regular pursuits. There is, however, a considerable amount made each year the Passion Play is produced by those who have concessions of various kinds, such as the photograph concessions. The text itself of the play is admirable and is followed by the best bibliography of the subject which we have ever seen.

CATHEDRAL CHURCHES OF ENGLAND. By
Helen Marshall Pratt. New York:
Duffield & Co., 1910. 12mo.; 593 pp.
Price, \$2.50 net.

This volume deals with the architecture, history and antiquities of all of the cathedrals of England, together with a bibliography and itinerary and glossary, so as to form a practical handbook for students and travelers. The purpose of the volume is to set forth in a concise and orderly manner the most interesting features historical and architectural of the two and thirty cathedrals of England, and is the result of eight years' study in England and on the Continent. The author intends not only to present anew the array of well-known facts concerning the cathedrals, but to give, so far as possible, some hints of the meaning of each, the reason why it was built at the particular time, and also something of the personality of the bishops, abbots, deans, canons, priors, royalties and noble men and women whose names are inseparably connected with the fabric, or who sleep within the walls. The work has been well done, and a critical examination of the book leaves little to be desired. The only criticism to be made is, that the number of engravings might be considerably augmented with advantage, as now it is necessary to look up illustrations in some other books.

GILLETTE'S INDUSTRIAL SOLUTION: WORLD CORPORATION. By Melvin L. Severy. Boston: The Ball Publishing Company, 1908. 8vo.; 594 pp. Price, \$1.50.

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THE LIFE OF WILLIAM THOMSON, BARON KELVIN OF LARGS. By Silvanus P. Thompson. Two volumes. New York and London: The Macmillan Company, 1910. 8vo.; 1,297 pp. Price, \$7.50 net.

One would naturally expect that a biography of Lord Kelvin, written by a prominent physicist, such as Silvanus P. Thompson, would deal largely with the scientific accomplishments rather than the personal life of the subject; and this is, in a measure, true. A picture of Lord Kelvin's life and home relations has already been written by his own sister. The present volumes, however, take up the life of this great man from a different viewpoint, that is, in relation to his epochal work in the realms of science. The present biography was begun nearly two years before the death of Lord Kelvin. Hence it was possible to obtain much valuable information and many personal reminiscences, which give the volume some of the importance of an autobiography, while at the same time due prominence is given to certain matters which might have been modestly passed over had Lord Kelvin been writing his own life story. The biography is made up to a large extent of manuscripts and scientific correspondence, and the author has wisely avoided placing his own interpretation upon them, preferring to let them speak for themselves. The work is intensely interesting from cover to cover, despite the fact that the work of Lord Kelvin was far in advance of the majority of his fellow men. The reader is brought into intimate association with the young man who struggled to the foreground in his college days, who in his very earliest days as a scientist did much to bring the theories of Joule into prominence, who as the foremost electrician in the world was the master mind in the problem of bridging the Atlantic Ocean by cable, and whose later work in the study of tides, mathematical astronomy, physics and electricity carried him far above any other man of his times. The two volumes are handsomely bound, and should make a most important and attractive addition to the library of the layman as well as the technical man.

CEMENT AND HOW TO USE IT. Edited under the supervision of William A. Radford. Chicago: The Radford Architectural Company, 1910. 8vo. 369 pp. Price, \$1.00.

The present volume has been prepared in response to numerous requests for a treatise written in simple non-technical English which will serve the purpose of a plain working guide to the selection of cements and aggregates, the purpose of proportioning and mixing concretes, and the rules obtaining in the many forms of construction to which it has shown itself so well adapted. Throughout the volume constant emphasis is laid on the product as distinguished from the theoretical mode of treatment. On account of the intimate relation which cement and concrete now bear to every branch of construction, the present volume will be of great practical value not only to concrete workers but to all other craftsmen engaged in the various trades of the building industry, such as carpenters, steel workers, plumbers, engineers, and others.

FOOLISH QUESTIONS. By R. Goldberg. Boston: Small, Maynard & Co., 1909. 18mo.; illustrated. Price. 50 cents.

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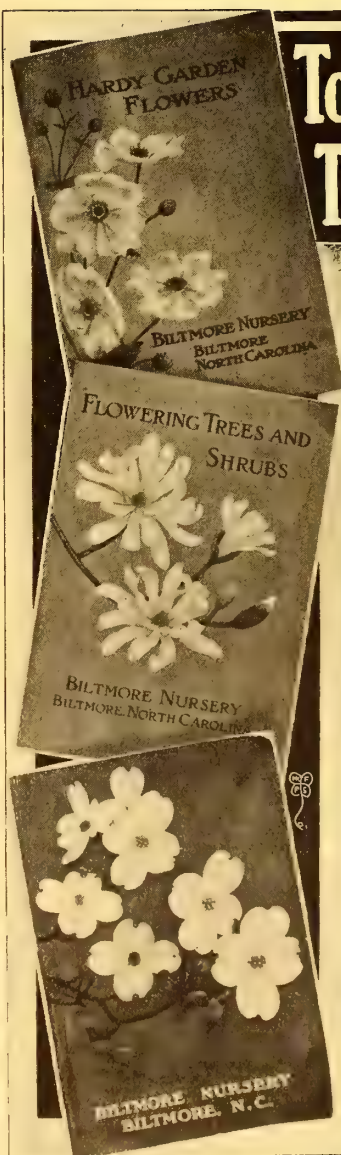
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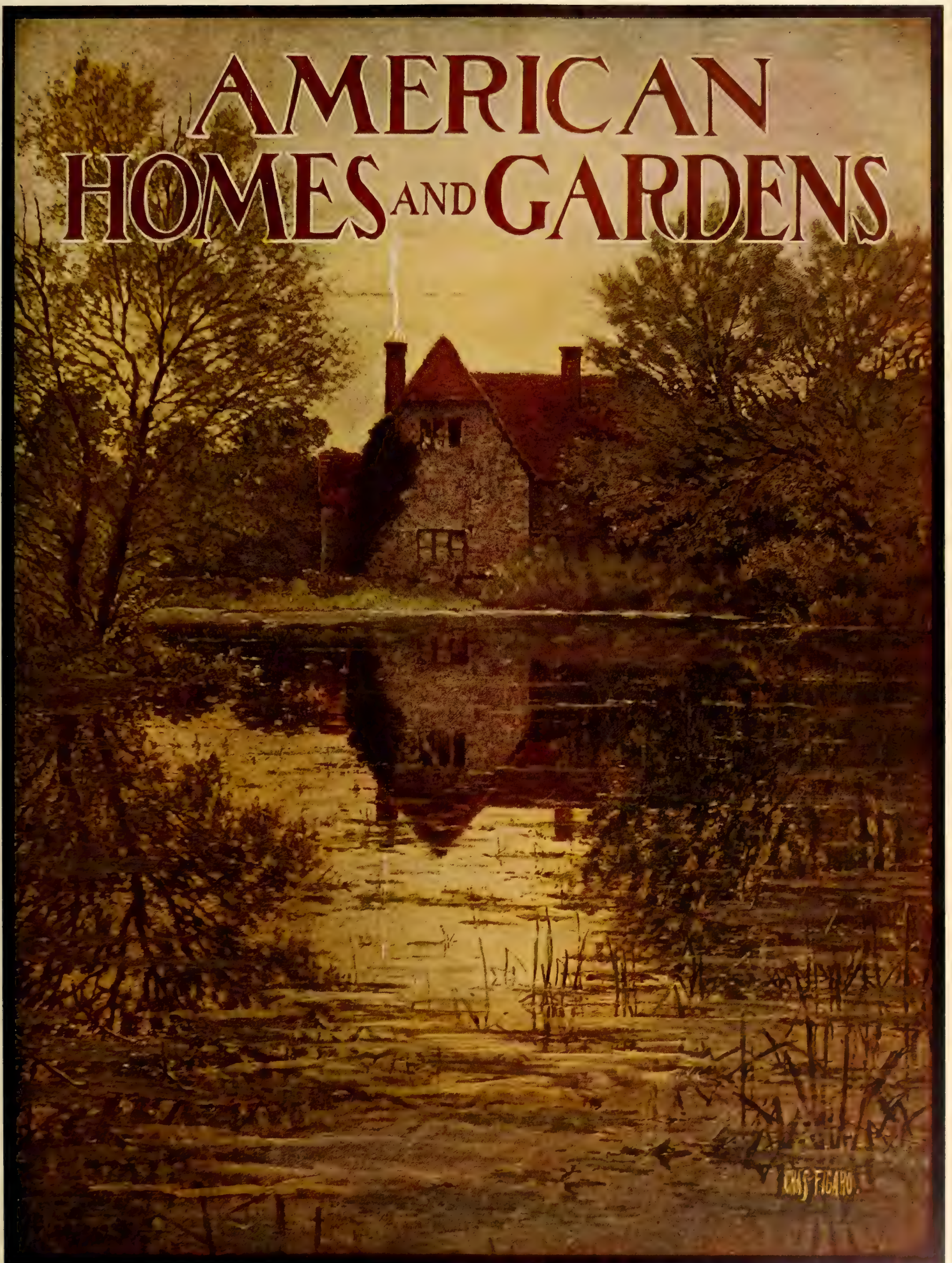
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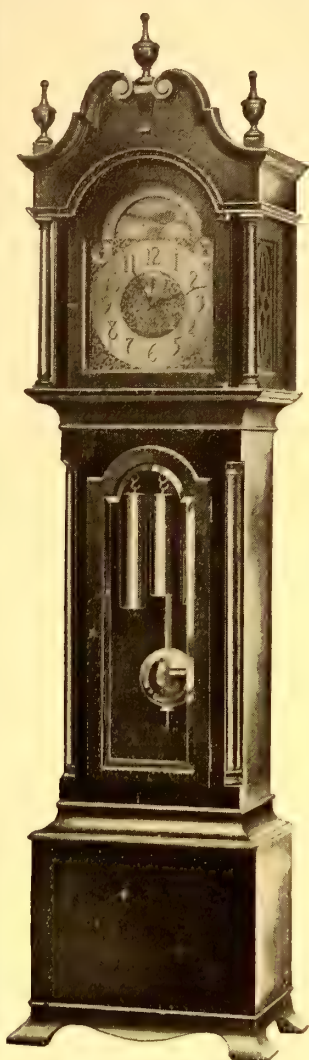
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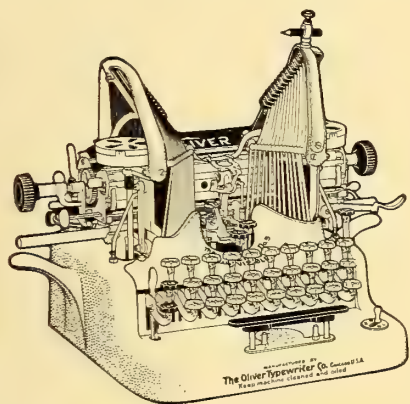
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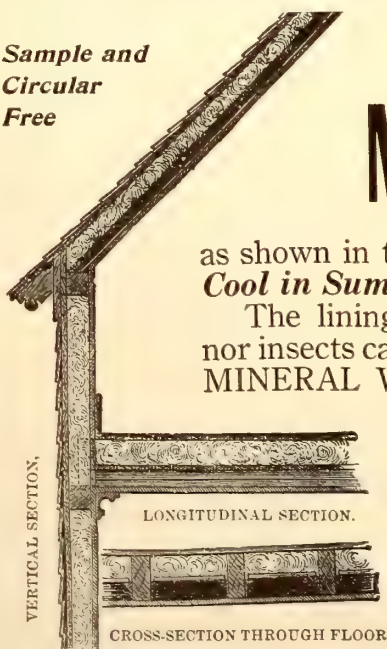
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pectation he waited for the remarkable crop he was going to produce, but the harvest showed him the danger of using cuttings not suited to his soil and climatic conditions. There are about ninety different varieties and hybrids of basket-willows that are successfully grown in Europe. In this country there are but four kinds that are yielding good returns, and only one of those is especially well suited to the lake States. Not a single variety has been found that can be grown successfully in the southern States.

The desired improvement should be brought about by continually selecting certain rods from normal stools of a variety that is most likely to yield to judicious treatment. To develop or to accentuate a specific quality which the bulk of rods are now lacking is the most important consideration for the American willow culturists. Slender, cylindrical, flexible, and tough rods are sought by the best basket makers, and so long as the American farmer is unable to raise a sufficient quantity of this sort, the manufacturers will buy their raw material in Europe. Consequently, the domestic rods will sell at a very low figure. Better strains of willows for local use will have to be developed, just as certain strains of farm crops have come to be recognized as suitable for local use. Because of the future importance of the industry and the strength of foreign competition, a rapid development in the quality of American grown rods is essential. This much-desired improvement of the basket-willow in the United States can be brought about by continually selecting cuttings from the shoots having the desired qualities. Since such strains are not as a rule susceptible to general adoption, it will be necessary to develop different ones for different localities.

In certain portions of Pennsylvania, Maryland, Ohio, and Kentucky, the American green willow is seriously affected with a willow rust which destroys the leaves prematurely, and consequently the shoots die. This disease was first discovered in Maryland and Pennsylvania, and later it appeared in Ohio, and now is reported from Kentucky. A wide-awake farmer in the last State observed that a certain strain of American green is very rarely affected by this rust. He concluded at once that this is an immune variety, which he is now successfully raising. This rust seriously affects the character and value of the rods. If the rods are not killed outright, they usually become so brittle near the top that the basket maker is unable to use them.

Farmers who wish to start a plantation of basket-willows should not buy a large number of cuttings by faith. There are nurseries springing up here and there, and the proprietors claim that they can furnish cuttings of all the best varieties known to willow culturists. The fact is that some of these nurserymen do not know the correct names of the willows they have for sale, nor do they know for what localities their varieties are best suited. Unless the farmer can buy selected cuttings from his neighbor, he is likely to be at the mercy of the dealer living at a distance, since he may not see the stock until it arrives on his farm. Although basket-willow breeding cannot be followed in the scientific sense by the farmer, selecting cuttings from the shoots on the stump and propagating them is a simple matter, and can be practiced by any farmer. Testing certain strains, continuing the best kinds, and discarding the

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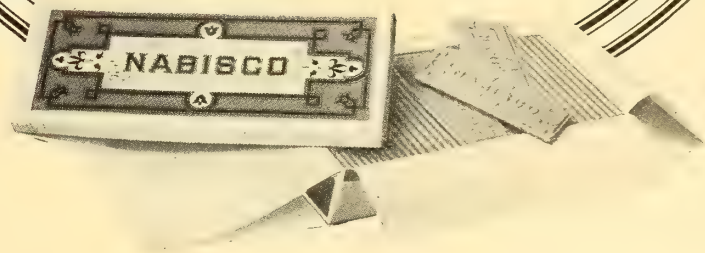
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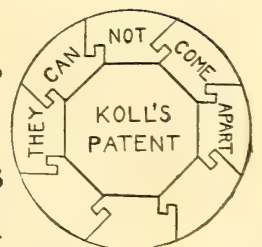
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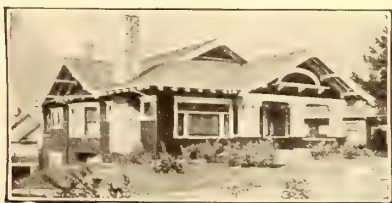
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inferior ones are still less formidable. Basket-willow growing should be a matter of sentiment, and the farmer should have a desire to see them grow under the best of care and cultivation. Unless the farmer does grow the best strains and puts his heart into the work, he is not worthy even of the meager results he does obtain.

STUDIES OF ROOT LIFE

THE experts of the Bureau of Plant Industry of the Department of Agriculture are carrying on a most valuable work in their investigation of root life. Their root experiments with plants are the outcome of a study of the problems involved in wide and shallow planting, as opposed to close, ordinary planting. In the former method, a great root development would enable the farmer to do well with very little rain; in the latter, his reliance is entirely on rain.

Experimenters have hitherto been handicapped by the absence of a device properly to study root growth, but this difficulty has been overcome by a member of the Dakota station. He dug a trench two feet wide about a block of earth in which were growing some plants, the roots of which he desired to study. When the block stood out alone quite clearly, he made a light wooden frame to fit around it and covered this with common wire poultry netting. This held the earth in place and enabled him to pierce it through with small wire rods, which were then fastened at both ends to the netting. When enough of these thin wire rods had been run through, to hold up the roots in case the earth was washed away, he covered the top of the ground with a thin plaster of Paris paste, which soon dried, holding the plants he desired to examine firmly about the base.

The subsequent stages of this process, which has been adopted by the Bureau experts, involve the washing of the earth from about the roots with soft, warm water, leaving them wholly exposed and suspended upon the wires which had been forced through the earth. It becomes easy then to lift the cage, with its plaster of Paris roof, holding the desired plants, to such a place as desired for study. Care is taken to dig the surrounding trench deep enough in the beginning to avoid the possibility of the roots being still connected with the earth below.

The root experimenters have met considerable difficulties. For one thing, the fine threadlike portions of the roots are destroyed at their extremities by the warm water washing. The threads, however, at the points where they ended, have been analyzed, and it has been found that even at this stage of the progress of the nourishment upward, the great chemical work, the taking from the soil of lime, sodium, nitrogen and the like, has been completed by the tiny filament. Somewhere, a little farther on in the soil which had been washed away, the work had been going on. It is the understanding of this process which is now desired, and which is apparently quite remote. Nevertheless, some valuable results have been already attained. Naturally, the investigations up to this time have concerned the plants most valuable to man—wheat and corn, potatoes, beans, and the like.

According to the Bureau's experts, roots seem to possess actual sentience in

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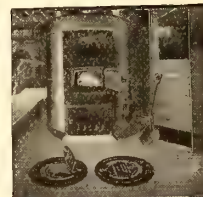
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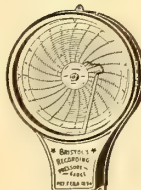
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regard to their search for water. One of the interesting results of this investigation is that science can now determine which of the plants are deep feeding, and hence which are most suitable for dry, insufficiently watered soils.

For instance, a species of wheat which had the power to dig six feet down in its search for food and moisture would be better adapted to the dry regions of the West than one that could dig but four. There are certain species of wheat that grow favorably in naturally soft, sandy soils, but whose roots are too weak to dig through heavy soils. This cannot be determined by simply pulling up a stalk. It requires such an investigation as this instituted by the government.

Another thing which has been proved by the investigation of the root development is why land laid down to grass is made better. It has long been known that when the wild prairie is first broken the soil is mellow, moist, and rich, producing abundant crops. After a few years of continuous cultivation the physical condition of the soil changes. The soil grains become finer, which is bad; the soil becomes more compact and heavier to handle; it dries out more quickly than it used to do; it balks worse, and often turns over in hard clods when plowed. This compact texture makes it difficult for the young roots of plants to develop properly. It also causes an insufficient supply of air in the soil and makes it sticky when wet, dusty when dry, so that when loosened by the plow it is easily blown away. This is because it lacks roots of the right sort—stout, hardy, deep-reaching roots.

A little table of soil conditions has been prepared for regions in which these root investigations will be of special value; which will prove interesting and suggestive, because they may be modified to suit almost any region. It contains the fact that an acre of soil to the depth of one foot is estimated to weigh 3,225,000 pounds and then tabulates the facts, namely, that within the first foot of soil there are found: 6,772 pounds of phosphoric acid, 32,897 pounds of potash, 47,407 pounds of lime. Thus, within the reach of nearly every plant is found four times this sum per acre, for nearly all plants reach four feet downward with their roots. It is figured that this means enough phosphoric acid to supply the wants of 1,400 annual wheat crops and of the other constituents even more. The relation of this to the root investigations lies in the fact that no root shall be deprived for lack of ample plowing of free search among these chemicals for what it needs.

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The average man does not realize that through the action of the wind, rain and sun, the top soil is often dried out or heaved up so that the grass roots are pulled away from the moist life-giving earth beneath, and consequently die out very quickly. The frequent use of a lawn roller will remedy this, and often is of far more importance than either a fertile soil or a high grade seed.



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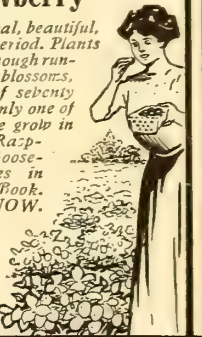
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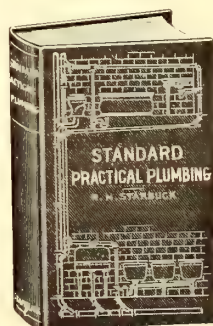
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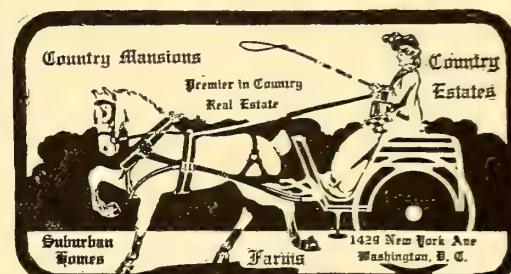
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THE EXHIBITION OF THE ARCHITECTURAL LEAGUE

THE twenty-sixth annual exhibition of the Architectural League, of New York, is now being held in the Fine Arts Building.

It is undoubtedly one of the largest and best displays that the League has made in some years, and is one that will appeal to all those who are interested in architecture, mural painting and sculpture.

A conspicuous feature of the present exhibition is the presentation of a more carefully selected, and a larger number of designs of domestic architecture than has hitherto been given at some of the expositions. The committee in charge of this part of the program is to be congratulated on its wiser and more comprehensive selections, as shown in the large number of creditable and interesting delineations, among which are the Bryant Memorial, by Grosvenor Atterbury; the great buildings of the University of Minneapolis, by Cass Gilbert; and the Robert Fulton memorial water gate, by H. Van Buren McGonigle. A country house of distinctive character is the one built for James Stillman, Esq., at Pocantico Hills. It is original in conception and is the work of Messrs. Albro and Linderberg. A plan of monumental proportions is the one prepared by Grosvenor Atterbury for the Sage Foundation Homes Company at Forest Hill, L. I. One has no idea of the magnitude of this work until he has studied very carefully, the proposed scheme outlined by Mr. Atterbury.

One of the most unusual mural paintings is the achievement of Barry Faulkner of the Academy of Rome.

It represents a group of heroes of antiquity, standing in glittering accoutrements. It is startling in conception, and occupies the place of honor assigned to it in the gallery.

The decoration of a swimming tank of an athletic club, at Pittsburg, by Albert Herter, representing youths in the pool or emerging from it is, perhaps, of more popular interest than any of the paintings shown in the collection.

The fine decorations by Edwin H. Blashfield are most excellent, and the delightful pictures of the Dutch Colonial scenes by Howard Pyle, for the embellishment of the Hudson County Court House, are admirable on account of their simple and artistic treatments.

No true Princeton man can fail to receive a fervent thrill when he observes the two great bronze tigers which have been designed by A. Phimister Proctor, for the entrance to Nassau Hall at Princeton University.

These superb beasts are the gift of the

class of '79, and are, perhaps, the most striking examples of sculpture shown in the gallery.

The colossal seated figure, by Charles Keck, for the Allegheny County Soldiers' Monument, is one of dignity and repose, and there is also some good work in sculpture by Daniel C. French and Herbert Adams.

A GOVERNMENTAL COMPETITION

IN the history of architecture there has been no more important competition than that recently held by the United States Government for the selection of an architect for each of the three proposed buildings for the Departments of State, Justice, and Commerce and Labor. There have been one or two competitions, as for example the International competition held some ten or fifteen years ago for a plan for the University of California, where a greater expenditure was contemplated, but we believe that there has been none in which the importance of the buildings, of their site, and of the expenditure involved together, compared with this. The three buildings are to be placed along the east side of the "White Lot," the open park which extends between the grounds of the White House and of the Washington Monument, and will extend from Pennsylvania Avenue to the Mall. Of the three buildings proposed, that for the Department of Commerce and Labor is considerably the largest. It is to be something over five hundred feet in length and about two hundred and seventy-five feet in depth. This building is to be placed in the center of the group, with the Department of Justice building to the north and with a frontage on Pennsylvania Avenue and the Department of State to the south with a frontage upon the Mall.

The total appropriation authorized for the three buildings is something over eight million dollars, divided in the proportion of \$3,650,000 for the Department of Commerce and Labor, \$2,200,000 for the Department of State, and \$1,900,000 for the Department of Justice. A special commission, composed of the President, the Secretary of the Treasury, and the Secretaries of the respective Departments, was created by Congress to obtain plans and to carry on the construction of the buildings. This Commission decided to institute simultaneously three independent, but exclusive, competitions—that is to say, no architect to be invited to compete for more than one building, and the list of competitors to be so general as to include nearly all of the most prominent architects of the country. Indeed, so comprehensive was the list of competitors that there remained few to be called upon later to serve as jurors in the

competition. Some sixty architects in all were invited to compete, Messrs. D. H. Burnham Company, Carrere & Hastings, and E. V. Seeler having declined the invitation, so that there were finally submitted nineteen sets of drawings in each competition. As each of these sets included six to eight sheets of drawings, each of which was approximately four by five feet in size, the amount of work involved was enormous. A large percentage of these drawings came from New York, and it is said that Pennsylvania Avenue presented an amusing sight upon the arrival of the midnight train upon December 30th. As the drawings were too large to be conveniently carried, except upon the front seat of a taxicab, the trip from the Pennsylvania depot to the Treasury Department must have resembled a parade of automobile sandwich men.

An interesting question developed early in the undertaking upon the decision to have three independent competitions. There were three buildings to be built, which must in the end be designed in harmony, and some discussion ensued as to the advisability of having the jurors of the three competitions consult or inspect the drawings submitted in the other competitions before making a decision in their own. It was finally and wisely decided that the competitions should be for the selection of an architect, and that the designers of the three buildings should subsequently cooperate, and the designs be modified and studied together to the fullest extent, in order that the three buildings as a group should form a harmonious composition.

The decisions of the juries were announced on January 6th, as follows:

Winner, Commerce and Labor, York & Sawyer; State, Arnold Brunner; Justice, Donn Barber.

First Honorable Mention, Commerce and Labor, Tracy, Swartwout & Litchfield; State, J. Gamble Rogers; Justice, Cass Gilbert.

Second Honorable Mention, Commerce and Labor, J. H. Friedlander; State, Warren & Wetmore; Justice, Percy Griffin.

Third Honorable Mention, Commerce and Labor, Geo. B. Post and Sons; State, H. V. B. McGonigle; Justice, Parker & Thomas.

The preliminary drawings are now being exhibited at the Fine Arts Building in New York city. It is proposed by the committee to hold an exhibition of the 57 sets of drawings which were submitted for the competition some time in the near future.

A CORRECTION

An error was made in the February issue of *AMERICAN HOMES AND GARDENS* by announcing that Mr. J. R. Cromwell was the architect of Mr. R. R. Colgate's residence at Sharon, Conn.

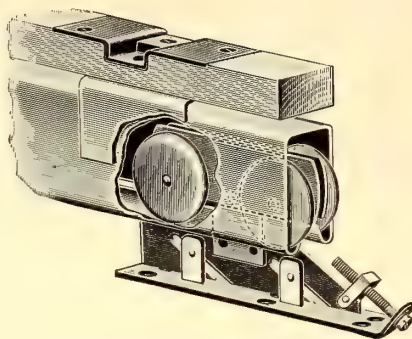
Mr. J. William Cromwell, Jr., of New York city, was the architect to whom credit should have been given.

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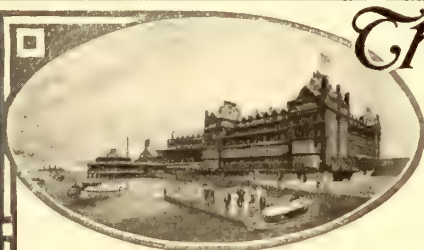
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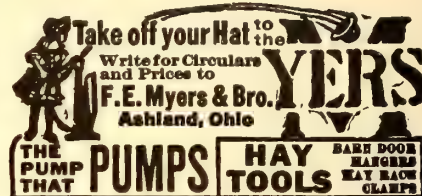
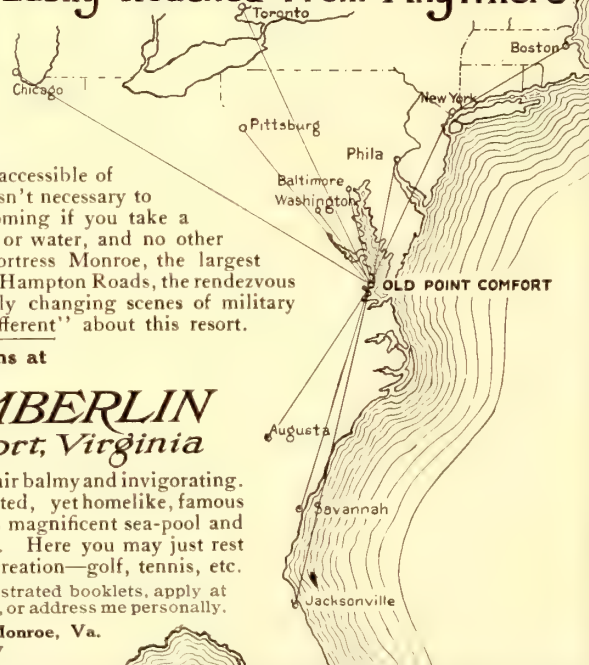
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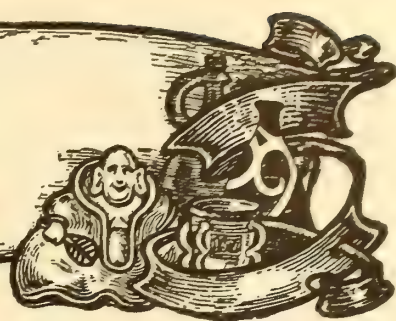
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American Homes and Gardens for April



A Country House

The opening article for this issue will be the country house of A. Lithgow Devens, Esq., at Manchester, Mass. A competent paper has been prepared by Francis Durando Nichols, which is illustrated by many fine engravings. They show exterior and interior views, and also the grounds around the estate. It is a house worth knowing something about.

Garden Notes

"Critical Notes on Typical Planting Schemes" is an instructive article written by Charles Downing Lay for this issue. Mr. Lay, in the same publication, concludes his Planting Table of the Best Perennials, from the March number of AMERICAN HOMES AND GARDENS.

Helps for the Housewife

Phoebe Wescott Humphreys, who is not unknown to the readers of this magazine, will take up a department entitled "Helps for the Housewife." Mrs. Humphreys' paper for this issue will be devoted to the making and canning of preserves. This subject is one that will be of interest to all housekeepers, and it contains many helpful and timely recipes.

A Concrete City by the Sea

Concrete is by no means a new material, for it has been used from the time of the ancient Romans. An interesting and instructive article has been contributed by John F. Springer, which deals with this material in its application to modern residential uses. It is handsomely illustrated by numerous engravings showing many houses of concrete which have been recently built. The exterior and interior views picture a number of modern houses, and with the diagram plans they offer many suggestions for the home builder.

Furniture of Our Forefathers

Perhaps to the lay reader the cleverest classification of the furniture of the Eighteenth Century would be that of the curve and the straight line. These styles came in the late Georgian period. Esther Singleton has prepared an excellent paper on this subject, which concludes her series of articles on the Furniture of Our Forefathers which appeared in the February and the March issues of AMERICAN HOMES AND GARDENS.

Suggestions for Darning

The immense popularity of all forms of darning owes its development to the way in which it adapts itself to all kinds of decorative treatment. An illustrated paper written by Mabel Tuke Priestman, shows some of the designs along the lines of simple broad effects which are so much desired to-day in all forms of needle work.

The Japanese Garden in America

The ever-increasing demand for novelty in the ornamentation of country-seats, in late years has led to

pleasing results as typified in the reproduction of the Oriental garden. An interesting paper prepared by Phoebe Wescott Humphreys, presents the fact that while a few years since there was not a Japanese garden constructed upon true Oriental principles to be found on any of the American country-seats, to-day there are many gardens of this character which have been laid out under the directions of competent Japanese craftsmen. The article is profusely illustrated, and is one that will be of service to those interested.

A Novel Rain-Water Collector

Owing to the increasing installation of water works, rain-water collectors, which once were so much in favor, in a measure have been neglected. Mr. Alfred Gradenwitz, has prepared an interesting paper with illustrations of some of the devices which can still be used with satisfaction. These rain-water collectors are specially well adapted for use in country places where there is no water works established.

The Sitting Hen and Her Management

The season of the year has now arrived when the consideration of the sitting hen should be taken up for study. Ida D. Bennett has prepared a paper on the subject and tells in a pleasing way how to manage the setting of a hen, which ought to be of interest to the amateur who is thinking of developing the care of the mother and the raising of her chicks.

Wild Flowers Worth Growing

In your rambles through the woods when the ground is carpeted with spring flowers, did you ever think of the possibilities of transplanting some of these flowers to your garden? Nathaniel S. Green has prepared an excellent paper on the subject, and tells in a practical way how wild flowers can be transplanted and cultivated with excellent results.

Artistic Novelties for the Easter Table

The attractiveness of every table, whether set for luncheon, dinner or parties, may be increased by the addition of timely centerpieces and favors, and the enjoyment of such an occasion is sure to be greater if the individual favors bespeak the characteristics or pet hobbies of the guests. May L. Schryver has prepared an article on how to purchase the necessary favors, or how to work them. The article is profusely illustrated by many fine engravings, showing some exceptionally good designs for table decorations, and are specially well adapted to children's parties.

Home-Made Pottery—III

W. P. Jarvis presents his third paper on the making of pottery in the home. He tells in a pleasing way how it may be done, and shows by illustrations the results accomplished.



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The Approach to an old Pennsylvania Homestead

AMERICAN HOMES AND GARDENS



Volume VIII

March, 1911

Number 3

A Woman's Two-Year-Old Hardy Garden from Seeds

By Adaline Thomson.



EARLY in the spring two years ago, I decided to have a real old fashioned garden of perennial plants I had dreamed of all my life. The barn—which at this time was within twenty-five feet of the house—was to be moved the following year back to the extreme end of our suburban lot, and the vacant space would offer an ideal location for my garden.

After consulting numerous catalogues, I made the discovery that to have half of the plants desired, meant an outlay of more money than would be necessary. Now, it

was important that the man of the house should not be discouraged at the very beginning of my venture, for within that garden of my hopes was to be a sun-dial and a pergola: The decision was made: I would raise my hardy plants from seeds!

At once, seeds were ordered of all the hardy plants to be found in the catalogues, and mixed packets were chosen to insure a variety of color. Almost two dollars was the sum invested on these various varieties.

The last of March there was made for me a hot bed; old lumber being used for the frame and a storm window for the sash. After the usual directions were followed as



A resting place in one corner of the pergola

to its treatment, all of the seeds were sown, two inches apart, and each variety was plainly marked.

There were delphiniums, columbines, primroses, pyrethrums, achilleas, platycodons, hibiscus, monkshood, gailardias, coreopsis, Shasta daisies, dianthus, veronicas, rockets, chrysanthemums, penstemons, clovepinks, arabiss, sweet Williams, foxgloves, Oriental poppies, Iceland poppies, forget-me-nots, holly-hocks, canterbury-bells, lobelias, garden heliotrope, ænotheras, boltonias, cornflowered asters, armerias, and agrostemma. A goodly company indeed!

Within two weeks all of the seeds had germinated, and during the following weeks it may be safely said that never were seedlings so carefully watered and cared for as were these.

By June the plants had become too large for their quarters in the hot bed, and they were then transplanted to the kitchen garden, to grow and to be cultivated in between the rows of vegetables. At the appearance of Jack Frost in the fall, the plants were finally given a close covering of leaves and old litter. That first summer's work was finished. Spring alone would tell whether the experiment had been worth while.

The very spirit of summer, however, was brought into those winter evenings following, for then it was—as the fire burned cheerily on the hearth—that the real garden was planned. The master of the house was pressed into service for this important work, and he gradually formulated a most practical plan, (see plan) drawing it upon paper true to scale in every detail.

Again, almost unaware, spring slipped in upon us. In April, when the litter was removed, it was a joy to find that all of the precious perennials were alive and looking as fresh and green as though just planted there.

I was singing with the robins, for the experiment had succeeded! I had between three and four hundred hardy year-old-plants, which were as good as any to be found in the nursery. There could be no set-back from change of climate, or of locality, the cost had been small, and the labor involved but a wonderful pleasure. Yet, there were five long months of waiting before the barn could be moved and the garden plotted. After all, would my expectations be realized, and the whole experiment be a success?

That second summer I kept faithfully a garden diary,

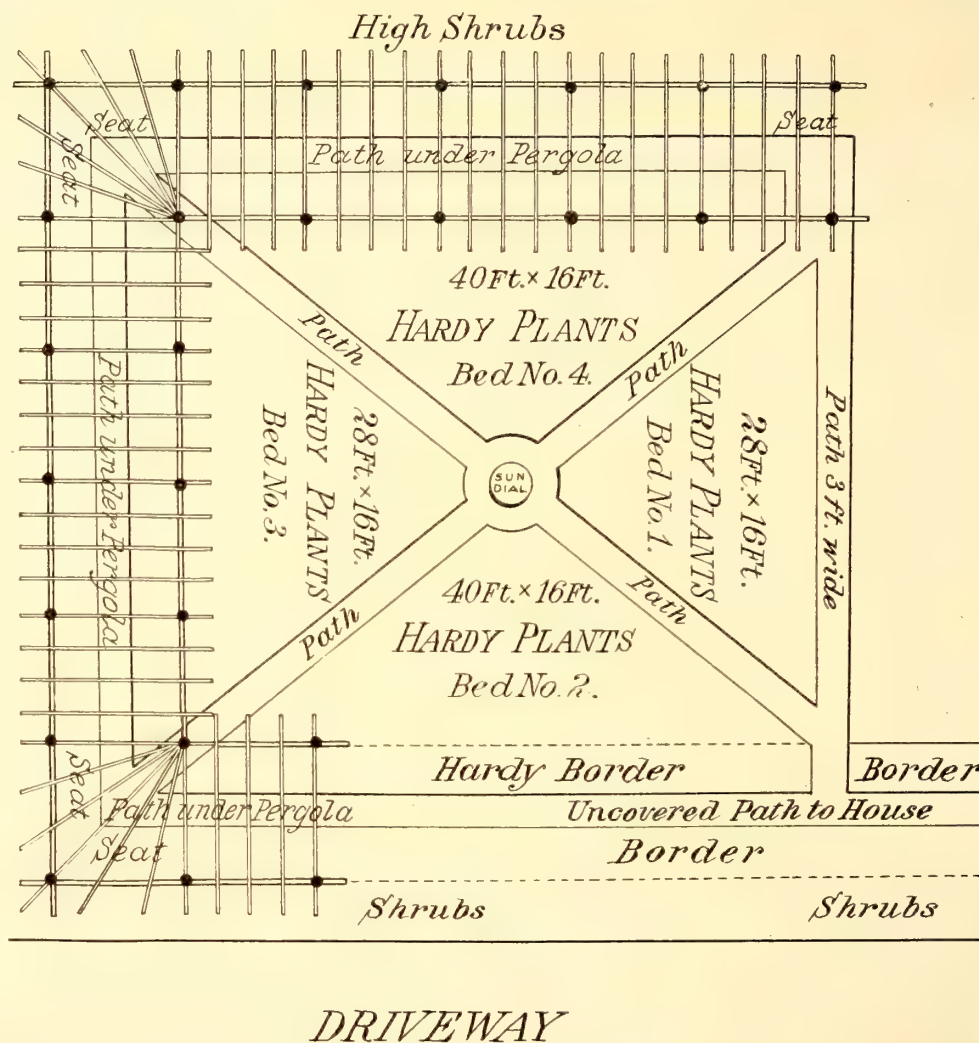
noting the habits, height, color, time and length of bloom of each plant and by autumn this contained such a practical fund of knowledge that I was enabled to work out a successive harmonious flowering scheme, and to definitely plan upon paper a place for each individual plant.

The last week in August the barn was moved! Within a week the vacant space was fertilized, plowed, harrowed and plotted true to the original drawing, and within a fortnight every perennial was growing in its own especial place in the garden. On the home lot were old clumps of peonies, iris, lemon lilies, bleeding-hearts, phlox, and lilies-of-the-valley, which were divided, and then were used in combination with the other plants, while violets, blood-root, hepaticas, blue-bells, Dutchmans-breeches, black-eyed Susans, lobelias, lavender phlox and hardy asters—brought from neighboring woods—in the spring time, would blossom there, in among their more cultivated sisters.

For the construction of the pergola we were able to secure great logs, retaining still the shaggy bark of the forest trees and measuring about twelve inches in diameter. Before the ground froze, every hole was dug for the uprights of the pergola, and beside them were planted hardy vines, which eventually would cover its roof.

With the approach of winter these vines, together with the perennials, were given the same careful protection as the previous year, and again I waited the coming of spring.

Very early in the spring the pergola was built. The whole work was successfully done, and was



The plan of the garden

accomplished entirely by unskilled labor, though this was made possible only by the help of that detailed plan. The finished pergola was not only extremely artistic in effect, but it had given tone and dignity to the whole garden, and at the same time served as a striking instance of the indebtedness of form to beauty which the adoption of this accessory makes to the grounds.

The hardest part of the work about the pergola was done during the winter months, for in this time all of the logs were sawed and split into the necessary dimensions. In the spring there remained nothing but the placing and fitting together of the logs. (See plan.)

With the coming of June the garden fairly leaped into a blaze of rioting color! Dazzling blood-red, black-blotched Oriental poppies, flaunted in among the white of early phlox—(Miss Lingard)—and tall stately foxgloves—pink, white and purple—sweet Williams, delicate

garden pinks, sky-blue delphiniums and spider-wort, dark purple canterbury bells, scarlet lychnis, tender blue bells, white achilleas, sweet rockets, and late deep yellow columbines, carried light into every part of the garden.

July scattered against the picturesque green vined pergola, wonderful blossoms of purple and white clematis, and sweet scented honeysuckles. Tall hollyhocks lifted

high their many hued blossoms, while white Shasta daisies, early monkshood, feathery campion, penstemon, coreopsis, and cornflower asters, vied together for supremacy.

August brought the deep orange and yellow of golden-glow, coreopsis, and gaillardia, the blue of veronica, the white of the day lily, and the countless shades of perennial phlox, while the perogla glowed scarlet and purple and yellow with bright blossoms of nasturtiums and morning glory vines.

The autumn wove garlands of starry-eyed asters and golden rod, while hibiscus, oxeyed daisies, armerias, crimson lobelias, tall monkshood and larkspurs, and sweet Japanese anemone's blossomed luxuriantly, giving no sign that winter was near.

Now the warm sunshine had begun to coax the perennials from their hiding places, for here and there over the garden could be seen green shoots pushing their way



The new garden occupying the old site of the barn

One day in late March, as though to silence my questionings, the hepaticas, scattered along the garden paths, suddenly burst into glorious pink, blue and white blossoms,

and following closely the blood-root with white petals clothing the bare garden with beauty.

Now, falling April showers called every growing thing to life and energy, and one after another of the familiar plants rose in their places, stronger and thriftier than before.

March flowers gave place to April blossoms, hardy primroses changing the garden to tints of crimson, yellow, rose, and saffron. Snow white albid, lavender sweet Williams, quaint Dutchman-breeches, Jacob's-ladder, and delicate shooting-star, passed on, in quick suc-

cession, each blossom bringing its own special message of beauty. Iceland poppies ushered in the month of May, and pure lilies of the valley breathed out their sweet perfume.

Garden Calendar

March	Hepaticas, Blood-root.
April	Primroses, Arabiss albid, Wild phlox, Dutchmans-breeches, Jacobs-ladder, Shooting-stars.
May	Iceland poppies, Peonies, Lemon lilies, For-get-me-nots, Pyrethrums, Bleeding-hearts, Heliotrope, Columbines, Violets, Irises, Lilies-of-the-Valley.
June	Oriental poppies, Miss Lingard phlox, Fox-gloves, Sweet-William, Pinks, Delphiniums, Spider-wort, Lychnis, Blue-bells, Achillea, Rocket, Canterbury-bells, Late yellow columbines.
July	Hollyhocks, Shasta-daisies, Campion, Penstemon, Monkshood, Corn-flower-asters, Monarda, Coreopsis.
August	Gaillardia, Golden-glow, Coreopsis, Veronica, Day-lily, Perennial phlox, Agrostemma.
September	Hardy asters, Golden-rod, Hybiseus, Oxeyed-daisies, Liatris, Lobelias, Monkshood, Larkspurs, Japanese Anemones.
October	Gaillardias, Coreopsis, Delphiniums, Monkshood, Japanese Anemones, Chrysanthemums.



The rear yard before the barn was moved from it



Pink, white and purple foxgloves, sweet Williams and garden pinks

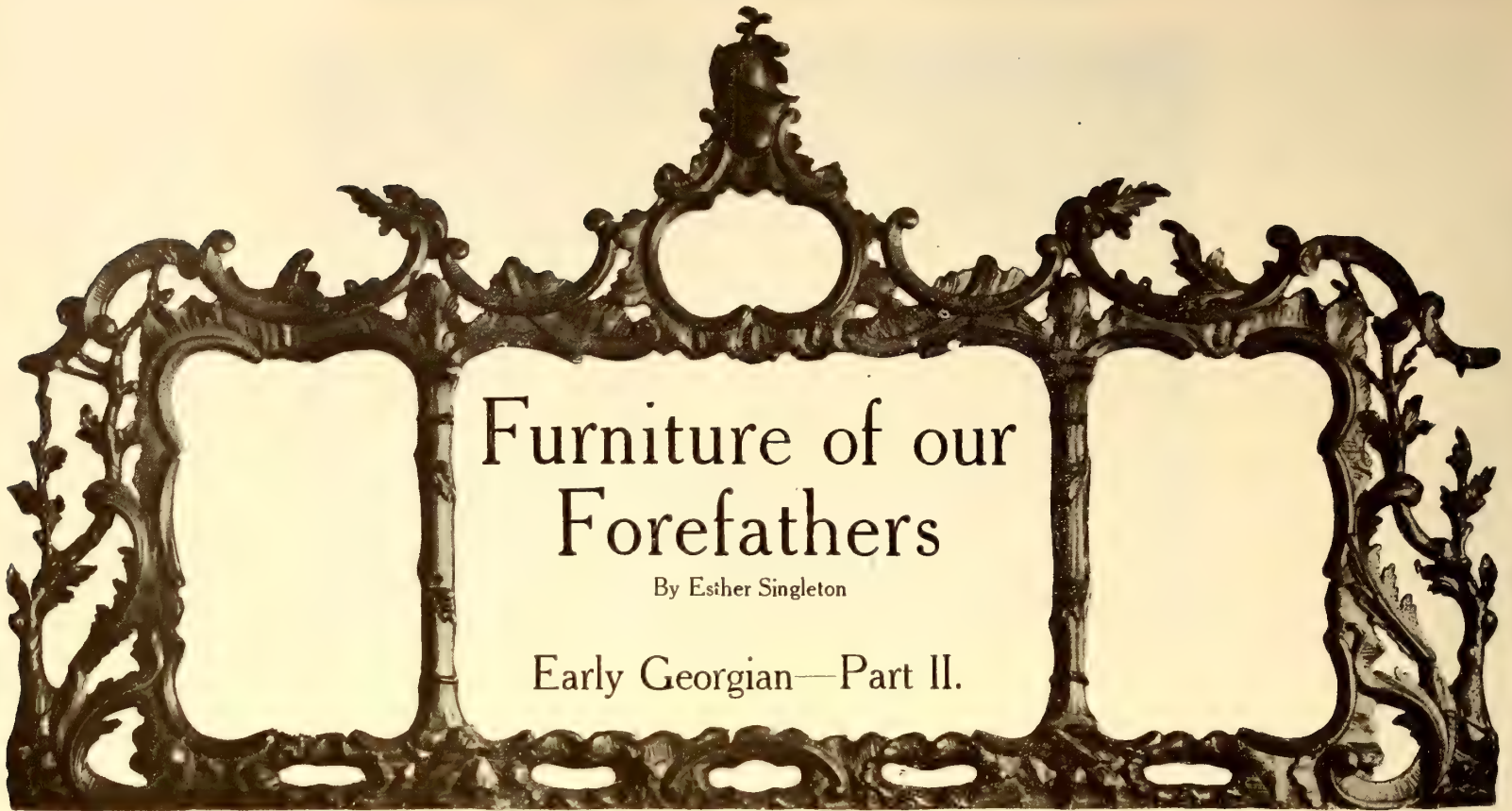


Fig. 1—A mantel mirror frame



IN England, the first part of the Eighteenth Century was dominated by the Anglo-Dutch taste, generally called Queen Anne. The general forms of Queen Anne furniture lasted till late in the century. For instance, the chair shown in Fig. 7 is of Dutch form, but has been subjected to the carving of later times. The card-table, Fig. 11, is also of Anglo-Dutch form, and is a model that was introduced at an early period, and lasted until late in the century.

At such a table, which has never gone out of use, we picture ladies in wide-spreading hoops of brocade and with enormous head-dresses intent upon their cards, with the flames of the candles that are standing at each of the four corners and illuminating their rouged faces and causing the jewels to sparkle. At such a table Belinda probably played her famous game of ombre, when she led to war her sable Matadores and "Spadillio first, unconquerable Lord, led off two captive Trumps and swept the Board" before she lost her beautiful ringlet.

The name of Chippendale has been so carelessly used to designate a whole period of furniture, including many designs and styles dating from the early Eighteenth Century to the dawn of the Nineteenth, that many persons have a very hazy idea of what "Chippendale furniture" really is; and much confusion has arisen because the greater number of the pieces that were known to have been designed by Chippendale, or to have come from his workshop, differ from the designs that appear in the *Gentleman's and Cabinet-Maker's Director*, the first edition of which was published in 1754, and the last in 1762.

Another mystery that surrounded the name of Thomas Chippendale was his singularly long life and his great productivity; but recently the curtain has been lifted and research has revealed that there were three Thomas Chippendales. The first Thomas, a carver and cabinet-maker of Worcester, removed to London about 1727; but he was eclipsed by his son Thomas, the great Chippendale, who became of such importance as a designer, cabinet-maker, carver and general arbiter of taste that he was admitted to the Society of Arts, that included such celebrities as Sir Joshua Reynolds, Horace Walpole, David Garrick

and Edward Gibbon. In 1753 Chippendale was settled in St. Martin's Lane, and in the next year he published the famous book of designs which exhibits the various styles in vogue during the middle of the Eighteenth Century and shows us what kind of furniture Chippendale made and preferred to make. Here we have two hundred plates "being a large collection of the most elegant and useful designs of Household Furniture in the most Fashionable Taste, including a great variety of Chairs, Sofas, Beds and Couches; China-Tables, Dressing-Tables, Shaving-Tables, Bason-Stands and Tea-Kettle Stands; Frames for Marble Slabs, Bureau-Dressing-Tables and Commodes; Writing-Tables and Library-Tables; Library Bookcases, Organ Cases for Private Rooms or Churches; Desks and Bookcases; Dressing and Writing Tables with Bookcases; Toilets, Cabinets and Clothes Presses; China-Cases, China-shelves and Bookshelves; Candle-Stands, Terms for Busts, Stands for China Jars and Pedestals; Cisterns for Water; Lanthorns and Chandeliers; Fire-Screens, Brackets and Clock-Cases, Pier-Glasses and Table-Frames; Girandoles, Chimney-Pieces and Picture-Frames; Stove-Grates; Borders, Frets, Chinese Railing and Brass-Work for Furniture and other Ornaments."

Chippendale's tastes led him far away from the styles and fashions of the past, though he made furniture to order after old models still in vogue. The Anglo-Dutch style, which is conspicuously absent from his book, died hard, and the chair shown in Fig. 7, frequently termed a typical "Chippendale chair," with the pierced and carved back, cabriole legs and ball-and-claw feet, does not appear in his book. On the other hand, Figs. 8, 9, 10, 12, 13 and 14 are taken from Chippendale models, with modifications. Fig. 8 shows the graceful bow-shaped top, known long before Chippendale's time, and the carved splat, Fig. 9, exhibits another but somewhat similar pattern in the splat, but the whole back is differently proportioned and the legs are in the French style. Fig. 10 is a mixture of Gothic and of "Chinese." The splat is Gothic, combined with the French C-shaped scroll, while the carving on the side-rails and legs is Chinese. Fig. 12 is Gothic and Chinese, and the legs are braced by stretchers; and Fig. 14 is the fantastic "Ribband Back;" and Fig. 13 is a variety of the "four

back" or "ladder back," of which Chippendale was so fond. In his book the model appears with square legs as in the "ladder-back" settee, shown in Fig. 3.

Of all varieties of chair, Chippendale's favorite was the "Ribband Back," in which the twisted ribbon forms the chief motive of decoration. It is open tied in a bow form. The dimensions of this chair he gave as follows: Length of front leg, 19 inches; rail of seat (upholstered with small nails touching one another), $22\frac{3}{4}$ inches; seat, 18 inches square, and the back from seat to top rail, 22 or 23 inches high. "If the seats are covered with red morocco," Chippendale adds, "they will have a fine effect."

In not one of Chippendale's drawings does the ball-and-claw foot appear. The nearest approach to it is a lion's claw or paw, on which the foot of chair, Fig. 8, is patterned. He was fond of the straight, square leg, perhaps, because he wanted all the interest concentrated on the elaborate carving or graceful tracery of the back. This straight and square leg was often carved with Gothic or Chinese fret-work, as in Fig. 10 and Fig. 12, or a *chûte* of husks. We also find the cabriole leg ending in a kind of scroll (Fig. 13 and Fig. 14), on which is a leg formed of a bunch of reeds wrapped with a ribbon; a leg on which a dragon is crawling, carved in high relief, a dolphin's head used for the foot while his tail is carved on the cabriole curve, and a leg resting upon a shell.

There were three styles in vogue in Chippendale's time—the French, which included the Regency and the more elaborate Louis XV; the Gothic; and the Chinese. All three of these are represented in Chippendale's design, with equal enthusiasm. Sometimes they are curiously combined.

In 1756, two years after the appearance of Chippendale book, Isaac Ware, complaining of "the degeneracy of modern taste," says: "It is our misfortune to see at this time an unmeaning scrawl of C's inverted, turned and hooked together, take the place of Greek and Roman elegance, even in our most expensive decorations, and it is usual because it is French; and fashion commands that whatever is French is to be admired as fine."

Of the Gothic taste he wrote in the same year: "The Gothic is distinguished from the antique architecture by its ornaments being whimsical and its profiles incorrect. The inventors of it probably thought they exceeded the Grecian method, and some of late have seemed, by their fondness for Gothic edifices, to be of the same opinion; but this was but a caprice, and, to the credit of our taste, is going out of fashion again as hastily as it came in."

One of the leaders of the French and Gothic style in England was Batty Langley, many of whose designs for buffets, chimney-pieces, cisterns, clocks, and table-frames are "after the French manner" and whose *Gothic Architecture*, published in 1742, had great influence in establishing the fashionable interest in Gothic. It was in 1750 that Walpole, having got possession of *Strawberry Hill*, wrote:

"I am going to build a little Gothic castle." As for the Chinese taste, it had long been a craze. Excessive use of Chinese subjects and monkeys formed a characteristic feature of the Regency style, and Chinese designs had been produced by Watteau, Aubert, Fraisse, La Joûe, and other French designers and artists; while in England Sir William Chambers, Johnson, Edwards and Darly, Halfpenny and others published books of design showing Chinese temples, arches, garden-seats, bridges, etc.

Chippendale's pieces in the French, Gothic or Chinese taste, were, therefore, neither caprices nor innovations. Moreover, he did not hesitate to borrow, or steal, directly from Meisssonier. "A Design for a Sofa for a Grand Apartment" appears among Meisssonier's designs as a *canapé* for the Grand Marshal of Poland, dated 1735. Chippendale added a little more carving. He also added

a little extra carving to a chair designed by Meisssonier in 1735 for Madame de Brezenval, which he quietly appropriates and labels "French chair." Meisssonier's books of ornaments were also drawn upon by Chippendale, for icicles, dripping water, cascades, swags of bell-flowers and laurel, shell-work, fountains, balustrades, acanthus leaves, fruits, animals, birds, human beings, feathers, vegetables, fragmentary peristyle effects and spiky ornaments. So familiar is he with this great French designer that there is some basis to the theory that Matthias Darly, who engraved the plates for Chippendale's book and who lived in Paris, was really the author of the designs and Chippendale the cabinet-maker and carver only. Be this as it may, what passes under the name of the Chippendale style is a fantastic combination and jumble of the French, Gothic and Chinese fancies of the period, to which Chippendale's contribution was excessive carving. He seems to have cared more for carving and ornamentation than for form; and elaborate as some of his carvings are, he constantly suggests that his pieces can be improved as to "beauty and enrichment"; and he often recommends additional ornaments. Chippendale had very



Fig. 2—Mirror frame of the inverted curve decorated with leaves and flowers

little affection for either mahogany, or walnut, these woods were far too sombre, and so he preferred furniture made of soft wood "japanned or painted" in bright colors and with all the ornamental parts heavily gilt. He was also fond of rosewood; but brightened it with gilt ornaments. Chippendale had also a great love of upholstery and gave explicit directions with regard to the looping of curtains, the making of rosettes and arrangement of the draperies for dressing-tables. Some of his beds are most elaborate; and the cornices are supplied with an intricate arrangement of laths and pulleys by which the curtains are drawn up, and, as the curtains and valances are required to fall in symmetrical festoons and loops, Chippendale enters into detailed descriptions of the mechanical devices. An idea of Chippendale's taste in beds may be gained from his description of a "Couch with Canopy." Of this he says: "The curtains must be made to draw up in Drapery or to let down,

when it is occasionally converted into a bed. This sort of couch is very fit for alcoves, or such deep recesses as are often seen in large apartments. It may also be placed at the end of a long gallery. If the curtains and valances are adorned with a large gold fringe and tassels and the ornaments gilt with burnished gold, it will look very grand. The crane at the top of the canopy is the emblem of care and watchfulness, which, I think, is not unbecoming in a place of rest. The length of the bed cannot be less than six feet in the clear; but may be more if required. The breadth is three feet, or more, in proportion to the length. The height may be determined by the place it is to stand in."

In a Chippendale room the bed curtains and window curtains were made of the same materials and the seats of the chairs were covered with the same. Chippendale also recommended leather seats for his chairs and liked red morocco. Beautiful tapestry and silks bearing designs from Æsop's fables were also used, especially for the "French chairs."

Cornices for bedsteads and windows attracted his interest and also frames for console-tables and mirrors. Here the carver exercised his most exuberant fancy and displayed his favorite ornaments, which were the Chinese pagoda, bells, mandarin, and mandarin's hat, canopy with bells at the corners, monkey and monkey's head, Chinese umbrella, fox, long-tailed and long-billed bird, crow, boys blowing horns, eagle, horn, pipes, violin, rising sun, fluttering ribbons, dragon, dolphin, cockatrice, pine cone, the inverted C, the endive leaf, the quatrefoil, the dog, the lion, the masque, spiky thorn, flowers of all kinds, acanthus, fret, shell, dripping-water, ram's head holding swags, the caducens, serpent among flowers, etc. Two characteristic mirror frames appear in Figs. 1 and 2. The former, a mantel mirror in three parts, shows a graceful use of the broken curve, or C, and the latter exhibits the inverted C's beautifully decorated with leaves and flowers, while the top is surmounted by a Chinese pagoda and two fan-

tastic birds. As was natural during a period when the Chinaman was still vital, Chippendale designed many shelves, cabinets and cases in the "Chinese taste," especially for the exhibition of choice pieces of porcelain. These are composed of fret-work, pagodas, mandarines, bells and roofs, or leaves with turned up edges, mingled with scrolls, rock-and-shell work and dripping water. The glass doors are often enriched with ornate vines and flowers, bells and mandarin hats. These pieces of furniture were gilt, painted and japanned, or painted and partly gilt. Tables for the library also claimed his attention; but, as a rule, they were rather simple. A plain table with drawers served for the

sideboard. Tables with the drop-leaf were also made during this period, of the model shown in Fig. 5, a handsome specimen with openwork fret-work, which gives a charming sense of lightness to the four square piece.

The tripod tea-table was always a success in the hands of Chippendale. Two of the graceful "tip and turn" tables, the tops of which can be made to rotate and to bend downwards, appear in Figs. 4 and 6. These are ornamented with what modern dealers like to term the "pie-crust" edge. It must be remembered that Chippendale's book supplied patterns for gentlemen to select from and other cabinet-makers to execute. Consequently a great deal of furniture was made by contemporary workmen on both sides of the Atlantic. Much "Chippendale" furniture was produced in Ireland, and not a little in the colonies of America. For instance, Mr. John Brinner arrived in New York in 1762 with six skilled workmen from London and established himself at the Sign of the Chair, opposite Flatten Barrack Hill, on Broadway, and advertised that he could make nearly every article that we find pictured in Chippendale's book, including the heavily draped bedsteads and furniture in the Chinese and Gothic taste; and a little later we find Joseph Cox from London settled at the Royal Bed in Dock Street, and afterwards in Wall Street, making



Fig. 3—A ladder-back settee with square legs of which Chippendale was so fond



Fig. 4—A tip and turn tea-table in standing position



Fig. 5—A table with open work and lattice fret sold for \$500



Fig. 6—A tip and turn tea-table with pie-crust edge



Fig. 7—A chair sold for \$440



Fig. 8—A Ribband back chair



Fig. 9—A mahogany chair



Fig. 10—A Chippendale chair sold for \$130

elaborate pieces of furniture such as "sophas, burgairs, French elbow, easy and corner chairs, backstools, mewses, ribband back, Gothic, and rail-back chairs, ladies' and gentlemen's desk and bookcase cabinets, chests of drawers, commode dressing and toilet-tables, china shelves, encoinures, fire-screens, voiders, brackets for lustres and busts, with every other article in the business."

Chippendale died in 1779, and the third Thomas Chippendale carried on the business. In 1814 he removed the shop to the Haymarket; but the furniture that was made by him, or under his direction, had nothing with what is known as "Chippendale."

Like his father, he was also a member of the Society of Arts. He seems to have been talented for he was a painter and exhibited some pictures at the Royal Academy. This Chippendale was much admired by that arbiter of taste of the period, George Smith, who was "upholsterer extraordinary to the Prince of Wales," and who said in his book in 1826 that Mr. Chippendale "possessed a great degree of taste with great ability as a draughtsman and designer."

The Chippendale style lasted a long time; but the straight line was destined to triumph; and as soon as it asserted itself the doom of the graceful and fantastic curve and waving line was sealed. In 1753, a year before Chippendale's book appeared, Hogarth wrote in his *"Analysis of Beauty"*: "There is scarce a room in any house whatever where one does not see the waving line employed in some way or other. How inelegant would the shape of our movables be without it? How very plain and unornamental the moldings of cornices and chimney-pieces without the variety introduced by the *ogee* member, which is entirely composed of waving lines!"

When Sheraton wrote in 1791, the style had become a thing of the past. Chippendale's designs, he says, "are now wholly antiquated and laid aside, though possessed of great merit, according to the times in which they were executed."

The gap between the Chippendale and the Sheraton periods was, however, filled by other masters of design and other cabinet-makers. In this great age of furniture, the Adam brothers became of such importance that it is not unlikely that Chippendale sent from his shop pieces made after Adam designs. At any rate, it is certain that he worked with Robert Adam in the decoration of Harewood House in Yorkshire; for the present Earl of Harewood owns bills and documents that tell the story. Robert Adam was employed as the decorative architect, and among the notable workers (who were also artists), he employed Chippendale. Most of the furniture, therefore, in the Harewood House is in the Adam style, though now and then there is a piece in Chippendale's favorite rococo manner. Again, there are pieces that exhibit both styles that cannot and will not merge, or fuse, into one another.

Another style that precedes Sheraton is that of Hepplewhite, in which the straight line is also insisted upon in most cases; but Hepplewhite is far simpler and less expensive than Adam, who designed only for the homes of the rich nobility and gentry.

Another contemporary was Thomas Shearer, who was remarkable for his simplicity and his good lines that frequently express both strength and gracefulness.

The engravings shown in this article, render valued and correct reproductions of the furniture in vogue at the period described, and their originals have the distinction of having had a place in the important Thomas B. Clarke collection, recently sold at the American Art Galleries, New York City.



Fig. 11—A card-table sold for \$140



Fig. 12—A Chippendale chair



Fig. 13—A ladder back chair



Fig. 14—A Chippendale mahogany chair



A Residential Property in the Suburb of New York City

By Francis Durando Nichols



HERE are few areas of suburban development that have been more successfully realized than those within the confines of Bayside-Flushing, L. I. No finer setting for a definite improvement of a great tract of land could be found than in this beautiful region. The very charm of the surrounding country was itself an incentive for the building up of one of the most delightful properties. The conditions and advantages of Bayside, as portrayed herewith, are not merely that of a single ideal community, but a existent, semi-rural abiding place, which is in close proximity to our leading American cities. The paramount thought of most of the urban dwellers of to-day is to live in the country, and in settlements where there are good sanitary sewer systems and water supplies, good schools and churches, and every appointment that makes country life a pleasure and a comfort. The fondness for the country has become characteristic of the American people, and is not a sudden fancy, but a well defined growth which has slowly developed. The congestion of our largest cities with the necessarily increased rentals is one of the reasons which has produced this movement.

One of the prime factors, which has proved so strong an inducement for migrating from the city to the country, is the provision of suburban properties in which are installed all the best modern improvements and conveniences, such as are to be found in the most complete city home. The illustrations presented in this article are representative of the best types of houses built at Bayside. There are some hundred houses on the property, many of which have been erected by the present owners; those built by the company have been constructed to meet the requirements of assured purchasers. All of the houses are thoroughly equipped with hot water, heating apparatus, sanitary plumbing, electric lighting, electric bells, telephone,

and every modern convenience, and are constructed of the best materials, and in the most thorough manner. The residence of Mrs. E. A. Norcross, Figs. 1, 2, 3, 4, and 5, is, perhaps, one of the most attractive dwellings in the group. The exterior of the house is designed with that repose which is always so delightful in a house of this character. It is a moderate-sized, two and a half story building, nearly rectangular in shape, with a latticed porch on either side and a large dormer on the back slope of the roof, which extends down and forms a protection for the piazza built at the rear of the house. The exterior walls of the building are covered with rived shingles, which are white-washed in order to give them an antique effect. The roof is shingled and stained a deep reddish brown color. A brick walk, edged with a privet hedge, leads from the

roadway to the classic porch built at the front of the house. This porch has fluted columns with Ionic capitals. A one-panel door, copied from Douglas Manor, with a leaded glass window on either side, completes the entrance. A central-hall extends through the house to the rear porch, from which broad vistas of the garden with its box-bordered beds can be obtained. The Colonial staircase in the hall is of graceful line, and has painted balusters and a mahogany rail. The trim throughout the interior is painted a delicate shade of ivory white enamel, which blends well with the stained and polished floors of oak and the color schemes of the wall decoration. The living-room, to the left of the entrance, is provided with an open fireplace furnished with a Colonial mantel made after one in the historic Pepperell House in Massachusetts. The walls from the bottom to the top seem to have the resemblance of wood paneling of the Georgian period, but, as a matter of



Fig. 1—The classic porch at the front of the house

fact, they are of smooth plaster with picture molding placed on the wall in such a form as to present the effect of paneling. The dining-room, occupying the opposite side of the house, is also provided with an open



Fig. 2—The front of the house

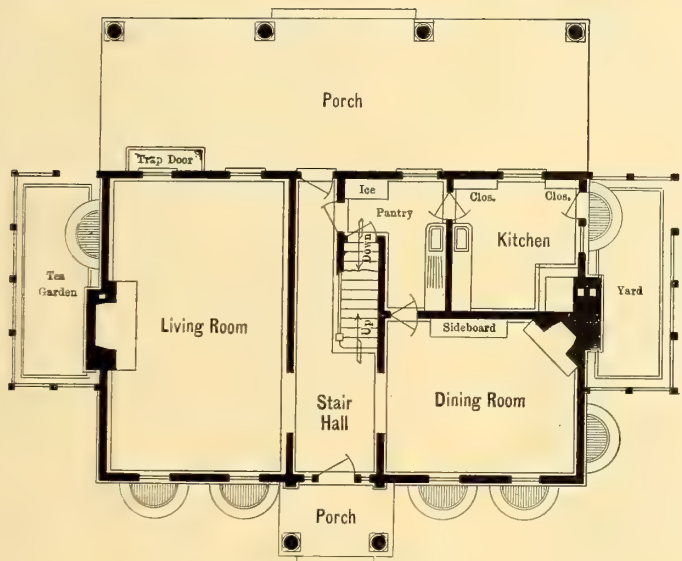


Fig. 3—First floor plan

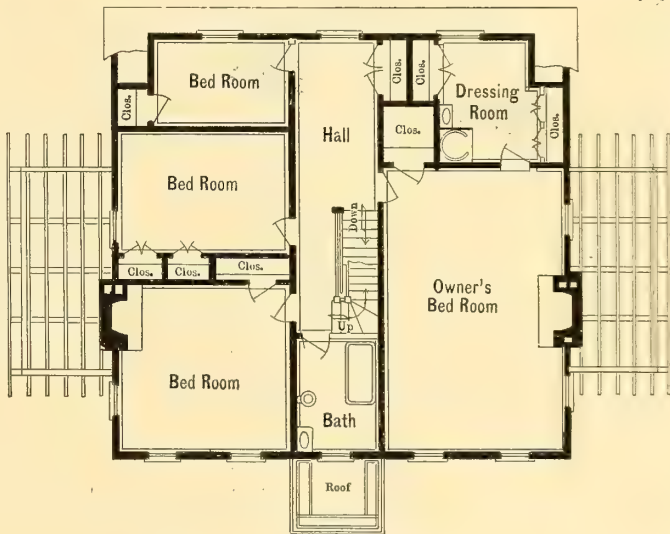


Fig. 4—Second floor plan



Fig. 5—The garden front



Fig. 6—A gambrel roof house

fireplace and a mantel made from the copy of one in the old McKnight homestead on Long Island. The service

tached, and the three guest rooms and bathroom occupy the remainder of the space on the second floor.

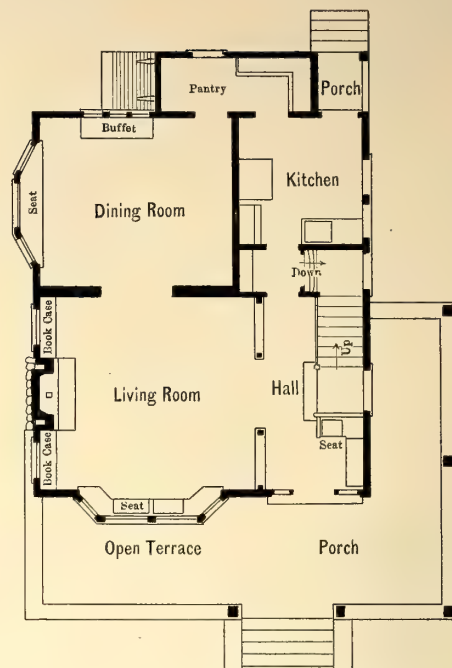


Fig. 7—First floor plan



Fig. 8—A Mission house

part of the house is complete in every appointment. The owner's bedroom, with dressing-room and bathroom at-

The house built for Mr. H. B. Martin, Figs. 6, 7, 12, and 13, is of the gambrel-roof style, and is quite in con-



Fig. 9—First floor plan



Fig. 10—A half-timbered house



Fig. 11—First floor plan



Fig. 12—Second floor plan



Fig. 13—A house with stucco walls and half-timber

trast with the house built for Mr. S. P. Belmonte, illustrated in Figs. 8, 9, 14, and 15, which is of the Mission type.

are built of hollow tiles and stuccoed on the exterior. The half-timbered house built for Mrs. M. E. MacKrell,

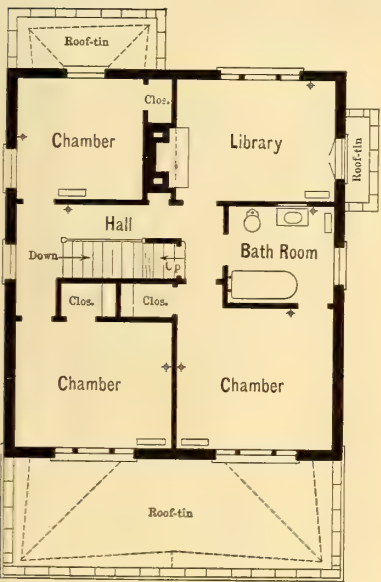


Fig. 14—Second floor plan



Fig. 15—A house built of hollow tile

The last is different from any of the houses shown, on account of the construction of the exterior walls, which

Figs. 10, 11, 16, and 17, presents a striking example of this class of building, with half-timber and stucco.

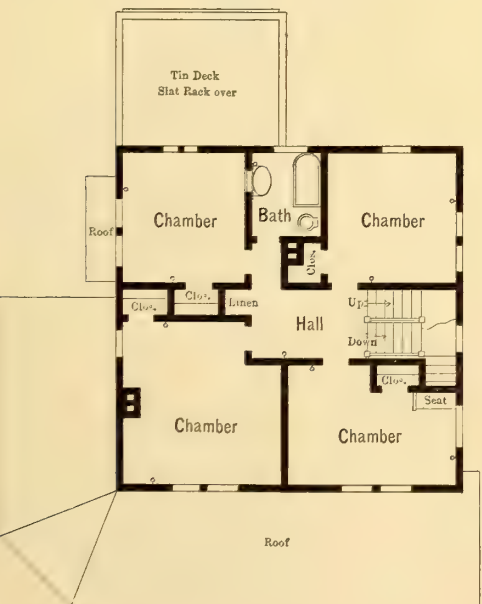


Fig. 16—Second floor plan



Fig. 17—A house with a cobblestone porch



Fig 18—A stucco house of simple lines

The handsome house, Figs. 18, 19, and 20, built for Mr. C. H. Walsh, is perhaps one of the most interesting types in the group, for it is very different in its exterior design and its interior arrangement. The entire wall surface of the exterior is of gray cement, and the low, sloping, shingled roof is stained a soft brown tone. The trimmings are also painted brown.

A feature of the plan is the living-room, with its ingle-nook provided with a red brick fireplace, furnished with a Welsh-tiled hearth and paneled seats built on either side. The ceiling is beamed, forming panels, while the side walls

are covered with Japanese grass cloth. The arrangement of the staircase, in combination with the rear stairs, is an excellent idea. The door leading from the platform to the kitchen is in one panel with a plate glass mirror. The absence of hardware furniture on the living-room side of the door gives the appearance of a stationary panel.

A novel feature of the plan is the dining-room, which is built in circular form, with a cove ceiling. The walls of this room are provided with strips of oak placed on the walls from the base to the plate rack; this latter extends around the room. These strips are placed a sufficient distance apart so as to form panels, which are filled in with imitation oak.

The bungalow built for Mr. Fred'k Follansby, Figs. 21, 22, and 23, is a type of house with all the living-rooms placed on one floor. The exterior of the house is beamed and plastered. A broad porch extends across the entire front of the house.

The entrance is direct to the living-room, which is separated from the dining-room by pilasters and columns, and is so arranged that both rooms can be thrown into one, when desired. Connecting with the dining-room is a pantry, beyond which is the kitchen. There are three bedrooms and a bathroom on this floor. The second floor is not

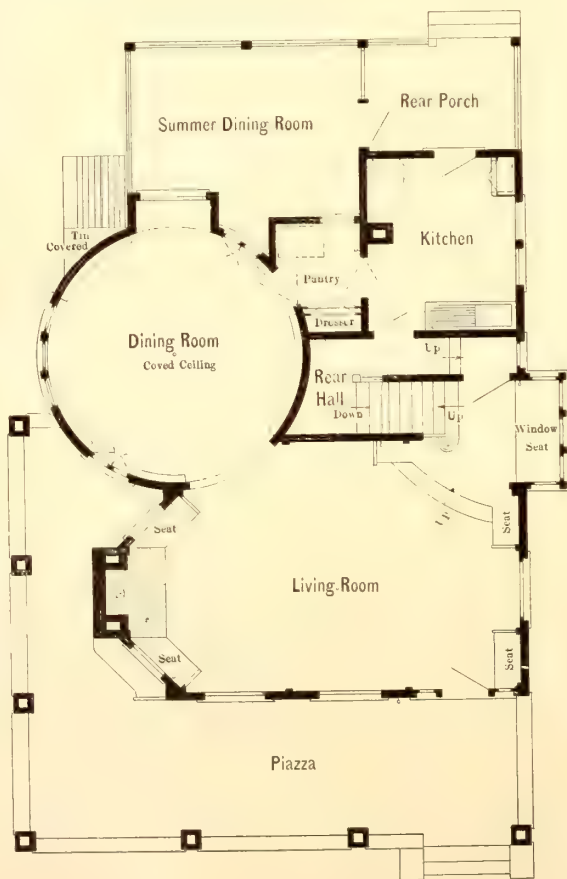


Fig. 19—First floor plan

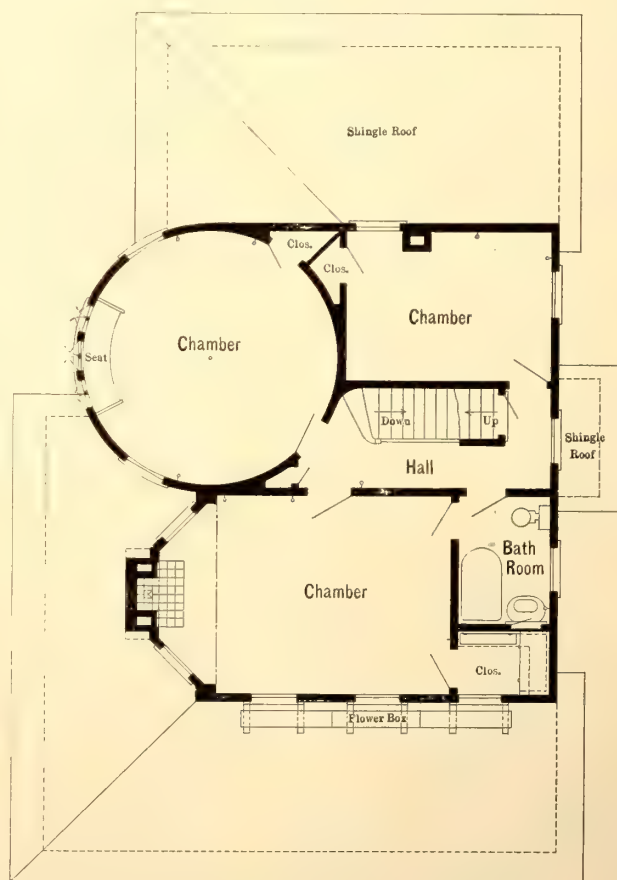


Fig. 20—Second floor plan

The second floor is not



Fig. 21—A bungalow of excellent design

finished, but ample provision has been made for three extra rooms when they may be desired.

The house of Mr. H. F. McGarvie, Figs. 24, 25, 30, and 31, is a very interesting one of concrete construction, and suitable for a narrow lot. The interior arrangement of the rooms on both floors is most complete. If desired, an extra bedroom may be obtained on the second floor by leaving out the fireplace and dividing the front sleeping-room.

The house, Figs. 26, 27, 32, and 33, built for Mr. George W. Spaid, is unusually large for a little house, and contains eight rooms, a bathroom, trunk rooms, and the necessary halls.

The house built for Mr. Peter

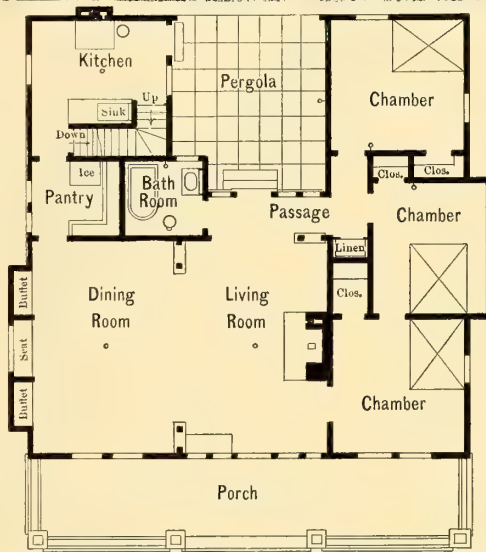


Fig. 22—First floor plan

F. Lane, Figs. 28, 29, 34, and 35, is somewhat similar to the one illustrated in Fig. 24, except that the plan is arranged differently and a second room is added as an addition to the rear. Opening from the dining-room and the kitchen is a sun-room, which can be utilized as a breakfast-room when desired.

All the houses illustrated in this article are trimmed with oak throughout the first stories, while the second stories are treated with white enamel paint. The first story floors are of oak and the second story floors are of cone grain Georgia pine. The fireplaces are built of Tapestry brick, and vary only so far as individual taste and arrangement dictate. The living-



Fig. 23—Another view of the bungalow



Fig. 24—A stucco house



Fig. 25—First floor plan

rooms have ceiling beams and the dining-room walls are striped with oak, forming panels, which are finished with are furnished with porcelain fixtures and exposed nickle-plated plumbing, and medicine closets with mirrors.



Fig. 26—A house of simple construction



Fig. 27—First floor plan

plate racks. The kitchen and bathroom walls are of Keene cement, marked off in an imitation of tile. The bathrooms The third floor contains the servants' quarters. Mr. George J. Hardway, of New York, was the architect of



Fig. 28—A house for a narrow lot

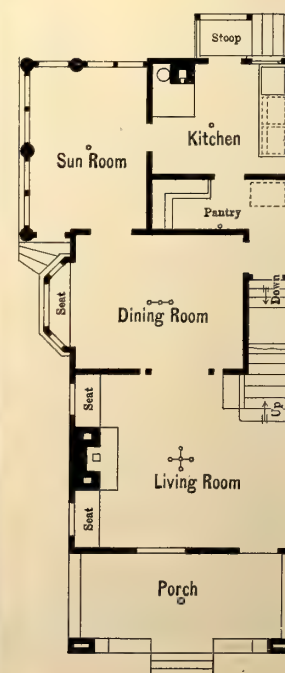


Fig. 29—First floor plan



Fig. 30—Second floor plan



Fig. 31—A craftsman house

all the houses, with the exception of one, in this article.

The small houses of the group are, perhaps, the most in-

of rooms in a given area of space, and for a specific sum. The houses presented, have cost from \$4,000 upwards, and

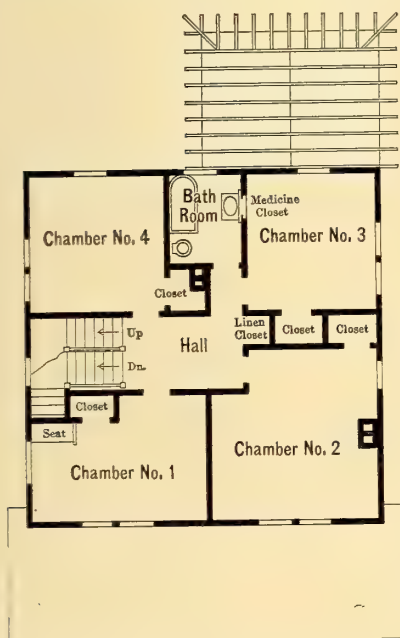


Fig. 32—Second floor plan



Fig. 33—A house of half-timber and stucco

teresting for the reason that a greater amount of study has been given to them in order to secure a large number

they show that much has been accomplished in providing suburban dwellings that embrace many important features.

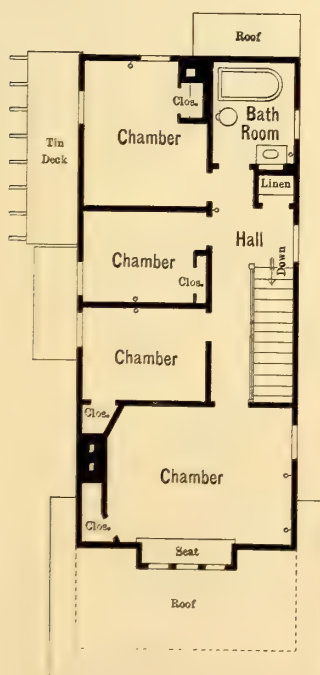


Fig. 34—Second floor plan



Fig. 35—A house of good proportions

Planning a Poultry House

By James J. Newland



TYPE of poultry house which has given good results winter and summer, and which has been adopted by a number of practical poultry men in a South Jersey section is as follows: It is built on 4x4 inch or 4x6 inch sills, measures twenty feet in length, fourteen feet in width, eight feet rear height, and five feet in front with

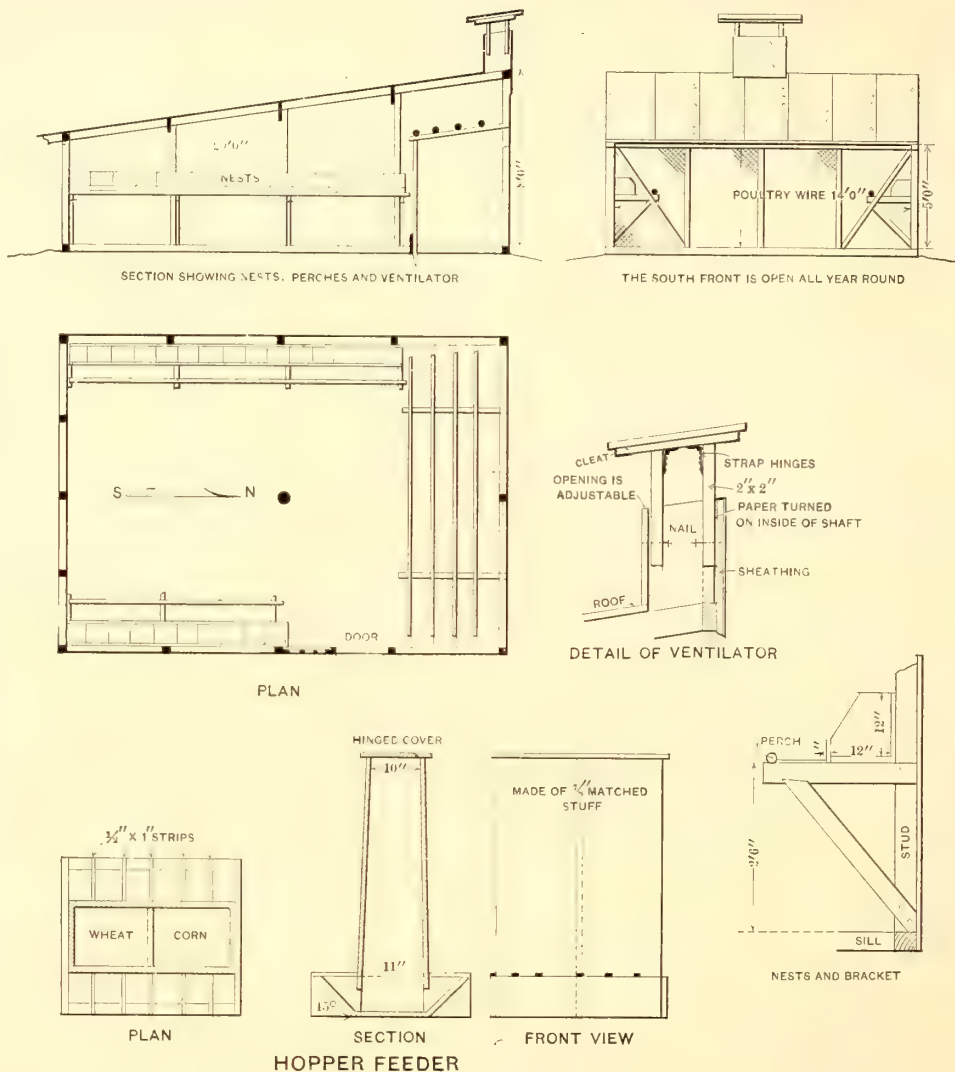
eighteen inches overhang, and seven-eighth inch sheathing covered with two or three ply roofing paper. The ventilator is placed over the roosting area. The front is open to the weather during winter and summer, and is covered only with poultry wire. These houses can be moved on rollers over the orchard or elsewhere on the farm when found expedient, leaving a well fertilized area at the last stand; a good plan where farms are small and intensive methods are followed. The house provides for the care of about seventy-five birds and where several units are placed in an orchard, the benefit in destroying larvæ, keeping down weeds, etc., is apparent. A door and a window can be placed on either side. The nest boxes are made in one length, divided into nests of 12 inches square, placed on brackets

from side studs and easily removable for cleaning. The perches are of about 1½ inch cedar and can be destroyed and replaced at a trifling cost. They do not touch the side walls, being stayed by stiff wires. The fowls are comfortable when confined to the house. Fresh water is supplied in buckets, at night and morning. A hopper feed box is placed in each house, with two kinds of feed, and of a height sufficient to allow a bag of feed to run into the

hopper from the shoulder. By an annual coat of white-wash, and by making the house as near air tight as possible and by fumigating with formaldehyde gas (the small outfit used by the Board of Health, being low in price and profitable where much poultry is kept), it can be made insect proof and held in fine shape for the birds. For use in the more northern latitudes, the front may need a winter closure, or at least occasional closure, by a glass or partial glass or canvas drop screen, but it has not been necessary here, in Lat. 39 degrees 30 minutes.

The diagrammatic presentation of the poultry house is sufficient in detail and form, to enable an

amateur or dealer to plan and to build housing accommodations for poultry that will be useful and ornamental.



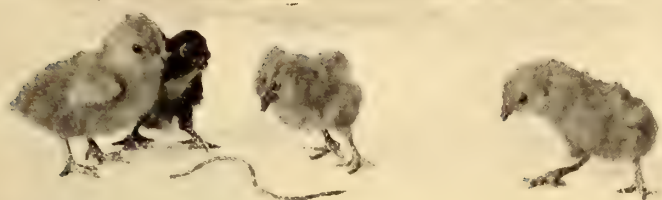
Chicks and the Camera

By Carine Cadby

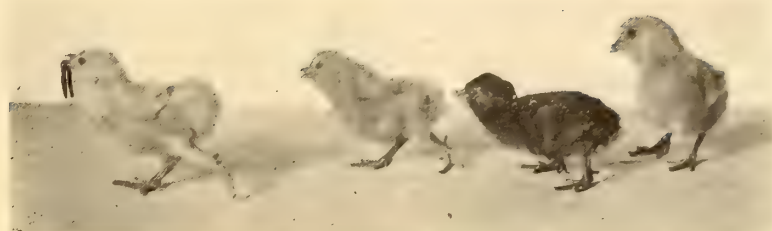


OUNG animals are always amusing and worth watching, but the most wonderful and precocious for their age are, perhaps, very young chicks. Only the record of twenty-four hours behind them, and already they are busily playing the game of life. Only one day old, and yet showing signs of character and individuality, so expressive are their actions and so suggestive their looks. The shrewd

perseverance of this one, intent on pushing to the fore, and the quiet humor of the other, content to look on and to philosophize. Those little twinkling dark eyes seem to say all sorts of things, or is it that they only possess the *look* of intelligence, which deceives one into crediting them with so much character, and all the while, underneath, they are just the same empty headed little noodles as their mothers are always supposed to be and from whom the term "hen-brained" is derived?



A find



The early bird

The photographer, who wanted to get representations of these fluffy little folk became quite intimately acquainted with them, and was a firm believer in their intelligence; more so than the farmer, who was always too busy to study the individuality of his stock, and who, indeed, scoffed at the idea of chicks possessing any personality at all.

"Oh, they don't amount to much," he remarked, meaning, of course, in intelligence, while he cast a calculating eye over the latest brood, an eye which took on itself an expression of approval of the economic sort, as he added, "but they soon grow into money and make good table-birds."

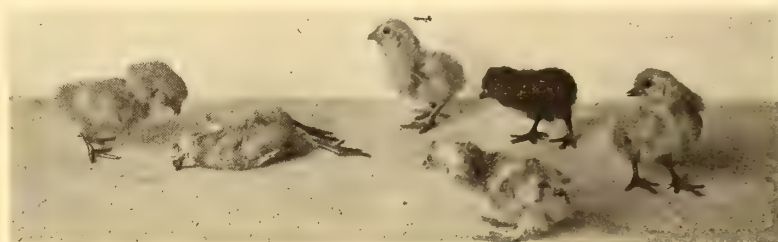
came hardhearted and callous enough to shout at them, "Table-birds! that's what you are, table-birds!" But it never quite came to that.

Among this particular brood was one who was darker than the rest, rather smaller, and which seemed to possess an energy and a whimsical humor all her own. She was always so busy enjoying her life, and whatever she did was with gusto, from getting the warmest and driest corner of the foster mother, to mixing in an infantile fight.

These almost hourly fights were a surprise to the photographer. Such a short time out of the infinite, and



The fight



The Tragedy

Table-birds, after the claims made, of individuality! What a drop to the very material! That barbarous expression "table-birds" made the photographer feel a perfect cannibal and conjured up such a picture to her mind, that she shut her tripod, packed away her camera and returned home full of vegetarian ideas.

However, the camera is a hard task master, and whether those delightful, fluffy little folk were to make table-birds in the future or not, their fate was to be photographed in the present, and it must be the immediate present, too, for

yet already falling a prey to angry passions; but development goes forward at such motor pace in a chick that the one, only out of his own egg about half an hour, will watch his brother emerging from his with such a superior expression of mild curiosity, as much as to say, "What a very odd and undignified proceeding!"

In spite of the habit the chicks have of defying one's efforts to picture them at critical moments, my camera has rendered certain general points of agreement with their appearances to our sight; but how would these little imps



A long drink



The Reward

days aged them like years, and the charm of the fluff-ball is very fleeting and soon disappears with the growth of legs and feathers. There is no time to waste, as enough time goes in watching, for in continual watching lies the only chance of success for a photograph. Indeed, it is almost a case of "watch and pray," for the poor photographer often found herself praying to these little balls of quicksilver to consider the camera. "Oh, do, do just keep like that for one second," she would beg, or "Pray, pray, don't scurry so continually," or again, "If you only wouldn't persist in getting so behind one another," etc. And the little chicks would look up and blink their small impudent eyes, as much as to say, "Don't you wish you might get us?" And sometimes—well to tell the truth, rather often—they so exasperated the exhausted photographer, that she be-

appear in passing before the latest processes of photography that repeat animal activities so as to present entirely different aspects,—those that for instance are caught neither by the artist or the spectator, because hand and eye cannot work at minimum mechanical speeds of one-thousandths of a second.

It is a pity that the charm of chicks is so short lived. The photographer felt this badly, as she saw her brood grow into ordinary lanky creatures with smooth heads and long legs; and before she parted from them, she was able to listen to the farmer with equanimity, and even smile at the expression "table-birds." When she visits them again, she hopes to find her little favorite dark one a plump hen, with perhaps, a little family of her own, but she will never believe any other brood could be as entertaining as this.



HANDICRAFTSMAN

Conducted by A. Russell Bond

How to Make a Japanese Lantern of Concrete

By Ralph C. Davison



AN odd and picturesque garden ornament is the Japanese stone lantern. No garden in Japan is considered complete unless it has one or more of these lanterns in it. They are placed singly in shady nooks to break the monotony of the scene, or, sometimes in this country, are used in pairs at the entrance to the garden walk. Granite or other durable stone is the material of which they are generally made, and their cost is from twenty-five dollars to one hundred and fifty dollars, according to their size and design.

If one is apt with tools a very creditable effective and durable Japanese lantern can be made of concrete. This will require but a small outlay of cash, a little ingenuity, and more or less time, which one will find is well spent as the work will prove most fascinating. The lantern shown in Fig. 3 is of concrete and is the product of a prominent studio in New York, as is also the lantern shown in Fig. 5. There appear to be untold numbers of designs of Japanese lanterns, but the design shown in Fig. 5 is one of the most popular.

The author has taken the liberty to slightly modify this design, as shown in Fig. 4, in order to simplify the making of the molds, which are required in order to produce the lantern in concrete. Fig. 2 is an outline sketch of the lantern in which are given its general dimensions, and Figs. 6, 7, and 8 show details of the molds in which the various pieces which go to make up the lantern are cast.

The molds should all be made of 1-inch lumber, dressed on one side, and the dimensions given should be followed closely. The main portion of the pedestal base mold, shown in Fig. 5, consists of nothing more than a box 18 inches square, with sides 5 inches high. In the center of the bottom of this box is placed a tapered wooden plug, or cone, so as to produce a hole in the cast through which a half-inch iron rod may pass. This plug should be made 5 inches long by $\frac{3}{4}$ inch at the small end and 1 inch at the large end. It should be secured to the bottom of the box by a nail driven in from below as shown.

The pieces a, b, c and d, which form the bevelled part of

the cast should be fitted into the bottom of the box as indicated and may be made of wood $\frac{1}{4}$ -inch thick. All of the joints should be neatly brought together and the edges should be tapered off so as to fit closely to the sides and bottom of the box.

The lantern has been so designed that the base of the lantern part proper is a duplicate of the pedestal base, only that it is turned up side down when setting it in place as shown. Therefore the same mold may be used for both pieces.

The pedestal proper consists of a shaft 8 inches square by 23 inches long. It has an iron rod running through its center its entire length and projecting for a distance of 5 inches at each end.

The mold for this should be made as shown in Fig. 6. It consists of a box 8 inches square by 23 inches long, with a bottom and top piece each having a half-inch round hole in their centers.

The lantern proper is a hollow square with walls 2 inches thick. In these are cast windows through which the light may radiate. The mold for this may appear somewhat complicated, but will be easy to make if the directions are closely followed.

The first thing to do is to make the core. This is shown in perspective in Fig. 1 at "A." It consists of a box made of $\frac{1}{4}$ -inch wood, 7 inches square by 10 inches high. On each side of this box are secured, in the position shown, by long thin wire nails, four pieces of soft clay each measuring $2\frac{1}{4}$ inches by $2\frac{3}{4}$ inches by 2 inches thick. The $\frac{1}{4}$ -inch wood box will form the hollow in the center of the lantern and the clay pieces will form the window holes.

The next step is to make a box, the inside dimensions of which will be just big enough to fit closely against the clay squares. If these have been made 2 inches thick, the box should be 11 inches square on its inside. It must have a bottom, as shown, and should be put together around the core. Looking down on the mold, when it is assembled, it should appear as shown in Fig. 1 at "B." The eight $\frac{1}{2}$ -inch rods connected with wire as shown in the perspective sketch in Fig. 1 at "C," should be placed around the inner core before placing the blocks of clay in position. This metal

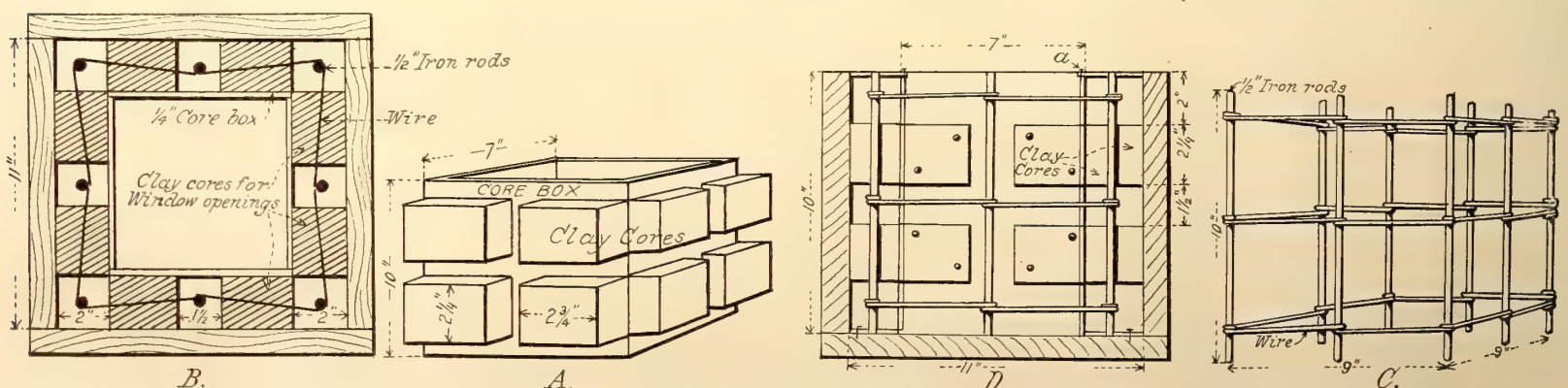


Fig. 1—Details of mold and reinforcing for lantern top showing clay cores for window openings in position on inner core box

frame work will act as reinforcing for the concrete lantern so that it will carry the weight of the concrete cap with safety.

The rods may be held in their proper places by small pieces of $\frac{1}{8}$ -inch wood, the holes in which should be made to fit snugly around the rods. Be sure that these pieces are flush with the top of the mold, as shown at "a" in illustration marked "D," in Fig 1. They may be held firmly in position by a small wire brad, as indicated, so that they will not be dislodged when the concrete is poured into the mold.

If preferred, one large hole can be made in each four sides of the lantern for the windows, instead of the four small holes as shown. The core for this hole should also be made of clay. Then when the lantern is complete four window frames of wood can be made just large enough to fit into the opening snugly. On the inside of these frames parchment paper should be secured.

The majority of the real Japanese stone lanterns are made in this way. In Japan they use a small vegetable oil lamp to produce light. A short thick candle known as a night candle will be found a good substitute.

The next mold to make is the lantern top or cap mold. This is made in exactly the same way as explained for making the base mold. The only difference being that no center core is used and the dimensions shown in Fig. 8 should be followed instead of those in Fig. 5, which latter illustrate the popular type.

After having completed the various molds for the lantern, as described above, sand paper the inner surfaces of them and give them two coats of shellac. Let this dry thoroughly and then oil the surface with a fairly thin oil, so that the concrete on setting will not adhere to the sides of the molds. When all of the molds have been prepared as above they are ready to receive the concrete mixture.

The mixture to be used for this work should consist of one part Portland cement, two parts of good clean sand, not too coarse, and three parts of trap rock, crushed to a size ranging from that of a pea up to three-eighths of an inch.

A very pleasing, light colored effect, similar in appearance to limestone, can be produced by using a mixture of one part cement to two parts of light colored sand and three parts of limestone screenings. The latter can be secured at almost any limestone quarry or stone yard.

Mix the sand and cement together while they are dry. Then add the stone, which has previously been sprinkled or wet down with water. Incorporate the stone thoroughly throughout the dry sand and cement, and then gradually add water. At the same time keep on mixing the ingredients until the whole mass is of the consistency of a heavy slush or paste.

First, the base mold should be filled. Place it in the position shown in Fig. 3 at "A," and pour the mixture into it until it is filled to the top. Jar or rock the mold until the air bubbles no longer come to the surface of the mass and then level the top of the soft concrete flush

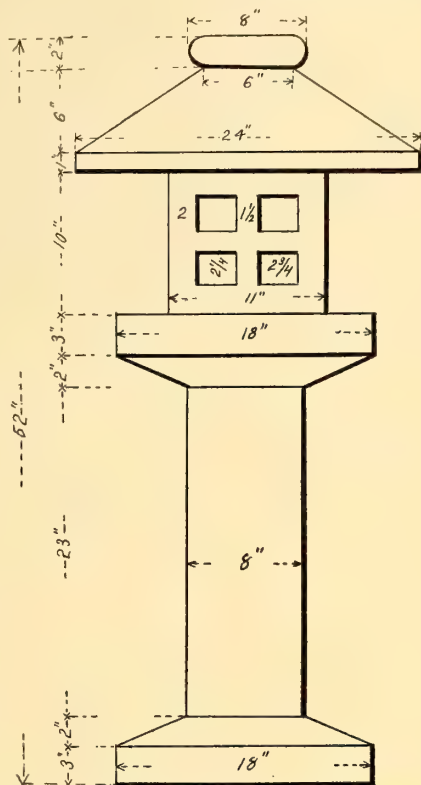


Fig. 2—Outline sketch giving general dimensions



Fig. 3—A purely Japanese design

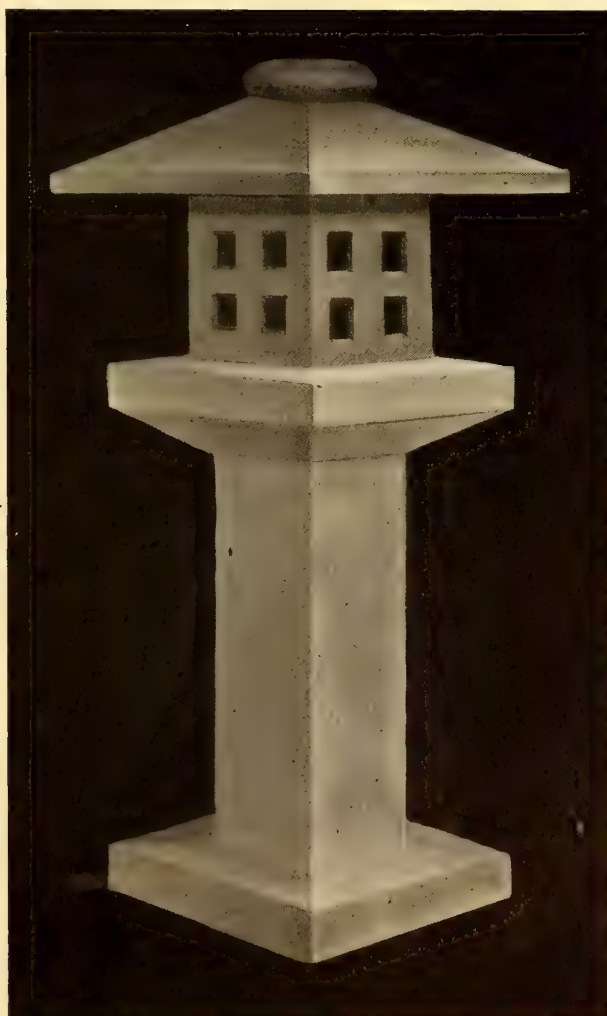


Fig. 4—A home-built lantern



Fig. 5—A popular type of lantern

with the top of the mold and allow the mold to stand for at least twelve hours. It should then be thoroughly soaked with water and allowed to remain in the mold for twelve hours more before it is removed.

In putting the molds together use as few nails as possible and do not drive them home too far. This precaution should be taken so that one will not have to handle the molds too roughly when taking them apart. If one is not careful in removing the molds the edges of the concrete casts may be injured or chipped off. After the concrete cast has been removed from the mold it should be hardened or cured. This is done by wetting it down two or three times a day for at least two or three days, the longer the better. For the oftener it is wet down and allowed to dry out again the harder it will be. Before pouring the concrete in the base mold the tapered piece in its center should be well covered with vaseline. Then after the cast has been cured this centerpiece can be readily driven out by striking it a sharp blow on its smaller end.

After the base is cast the base mold should again be as-

down and cured for from three to four days. After it is thoroughly cured and hard the clay pieces can be cut out and the surplus clay washed off.

The next piece to cast is the lantern top or cap. The mold for this is shown in Fig. 8. The last piece to make is the little round flat top. This can be cast in a round box made of wood or cardboard. It should be 2 inches high by 8 inches in diameter. Fill this mold with a mixture of one part cement and three parts of sand, allow it to set for at least twelve hours, and then remove it from the mold and round its edges off by wetting them down well with water and rubbing them into shape with a wood or stone block. If by any chance the casts should be injured or chipped in removing them from the molds, the damaged parts can readily be replaced or filled in by applying and forming into shape cement mortar made of one part Portland cement and one part of the same sand as was used in the regular mixture. To these two ingredients should be added enough water to produce a fairly thick paste. Before applying this mortar to the injured portions of the

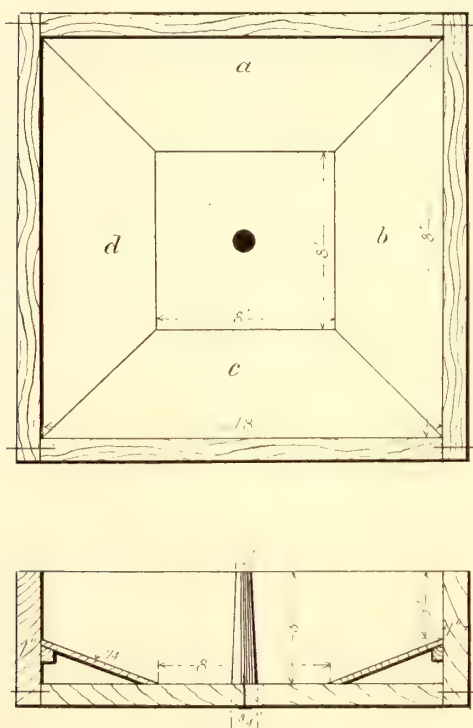


Fig. 6—The base mold

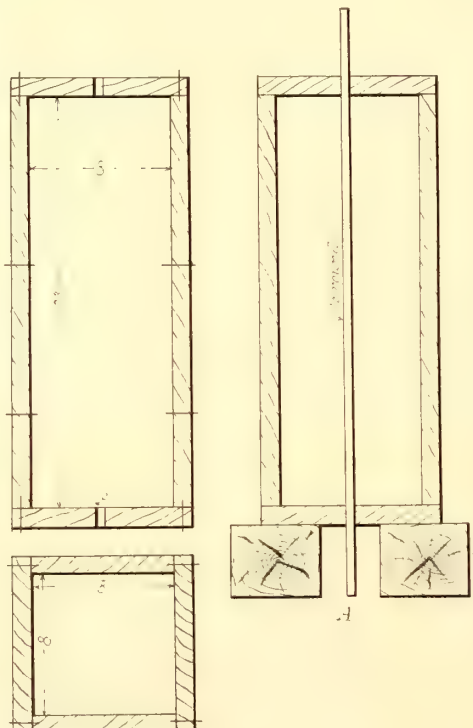


Fig. 7—Mold for the pedestal shaft

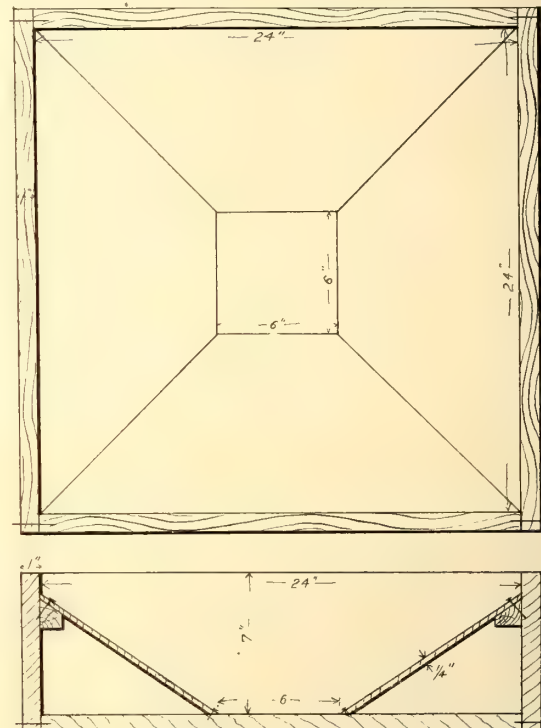


Fig. 8—The cap mold

sembled and a duplicate cast made from it, inasmuch as two pieces are required, one for the base of the pedestal and one for the base of the lantern proper.

The pedestal shaft should now be cast. Set the mold for this up on two 5-inch blocks, as shown in Fig. 6 at "A." Fill it flush with the top and jar the mold as before. Then fasten on the top with a couple of wire nails. This will hold the rod firmly in place and will assure its central location in the shaft. Cure this cast as explained above.

Next cast the lantern proper. Having placed the reinforcing in it as previously described, place the mold in the position as shown at "D." The mixture for casting this should be of the same proportion as used for casting the base and pedestal. It would be well, however, to sift the stone so that the largest particles should not exceed $\frac{1}{4}$ -inch in size—by doing this one will be assured of the concrete finding its way around all of the reinforcing. Make the mixture very thin and pour in a steady stream between the core and the outer portion of the mold. Fill the mold to the top, and then jar it down. Fill it again and repeat the operation until the mixture remains flush with the top, after which it should not be disturbed for at least twenty-four hours. If the concrete appears hard enough in that time the inner mold should be carefully cut away. Then the outer mold can be removed and the cast should be wet

piece be sure to wet down the surface of the cast thoroughly, so as to secure a permanent bond.

After pointing up the various parts of the lantern they should be allowed to stand for a short time, and then all of the pieces should be well soaked with water so as to harden them. After the pieces have all become thoroughly hardened or cured they can be assembled or set up in position as shown in Fig. 2.

The surfaces of the parts which are to be joined together should be sprinkled with water, and covered with a thin layer of cement mortar—the same mixture as used for pointing up will do. The holes in the base of the pedestal and base of the lantern should be filled with soft mortar. The iron rod, projecting from each end of the pedestal should then be solidly cemented in place by passing them through these holes. A thin layer of mortar should then be spread on the bottom of the lantern proper, and it should be centered on its base. When this has set up or hardened, another thin layer of mortar should be placed on the top edge of the lantern and the top or cap made fast. The round flat top piece can then be cemented in place.

A good smooth finish can be given to the entire piece by wetting it down thoroughly and then sprinkling it with a little dry cement and rubbing it down with a fairly fine grade of carborundum brick.

Appropriate Mottoes for the Home

By Dorothy Tuke Priestman

"In this safe anchorage
Find welcome and good cheer."



HOUSE mottoes add in a delightful way to the appearance and interest of the home. When thoughtfully chosen and carefully applied they prove a very charming feature from the standpoint of both art and interest. They have, too, a certain educational value, which is particularly felt when the name of the author is given with a quotation. Moreover, noble thoughts constantly in view have a certain moral value which cannot be ignored, especially where there are young people in the home. But perhaps the strongest argument in favor of mottoes is the opportunity afforded for the expression of personality in the selections of the quotations; for in choosing quotations, care should be taken to have them in keeping with the house and the lives of the occupants, and to have only those mottoes that are sympathetically appreciated by the home-dwellers. On entering a house, which has mottoes as a decorative feature, one should feel the personality of the home-maker expressed in the lines.

There are many ways in which mottoes can be applied. They can be carved or burned on wood—cut in stone—painted or stenciled on the walls,—hammered on brass or copper, or embroidered. More often the mottoes are done

by professional men, but they can be effectively accomplished by the home-maker.

In giving suggestions for the home, I have classified the quotations under different rooms, but many of them would apply equally well almost anywhere. Circumstances and individual taste must decide upon the place most appropriate for each motto.

For the hall, as a rule, mottoes with suggestions of welcome are appropriate. Among those that would be fitting are:—

"Welcome the coming, speed the parting guest."

—*Alexander Pope.*

"Home—A world of strife shut out, and a world of love shut in."

"Love lives in cottages as well as in courts."

This would be attractive for a tiny house or a bungalow.

"A man's house is his castle."

"East, West, home's best."

"Where there is room in the heart,
There is room in the house."



The fireplace seems the appropriate place for a motto



An attic living-room with a motto carved in the mantel shelf

"Peace be within thy walls." —*Old Testament.*

LIVING-ROOM

For a living-room the selections may be a little more intimate and quotations of many kinds are suitable. If the house is small and there is but one living-room, and the piano is in this room, verses pertaining to music are suitable, or fireside verses, if the room has an open fireplace. Under this heading are given only general verses, as verses for the music-room and for fireplaces are given under separate headings.

This little verse of Lord Byron's makes a charming motto for a living-room:—

"All who joy would win, must share it—
Happiness was born a twin."

"Make it mine
To feel amid the City's jar
That there abides a peace of Thine
Man did not make and cannot mar."

—*Matthew Arnold.*

"The first symptoms of a mind in health is rest of
heart and pleasures felt at home."

"Domestic happiness, thou only bliss
Of Paradise that hast survived the fall!"

—*Cowper.*

"Look up and not down,
Look forward and not back,
Look out and not in, and
Lend a hand."

"Poor and content is rich and rich enough."

—*Shakespeare.*

DINING-ROOM

The dining-room lends itself particularly well to motto treatment. One of the first houses I remember seeing with motto treatment was a summer home in North Wales, Great Britain. The walls of the dining-room were painted a pretty golden yellow up to an old-fashioned plate rail. The space above this and the ceiling were tinted white. The chairs were carved oak, quaint and beautiful in their design. The curtains were of yellow linen, faced with white against the glass. Just below the pretty white plate rail was painted in brown in old English lettering the following:

"Conversation is but carving,
Give no more to every guest
Than he's able to digest.
Give him always of the prime
And but little at a time.
Give to all but just enough,
Let them neither starve nor stuff,
And that each may have his due,
Let your neighbor carve for you."

At first the impression received was of a design running below the plate rail, and it took careful reading to decipher the quotation. This, I think, is as it should be, for if the lettering is too plain and too conspicuous the effect is rather bold, and suggests an advertisement; but with pretty lettering the motto forms a pleasing and at first, an indescribable effect.

The following quotation from Owen Meredith, though



A dining-room mantel with a motto carved in its face

too long for general use, would be suitable for a frieze or to run above a dado of a large dining-room:—

"We may live without poetry, music and art;
We may live without conscience, and live without heart;
We may live without friends, we may live without books,
But civilized men cannot live without cooks.
We may live without books—what is knowledge but griev-
ing?

We may live without hope—what is hope but deceiving?
We may live without love—what is passion but pining?
But where is the man who can live without dining?"

In a room that has a dinner bell in a permanent place

LIBRARY

Mottoes in a library as a rule should apply to books, or have a somewhat intellectual thread running through them. One of the accompanying illustrations shows a delightful little corner seat of a simple library. Under the book shelves built above the seat are carved these words from Chaucer:—

"And as for me, though that I konne but lyte,
On bokes for to rede I me delyte."

"Knowledge is proud that he has learned so much;
Wisdom is humble that he knows no more."

—Cowper.



A motto is placed over a seat in the den

these words by Byron would be appropriate, if applied either on the wall near the bell, or on the stand upon which it is kept:—

"That all-softening, overpowering knell,
The tocsin of the soul—the dinner bell."

"He that banquets every day, never makes a good meal."

These lines from Burns make a charming motto for a dining-room:—

"Some hae meat and canna' eat,
And some wad eat who want it;
But we hae meat and we can eat,
So let the Lord be thankit."

—Burns.

"Absence of occupation is not rest,
A mind quite vacant is a mind distress'd."

—Cowper.

"There is no friend so faithful as a good book."

"Choose an author as you choose a friend."

"Books should to one of these four ends conduce,
For wisdom, piety, delight or use."

"Reading maketh a full man,
Conference a ready man, and
Writing an exact man."

"Dreams, books, are each a world; and books we
know,

Are a substantial world,
both pure and good.
Round these, with tendrils
strong and flesh and
blood,
Our pastime and our hap-
piness will grow."

—*Wordsworth.*

"The love of learning, the
sequestered nooks,
And all the sweet serenity
of books."

—*Longfellow.*

"Books cannot always
please, however good;
Minds are not ever crav-
ing for their food."

—*Crabbe.*

MUSIC-ROOM

There are many delightful quotations that can be used in a music-room, or in whatever room the piano takes its stand. In a handsome music-room, mottoes combined with mural decorations, introducing harps, flutes and other symbolic suggestions, form an effective and interesting treatment. As music-rooms should have few hangings for the sake of the acoustics, wall treatment of this nature takes away the bareness of the room. The following quotations lend themselves delightfully for use in a music-room:—

"Music hath charms
to soothe the sav-
age breast,
To soften rocks, or
bend a knotted
oak."

—*Congreve.*

If this is found
long for a desired
place, it might end
at breast.

"The man that hath
no music in him-
self,
Nor is not moved
with concord of
sweet sounds,
Is fit for treasons,
stratagems, and
spoils."

—*Shakespeare.*

"I do but sing be-
cause I must,
And pipe but as the
linnets do."

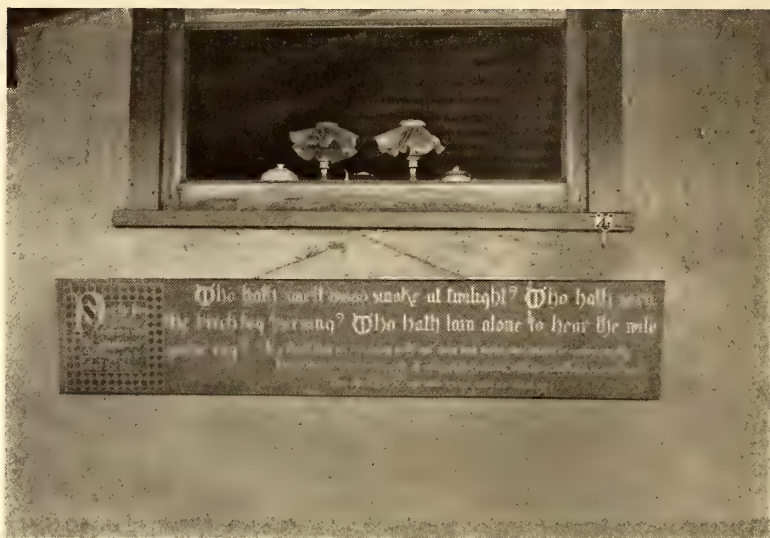
—*Tennyson.*

"Such sweet com-
pulsion doth in
music lie."

—*Milton.*

"If music be the
food of love, play
on."

—*Shakespeare.*



A motto under a window relieves the severity of the wall surface

BEDROOM

For a bedroom, quota-
tions expressing rest and
peace are pleasing thoughts
to dwell upon as one pre-
pares for sleep; while
bright and inspiring lines
are a cheering greeting in
the early morning."

"To all, to each, a fair
good-night,
And pleasing dreams, and
slumbers light."

—*Scott.*

"Sleep that knits up the
ravell'd sleeve of care,

The death of each day's life, sore labor's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher in life's feast."

"Early to bed, early to rise,
Makes a man healthy, wealthy and wise."

"He that will thrive, must rise at five,
He that hath thriven,
May lie till seven."

"O sleep, O gentle
sleep,
Nature's soft nurse,
how have I
frighted thee,
That thou no more
will weigh my
eyelids down
And steep my senses
in forgetfulness?"
—*Shakespeare.*

DEN AND BILLIARD-ROOM

For a man's den
or billiard-room
the quotations
should relate to a
pipe or tobacco, or
if he is a sports-
man, to whatever
particular sport he
is interested in. Je-
rome K. Jerome
dedicates his book,
"Idle Thoughts of
an Idle Fellow," to
his pipe. Many of
the lines from this
dedication could be
used in a den, such
as the following:—

"To the friend who,
treated with
marked coolness
by all the female
members of my
household, and
regarded with
suspicion by my



Mottoes are used in mural decorations in the library

very dog, nevertheless, seems day by day, to be more drawn by me, and in return, to more and more impregnate me with the odor of his friendship.

To the companion of my idle hours, the soother of my sorrows, the confidant of my joys and hopes—my oldest and strongest pipe."

"A little nonsense now and then
Is relished by the best of men."

"Let the world slide, let the world go,
A fig for care, and a fig for woe!
If I can't pay, why, I can owe,
And death makes equal the high and low."

—Heywood.

One of the illustrations shows a mantelpiece in a den in the house of Robeson Lea Perot, the architect, which he built for



A motto painted on the fireplace

himself. The following quotation is cut in stone, and painted red:—

"To draw good friends
with welcome free,
Is all you can expect of
of me."

FIREPLACES

Fireplaces lend themselves remarkably well to motto treatment. Although general mottoes are often used, there is a charm about one that applies directly to the hearth. One of the illustrations shows a mantelpiece in a Flemish dining-room in an old Philadelphia home, which has recently been remodeled by Mr. C. M. Burns, the architect. The mantelpiece is of butternut wood, copied from a house in Antwerp, which dates back to 1650. The lower part of the breast of the mantel has carved thereon these French words:—"A vault mieux pour moi de ne pas fumer," meaning—"I had



The motto carved in the face of the mantel shelf

better not smoke." The beauty of the mantelpiece lies in its simplicity. The motto relieves in a pleasing way the somewhat severe lines, and the effect is altogether delightful.

Another illustration shows a handsome and somewhat elaborate mantelpiece designed by Mr. William Price. On the breast of this mantel is painted the following quotation:—

"O turn thy rudder hitherward awhile,
Here may thy storm-beat vessel safely ride,
This is the port of rest from troublous toil
The world's Sweet Inn, from pain and wearisome
turmoil."

Still another illustration shows a simple living-room with

"The fire burns brightest on one's own hearth."

"Fireside happiness, to hours of ease,
Blest with that charm, the certainty to please."

—Rogers.

"Sure the shovel and tongs
To each other belongs."

These words, though ungrammatical, might be applied to the side of a mantel close to where the andirons are placed.

"There is no fire without some smoke."

"Now stir the fire, and close the shutters fast,
Let fall the curtains, wheel the sofa round,



A billiard room with a motto painted on the wall

a little Ingle-nook. Above the fireplace hangs a board on which is painted:—

"Two at a fireside."

And also—

"I built a chimney for a comrade old,
I did the service not for hope or hire,
And then I traveled on in winters cold,
Yet all the while I glowed before the fire."

On a beam that supports the rafters are painted the words:—

"Who hath smelt wood smoke at twilight?
Who hath seen the birch log burning?
Who hath lain alone to hear the wild goose cry?

It is there that we are going with our rods and reels
and traces,

To a silent smoky Indian that we know,
To a couch of new pulled hemlock, with the starlight
in our faces,

For the red God calls us out and we must go."

The following quotations are very apt for fireplaces:—

And while the bubbling and loud-hissing urn
Throws up a steamy column, and the cups
That cheer but not inebriate wait on each,
So let us welcome peaceful evening in."

—Cowper.

"How great a matter a little fire kindleth."

—New Testament.

"Sir, he made a chimney in my father's house, and the
bricks are alive at this day to testify it."

—Shakespeare.

Motto treatment is no new method of ornamentation—no passing fad. It is as old as history. Nor is it a revival of an old custom, for mottoes and inscriptions have been used steadily in buildings and houses for many generations. Since mottoes in the home enhance its charm by their interest, their educational value and their decorative appearance, surely they deserve to be more generally used. Moreover, when painted, they afford an excellent opportunity for introducing the right note of color into a room, and when tastefully applied, and thoughtfully chosen, the mind and eye are treated to the pleasure of harmony in both thought and color.

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The Best Perennials

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The Best Uncommon Shrubs

[illegible]

The Best Vegetables

TIME TO MATVRE				1ST CROP	TRANS-PLANT TO OPEN	SEED UNDER GLASS	PLANT SEED OUTDOORS				NAME	DISTANCE BETWEEN ROWS					DISTANCE IN ROWS					DEPTH		1st. of seed for	Store in cellar	Store in attic	Leave in Open for winter use																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Note.—The Planting Table of Perennials will be concluded in the April number of American Homes and Gardens.



Verbena picked after a killing frost

Planting a Frost Defying Flower Garden

By I. M. Angell

Some Iron-clad Annuals that Bloomed for Weeks after Tender Plants were Blighted by the Cold



Verbena picked after a killing frost



MUCH energy is wasted in sowing tender annuals that are rendered unsightly by the first frosts, when the same time might be given to planting a bed of frost-proof ones that keep their decorative qualities long after sensitive varieties have been destroyed. It is better worth while for the amateur gardener to give his attention to plants that flower for weeks after tender sorts are blackened with the cold, for surely those that will thaw out and regain their freshness, after a cold snap that causes a half-inch of ice to form, pay better for the trouble than the kinds that perish in early October, and leave no choice but withered vines or bare ground as an outlook for the rest of the season. Then, too, a frost resisting flower bed can be sowed at the gardener's leisure, after the spring rush. There are nearly a score of annuals that survive the early frosts. Two-thirds of these have been proved by personal experience.

Mignonette is so hardy that fresh flowers were picked when the temperature was eight degrees below freezing point. It flowered for six weeks after the first frost. This was sowed late in July for fall bloom. Mignonette is at its best during the cool months. It should be sowed in moist, cool soil, that is moderately rich, where shade can be given part of the day. An early sowing bloomed for three months as a result of constant picking, no seed being allowed to ripen.

Asters deserve a prominent place on the hardy list, as they will endure more frost than the cabbage of ironclad reputation. Plump seed, of the Branching variety, sowed in early June, will produce a fine fall display. The seed should be sowed an inch deep, in good garden loam, and the surface of the soil sprinkled afterward with air slaked lime to discourage the insects. When the little plants are

an inch high, earth should be drawn up around the stems. A mulch of tobacco stems is a wise precaution when the flowers begin to show. Later, if the black beetle should put in an appearance, he can be fought off with benzine and water, one part of the former to four parts of the latter, mixed in a can and held under the affected parts of the plant. This must be done often for the few days that they will need watching. As asters are very attractive to the squash bug, it is well not to plant too near the vegetable garden.

Pansies are near the head of the list for frost defying qualities. They escaped destruction when tender plants were blighted under a carpet covering, and revived and lifted their heads after being wilted and almost blackened with the cold. A fresh blossom was picked on November 24th, more than six weeks after the first black frost. They were sowed in the spring, and in order to force them to their best efforts in the fall, all flower buds were nipped off, and straggling branches pruned, during the hot months, to conserve their energy for bloom in cool weather. They were

sowed in a bed of rich soil, under a tree that provided shade during part of the day. Water and liquid manure were supplied frequently, the latter twice a week. From three of these plants 250 flowers were picked in one day.

Sweet Alyssum gave a good report of itself during the entire season. Bloom began when the little plants were less than two inches high, and continued until covered with snow, forty days after frost annihilated the tender annuals. Seed was sown July 1st for fall bloom. Early plantings of alyssum

are improved by cutting back. This variety self-sows freely, and the plants are at their best in the fall. Alyssum can be transplanted when in bloom.

Annual Phlox is one of the brightest of the hardy sorts. Combined with sweet alyssum, it made one of the most at-



Eight iron-clads that were picked four days after killing frost. Annual Phlox, Sweet Alyssum, Stock, Verbena, Calendula, Cornflower, Mignonette, Pansy

tractive beds that the garden contained. The plants were set in close rows, eight inches apart each way, alyssum and phlox alternating. A bed three feet or more in width is required to give the desired effect. The brilliant phlox and the feathery alyssum form a happy combination; they are of the same height and season of bloom.

Cornflowers are a delightful addition to the frost garden, if sown in masses, the plants standing not closer than one foot apart. June sown seed will produce fall bloom, and nipping off the flower buds that appear too early will give a better late display. Cornflowers are so hardy that

is useful for sowing in bulb beds to screen the fading foliage.

Petunia is another ironclad. To train it during the summer for fall flowering, pinch back the plants so that they will make a stocky growth. A sunny open bed with warm soil are the conditions that suit it best.

Calendula, as its name indicates, is capable of bloom the year round. Even in our climate it is one of the last to succumb to the cold. Warm loose soil gives the best results.

Wallflowers are better treated as annuals. The bloom-



One variety of pansies that defies frost. Picked November 24th, more than six weeks after the first black frost



Phlox Drummondii. One of the highest of the frost-proof annuals. Picked after tender ones were killed by frost

self-sown plants winter over without protection, start into growth the following spring, and begin flowering in May.

Annual Larkspur gave fall bloom from spring sown seed. On November 12th a plant was lifted for indoor experiments; it was full of buds and still uninjured by three cold mornings when the thermometer registered twenty-six degrees.

Verbenas are among the gayest of the frost proof annuals. They came to no harm when exposed to a temperature so low that ice, formed during the night, was still unmelted at noon. Verbenas gave satisfactory bloom as houseplants, after flowering for a season outdoors. This variety

ing season begins at midsummer and extends till snow time. Fresh flowers have been picked as late as Christmas.

Stock outlived a number of frosty nights. This plant prefers cool weather. For fall bloom it should be sown in May in rich soil. The plants should stand one foot apart.

Godetia, the tall sort, survived four mornings at 26 degrees.

Everlasting, salpiglossus, forget-me-not, sweet pea, marigold, cosmos, snap dragon, salvia, and anemone have all been recommended for fall bloom. All have not been tested by personal experience, but the prospects are fair for some of the varieties.





1



2



3

1.—After the radish seeds are planted, the soil should be pressed firm with a board. 2.—Seeds may be tested by placing them in a warm place between layers of damp flannel. 3.—A hill is such in name only. It should be on a level with surrounding soil.

Seeds and Their Planting

By M. Roberts Conover



IN buying garden seeds you will save much trouble and disappointment if you get them from a dealer who handles the product of reliable seedsmen only. Otherwise your garden planting may become irksome because of repetition, instead of the wholesome recreation it should be.

A supply of seeds saved from the finest garden specimens grown the preceding season is a valuable possession for starting the new period. These seeds, if they have been kept cool and dry, should possess the maximum of vitality.

The seeds of certain vegetables, such as corn, squash, and a few others, maintain their germinating power for several years, but the majority are good for a few months only. For best results, therefore, plant only those seeds that matured last fall or summer.

Where there is doubt as to the life of seeds, they can be tested by giving them moisture and setting them in a warm place. Small seeds are conveniently sprouted by sprinkling a few on some moist wool or flannel and covering them. After twenty-four hours note the proportion of live seeds. If after three days of warmth and moisture the proportion of live seeds is small, the lot is worthless for garden planting.

For germination, live seeds must have air, moisture and warmth. The normal conditions are moist, friable soil, warm to fifty degrees or more. Soil that remains saturated during the period for germination will cause the seeds to rot, as the surplus of water excludes the air.

To prepare the ground for successful planting, it must be stirred to a depth of four or five inches at least, by plowing or digging. This renders the soil a porous medium for the admission of air to the roots and drainage beneath

them. The surface should then be finely smoothed or pulverized by a toothed tool—a harrow in large gardens or a steel-toothed rake for small areas. The finer the seeds the more thorough should be this pulverization of the soil. The depth of planting is regulated, not only by the size of the seeds, but also by their manner of growth. Seeds whose seed-leaves, because of their form, offer the least resistance to the soil, will push up to the air when very deeply planted, others with broad, blunt cotyledons would probably be smothered before they could get through. Such seeds as beans having this characteristic should be planted very shallow.

The planting should commence as early in the spring as the weather permits, hardy seeds going in a month or six weeks before the more delicate kinds.

Tomato seeds require sixty degrees for germination, and pepper and eggplants seventy degrees or more, and seeds of these must be grown under glass or indoors to become of size for use in transplanting out of doors in May.

In my garden, fifty miles south of New York city, I have planted by the first of April, peas, flat purple-top Milan turnips, celery, lettuce, beets, radishes, spinach and onion sets, following very simple planting methods. For the dwarf peas, a broad space of twelve inches is prepared by drawing the soil away to a depth of one and

one-half inches. I scatter the seeds over this, using one pint of seeds for every twenty feet of distance. The soil is then raked back over the seeds.

For beets, turnips, lettuce, carrots, spinach and seeds of similar size, narrow shallow furrows are made and the seeds are sown rather thickly, covering with about one-quarter of an inch of earth.

Celery seeds are so fine that there is danger of covering



Beans should be planted in very shallow furrows

them too deeply. The soil should be very finely worked, and the seeds sown in a row almost on the surface. With some fine-toothed tool—a child's garden rake is good—stir the soil gently by passing it up and down the row four times.

In planting radishes in beds the seeds are sprinkled over the pulverized soil; more soil being sifted over them until they are covered. About half an ounce will plant a bed three by four feet. After planting press the soil firmly over the seed.

Onion sets are more tedious to plant than seeds, as they are placed upright in a shallow furrow about three inches apart. The very large varieties, however, must be set five inches apart. The soil is drawn about them, barely of a depth sufficient for use in covering the crowns.

Cabbage seeds planted in the open ground about April 1st will produce heads in August. The seeds should be planted about one-quarter of an inch deep. These are sown in a row as are beets, or turnips, but are transplanted for subsequent growth, when about four inches high.

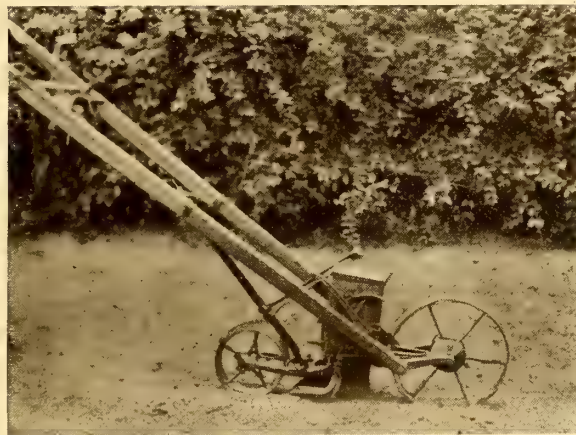
About the middle of April, sweet corn and long-necked squash may be planted, if the weather is real spring-like. The corn is planted in hills about two and one-half feet apart and an inch and one-half deep. About five grains are planted in each hill. These hills are such in name only, being isolated spots on a level with the surrounding ground.

The seeds of summer squash are planted at about the

same depth, in hills four and one-half feet apart, using six seeds in a hill. Three plants should be allowed to survive, so as to avoid too much crowding.



This seed bed should be worked fine with a steel-toothed rake



A planet seed drill saves much labor in planting a large garden. It can be adjusted for any kind of seed

and wax beans by April 20th. If frost comes it kills them and they must be replanted. Do not plant lima beans until the tenth of May, however, as their replanting is almost certain in the vicinity of New York city.

Melon, cucumber, bean, squash and pumpkin seeds may be sprouted before planting, to hasten them. They should be soaked in luke-warm water for several hours and then kept moist until the sprouts appear. Plant them before these get too long as they are easily broken.

A principle of planting, which is absolutely essential to its success is that the soil must be pressed firmly over the seeds to insure their contact with it. A hoe or a piece of

board will do the work nicely. Neglect of this important duty frequently results in great loss to gradeners.

Growing Asparagus in the Garden

A simple method of preparation and cultivation for the amateur



WHEN selecting roots for garden planting, it is better to choose two-year-old roots than those of one year, since the former may be cut the second year after planting. One year roots give a longer lived bed and a heavier yield, but cannot be cut before the third year. In a garden a bed of shorter duration than fifteen years is often more desirable since it admits of some change in the garden

plan. To the novice it may be well to explain that the asparagus is a slow growing plant whose productiveness depends upon the strength of the root and its ability to force upward a number of spears whose loss in cutting will not deprive the plant of its vigor. This strength is attained after four years of growth from seed planting, hence farmers and gardeners generally buy roots of thrifty growth and thereby hasten the time of yield.

The roots are planted in trenches plowed to a depth of



The young roots are set in deep trenches which are gradually filled in as the young plants grow



After the cutting season the bed is leveled and the asparagus is allowed to grow



The root system of an asparagus plant three years old

from eight to twelve inches with a two-horse plow. If the first furrow does not reach the desired depth, the plowman should go over it again. The deeper the plants are set, the more enduring the bed.

If you examine an asparagus root, you will discover two or three small white sprouts. These sprouts will eventually become the feathery top visible above ground. Some roots will have more sprouts than these, but their greater number is a disadvantage as the root cannot support them in vigor.

The root must be so placed in the trench that these sprouts or pips are uppermost, and, as the gardener sets them in position he should cover them with about two inches of earth. The first shoots up are so fragile that too great a depth of earth will often smother them, and after exhausting all of its sprouts the root must die. A distance of twelve inches is sufficient space between plants.

Roots are set about the first of April, before growth commences, or after growth has ceased in the fall.

Assuming that the roots have been properly set and are, with the warmer days, sending up slender spears, and it becomes necessary to stir the soil to destroy tiny weeds and for needs of cultivation, the soil along the edge of the trench must be gently stirred so that about an inch or two falls in about the plants where a second or third sprout is struggling through. A straight or harrow toothed cultivator is excellent for this end, but if a hand-tool is used an iron garden rake drawn along the edge of the trench will answer the purpose. This process is repeated at intervals during the season, till in August the trenches are almost on a level. The bed must be kept clear of weeds at all times and the ground frequently stirred by hoe or cultivator.

When the young tops have feathered out, a good fertilizer should be applied in the trench along the roots, about a handful opposite each plant. Fertilizers that are ready prepared are convenient, but if one buys the necessary ingredients and mixes them himself he is sure of an unadulterated product. Cleanings from the henery are excellent.

A serious menace is the asparagus beetle, which appears with the first warm days—first a few able-bodied ones, winged, agile, and equipped for mischief. They eat enough to sustain them through egg-laying and about twelve or fifteen days later are reinforced by fresh relays of kindred in the form of helpless looking slugs whose only assets are able

jaws and voracious appetites. One hatching of these upon a plant will soon reduce it to a naked skeleton of stem and branches.

At this stage the slugs are wingless and may be killed by beating them from the plant when the sun is shining hot. With a small garden plot this method is as effectual and less expensive than spraying. Some prefer spraying with a solution of arsenic or Paris green. Poultry are exceedingly fond of these beetles and are great aids in their extermination, but do not apply chickens and poison at the same time.

A bed that was planted with roots two years old at setting may be cut about two weeks the second year, one month the third year and until July 1st in the subsequent seasons.

Where green asparagus is desired the beds are not mounded, but the asparagus is allowed to grow several inches above the ground before it is cut.

The gardener who would keep the beds in condition must cut the growth of spears regularly—every day in warm weather and every other day when it is cooler.

After the cutting season the beds are thrown down by plowing apart the mounded ridge and another application of fertilizer or manure is given, and the asparagus left to a season of recuperation and growth. Cultivation continues until frost.

There are three distinct varieties of asparagus. The Palmetto, a thick growing, green asparagus, considered immune from the asparagus rust; the French Argenteuil, also immune the first few years after its importation, and an ordinary variety resembling the Argenteuil, which succumbs readily to the rust. The asparagus rust is a disease which appears in late summer, and which turns the tops to a dusty brown. It is destructive to patches when it gains headway early.

The only method of combating it seems to be the strengthening of the plant by heavy fertilizing and persistent cultivation. Patches that are cut beyond the usual time succumb readily and beds that have rusted the previous season will be helped by a shorter cutting season.

An application of compost in furrows between the rows should be made late in the fall or early in the spring and this should be covered by a furrow of earth.

The virtue of any manure or fertilizer is lessened if it remains exposed to the air.



Fertilizer may be applied to the asparagus with a scoop



The spears are cut by a long knife which is passed beneath the surface of the ground



If properly set and well fertilized, the asparagus bed should yield an abundance of fine, large spears



Asparagus stacked, tied into neat bundles and made ready for transportation to the market

the desired size from inch boards. If the box is to be a large one you will save haulage by insisting that he do the work near the water-garden site, beside it if possible. In the meantime, dig the hole, two feet in depth, to receive it.

Before setting the tank in the ground, paint the outside with tar, to prevent rotting the boards. Next, procure from a mason a pailful of mixed Portland cement. With a garden trowel go over all the seams and cracks and the box with a double coating of the cement, and the water-garden is ready for its plants. In cold climates, this is superior to a cement tank, for unless well and expensively constructed, they are almost sure to heave and crack in weather much below zero. Of the comparative life of the cement or wooden tanks, I have not yet had an opportunity to judge. One wooden tank of my personal knowledge, made from a packing box of only half inch boards, has lasted in good condition for nearly five years, and its initial cost was about 80 cents. Of course, in a cold climate, the cracks have to be looked over and patched with fresh cement each spring, but this expense is so slight as to be hardly worth mentioning.

In one corner of the box there should be an auger hole, and a length of inch pipe, two feet long, running into the ground, to drain off the water in the fall. This tank can be filled with a hose, and if provided with a few fish, and a number of oxygenating plants, the water will keep sweet, and only need syringing with the hose to replace evaporation. For a tank of this size (ten feet square) you would need about a dozen assorted aquarium submerged plants, in addition to the water-lilies, and other ornamental plants, and about two dozen fish of about two inches in length. These may vary from fancy gold fish, to the familiar "shiner," only remembering that fish that will thrive in cold running water will not live in a sun-warmed stagnant pool.

The pool once in position, the next step is the planting, both of the pool itself, and its surroundings. As regards the latter question, there are many conflicting arguments, and opinions. Much will depend on just what type of water-garden yours is to be, as has been stated. But one rule is safe to follow, and that is to keep as near to nature as your desires will let you. Iris, reeds, grasses, and flowering shrubs are never a mistake in the vicinity of water, or water-gardens. Tropical plants, such as cannas, Castor beans, Caladium Esculentum and others too numerous to mention are favored by many and give a tropical luxuriance of foliage. But they must be renewed each year, or great care must be taken in storing them over winter. In this article, and the diagram, I have made use of only

such plants as are hardy perennials, with the exception of the gladiolus, and possibly the Auratum lilies. These last-named are listed as perennials, but few people have succeeded in keeping them in their beauty for more than a year or two.

The little arbor, or tea-house is an attractive but unnecessary adjunct to the garden, and is not included in the estimate of fifty dollars. It should be built of cedar or white birch with the bark left on, and may be covered with honeysuckle, Wistaria, or any of the many attractive vines listed in the catalogues.

Around the tank itself are collections of Iris and hardy grasses, some of the latter reaching a height of over twelve feet in the flush of the season. The garden depends mostly on flowering shrubs to furnish bloom throughout the entire summer and fall.

For the planting of the tank itself, I quote from one of the best books on water-gardens, by Peter Bissets, designating the best lilies and nelumbiums for the small water-garden. "The tank can either be filled to the depth of one foot with rich pond muck and well-rotted cow manure, and the lilies planted, or the roots may be planted in boxes of soil two feet square and a foot in depth, and set into the tank. I prefer the latter method, as in winter the boxes can be lifted and stored entire in the cellar. The following is a list of the best lilies for the small garden. There are many others fascinating in color that you may wish to attempt later, but for the first attempts of the amateur, these few may be relied on to repay anything but unpardonable neglect."

White *Nymphaea marliacea albida*.

Pink *N. marliacea rosea*.

Yellow *N. marliacea chromatella*.

Red *N. gloriosa*.

Among other plants suitable for a small water-garden are listed:

Limnocharis Humboldi—The water poppy with yellow blooms.

Limnathemum Indicum—Yellow flowers.

Eichornia Speciosa—The water-hyacinth—pinkish.

Nelumbiums—White—*Album Grandiflorum*.

Pink *N. Speciosum* (the Egyptian Lotus).

It may not seem to the scoffer that a patch of water ten feet square can add much charm to a garden. Any patch of water might not. But for the little water-garden, however simple, where the plants are well chosen, and the surroundings carefully thought out, my only advice is—Work out the plan and construct a pool as directed, to secure a pleasing and permanent addition to the garden.





CORRESPONDENCE



The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds. All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By ALICE M. KELLOGG

BREAKFAST TRAY FOR A GUEST ROOM

"I HAVE heard of a special tray," writes L. O. R., from Canada, "that is fitted for serving breakfasts in a room. I would like information about this if it would be suitable for a guest room."

There are special trays fitted for serving breakfast in a room, and that are suited for a guest room. The English china is particularly interesting. The tray is of white enamelled ware, and is oblong in shape. A small plate, covered dish for toast, eggcup, cup and saucer, porridge dish, cream pitcher and sugar holder are the usual pieces that are sold with the tray. The prices range from eight to fifteen dollars according to the quality of the china.

Of course, this idea could be carried out less expensively, by selecting the necessary pieces for the tray from American earthenware. In this case the open stock should be drawn from, so that any breakages could be replenished.

An oblong table made of mahogany with a glass tray on the top is sometimes used in a guest room for serving tea or lemonade.

BUNGALOW FITTINGS

"The bungalow we have rented for the summer, on the south shore of Long Island, is partially furnished with beds and bedding, dining room furniture and kitchen utensils. Please suggest what we can add at small expense to give a homelike atmosphere."—G. N., Geneva, N. Y.

The living-room should be made comfortable for stormy weather with rugs, a divan, chairs and small tables. None of these need cost very much as there are summer furnishings now that can be bought very cheaply and will give a season's wear. The Kazak rug comes in good colors and costs \$8.50 for a size six by nine feet. Unstained Windsor chairs cost about \$2.50 each. These can be painted and used on the porch as well as in the living-room. A woven wire divan of good quality costs five dollars, and other grades would probably be less. An excellent mattress of cotton felt may be had for eight dollars.

If the living-room is not very well lighted, the curtains should be of thin net. If heavier material can be used something with colors in the pattern would be attractive, if the walls of this room (as is usual with the summer bungalow) are plain.

Two good reading lamps should not be overlooked for the living-room. Colored prints made in Germany can be had from twenty-five cents up that are successful wall decorations. Some attractive table covers may be found among the hand-blocked India prints, and covers for the divan pillows from the imported sun-fast or unfadable fabrics.

Some inexpensive flower jars in the Mexican and Spanish ware would serve as well for mantel ornaments.

(Continued on page xvi)

Hints for the Housewife

By MARGARET SEXTON

W. K. G.—The life of silk stockings may be prolonged very much if a small piece of black silk is sewed on the inside of both toe and heel. The soft Japanese silk is the best to use. It should be basted on first and the edges darned on, so as to avoid any roughness or seams. A piece of the silk may be sewed also at the top where the suspenders are fastened. This is a very easy thing to do and will take only a little while to accomplish.

S. W. A.—If you make "home-made" ice-cream, you have probably seen before now that when cleaning a freezer, after having made ice-cream, there is generally a quantity of salt to be found in the bottom of the freezer. Remove the salt and put it in a jar or crock to dry, either in the sun or near the stove. The salt can be used again at the next ice-cream making, and so a bag of ice-cream salt can be made to last a long time.

W. H. N.—A careful buyer will plan to get her table linen after some holiday exhibit—Thanksgiving, Christmas or Easter—if you ask to see the stock which has been mussed by being used as decorations for the windows. There will be a fine assortment of linen goods, especially in the strictly linen store, and although they may not be offered for sale by the clerks, they can be found by inquiry. Even if the soiled linen is not attractive at first, it is perfect after laundering, and choice quality and patterns may be bought at great reductions.

J. D. N.—A very appetizing way of serving cucumbers is to slice them very thin and mix with them radishes, also thinly sliced. They look well together; the tiny line of red of the radishes adds color to the cucumbers, and the slight biting sensation of the radish makes a very good flavor. This is a particularly good relish to serve with a fish course. A little watercress is a nice addition and is a pretty finish.

R. O. O. J.—If you should have the misfortune of breaking the string of your beads and must string them again yourself, if it is a graduated necklace, begin with the smallest sized bead, and as you string, lay aside a duplicate bead in each side until you have reached the largest. You will then have, by arranging the beads in this way, the other half of the string to match the first half.

M. R. T.—When washing cut glass make a solution of baking soda and soap so as to have a good suds. In this wash your cut glass, scrubbing with a soft brush. After this is done rinse in water that is not too hot, as it might crack the glass. Then dry with a clean tea towel. The result will be the glass looking clear and sparkling.

R. W. D.—If you have a little family whose rubbers must be taken care of, the following is a suggestion. Provide yourself with a patent clothespin, the kind that has a

(Continued on page xvii)

Garden Work About the Home

By CHARLES DOWNING LAY

PLANTING A SLOPING BANK

"WHAT do you think of the idea of planting shrubs to trail down the embankment shown on the enclosed sketch," asks H. W. G. Cleveland. "I want to do away with mowing the slope. What shrubs should be used? I should also like to know if large specimen lilac bushes should be pruned back when first planted?"

There are many things you might use on this low bank along the sidewalk and the choice must be determined by your own taste.

One of the best things for such a bank is the Memorial Rose (*Rosa Wichuraiana*), but it is a rampant grower and might soon get beyond bounds. English Ivy is another good thing, more difficult to establish than the rose and of slower growth, but it is very satisfactory and it will last forever. Plant the roses four feet apart at the top of the bank. The ivy should be closer for an immediate effect, say two feet each way. The ivy and the rose are both so low and grow so close to the ground that they will not screen the house nor be a barrier to keep people out unless they are trained to a fence. This could be done very easily and would be very beautiful, especially if the lawn is lower than the sidewalk so that the fence could be at the top of the bank and next the sidewalk. It would scarcely do to have the fence at the bottom of the slope.

Japanese Barberry (*Berberis Thunbergii*) would be a good shrub for this situation, and it will serve as a screen and a barrier at the same time. Plant them four feet apart in a row in the middle of the slope. They will need no clipping and in a few years they will form a compact and impassable hedge.

If you want a thornless flowering shrub you might use a spiraea, either Van Houtte's or Waterer's.

The lilac bushes need not be cut back when they are transplanted if their shape is satisfactory, but it would be well to thin the head, cutting out about one-quarter of the wood. The lilac is easy to transplant and if most of the roots are dug with the tree it will need almost no pruning.

THE GARDEN PLAN

"In making plans for my garden I find your article and illustration in the October number, 1910, of *AMERICAN HOMES AND GARDENS* most practical, and would like to inquire the dimensions over all of the plans you gave there, and also to inquire, if where you have marked 472 early tulips and dahlias, or 100 late tulips and snapdragon, the numbers given refer to the tulips, or the dahlias or both. Do you plant the given number of tulips first, and after they bloom do you put in the same number of dahlias, or are they planted at the same time?"

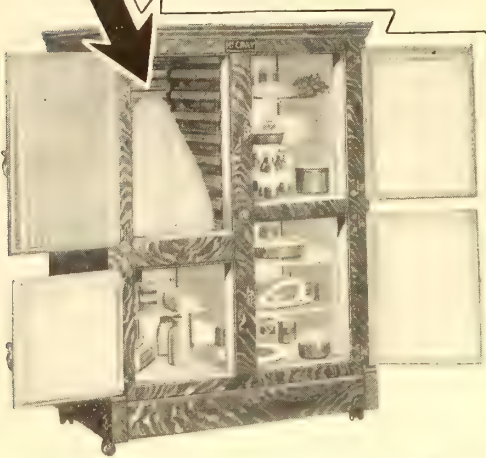
"Being an amateur and just starting my

(Continued on page xv)

The Ice Shows How the Cold Air Circulates

Moist Cold and *Dry Cold* are, from the standpoint of perfect refrigeration, almost as widely dissimilar as are zero and summer-heat; because moisture is a deteriorant and a medium of interchange for the flavors or aromas of everything it envelops.

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"Everything for the Garden"

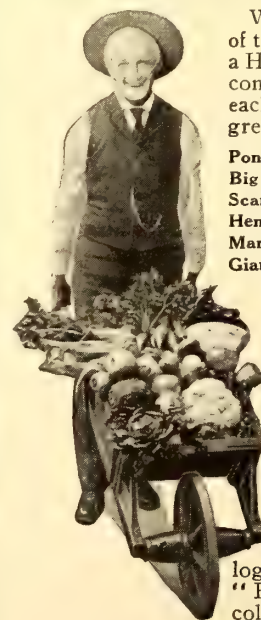
is the title of our 1911 catalogue. It is a book of 212 pages, handsomely bound, 8 colored plates, 800 illustrations, most of them direct from photographs, showing actual results without exaggeration. It is a library of everything worth while, either in farm or garden, or home. Our special advertising edition also contains 12 extra pages, 8 pages of the most concise, comprehensive, clear, cultural instructions ever published. In addition, there are three pages of a new departure in our cooking recipes.

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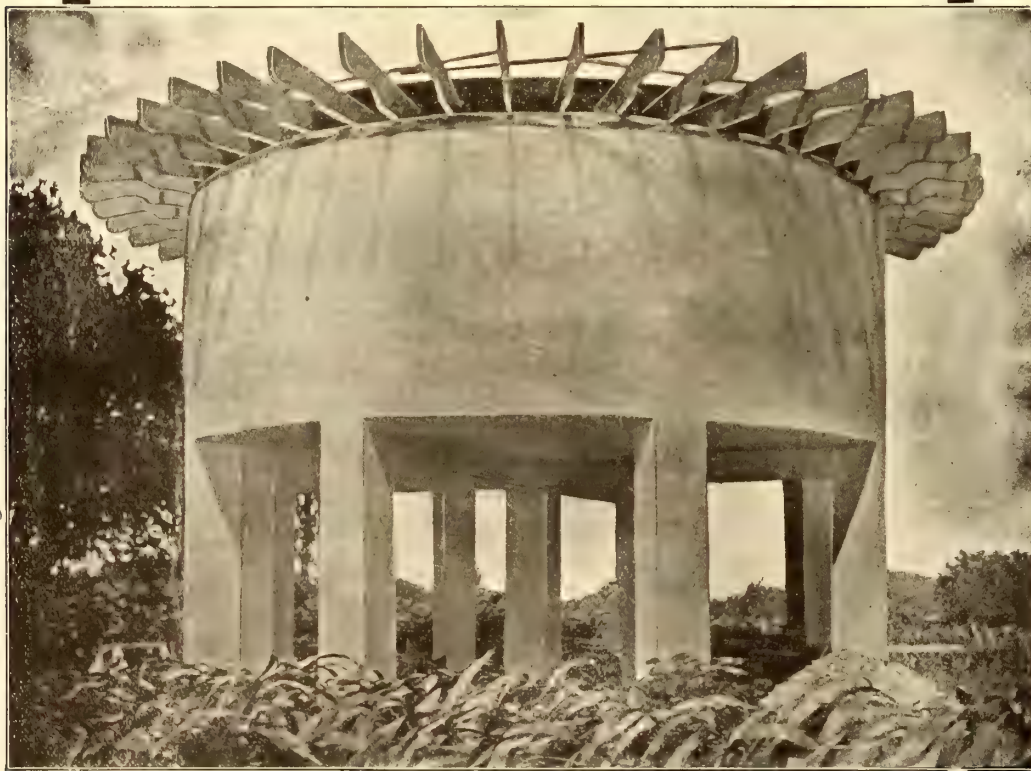
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GALLOWAY TERRA COTTA CO.
3206 WALNUT ST. PHILADELPHIA.

Garden Work About the Home

(Continued from page xiii)

garden, would it be possible to have tulips or bulbs planted at all this year?

"I shall consider it a great favor if you will explain these things to me, and I intend following your plan for the formal garden as exactly as I can.

"My place is in the country, sixty miles up the James River from here, and I have every reason to believe I can raise all the plants you have listed, as this climate is very mild," writes M. M., Richmond, Va.

The garden is 84x134 feet. The numbers refer in some cases to the tulips, in other cases to the plants shown in the same bed. The tulips are, of course, planted in the fall and the other plants in the spring, after the tulips have flowered. The dahlias are planted after the early tulip bulbs are taken up, as the early tulips give a satisfactory bloom only once. The late tulips, which often improve from year to year, can be left in the ground, and the snapdragons and other things can be planted between them.

There is no doubt that you can grow all these plants on the James River, and you can probably do better, as the plan was designed for a cold hill in Northern Connecticut.

I am sorry that you are going to copy the plan, as it is very seldom that a garden designed for one situation can be built in another, because the conditions of situation and surroundings are so unlikely to be the same. A garden is always designed to fit its environment, and it is doing violence to the scheme to attempt to use it in dissimilar surroundings.

All that one can ever do is to adapt the broad outlines and perhaps some of the details to a new site, but one is seldom tempted in that way because the new site always suggests new schemes that fit better than any such adaptation could possibly fit.

I am glad that you like the plan and hope you will be successful in your adaptation.

SEA WATER A LIQUID FOOD

IT HAS hitherto been supposed that marine animals derive their food from each others' bodies and, in the last analysis, from plants, says Prometheus. A few years ago, however, Puettner discovered that the sea contains dissolved food materials, upon which some marine animals, notably sponges, appear to live exclusively. A given volume of sea water contains in dissolved condition 24,000 times more carbon than it contains in the form of organisms. Puettner proved that one species of sponge, if it were compelled to exist upon ready formed food, could obtain in one hour only 1/2300 of the quantity of carbon which it consumes in that time; and in order to obtain even this small quantity, it would have to fish over twenty times the volume of sea water which would suffice to supply it with all the carbon it requires in the form of dissolved complex carbon compounds. Very interesting in this connection is the observed fact that comparatively small quantities of ready formed food are found in the digestive cavities of the lower marine animals. Hence sea water is, for a great many invertebrate animals, a nutrient fluid from which they absorb food, as the cells of animal tissues absorb food from the bodily fluids, animal parasites from the media in which they live, and all plants from their environment. The sea is an inexhaustible reservoir of food.

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—they not only add to the refinement and the home-like appearance but greatly enhance the value and importance of your property.

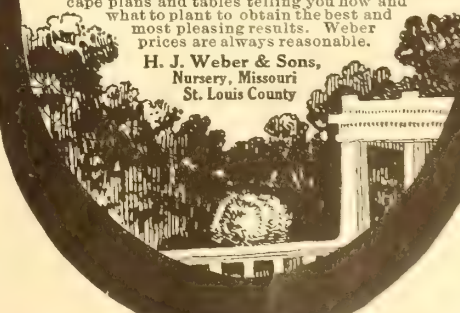
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BUFFALO, N. Y., 61 MANCHESTER PLACE

Problem in Home Furnishing

(Continued from page xiii)

TWO GUEST ROOMS WITH SLOPING CEILINGS

“In remodeling an old farm house we have added windows to the guest rooms on the third floor, but have not been able to do away with the sloping lines of the ceiling,” writes Mrs. M. McC. “Now, we are puzzled as to the wall treatment, curtains, etc. One is a single, one a double room.”

The two rooms may be made distinctly different yet equally attractive by using a flowered paper in one,—a pink rose on a trellis costs thirty-six cents a roll—and a canary-colored lattice paper at fifty cents a roll in the other. The patterns should be such as may be run from the floor over the ceiling and down on the opposite wall. This does away with the uneven ceiling lines and impossible picture moldings.

Starting with these color notes, the rose room may have curtains of white nainsook edged with lace looped back against the casement, with straight over-curtains of pink Japanese cotton crêpe; rugs made of cretonne strips woven in a hand-loom,—colors, pink and green on a white ground; white enamelled furniture with two willow chairs stained green and cushioned with rose cretonne.

The larger guest room with pale yellow wall-paper may combine blue and green in some of the furnishings, a Scotch rug with a green mixed in the border may be chosen for the floor covering. An English chintz with a bird design may be made into covers for the twin beds, and also for over-curtains at the windows. Mahogany furniture in good reproductions from the old styles may include a fireside chair, rush-seated rocker, candle-stand and sewing table. A small top table for holding a breakfast tray may also be remembered. (See answer to question on breakfast trays.) A screen is a necessary article of furnishing in a double guest room, and covered with cretonne like the bed-spread, helps to unify the decorative features.

COVERING FOR A FIRESIDE CHAIR

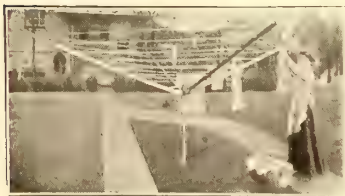
A Richmond (Va.) correspondent has just bought a wing or fireside chair, and asks what kind of material would be the most suitable for a cover. “The library,” she writes, “where this chair is to be used has Oriental rugs in which tans, blues and greens predominate. The furniture already in the room is upholstered in olive-green linen velour. The wall space above the bookcases is gold and green Japanese leather paper resembling burlap. As this one large chair will be rather prominent in the room I would like its covering to be a pleasing note.”

There are numberless good patterns in the wool tapestries from which to choose a covering for this chair, and the verdure designs combine the colors that would suit this room,—tans, browns and greens. While the cost of the wool tapestries seem high in comparison with the cotton ones, the former are more durable, both in color and texture.

FERN DISH FOR DINING TABLE

A request comes to suggest some kind of receptacle for ferns suitable for standing in the center of a dining table.

Either metal or pottery can be used for holding potted ferns. Usually a tin lining is fitted inside the holder. A silver fern-dish accords with fine table linen and china, and copper or brass are appropriate for simpler conditions. A plain green bowl is always in good taste, and this is not difficult to find in the Japanese stores.



CHICAGO-SUN CLOTHES DRYER

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All in one

- A light Machine for the soft, wet spring lawn.
- A heavy Machine for the hard, dry summer lawn.
- A heavier Machine for the driveway or tennis court.

Why buy one of the old style iron or cement fixed-weight rollers that is generally too heavy or too light to do your lawn the most good, paying for two or three hundred pounds of useless metal—and freight on it as well—when less money will buy the better, more efficient.

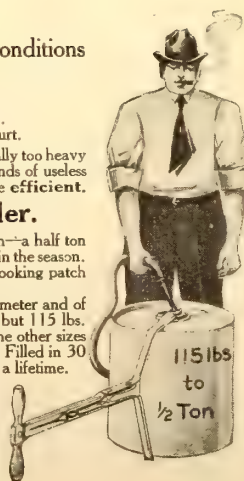
“Anyweight” Water Ballast Lawn Roller.

Remember that a difference of 50 pounds may mean success or ruin to your lawn—a half ton machine will spoil it in early spring, while a 200 lb. roller is absolutely useless later in the season. If you desire a fine, soft, springy turf of deep green, instead of a coarse, dead looking patch of grass, use an “Anyweight.”

The “Anyweight” Water Ballast Roller is built in 3 sizes, all of 24 inch diameter and of 24, 27 and 32 inch widths. The machine shown here (our smallest) weighs but 115 lbs. empty, 470 lbs. when completely filled with water, and 737 lbs. with sand. The other sizes weigh 124 and 132 lbs. empty and from that “anyweight” up to half a ton. Filled in 30 seconds—emptied in a jiffy. Fully protected by our patents. Runs easy—lasts a lifetime.

This book sent free:—We will mail you, postpaid, our valuable and interesting book on “The Care of the Lawn,” together with folder about the “Anyweight.” Write us to-day. Save money—save your lawn.

WILDER-STRONG IMPLEMENT CO., Box 9, Monroe, Mich.



Hints for the Housewife

(Continued from page xiii)

wire spring in it. Mark the child's name on the clothespin and when the rubbers are taken off fasten them together with the clothespin. When the rubbers are in use keep the clothespin in one place where it is convenient. Children can be taught to take care of their own rubbers in this way, which will save much confusion when the rubbers are wanted.

C. D. P.—It is not an unusual thing to have our clothing, towels, etc., rusted by hanging on iron nails. It pays to paint all hooks that are to be put up in the pantry, kitchen or bathroom. If this is done there will be no rust spots to struggle with. The hooks may be dipped in good white enamel paint and allowed to dry thoroughly before they are put up, if one has no brush with which to paint the hooks.

K. A. B.—All housekeepers have experienced the difficulty of keeping cheese any length of time and having it remain soft and free of mold. This can be very easily done by slipping the cheese after you have cut it into strips into a fruit can and screwing the top on tight. You will find you have accomplished what you have aimed at, that is, moist cheese and not moldy.

F. O. B.—Any cut glass piece that you have had broken can be mended splendidly by being riveted with small silver rivets. This also applies to china. Any china or cut glass firm will do this work, and it will scarcely show and is very durable.

F. D. M.—Do you save the water corn beef and fresh beef have been boiled in? There is a great economy in doing so, you will find if you try it once. After the meat has been removed set the water away to thoroughly cool. You will find that a thick white cake of grease will form on the top of the water. This can be taken off in a solid mass, put in a granite pan and set on the stove where the grease will melt slowly. Let it remain on the fire until it stops bubbling, then strain through a very fine hair sieve, put in old cups or jars and let harden. There are a variety of ways in which this usual wholesome shortening can be used, and so save the lard. Ginger snaps and ginger bread with a little addition of butter are very good made with this shortening; it is also good for shortening griddle cakes, breakfast muffins, frying potatoes, making them a pretty color and crisp. There are a dozen different ways this shortening can be used very advantageously.

J. C. B.—A very good thing to use when pressing sleeve seams so that the seam will not make a mark is a section of an old broom handle. Cover the handle with several thicknesses of flannel; an old drawers leg or sleeve of a shirt is just the thing for this. A sleeve board made in this way is as good, if not better, than one that is to be bought, and can be most easily made, with no expense. It is well to sew the flannel on the stick.

F. D. T.—A number of small, soft pillows for the use of an invalid will be much appreciated. They can be put below the feet as a sort of brace, under the bed clothes to remove their weight; they are often a great comfort as a support beneath the tired arms, or at the hollow of the back. A patient can always find just the spot for one of these little pillows. So make a number; they will bring comfort and rest.

W. R. G.—When making toast for invalids it is very wise to cut it in strips. It is far more tempting to the patient and many times more toast will be eaten than



Wouldn't you like to know in advance what colors would look best on the outside of your house?

We have a Portfolio of color schemes for house-painting which we send free on request. This shows colors in artistic combinations on actual houses. There are fifteen of these plates, each showing a different style of architecture and each suggesting a different color scheme with complete specifications for obtaining it.

Another Portfolio—

this one on Interior Decoration

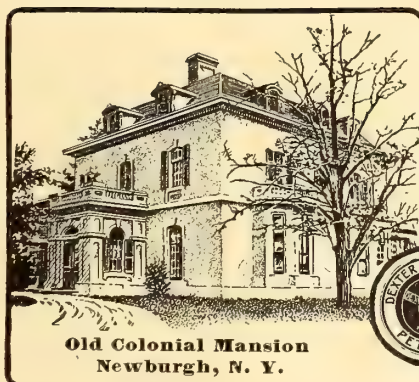
This Portfolio shows an attractive cottage bungalow, decorated and furnished throughout. Each room, as well as three exteriors, and a veranda, are shown in their actual colors, and accompanying each plate are carefully worked out specifications. Even the curtains, rugs, draperies and furniture are suggested. You can adapt any or all of the color combinations in the Portfolio, or our Decorative Department upon request will prepare without cost special suggestions for your use. Write today for these two helpful Portfolios.



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Old Colonial Mansion
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it's an easy matter to obtain just the right tone to harmonize with the rest of the color scheme and the natural surroundings. Made in white and several artistic shades. Petrifax also gives UNIFORMITY of color which is impossible to secure in ordinary cement or plaster work. Petrifax fills the pores, waterproofing the surface it covers, yet preserving its texture. The mineral base is carried into the cement by a volatile liquid, which evaporates readily, leaving a hard but elastic surface that will not chip, crack or peel. Rain and dampness cannot penetrate it, climatic changes cannot affect it. Let us tell you more about this waterproof coating. Ask for our interesting booklet.

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Every **Morgan Door** leaving our factory has the word "**MORGAN**" stamped on it. This is for the protection of the house builder, who is then assured that he is getting **Morgan Doors** if he sees the name.



Are specified by all up-to-date architects and are furnished by dealers who do not substitute. If the door you get has not the word "**MORGAN**" on it, it is not a **Morgan Door**.

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Handled by Dealers who do not substitute.

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The old adage, "look before you leap" now reads, "look before you lease." A poorly heated building is no renting (or sales) bargain at any price—because no house is really worth living in without plenty of clean, healthful, invigorating warmth. That is why

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are proving in many thousands of buildings, of all classes, in America and Europe, to be the greatest boon of the century in utmost betterment of living conditions, as well as in *reducing the cost of living*.

IDEAL Boilers and **AMERICAN Radiators** bring *freedom* from the back-breaking work, ash-dust and poisonous coal-gases which attend the use of old-style heating devices. At the same time, an outfit of **IDEAL Boilers** and **AMERICAN Radiators** will prove to be a dividend-paying investment to you—far better than bonds at 6%—as in a few years the outfit saves enough in coal and cleaning, time and temper, no rusting or repairs, to quickly repay the original cost. Any owner, architect or real estate agent will tell you that **IDEAL Boilers** and **AMERICAN Radiators** will attract and hold best tenants at 10% to 15% higher rental; or assist to sell the property quicker, at full price paid for the outfit.



A No. 3015 **IDEAL Boiler** and 175 ft. of 38-in. **AMERICAN Radiators**, costing the owner \$125, were used to heat this cottage.

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At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

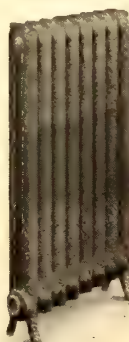
Whether landlord, tenant, or intending builder, whether your building is **OLD** or new, **FARM** or city, it will pay you well to **LOOK INTO** the merits of **IDEAL Boilers** and **AMERICAN Radiators**. Tell us of the building you wish to heat. Our information and catalog (free) put you under no obligation to buy. Prices are now most favorable.

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Chicago



though it was in a large piece. To one who has a poor appetite, to eat the delicate strips does not appear such an undertaking, and, besides, there is no need to break the toast and so make objectionable crumbs.

J. W. K.—Much time, labor and stove polish may be saved if, every day, instead of blackening the stove in the usual way, you allow the fire to dampen down, then, when the stove is cooled off, rub it thoroughly with a newspaper. Stoves will keep bright for a long time taken care of in this way.

GILDING GLASS.

A PART from the gold decorations on hollow glassware, the process of gilding glass, for all possible purposes, is the time-honored one involving the use of gold leaf. The chemical processes of gilding, owing to their complicated character, have not found widespread introduction. This is also in part due to the fact that, in gilding glass, we have, for the most part, to deal only with small surfaces.

The tools for gilding work are the simplest imaginable: A gilder's cushion, consisting of a little board, with a leather pad and on a narrow side a protective shield of strong paper, or thin pigskin, nailed on. On the under side is a leather loop, in which the thumb of the left hand is inserted, so that the cushion can be handled like a painter's palette. From the book of gold the gilder carefully blows several leaves of gold against the protective shield, passes the gilding knife under one of these leaves and spreads it smoothly on the cushion. With the knife it is then divided into strips of the requisite length and breadth, which are laid on the surface to be gilded. For this purpose he employs a broad brush, thinly set with hairs, which is known as the gilding tool.

As the adhesive medium, or binder, between the gold and the glass, he employs a solution of water, alcohol and isinglass. The preparation of this adhesive demands the greatest care, and experience is the best teacher. Upon this the success of the entire work depends.

Take a small piece of isinglass, boil it out thoroughly in water, pour the solution through gauze and add a little alcohol to it. With a short, thick brush, of hair, apply this solution quite liberally to the glass surface to be gilded and lay the proper piece of gold on it. Proceed in this manner until the entire plate has been gilded. In the meantime remoistening is constantly necessary. This must, however, be done in such a manner that the gold is not floated off by the liquid. After gilding, place the glass plate in a sloping position and allow the surplus water to drain off. Then lay the plate, gilded side up, in a box, place over it unsized tissue paper, and dust over this washed chalk. The object of this is to absorb the moisture and the paper interposed is to prevent the balling up of the chalk, just as the alcohol expedites the evaporation of the fluid and insures a brilliant gloss to the gilding.

When the gilding is perfectly dry we can proceed to the polishing. For this purpose we use a rag of soft silk velvet with which we rub vigorously, backward and forward, over the gold surface. If, during the polishing, the gold rubs off, then either the gilding was not properly dry or the solution was too weak. If



it was too strong, that is to say, if too much isinglass was used, the gold, after polishing, will show spotted places and the high polish will be lacking. These are signs of which every layman can avail himself, and a little patience will soon bring results.

Dull gilding on glass calls for a coating of varnish. The surface to be gilded must be coated with damar or copal varnish by means of a soft, broad brush, thinly and evenly, which is the principal thing. After drying, which must have proceeded so far that on touching the varnish with the finger nothing comes off, the leaf gold is laid on evenly and smoothly. This gilding is not polished over.

Another kind of gilding is the oil gilding, such as is used on tombstones and for other outside work. The lettering that has either been carved by the stone-cutter in stone, granite, etc., or, in the case of glass plates, etched with the sandblast, is given, to insure greater durability to the gilding, a priming coat of oil paint, to which some ochre has been added, and when thoroughly dry slightly moistened with oil-size. This is allowed to dry to the same extent as in dull gilding, and we then proceed to apply the gold, which is pressed down firmly with a soft brush. Even sizing means even drying of the oil-size and this facilitates the work and immeasurably increases the durability.

The gold projecting beyond the edges of the letters is very easily removed by drawing a cloth, not too damp, tightly over the gilded plate and allowing it to remain for a time. As the lettering is recessed, the dampness of the cloth will only affect the surplus gilding and this, after the cloth has been removed, can easily be scraped off with the aid of a steel spatula.

What has been said of leaf gilding applies also to leaf silvering, except that the solution for bright silver gilding must contain rather more isinglass, as the leaf silver is harder than gold.

For oil gilding we do not use leaf silver, but leaf aluminum, because the former tarnishes on exposure to the air, i. e., is oxidized.

SOFTENING HARD WATER

ON a small scale, for household use, hard water can often be softened by simple boiling. It becomes somewhat turbid thereby on account of the separation of the carbonates of calcium and magnesium, soluble only in water containing carbonic acid, when the carbonic acid is expelled. By the addition of a little soda, varying according to the hardness of the water, it can also be softened. On a large scale, hard water may be softened by the addition of a suitable quantity of lime milk. The lime combines with the free carbonic acid and thereby the calcium and magnesium carbonates, previously held in solution, are also rendered insoluble.

DULL VARNISH

ALLOW 12 to 11 parts of seed lac to steep in 9 to 11 parts of spirits of sal ammoniac. Then add 80 parts of water, in which 1 to 2 parts of fluid extracts of logwood, 0.1 part of blue vitrol and 0.1 part of sugar of lead have been dissolved; shake well, and add just enough lamp-black to produce a deep black.

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(One of our Pergolas as it appears when erected)

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The Pergola Company, 155 LaSalle Street, Chicago, Ill.

ANY man-about-the-house or carpenter of ordinary ability can set up these pergolas by following the simple instructions we send with the crated sections.

Our new departure places pergolas of a number of the most modern and most approved designs, and of excellent quality, within the reach even of the owners of modest-priced homes.

The saving in money averages about one-third to one-half the cost of such equipment when made to order. The saving in time may amount to many weeks.

Our illustrated catalog will show you how you can acquire a pergola of correct design and proper construction without the usual trouble and excessive cost. Let us send it to you.

Will You Try Johnson's Wood Dye and Wax at our Expense?

We'll gladly send you samples of all of Johnson's Wood Finishes—together with copy of our beautifully illustrated book by famous experts—printed in five colors—"The Proper Treatment for Floors, Woodwork and Furniture"—absolutely free. This Book tells you how to finish or refinish all woodwork, floors and furniture.

Read Free Offer Below.

Johnson's Prepared Wax

for all woodwork, floors and furniture (including pianos). Anyone can



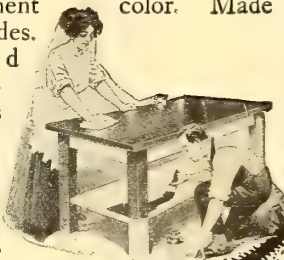
easily use Johnson's Prepared Wax over any finish or on the bare wood for that beautiful, artistic, dull finish so much in vogue. Ask your dealer for sample.

Johnson's Wood Dye

—not a varnish stain—but a deep-seated Dye which penetrates the wood and fixes a deep, rich, permanent color. Made in 14 artistic shades.

Johnson's Wood Dye makes inexpensive softwoods as beautiful and artistic as expensive hard woods.

Color plates and directions for use in the booklet.



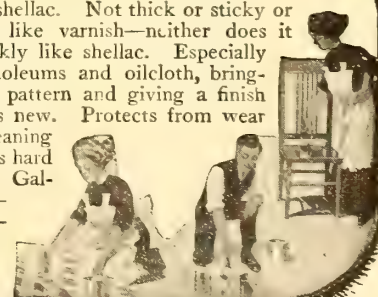
Johnson's Kleen Floor

for cleaning all polished floors, stairs, and finished surfaces, keeping them in perfect condition. Apply with a cloth and rub dry—removes all stains and discolorations. After using, give the surface a coat of Johnson's Prepared Wax and the wood will look just like new.



Johnson's Under-Lac

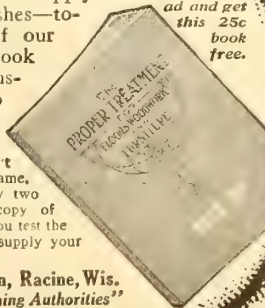
a thin, elastic spirit finish far superior to varnish or shellac. Not thick or sticky or slow-drying like varnish—neither does it dry too quickly like shellac. Especially good on linoleums and oilcloth, bringing out the pattern and giving a finish as glossy as new. Protects from wear—makes cleaning easy. Dries hard in an hour. Gallons \$2.50—quarts 70c—pints 40c.



Free Book and Sample Offer

We have sent a liberal supply of Johnson's Wood Finishes—together with a supply of our beautiful Instruction Book by famous experts—illustrated in five colors—to all leading dealers who handle paints, for your use, free. If your dealer hasn't samples and books send us his name, and we'll send you Free—any two of the above finishes, with copy of the Book. All we ask is that you test the samples and ask your dealer to supply your future needs.

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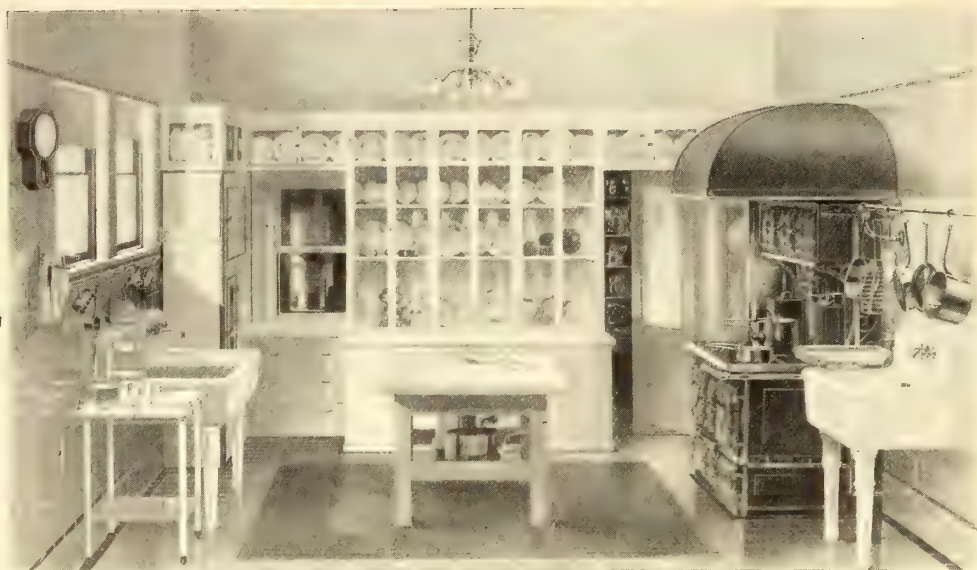
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IN KITCHEN, PANTRY AND LAUNDRY

THIS illustration appears on page 68 of our booklet, "Modern Plumbing." It shows a well-appointed modern kitchen, in which Mott's Plumbing Fixtures are used. In this booklet various styles of kitchen and pantry sinks, laundry tubs and kitchen ranges are illustrated and described.

"MODERN PLUMBING" also exhaustively treats the subject of bathrooms. There are shown 24 modern bathroom interiors varying in cost from \$74 to \$3,000. So extensive is the Mott line of bathroom equipment, that it is easy to find Mott fixtures exactly adapted to your taste and needs.

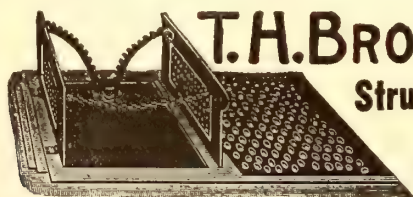
Before you build or remodel ask for a copy of "MODERN PLUMBING;" sent on request with 4 cents to cover postage.

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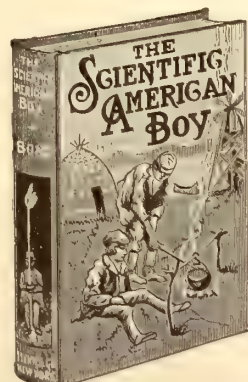
FLOOR & SIDEWALK LIGHTS.

SEND FOR CATALOGUE

The Scientific American Boy

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, \$2.00. Postpaid.



This is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. ¶ The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping bags and tents; also such other shelters as tree houses, straw huts, log cabins and caves. ¶ The winter diversions include instructions for making six kinds of skate sails and eight kinds of snowshoes and skis, besides ice boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." ¶ Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

FOR SALE AT ALL BOOKSTORES

The Care of Fine Furniture

First get your furniture. This, while a most important feature, when consideration is taken of plans, schemes and the thought that must be given to architectural and color effects, really becomes of but secondary importance in the face of the more vital question: "How can the furniture be kept at its best?"—a question that applies with equal force to all furniture, whether Colonial, Chippendale, Heppelwhite, Sheraton, or of some art period, or whether it be of highly polished mahogany, mission, gilt, white enamel, or some other costly finish.

Some one has said that furniture is human. It has its dull days, as well as its bright days. To-day it looks gloomy, where yesterday it was cheerful. It is affected by climatic conditions. It perspires on hot days, and readily shows the effects of neglect and exposure to dust and dirt.

The proper care of furniture is more a matter of correct daily dusting than of imparting an artificial gloss at more or less lengthy intervals. Even soap and water is not necessary; in fact there is always danger of harming fine finishes with the free alkali contained in many soaps, even of the highest grade.

The ideal way to dust is to moisten a soft duster with some dusting preparation that will restore the original newness of the article by removing finger marks, spots, stains, discolorations and scratches, all in the one simple dusting operation. A dusting aid such as this is to be found in Liquid Veneer, a unique liquid food for furniture. When used on an ordinary cheese-cloth duster it instantly beautifies every finish on which it is used, no matter how old, how new, or how costly.

On fine mahogany furniture, as well as on finishes of rosewood, ebony, golden oak, enamel, gilt and others that add to the beauty of the home Liquid Veneer gives truly remarkable results by restoring the original newness and lustre. *Restoring* is the exact word, for Liquid Veneer is not a mere furniture polish which imparts but an artificial surface-gloss, but an article of daily use which does its work by renewing, *restoring*, all the original beauty of the finish; and all this in the simple daily dusting.

For instantly removing that blue, smoky appearance so common to pianos and furniture having highly polished surfaces. Liquid Veneer is in a distinct class by itself. When used in the usual dusting, it instantly removes that unsightly "mistiness" and restores and enhances the original finish and gloss. Being a surface food it gives life to the most highly polished finish by imparting elasticity, in this way retarding cracking and checking.

No furniture is too costly or too cheap to be beautified with Liquid Veneer. Its daily dusting uses are endless. It is equally effective on all furniture and metal work, finishes of brass, silver, enamel and lacquer, while for making and keeping hardwood floors looking new it is unsurpassed.

Upon request a free trial bottle of Liquid Veneer will be sent by the Buffalo Specialty Company, 173 Liquid Veneer Building, Buffalo, N. Y. One trial will prove its wonderful value as a beautifier, as well as its great labor-saving, money-saving and all 'round "CHEER UP" qualities.

Advertisement.

THE JUDGING OF RUBBER GOODS

ON the above subject the Gummizeitung says: The determination of the quality of rubber goods is often effected from entirely erroneous viewpoints. Thus, for instance, the opinion prevails that the softest qualities are the best, which in the case of certain combinations, for tough hose, or valves, is by no means the case. It is just as wrong to draw conclusions as to the quality of the goods from their color or to base a judgment on energetic pulling and blending tests. This opens the door to mistaken conclusion. If we can bend a semi-circular formed hard rubber child's comb of very thin make, out flat, its quality will be recognized as excellent; a similar experiment cannot be conducted with an equally good comb, of heavier make, without breaking the object of the experiment, which would then erroneously be regarded as of inferior quality. There are many such cases. Widespread also is the misunderstanding of the term 'Pará rubber;' it includes, as far as the technically uninformed are concerned the idea of a high-class caoutchouc adapted for all purposes. That Pará rubber cannot be used for all purposes, would only, in rare cases, find credence; the objection that some goods, whether for practical reasons or only for considerations of price, must be produced more or less with the aid of surrogates or fillings, and can then no longer, in accordance with commercial requirements, be designated Pará quality, would often awaken doubts.

THE SPEAKING CLOCK

THERE is nothing outwardly remarkable, according to Das Echo, in the appearance of the ingeniously constructed timepiece known as the "time-stating clock." But every quarter of an hour an agreeable voice issues from it, announcing the correct time, as, twelve o'clock, twelve fifteen, twelve thirty, etc.

The works of the clock actuate a stout belt, which runs over a roll connected with a sounding box.

Upon this belt, or rather film, the hours, which have been recorded by a phonograph are impressed by galvanization on a copper plate.

The mechanism which moves the hands is connected with the speaking device, and this with a funnel which reinforces the sound and projects it outward through a finely grated opening attached to the narrow side of the clock.

At night a touch on a lever reduces the clock to silence. But if one wakes and wishes to know the hour without striking a light, an easily found button is pressed and the clock immediately states the time.

The speech film is practically indestructible and occupies very little space since, because of its elasticity, it may be wound upon a very small roller.

CURES FOR WARTS

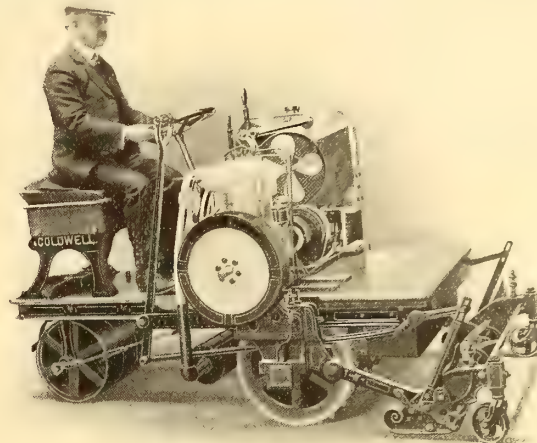
ALTSCHUL recommends as a remedy for this very obstinate trouble, the ointment described by Unna, made of gray mercury salve, with the addition of 5 to 10 per cent. of arsenic. The salve should be smeared on lint and made fast to the wart by bandages. Finally painting with tar may be resorted to. The remedy is very poisonous.

Coldwell Lawn Mowers

Hand, Horse and Motor

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The Cost of Manufacturing Denaturated Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

The Use, Cost and Efficiency of Alcohol as a Fuel for Gas Engines are ably explained by H. Diederichs in *Scientific American Supplement* 1596. Many clear diagrams accompany the text. The article considers the fuel value and physical properties of alcohol, and gives details of the alcohol engine wherever they may be different from those of a gasoline or crude oil motor.

In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

Any Single Number of the *Scientific American* or *Supplement* will be sent for 10 cents by mail. The entire set of papers above listed will be mailed on receipt of \$2.00.

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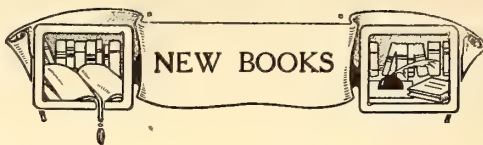
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ON THE TRAIL OF WASHINGTON. By Frederick Trevor Hill. Illustrations in color by Arthur E. Becher. New York and London: D. Appleton & Co., 1910. 276 pp.; 8vo. Price, \$1.50 net.

For more than a century Washington was exalted as a model of manners and morals—and portrayed as a prig; he was idealized as a hero—and rendered unreal; he was glorified as the father of his country—and denied all human fellowship with his kin; he was invested with every virtue, and divested of all virile character. That he survived in the affections of his people is the best demonstration of his true greatness. Of recent years, however, there has been a notable effort to depict the man as he really was, a man with good red blood in his veins, good common sense in his head, good kindly feeling in his heart, and a good honest laugh. This humanizing of Washington has been the work of eminent editors, historians and collectors, and their investigations during the past twenty years have virtually revealed Washington to Americans for the first time. It is to place before readers, young and old, the results of this modern research that the writer retells the story of Washington in these pages.

THE DESIGN OF CONDENSING PLANTS. By F. W. Wright. London: The Technical Publishing Co., Ltd., 1909. 203 pp.; 12mo.; illustrated. Price, \$1.50. Considerable attention has been devoted during the past few years to the subject of condensing equipment for steam plants, and scattered throughout the technical press and in the published transactions of engineering societies are to be found a number of valuable papers embodying the results of careful and extended observations and experiments by able investigators. So far, however, as the author knows, there was no book devoted exclusively to a consideration of the various problems involved, and in many of the standard text books on the steam engine the references to the question of condensing are very brief. The pages are a modest attempt to supply the lack in a volume of such dimensions and price that it should be within the reach of all who are interested in the subject.

SCIENTIFIC LIVING FOR PROLONGING THE TERM OF HUMAN LIFE. The New Domestic Science, Cooking to Simplify Living and Retain the Life Elements in Foods. By Laura Nettleton Brown. New York: The Health-Culture Company, 1910. 284 pp.; 12mo. Price, \$1.00

A great truth is emphasized in this book, namely, that in the ordinary processes of cooking the organic elements become inorganic and food values are destroyed. This dietetic idea is most important, and it is claimed by the author that when generally known and made practical it will restore the radical vigor as nothing else can, free woman from the slavery of the cook stove and become a large factor in the solution of the servant problem. The volume is thoroughly sensible and enlightening; original without being cranky, radical without being faddish; withal, practical, plain and entirely helpful.

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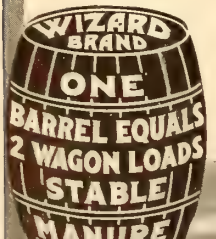
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HARDY PLANTS FOR COTTAGE GARDENS. By Helen R. Albee. New York 1910. 12mo.; 390 pp. Price, \$1.60 net.

A personal and very readable record, illustrated by photographs, of the author's success in assembling within a limited area, the choice varieties of hardy shrubs, annuals, and perennials, so arranged as to give a succession of bloom of pure color in each bed. With a list giving manner of growth, height, time of blooming, exact color, special requirements of soil and moisture, "easy ways" taught by experience, and many etceteras of vital importance. This book appears in the very attractive garb of the American Nature Series. The gold contrasts beautifully with the dark green. The illustrations are excellent and are well chosen and well executed. It is a delightful book and is worthy of a considerable sale. There is an excellent garden diagram.

HOVEY'S HAND BOOK OF THE MAMMOTH CAVE OF KENTUCKY. A Practical Guide to the Regulation Routes, With Maps and Illustrations. By Horace Carter Hovey, D.D., F.G.S.A. Louisville: John P. Morton & Co., Inc., 1909. 64 pp.; 16mo. Price, 25 cents.

The writer is well known to the readers of the SCIENTIFIC AMERICAN, having written many articles on the subject of caves and caverns for its columns. The present book may be regarded as an excellent guide to the Mammoth Cave and should be in the hands of all those who may think of visiting this unique wonder.

SHELL-FISH INDUSTRIES. By James L. Kellogg, Professor of Biology in Williams College. New York: Henry Holt & Co., 1910. Illustrated by half tones and original drawings. 8vo.; 361 pp. Price, \$1.75 net.

Prof. Kellogg's book fills a gap in the literature of natural history, or what may be called applied natural history. It covers the classification, propagation, and distribution of shell-fish. For those interested in oysters, clams or scallops, there is information on their structure, life-histories and habits. A chapter is devoted to shell-fish as collectors and carriers of disease organisms.

THE UTILITY OF ALL KINDS OF HIGHER SCHOOLING. An investigation. By R. T. Crane. Chicago, 1909. 8vo.; 331 pp. Price, \$1 net.

This edition gives further results of the author's investigation of the utility of academic or classical education for young men who expect to pursue a commercial or industrial career. The following subjects have been investigated and studied: Technical Education in Manufacturing; Technical Education in Civil Engineering; Technical Education in Electrical Engineering; Agricultural Colleges; Manual Training in the High Schools; Business Education; Medical Education; Scientific Education; Rural Schools.

THE HEALTH OF THE CITY. By Hollis Godfrey. Boston and New York: Houghton, Mifflin Company, 1910. 12mo.; 372 pp. Price, \$1.25 net.

Like all books issued from the Riverside Press, it has a certain air of distinction gained only by great simplicity in typography. Few contemporary topics are so pressing, or attracting so much attention, as city sanitation to help the health of cities.



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YOUR HOME AND ITS DECORATIONS. Compiled and published by the Sherwin-Williams Company. New York: John Lane Company, 1910. 8vo.; 204 pp. Price, \$2 net, postage 15 cents.

The determination to publish a book of real assistance to the home builder has placed it on a different plane from other publications of this character. Much has been written on the subject of home decoration, and in almost every instance one vital point, practicability, has been wanting. Many of these publications are full of glittering generalities, from which very few of us can gather applicable points on decoration. There has been a continual beating round the bush, trying to give information without supplying anything specific. The Sherwin-Williams Company have endeavored to eliminate this difficulty in the book before us. They come out boldly and specify certain products of their manufacture which are necessary to produce certain effects. The result is a work of real merit. It is artistically printed, the methods of illustration being half tones and color plates. Even the subject of Oriental rugs is thoroughly taken up.

THE GRAPHIC ARTS AND CRAFTS YEAR BOOK, 1910. Joseph Meadon, Editor, Hamilton, Ohio. 4to.; 350 pp. Price, \$5.

This is the American annual review of the printing, engraving and allied industries. It is beautifully printed on deckle edge paper and is filled with the most beautiful reproductions of all kinds. To the technical worker in photo-engraving, and particularly the color work, it will prove of inestimable value. The present volume displays a very wide range of treatments, processes and methods of reproduction.

The editor apologized for the fact that in the present book it is not possible to observe consistently the nice formalities of bookmaking. This apology is not, however, necessary, as the make-up is most admirable. That the engraving and printing provisions are evolutionary by nature and revolutionary in effect is demonstrated by the march of events as the years roll by. There may be nothing startling to chronicle, but each year shows an improvement in some operation, method or material, and as change follows change in a few decades the process or means employed in the process presents entirely different problems.

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The book is a very beautiful one, is tastefully bound in half morocco. The present is the fourth volume of issue.

AUF VORPOSTEN IM LEBENSKAMPF. Biologie der Sinnesorgane, I-Fühlen U-Hören. Von Dr. H. Dekker. Stuttgart: Kosmos Gesellschaft der Naturfreunde. 92 pp.; 33 illustrations.

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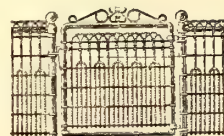


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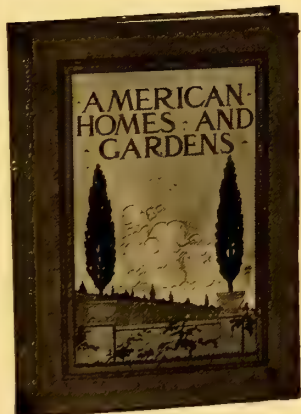
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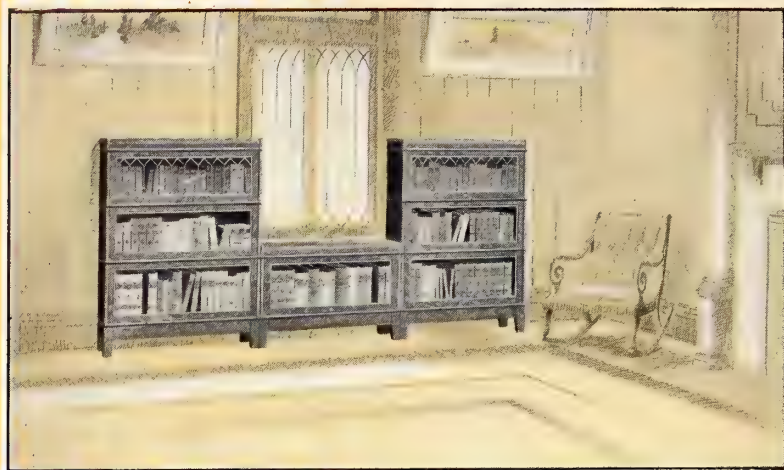
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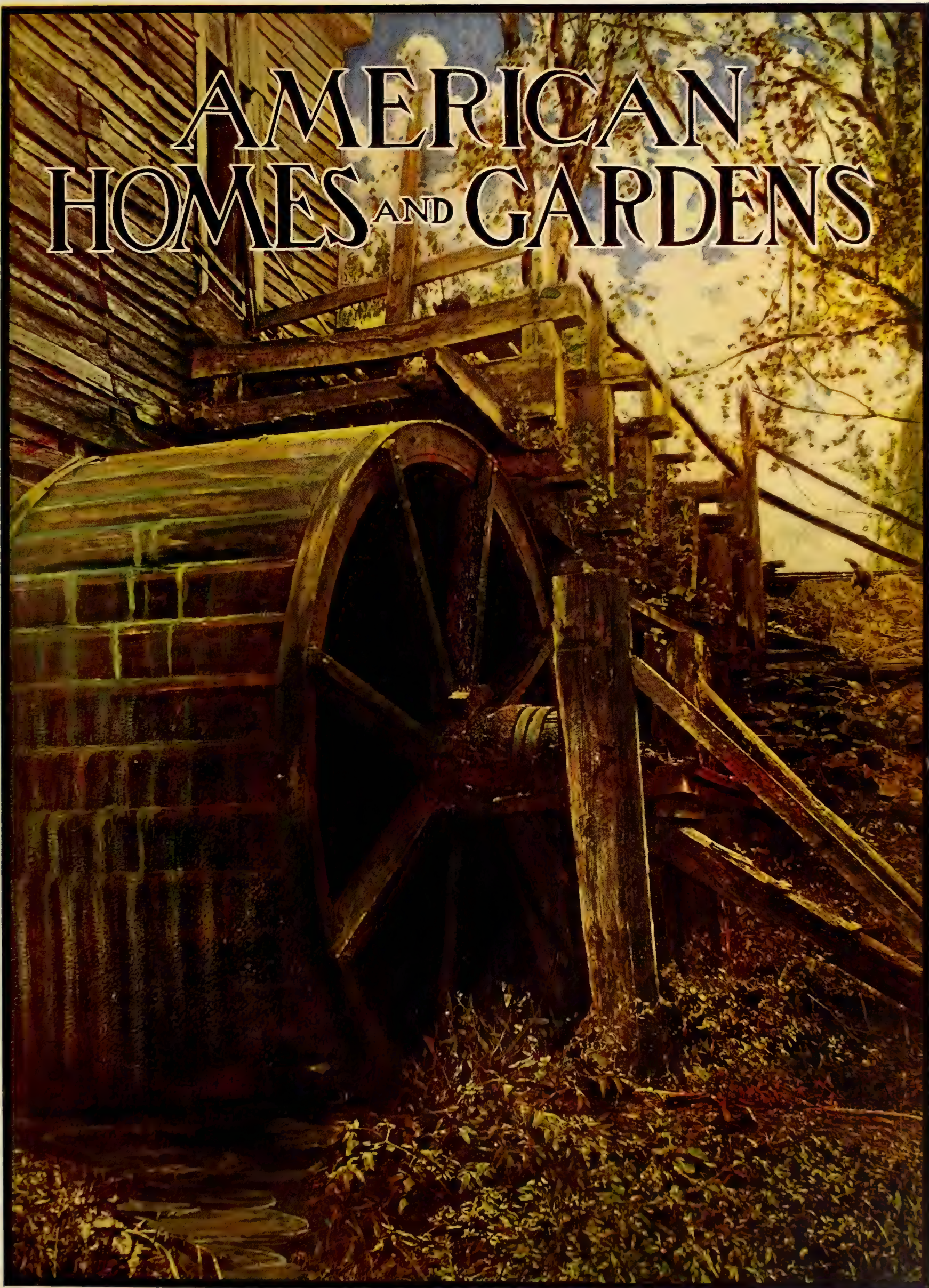
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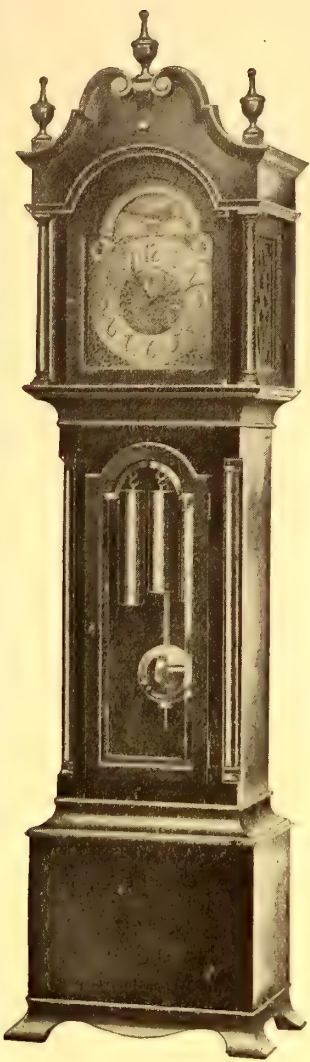
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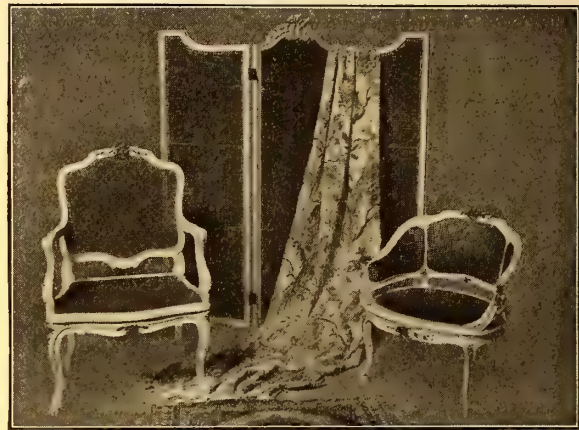
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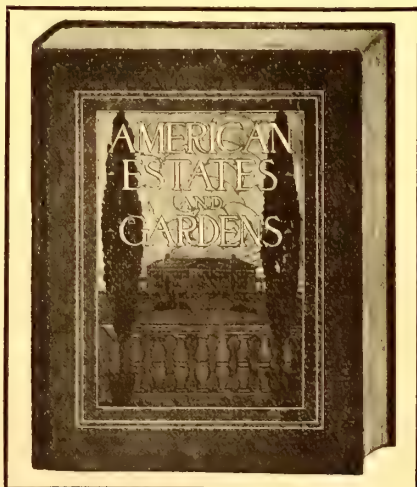
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rounding grounds and gardens; the work of the landscape gardener has rivaled, in its dignity and spacious beauty, that of the architect. If but little is known of our great estates, still less is known of their gardens, of which, in spite of the comparatively short period that has been given for their growth, we have some very noble instances among us, which are illustrated and described in the present volume. ¶ This work is printed on heavy plate paper and contains 340 pages 10½x13½ inches, enriched with 275 illustrations, of which eight are in duotone. It is handsomely bound in green cloth, and stamped in black and gold, and, in addition to being the standard work on notable houses and gardens in America, unquestionably forms a most attractive gift book.

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THE USE AND CHARM OF STUCCO

By ALBERT MOYER

THE history of stuccoes does not furnish sufficient information and data to be of practical value in the manufacture of the present day Portland cement stuccoes. There are records standing 350 years B. C. of stuccoes made from vastly different materials than are of economical use at the present time, and we find that such plasters were almost invariably used in the warm climates where the action of frost would not tend to disintegrate the rather poor material which was then available.

There is every reason to believe that originally these stuccoes were intended to cover up and protect inferior building stone and sunburned straw brick. The archaeology of stucco would tend to show that from an artistic standpoint this method of decoration was a development of the wattled buildings, which were plastered with clay and different muds hardened by being baked in the heat of the sun. Therefore, in this instance, the use of clay plaster over wattled houses was to protect an inferior building material.

To-day, stucco is used for a similar purpose, and for its pleasing surfaces. It would, therefore, seem advisable to recommend a material which would best serve the purpose of protection and artistic merit. Stucco or plaster should never be used as an imitation of other building material.

To carry out these ideas we desire to recommend only Portland cement stucco for exteriors, as this is the only hydraulic material which will stand the action of the elements.

From the artistic side we would also recommend such surface finish for stucco as will cause both natural color and pleasing texture. It would be well, therefore, to expose to view the aggregates used and avoid as far as possible exposing the bonding material, Portland cement.

There is no artistic reason for allowing only the bonding material to be displayed to the eye. On very large jobs the surface can be cleaned off by means of a sand blast, and on smaller work, the outside may be cleaned by means of muriatic acid in dilute solution, 1 part commercial muriatic acid, 4 to 5 parts clear water, until each grain of sand is exposed.

Where white aggregates are used the surface may be cleaned off with a solution of sulphuric acid, 1 part acid, 4 to 5 parts clear water. The sulphuric acid leaves a white deposit and therefore should not be used excepting where the aggregates are white.

Another method is to scrub the surface while yet green, say within twenty-four hours, with a house scrubbing brush and clear water. This is more difficult than the others for the reason that if the stucco is allowed to remain too long before scrubbing, it will be too hard to remove the coat of neat cement from the outside of each particle of sand or other aggregates; and if scrubbed when it is too soft the surface may be damaged and difficult to repair.

If the character of the available aggregates will not present a pleasing surface when exposed, the following surface treatment may be used: While the last coat is still thoroughly damp, apply a Portland cement paint composed of 1 part Portland cement, 12 per cent. of the volume of the cement of well hydrated lime, pulverized form, and 1 part of the volume of the cement of fine white sand. Mix with water

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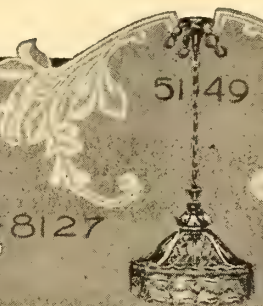
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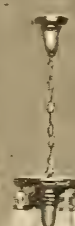
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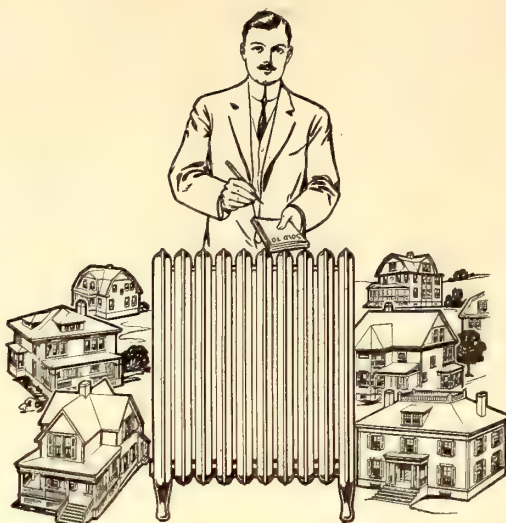
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to the consistency of cream or the ordinary cold water paint. Stir constantly and apply by using a whisk broom, throwing this paint on with some force.

Keep this finish surface damp for at least six days or longer if economy will permit. Do not allow it to dry out in any one place during the week. If necessary protect it by hanging tarpaulins and using a fine spray of water, playing on several times during the day by means of a hose. This will give a pleasing light gray color of excellent texture.

Stucco may be applied to various building materials. There is hardly any reason at the present time for stuccoing stone building, as the procedure at best is difficult and hardly to be recommended. Our building stone is usually an excellent material and therefore does not require either protection or covering to produce pleasant effects.

New brick may be covered with stucco very successfully. The joints should be first raked out half an inch. The brick must be saturated with water. It is always best to start stuccoing at the top of the wall and work down between the pilasters or corners, finishing a whole strip or whole side wall from top to bottom in one day. Thus no streaks or cracks are formed where one day's work ends and another begins. By this method the wall can be kept wet ahead of the work by means of a hose.

The second coat should be put on as soon as the first coat has stiffened sufficiently to hold in place and stand the pressure of the trowel. This second coat should be well scratched and the finished coat applied while the former one is damp. The finish coat should then be kept wet, protected from the rays of the sun and as far as possible from drying out. This can be done by hanging wet cloths over it. This rule of keeping each coat moist until the other coat is applied, and protecting after applying the finish coat, must be observed in all forms of Portland cement stucco.

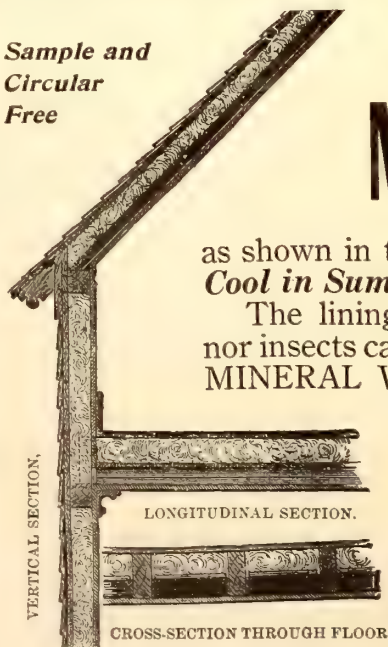
If the stucco is to be applied to metal lath or wire cloth, the metal should be plastered on two sides so that it is entirely encased in mortar in order to avoid rusting. If this is impracticable, then the metal lath or wire cloth should be dipped in a paint made of equal parts of clear Portland cement and water. Immediately after dipping, the metal lath or wire cloth should be tacked onto a frame in the position it is intended to occupy. As soon as the neat Portland cement has hardened on the metal apply the first coat of stucco. Hair should be added to the mortar in the proportion of one bag of cement to one pound of hair, the mass applied on wire mesh or expanded metal.

If plaster boards are used they should be nailed on the frame work of the building, leaving at least a quarter of an inch joint between each plaster board, this joint to be filled in with lime putty, otherwise each plaster board will cause square cracks on the outside of the stucco the size of the board.

A convenient method of waterproofing plaster boards is easily available. The boards may be painted with two coats of any of the reputable bitumen waterproof paints to which plaster adheres. Then about twenty-four hours after the bitumen paint has been applied, and within six days, apply the first coat of stucco.

For use of stucco on terra-cotta blocks, great care should be exercised in keeping them thoroughly saturated with water, for if not saturated, they will pull the water

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out of the mortar and it will crack and disintegrate. Portland cement requires water until it has thoroughly hardened, which ultimate hardening usually takes from fourteen days to a month. It is not always necessary to play the hose on the wall for a month, although it would be advisable. The dews at night, the dampness in the atmosphere and the rain will furnish the necessary moisture provided the material on which the mortar has been plastered has not too great an affinity for water.

In order to prevent the porous hollow terra-cotta tile from sucking the moisture from the stucco, and also to furnish waterproofing and an additional bond other than that which would be given by the key, it is good practice to paint the surface of the dry terra-cotta blocks after their erection in the wall, with two coats of bituminous paint, equal to such compounds as Dehydratine, Minwax, R. I. W. or X-Hydro-Plastic. It is important to place the first coat of stucco over this paint after twenty-four hours and within six days.

The proportions for a good stucco should be one part Portland cement, two and one-half parts coarse clean sand. (If coarse clean sand is not available use only two parts of sand.) Add 10 to 15 per cent. of well hydrated lime, dry pulverized, of the volume of the cement.

If it is the desire of the owner or architect to use the exposed aggregate method, interesting natural colors can be obtained by using the following materials instead of sand in the same proportions. Green, red, buff, black or white marble screenings all passing a No. 8 screen and all collected on a No. 40 screen. These different colored marble and different colored sand, where obtainable, can be used singly or in a combination. When exposed by scrubbing or the acid treatment very interesting results are obtained.

In mixing stucco, great care should be exercised to obtain the thorough incorporation of cement, sand and the other aggregates. The sand and the cement should be mixed together dry, until an even color results. This can be done by shoveling and by raking at the same time. Water should then be added, care being taken lest too much water is used at a time and the resulting mortar get too wet so that more sand or cement has to be added. Be very careful to bring this mortar up to the proper consistency for use in plastering.

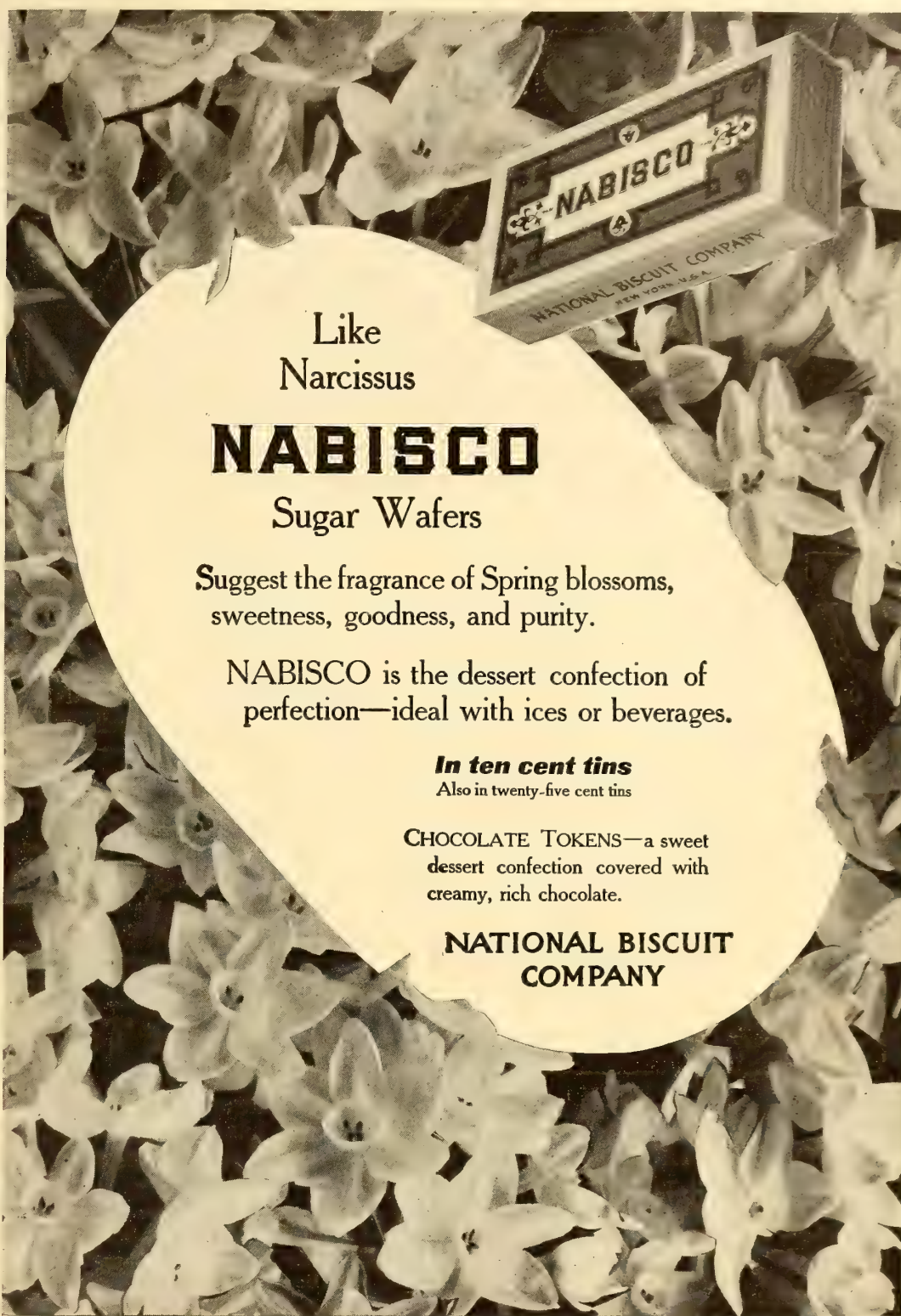
It is advisable to add to the mortar from 10 to 15 per cent. of the volume of the cement of well hydrated lime. This should be mixed dry with the cement and the sand before the water is added. The addition of hydrated lime tends to fatten the mortar, thus making it more adhesive and impervious.

Another specification which we believe will prove of considerable value, is that of the addition of mineral oil to wet mortar. After the water is added and thoroughly mixed with the mortar, add 15 per cent. of mineral oil and remix. If a light effect is to be produced, use white oil, such as Oil Petrole.

When the oil is to be mixed with the mortar it is always advisable to use hydrated lime, as we thus have a larger amount of emulsifying material.

The color obtained by the scrubbing or acid method is limited only to the available sands or marble screenings. The color will be that of the aggregates. An excellent green can be obtained by adding 8 per cent. of the weight of the cement of chromium oxide, which should be mixed

(Continued on page vi)



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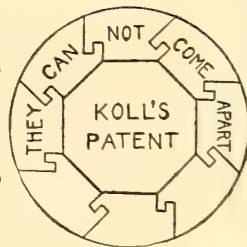


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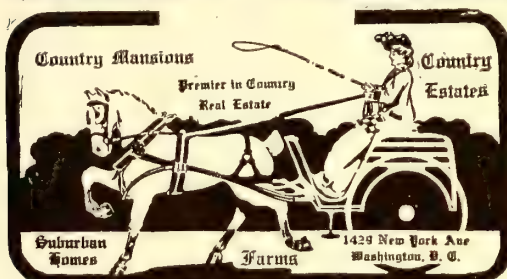




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(Continued from page iii)

dry with the sand, cement and hydrated lime.

Always keep in mind that the surface to which the mortar is to be applied must be thoroughly saturated with water, each coat of stucco kept moist and the final coat remain moist for at least one week and longer if economy will permit.

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QUEEN OF THE HOLLYHOCKS

By JANET WEED HAZARD

PART I

THE Hollyhocks had never been half so many or so beautiful in Grandmother's garden as they were today. All along the side fence, where they stood like sentinels, around the edge of the walk, in front of the south bay-window, all about the pergola, up and down the grape-arbor, and even here and there in the vegetable patch, there they were with their pretty faces upturned to the sun in many colors and various shades.

James was the gardener. He had been snipping and tying up the honeysuckle that grew over the porch, when Grandmother came out to inspect his work.

"Dem Holly-hawks sho' do look fine; we'll be a-missin' 'em 'fore long, Miss Jo. I reckon the young lady be comin' home right soon now?"

"Yes, James," said Grandmother, "I expect her to-morrow. You must clip the Hollyhocks in the early morning while the dew is still on them. They do look well! I hope she will like them."

Just then a slight breeze stirred the leaves and flowers, and a tall, stately crimson that grew in the bed by the porch touched her companion and whispered what James and Grandmother had said. By and by another breeze swept through them, carrying the message from flower to flower. Then another, until a great gust of wind sent all the flowers nodding and sighing "So soon, so soon."

"We are so many and so beautiful," said the first that had spoken, the tall, stately crimson, "we will have a carnival and let the Sun-God crown the prettiest our Queen—Queen of the Hollyhocks."

Then the soft summer breeze swayed them gently and the big golden Sun looking down kissed each one and bade her be happy.

Now, when the soft summer breeze saw what the big golden Sun had done, he grew angry and said, "They shall have no 'Queen'. I will spoil their beauty."

Suddenly it grew dark and darker, until a few big drops came down from the storm-cloud above; then more and more; and by and by they came faster and larger and all the poor Hollyhocks, all but one, shed tears of sorrow.

All but one that grew among the sweet grasses and ferns under the South bay-window shed tears of sorrow for fear their gowns would fade and they appear less richly dressed.

So they wept until late in the afternoon,



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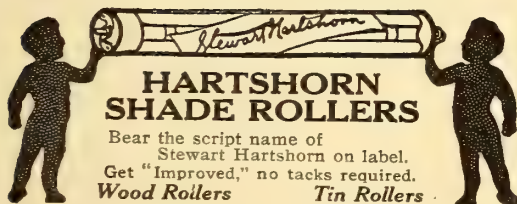
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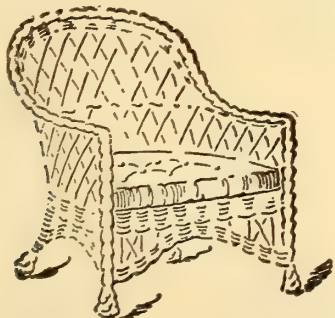
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the Sun-God began to peep out from under a big cloud, and looking down, kissed the pretty tear-stained faces and bade them be happy again.

Then all the Hollyhocks nodded and opened wide their pretty petals and glowed under the Sun-God's warm kisses, until it was almost time for him to say "Good-night."



PART II

It was that beautiful time in the evening when Grandmother loved to walk in her garden.

The flowers knew she would come, they had ceased to talk and now listened, but was it she that was saying:

"How beautiful they are! You dear old-fashioned flowers, how long has it been since I saw you, a wee little girl, and Grandmother has grown you all for me."

The soft summer breeze stirred the leaves and flowers. They nodded and whispered. "Not Grandmother, but our little girl that played among us so long ago. Can it be? Ah yes, now we shall know our 'Queen'—Queen of the Hollyhocks." The soft summer breeze sighed, "She knows, she knows."

In and out she went among the flowers, talking to and caressing them.

"You are all lovely," she said, "and to-morrow you will smile back at me among the sweet grasses and ferns."

And so she passed on until she reached the pretty white flowers that grew among the sweet grasses and ferns in front of the South bay-window.

The soft summer breeze lightly stirred and the leaves and flowers all listened.

"You pretty white flower, how I love you; you are Queen of the Hollyhocks, Queen of the garden. Grandmother's own little girl planted you, but that was ever so long ago—I can't stop now to tell you, for here comes Grandmother, and she is not expecting me until to-morrow."

The soft summer breeze stirred the leaves and flowers, and each one nodded her homage.

The Sun-God, going to sleep in the West, cast her bright golden rays on the pretty white flowers, on the Queen of the Hollyhocks—Queen of the garden.

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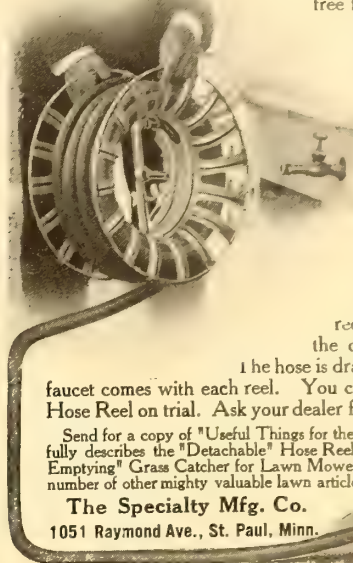
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the skulls of these mammals he concludes that inbreeding is the cause of these peculiar head-formations.

This view is severely criticized by biologists, since it is a well-known law that inbreeding never creates new characters, but only intensifies old ones. A more reasonable view is that which directs attention to the fact that many wild animals, when caught young and brought up in confinement, do not have as long heads as shown by other members of the species in the wild state. A decided shortening of the bones of the face takes place in the case of the wild dogs and the wolf. This is the beginning of the pug face. Inbreeding develops this character; it is the *method*, not the *cause*, says Prof. Hilzheimer, of Stuttgart. This scientist finds the cause rather in the modified use of the jaws resulting from conditions of captivity. The face, he says, fails to develop the same as it would in a state of nature.

The bending of the bones of the palate in these dogs is explained by the upholder of the inbreeding theory as resulting from degeneration or rachitis ("rickets") due to the inbreeding; Prof. Hilzheimer explains this bending as due to the crowding of the teeth consequent upon the shortening of the face bones.

While it is true that inbreeding cannot cause the appearance of a new character, it is also true that we have no evidence of any character arising as a result of changed external conditions being preserved by heredity. If it is true that changes in the food have made the jaws of wild dogs under domestication fail of development, we should be able to get the original wild dog again by suitable feeding; this, however, is impossible. According to our present knowledge, the probabilities are that short-faced dogs, like short-faced varieties of other animals, arose as "sports" and were preserved through inbreeding, or even had the character intensified.

THE DISEASES OF TEA

THE cultivation of the plant is making considerable progress in the Caucasus region, and although its introduction has been comparatively recent, it has already brought a good profit to the planters. However, the tea plant is subject to maladies caused by certain parasites which prevail in these regions. A Russian scientist, M. Spiechneff, observed twelve cryptograms, and one of them, the *Pestalozzia guepini*, causes a curious disease known as the "gray malady." Here the leaves show gray spots surrounded with a border of darker color. After some time there appear small dark spots which represent the fructification of the fungi. Other dangerous species are the *Dicosia Theae* and the *Capnodium footii*. This latter causes a malady known as "soot" of the tea plant, and sometimes gives much damage. Another disease is described by M. Spiechneff, and it has the form of buff-gray spots sometimes covering all the leaves. He considers that it is caused by a cryptogram, but Duconnet and others consider that the disease is not of a parasitary nature. The gray malady and the "soot" disease attack also the leaves of evergreen plants such as the camelia, rhododendron, and magnolia, but on the contrary the former hardly ever attacks any but the Chinese tea plant, and others escape it. We may also mention that M. Voronoff observed in the Imperial plantations near Batoum, a caterpillar which bores galleries in the young tea shoots and causes much damage in this way.



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THE ANNUAL SMALL HOUSE NUMBER

THE May number of AMERICAN HOMES AND GARDENS will be devoted to the small house, its building, its decoration and its furnishing. The subject will be strongly featured, including a display of bungalows and small houses, which will be illustrated by exterior and interior views, and floor plans.

The small house will be given special attention, since it is the most numerous building in this country, and because it is a type of building that excites the widest interest and offers the largest field for helpfulness to the home builder.

There will be articles from the decorating of the home to the arrangement of flowers for the table, from the planning of the kitchen to the building of a garage, from the purchasing of a motor car to the planting of the garden and the home grounds.

Everything pertaining to the home and garden will be presented in such a form as to solve the problems which so often confront the house owner.

The various departments conducted by specialists add greatly to the value of this number, and besides these departments the magazine will contain a host of articles which will prove of great interest to our readers.

The table of contents published on page 121 in the current issue will give a synopsis of the contents for the May number of AMERICAN HOMES AND GARDENS.

THE ELM LEAF BEETLE

ACCORDING to the leading State Entomologists, the indications are that the ravages of the Elm Leaf Beetle will be far more serious this year than during the past, and it is certainly a matter of vast importance for the consideration of all owners of estates in the country to do their utmost to eliminate this insect.

It is suggested that the owners of elm trees should have them sprayed as soon as the foliage develops in early May. The winter of the Elm Leaf Beetle is passed in adult condition. The beetles take refuge in attics, sheds, barns and other places of similar nature. They emerge from their hibernating quarters as soon as the foliage of the elm develops in the spring, when they take to the leaves and in early June, eggs are deposited by the beetles on the under side of the leaves, from which caterpillars are hatched. These feed on the layer of cells on the under side of the leaves, giving the foliage a skeletonized appearance.

Beginning during the last days of June and continuing until the middle of July, the full grown larvæ, which are less than half an inch long, crawl down the trunk and change to yellow pupæ at the base of the tree and on the ground near it. Adults develop a week after the formation of pupæ, and in the last part of July the summer

brood of beetles is abundant. These fly to the leaves again, feed on them, deposit eggs and the life cycle of the insect is repeated. There are two broods a year.

The only effective way to control the Elm Leaf Beetle is to spray the foliage with arsenate of lead as soon as the leaves unfold. This spraying is important for the reason that if the beetles can be killed before they lay their eggs there will be no larvæ to deal with later. It is this early spraying to catch the adult beetles that is suggested.

If early spraying is neglected, an application of arsenate of lead is necessary when the larvæ begin to feed. This spraying, however, is not as effective as the early one. When the full grown larvæ crawl down the trunks to pupate, great numbers of them collect in the crevices of the bark, at the bases of the elms, and on the ground near the trees. At that time every owner of a tree can do his part to destroy the pest by sweeping up the caterpillars as they come down and kill them by pouring boiling hot water over them.

There are plenty of firms in practically every city, town or village who will do the spraying at a nominal cost, in case one is unable to do it himself, for it should be the pleasure of everyone to assist in the preservation of that most beautiful tree, the elm, so splendidly mentioned by Ruskin, who speaks of it as the mother of Gothic architecture.

THE REAL ESTATE AND IDEAL HOMES SHOW

THE second exhibition of the Real Estate and Ideal Homes Show will be held at Madison Square Garden from April 26th to May 3d, inclusive.

The first exhibition was held last year, and, while an interest was to be expected from the public, it was not anticipated that the attendance would be so large. On account of the demands of the public it was found necessary to extend the show another week, which was a very unusual concession, and the first on record where the exhibitors made a unanimous request to the management for such a purpose.

The show was organized to afford an opportunity of studying various types of house construction, decorations, and furnishings, and includes everything that goes to make a home.

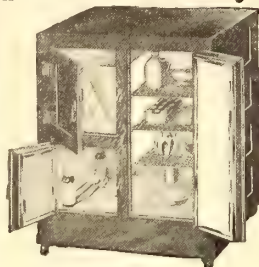
One of the principal features of the exhibition will be the presentation by real estate companies of models of suburban development. Another feature worthy of note will be the splendid collection of photographs of houses and architects' drawings, from which one may secure suggestions for home-building. The exhibits of all kinds of materials for the building of a home, the models of the most improved kind for use in its perfect equipment, and the latest designs for the decorating of the interior are features in this show, and will prove helpful to those who are interested in either the building or the improvement of the home.

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A NEW METAL FOR AEROPLANE CONSTRUCTION

ONE of the chief chemists in the laboratory of Messrs. Vickers, Sons & Maxim, the well-known British armament manufacturers, has recently perfected an aluminum-alloy which has the strength of mild steel, and which is only slightly heavier than aluminum. This new alloy, to which the generic name "Duralumin" has been applied, is especially suitable for the frames of aeroplanes and the cars of dirigible balloons, where combined lightness, great strength and toughness are so imperative; and inasmuch as this firm is now actively engaged in the construction of aerial vessels, it is being extensively utilized in connection therewith. The alloy contains upward of 90 per cent. of aluminum, has a specific gravity of about 2.8, and a melting point of 650 degrees C. (1,202 degrees F.). Its physical properties are secured by special treatment which is well under control, and may be obtained for any purpose for which it may be required with a tensile strength of 40 tons per square inch with very little elongation, from 28 to 30 tons per square inch with 15 per cent. elongation in 2 inches, or 25 tons per square inch with an elongation of about 20 per cent. in 2 inches. Although primarily evolved for the rigid parts of aerial vessels, it has been found that the alloy is eminently suited for the fabrication of any article usually executed in aluminum, either for military, domestic, or commercial purposes where a great economy in weight is of vital importance. The alloy will also take a polish equal to nickel plating, is unaffected by mercury, and is non-magnetic, while it is proof against atmospheric influences and but slightly susceptible to the action of sea or fresh water. For electrical apparatus it possesses many possibilities, emits when struck a clear silver tone, and is suitable for sound producing apparatus such as bells, organ pipes, etc. The alloy is obtainable in its finished form for whatever purpose it may be required, such as rivets, plates, sheets, wire, strip, and so on, but is not recommended for castings. The Vickers, Sons & Maxim Company has erected a special factory near Birmingham for its production, which has been placed in the hands of one of its subsidiary connections, the Electric and Ordnance Accessories Company.

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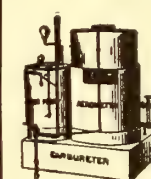
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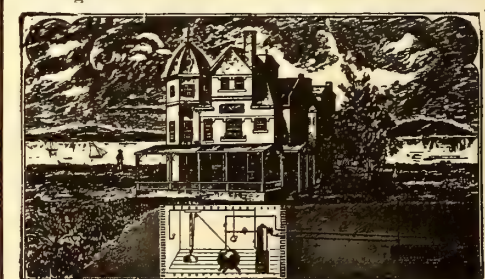


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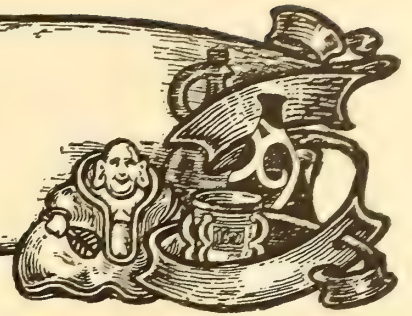
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American Homes and Gardens for May



The Small House of To-day

There is no more interesting subject for the home-builder than that which deals with the building of the small house. Exterior and interior views, and floor plans are shown to illustrate an article written by Francis Durando Nichols, which gives a comprehensive idea of the interior treatment of each house.

Two New England Houses

Illustrations of the modern house of low cost, which have been copied from the old New England farmhouse, are always interesting for the reason that they represent all that is simple, and yet combine all the features for comfort and repose. Paul Thurston has contributed an article on the subject which is illustrated by exterior and interior views, and floor plans, and it presents helpful suggestions for the one who is seeking designs for houses of interest.

Bungalows

A special number would not be complete without the presentation of the bungalow. There are some interesting ones with views and plans which illustrate the paper prepared by Robert Prescott.

A Bungalow Built of Terra-Cotta Blocks

The bungalow built for Mr. F. R. Bangs, at Wareham, Mass., was designed primarily for comfort, and its well planned rooms and picturesque environment tend to produce the desired result. It is constructed of hollow terra-cotta blocks, which are exposed in the main living-rooms of the house. Mary H. Northend has prepared a paper on this house which is illustrated by many fine engravings, and is one that is worth knowing about on account of the material of which it is built.

Flower Arrangements for the Table

Along with the marked progress made in the larger and more important details of home-making is the attention now paid to those which are contributing to the general effect of a home. While the conventional holder for a floral centerpiece for the dining-table is some kind of vase or jar in pottery or glass, there is nothing more attractive than a shapely basket in which a bowl of water is fitted. Edith Haviland has presented an excellent article, illustrated by many engravings showing how this may be attained.

Decorative Curtain Schemes

Selecting curtains for the house is a rather hard task; not because there is so little to choose from, but for the reason that there is so much. In order to avoid mistakes and to secure the best possible hangings, that will not only give satisfaction to those who occupy the home, but pleasure to all who see them, one not skilled in the art of selection should be interested in the ideas furnished by Mabel Tuke Priestman, who presents many helpful suggestions in the furnishing of the doors and windows of a home. The article is illustrated, and shows some of the latest designs for curtain hangings.

The Modern Kitchen

We accept without question the idea that the kitchen should be both clean and sanitary, but we are not always so sure that the efficiency of this busy end of the house is a matter of vital importance to those sup-

posed to be interested in home affairs. The kitchen is the place where nearly three-fourths of the actual housework must be performed, and the arrangement and equipment must exert more or less influence upon the whole problem of housekeeping; therefore, it is necessary that great consideration should be given to this part of the house. George E. Walsh has contributed an excellent article on this subject; one which is illustrated by engravings showing some model kitchens.

The Inexpensive Small Garage

With the increasing use of the motor car, it is becoming more and more the custom to house the machine on the premises of the owner, particularly in rural and suburban places. The practice of keeping the car at home is more practical and satisfactory now than formerly, and H. P. Wilkin has prepared an excellent article on the subject, which is illustrated by many designs for a moderate price garage.

The Low-Priced Motor Car for the Man of Modest Means

The motor car has become as important and as necessary for the convenience and comfort of the man who lives in the country, as the heater which warms his house. The economic process of the building of a car has enabled many manufacturers to produce a vehicle that is within the means of the average man who lives in the country. Stanley Yale Beach has written an interesting paper on the subject, which is illustrated by engravings showing cars which can be bought for from \$725 to \$1,500.

Planning a Seashore Garden

The first thing to consider in the making of a seaside garden is the matter of wind-breaks. These may not be over two feet in height, but in most localities they are an absolute necessity. The next important detail is to select the flowers with which to plant it. All flowers will not grow in a seashore garden, so Martha Haskell Clark tells in her article how to make a selection of the best flowers to plant, and the results that are to be expected.

The Arrangement for the Small Garden

Charles Downing Lay has prepared plans by which to illustrate his article, showing how a garden for a small place may be planted. He tells in his paper how it is possible for one to have a small garden, even though the space is limited, and points out the possibilities and the means of developing it.

Spraying the Apple Orchard

There is not a neglected "home orchard" in our country but can be brought back to a good bearing condition and made to produce perfect fruit. This is a condition that is realized by many farmers who would gladly give their trees proper attention if they knew what to do. They recognize their trouble, but do not know the cause. Benjamin W. Douglas, State Entomologist of Indiana, has prepared an exceptional article on this subject, which points out the methods to pursue in order to eliminate destructive insect pests. The article is profusely illustrated, and is one that ought to be of interest to all who possess apple trees, whether they belong to the home grounds or to the more pretentious orchard.

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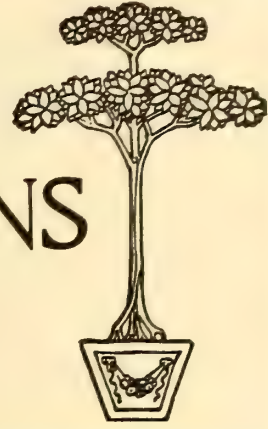
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The Editor's Note Book

AMERICAN HOMES AND GARDENS for May

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Queen of the Hollyhocks

Garden Notes

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The terrace steps lead to the garden

AMERICAN HOMES AND GARDENS



Volume VIII

April, 1911

Number 4

“White Lodge”

The Country Seat of A. Lithgow Devens, Esq., Manchester-by-the-Sea, Mass.

By Francis Durando Nichols



ON dismounting from the train at the little station at Manchester, one is met at one side by the sea with its broad expanse of glittering water, while at the other side is the highway. Entering a motor car, one is taken through a delightful road, with its many finely kept estates all linking hands one with the other in such a harmonious fashion as to resemble a single great park. A sudden stop and one enters the woods at “White Lodge.” The primeval forest seems almost impenetrable on account of its denseness;

beautiful woods, such as are frequently found in northern New England; woods that seem soft and quiet, with not a house or living thing to indicate the presence of man, save the roadway which has been made through them. The road ascends to the hill top where a sudden sweep brings the visitor to the forecourt built at the front of the house.

One is not disappointed, for here rests a delightful house; a house with absolute simplicity and directness. Standing on the crest of the hill as it does, wreathed in all the beauty and glory of its wooded land, it is a place where one may live for the beauty and sequestration, for it holds all that



The entrance front to the house



The stable court

man can possibly demand for quiet and repose. A charming structure; the work of Messrs. Little & Browne, architects, of Boston, Mass.

The classic exterior pleases the eye for its direct lines and for the absence of superfluous ornamentation, which effect is repeated throughout the interior. The plan of the whole place shows a comprehensive idea carried out to its logical end. The problem was to give a sunny exposure to as many rooms as possible and at the same time to create a private garden at the rear of the house.

The forecourt, enclosed with a high stucco wall, has its entrance-way columns ornamented with classic urns. At the left side of this court, a similar entrance way leads to the stable and garage, which is built in close proximity to the main house and is easily accessible from the service quarters. The main entrance to the house is built in the center of the main building, and it is interesting to note what

passageway also forms an access to the dining-room and the service part of the house.

To the right of the entrance is built the den, which is a charming little room. The fireplace is furnished with Welsh tile facings and hearth, and a mantel with a paneled over-mantel. Bookcases with enclosed cupboards below the counter shelf and open shelves above are built in at either side of the fireplace. The trim is painted white and the walls are covered with a soft tone of *écru*, which latter forms an excellent background for the many old prints with which the walls are hung. A flowered chintz covers the furniture, and curtains of the same material are hung at the windows.

The drawing-room, opening from the hall and facing the garden, is delightful. It is a matter of satisfaction to note the absence of any pretence of elaborate ornamentation in its treatment. The walls have a low wainscoting

effective results can be obtained by the use of simple forms in construction. The main doorway is a very excellent example of this kind of building, for it is emphasized by a slight projection hardly more than two feet in extent, but being the only projection on the front is quite sufficient to meet the desired attainment. The vestibule is entered one step above the porch floor, while other steps ascend to the main hall. The woodwork and the low dado which extend around the walls are painted white. The wall surface above this dado is done in two tones of blue; the darker tone lining out a paneled effect.

In most houses of this size the stairs mount directly from the hall, thus doing away with the sacrificing of a great deal of room for a separate staircase-hall. In this house, however, a different treatment was found desirable, and in consequence the stairs ascend from a private hall separated by a classic archway. This



The drawing-room



The ingle-nook

painted white, above which they are covered with a paper showing a white floral design on a gray background. The chintz coverings of the furniture give a touch of color to the decorative scheme. The ingle-nook is the important feature of the room. It has an open fireplace, tile facings and hearth, and a mantel and over-mantel. Low bookcases are also built on either side of the fireplace.

The dining-room is the most pretentious room in the house. It is a splendid apartment, long and broad in its proportions. The principal feature here is the scheme for the wall decoration, which is most unusual, and it is particularly handsome, as it is carried out in harmony with the architecture of the house and illustrates the classic feeling. To describe the effect of these wall paintings upon one when entering, would be impossible. While the illustrations show the detail and outlines of the designs, they do not present the coloring, which is the most important feature of the paintings. It is in reality an "Italian Fancies," and is the work of the well known mural painter, George Porter Fernald, of Boston, Mass. Broad doorways at one end of the room give access to it from the staircase hall, while at the opposite end of the room the broad windows furnish ample light and ventilation, and open directly onto the garden, which is built at the rear of the house. The fireplace has marble facings and hearth and a paneled over-mantel, in which is placed a painting to carry out the decorative scheme of this side of the room. Oriental rugs placed on a highly polished floor, and mahogany furniture and antique cabinets complete the furnishings of this room.

The service end of the house is built in a separate wing and includes a large butler's pantry, finished in white enamel, a kitchen thoroughly equipped with every modern appliance, a servants' hall and laundry, while a private

stairway leads to the servants' quarter in the second story of the extension.

The second floor of the main house contains Mr. Devens' boudoir and bedroom, which are treated with white enamel trim and gray and white striped wall covering. Mr. Devens' room has also white enamel trim and the walls are covered with crimson poppies. The guest rooms are all treated in a particular color scheme. Each of the rooms connects either with a private or a general bathroom, which is tiled and furnished with all the best modern improvements.

The second story porch, opening from Mrs. Devens' room, is screened and enclosed so as to be used as an outdoor sleeping-room.

The garden, built at the rear of the house, was made from the clearing in the woods, and is enclosed with a terraced wall. From this garden broad vistas are obtained



The garden front



The den



The dining-room

of the surrounding country, beyond which is the sea.

The garden entrance from the drawing-room is ornamented by concrete columns which are placed between the doorway and the windows, the latter built at either side of the opening.

A broad porch flanked on each side by a balustrade and seats, is marked by two ornamented urns at the step line of the porch.

Broad, sweeping steps descend to the garden walk which leads to the woods in either direction and down to the belvedere at the end of the bowling green. The terrace wall which extends around the garden is built of rock-faced stone laid up in a random manner. Vines have been planted that grow over this wall, and it is now nearly covered by their attractive spread.

Considerable planting has been done about the garden porch, which rounds out the corners between the porch and



The hall

the wall. A living-porch is built at one side of the house, and it is reached from the drawing-room. It is enclosed with a green painted lattice work, and is furnished in a comfortable and harmonious fashion. The garage, which has already been mentioned, is constructed in harmony with the house. It is a square building, with three entrances surmounted by three circular arches. It is thoroughly equipped with all the modern appliances

for the care of a motor car. The chauffeurs' quarters are also provided and are fitted with the necessary appointments.

This country seat with all its accessories is undeniably arranged on the lines that secure a perfect residence; one that even the most jaded taste could welcome with the relish that comes with a gratified rural appetite, for every comfort and luxury are here in very ample measure and with the buoyant adjuncts of land and sea air influences.



Another view of the dining-room

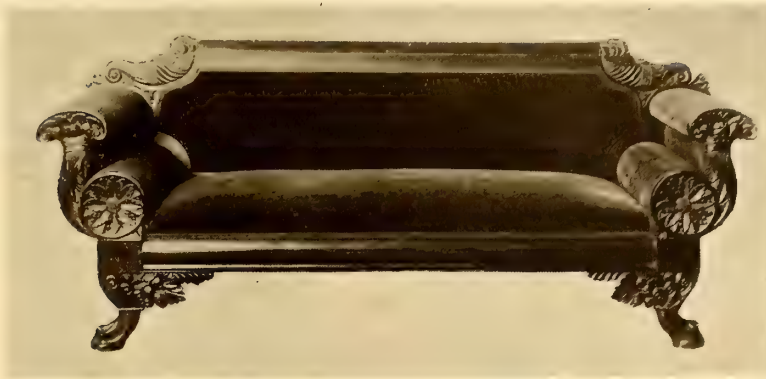


Fig. 1—A Sofa sold for \$230

Furniture of Our Forefathers

By Esther Singleton

Late Georgian—Part III.



ROUGHLY speaking, furniture and all forms of Decorative Art in which the curve predominated lasted from the beginning until the middle of the century, when the straight line asserted itself and triumphed. In the last days of Louis XV the reaction is already visible. Indeed, indications of the coming Louis XVI style begin between 1745 and 1750. The discoveries made in Pompeii and Herculaneum are responsible for the enthusiasm that the straight line and regular forms of Greek art exerted in certain masters of Decorative Art.

Among the precursors of the Louis XVI style and whose works are a mixture of the Louis XV and Louis XVI styles are Lucotte, Watelet, J. B. Pierre, Dumont, Roubo, Charles de Wailly, Choffart and Neufforge. In the last particularly do we meet with the coming style; and, among the designs of Delafosse (1731), one of the chief exponents of the Louis XVI style, we find many reminiscences of the Louis XV style.

The lovers of the Classic in England were only too ready to welcome the reaction from the rococo and to stimulate the new taste for the straight line, mortuary urn, and arabesque ornamentation. The early Louis XVI was known in England as the Adam style, which is, however, unfair to a great many others who made war on the Gothic, Chinese, and rococo taste. Numerous books on architecture, ornamentation and decorative design, as well as cabinet work, were issued between 1765 and 1771; and it is noticeable that the names of many Italians appear in this list. The artists that the Adam brothers employed to work for them—Angelica Kauffman and her husband, Antonio Zucchi, Cipriani and Pergolesi—had also great influence. The last, whom they brought from Italy, is thought by Mr. Heaton to be the "unacknowledged author of most of the beautiful details of Adam's book." The Adam brothers never made furniture—they were architects and designers; and it was largely owing to their high social position that their influence was so great.

When Chippendale published his famous book of designs, the Louis XV style was on the wane. The very year

of its publication—1754—Robert Adam went to Dalmatia to study the ruins of the Emperor Diocletian's palace; and, on his return to England in 1762 became royal architect. His brother, James, was identified with him in all his work. As the nobility and gentry not only patronized the Adam brothers, but received them socially, these architects and designers of furniture belong to a different class from that of Chippendale, Heppelwhite and Sheraton. They themselves said: "If we have any claim to approbation, we found it on this alone: That we flatter ourselves we have been able to seize with some degree of success the beautiful spirit of antiquity, and to transfuse it, with novelty and variety, through all our numerous works."

An English critic has aptly written: "Whatever were the architectural defects of their works, the brothers formed a style which was marked by a fine sense of proportion, and a very elegant taste in the selection and disposition of niches, lunettes, reliefs, festoons, and other classical ornaments. It was their custom to design furniture in character with their apartments, and their works of this kind are still highly prized. Among them may be specially mentioned their sideboards, with elegant urn-shaped knife boxes; but they also designed bookcases and commodes, brackets and pedestals, clock cases and candelabra, mirror frames and console tables of singular and original merit, adapting classical forms to modern uses with a success unrivalled by any other designer of furniture in England."

Among the ornaments the Adam brothers used were lozenge-shaped panels, octagons, ovals, hexagons, circles, wreaths, fans, husks, medallions, draped medallions, medallions with figures, goats, the ram's head, eagle-headed grotesques, griffins, sea-horses, the patera, the rosette, caryatids, and all other classical and mythological subjects.

Very much simpler than the furniture *de luxe* of the Adam brothers is that appearing in the book published in 1788 by the firm of A. Heppelwhite & Co., cabinet makers, called *The Cabinet Maker and Upholsterer's Guide, or Repository of Designs for Every Article of Household Furniture in the Newest and Most Approved Taste*. In some respects the patterns shown here are more character-

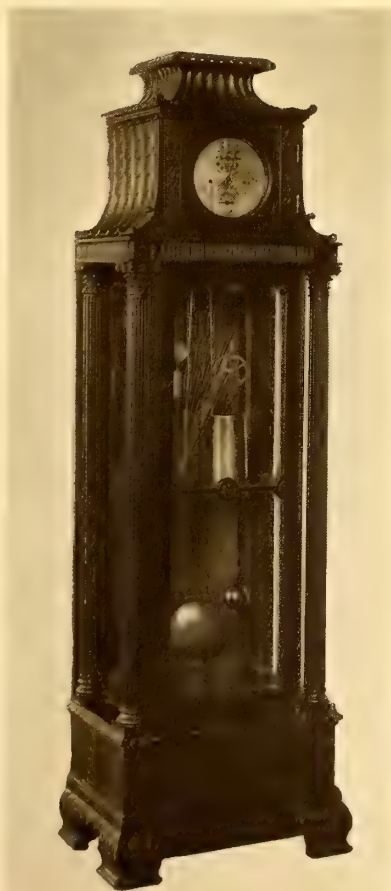


Fig. 2—A clock sold for \$250

istically English than the designs of either Chippendale or Adam. Indeed, the authors of this book claim that they have selected such as will "convey a just idea of English taste in furniture for houses." They also remark that "English taste and workmanship have, of late years, been much sought for by surrounding nations; and the mutability of all things, but more especially of fashions, has rendered the labors of our predecessors in this line of little use." They also assert that they have avoided all whims, or fancies, and "steadily adhered to such articles only as are of general use and service," but they also claim that their drawings are new and follow "the latest, or most prevailing fashion."

When this book appeared, the Chippendale style was entirely out of date; and as far as Heppelwhite is concerned, neither the "Chinese" nor the "Gothic" styles ever existed.

The general effect of Heppelwhite furniture is lightness and the straight line is insistent. The characteristic ornaments are the bell-flower in swags or chûtes, the lotus, the rosette, the acanthus, the shell, the urn, draped and without drapery, and the three feathers of the Prince of Wales's crest. These ornaments are carved, inlaid, painted, or japanned. To all other legs, he prefers the tapering and slender "term" leg ending in the "spade" foot, as shown in Fig. 12, which is very heavy for a genuine Heppelwhite piece. The carving of the bell-flower chûtes on the legs is also heavy. The fluting on the drawers suggests Sheraton.

The Heppelwhite chair is famous, and two good examples appear in Figs. 6 and 11, which show the oval and shield-shaped backs, of which this school was so fond. Both are "elbow," or armchairs, and Fig. 11 shows a festoon of drapery, which falls in a graceful swag from



Fig. 3—A dining table sold for \$400

of open back and carved chairs silk, satin, and leather and horsehair (figured, checked, plain, or striped) were used.

A table of this period appears in Fig. 5, intended for a sideboard-table for the dining-room.

It was in Heppelwhite's time that the sideboard, with its convenient arrangement of drawers and cupboards, with a large flat top for the display of silver, came into fashion.

Up to this time the court cupboard, the tall enclosed buffet, and large "sideboard table" had been used, but Heppelwhite turns it into a very elaborate piece of furniture, with drawers and cupboards. The Heppelwhite sideboard stands on tapering legs ending in the "spade," or "Marlborough" foot, and is generally made of mahogany and inlaid with satinwood, the legs being ornamented with graduated bell-flowers. Brass ring-handles are used. Knife cases and an urn-shaped spoon case stand, as a rule, on the slab of the sideboard with the plate.

Tea-trays, tea-tables, candle-stands and tea-kettle stands are also to be found among his designs. The tea-kettle stand, of which an example of this period is shown in Fig. 7, was of great use to the hostess. The one in the accompanying illustration has gaps in the banister and rail for the sake of convenience in handling the kettle.

Heppelwhite was as fond of upholstery as Chippendale. He loved the festoon, cords and tassels, and gave explicit



Fig. 4—Wine cooler



Fig. 5—A wall table sold for \$1,750



Fig. 6—A shield-back chair



Fig. 7—A tea-kettle stand



Fig. 8—A Sheraton chair



Fig. 9—A Sheraton chair



Fig. 10—A Sheraton leather chair

directions for his elaborate draperies for beds. Pier glasses, mirrors and girandoles were carved in a great variety of designs. Many indications of the approaching Sheraton style appear among his models.

In all probability Thomas Sheraton, a journeyman cabinet-maker, who settled in London about 1790, made even less furniture than Chippendale. From the time he arrived in London until his death in 1806 he seems to have devoted all his time to writing practical books on furniture and issuing designs. It is interesting, too, to notice that he claimed very few of the models. He says that his *Cabinet-Maker and Upholsterer's Drawing-Book* is "intended to exhibit the present taste of furniture and at the same time to give the workman some assistance in the manufacture of it." Moreover, he continues: "I have made it my business to apply to the best workmen in different shops to obtain their assistance in the explanation of such pieces as they have been most acquainted with. And, in general, my request has been complied with, from the generous motive of making the book as generally useful as possible." Thus, the most fashionable furniture of the day appears in Sheraton's books. In his early publications the designs are chiefly in the Louis XVI style, while in his *Cabinet Dictionary*, published in 1803 and *Cabinet-Maker, Upholsterer and General Artist's Encyclopaedia*, published in 1804-06, the Empire style appears in full glory.

He is particularly fond of carving and gives many graceful designs and motives for the splats and banisters of chairs and the posts of beds. He is also extremely fond of inlaid furniture and painted furniture and liked the new fashion of inlaying with brass. Satinwood he greatly admired, especially of a fine straw color, and thought zebra wood and tulip wood beautiful for cross-banding. His drawing-room furniture was of white and gold, painted and japanned, of satinwood or of rosewood. Mahogany he used only for dining-room, bedroom and library furniture and for chairs with carved and open backs. A typical chair of Sheraton's early period appears in Fig. 8. Here we have one of his favorite square backs, the two central posts forming a round arch, the square top of which rises above the top rail of the chair. The slender, delicate and elegant urn of the Louis XVI period is surmounted by three feathers, and is carved with graceful drapery in low relief. A chair of a later period appears in Fig. 9. Here we see the square lattice-work back, the reeded legs and the twisted stumps that support the arms. The patera, or rosette, hides the joining of the side posts and back and the legs in the front. Diagonal stretchers connect the legs. Of still later period is the chair Fig. 10. This is much in the style of what he calls the Herculaneum, intended for "rooms fitted up in the antique taste." He also recommends them for music-rooms.



Fig. 11—A shield-back chair sold for \$330



Fig. 12—A dining table sold for \$600

The secretary and bookcase was, as a rule, somewhat smaller than during the days of Chippendale; but the glass doors, of which so many varieties appear in Chippendale's book, still remained in fashion. A good example appears in Fig. 13, which needs no description except to say that Sheraton would flute green silk behind the glass doors. One of the central drawers is missing. Another mahogany desk and bookcase appears in Fig. 15. This is built on concave curves, as are also the glass doors of the upper part. The lower part contains a slide, which, when pulled out, forms a desk, beneath which is a drawer, then a cupboard and below this a second drawer. This piece is also in the Sheraton style. A mixture of styles appears in Fig. 14. The model for this is the old Dutch cupboard in two parts; the ogee foot and the framework for the glass suggest Chippendale, the fluted sides Sheraton and the "swan-necked" pediment with its pedestal for a bust, or piece of china, a still earlier period.

The extension dining-table did not come into existence

will admit of eight persons, one only at each end and three on each side. By the addition of another bed, twelve, with four times the room in the center for dishes. The accompanying illustration, Fig. 3, is a table of this period, each pillar ending in three claws. For the further support of the central leaf a horse has been added; but, of course, has nothing to do with the original design. When the central leaf is not needed the two halves, supported by the pillar and claw, if put together form a round table, and they can also be used to form separate pier tables, and placed against the wall in the dining-room.

Although the cellaret sideboard and sideboard with drawers, which became fashionable under Heppelwhite, were still more developed by Sheraton in his early period, in his late period he returns to the old "sideboard table" without drawers. Beneath it stood the cellaret, or wine cooler, also called by Sheraton a wine cistern. These were generally in the form of a sarcophagus and "are adapted to stand under a sideboard, some of which have covers and



Fig. 13—A secretary



Fig. 14—A china cabinet



Fig. 15—A desk and bookcase

until 1800, when Richard Gillow, a cabinet-maker in Oxford street, invented the telescopic table which, with its various changes, is the table in use to-day. Gillow's table is described as "an improvement in the method of constructing dining and other tables calculated to reduce the number of legs, pillars and claws and to facilitate and render easy their enlargement and reduction."

Sheraton's ideas of the dining-table are best understood by a reference to his book: "The common useful dining-tables are upon pillars and claws, generally four claws to each pillar, with brass casters. A dining-table of this kind may be made to any size by having a sufficient quantity of pillar and claw parts, for between each of these there is a loose flap, fixed by means of iron straps and buttons, so that they are easily taken off and put aside; and the beds may be joined to each other with brass straps or fork fastenings.

The sizes of dining-tables for certain numbers may easily be calculated by allowing two feet to each person sitting at table; less than this cannot with comfort be dispensed with. A table six feet by three, on a pillar and claw,

others without." A mahogany cellaret of the heavy Empire period appears in Fig. 4. The cellaret is always lined with lead and sometimes partitioned for wine bottles. Sheraton preferred them hooped with brass and with brass rings at the sides.

The cornucopia appears on the sofa, Fig. 1, which also shows the influence of the Empire. This design is used to form the arm, above which on the top rail of the back is carved a dolphin. An animal's claw with leaves suggests faintly the wing of the Assyrian lion. The ends of the rolled cushions are carved in leafy rosettes.

Another Empire piece is the clock case, Fig. 2. The dial and works were made by George Prior of London between 1809 and 1811, and the case is of the same date. Although the upper portion slightly suggests the turned-up roof of the Chinese pagoda, the general heaviness and clumsiness belong to the Empire period.

The illustrations of this article are of the Thomas Clarke Collection, which was recently sold at the American Art Galleries.



Suggestions for Easter Tables

Jack Horner Pies and Favors

By May L. Schryver

Photographs by Helen D. Van Eaton



THE attractiveness of every table, whether set for luncheons, dinners, or parties, may be increased by the addition of timely centerpieces and favors, and the enjoyment of such an occasion is sure to be greater if the individual favors bespeak in any way the characteristics or pet hobbies of the guests. The clever hostess who realizes this will be able to adapt many of the favors illustrated to her own particular needs. The bunnies, chickens and decorated eggs belong exclusively to the Easter season and provide a wide choice and unlimited possibilities.

If rabbits have been chosen for the decoration of the Easter table, one need not consider whether or not the design in mind may be found. The favor shops supply every variety from the flat, fuzzy white ones, which sell at thirty cents a dozen for the smallest size, up to those of brown and white papier mache in all sizes, from five cents each to the full life-size bunny at eighty cents. They may be had, also, in every conceivable attitude and costume. The bunny chums, with their basket of candy eggs, are a solemn little pair who would delight the heart of any child and be welcomed by adults also. The eggs may be white sugar decorated with candy flowers, or eggshells filled with maple sugar. Their bugler brother is a sturdy figure who will do service as a bonbon box and also allow the band of his cap to be used as a place card. Another dressed figure carries a basket of wee, yellow chicks for an Easter gift, and it is a safe assumption that the child who receives the

basketful is provided with amusement for a week at least.

The fuzzy, white rabbits are the surest ally, if children are to be entertained, for the soft, white bodies and pink ears are certain to delight them. The little fellows with jointed "hands" and feet are very adaptable. Those in the illustrations may be bought by the dozen and used with other trifles, such as the automobile for the guest who motors, or the harp or banjo for those whose tastes are musical. They may be used either for bonbon box decorations, or for place cards.

If chickens, or chickens and rabbits combined, are decided upon, the result will be most attractive, for the yellow chickens will brighten the table surprisingly. These may also be had in numerous sizes at ten cents or over per dozen, and may be used in quite as many ways as the rabbits. Two or three placed in natural positions on top of a bonbon box are a sufficient decoration, and one alone on the corner of a place card will make it a fit companion piece. The one shown in the illustration is rather a hapless little fellow caught in a gilded toaster with a place card dangling from the end.

A simple centerpiece for a children's party table has a nest of clean hay or straw for a foundation. Upon it is placed a hen made from a flat piece of cardboard cut in the proper shape. The sides are padded out slightly with cotton and covered with smooth paper. Upon this are pasted the crêpe paper feathers, beginning with the tail and overlapping them in irregular rows toward the head. Before the head is covered, a comb made of red flannel should



These favors can be bought by the dozen and arranged to suit the occasion



These favors are made from a group of articles purchased from a toy shop



A beehive made of crêpe paper and ornamented with flowers



A rooster with a mail-bag made of crêpe paper containing Easter favors



A Jack Horner egg made of crêpe paper and cotton batting

be glued in place and the bill gilded. When the feathers are on, the eyes, made of round bits of yellow paper with ink spots in the center, may be put on.

In the same way a rooster can be made for carrying mail-bags containing Easter favors. These mail-bags may be made of buckram, in the shape of an egg which has been cut lengthwise through the middle. The top should be left open, after the manner of a wall-pocket, and the outside covered with crêpe paper. A tiny chick for each guest is attached to the ends of the favor ribbons hanging from the mail-bags. The tail feathers should be made double, with a wire between the layers, so that they may be easily curved into shape.

The egg Jack Horner is very easily made by covering an egg-shaped wire frame with crêpe paper or cotton batting. The frame is supported by four large bunnies, and chicks are attached to the ends of the favor ribbons.

A discarded toy cart decorated with flowers and colored paper or ribbon is the foundation for the chariot. It is drawn by a home-made chick, and driven by a little girl doll. If the chariot is made from a large cart, it will serve as a Jack Horner Pie, and a very small cart may be used as an individual favor.

An adaptation of "There was an old woman who lived in a shoe" is carried out in the shoe swarming with chicks and

presided over by a distracted hen, also made of flat cardboard and covered with feathers. The block shoe is easily made from buckram. The seams should be overcast together and the whole covered with crêpe paper. Short ladders made of cardboard provide a foothold for the numerous brood.

The little carriage with its doll coachman shows another use for a child's cart. It is filled with leaves and moss and topped with flowers, and the harness is decorated in the same way. A Saturday morning sewing bee may terminate in a luncheon with a beehive centerpiece. The foundation is a frame made of thin pieces of wood nailed together, with a flat board top covered with plain crêpe paper. This material, cut into strips narrow enough to look like grass, is fastened to the posts, and clusters of flowers are used for decoration. For the top of the hive use a shallow, round bandbox of a size in proportion to the base. Around the top fasten a cone of stiff paper and cover with paper rope, beginning at the bottom and winding upward, using a little paste to secure it. The rope may be made by twisting two strips of crêpe paper tightly, and then twisting the two together in the opposite direction. A few artificial bees on the hive will give a realistic touch. Under the hive, place a hen and her brood of chicks.

The accompanying illustrations show three or four ways



A toy cart decorated with flowers



A adaptation of "There was an old woman who lived in a shoe"

of using each article, but to the far-sighted hostess they will serve but as suggestions of the countless effects which may be obtained. The materials which may be used for such work are the cheapest of their kind, as, for instance, cheesecloth, crêpe paper, paper muslin, buckram, cotton batting, mosquito netting, and cardboard. These may all be utilized for different effects, and at different times of the year.

A half-dozen toys, outgrown or forgotten by the children, or selected, at five cents each, from a counter of damaged goods after the holiday season, may be repaired and freshened with glue and paint, and made to take the place of more costly favors at each plate. Often one of these toys is so appropriate for a certain guest that it is scarcely necessary to point out the fitness. An automobile that has been discarded for a locomotive may bear a small basket of almonds before the motor enthusiast; the chafing dish, which the little girl has perhaps forgotten in the joys of

bearing upon the scheme of the entertainment, as, for instance, a cart full of Easter eggs to be distributed at an Easter party. Flowers from summer hats may be used for such decorating, or one may buy inexpensive artificial flowers at the ten-cent stores, or make paper ones.

Baskets, such as the one carried by the chums, will supply the whole basis for a table decoration, and the fresh, unpainted willow will be found very cool and attractive for a spring luncheon. A large one in the center may hold a basin filled with long-stemmed flowers or branches of small green leaves, or it may be used as a Jack Horner pie. A small one at each plate may be filled with nuts or

candy, or oval ice cups of plain white paper may be placed inside and the ices served in them.

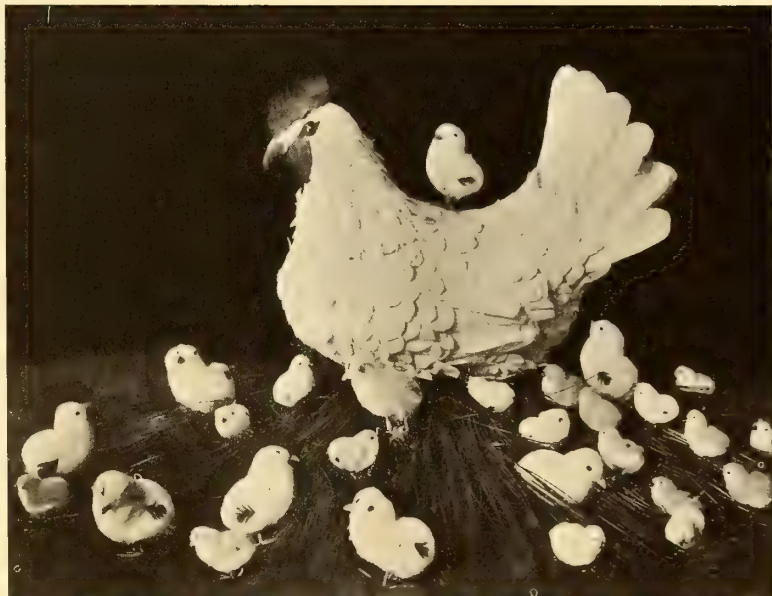
If one can procure wire frames, or can make them, as one can do occasionally, she has a most helpful addition to her stock of materials. The Easter bell, the Easter egg, the spring bonnet which is used as a Jack Horner



The chums and their bugler brother



Doll coachman and Bunny steed

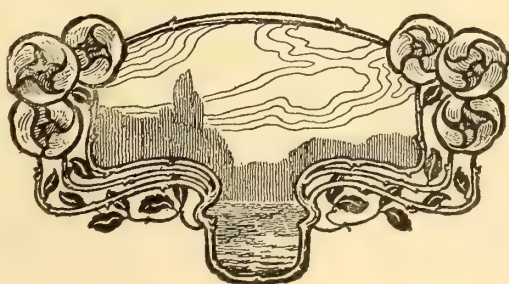


Centerpiece of hen and chicks. Chicks to be distributed as favors

a new gas stove, belongs, according to tradition, to the college girl; and the last cup and saucer of a toy tea set may be used, as a warning against spinsterhood, at the plate of an unquestionably popular girl.

Toy carts of all sizes, from a three-inch tin affair to a large express wagon, can be used as often as one finds a superfluous number about the house. The wheels and shafts may be wreathed with flowers, and the body filled with them, unless the load to be carried must have direct

pie, the basket to be filled with flowers, and the beehive may all be made over wire frames. These frames, as sold, are made of stout wire that is not easily crushed out of shape, and they may be kept and used from year to year, as the foundation for Easter decorations. The color and design of the covering may, of course, be changed each year, and the accompanying favors may be so varied as to give the effect of an entirely different arrangement as occasions demand.





New Suggestions for Darning

By Mabel Tuke Priestman



NOWADAYS much needlework is done with the evident intent of putting into it a minimum expenditure of both thought and labor, and the results are obtained by a studied blending of colors and individual treatment of design. Each piece should be a part of the whole and should not stand out asserting its right to be admired. The immense popularity of all forms of darning owes its development to the way in which it adapts itself to all kinds of decorative treatment.

The designs for darning illustrated here mark a distinct development along the lines of simple broad effects, so much desired to-day in all forms of needlework. Most of the designs shown are carried out on gray, hand-woven linen. This comes fifteen inches wide; just the width for sideboard cloths and table runners. The material is most interesting both in weave and color. It is made from natural unbleached flax and varies from light grayish tan to a warm light brown. It is often found in almost silver gray and is one of the most decorative materials for needlework to be obtained. The colors used to ornament this fabric should be soft dull tones of linen floss that harmonize with the natural gray of the linen. Outline and satin stitches are used to define the lines and masses very sharply, but the designs are wrought throughout in a simple darning stitch, taken in short uneven lengths parallel with the woof threads. The fabric is allowed to show through these stitches so that the design has the effect of being an integral part of the material, having almost the appearance of hand-weaving. The charm of this work lies in the shimmering jewel-like effect that is gained by allowing the ground material to show through in broken uneven spacings between the stitches. It is worked in several colors—silver, blue and old rose, charmingly blended with soft, dull greens. There is a suggestion of the wings of a dragon-fly in this beautiful piece of needle craft. When hanging in a window with the light filtering through, the effect is most beautiful.

The other curtain is made of brown homespun linen and is darned in a conventional figure in tobacco brown. The ground color is allowed to show through, giving it a translucent effect that is most decorative.

The linen blotters vary somewhat from the other

pieces in the way they have been treated. The center blotter is outlined in gold cord, couched around the design. The darning is run up and down instead of horizontally, the usual way. It is worked in heavy green with a gold outline on the gray linen. The largest blotter is almost as much blanket stitch as darning, but a very bold effect is given to it by an outline of black silk worked in embroidery stitch. The Tussore silk chair back has an insertion of curtain net matching the ground work of the silk. This is darned in medieval pattern in old gold and is very quaint and somewhat out of the ordinary. The little work bag of linen and silk is done in outline stitch and darning in several odd shades. We have seen another design on curtain net which showed a somewhat unique treatment of pillow lace and darning. The cushion was covered with old rose satin and the slip consisted of écru net ornamented with pillow lace and darning. All the threads ran horizontally and the ivory silk darning shimmered through the curtain net in a very attractive manner. The design was centered and consisted of a group of roses, one overlapping the other, with a few leaves suggested at the edges.

One of the illustrations shows somewhat unique designs. They are made of coarse unbleached linen and the decoration has been impressed with a block print. This is only partly concealed by the darning and has a most unusual and pleasing effect. The chair back in green and old rose is extremely effective. This consists of darning outlined by chain stitch. The dark green lines in the background serve to throw in relief the old rose design. The other designs show a simple treatment for shaving-tidies. One is on ivory ground while the other is almost brown and worked entirely in dark tones. The sort of design suitable for darning

differs considerably from all other kinds. In order to get broad, flat masses which go to bring about the right results, an individual treatment is necessary. At the present time table runners are the latest cry in up-to-date needlework, and naturally a border treatment at either end is the most suitable. Sometimes this is run entirely across, about six inches from each end and with a line at the top and bottom.

The designs are usually based upon conventionalized plant or insect motifs, but a good many are geometrical in their formation. Satin stitch and outline are used to define the lines and masses very sharply, but



Some dainty workbags ornamented by darning



A border of Japanese effect



A working bag



A border of jewel-like effect

the designs themselves are worked in short darning stitch parallel with the woof threads.

A very beautiful table runner consists of a dragon-fly design. The upper and lower border lines are darned in a brilliant blue floss interspersed with uneven threads of green. The legs of the insect are worked in green and the body in art stitch in both blue and green. The eyes and wings are

effect and is significant of the exquisite coloring used in darning craft.

When the design does not run right across the end, a very effective treatment is to outline the whole runner or sideboard cloth with hemstitch an inch and a-half at the sides and at least three inches wide at the ends. The design would look well with an upward growth of conventionalized



Block printing is an important adjunct to decorative darning



A cover for a stand, with a darned border



Table cloth with a decorative center for a small stand

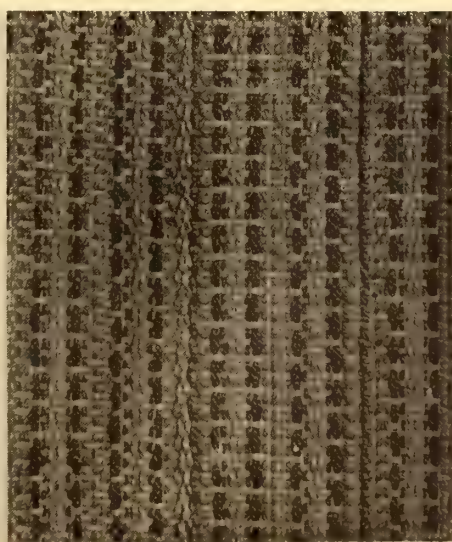
both composed of threads of green with a little blue introduced. The veinings of the wings are blue and green floss run alternately, with touches of old rose darned in the lower spaces of the lower part of the wing. The mixture of old rose, blue, and green, gives the effect of old Persian embroidery, and the sparkle given by the showing of the ground work through the uneven spaces left by the threads is wonderfully effective. Such a border has an almost jewel-like

flowers and a few running lines to support it below, and tulips; poinsettias, crabapples, or water lilies are all suitable.

Pure white is very effective on a creamy ground. Some people prefer white to using colors for table use. The round table center is always popular and lends itself to darning; the edge may be finished with a hand-made lace, or a tiny rolled hem on the upper side of the material, which is known as a peasant roll.



Brown homespun linen is darned with brown; the design is conventional and effective



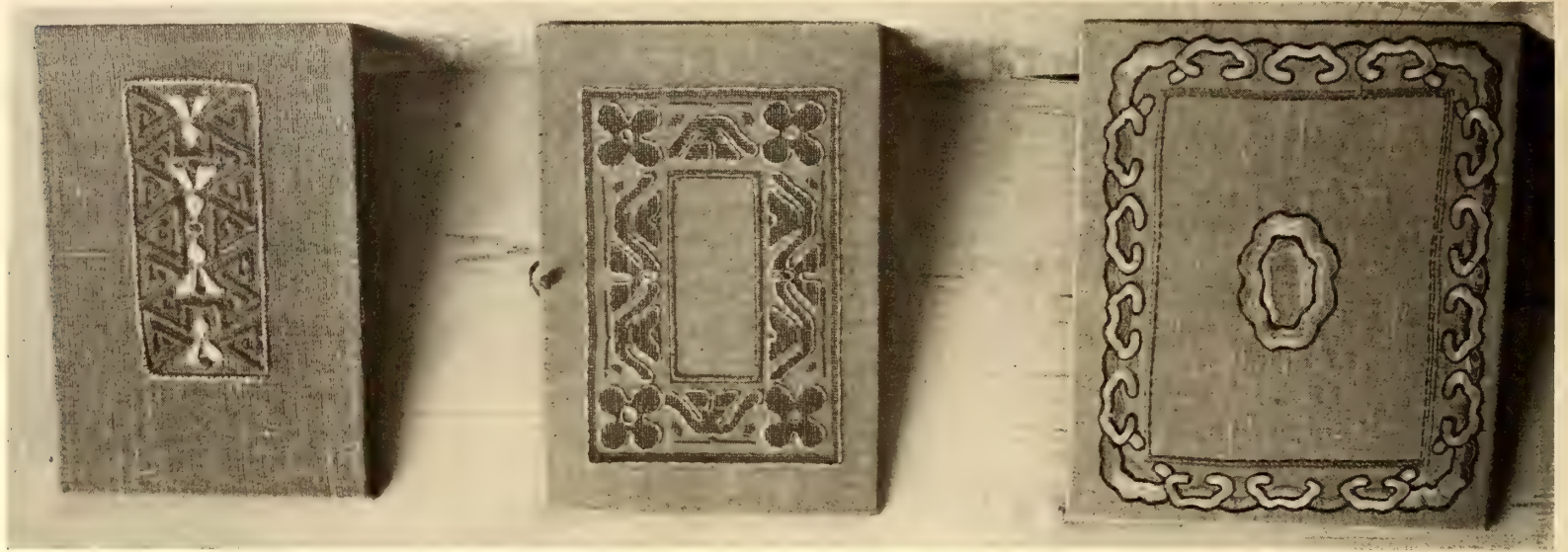
Ivory Java canvas darned with three shades of delft blue



An original treatment of darning. The loops are allowed to appear on the surface

Huckaback toweling is a delightful material to darn on as the weave is loose and the needle can be run on the surface, catching up every other group of threads. This method

two groups of threads makes the surface of interest. Our illustration shows ivory huckaback with stitches of three shades of delft blue. A departure from darning



Linen blotters and all kinds of little things can be ornamented by darning

of darning can be done very rapidly. Huckaback has become so popular for darning uses that it can now be obtained in soft pastel shades for men's waistcoats, and écru, gray, and pale green as well as ivory are seen at fancy needlework stores. It is not necessary to have a design, for the

fact of varying the length of the stitch by skipping one or is allowable, as featherboning and cross stitch look well with it.

Exquisite bits of coloring, original designs and a variety of uses make darning one of the most effective needle crafts, requiring little time and skill, but a good deal of artistic perception to gain the desired results.

Big Fir Trees of the Northwest



HE fir trees of the Pacific Northwest occasionally attain such proportions, especially in the territory near Puget Sound, that the stumps after the trees have been cut down are employed for novel purposes. In some portions of Washington one can

see these huge stumps, which have been hollowed out and actually made into temporary homes for settlers. To make a stump house, it is only necessary to remove the material from the interior, leaving enough to form walls of suitable thickness. Then a roof of boards or shingles is put over the top of the stump, holes are cut for windows and doors, and the dwelling is practically ready for occupation. A number of these stumps have been used by settlers on what are called logged-off lands, until they have been enabled

to construct larger and more convenient dwellings. After the stump home has been vacated, it is turned into a stable for the horses, or sometimes into an inclosure for chickens or hogs.

Next to the big tree of California, or sequoia as it is termed by the scientists, the fir as found in Washington and Oregon has the largest diameter of any tree in America, and probably in the world. Some have been cut down

which actually measured 15 feet in diameter at the point where the incision was made. As they decay very rapidly after the timber has been removed, usually the interior can be hollowed out with little difficulty. Sometimes they are used for dancing platforms. Another custom is to turn the big stumps into playgrounds for the children, who reach the top by pieces of wood nailed against the sides or by ladders, the latter being easier of use.



Stump of fir tree in Washington which shelters a family of five

The Japanese Garden in America

By Phoebe Westcott Humphreys



THE ever-increasing demand for novelty in the ornamenting of country-seats has of late years led to pleasing results in the reproduction of the best types of Oriental gardens. Less than a decade ago an authority on landscape gardening lamented the fact that Americans are slow in appreciating the true art of gardening in regard to the idea of fitness and harmony in details, as evidenced by Japanese landscape artists; and the statement was then made, that while there have been a few attempts at copying Japanese methods, there is not a genuine Japanese garden, constructed upon true Oriental principles, to be found upon any of our noted American country-seats. Now, all this has changed. Within the past few years many famous gardens have been constructed by competent Japanese craftsmen, who have given their entire lives to the study of the religious and symbolic, as well as the picturesque features of landscape gardening, and who have carried out with painstaking care upon Occidental acres the artistic details that have made Oriental gardens of world-wide fame.

The study of Japanese manners and customs, of home decorations and gardening features, first became of prominent interest in this country in connection with the early world's fair. The Chicago fair of 1893 presented one of its most charming features in the form of a complete Japanese village, constructed and ornamented with regard to all the traditional details for which our Eastern neighbors are famous. Japanese villages then became the fad, not only for later "fairs," but Japanese tea-rooms and Japanese gardens on an elaborate scale were built as side attractions at famous summer resorts; and an increasing interest in the quaint stone lanterns, the curiously dwarfed trees, the winding rock-bound waterways crossed by novel bridges, and all the significant details of garden accessories associated with traditional and legendary lore of the Japanese attracted the attention of owners of splendid country-seats, who speedily demanded the services of Oriental landscape artists to thus decorate a portion of their extensive acres.

In some instances, of late, Japanese gardens have been transplanted bodily from a summer resort (where they have flourished for a time and then

became unprofitable) to decorate a home-garden of an enthusiastic nature student, as in the case of the quaint and charming bit of old Japan now owned by Mr. Matthias Homer. In other instances, the owners of still more extensive acres have not only employed famous Japanese artists to lay out ideal gardens, but they have themselves become interested in importing the dwarfed and curiously stunted and gnarled old trees direct from the mother country to decorate their unique gardens. Mr. Charles Pilling was one of the first to follow this fad, and the century-old pines, and many novel plants and trees measuring only a foot or two in height and numbering their years by centuries, now decorate his Japanese garden nook imported by himself. Again, the owners of extensive country-seats have given all the details of importing the paraphernalia and the construction of their Oriental gardens to the care of the Japanese craftsmen who excel in this work, while taking an intense personal interest in all the details of their new possessions, growing from year to year, like the garden of Mr. Louis Burk, in which he has watched the tedious process of construction for three years or more with ever-increasing delight (though not taking any direct part in its construction) and who is now planning to greatly increase its area. There is a fourth class who own wonderful Japanese gardens, who look upon them simply as an additional attraction for decorating a portion of their ample areas, and after being assured that the garden building is under the supervision

of a practical Japanese artist, who will "do the thing up right," they give no further concern to this than they do to the Italian gardens and other formal gardens that are appropriately placed on various secluded portions of their grounds. But no matter what the object that influenced the owner to include Japanese gardening in decorating his home grounds, the interest thus evidenced has grown until many are becoming familiar with the true art of gardening in Japan.

There is still another class of enthusiasts upon this subject who have attempted to build their own Oriental gardens, fashioned after those that they have studied on their travels in Japan, or by studying the models already established in this country; but in every instance it is noted that such gardens fail to be successful unless one understands the seemingly endless details that govern true Oriental gardening. It is



Dwarf trees and water-worn rocks cover the little islands

safer if one would have it constructed on correct lines, to give the building of even the tiniest Japanese garden into the care of a native craftsman.

The American-Japanese gardens, which present interesting studies in various sections of the country to-day, almost invariably include numerous flowers with their manifold ornamental accessories—the Japanese azaleas, the dwarfed plum trees and many novel water plants being the prime favorites; but travelers in Japan frequently note the fact that the native gardens are not necessarily flower gardens, neither are they always made for the purpose of cultivating plants. In nine cases out of ten there is nothing in the smaller plots to resemble a flower-bed. Some gardens may contain merely a sprig of green; some (although these are exceptional) have nothing green at all, and consist entirely of rocks, pebbles and sand. Neither does the Japanese garden require any fixed allowance of space; it may cover one or many acres; it may be only ten feet square; it may, in extreme cases, be much less, and be contained in a curiously shaped, shallow, carved box set on a veranda, in which are created tiny hills, microscopic ponds and rivulets spanned by tiny humped bridges, while queer, wee plants represent trees, and curiously formed pebbles stand for rocks. But on whatever scale, all true Japanese gardening is landscape gardening; that is, it is a living model of an actual Japanese landscape.

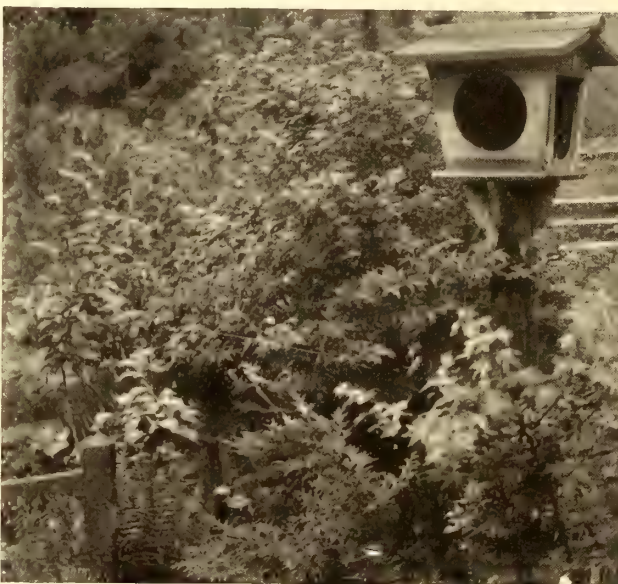
It is an exceptional privilege to study at first-hand the significance of all the details that go to make up the true Japanese gardens, which have now become the fad in this country. I have been informed by an excellent authority on the subject that "through long accumulation of traditional methods, the representation of natural features in a garden model has come to be a highly conventional expression, like all Japanese art; and the Japanese garden bears somewhat the same relation to an actual landscape that a painting of a view of Fuji-yama by the wonderful Hokusai does to the actual scene—it is a representation based upon actual and natural forms, but so modified to accord with accepted canons of Japanese art, so full of mysterious symbolism only to be understood by the initiated, so expressed, in a word, in terms of the national artistic conventions, that it costs the Western mind long study to learn to appreciate its full beauty and significance.

"Suppose, to take a specific example, that in the actual landscape upon which the Japanese gardener chose to model his design, a pine tree grew upon the side of a hill. Upon the side of a corresponding artificial hill in his garden he would, therefore, plant a pine, but he would not clip and trim its branches to imitate the shape of the original, but, rather, satisfied that by so placing it he had gone far enough toward the imitation of Nature, he would clip his garden pine to make it correspond as closely as circumstances might permit, with a conventional ideal pine tree shape, as though buffeted and gnarled by the fierce winds of centuries."

These native craftsmen will also assure the owners of the gardens they are constructing that there are ideal shapes not only for the



Stepping-stones for stairs



Wooden lantern and Japanese maples



A favorite type of stone bridge



A room, la



An exquisite bit of



and bridge



A typical wisteria arbor



A plain type of wooden bridge



k in a secluded spot



Guards at the entrance

pinus, but also for the mountains, lakes, waterfalls, stones, and numerous other accessories; and it is of the utmost importance that the gardener should take cognizance of a multitude of religious and ethical conventions in working out his design. They call attention to the fact that the streams must follow certain cardinal directions, that the nine spirits of the Buddhist pantheon must be symbolized in the number and disposition of the principal rocks. That the trees and stones must be carefully studied as to their relations to each other and to the general garden scheme, and only such combinations made as are regarded as "fortunate." And woe to the unhappy gardener who does not carefully study their symbolic relations and who carelessly introduces what is considered an unlucky combination.

So conscientious are the Oriental garden builders that they give the same care in regard to symbolic details to their "foreign" landscape construction on American country-seats, as in their native country. No matter what the size, form or finish—whether it is large or small, mountainous or flat, rough or elaborate—the true landscape garden must be made to contain, in some form, rocks and water and vegetation, in connection with various architectural accessories in the form of indispensable lanterns, bridges and stepping-stones, while, in the more elaborate gardens are introduced pagodas, water-basins, tea-houses, boundary fences, or hedges of bamboo, and fancifully roofed gateways.

The careful distribution of garden vegetation is considered quite as important as the arrangement of the principal rocks and stones and the contours of land and water. The Eastern travelers who have taken cognizance only of the grounds of the larger temples of Japan will probably fail to realize the significance of tree grouping in regulation landscape gardening. In the temple gardens, groves and avenues of trees are frequently planted in rows, with the same formality adopted in Western gardens, while in the true landscape gardens such formal arrangements are never resorted to. Not only are the trees arranged in open and irregular groups instead of being planted in rows—when several are planted together—but the rules for planting these clumps or groups are rigidly determined. To the uninitiated it is difficult to understand just why these tree clumps must be disposed in double, triple or quadruple combinations, while these combinations may be again regrouped according to recognized rules based upon contrasts of form, line and color of foliage; but all these rules are understood and most carefully adhered to by the student of Japanese garden craft. And it is found on comparing the grouping of tiny dwarfed trees of miniature gardens with the arrangement in larger spaces, that the same rules have been followed.

The disposition and the use of the various architectural accessories of the garden is also formally regulated, and the variety in garden building is found mainly in the form of these accessories, as the pagodas, lanterns, water-basins, wells and bridges are fashioned in many curious and beautiful designs, while the enclo-

safer if one would have it constructed on correct lines, to give the building of even the tiniest Japanese garden into the care of a native craftsman.

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A garden gateway



A rare Japanese dwarf tree



An ancient knotted pine tree



An antique Japanese lantern

tures on the form of unique fencing of reeds, bamboo and twigs present many pleasing forms and combinations.

The famous Japanese landscape gardens that have been established on American country-seats have been sufficiently large to give a fairly good idea of Oriental landscape gardening on an extensive scale, and yet there is no reason why the owners of city homes with small backyards enclosed by ugly, high board-fences should not have them transformed by a bit of Japanese magic. Professor Morse tells, in his talks on the Japanese, of how they utilize the smallest areas of ground for garden effects. "I recall an example," he says, "of a cheap inn, where I was forced to take a meal or go hungry until late at night. The immediate surroundings indicated poverty, the house itself being poorly furnished, the mats hard and uneven, and the attendants very cheaply dressed. In the room where our meal was served there was a circular window through which could be seen a curious stone lantern and a pine tree, the branches of which stretched across the opening, while beyond, a fine view of some high mountains was to be had. From where we sat on the mats there were all the evidences of a fine garden outside; and wondering how so poor a house could sustain so fine a garden, I went to the window to investigate. What was my surprise to find that the extent of ground from which the lantern and pine tree sprung was just three feet in width! Then came a low, board-fence, and beyond this stretched the rice-fields of a neighboring farmer. At home such a strip of land would, in all likelihood, have been the receptacle for broken glass and tin-cans and a thoroughfare for erratic cats; here, however, everything was clean and neat—and this narrow plot of ground, good for no other purpose, had been utilized solely for the benefit of the room within."

There is no reason why the smallest of these backyard gardens should lack any of the indispensable accessories, for all may be reproduced on a miniature scale. In fact, a great

majority of city homes in Japan have very little more scope for their gardening than that contained in the brick-paved or cemented space back of the average city homes of America; and yet travelers in Japan, who have had access to private dwelling-places in the cities, as well as to the public inns, tell of wonderful "toy-gardens" in which nothing is lacking in Oriental completeness—there is a little artificial lake of pellucid brightness, a little artificial waterfall fit for a naiad's fountain, both fed by a little sandy-bottomed brook or conduit of clear, spring water; a cluster of little islands (one of them, perhaps, shaped like a tortoise) affording opportunities for impossible quaint little stone bridges, circle-backed, horseshoe-backed, or flat slabs of pretentious size, and every member of the cluster with its little stone pagoda, its quaint daimio-lantern, its toy shrine, or the fantastic bits of rock for which the Japanese pay such extravagant prices.

On the artificial promontories will stand maples—plain maples, copper maples, pink maples, variegated maples—all within the fine splintery-leaf of the Japanese maples, trained into whimsical shapes, though not so whimsical as the fir trees (*matsuji*) which rival the box-hedge peacocks and other armorial bearings in old English baronial gardens. In the garden of the "Golden Pavilion" (*Kinkakuji*) at Kyoto, there is a fir tree tortured into the similitude of a junk in full sail; and every tiny garden will display some strikingly unique form of twisted and stunted pine tree. Where the stream runs into a little lake, there will be a bed of stately purple iris, and built out into it on piles, or spanning a narrow arm as a covered bridge, a wistaria arbor, with long, purple blooms reaching down to the water in the springtime. The wild wistaria, which grows profusely in Japan, is one of the favorite garden flowers, and it is one that should figure prominently in the city gardens of this country, one that would give constant delight.



Symbolical rocks are as important as lanterns in the Japanese garden



HANDICRAFTSMAN

Conducted by A. Russell Bond

Home-Made Pottery—III

By W. P. Jervis

Illustrations by E. M. Harlow



THE decoration of pottery by means of colored clays is capable of so much variety and yields such easy harmonies in color as to immediately commend itself to the worker in the studio. From time to time new methods of application have been found, the faience of Haviland, Rockwood pottery, Moorcroft's Florian and the charming creations in *pâte-sur-pâte* by Solon and others, which have been hailed as something new, but the prototype of them all is the old slip painting of the Romans and of the medieval English potter.

The condition of the clay piece to be decorated is most important. It should be just hard enough to enable you to handle it carefully without putting it out of shape. If used any harder than this the colored slips used in its decoration will peel off in the firing. It is essential to success to keep it in this condition until completely finished. This may be done by wrapping in damp cloths when not in use, or better by keeping it in a "damp box." This can easily be constructed with very little trouble or expense by taking a box, driving in on both bottom and sides small nails or tinned tacks, leaving the heads projecting. Cover both bottom and sides with plaster of Paris, from one to one and a half inches thick according to size of box, for which the projecting nails form an anchorage. Treat the cover in the same way and as soon as the plaster is set your box is ready for use and needs only an occasional sprinkling with water to keep the plaster moist.

The colored slips are prepared by mixing certain proportions of metallic oxides or underglaze colors with white clay, and must shrink during the firing in equal ratio with the body. The first requisite is a white base, which can be compounded as follows:

Ball Clay	33	parts
China Clay	28½	parts
Flint	14	parts
Cornish Stone	19½	parts
Feldspar	5	parts

100 parts

This will mature at cone 1, as low a heat as is desirable to use to insure the ware holding water. When this has been prepared and lawned, dry it out on plaster bats

or in molds, so that it can be accurately weighed. Before trying to decorate any pieces it is best to make trials of the colors you intend using, so that the effect of both the glaze and the firing on them may be accurately judged.

In preparing colored slips, first grind the colorant in a stone mortar and add it in the proportions given to the white clay, and stir thoroughly so as to obtain an intimate mix. Pass through a 120 mesh lawn and any residue remaining on the lawn must be again ground in the mortar so that the whole will pass through the lawn. Leave it to settle, until after pouring off the water you have a slip of about the consistency of cream, and it is then ready for use.

Coloring matter is added in the following proportions:

1. Dark blue . . . 15 parts white clay, 1 part oxide of cobalt
2. Peacock blue . . 25 parts white clay, 1 part oxide of cobalt
3. Light blue . . . 35 parts white clay, 1 part oxide of cobalt

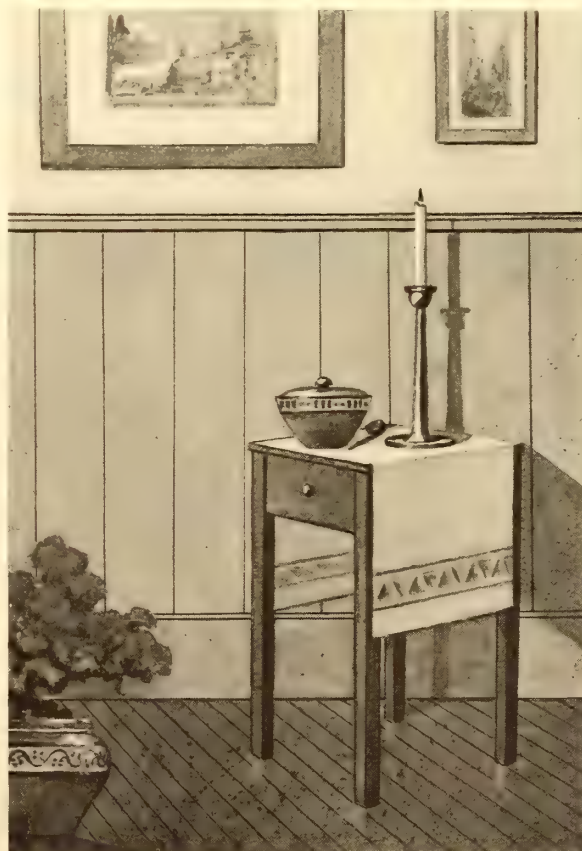
The cobalt cannot be too finely ground, as otherwise it will show in flecks of darker color, occasionally not an objection for grounds. The only remedy is to grind and lawn again. These three blues can all be improved by slightly reducing the quantity of cobalt and about doubling the difference with underglaze peacock and mat blue, according to tint required. No. 1, for instance, is considerably improved by adding green and mat blue as follows:

4. Dark blue, 25 parts white, 1¼ parts oxide of cobalt, ¼ part French green, ½ part mat blue. Greens can be formed from either oxide of copper or chrome:
5. Chrome green, 7½ parts white clay, 1 part oxide of chrome.
6. Blue green, 8 parts white clay, ¾ part oxide of chrome, ¼ part oxide of cobalt.
7. Pearl green, 20 parts white clay, ½ part oxide of chrome, ¼ part peacock blue, ¼ part mat blue.
8. Copper green, 20 parts white clay, ¼ part oxide of copper.

Oxide of chrome cannot be mixed with brown, yellow or orange, and any attempt to do so will result in failure.

The brush, also, must be kept perfectly clean.

9. Black, 15 parts white clay, 1 part underglaze black.



Suggestion for a flower pot, tobacco jar, and a candlestick

10. Chocolate brown, 10 parts white clay, $\frac{3}{4}$ part underglaze golden brown, $\frac{1}{4}$ part part underglaze black.
11. Red brown, 10 parts white clay, 1 part underglaze golden brown.

Hancock's Worcester black is the safest to use.

12. Fawn, 20 parts white clay, $\frac{1}{4}$ part black oxide of manganese.

Darker tints by increasing the manganese.

This palette is sufficiently large for general purposes, and is capable of considerable extension.

These slips will agree in shrinkage with the red clay previously mentioned, but as these red clays vary considerably it would, perhaps, be best to make the ware itself of the same white clay as the slips are formed from.

For your trials of color make a tile about eight inches long on which paint strokes of all your colors, numbering them to correspond with the formula for the same. At the same time it will give an added interest if you make a few small pieces, either square tiles or vases, of very simple design not more ornate than those suggested here. A little trouble taken now will save a good deal of time later on. The slips for painting should be soft enough to be easily worked on the palette with the brush.

Use flat sable brushes for the larger spaces, and pointed ones for lines or small spaces. With the end of the brush lift up from the palette as much color as you can, apply it to the desired spot and smooth it down with the tip, not the side, of the brush. If the result is not sufficiently thick allow it to set and then apply a second coat. The color should be distinctly raised from the surface. The brush soon clogs with color and must be frequently rinsed out in water. One color can be superimposed on another, light on dark or dark on light, and will kill, not mix with, the color beneath. A light color on a dark one is a good test as to whether you have attained the desired strength, and only after the glaze is fired can you be sure of this. We repeat that the great desideratum in this slip painting is that the color must be thick enough to form a clay body of itself and be evenly applied, whether in one mass or in a number of successive coats.

If you desire to cover first the whole piece with a ground, this can be done in several ways. The best and quickest is by dipping. A sufficient quantity of the desired color must be prepared so that the whole piece can be immersed in it.

To do this successfully is rather a delicate operation, but with a little practice can soon be successfully accomplished. The manner of handling depends much on the shape. If by putting one hand inside and spreading out the fingers you can easily lift it up and down, it is a simple matter to immerse it in the colored slip. Let the immersion and withdrawal be done

as quickly as possible, being careful not to allow any of the slip to get inside the piece, for it may cause the piece to collapse. Have ready a plaster bat on which to place it and leave it there until it hardens so that by touching it you do not disturb the color.

If it happens that the slip has not quite reached the top it is practical to take the plaster bat in one hand, reverse it, and dip the top in the slip, as the color will give sufficient adhesion to allow the piece to be inserted. But this can only be done when the bat is small enough to be held in the outstretched fingers. Wide-mouthed pieces require the use of both hands, two fingers of each hand being placed directly inside, while a little pressure can be brought to bear against the resisting slip by the thumbs and little fingers resting on the edge. Practice holding the piece until you feel you can safely lift it up and down before dipping in the slip. You can obtain very nice streaks or runnings of other colors by placing on the ground slip small

quantities of other colors, which should be floated on so as to rest on the top; on withdrawal these colors will attach themselves to the piece. Always be sure the slip is well stirred or the edge of the piece will be thin. A ground can also be put on with a brush or small sponge, the latter giving a granulated surface, often very effective. In both cases care must be taken to have a good body of color all over. There is another way in which a ground can be applied as follows: Before casting the ware fill the mold with a colored slip, allow it to remain there until there is about one-sixteenth of an inch adhering to the sides of the mold, empty it out and so soon as it is a little dry complete the casting with ordinary clay. The objection to this is that unless the mold is very perfectly made, the piece may very easily be marred while being trimmed.

From the simple experiments and trials here indicated the way has been paved for more important work. We urge the adoption of a conventional rather than a natural style of decoration. You may attain distinction in the one,

it is not possible in the other, for pottery is not a material to *paint* on, whilst it is pre-eminently suitable for decoration. One more word: Try to make shapes for a purpose. If for flowers they should suggest almost at sight the particular class for which they are intended. Jugs should be wide enough to allow of easy cleaning, should pour well, and the handle must be so placed as to balance perfectly; candlesticks firm at the base, the nozzle the proper size and large enough to catch the running



Designs of pottery made at home



Some simple designs for jars and vases

wax; tobacco jars wide enough to allow the pipe to be easily filled, and so on. The useless vase of our grandmothers is no longer tolerated. To-day we demand articles of utility which shall also satisfy our aesthetic feelings. The illustration shows how well these slip-painted pieces adapt themselves to the surroundings of an ordinary room.



Semi-double Shasta daisy

Luther Burbank's Wonderful Work in Horticulture

By Charles J. Woodbury



Branch of sunberry plant



THE chronology of the Burbank creations and ameliorations has never been published. In presenting this, the reader should be informed that these survivors of their producer's rigid exactions have received during their history two and sometimes three names. At first they were merely numbered, separated from their companions by an epithet, or nicknamed for field reference. Then, when proven, they were given in the bulletins less domestic and unscientific designation; as at christening in the Roman Catholic communion a saint's name is given to the child. Finally, when turned over to the nurseryman for distribution, he gives them in his catalogue more high sounding and generally more assuring titles, for which the originator is mistakenly held responsible by the public. For instance, that latest-appearing culture—now in controversy—the cross of the African stubble-berry (*Solanum guineuse*) with the Pacific coast (*S. villosum*) was called the "Sunberry" when it was graduated from the experiment grounds. It came advertised to the public as the "Wonderberry."

The registry begins in 1873, when Mr. Burbank, then 24, answered the demand for a potato which should yield 200 bushels to the acre, with the famous seedling from the "Early Rose" (itself from seed of a garnet Chile plant) which at once gave a yield of 435 bushels, and has since produced 525 bushels. With its proceeds, \$125, Mr. Burbank arrived in Santa Rosa, California, in October, 1875. Five years of severe ordeal, poverty, starvation, discouragement well-nigh fatal awaited him. At last he was able to buy four acres of the soil for which he had crossed the continent. His own words are:

"In 1880 I began paying especial attention to the *Rubus* family. I had in my collection of blackberries and raspberries nearly all the popular varieties. In 1883 I began crossing. In 1884 I had about 60 hybrids, the first ever produced. The next season more extensive trials were made with many new subjects." (He now possessed 10 acres, home land.) "From hybrid seeds of the third gen-

eration, I obtained black, red and yellow raspberries, white, black, red and pink blackberries, in every possible combination of sizes, colors, qualities and flavors. Many were totally barren, some with long trailing vines, some stiff and upright as a currant bush; some thorny, others as free from thorns as currants; still others producing leaves, flowers and fruit perpetually. Then there were others growing into canes 3 to 4 inches in circumference, others 20 feet long on the ground or straight 10 feet high. But from all these were presented more radical improvements in blackberries and raspberries than had been obtained for eighteen centuries."

The list of the main species incorporated to establish these hybrids is too long to print. The photographs of the leaves of different individuals show remarkable variations and eccentricity, a few offering but a single leaf, or leaves, as reticulate as ferns; many profuse and palmate. The results in their entirety made the scientific botanists' barriers between species and varieties, to use the audacious horticulturists' word, "wobble."

1884 witnessed the announcement of the "Japanese Golden Mayberry" and the "Primus." The distinction of the former was that it led far in advance the berry season, the earliest raspberry known, ripe while yet the standards were well-nigh dormant. It was a blend of the Cuthbert with a diminutive variety of *Rubus palmatus*, characterized by Mr. Burbank as "one of the most worthless, tasteless, dingy, yellow berries I have ever seen." The new fruit is large, sweet, glossy, semi-translucent, growing on bushes resembling trees, six to eight feet high. The Primus is now grown extensively in semi-tropical climates, thriving especially in the Philippines. It ripens a month before either of its parents, the wild dewberry (*Rubus ursinus*) and the Siberian (*X Rubus cratoegifolius*). It produces a



Luther Burbank

large and perfectly black fruit in abundance, a distinct new race of the garden berry. The seedlings of this pioneer have taken their places as standards in various localities.

In 1886 the experiments had become more extensive. He was crossing the Satsuma and other Japanese plums with the Eastern, European and California, Nevada and



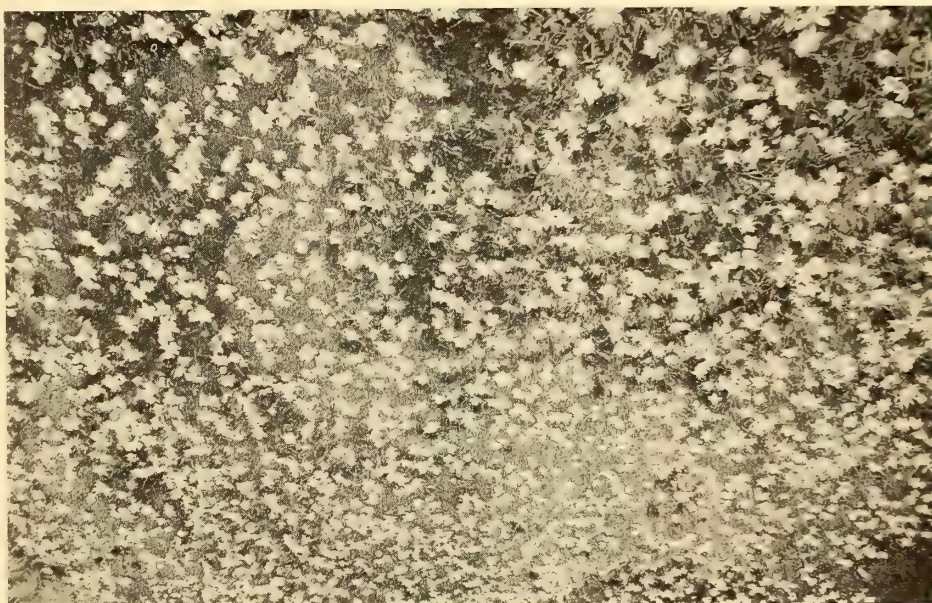
A new flowering allium

Oregon natives, many of which in size and clustering growth are grapes, rather than plums. "Some of them are of very little value," remarked Mr. Burbank, "having an unpleasantly bitter taste, reminding one of the eastern cranberry." The famous walnut hybrids are now under culture.

But, important as these successes were, they were only in a way by-products. Mr. Burbank's main business had been to entrench and establish himself. To this end, he had built up the largest and best-stocked nursery west of the Mississippi. For years he had resumed the habit begun as a boy on his fragment of soil at his home in Lunenburg, Mass., of taking the premiums at the State and county fairs; and his reputation for integrity and liberality in dealing was fully substantiated. In 1888 he sold one-half of his nursery (which was yielding a clear profit of \$10,000 per annum) for \$13,000, and focused on his life work the far less promising venture of plant-breeding. He purchased the large experiment grounds at Sebastopol.

The ennobling of the plum, stands perhaps foremost in Mr. Burbank's work; and the year (1890-1891) developed the first twelve of the new varieties which were to distinguish it. They were the "Burbank," so named by Prof. H. E. Vande-

man, of the United States Department of Agriculture; from the common *Gardanensis* type as a basis with bulbs from South Africa; and is so vital that even in the scorching sun and wind of inland California, the last flower to



Gigantic platystemon, native cream cup of California, greatly improved



Burbank's new rosy-crimson chives, showing astonishing blooming qualities

"Satsuma," "Botan," "Chabot," "Long Fruit," "Maru," and six other varieties under numbers as received from his collectors. The last four of these were named by P. J. Berckmans, of Augusta, Ga., president of the American Pomological Society. Prof. L. H. Bailey named the "Berckman," "Humi," "Blood," "Willard." 1891 also saw the delivery to fruitgrowers of the "Phenomenal" berry, which has since made half-acres more profitable than farms.

In the exhibition of the California Floral Society, 1892, the prominent feature was Burbank's new *Gladiolus*, the "California," a large double flower with a solid cone of blossom, $5\frac{1}{8}$ inches expanse of petals clustered on stiff, compact low-growing stems, flowering so profusely as to hide the stem on all sides. Compared with the thinly scattered blossoms on but one side of the weak-stemmed ordinary flower, it looked like a new race. It came

bloom on the stalk finds the first unwithered. The same year "Hale," and "Abundance," the latter so named from its ropes of fruit and afterward renamed "Alhambra," and the first perfect freestone of Japanese blood were added to the list of plums. In June, 1893, was published the now historic "New Creations." The stir this pamphlet made was immediate and far reaching. Its bold claim that the new fruits and flowers it described would inevitably displace present standards, the extensive biological knowledge it displayed, its high scientific character and the grace and dignity of its style, ushered it into an appreciation quite outside of the attention usually accorded to the presentations of plant growers. It was sought by students of plant science; received the indorsement of the authorities; was adopted as a class book in universities of this country and abroad. Its singular illustrations from actual photographs were convincing of its statement that "the life forces of plants may be combined and guided to produce results not hitherto imagined," and that "we are now standing at the gateway of scientific horticulture." Among the new

fruits it presented, now prominent, were the "Perfection" (the present popular "Wickson"), "Delaware," "Shipper," "Gold," with as many more hybrid and cross-bred plums; the "Eureka," "Dictator," "Paradox," "October Giant," "Autumn King," with other berries and crosses; the peach x almond, x Japan plum, x Chick-

asaw, x apricot; the almond x Japan plum; apricot x the same, pyrus japonica x quince; quince x crabapple; Chinese quince x apple and others. Then there were shown seedlings of the new "Seckel Pear"; five new quinces, including the famous "Childs" and Van Deman; new potatoes, one of them the peculiar "Aerial"; the begonia-leaved squash and the cross-bred tomatoes. The

dozen new roses and as many more callas and lilies; the "Silver-Lining" poppy, a new myrtle; hybrid clematis; hybrid nicotianas, and a new family which the author names "Nicotunia," a union of large flowering nicotianas with petunias; new ampelopsis veitchi; wax myrtle; seedling tigridias; new cannas, arums, amaryllis, brodia, aquilegias, asters, etc. The frontispiece is a photograph of leaves from the new walnuts, *Juglans Californica* x *J. Regia* and *Juglans nigra* x *Californica*. A magnificent row of the first lines the roadway in front of the Burbank home gardens. The trees are twice the size of the ordinary walnut at double their years. They grow twice as fast as the combined growths of both parents. The latter produces prolifically nuts three times the bulk of the ordinary American or California varieties. With these is announced the Japan Mammoth Chestnuts, since named the "Hall."

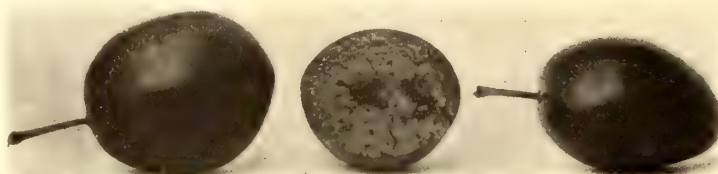
1894, second edition of "New Creations." Announcement of the cross-bred Japan plum "Prolific," finest of the first crosses. Appear, also the cross-bred white blackberry "Iceberg," the blackberry-raspberry



Feijoa sellowiana



A new loquat



Stoneless prunes



View of the home ground in Santa Rosa



Native California golden-leaved chestnut

hybrids, "Humboldt," and "Paradox," a new race of clematis; new callas; "Snowdrift" and "Fragrance," Ostrich Plume, Waverly, Double Jackmaurie and Sanguinosa types, seedlings of Pyrus Japonica, and the new rose, "Peachblossom."

1895, a group of hybrid lilies and the "Burbank" and "Tarrytown" cannas are announced; also the "Apple," "America," "Chaleo," "Bartlett," "Shiro" and "October Purple" plums, the last a cross of Satsuma and a Japanese seedling, the "Giant" prune and three new chestnut seedlings, "Coe," "McFarland," and "Hale," offspring of the Japan Mammoth.

No more introductions were made until 1898-1899, when appeared the "Climax" and "Sultan" (cross of Wickson and Satsuma) plums, the pineapples and the third and the fourth editions of "New Creations."

1900, Mr. Burbank's substitute for the French prune, the "Sugar" prune as given to the market. Since known as "Splendor," the original name is derived from the proportion of sugar in the fruit, 24 per cent.; the French variety carrying 18½. It has displaced the French variety, which had been the only reliance of fruit growers. Appear also this year the new winter apple Gravenstein type; other hybrid plums; the "Oriental" poppy, hybrid tigridias and clematis, and a new canna of the Crazy type.

1901, fifth edition of "New Creations" and a supplement are issued. Announcements are made of the "First" and "Combination" plums (this is a cross of 8 varieties).

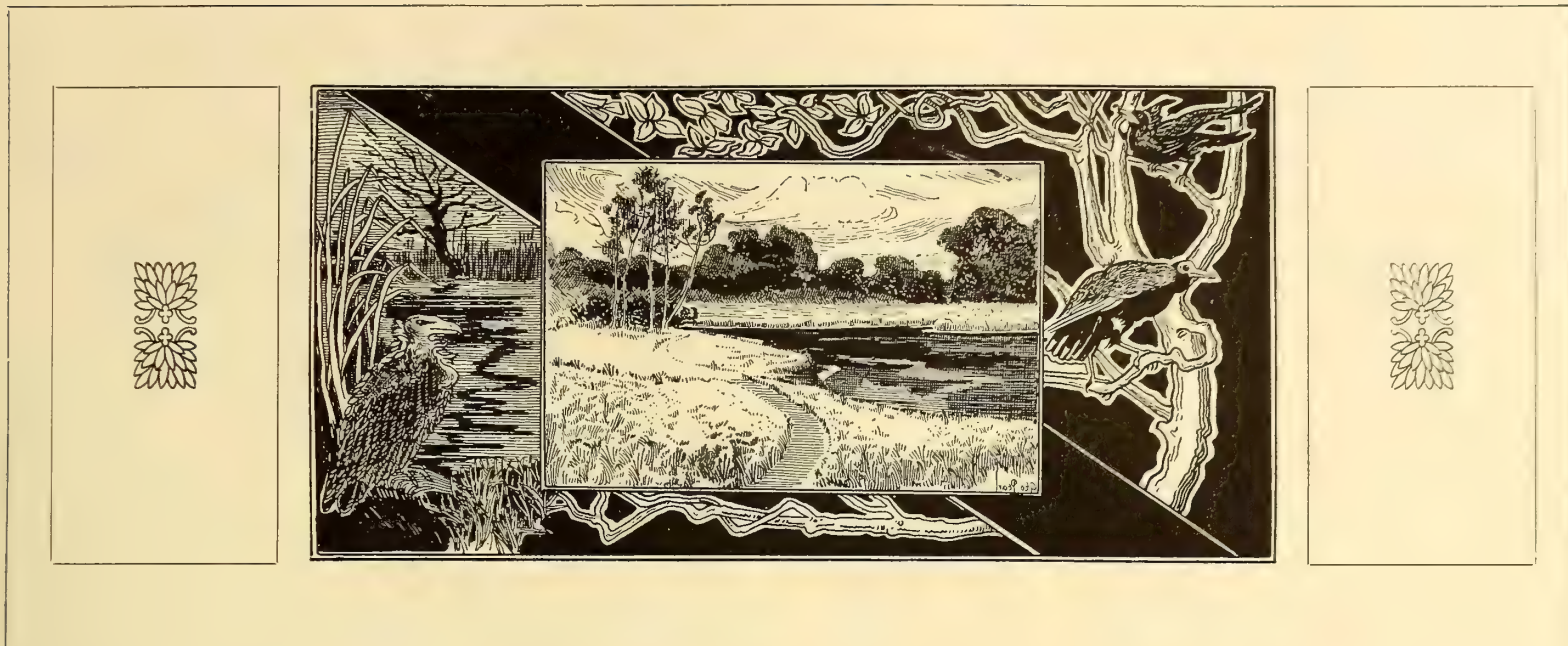
1902, publication of "Fundamental Principles of Plant Breeding."

1904, introductions of plums, a rhubarb and three strains of the Shasta daisy.

1905 was a year of flower novelties.

1906, 1907, appear four new plums, and a union of plum and apricot.

He has since attained many new cultures, the latest an evening primrose, all a credit to his horticultural skill and perseverance.



A Novel Rain-Water Collector

By A. Gradenwitz



OWING to the increasing adoption of water works, the rain-water collectors, which were once so much in favor, have been somewhat neglected. Still, such devices could do far better service than might be supposed at first sight. Especially in the open country, and even in small townships

where water works do not pay, they would enable anybody to secure his own drinking and washing water for consumption. It is a well-known fact that rain-water is of absolute purity and far softer than any other water. On account of not being in contact with the ground it is practically free from microbes and accordingly most recommendable from a hygienic point of view. If in spite of these obvious advantages, its use now is generally discarded, it is mainly due to the impurities which attach to the collector, and thus indirectly introduced into water of so excellent a quality. In fact, on dripping from the roof, the water is bound to become mixed with dust and all kinds of animal and vegetable waste matter, so that the liquid at first collected not only is unsuitable for use, but infects the after rainfall.

A French inventor, Mr. G. H. Munier, at Ciboure, has designed a rain-water collector, which supplies an excellent drinking and washing water without any decantation, filtering or chemical cleaning.

The apparatus, as shown in the diagram, comprises two vessels, viz., the drinking water vessel A and the impure-water vessel B, above which is arranged a trough C tilting round the pivot T. At the end D of the trough the rod of a float F is fixed, dipping into the vessel B.

As the rain-water coming from the eaves H flows down the trough C, it at first enters the vessel B, which is still empty, so that the float rests on its bottom. As this vessel

then is gradually filled, the float, and along with it the trough C, will rise continually, until the trough is tilted so as to point towards the drinking water vessel A. All the subsequent precipitation then flows into this vessel, and as the roof has been washed clean in the meantime, it can be used immediately for drinking or for washing purposes.

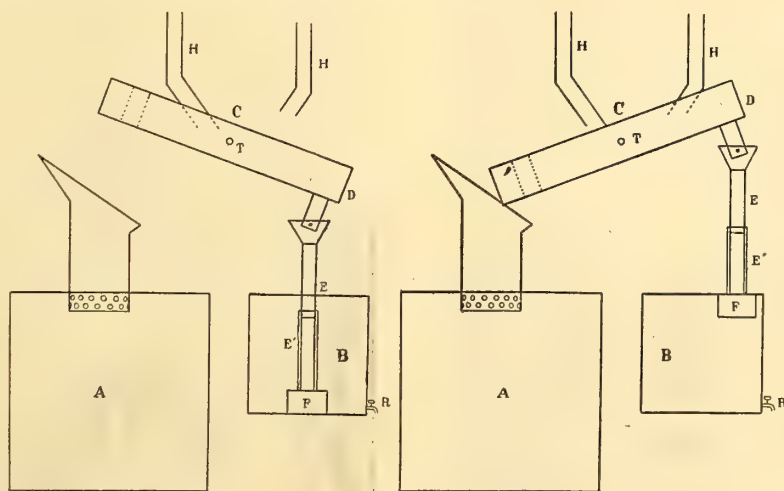
As the water dropping from the roof could carry along foreign objects, the mouth of the trough C is closed by a piece of metal gauze. Moreover, before entering the clean water vessel, the water has to pass through some kind of funnel consisting of a box filled with gravel, and finally the whole tilting trough is covered with metal gauze.

The apparatus should obviously be adjusted in accordance with the amount to be collected in the dirty or waste water vessel. The actual condition of the roof, and the kind and degree of its impurities should therefore be accounted for in each case.

According to experiments made by the inventor a minimum of 4 liters (1.05 gallons) per square meter (10.76 square feet) is required under the most favorable, and 6-10 liters (1.6-2.6 gallons) under the most unsatisfactory circumstances.

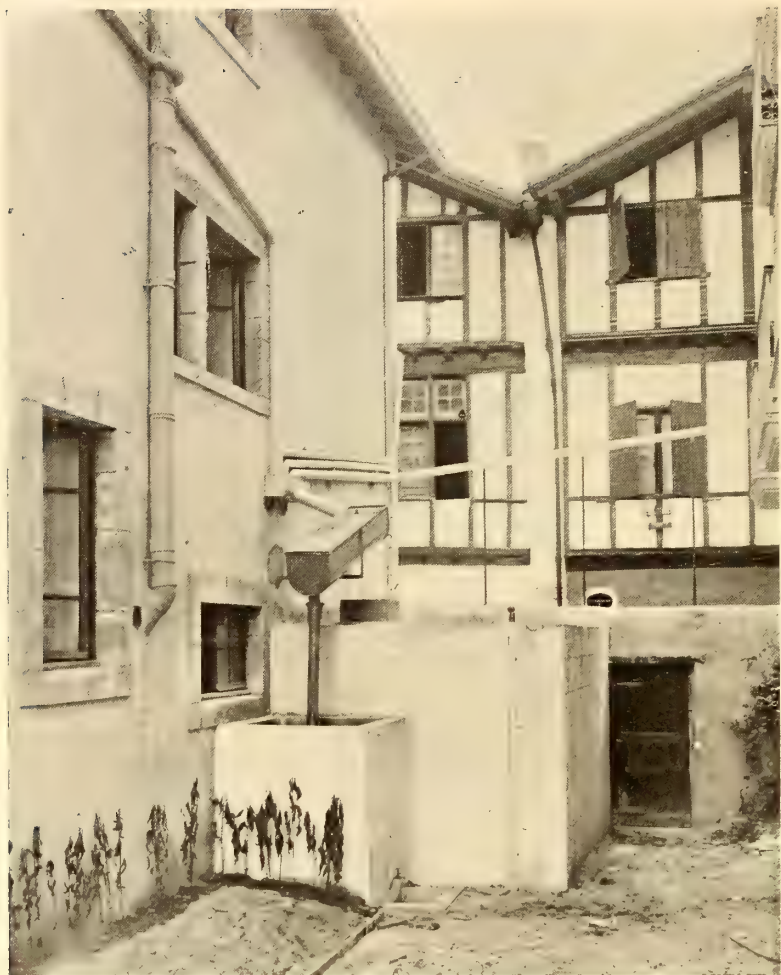
In order to account for any interruption in the rain-fall, which is liable to give rise to a renewed deposit of dirt, a cock discharging the water in drops is arranged at the bottom of the unclean water vessel, the rate of flow being so calculated that only the amount corresponding to the possible impurities flows out

each day. A modified apparatus represented herewith comprises a funnel catching the water as it drops from the roof and directing it towards a dirty-water vessel with the float. As soon as enough water has flown out to wash off any impurities, the float will direct the lower opening of the funnel towards the clean-water vessel.



Position of the pipes before the rain

Position of the pipes during the rain



Showing the pipes before the rain



Showing the pipes during the rain



A rain-water collector in the Pyrenees



Another kind of rain-water collector



Fig. 1—Simplicity is the keynote of the exterior design of this house

A Concrete City by the Sea

A Group of White Stucco Houses with Red Tiled Roof

By John F. Springer



CONCRETE is by no means a new material. It was used by the ancient Romans. And there are examples of concrete construction scattered about Europe which are undoubtedly quite old. But there are concretes and concretes. A modern concrete consists of three solid ingredients: Portland cement, sand, and broken rock or an equivalent. It is hoped that this material is as durable as the more ancient article. And there is some warrant for this. It will be seen at once that indestructibility is a wonderfully attractive quality in a building material. When we combine with this reasonableness of first cost, we do not have to go much further, perhaps, to understand the present popularity of concrete. But this material does have other good qualities. It is easily molded to the forms desired; it permits rapidity of construction; it is vermin proof; it can be made waterproof.

But not everything that goes by the name of concrete is deserving of the name. Let me explain. There is only one ingredient in concrete which has the power of binding the whole into a single mass. This is the Portland cement. Now it so happens that this is the most expensive one as well. It can readily be understood, then,

that contractors and builders are liable to be tempted to reduce the proportionate amount used or to use an inferior quality, or to do both. As with everything else, the only way to get a fine concrete is to use the best materials and in the proper proportions. Use the best Portland cement and in proper amount. You have then solved a large part of your problem. Further, when the best Portland cement is used generously, you have taken the right steps to get a waterproof material.

You can make an efficient material without using broken rock at all. A large part of its office—perhaps approximately the whole—is this: Wherever you have a piece of stone, you do not have to have cement, and so the cost can be kept down. There is sometimes this advantage in leaving out the stone: The material, on account of its uniform consistency, can be disposed in very thin sheets. Perhaps one ought not to call such material concrete, as it is more properly a cement mortar. But popular imagination may be counted on to call it concrete, nevertheless.

Down by the shore of the ocean, at Long Beach, Long Island, there is being constructed what we may perhaps be excused for calling a concrete city, although much of the material used contains no stone. Different contractors who are



Fig. 2—A home of bungalow construction

doing pretty much all of the initial building, have set a minimum valuation of \$7,000 on a house. Values go up, however, to \$35,000, though on some parts of the property the minimum price of a house is \$5,000. It will be seen from these facts that the concrete houses being constructed there do not belong to the cheap grade at all. The house must measure up to a certain minimum standard, or it is not permissible to build it. In order to insure a high grade construction, the land companies themselves have undertaken a great deal of building and their houses may very well be considered as models of what concrete construction may and should be.

The location is a sandy one, and the houses are of considerable height. The foundation is secured by digging trenches in the sand to a sufficient depth and filling these



Fig. 3—A simple treatment is appropriate

free from imitation of other building materials.

Thus, consider Fig. 1. There is no attempt made in the treatment of the exterior surface to make it appear like something else. The house is a cement house. There is no attempt to hide the fact; and why should there be? The ceilings are high on the first floor, and there is much light and air. On the second floor the windows are particularly large.

In Fig. 2 we have the bungalow construction. There are

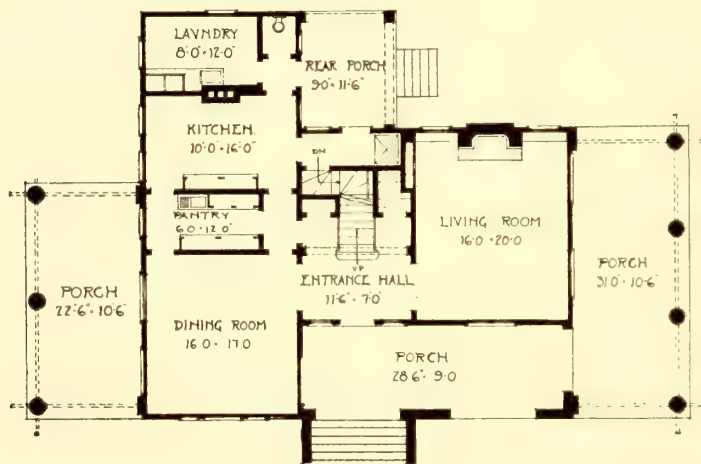


Fig. 4—First floor plan

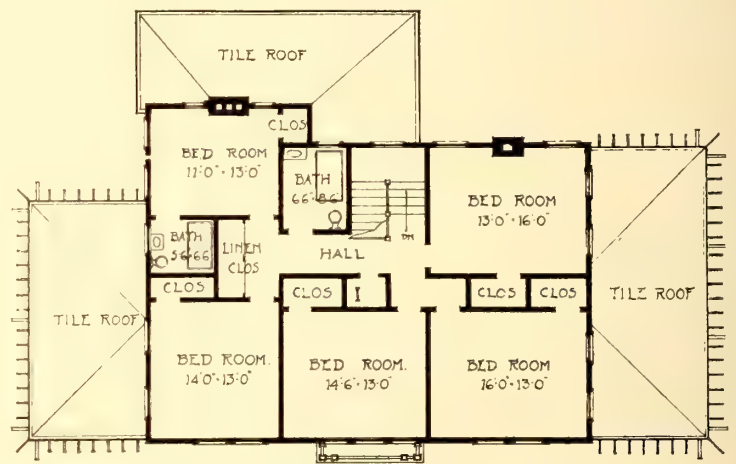


Fig. 5—Second floor plan

with concrete. This is a simple and adequate procedure. Upon this foundation is reared the frame of the house. This consists of wood, to which is attached a covering of galvanized wire netting. Upon this surface the concrete, or rather the cement mortar, is spread. By this means it is possible to make the wall comparatively thin. The netting is sufficiently imbedded to enable it to get a good hold upon the "stucco" of mortar. The roof is constructed of red vitrified tiling. The tinting of the exterior walls can be modified to suit one's taste or the general surroundings.

We may look on these structures as one class of concrete houses. Cement construction in one form or a number has undoubtedly come to stay. It is well, then, to consider the architectural and other dispositions of the ma-

eight rooms, besides bath and laundry. There are two partially inclosed porches at the front, to right and to left. A third porch, between these, but more to the rear, affords entrance to the house itself. One enters at once into a large living-room (17x26 feet.) The dining-room (15x23 1-2 feet) lies just back of the right-hand porch. In the corresponding position on the left is the principal bedroom. Back of it is the bath and three other bedrooms. Back of the dining-room are pantry, kitchen, laundry and servants'-room.

The general plan resembles a letter H, the living-room being the cross-piece. The servants'-room, which lies on the inside of the H, is opposite the last of the family bedrooms, but the wall of the servants'-room is not pierced by a window. Its beauty of appearance may be judged from the picture.



Fig. 6—Built after the same plan as Fig. 5



Fig. 7—The red tile roof and the stucco walls mingle finely together

A very attractive house is shown in Figs. 3, 4 and 5. The entrance onto the porch and the large opening to the right, is absolutely no trimming. This house has about the same amount of household space as that of the bungalow of

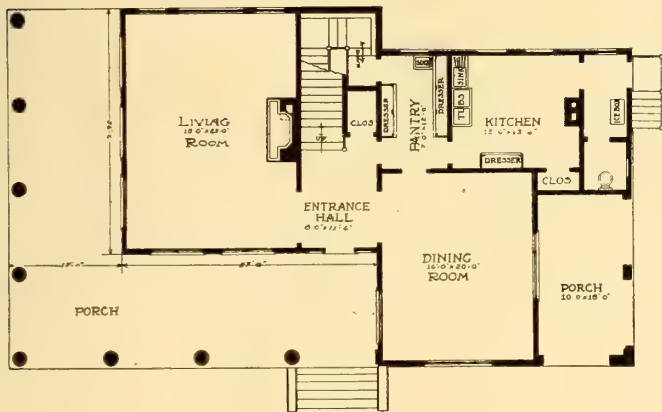


Fig. 8—First floor plan

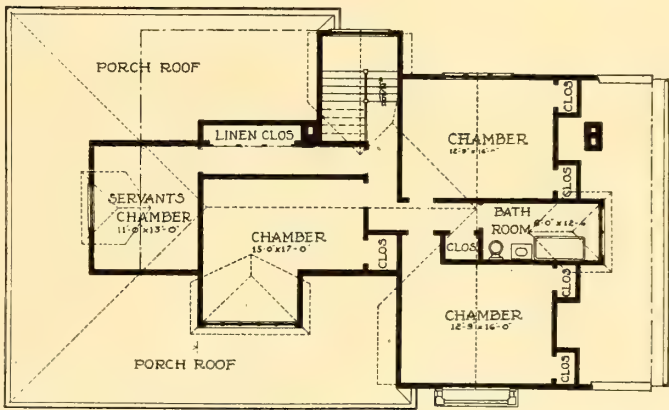


Fig. 9—Second floor plan

are good examples of the simplicity of treatment appropriate to cement houses. It will be noticed that there are no trimmings. All the bedrooms are on the second floor. The partially inclosed porch on the first floor may be provided



Fig. 10—A house of quaint construction, with fine color contrasts



Fig. 11—A house built on square lines

with suitable glass protection to enable it to become a part of the living-room in winter, and is an idea worthy of imitation.

That the same general plans upon the interior may be coupled

with the adjoining bedrooms and bath, can be readily cut off from the rest of the second floor and would thus become serviceable for use as a nursery and children's room.



Fig. 14—A house of picturesque character

with quite a difference in exterior appearance is shown by comparing Figs. 3 and 6. They are upon the same general plan within, and are charming seashore homes.

It may be added that the upper piazza on the left, together



Fig. 12—First floor plan

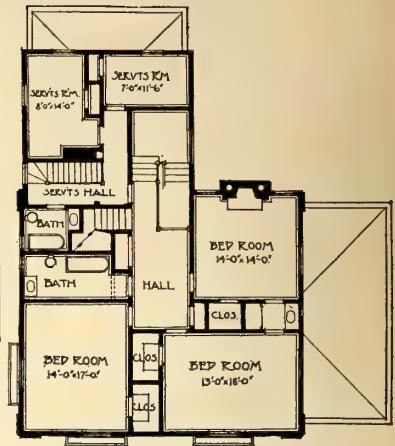


Fig. 13—Second floor plan

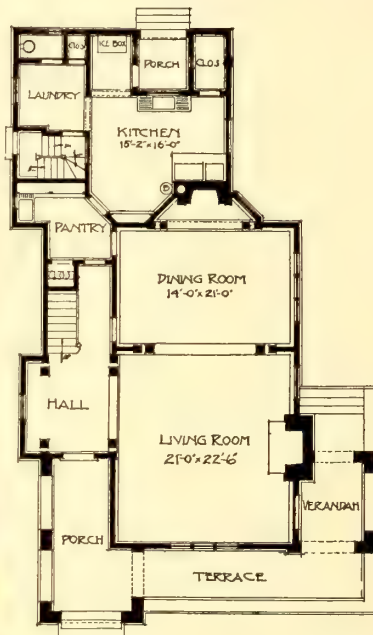


Fig. 15—First floor plan

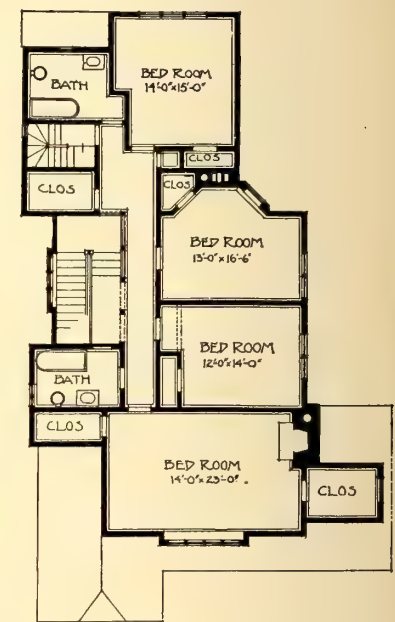


Fig. 16—Second floor plan

We have in Figs. 7, 8 and 9 a beautiful house. Here the red of the roof and the pale hue of the cement mingle finely together. The porch is very pretty and commodious. The living-room which it partly surrounds, receives light on still another side.



Fig. 17—A house of Spanish type

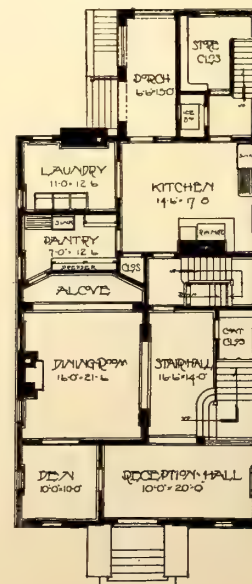


Fig. 18—First floor plan

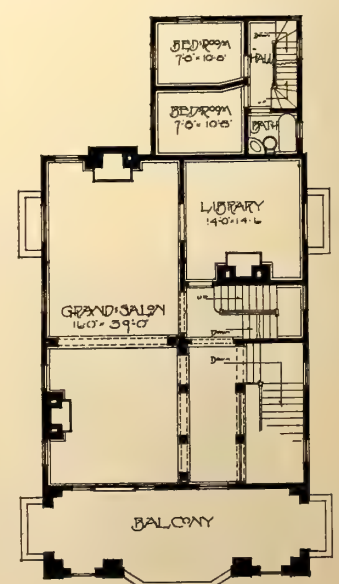


Fig. 19—Second floor plan

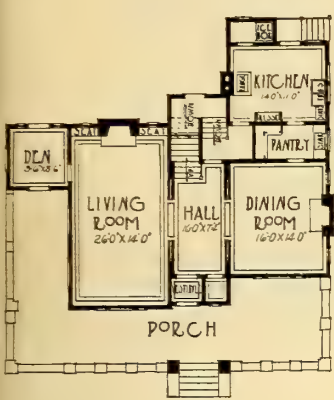


Fig. 20—First floor plan

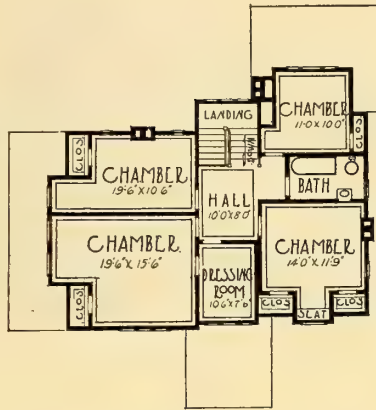


Fig. 21—Second floor plan



Fig. 22—A design of a true concrete house

Upstairs, the three principal bedrooms are well situated both for light and for convenience of access to the bathroom. The servants' room is well cut off, as may be seen by looking at the plan.

ing with the general design. This house is not at all small, contains many rooms, and is a model cement structure.

We have in Figs. 11, 12, and 13 the square house provided with

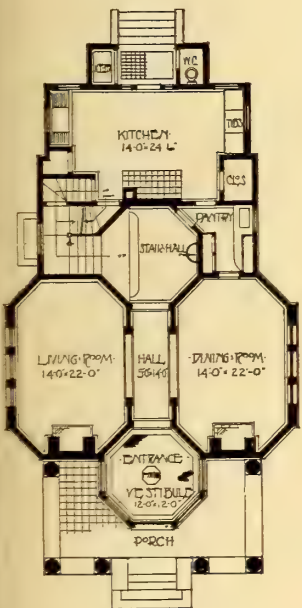


Fig. 23—First floor plan

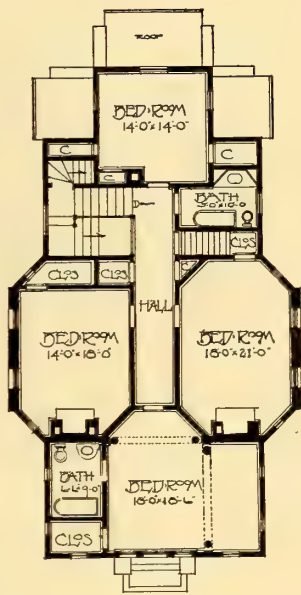


Fig. 24—Second floor plan



Fig. 25—Cement is used with a restraining effect

A house of quaint construction is that shown in Fig. 10. Here the color contrasts among the roof, the walls and the window frames are strongly brought out. The uncovered porch is in keep-

ing with the general design. This house is not at all small, contains many rooms, and is a model cement structure. We have in Figs. 11, 12, and 13 the square house provided with

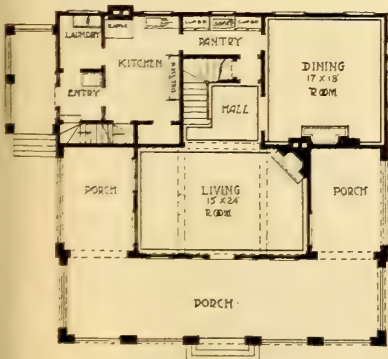


Fig. 26—First floor plan

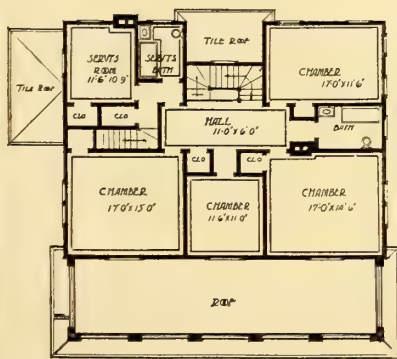


Fig. 27—Second floor plan



Fig. 28—The front porch is the principal ornament to this house



Fig. 29—Lattice work is of the decorative feature



Fig. 30—The porches are the features of this house

hall. This is a very attractive house outside and quite convenient within. It will be noticed that there are also some rooms on the third floor.

Those who go in for picturesqueness will perhaps be taken with the house shown in Figs. 14, 15 and 16. Here the roof does all sorts of things. There is a great deal of

In Figs. 17, 18 and 19, however, we have a Spanish idea of a home. This is a somewhat complete establishment. On the first floor we have dining-room, kitchen, and so on, together with a small corner room and a reception hall at the very front; but there is nothing of the nature of a parlor or living-room. The small room, or den, is ten by ten



Fig. 31—First floor plan

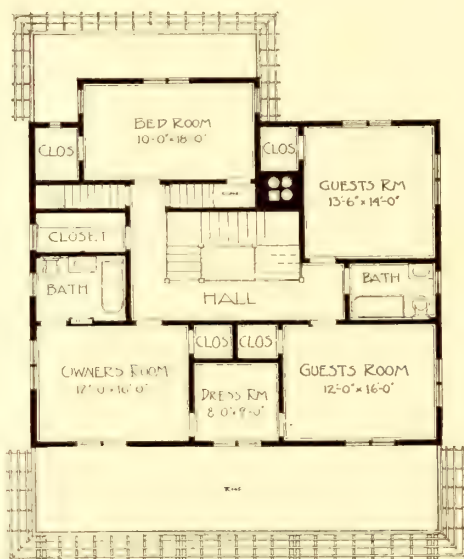


Fig. 32—Second floor plan

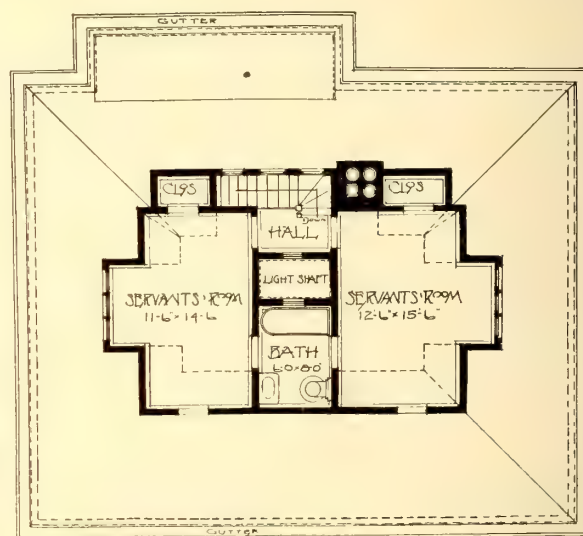


Fig. 33—Third floor plan

porch, as may be seen by consulting the view and the plan of the first floor. As one enters the house, he finds a side hall, which affords access on the right to the living-room and the dining-room. On the second floor are four bedrooms and two baths. Still other rooms are on the third floor. The general style of this house is German.

feet and is located at the corner, seen in full in the view. The reception hall has the same depth, ten feet. On the second floor there are two small bedrooms, bath and separate stairway. These are all cut off from the rest of the second floor. The main portion consists of a fine balcony, a library, and a "grand salon." This grand salon is sixteen



Fig. 34—The living-room



Fig. 35—The dining-room

by thirty-nine feet. All master bedrooms are above, on the third floor. There are five of them, besides two baths. There is also a small balcony at the front, and two servants' bedrooms and bath at the rear. The latter is reached by a separate stairway and is entirely cut off. In fact, the three servants' rooms and bath have no connection whatever with the main portion of the home on either the second or third floors.

In the view shown in Figs. 20, 21 and 22, we have a fine example of the true concrete or cement house. There is a simplicity about the lines to suit the material. Notice particularly the heavy posts of the uncovered porches. The simple doorway admitting to the covered porch is very attractive.

The house of Figs. 23, 24 and 25 is, perhaps, a little more ornate; but there is still a restraint which goes well with the material. Observe the plainness of the main lines of the bay window portion. Ornamentation is here secured by the arrangement of the openings. Especially attractive in this house is the rise of the side walls above the roof. This is a fine concrete house.

Another admirable example is the one shown in Figs. 26, 27 and 28. Here it is the front porch which beautifies the house. The large square pillars with their continuations above to form posts on the uncovered portico, taken in connection with the intervening projecting roof of red tiling, make of the whole a charming picture—simplicity and effectiveness.

Figs. 29, 30, 31, 32, 33, 34 and 35 show a pretty home. The double windows are especially attractive. All the

views of the page refer to the one house. As with all square dwellings, there is plenty of room. The side porch is not shown in the plan of the first floor. It is, however, an important addition,

and is reached by a French window from the living-room. Exclusive of the two bedrooms and bath for servants on the third floor, there are eight rooms and two baths for the family and its guests. On the lower left-hand side of the page is shown the interior one end of the living-room. Very attractive, isn't it?

The dining-room is shown by the picture to the right. The broad window seen here is the one which opens onto the front porch.



Fig. 36—A picturesque house of bungalow form

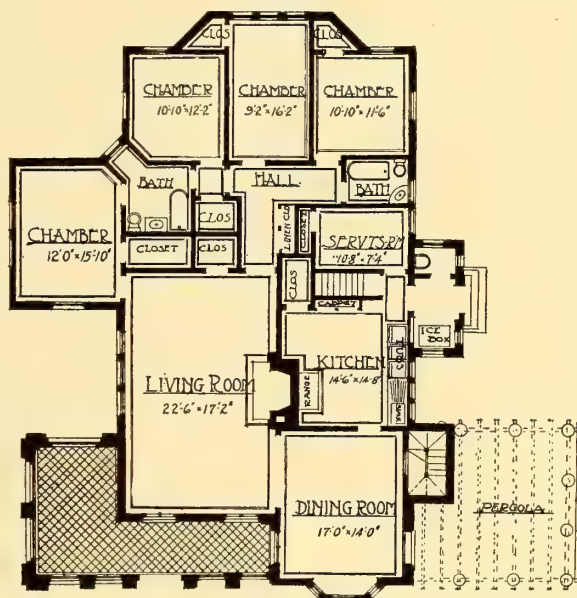


Fig. 37—The floor plan

Figs. 36, 37, 38, and 39 show a picturesque house, from the side and rear. The bay window belongs to the dining-room. On the first floor are, in addition to a servants'-room and bath, four bedrooms and bath. A little winding stairway and the tower to which it belongs are attractive features. In the left-hand interior view, we have a portion of the living-room, and get a glimpse through the doorway to the dining-room and see the bay window belonging to the latter space. The adjoining view is that of the inside of the dining-room.

Messrs. Kirby, Petit and Green, of New York, were the architects of all of the houses illustrated in this article, except six dwellings which were designed by Mr. Louis R. Kaufman, also of New York.

In order to avoid excess in giving details, we have not treated the under features of the individual house, but have pointed out the most essential features.



Fig. 38—The living-room



Fig. 39—The dining-room

GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY

CRITICAL NOTES ON PLANTING

IT IS often difficult to explain why one scene pleases and why another fails to please, why one grouping of trees is satisfying to our taste and another grouping of the same trees not so. The landscape which displeases is "Nature" and the unsatisfactory group contains the same trees that are in the satisfactory group. It is hard in any art to explain the finer shades of feeling, but we, who work with living trees and shrubs find a new trouble; namely, the veneration for all growing things which is so thoroughly inculcated to-day. A tree is sacred and must not be spoken of without respect!

I shall try, however, to point out by means of similar but contrasting examples why one scene pleases and another is vile, at the same time taking the opportunity to speak of the means by which the results were obtained.

Figure No. 1 shows a good group of Norway spruces flanked by deciduous



Fig. 1—A group of Norway spruces, with beeches and maples, forming a wind-break

trees (beeches and maples) all forming an effective wind-break for the house. The spruces have been taken advantage of as a background for the large bed of rhododendrons and lilies (which are now in flower). It is a charming arrangement, good at all seasons of the year and it is just the place to plant rhododendrons and lilies. They are protected from the winter sun and yet get enough in summer. It will also be noticed that they are not planted too near the spruces, which rob the soil of fertility and moisture.

A little more variety in the height of the rhododendrons would help and it would be better to have them extend further to each side, losing themselves in the trees. As it is, they are disconnected and fill up a bay, which should be open, but with rhododendrons at the margin, linking trees and grass.

Figure No. 2 shows a scheme which is obviously insulting to any taste and needs little comment except the suggestion that the large Norway spruce to the left be cut out. The other trees would be more effective without it.



Fig. 2—The large Norway spruce to the left should be cut out to make the cluster effective

Figure No. 3 is not only a good group of hemlocks, maples and oaks, but it also shows a well located blue spruce and another which is badly located. The one in the middle is excellent. It is a magnificent tree in a good place. The smaller spruce at the right, however, detracts much from the beauty of the scene, and I should like to take out the insignificant bushes dotted on the lawn.

Figure No. 4 is the prize of our collection, and if one may judge from a photograph it is a masterful piece of work, full of charm and restraint and technically excellent. It is probably as good in color as it is in form and texture. What could be nicer than the way the rhododendrons and the taller shrubs and trees blend together? What more picturesque than the sky line of the group? Only hints of such beauty are to be found in real unspoiled "nature."

The last note in atrocious work is found in Figure 5. The line of the path is bad, the planting is spotty even in the photograph, and in real life it must be hideous. With the naked eye I can count 57 varieties of trees and shrubs, all different tones and showing the complete range of color from yellow to blue, with



Fig. 3—An excellent group of hemlock, maple, oak and spruce trees with the exception of the smaller spruce at the right

JAPANESE ORNAMENTS FOR THE AMERICAN GARDEN

AMONG all peoples perhaps the Japanese best understand the art of making beautiful GARDENS, not only beautiful with buds and blossoms, but with garden furniture and permanent ornaments.



Japanese gardens are famous the world over for their unique complement of bridges, arches, lanterns, curiously carved dragons and gargoyle-like figures, "cozy-corner" seats, and numberless artistic conceptions for ornamentation.

The accompanying illustrations show two pagoda-shaped lanterns. A most delightful effect is obtained at dusk by lighting candles in these lanterns. The glow is seen through

small windows covered with oil paper, and the effect is in perfect harmony with the tranquil charm of the evening hour.

These stone lanterns are imported from Japan, each are of different design and retail at from \$25.00 to \$200.00.

Pottery water kongs, large pots, bronze garden lanterns, jardinières, and benches are also to be found in The Oriental Store, all imported by us from Japan.

The bronze lanterns sell at \$1,000.00, \$1,500.00, \$3,500.00 and \$4,000.00. The water kongs are in two sizes, either round or octagonal shapes, and sell at \$25.00 and \$30.00.

We shall take pleasure in helping you make a selection, should you call at our store. If this is impossible, we cordially invite correspondence, and we will gladly submit sketches and give you full information. Address Department B.

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judgment and the desperate means he must rely on to attain his ends.

Few trees and those native, not many shrubs and those all hardy, vigorous growers, adapted to the soil and the situation, will produce a far better result than a miscellaneous collection of many varieties, no matter how beautiful each may be in itself. Planting is only part of a place, and if it be not simple, how can the place as a whole be beautiful?

WILD FLOWERS WORTH GROWING

By NATHANIEL S. GREEN

IN YOUR rambles through the woods when the ground is carpeted with spring flowers did you ever think of the possibility of transplanting some of these flowers to your garden? There are many wild flowers and ferns in every locality that take kindly to domestication. Planted in loose, fertile soil in a partly shaded spot, they grow and thrive wonderfully, and their blossoms rival our cultivated favorites in beauty and charm. Once well established they grow and blossom luxuriantly for years with little care. The only attention they require is a mulch of leaves to protect them from cold, and an occasional watering during summer drought.

The best time to secure these wild plants is in the early spring when they are just starting into growth. They may be a bit difficult to find to one unaccustomed to their haunts, but a little searching among the leaves along the slopes near a woodland rill will reveal the young plants pushing through the ground. They appear earliest on south slopes, where the mid-day sun has a chance to melt the snow and warm the soil.

The daintiest of spring flowers are the wood anemones that may be found in great profusion along overhanging banks or beside fallen tree trunks. Their delicate pink and white blossoms are as beautiful as any greenhouse flower. The bulbs are small and a dozen or more may be placed in a six-inch pot; but they are more charming planted outdoors in a shady border. Here they become naturalized and bloom year after year without care. Another charming wild flower of early spring is *Dielytra*, or as the children call it, Dutchman's Breeches. Its clumps of tiny bulbs may be found just under the leaves, only half covered with soil. Its flowers closely resemble the cultivated "Bleeding Heart" in shape, but are smaller and white or pinkish white. The abundant lacy foliage is as attractive as the blossoms. The bulbs of *Erythronium* or Dog-tooth Violet, are difficult to obtain, as they are usually found six to eight inches deep, but they well repay the work of digging them out. The dark green leaves covered with blotches of bronze and purple make a charming setting for the lily-like blossoms. Two varieties are found in our woodlands: *Erythronium Americanum*, having bright, yellow flowers an inch broad, and *E. Albidum*, having bluish-white flowers. Both make pleasing additions to the garden, or they may be naturalized in the grass and allowed to spread at will.

The large rose-colored flowers of Claytonia, or Spring Beauty, compare favorably with any of our garden blossoms. The bulbs are easily obtained and grow readily if given a moist, shady spot. Violets—blue, white and yellow—give a most charming effect when planted in masses on a shady slope. Among the



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Johnson's Wood Dye and Prepared Wax

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Under-Lac is a thin, elastic spirit finish very much superior to shellac or varnish. It dries hard in less than an hour. Under-Lac is just what you want for your linoleum and oilcloth; it brings out the pattern, making it bright and glossy like new, protects it from wear and makes cleaning easy. It dries so the floors may be walked on in an hour.

We want you to try Johnson's Wood Finishes, so we are supplying all leading paint dealers with samples for their customers' use. If your dealers haven't samples of our Wood Dye, Under-Lac and Prepared Wax and the Instruction Book—we will send them to you postpaid for the name of your dealer in paints. In writing us mention the shade of dye you prefer and Instruction Booklet, edition A H 4.

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A lawn roller whose weight can be adjusted to the conditions of your lawn, garden or tennis court

All in one { A light Machine for the soft, wet spring lawn.
A heavy Machine for the hard, dry summer lawn.
A heavier Machine for the driveway or tennis court.

Why buy one of the old style iron or cement fixed-weight rollers that is generally too heavy or too light to do your lawn the most good, paying for two or three hundred pounds of useless metal—and freight on it as well—when less money will buy the better, more efficient.

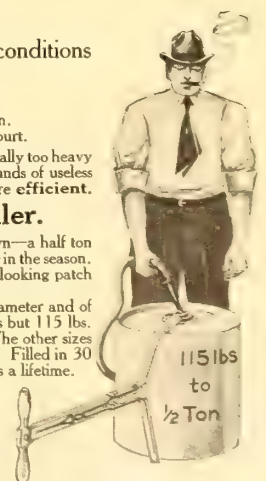
"Anyweight" Water Ballast Lawn Roller.

Remember that a difference of 50 pounds may mean success or ruin to your lawn—a half ton machine will spoil it in early spring, while a 200 lb. roller is absolutely useless later in the season. If you desire a fine, soft, springy turf of deep green, instead of a coarse, dead looking patch of grass, use an "Anyweight."

The "Anyweight" Water Ballast Roller is built in 3 sizes, all of 24 inch diameter and of 24, 27 and 32 inch widths. The machine shown here (our smallest) weighs but 115 lbs. empty, 470 lbs. when completely filled with water, and 737 lbs. with sand. The other sizes weigh 124 and 132 lbs. empty and from that "anyweight" up to half a ton. Filled in 30 seconds—emptied in a jiffy. Fully protected by our patents. Runs easy—lasts a lifetime.

This book sent free:—We will mail you, postpaid, our valuable and interesting book on "The Care of the Lawn," together with folder about the "Anyweight." Write us to-day. Save money—save your lawn.

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Can be used as a blind or an awning at will, or pulled up out of sight if desired. Slats open and close. Admit air, exclude sun. Very durable and artistic. Suitable alike for town and country houses. Orders should be placed NOW for Summer Delivery.



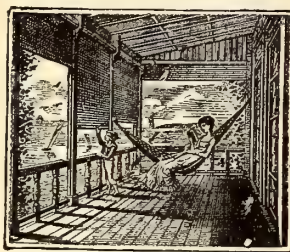
Inside View.



Outside View.



Pulled up.



For Piazzas and Porches.

Wilson's Blinds have been furnished to the houses of John P. Morgan, H. M. Flagler, A. G. Vanderbilt, Chas. Lanier, Mrs. R. Gambrill, Clarence Mackay, Wm. C. Whitney, J. S. Kennedy, C. Ledyard Blair, Jas. C. Colgate, O. Harriman, Jr., and many others.

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For Shingles, Siding, Clapboards, Timbers, and all other outside woodwork

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Have been proved in every climate for twenty-five years.

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Stained with Cabot's Shingle Stains
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larger wild plants suitable for the garden are *Polygonatum*, or Solomon's Seal, the glossy green foliage and bright berries borne on a long, curving stem making a pleasing background for smaller plants—Larkspur, May-apple and purple Phlox. Of the shrubs one of the most pleasing is "Burning Bush," which is at its best in autumn, when frost has killed the tender plants. Its seed pods divide when ripe, revealing the scarlet seeds, which make a brilliant display all winter long.

Quite as attractive as the flowering plants and as easy to grow, are the many varieties of ferns that abound in every woodland. Maiden Hair is one of the easiest to grow and it makes a fine display. Christmas fern gives a picturesque effect planted among the roots of a tree or on a rocky shaded slope. Its leaves are a glossy green and remain so throughout the winter. In a moist, rich soil the stately Sword fern will make an immense growth, its fronds often reaching a length of four feet.

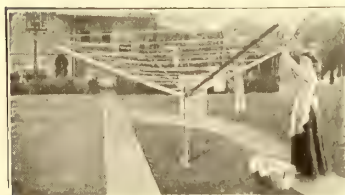
The plants mentioned give only a hint of the possibilities of a wild flower garden. There are dozens of other native plants that may be transplanted to the home grounds, where they will thrive with little care, and by judicious planting a brilliant display may be enjoyed from early spring until the beginning of winter.

FELLING OF TREES

ABERLIN inventor has recently designed a simple device for the felling of trees. The trunks are cut by the friction of a steel wire about 1 millimeter in diameter, which, as demonstrated by practical tests, is able to cut through a tree about 20 inches (50 centimeters) in thickness in six minutes. The wire, which is carried to and fro by an electric motor, is heated by friction on the tree to such an extent as to burn through the timber, the result being a cut which is both smoother and cleaner than that effected by saw. The wire will work satisfactorily on the thickest trees without the insertion of wedges into the cut, and the trees may be cut immediately above or below the ground. In the latter case the stump may be left safely in the soil. The motor which actuates the wire is placed outside of the range effected by the fall of the tree, and when electricity is not already available it can be generated by a transportable power plant consisting of a 10 horse-power gasoline motor and dynamo, which are left at the entrance to the forest during the felling operations.

WATER COLORS

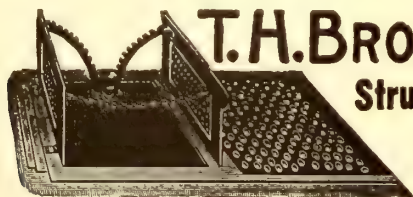
WATER colors prepared with gum or dextrine form hard, solid masses that can only be softened after prolonged rubbing with the moistened brush. To obtain water colors that will always be soft and can be readily taken up by the brush, a solution of sugar should be used, containing from 2 to 10 per cent of the weight of the sugar used of pure concentrated glycerine. As the latter constantly absorbs moisture from the atmosphere, colors prepared in the manner described never become perfectly hard. By using thick solutions of gum, to which glycerine has been added and with which the color has been rubbed down, we obtain water colors which can be put up for sale like oil colors in tin capsules (tubes) and are always ready for use.



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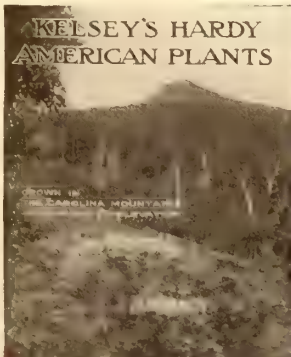
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lutea (calendulacea), sulphur yellow to deep red.

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Highlands Nursery and Salem Nurseries.

HELPS FOR THE HOUSEWIFE

BY PHEBE WESCOTT HUMPHREYS

Delectable "Sweets and Sours" from Old-time Recipes

SPICED APPLE JELLY

OLD-FASHIONED housewives—especially the thrifty home-keepers of New England—held the secret of making a spicy and delicious jelly from the comparatively worthless buried-apples of early spring. We seldom taste in these days a jelly with a flavor so peculiarly rich and spicy. When the jelly closet is empty just before the fresh fruits and berries begin to appear, a thing to be reckoned with is the unpalatable condition of the kept-over fruits and their lack of flavor for jelly making. In New England they used to bury the apples in underground pits when it was desirable to keep over a quantity for use in the spring. Naturally these old apples "tasted of the earth" and those kept over in the cellars were spongy and juiceless at the approach of spring.

Some of our cold-storage apples of today that are kept till fresh apples come again are equally lacking in flavor and juiciness in the spring and early summer. Yet, when they are manipulated by the same processes as used by the old New England housewives, the jelly is even more delicious than when made in the usual manner simply as apple jelly.

For this richly spiced apple jelly, our grandmothers washed and quartered the apples, removing all "specks," but leaving on the skin. They were then put in a preserving kettle with sufficient liquid to keep from burning—using one part water and two parts vinegar. When boiled until thoroughly done, with all the juice and jelly substance substracted from the skins, the whole was poured into a cheese cloth bag and allowed to drip until all the clear juice was secured. This juice was then measured, an equal quantity of sugar added, with a teaspoonful of whole cloves, a teaspoonful of broken mace and one of stick cinnamon broken in small pieces for each quart of the syrup. It is important to avoid the use of ground spices for clear jelly, and even the whole cloves and other spices should be tied loosely in a bag to avoid "specking" the jelly. When boiled until ready to "jell," the spices were removed, the liquid poured into glasses, and covered when cold, and the result was a clear, red jelly, much more attractive in appearance than the usual apple jelly and of a rich, fine flavor.

For a change in making apple jellies at any season of the year, it will be pleasing to have a portion of it spiced, for variety in color and flavor; but it is especially wise to "doctor up" old apples by this process.

APPLE-LEMON JELLY

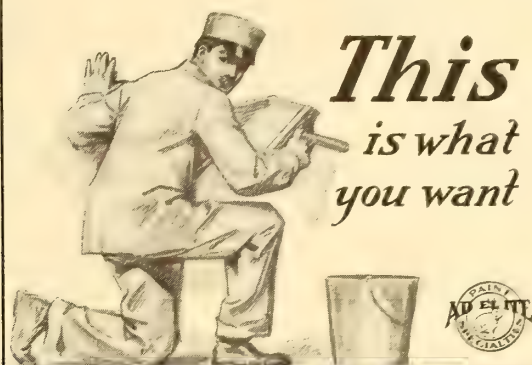
Lemons are scarce and high in the spring, it is true, but it will be desirable to include apple-lemon jelly in the

emergency preserves; and, after all, very few lemons will be required for good results when intelligently used. After preparing the apple juice as for the spiced jelly, do not add spices, but prepare the clear slightly acid jelly in the usual way. If the lemons are sufficiently plentiful one lemon may be added to two quarts of apple juice; slice the yellow rind from the lemon in small pieces, pare off and discard the white inner coating, then slice the juicy pulp, throwing away the seeds, boil up with the apples, and strain the juice through the cheesecloth bag. The picturesque part of the lemon jelly is the finishing touch, however. After the juice has jelled, and is ready for pouring into the glasses, slice fresh, juicy lemons, cutting through the rind and pulp and forming the circular slices about a sixteenth of an inch thick, or as thin as can be sliced. Remove the seeds. Place a slice in each glass, and pour the hot jelly over it. No other cooking will be required. Then with a silver fork, make each circle of lemon stand on edge where it will show to best advantage through the glass and it will retain this position when the jelly is cool and firm, and is especially attractive when the mold of jelly is turned from the glass for serving. Not only is the distinct lemon flavor of this jelly pleasing, but the decorative feature is unique—and how the children clamor for that slice of lemon, to be dipped in sugar and nibbled after the jelly is served.

Here is a secret that our grandmothers understood—jelly can be made from dried apples that will vie with the fresh apple jelly in quality, color and flavor. The old-time sun-dried apples with the skins left on are the ones to be used if possible, instead of the white, evaporated apples. In some portions of New England it was customary each summer to dry all the apples, to be set aside with the skins left on, for spring jelly making. Other "wind-blown and specks," as the unmarketable apples were called, were used for cider making, for immediate jelly making, and for summer apple sauce, with a certain proportion dried without the skins—the thrifty housewives using the skins from the drying apples for the fresh-apple jelly. But a goodly proportion of the dried apples were simply washed and cored, cut into drying slices, and dried in the sun. These were dependable for fine jellies in the early summer, between the season of the "kept-overs" and the "new" apples.

SPICY APPLE BUTTER

Again we can follow the thrift of the old-time housekeeper by utilizing all the apple pulp from which the jelly juice has been drained. Rub it through a fine colander to remove all skins and waste. The fresh apple pulp from the lemon jelly can simply be sweetened and served with a dash of grated nutmeg. The pulp from the spiced apples and the dried apples will form delicious apple butter or apple marmalade with additional flavoring of ground spices—equal proportions of cinnamon and nutmeg or mace—to make



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McCray Refrigerator Co. 287 LAKE STREET, KENDALLVILLE, IND.
Display Rooms and Agencies in all Principal Cities

the butter rich and dark; also add half a cup of vinegar and one cup of sugar to each quart of pulp; boil all together, then simmer slowly, stirring frequently, until a firm, rich marmalade results—sometimes known as apple butter, but finer in flavor and texture than the usual apple butter of to-day.

OTHER DRIED FRUIT BUTTERS

It should be more generally known that dried peaches, dried plums, and especially the spicy dried apricots, may all be made to supply delicious butters, jams or marmalades when carefully prepared, and when vinegar and spices are added as for the apple butter, it will not injure the flavor of the butter if a portion of the juice is drained from the fruit for jelly. Any sort of dried fruit should be very carefully washed and thoroughly soaked until the small, dark shriveled pieces become "life-sized," tender and light-colored. Soaking for a day and a night is a good old rule; then cook quickly, drain off a portion of the juice for jelly, and proceed as with the apple jelly and butter.

LITTLE KNOW-HOWS FOR CANNING

It is always more difficult to keep the canned goods fresh and sweet than the jellies and preserves that are cooked down thick and firm. The general principles of canning may be thoroughly understood (and they have been too frequently discussed to require repetition here), but there are several little "tricks" known to experienced canners that should be brought to the attention of young housewives if they would prevent breakage of glass jars and avoid fermentation.

For instance, many new jars are sacrificed for want of care in filling with the hot liquid. I once watched a practical housekeeper at her canning and noticed one little trick that was new to me. She invariably held the palm of her hand for a moment over the jar after filling in a cupful of the hot fruit—for a quick steaming of the jar to prevent breakage when the boiling fruit came in contact with the glass. She claimed that she had never lost a jar by cracking after she began to practice this one extra precaution. Of course, she followed the usual accident preventative of setting the jar on a hot cloth. She folded several thicknesses of cotton cloth, laid it on a pie plate or other shallow tin, poured hot water on the cloth, and set the jar on this. And, equally of course, she rinsed the jars out in very warm water in preparing them to receive the boiling fruit. But even with the hot rinsing and the hot water pad beneath the jar—insuring one against cracking the jar with the first cupful of fruit—on continuing to fill, often the very last cupful will break the jar. The moment of hand covering to "even up the temperature" is the needful finishing touch.

Another precaution for successful canning is to fill the jar to running over, and remove all air bubbles before putting on the top. If the syrup of the fruit is evenly distributed through the latter, in filling the jar, the air bubbles will not be likely to appear; but if they form, run the long handle of a spoon around the sides, and they will rise to the top and be entirely removed by the final overflow of the fruit juice. Then wipe the jar quickly and screw on the cover.



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where water gets through to the under shingles and wet rots them. Dipping the shingles two-thirds their length prevents this.

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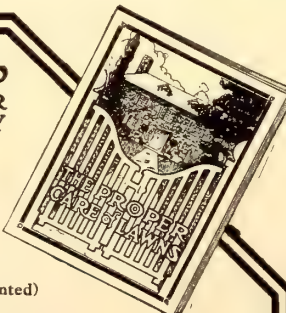
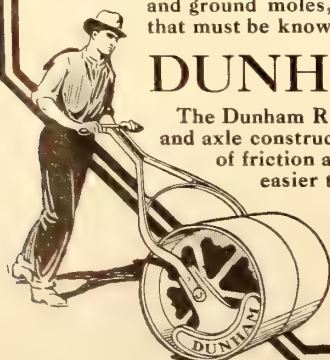
The Dunham Roller for paths, lawns and tennis courts has automobile roller bearings and axle construction. The weights are hung on the outer ends giving only two inches of friction against ten to twenty-two inches in others, making the Dunham 44% easier to operate than any other roller.

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CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds. All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By ALICE M. KELLOGG

A PARLOR THAT IS TOO LIGHT

PROVIDENCE, R. I., correspondent is discouraged about her parlor, which has just been repapered. "I fear I have made a mistake," she writes, "as the room looks much worse than it did before. The new paper is a warm tan-color in two tones and I find it accentuates the brightness of the room. There is a large bay with three windows, besides two windows on the side. The woodwork is painted white and the window shades and thin, net curtains are white. The room looks garish and inhospitable. Is it possible to improve it without putting on another paper?"

Under the conditions described a wall paper of a gray-brown tone would be helpful in softening the light. Another suggestion would be to change the thin net curtains for cream-white scrim, trimmed with a lace edge and insertion, and hanging them across the glass. Over-curtains to hang at the side of the windows would also assist in darkening the room.

DECORATING A CEILING

A Lincoln (Neb.) reader, G. O. F., asks about decorating the ceiling of her parlor, and if it would be better to leave the plaster in the original white finish.

The ceilings of houses of moderate cost are better treated with a water color tint, either cream or buff, rather than attempting an expensive decoration. If a wall paper must be applied to the ceiling on account of defects that cannot be covered with a tint, the design should be inconspicuous. Some wall papers have ceiling papers to match, but this is not necessary. If a considerable amount of money is expended on the interior of the house, the ceiling may be covered with the English relief material made for this purpose in various designs. This comes in plain white, and is intended to be tinted in one or more colors to suit the tones of the side wall and general color scheme.

OBJECTS FOR A PARLOR TABLE

"We have been boarding the past few years, and previous to that our furniture, then in storage, was all burned up in a fire. Consequently, on starting again this year to make a new home we have had to buy all new furnishings. In the parlor we have a mahogany table with a round top thirty-six inches in diameter. What would you suggest as ornaments for it?"—Mrs. G. A. R., Sandusky, Ohio.

Usually, a family has odd pieces of bric-a-brac on hand to meet the need described by this Ohio correspondent. Sometimes wedding presents of one kind and another are useful. In purchasing new articles it would be well to deliberate carefully so that each one piece may be worth the attention it will receive in this conspicuous position.

(Continued on page xx)

Garden Work About the Home

By OLIVER INGRAHAM

WINDOW BOXES

"I WOULD like suggestions about the plants to grow in the boxes at the sides of the steps to my piazza and on the balcony above the piazza," writes a correspondent from Columbus.

Evergreens would, of course, be the best in winter, and you might use pyramidal box bushes or red cedar trees or arborvitae. A high tree at each end of the box and low ones in the middle would give a pleasing effect. In summer these evergreens can be planted in the back yard (if they live, which may happen) and the boxes can then be filled with flowering plants. Geraniums, nasturtiums and petunias are best because they are vigorous growers, bloom continuously and make a good show. Plants with pale colored flowers like heliotrope will not be pretty in such a situation. The foliage of carnas, caladiums and castor bean, which are sometimes used in such a situation, is too coarse and is out of scale with most buildings.

W. H. F.

The Black Walnut is a beautiful tree in some localities. It grows best in moderately rich, moist soil, as in bottom lands near rivers. I should not attempt to grow it on a rocky hillside or on a gravelly knoll.

It is one of our grandest trees, reaching a height of 70 feet, and it has a broad, open top with the foliage carried well out on the branches.

It loses its leaves early in the fall, which is sometimes an objection, but its branches are bold and strong and impressive when bare.

The gray birch is a charming tree and will grow anywhere. There is no handsomer lawn tree. It is easy to transplant when young, but the old clumps, which are so much admired, are so difficult that it does not pay to bother with them.

To recommend a course of home study in Landscape Architecture as S. D. asks would be difficult.

The course in Landscape Architecture at Harvard requires four years for completion and it must be preceded by at least two years of work in the college. Such an amount of work it would be difficult to accomplish at home, even if time is of no value.

A course of reading, however, might be arranged, which could be finished in a year or two and which, with the aid of outdoor study and observation, would give one an understanding of the art and a more cultivated taste that might be a sufficient return for the labor expended.

The technical side of the art it will be difficult to get from books, but the æsthetic side may perhaps be better grasped.

Such a course of home reading should include the following books, read more or less in sequence: Bawn's Essays, "Of

(Continued on page xxi)

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BUFFALO, N. Y., 61 MANCHESTER PLACE
CINCINNATI, OHIO, 506 LYRIC BUILDING

Problems in Home Furnishing

(Continued from page xix)

A tall lamp or vase may be the first object secured for the center of the table. If fresh flowers cannot be kept in the vase, some of the artificial Japanese plum blossoms in white and pink may be substituted. A square of antique embroidery edged with gold braid may be laid underneath the lamp or vase as a mat. A small picture, framed with a support at the back, may stand near the edge of the table. Such a picture should have real artistic merit, or be of enough general interest to attract a visitor.

Two or three small books in good bindings (preferably with illustrations that may be enjoyed without depending on the text), and one or two pieces of glass or pottery of real beauty may complete the outfit for the table.

DESIGN FOR A CHAUFFEUR'S COTTAGE

A request comes from a New England reader, Mr. N. F. J., for a floor plan for a chauffeur's cottage, which is to be built this summer. Only a one-story house is to be erected to meet the requirements of man and wife.

In the back numbers of this magazine will be found a variety of plans for small houses. These may be adapted to the needs specified; or, the arrangement of rooms may be as follows: Across the entire front of the house may be the living-room, with one corner at the back used for dining purposes. A chimney may be built into the wall, facing the front door, and opening into a kitchen at the back. The rear of the house may be divided into bedroom, bathroom and kitchen.

INTRODUCING GRAY IN A COLOR SCHEME

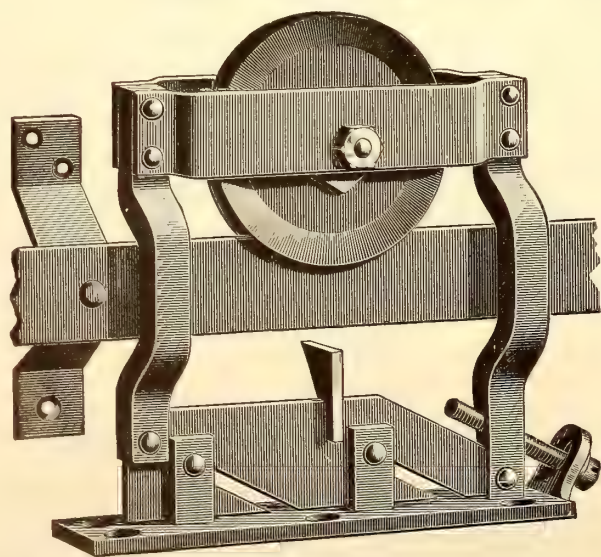
A western reader has noticed the references in articles on house furnishing to gray as a successful color for the house. "I would like to know if I could introduce this color in a guest room that I am fitting up. What shall I have in the room in this color? The exposure is south and west with a bay of three windows and a side window. At present there is a white Chinese matting on the floor and a brass bedstead. I can add whatever you think will make the room restful and attractive for my friends."

If you can find a large rug with a plain gray center and a border with green and yellow in it to lay over the matting it would give a keynote for the rest of the room. There is a good variety of gray wall papers from which to choose, and if pictures are to be hung in this room the pattern may be an inconspicuous one. If the picture element is lacking, a decorative wall paper introducing gray would be the better choice.

White muslin or white scrim may be made up at home with two rows of filet squares set in near the bottom as an insertion. Over-curtains may be added for winter use, selecting a plain or two-toned effect with a decorative wall paper, and a chintz or cretonne with a plain gray paper. A bedspread and pillow cover may also be made of the curtain material and seat covers for two arm willow chairs stained gray.

The bureau, side chairs and table may be of white enamel or mahogany, and the amount to be expended often determines the choice of these pieces. Either selection would accord with the color scheme suggested.

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Garden Work About the Home

(Continued from page xix)

Gardens"; Sieveking, "Gardens, Ancient and Modern"; P. G. Hamerton, "The Landscape"; Van Rensselaer, "Art Out of Doors"; Repton, "The Art of Landscape Gardening"; Downing, "Landscape Gardening"; Hemp, "Landscape Gardening"; Blomfield, "The Formal Garden in England"; Robinson, "The English Flower Garden"; Robinson, "The Parks and Gardens of Paris."

These books will give general knowledge. For information on special subjects, consult "The American Cyclopaedia of Horticulture," "Garden and Forest," and all the volumes in the Rural Science Series.

HOW BIRDS WORK TOGETHER

TURNSTONE is the name of a variety of shore-birds that are allied to the plovers and the sand-pipers. This name has been given to them because of their singular manner of feeding. With their strong bills they turn over the small stones lying in the sand of the beaches to find the insects that may be sheltered underneath. If the stone prove too heavy for the bill, they push it over by applying the breast to the upper side. Frequently a number of these birds will work together to turn over an object that is too heavy for one alone to move.

Two little workers were once seen busily endeavoring to turn over a dead fish that was fully six times their size. They were boldly pushing at the fish with their bills and then with their breasts. Their endeavors were, however, in vain, and the object remained immovable.

Then they both went round to the opposite side and began to scrape away the sand from beneath the fish. After removing a considerable quantity, they again came back to the spot where they had been, and went once more to work with their bills and breasts, but with as little apparent success as before. Nothing daunted, however, they ran round a second time to the other side and recommenced their trenching operations with a seeming determination not to be baffled in their object, which evidently was to undermine the dead creature before them in order that it might be the more easily overturned.

While they were thus employed, and after they had labored in this manner at both sides alternately for nearly half an hour, they were joined by another of their species, which came flying with rapidity from the neighboring rocks. Its timely arrival was hailed with evident signs of joy.

Their mutual congratulations being over, they all three set to work, and after laboring vigorously for a few minutes in removing the sand, they came round to the other side, and putting their breasts to the fish, succeeded in raising it some inches from the sand, but were unable to turn it over. It went down again into its sandy bed to their manifest disappointment.

Resting, however, for a space, and without leaving their respective positions, which were a little apart the one from the other, they resolved, it appeared, to give the work another trial. Lowering themselves, with their breasts close to the sand, they managed to push their bills underneath the fish, which they made to rise about the same height as before. Afterward, withdrawing their bills, but without losing the advantage which they had gained, they applied their breasts to the object. This they did with

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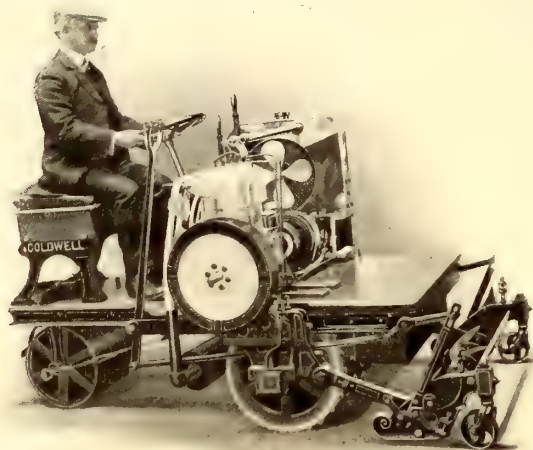
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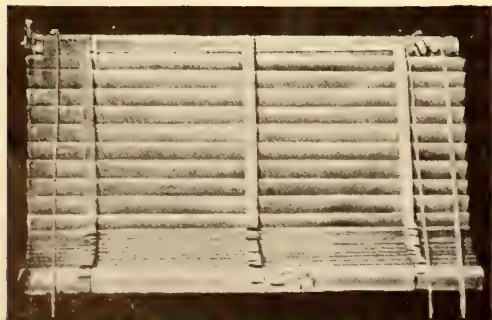
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such force and to such purpose that at last it went over and rolled several yards down a slight declivity. It was followed to some distance by the birds themselves before they could recover their bearing.

TO COLOR TIN SOLDER YELLOW

PREPARE first a saturated solution of blue vitriol in water, dip a polishing stick into it with which the place to be soldered is moistened. Touch the spot thus moistened with an iron or steel wire or rod. If this is frequently repeated copper will be deposited. To produce yellow color, the spot is moistened with a mixture of 1 part of saturated aqueous solution of white vitriol and 2 parts of blue vitriol solution by means of a zinc rod. The spot is to be finally rubbed with gilding powder and polished with the burnisher. In the case of gilded objects, the coppered spot should be coated with a thin covering of gum or isinglass solution, dusted with bronze powder, and after drying, brushed smooth. For silver articles the coppered place is to be rubbed with silvering powder, brushed and polished.

POISONOUS PLANTS

SOME of the plants of the family *Cruciferae* which grow in pastures are distinctly poisonous. Among these dangerous plants are various species of mustard. The field mustard, or charlock, which is very common in many parts of France, is particularly dangerous. The black mustard appears to be less irritant, but it is not free from poisonous qualities. Its seeds seriously affect the health of cows and make their milk unwholesome. The white mustard is still less poisonous, but not entirely innocent.

THE TRANSFORMATION OF SEA-WATER INTO FRESH WATER

THE belief was prevalent among the savants of the 17th and 18th centuries that a hermetically sealed earthen vessel dipped into the sea would fill itself with fresh water. At the present day it is difficult to say on what this belief was grounded. It surely could not have been evoked by experiment. In a similar sense Marsigli, the founder of oceanology, made in the year 1725 an experiment which effected the filtration of sea-water through a system of fifteen pots filled with washed garden-earth or sand and so placed as to let the water fall as if in a cascade. It is stated that the palate disclosed a definite diminution of the presence of salt. Similar assertions are everywhere current among seamen.

A scientific test of the endeavor to free salt from water was recently made by the French investigator Thoulet. His report, which appears in the minutes of the Académie des Sciences of Paris, states that the presence of salt can be reduced by filtration. Forty centimeters of the length of a glass tube, which was one meter long and was placed in a perpendicular position, was filled with sea-sand, and the rest of the tube was filled with sea-water; portions of the filtrate were examined at intervals of the experiment to ascertain its density and chemical composition. The result was that in the initial stage of the experiment density as well as saline content were found to be moderately reduced; very soon thereafter both recovered their original value. The early decrease of value is explained by the mechanical attraction which every

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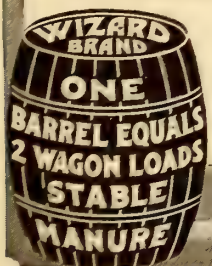
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chemically neutral body exercises on the molecules of a substance in solution as soon as the body comes in contact with the solution. In nature, too, sand fails to effect the separation of salt. Through shipwrecked seamen it became known that relatively fresh water may be found on very low and barren coral reefs in the Pacific Ocean by digging to a trifling depth in the coral sand. It is not, however, as was supposed, sea-water freed from salt through the layers of sand, but is simply rain water that is retained by a sandy stratum and by it protected from admixture with the sea-water. Similar phenomena may be observed on the European coasts. They may be considered the key to the popular belief, now contradicted, that sea-water can be sweetened by filtration through sand.



HUNTING WITH THE ESKIMOS. By Harry Whitney. New York: The Century Company, 1910. 8vo; 453 pp. Price, \$3.50.

This is a unique record of a sportsman's year among the northernmost tribe—its big game hunting, the native life, and the battle for existence through the long Arctic night. It is illustrated with photographs by the author and is a timely and sumptuous book. Mr. Harry Whitney has brought out of the Arctic a remarkable and absorbing narrative of thrilling adventures and unusual experiences. It is a narrative unlike any other description of Arctic life and travel. It is a distinctive and valuable contribution to the literature of the region. Not only will it interest and hold the sportsman and lover of wilderness adventure, but from an ethnic standpoint it contains much that is new concerning the Highland Eskimos, the most northerly inhabitants of the earth. The chief feature of the narrative, however, is adventure. The imaginative writer could hardly picture more thrilling incidents and hair-breadth escapes than fell to the lot of Mr. Whitney and his Eskimo companions on their hunts for bear, walrus, or musk-ox, on the trail; on the sea, or at times when they were overtaken by the fearful storms and hurricanes characteristic of the region. Hardly a chapter but contains an unusual adventure. Mr. Whitney is a very modest man, however, and in his record he has so undervalued the hazard and peril of many of the positions in which he was placed, that one must read between the lines to fully appreciate them.

OLD ENGLISH INSTRUMENTS OF MUSIC. By Francis W. Galpin. London: Methuen & Co.

The Rev. Francis W. Galpin's name is well known to antiquaries in this country, partly because of the assistance which he gave in arranging and cataloguing the old musical instruments in the Crosby-Brown collection of the Metropolitan Museum of Art. From so distinguished a student in the domain of antique musical instruments, we cannot but expect a work of authority, and this expectation Mr. Galpin has fulfilled in the book before us. The subject is so vast in extent that it is difficult indeed to compress, as Mr. Galpin has done, in a space of 314 pages, and in a form which would satisfy both the general reader and the student, an amount of material which is truly enormous. Although the book is confined almost entirely to English



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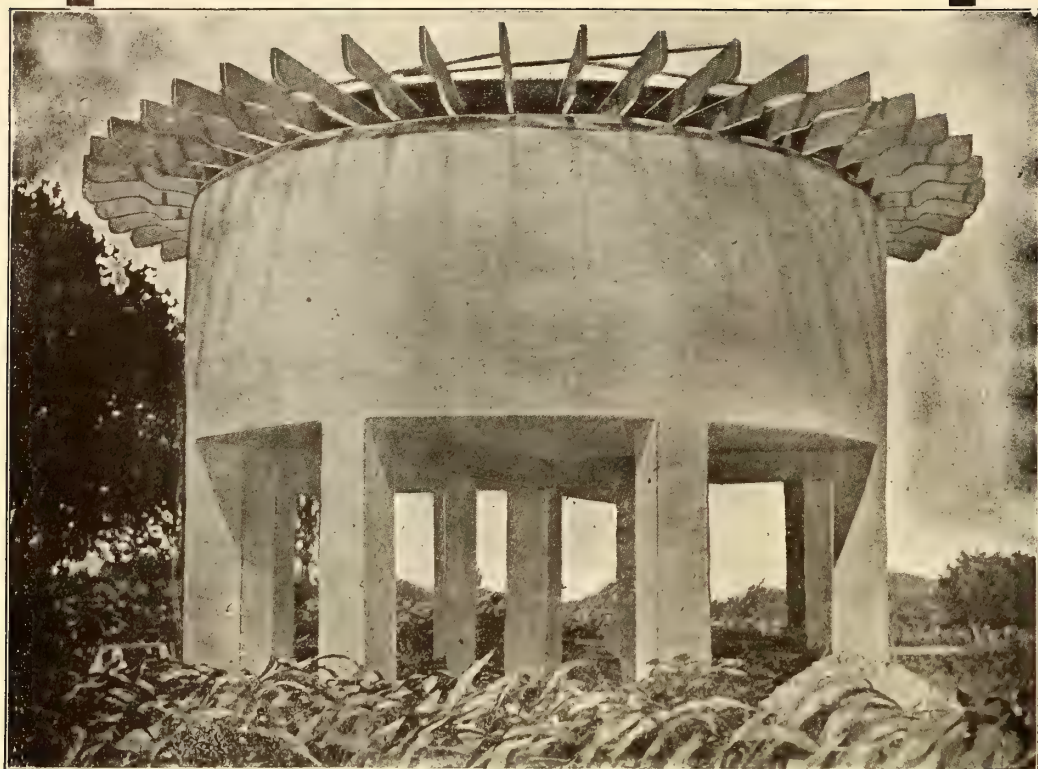
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Partitions

musical instruments, it goes without saying that it is applicable to European antique musical history in general. In a perusal of the painstaking treatise of Mr. Galpin, one cannot but feel that our stock of useful books is decidedly enriched.

IN AND OUT OF FLORENCE. A New Introduction to a Well-Known City. By Max Vernon. New York: Henry Holt & Co., 1910. 12mo.; 370 pp. Price, \$2.50 net.

This is a kind of guide book or introduction to Florence, both for those who actually are coming or have come to it, and for those who can come only in the spirit. It tells something about Florence and the Florentines of to-day as well as about those glorious people of the earlier centuries. Finally, it tells also something of how one may become, with the least trouble and expense and most advantage and interest, temporarily a Florentine. The illustrations are from both drawings and photographs, and are very pertinent to the text. There is an excellent bibliography of books on Florence at the back of the book. The chapters relating to various galleries are particularly interesting, while the information which is conveyed about servants, marketing and housework is extremely valuable.

HEALTH PROGRESS IN THE ADMINISTRATION OF THE WEST INDIES. By Sir Rubert W. Boyce, M.D., F.R.S. New York: E. P. Dutton & Co., 1910. 8vo.; 328 pp. Price, \$3.50.

The epitomized record of the progress or sanitation and sanitary administration in the West Indies is the outcome of a visit which the author paid to the West Indies in 1909 in order to investigate an epidemic of yellow fever which was present in the colonies of Barbados at the time. While making the investigations on the subject of yellow fever in Barbados, he was requested by the Governor of the Windward Islands and the Governors of Trinidad and British Guiana to prolong his stay and visit their respective territories and report upon the health conditions obtaining in these colonies. The results of the author's experiments as described in the present volume is of value not only to the medical and business man, but also to the tourist who wishes to reside in or visit these beautiful colonies. The book is beautifully illustrated with interesting half-tones.

NAUTICAL SCIENCE. In Its Relation to Practical Navigation. Together with a Study of the Tides and Tidal Currents. By Charles Lane Poor, Professor of Astronomy in Columbia University. New York and London: G. P. Putnam's Sons, 1910. 8vo.; 31 illustrations; 11 plates; 329 pp. Price, \$2.

Astronomy finds its most practical application in navigation. However, many a navigator knows very little astronomy, as most of the astronomical matter which is necessary for the guiding of his vessel is presented to him in the form of tables and formulæ which he accepts without inquiring into their mathematical significance. The present work attempts to explain in non-technical language and without the use of complicated mathematical formulæ the fundamental facts and principles that form the basis of all navigational methods. A large part of the book is devoted to an explanation of tides and tidal currents, and their causes, giving the recent researches of Dr. Harris, which show that the tides of each ocean basin are practically independent of those of the rest of the world.

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Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydras; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

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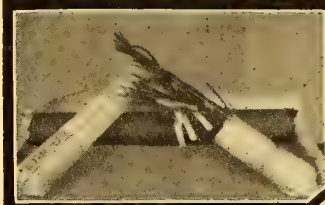
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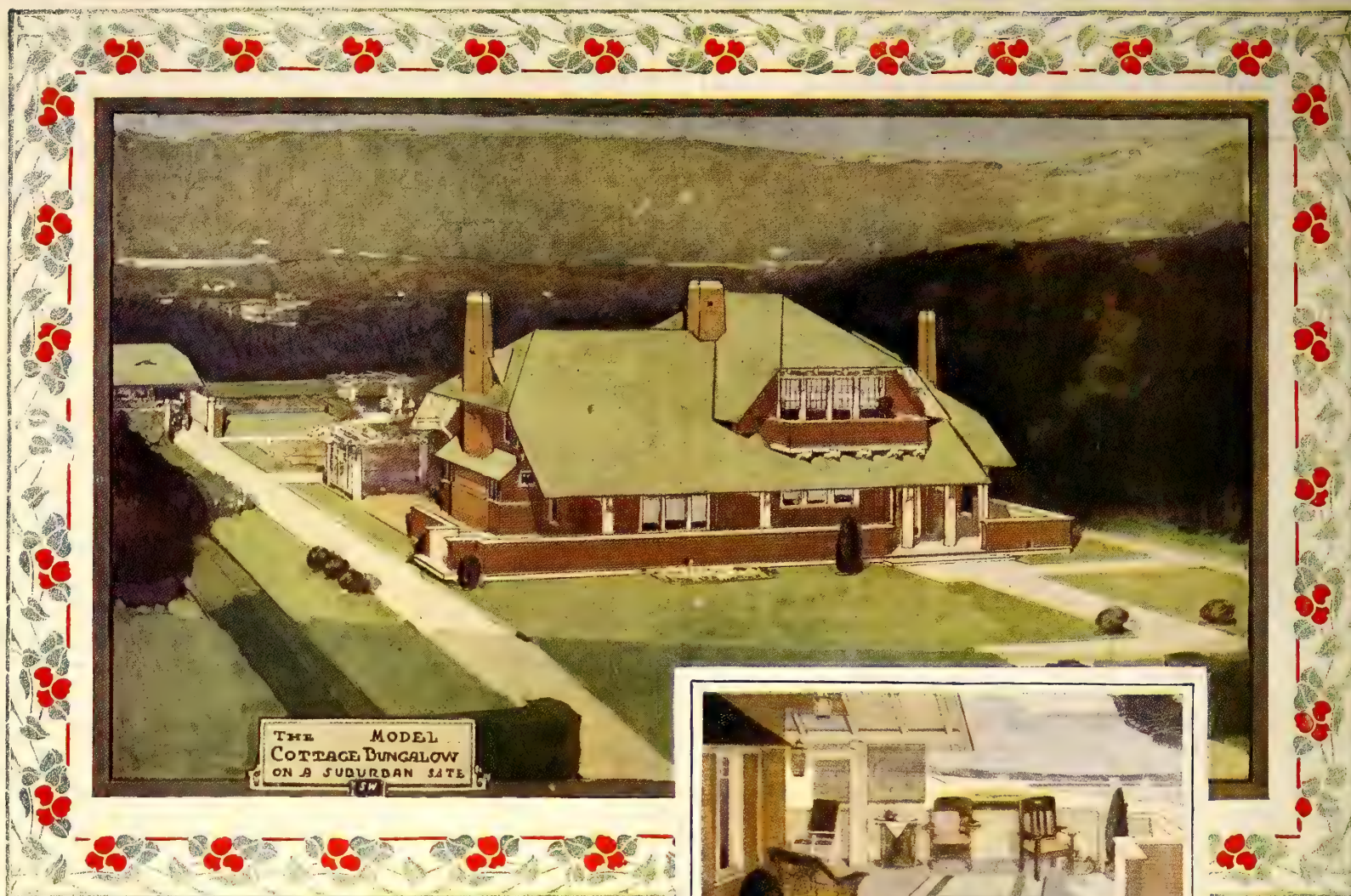
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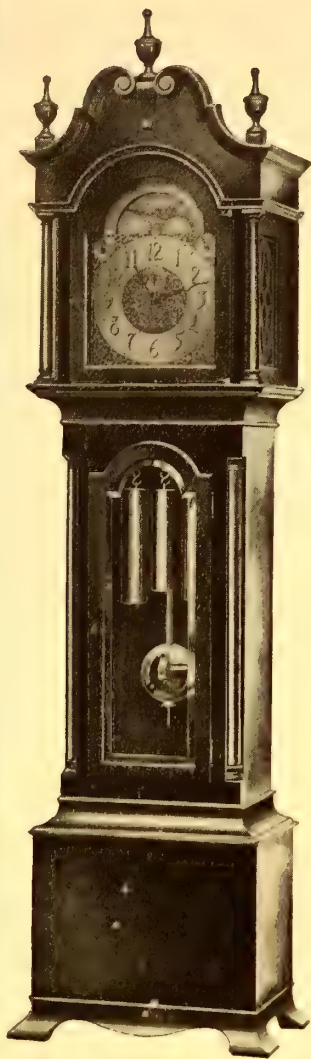
AMERICAN HOMES^{and}GARDENS



MAY, 1911
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President's Office Moline Plow Co. Moline, Ill.
George Arthur Stephens, President
Davey Tree Expert Company, Kent, Ohio. March 13, 1911

Gentlemen:—Replying to your letter of February 3rd, which has not had my attention before because of my absence for the Winter, I beg to advise you that my trees are looking very good. Some of the old elms in the front of my property were beginning to deteriorate. I think with the treatment you have given them they will come through all right and remain live sentinels for many, many years, shielding my residence from too great familiarity of the hot summer suns.

I look upon the work with very great satisfaction and am glad every time I look at the trees that they have had your scientifically intelligent attention.

Most sincerely, Signed (G. A. STEPHENS)

Cone Export & Commission Co.—Southern Cottons.
74 and 76 Worth St., New York, and Greensboro, N. C.
The Davey Tree Expert Co., Kent, O. New York, N. Y., February 14, 1911

Gentlemen:—Your favor of the 4th instant was forwarded to me from Greensboro, N. C. Replying to your inquiry, would state that the trees on my place, which your representative treated, appear to have done very well and I believe have been benefited by the work done on them. I take pleasure in recommending your methods to anyone who wishes to preserve their trees.

Signed (CEASAR CONE)

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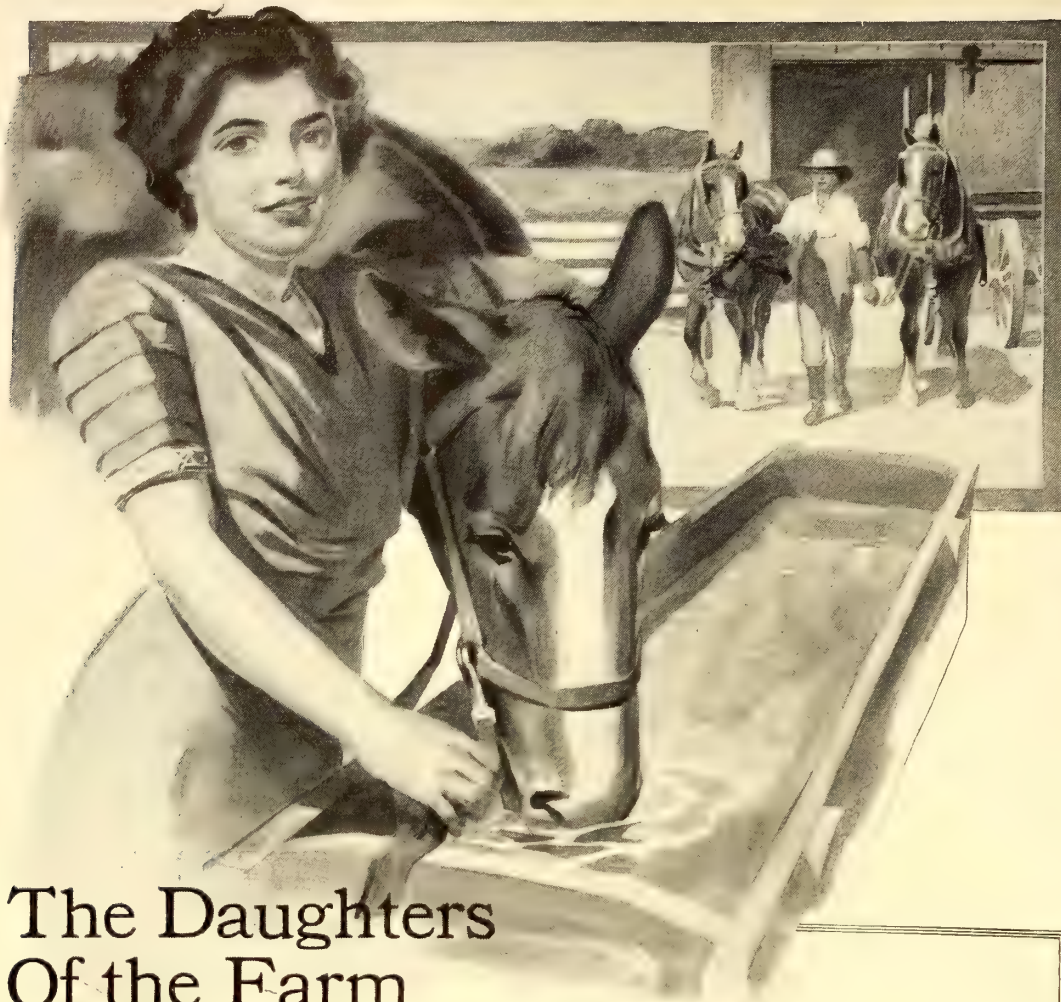
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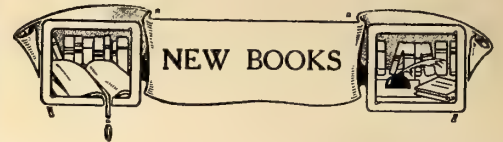
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THE ART OF THE MUNICH GALLERIES, By Florence Jean Ansell and Frank Roy Fraprie. Boston: L. C. Page & Co., 1910. 12mo.; 448 pp. Price, \$2.

This volume is uniform with the others in the series entitled "The Art Galleries of Europe." The present volume is to be a history of the progress of the art of painting, illuminated and demonstrated by critical descriptions of the great paintings in the Munich gallery. The section relating to the Schack collection is interesting, as the books on painting do not usually take in this gallery. Shortly after Schack's death in 1894, the gallery was hung in his late palace, which was rearranged for the purpose, and the collection has now been removed to the new building, which was opened the past year, opposite the Bavarian National Museum. The collection of copies in this gallery is remarkable. The authors make the curious statement that in this gallery are represented a few more "painters who tried to be artists." Bocklin's famous *Villa on the Sea* (*Villa am Meer*) is in this collection. Fifteen years ago a book as handsomely illustrated as the present one would have been a novelty. The book merits a wide sale, both on account of literary worth and good clothing. As is customary with these progressive publishers, they have given the book a very appropriate binding.

MECHANICAL DRAWING FOR PLUMBERS. By R. M. Starbuck. New York: The Norman W. Henley Publishing Company, 1910. Price, \$1.50.

This is not the first book that Mr. Starbuck has produced on plumbing. His "Modern Plumbing Illustrated" and "Standard Practical Plumbing" have been very well received in the trade. In this latest work he has supplied a want that has long been felt by the practical plumber; in other words, he has given us a simply written book on the manner of making drawings for plumbing purposes, and has told how they may be effectively used. The drawings in the book are large and clear.

DIAGRAMS FOR DESIGNING REINFORCED CONCRETE STRUCTURES. Including Diagrams for Reactions and Strengths of Steel Beams. By G. F. Dodge. New York and Chicago: The Myron C. Clark Publishing Company, 1910. Ob-long, 13x16 inches. 104 pp. Price, \$4.

The author, like many other engineers designing in reinforced concrete, has often wished for some method of reducing the tedious detail calculations resulting from the diverse properties of the materials being used. Many methods have been and are in use at present, but all of these whether in tabular or diagrammatic form, are based on more or less inflexible approximate formulæ which introduce quite considerable errors if the proportions of the composite structure vary materially from those assumed in deriving the formulæ on which the method is based. A method to be universally acceptable must be based on theoretical formulæ and embody all of the requirements that occur in the building ordinances that govern construction in the

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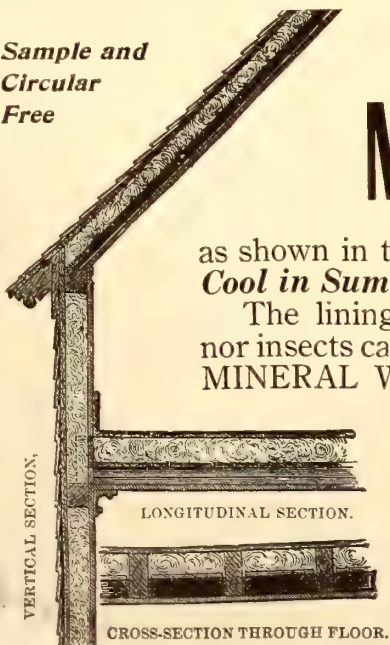
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various localities. It must be rapid and accurate in its applications, and if possible give at a glance the final result of changing any one or more of the assumed variables of design.

THE DESIGN AND CONSTRUCTION OF OIL ENGINES. By A. H. Goldingham. New York: Spon & Chamberlain, 1910. 16mo.; 260 pp. Price, \$2.50.

This work has been written with the intention of supplying practical information regarding the kerosene or oil engine, and in response to frequent requests received by the writer to recommend such a book. While many works have been published on the subject of gas engines, some of which refer to or describe the working of the oil engine, no other book, it is believed, is devoted entirely to the oil engine in detail. The work, it is hoped, will be found useful to the draftsman, the engine attendant, as well as to those who own or are about to install oil engines. The classification of vaporizers has been adhered to as made some few years ago, and a representative engine with each type is described.

ATKINSON'S SIGN PAINTING UP TO NOW. By Frank H. Atkinson. Chicago: Frederick J. Drake & Co., 1910. Oblong 4to.; 378 pp. Price \$3.

This is a very handsome book on sign painting and the design of show cards with valuable alphabets, which contain 96 designs of lay-outs and accompanying color notes. There are 75 alphabets embracing all standard styles, their modifications and alterations, together with comprehensive text covering all practical phases of the art. There are a number of illustrations in the first part of the book showing how the work is actually done. These are specially valuable and we have not the same in any other book. The work seems to be eminently practical and the technical matter reflects the best usage in vogue at the present day.

THE MEDITERRANEAN CRUISE. Compiled by Bruce Millard. New York: G. P. Putnam's Sons, 1910. 16mo.; 438 pp. Price, \$2.25 net.

The present volume is a standard up-to-date compendium for Mediterranean travelers and contains pertinent information as to all points usually visited in a winter's cruise in Europe, Asia, and Africa. In fact, with its use the student can successfully travel without other descriptive aid. It is particularly valuable, as Baedeker's "Mitteleuropa" has not been translated into English as yet. The book, which is light in weight, is well printed in good-size type, thus doing away with the objection to most guide books.

WHAT PICTURES TO SEE IN EUROPE IN ONE SUMMER. By Lorinda Munson Bryant. New York: John Lane Company, 1910. 16mo.; 183 pp. Price, \$1.50 net; postage, 15 cents additional.

The average European traveler is overwhelmed by the enormous collections which are to be found in even the cities of secondary importance. Thus, even in places like Nancy, Lyons, and Turin, we find impressive collections which require a long visit to thoroughly appreciate. The object of the present book is to eliminate the ninety-nine pictures and to concentrate the reader's attention on the one remaining. The idea is an excellent one and has been well carried out. There is very little to be said in criticism of the text, but some of the illustrations are ridiculously and unnecessarily small, such as the "Moretto" in the Academy at Venice, shown in Fig. 46.



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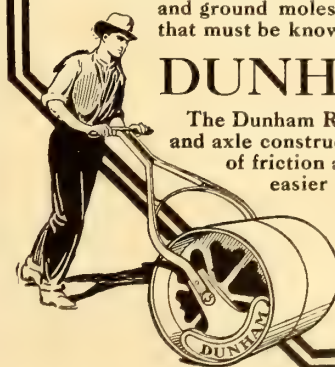
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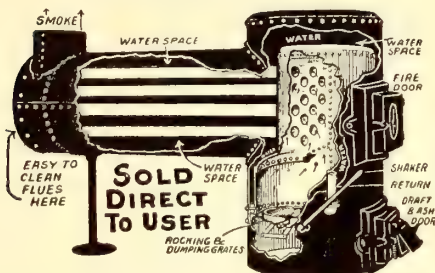
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RHODES'S DIRECTORY OF PASSENGER STEAMERS. London: George Phillip & Son, Ltd., 1910. 12mo.; 387 pp. Price, \$1.

This is a very valuable book for all who are interested in any way in shipping. It gives a list of companies with the names of the vessels under each; then comes a directory of passenger steamers, giving the length, breadth, depth, horse-power, etc., of all vessels. The writer has found this book of great value in comparing tonnages and horse-power in disputed questions which have arisen. There are a number of excellent illustrations in the front of the book. The book is printed on light-weight paper, rendering it very convenient for reference. It is attractively bound.

THE FLOW OF WATER. D. Van Nostrand Company, 1909. 8vo.; 228 pp. Price, \$3 net.

The present work is the outcome of a series of investigations begun several years ago with the object of finding a simple expression for the phenomenon of flow in irrigation channels. The author hopes that his work will prove of interest and value to the student and useful to the practical engineer. He also hopes that it will stimulate further research and thus tend to widen the field of hydraulic knowledge.

APPLIED MECHANICS. By David Allen Low, Whitworth Scholar, M.I., Mech. E., Professor of Engineering, East London College, University of London. London, New York, Bombay and Calcutta: Longmans, Green & Co., 1909. 551 pp., 850 illustrations. Price, \$2.75 net.

Mr. Low has succeeded in crowding a great deal of matter between the covers of this text book for engineering students. It embraces strength and elasticity of materials, the theory and design of structures, the theory of mechanics, and hydraulics. The matter is presented in a very clear and concise manner. The author believes thoroughly in the importance of exercises to fix a subject upon the student's mind. Accordingly a large part of the book is devoted to various exercises, there being 780 in all, 600 of which are original. The remainder have been selected from various examination papers. The book should occupy an important place in the student's library.

THE COPPER HANDBOOK. A Manual of the Copper Industry of the World. By Horace J. Stevens. Houghton, Mich., 1909. 8vo.; 1,628 pp.

The book before us is most important from its vast array of facts as to the various copper properties of the world. The copper mines in various countries are dealt with, and there is an excellent glossary. There are also chapters on the uses of copper; substitutes for copper; brands and grades of copper; alloys of copper; electro-metallurgy of copper; pyro-metallurgy of copper; hydro-metallurgy of copper; milling and concentrating of copper; mining of copper; chemistry and mineralogy of copper; geology of copper, etc.

INSECT WONDERLAND. By Constance M. Foot. New York: John Lane Company, 1910. Price, \$1.25 net.

The kind reception given to the author's little book entitled "Science Through Stories" emboldened the writer to choose for the subject of this volume some simple facts concerning the insect world, and she has selected one or more specimens of each of the seven great orders of the insect world according to the Linnean system of division.



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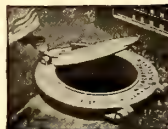
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The designer being a native of California has imbibed the spirit of the true bungalow art, not only through association, but by experience in actual construction. This art has been applied in adapting the bungalow to the requirements of the sterner climates of the north.

The book is bristling with interest and suggestions for the builder of either a suburban cottage or city residence. Price, Fifty Cents.

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THE STERILIZATION OF MILK

By Dr. M. SEIFERT

THE insanitary and economically defective method of transporting milk in cans and pouring it repeatedly before it reaches the vessel of the consumer is still in general use. In this way the milk is exposed to contamination of many kinds, and the visible impurities which it collects are not the least dangerous ones. The employment of cans for the transportation and sale of milk is also open to the objection that, even when no fraud is intentionally practiced by the dealer, one customer may receive milk which contains much more than the normal proportion of cream, while another receives what is virtually skim milk. Unfortunately, however, the bottles and the method of sealing them which are now in use possess serious defects. The so-called patent bottles, which are closed by a porcelain stopper and a rubber ring, are condemned by the bacteriologist because they cannot be cleaned and freed of bacteria so perfectly as to make them fit containers for a liquid so prone to decomposition as milk. The bottles covered with paper caps are objectionable because the caps and the mouths of the bottles are handled in transport and therefore necessarily become conveyors of germs. Furthermore, it is not practicable to make or to apply the caps by absolutely aseptic processes.

The new "uvio" method of bottling milk uses a seal which satisfies every requirement of bacteriological science and allows a perfectly aseptic handling of the milk. This seal is a disk of tinfoil which is coated on its lower side with a germ-free stiffening material and which comes to the bottling room in a germ-free package. The bottles are sterilized before being filled and are sealed by an automatic machine, neither the seal nor the mouth of the bottle coming into contact with a human hand during the operation.

Another obstacle to the increased use of milk in large cities is the uncertainty whether the milk comes from healthy or from diseased cows. The old remedy for this state of things consisted in boiling the milk and thereby seriously impairing both its flavor and its nutritive value. The necessity of boiling all milk in order to escape the danger of swallowing disease germs has caused a great many persons to abstain from milk altogether. Those persons who prefer bottled milk in its natural condition to boiled milk are certainly far more numerous than those to whom the taste of boiled milk is not disagreeable. It is equally certain that raw milk is more effective than boiled milk in promoting the growth and increasing the blood supply of infants, whose food consists entirely of milk.

In the manufacture of butter and cheese, also, sterilization of the milk by some method other than boiling is not only desirable, but sometimes absolutely necessary. Although many butter makers pasteurize the milk, it is well known that the process injures the flavor and quality of the butter. The heating of milk used for cheese making, although it is enjoined by the new (German) cattle plague law, cannot always be employed, because it seriously affects the formation of the curd.

In the feeding of calves and pigs, also, experience has proved that better results are obtained from raw than from boiled milk, and the feeding value of such waste products as curds and whey would be greatly increased if they could be used in

(Continued on page x)



The fragrance of honeyed apple blossoms in May is not more alluring than the goodness of

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Sugar Wafers

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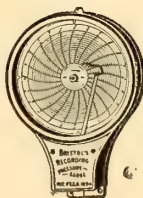
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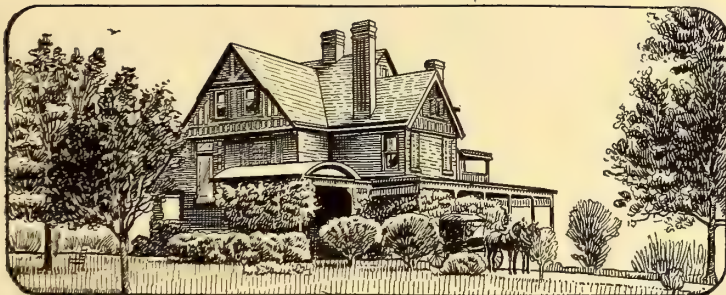
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For Sale: A very desirable lot, 50x125, at Harmon-on-the-Hudson, Westchester County. Magnificent views, fine surroundings. Ideal place for a suburban home. Forty-five minutes from New York by the New York Central's excellent electric train service. Harmon is the terminus of the "electric zone." Has good future. Am selling on account of permanent change of residence from New York to the west. For further particulars address,

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Concerts by Quintano's Royal Venetian Band

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General View of the First Annual Real Estate and Ideal Homes Show, held at Madison Square Garden in the Spring of 1910.



CITY PLANNING

THE National Conference on City Planning will be held this year in Philadelphia, Pa. The time selected for this conference is May 15, 16 and 17. The importance of such a meeting is now being recognized by architects, engineers, city officials and citizens who have a civic pride and a patriotic spirit.

No art progress can be expected in the building of the future cities, or in the improvement of the present one's, until the people stop to consider the vital importance of such a subject, and it is just such meetings as these that are proving so beneficial in stimulating the desire for the development of beauty in cities and in villages.

A special committee has been appointed and the program has been particularly arranged so as to interest all who may have the privilege of attending.

This will be the third conference held of the kind and the interest in them has been active without being spasmodic at any period.

It is a forum where debates are given, and deliberations are held with the viewpoint of solving some of the great problems which confront us.

The opinion of the best expert authority is expected to be expressed in the papers which will be read before the conference; papers that are likely to induce and develop extended discussion on the great subject of "City Planning."

THE NATIONAL BUILDING MATERIAL EXHIBITION

THE first building material exhibition ever held in this country will take place at Madison Square Garden, from the 13th to the 20th of May. The object of this exhibition will be to cover the entire field of public and private building construction in its minutest detail. The plans for the exhibition have been carefully laid, and the support and patronage of all of the most prominent architects, manufacturers of building materials and various mechanical and building trades associations have been enlisted, and it is the general opinion that this exhibition will greatly stimulate the interest, not only of those directly associated with building construction, but also of the public at large. The coming exhibition, not only will be national in character, but will in reality be of international importance, for the reason that it is the direct outgrowth of the building show which has been held annually in the Olympic Exhibition Building in London for the past ten years. As the London show has met with the greatest success, both from the standpoint of the producer and of the general public, the field in this country, being so much more extensive, owing to the rapid advancement which has been made in recent years in building construction, makes the prospects of the coming exhibition exceedingly bright. The wide scope of this exhibit of material will cover in-

terests so large that the architect, the general public, the man who specializes interior and exterior appurtenances, and the home builder will find everything pertaining to the construction and fitting up of all kinds of buildings. One of the interesting features of the exhibition will be the daily building and completion of an entire house. This is something that has never been attempted before, and it is only made possible by the wonderful advancement in construction work within the past few years. One of the most important attractions of the exhibition will be the display of modern country and suburban houses, showing all of the best features of architecture, and the manifold conveniences by which recent inventions have placed the suburban and country dweller upon a par with the occupant of the town house.

ARBOR DAY

ARBOR DAY, April 11th, has come and gone, but it is not too late to consider the importance of tree planting.

Trees of all kinds may be set out with safety up to the 15th of May, and if every householder would set out even one tree each year, a wonderful work could be accomplished, and the most barren place would become a thing of beauty.

Why not plant a tree about your home grounds and along the highway? What greater legacy could a man leave to his home town than some fine old trees, for which his posterity will thank him as long as their shades endure.

THE HORTICULTURAL NUMBER

IT may not be out of place for the publishers to express their appreciation of the wide interest which was shown in the Horticultural Number for March, by the readers of AMERICAN HOMES AND GARDENS. So great was the demand for this number that it was completely exhausted a short time after publication.

The result was very materially due to the presentation of an exceptionally valuable planting table, comprising examples of garden planting that embraced everything pertaining to the garden from the planting of a rose garden to that of the more prosaic vegetable garden.

These special numbers take up the treatment of one particular subject, to which their pages are exclusively used, the March number being dedicated to the garden.

The policy of the publishers has been to devote the pages of AMERICAN HOMES AND GARDENS entirely to the home, its decorations, its furnishings, and its gardens, and to present each of the subjects in the most timely and suggestive way.

It seeks to present this information in a form so readable and so readily understood as to become a fascination for the study by the home-builder of the improvement of the home and the beautifying of the home grounds.

A very interesting pamphlet just issued by us on the Pergola can be had free on request.

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Send today for free illustrated booklet telling all about this labor-saving cart.
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88-page Catalogue Hardware Specialties, Free.

THE H. B. IVES CO.
SOLE MANUFACTURERS ... NEW HAVEN, CONN.

THE STERILIZATION OF MILK

(Continued from page v)

the raw state, without danger of infection with tuberculosis or intestinal disease.

For these reasons the "uviol" process, which destroys disease germs, but spares the acidifying organisms in milk, has been developed. The process is based upon the power of violet and ultra-violet rays to paralyze the growth of vegetable organisms. The bactericidal efficiency of these rays is now universally recognized. By the "uviol" process the germs of disease, chiefly tubercle bacilli and pus-forming bacteria, which the milk of a cow may contain, even before the veterinary inspector can detect the disease and remove the animal from the herd, are killed without altering the natural state of the raw milk.

In the industries dependent on fermentation, also, the "uviol" process will soon find important applications, as yeast and mold fungi are likewise destroyed, though less rapidly than bacteria, by ultra-violet rays.

The success which has been attained in purifying water with ozone has naturally led to attempts to sterilize milk by means of the same agent. The experiments soon proved, however, that the conditions in the two cases are entirely different. In water, the destruction of organic matter is desirable, but in milk this must be avoided, if the milk is to remain fit for use as food. The quantities, both of organic matter and of bacteria, which the two liquids contain, also differ widely. Even the results obtained in ozoning water, however, appear to indicate that milk cannot be perfectly sterilized by direct action of an electric current, because the ozone generated by the current passes through the liquid in large bubbles, making unfit for use those portions of the milk which it touches and exerting no germicidal action on the rest of the milk. In order to sterilize milk completely without injuring it, the ozone must pass rapidly through it and come into contact with every particle.

For this purpose Dr. Emil Wiener has made experiments with atomizers producing sprays of exceeding fineness, in which the diameters of the drops range from 12 to 20 millionths of an inch. As these drops are little larger than bacteria, any bacteria which they contain are fully exposed to the action of ozone coming into contact with the drops, and are instantly killed even by greatly diluted ozone. The ozone is then quickly removed from the milk by the same apparatus by which it is applied. In this apparatus the milk is atomized by a jet of compressed air, mixed with ozone. The milk falls to the bottom of a glass vessel, from which the ozonized air escapes by an orifice above the level of the liquid. Before the milk is drawn off it is thoroughly aerated by a current of compressed air which has been filtered through glass wool, calcium chloride and soda lime. In this way Dr. Wiener succeeded in freeing milk completely from disease germs and toxins and improving its "keeping" qualities, without affecting its taste, odor, or chemical composition.—Umschau.

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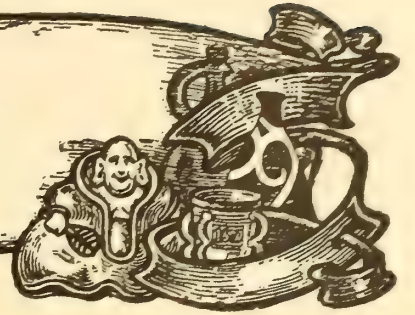
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American Homes and Gardens for June



The Prize Garden of Mr. George E. Barnard

Ten acres of garden constitute the principal feature of Mr. George E. Barnard's garden at Ipswich, Mass., and to the garden lover there can be no more interesting spot than the grounds which won the H. H. Hunnewell triennial prize, offered for an estate of not less than three acres which should be laid out with the most taste, planted most judiciously, and kept in the best order for three consecutive years.

A paper by Mary H. Northend describes in a pleasing way the features of the garden, and the engravings show the general scheme.

Cretonne and Summer

There is not a home which cannot be improved for summer use by a touch of freshness and color with the addition of cretonne. Mary Edith Griswold, in her paper, has presented the subject in a very attractive manner, and has given directions as to how to proceed about doing it. This work is supplemented by photographic engravings of the results attained.

A Summer Home and Furnishings for \$1,000

The problem of how to live with comfort and pleasure during the long summer season strikes with dismay many persons who do not own cottages or country homes. Desirable cottages, moreover, are expensive, and hotel life soon palls upon the homeless wanderers. To meet a demand for novelty and necessity, Alice M. Kellogg tells in her story entitled "A Summer Home and Its Furnishings for \$1,000," how to buy a portable house, containing five rooms and piazza, and to furnish it with rugs, curtains, furniture, glass, china, kitchen utensils, and every necessary appointment. The story explains how one may go to the seashore or mountains, rent a piece of land, set up a home, and enjoy the peace and quietude of the country in equal pleasure with the more pretentious neighbor.

The Table

The article under this department, telling how to make various kinds of salads, and showing illustrations of the results, should be of interest to the housewife, Margaret Sexton has presented her subject in a very simple way, so that even the novice can readily follow out all of her directions.

A Brick and Half-Timber House, Costing \$3,500

It is a difficult matter to obtain a house with a distinctive exterior and a well arranged plan for the sum of \$3,500. Robert Prescott tells in his paper how this may be accomplished, and the engravings show the plans and an exterior view of the completed house.

Some Long Island Homes

Paul Thurston in one of his travels last fall took a trip along the south shore of Long Island, and, to his astonishment, he found the handsome group of houses at Bayshore, which is used to illustrate his paper. The text is full of timely information on building and decoration, and it is profusely illustrated by floor plans, and interior and exterior views.

Dark Blue Staffordshire

One of the most interesting articles in the May issue of AMERICAN HOMES AND GARDENS is the one on Dark Blue Staffordshire, by the well-known collector, Alexander M. Hudnut. Mr. Hudnut has made a special study of the collecting of old pieces, and is an authority on the subject. The article is profusely illustrated, and shows some of the rarest plates, and is one that ought to be of great value to the layman as well as to the collector. His paper in the May number describes and illustrates the "Syntax" plates, while the article which will be published in the June issue will be devoted to the historical plates depicting American scenes.

Planning and Planting a Rose Garden

June is the time when one should consider the planning and planting of the rose garden. Charles Downing Lay in his paper on this subject gives information how to lay out a rose garden, and the kind of roses to select for the planting of it. This is an article which will prove helpful for all those who are interested in the rose.

A Country Home

One of the most surprising houses the author has ever found is the one which illustrates "A Country Home." The exterior has the appearance of an old New England farmhouse built one hundred and fifty years ago, instead of being of recent construction, and when one enters the interior, a still greater surprise is in store, for here the artist has departed from the simplicity of the farmhouse to the splendor of the more pretentious home in its furnishings, and while this is true there is a perfect harmony throughout. It is a home worth knowing about, and Burr Bartram has prepared an excellent description, which is profusely illustrated by many fine engravings.

A Summer Home at Kennebunkport, Me.

The rugged coast and the low pine forests of Kennebunkport lend themselves to the building of a low rambling house, such as the one illustrated in the paper prepared by Henry Hawley. The plans show the form of the house, and the photographic illustrations give a good idea of both the exterior and interior treatment.

The Camera in the Garden

An interesting adjunct of the country home is a good camera, which can be used for many purposes, and especially for the garden, where it is desired to show the progress which is being made in the growing of the various plants. Frederick C. Beach, editor of American Photography, has prepared an interesting paper on the subject, pointing out the important features in the purchasing of a camera and the use of it. Mr. Beach has made a long and careful study of the subject, and is well qualified to give it the best and most timely information.



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THE LAWN—ITS PREPARATION AND CULTIVATION

"THE most beautiful feature of a city home or a country estate is a well-kept lawn."

This article is written for the city man, particularly he who has just completed a home and desires to finish off its general appearance with a thick, even-growing lawn.

Very many home builders make the mistake of not thoroughly cleaning up the yard after building, before they attempt to start the lawn, and then wonder why the grass fails to thrive. It is probable that everything else has been made secondary to the rapid erection of the home, and consequently plaster and bits of wood and stone have been swept out of the building until they have covered the surrounding yard to a depth of several inches. On top of this the average man tries to start one of those thick, velvety, green lawns that he has so long admired. Of course many of the larger lumps of stone and wood have been raked up, but the top soil still contains many small bits of lath, shingles, plaster and often chips from the stone foundation piers and front sidewalk.

The first step in building the foundation for a good lawn under these conditions would be to plow the surface in several directions so as to loosen and bring to the surface all of these foreign elements that should not be in the top soil. Then the land should be graded. If the area is a small one and very flat, then a level surface is most desirable, but if the lawn is over an acre or more in size, it will be far better to leave the land with very little grading but preserve the slight hollows and elevations, as they are far more pleasing than flat lawns would be. If the soil is a heavy clay then perfect drainage is most essential, as this sort of ground does not allow the moisture to filter through as readily as sand or loam soil, and after a hard rain will often be found covered with small pools of water, unless the drainage is perfect.

In the selection of the grass seed you will have to be governed by the local climatic conditions, the amount of shade and other points particular to your location alone. It is advisable to purchase seed from a nearby seedsman, who can probably supply you with a close-growing wide-rooted variety. Sow the seed on a day of little wind and preferably in the late afternoon. Rake the soil lightly in order to spread a thin layer over the seed. Then comes the point to which can be ascribed nine out of ten of the failures in attempted lawn-making—those who fail do not realize the value of a lawn roller. The seed bed should be rolled with a heavy lawn roller so as to force the seed into close contact with the soil and so establish a firm root foundation. This point is positive. You cannot expect to produce a thick, even-growing lawn on a soft, springy seed bed.

The lawn roller must be used at least twice a month throughout the season from early spring to the first snow fall in order to keep the action of sun, wind and rain from drying out the soil and to keep the roots thoroughly imbedded in the moist sub-soil, from which they take their strength and nourishment.

The assertion that rolling is absolutely necessary need not frighten one out of attempting a perfect lawn, for lawn rollers are now made with roller bearings so that even the heaviest sizes are extremely easy to operate; in fact a mere child can push even a 650 pound roller.

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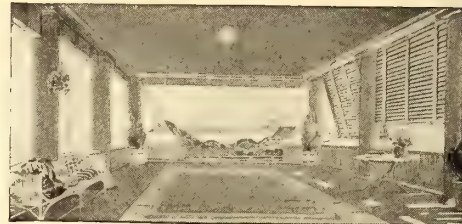
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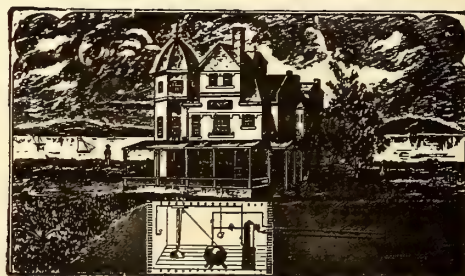
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ON A finished background of mortar of lime, quartz sand, infusorial earth and water painting are prepared as follows: Painting ground: Four parts of quartz sand, 3.5 parts marble sand, 0.5 part infusorial earth heated to redness, 1.5 parts thick lime paste. After drying, the painting ground is to be coated with hydrofluosilicic acid and impregnated, several times with potash water-glass; earth colors which have been digested for a long time with potash water-glass are used. After dilution the silicic acid is separated by means of carbonate of ammonia from the water-glass, which remains in intimate combination with the colors. To the washed-out colors, hydrate of alumina and hydrate of magnesia are added; they are rubbed down and preserved in paste-like condition. The pictures are fixed by means of a spraying apparatus and a fluid obtained by heating 200 parts of potash water-glass, 100 parts caustic ammonia, 10 parts caustic potash, and 12 parts marble powder, and decanting this from the residue. After fixation, which must be done four to five times, at a temperature of 100 deg. to 120 deg. F., the painting must be washed with carbonate of ammonia, then with water, and finally impregnated with a solution of paraffine in petroleum ether.

TO MARK TOOLS

COAT the tools to be marked with a thin covering of wax or hard tallow by heating the steel, rubbing the wax over it while warm until it melts and then allowing it to cool. Now scratch the mark in it with a sharp instrument and pour on nitric acid, rinsing the acid off with water, after a time; finally heat the metal until the wax melts and wipe it off. The mark appears as though engraved.

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YELLOW beeswax is cut into very fine shavings and protected from dust, and dried at ordinary room temperature for 10 to 14 days. The wax must then be mixed in a mortar, having a rough surface, with an equal quantity by weight of rice starch. The mixing is effected at the lowest possible temperature without rubbing. The powder mixture is finally passed through a fine tin strainer.

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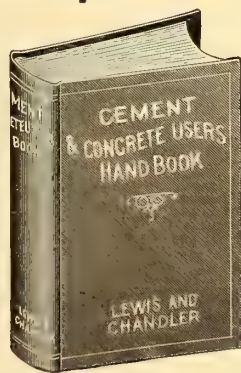
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How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

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CONCRETE. A general article on its merits and defects. *Scientific American Supplement* 1543.

REINFORCED CONCRETE. Some of its Principles and Applications with practical Illustrations. *Scientific American Supplements* 1547, 1548, 1551.

ELECTRONS AND THE ELECTRONIC THEORY are discussed by Sir Oliver Lodge in *Scientific American Supplements* 1428, 1429, 1430, 1431, 1432, 1433, 1434.

WIRELESS TELEGRAPHY. Its Progress and Present Condition are well discussed in *Scientific American Supplements* 1425, 1426, 1427, 1386, 1388, 1389, 1383, 1381, 1327, 1328, 1329, 1431.

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AMERICAN HOMES AND GARDENS



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Some good planting about the front of the house

AMERICAN HOMES AND GARDENS



Volume VIII

May, 1911

Number 5

The Small House of To-Day

By Francis Durando Nichols



THE leading principle on which the foundation of human happiness is built to-day centers in the home life of the people. With a house that is well designed and planned, and placed in a charming setting, the busy man soon forgets the anxieties and perplexities of his business life in the enjoyment of home and its surroundings. A tendency has been rapidly developing for the urban business man to live

in the country. Transportation facilities, which have so greatly increased during the past few years, have made it possible for the brain-worker to spend part of his time among nature's surroundings, where he may find relaxation and repose, for here is where he can in reality enjoy life. The introduction of the modern country house as an important feature of building has undoubtedly been influenced by the great desire to live in the country and to be surrounded by all the comforts and utilities of a city home. There are



A house built of stone and stucco

certain features, however, which are absolutely necessary for a home to qualify as a dwelling of the latest period. One of the most difficult problems which confronts all architects at the present time is the building of inexpensive houses combining certain characteristics which make them distinctive and at the same time embracing all the essentials and appointments of the up-to-date house. Messrs. McIlvaine and Roberts, architects, of Philadelphia, have been very successful in this direction in the designing of the moderate sized country house. A study of the dwellings illustrated herewith will show the fine points of construction; a glance will show the atmosphere which distinguishes one from the other, yet all in harmony.

The first house illustrated is that of Mr. W. L. Haehulen, at Cynwyd, Pa., and it presents a dwelling of unusual merit in its design and plan. It is constructed of rock-faced stone for the first story and stucco for the second, the whole being given a coat of whitewash, while the trimmings are painted white. The building is rectangular in form and the chimneys and porches are the architectural features of the exterior of the house. The entrance, with its hooded cover supporting a bay window above, is an interesting feature of the façade.

Crossing the threshold, one enters the hall which extends through the house, and which contains an ornamental staircase with white-painted balusters and a mahogany rail. This ascends to the second and the third floors. The woodwork of the hall, as well as that of the entire house, with the exception of the service part, is painted white.

To the right of the entrance is the living-room, with exposures on three sides of the room. A large open fireplace with brick facings and hearth and a Colonial mantel occupies the center of the wall space opposite the entrance to the room. French windows built at either side of the fireplace open onto the living-porch built at the side of the house. This porch is separated from the entrance and has a brick-paved floor.

The dining-room to the left of the hall is provided with a similar fireplace and connects with the service part of the house through a butler's pantry, which is fitted up with butler's sink and dressers complete. This pantry, the kitchen and the laundry are trimmed with yellow pine, and

are provided with all the best modern improvements.

The second floor contains four bedrooms and two bathrooms. Each of the bathrooms is so arranged as to be accessible from two of the bedrooms. The bathrooms have tiled wainscotings and paved floors, and are furnished with exposed nickel-plated plumbing.

The second house illustrated was built for Mr. H. Norman Thorn, at Ardmore, Pa. It is an attractive house constructed of rock-faced stone and half-timber work. The

rough plaster, placed between the beams of soft brown stain, adds a touch of color to the rugged surface of the stone of which it is constructed. The house is built on the side of a hill, with the rear facing the woods, consequently it was deemed advisable to place the living-porch at the rear of the living-room, from which access to it is obtained.

The hall is trimmed with oak and so is the living-room and the dining-room. The staircase, which is built at the rear of the hall, is turned out

of oak in an ornamental manner. The living-room has a beamed ceiling and an open fireplace with stone facings, brick hearth and a mantel. The dining-room is of good dimensions and the pantry and the kitchen occupy the remainder of the first floor. There are three bedrooms and a bathroom on the second floor. The bedrooms are painted white and the bathroom has tiled wainscotings and floor, and porcelain fixtures.

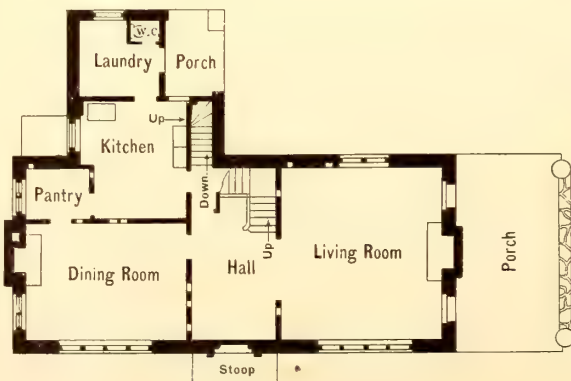
The third house, which was built at Cynwyd, Pa., is of English design, and is constructed of rock-faced stone laid

with wide white mortar joints, in the first story, and half-timber work for the remainder of the building. The beams are stained brown and harmonize with the soft gray tone of the stucco. A stone chimney with a brick top is a feature of the exterior.

The living-room contains a large open fireplace with stone facings and hearth and a mantel. French windows open onto the living-porch, which has a floor paved with brick. The dining-room is provided with a bay window, and a fireplace with brick facings and hearth and a mantel. The large butler's pantry, the kitchen and the laundry are trimmed with yellow pine and are provided with all the best modern appointments. The second floor is painted white and contains four bedrooms and two bathrooms, the latter



The chimneys are a feature of this house



First floor plan



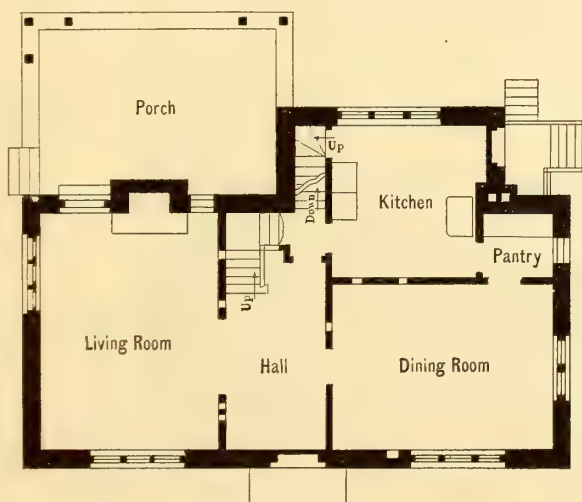
Second floor plan



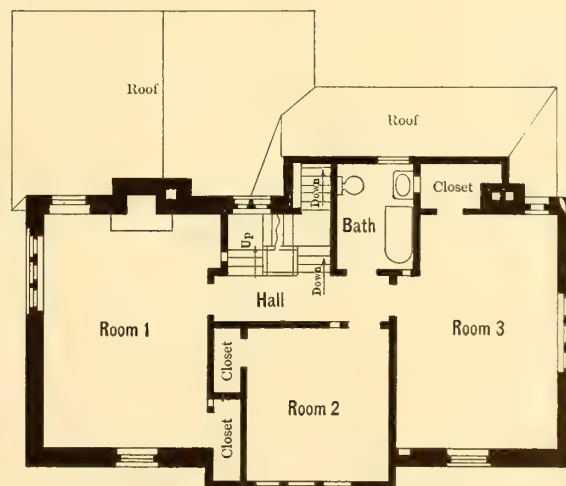
A house built of stone and half-timber

having tiled wainscoting and floors, and porcelain fixtures.

The fourth house illustrated was built for Mr. Charles R. Scull, also at Cynwyd, Pa., and represents a different type of house. The piazza with its stucco columns and brick-paved floor is a feature of the exterior. The first story is built of rock-faced local stone, laid with wide white mortar joints, and the second story of stucco. The hall extends to the rear of the building, at which point the stairs ascend in combination with the servants' stairs. A broad opening from the hall forms an access to the living-room, opposite which is a cluster of small windows, which occupies a considerable space in the wall of this room facing these openings. The fireplace has stone facings and hearth and mantel. The arrangement of the service part of the house is most complete. There are four bedrooms and a bathroom on the second floor.



First floor plan



Second floor plan

more, at Ardmore, Pa., is a more advanced type of English country house than the one shown in the second illustration. It is constructed of rock-faced stone for the first story and brown-stained beams and rough stucco for the second. The small lighted windows and the chimneys are features of the architectural scheme. The hall, living-room and dining-room are trimmed with oak. The living- and dining-room

have open fireplaces. French windows open from the living-room onto the living-porch, which has a brick paved floor. Access to the kitchen from the dining-room is obtained by way of the butler's pantry. The

second story is painted white and contains four bedrooms and two bathrooms. The latter are furnished with tiled wainscoting and floors, and porcelain fixtures.

The sixth house illustrated, and built for Mr. Joseph H. Kleckner, at Cynwyd, Pa., is of a different design from the one already described. It has a lean-to roof that extends



A stone and half-timber house

down and forms a roof for the porch, which extends across the front of the house and is supported on stucco columns. The first story is built of rock-faced stone and the second story is shingled. The entrance is direct into the living-room, from which the stairs ascend to the second story. This room has a large open fireplace with stone facings and hearth and a mantel. A broad opening permits one to enter the dining-room. Both the living- and dining-room are trimmed with chestnut, finished natural. The kitchen, pantries and laundries are trimmed with yellow pine. The second floor contains four bedrooms and a bathroom, the latter having a tiled wainscoting and floor, and porcelain fixtures.

The third floor of each house illustrated contains extra guest-

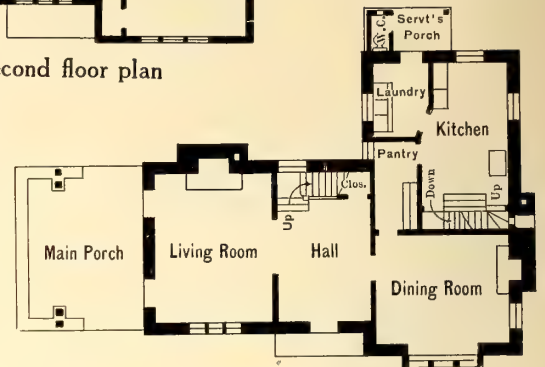
rooms, servant quarters and trunkrooms. The cellar of each of the houses have cold storage room, fuel-rooms and heating apparatus.

Throughout all the houses, great restraint has been exercised in the design of the interior woodwork, and an attempt has been made to keep it within the confines of simple treatment while maintaining general excellence of proportion. The desire has been to attain the reposeful freedom of atmosphere peculiarly appropriate to a country house intended for all the year occupancy.

It is comparatively easy, or it ought to be so, to understand the reason for the success of these houses, for there is no question about the high character of their design or the successful execution of their construction. This success is due to simple



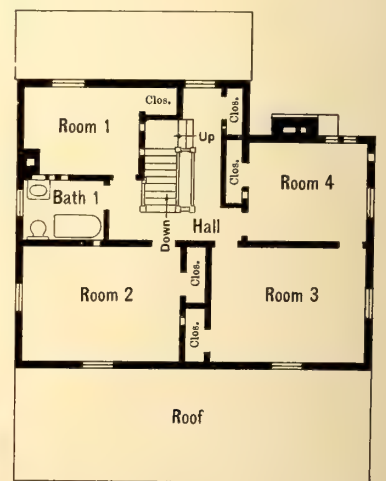
Second floor plan



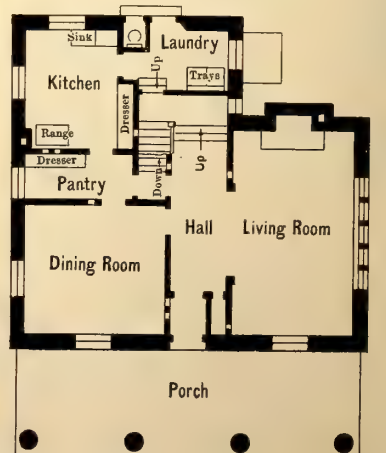
First floor plan



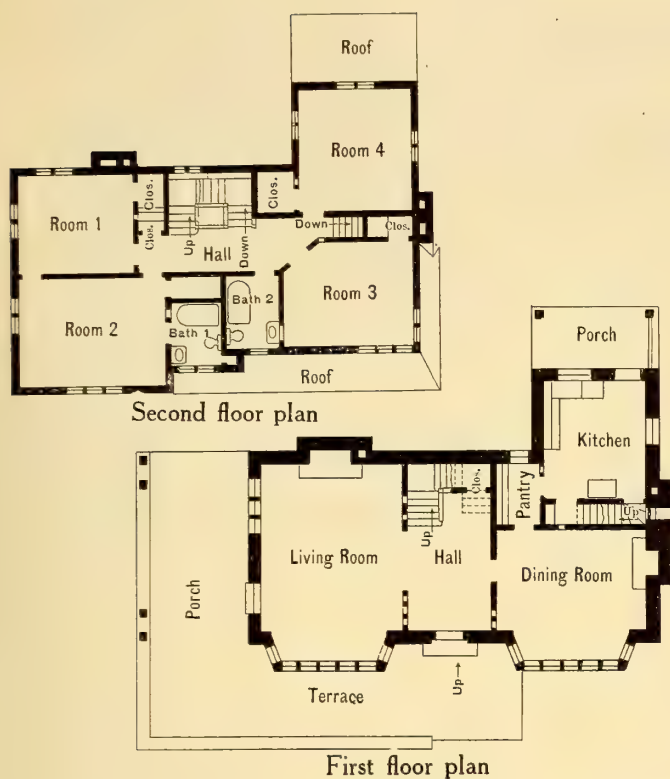
A house of simple design constructed of stone and stucco



Second floor plan



First floor plan



A house of English character

treatment, for interesting as they are in a very real and pervasive way they are above all things of the best, in true and artistic simplicity, for a house must be artistic as well as simple to have successful architectural character; it must be well designed and well built; it must be suited to any requirement that may be demanded of it and available for any use for which it may be desired. All these as well as many other matters are well solved and given expression in these delightful houses. Very different in design as they are, they possess a distinct individuality in style so pronounced, indeed, that the fact of a common authorship needs to be known before it can be recognized. The versatility of the architects is well illustrated in the design of these dwellings, for

in no instance is there a duplication of architectural thought. These houses, therefore, point a valuable object lesson for individuality in house design. This is quite as essential to the success of an estate as the development of the grounds, and the decoration of the various rooms contained in the interior. The illustrations which accompany this article show how varied and how interesting these dwellings are. Here, then, is a series of houses that represents the best in modern domestic architecture. They do not constitute a group, for they are absolutely unrelated, and the mere fact that each one of the houses has been designed by the same architects has not influenced the purpose of these houses either in their style or in their construction.



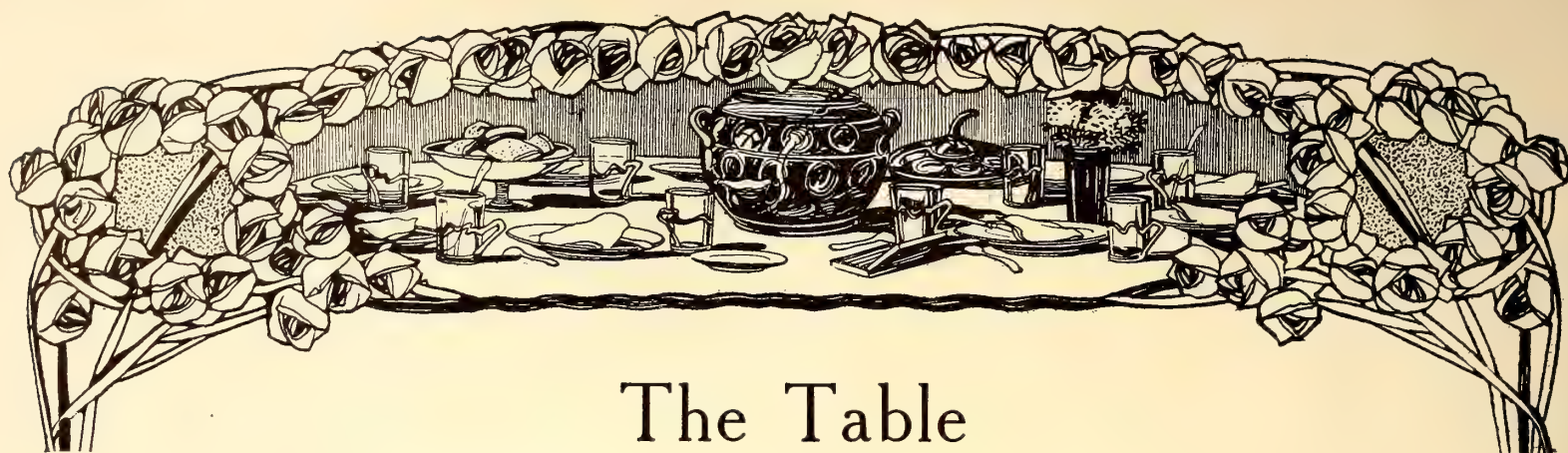
Second floor plan



First floor plan



A house with a lean-to roof



The Table

Flower Arrangements

By Edith Haviland

Photographs by Mary H. Northend

ALONG with the marked progress in the larger, more important details of home making is the attention now paid to those that are contributing to the general effect, but of a less prominent and more impermanent character. Among the latter there is nothing that gives a more distinctive charm to a home than flowers and plants. A conservatory may be an object of envy as a luxurious attachment to a house, but its specific value lies in its being a source of supply for flower and plant decoration throughout the various rooms.

I have seen a small plant room opening from a dining- and a living-room that gave as much satisfaction as an elaborate winter garden, and an inclosed piazza filled with growing plants of humble origin give more pleasure than a well-stocked glass house. In both cases the enjoyment was not limited to the plants as a collection, but by their transference from time to time into the living-rooms.

A tiny greenhouse belonging to a suburban dwelling was so skillfully conducted that it yielded not only flowering and foliage plants, but a constant, if limited, supply of carnations and roses throughout the cold weather.

In every household there is usually one lover of flowers to whom no thought nor trouble on their behalf is too great, and to whom success seems to come as if by magic. Who has not heard the remark, or made it himself, that "Miss So-and-So could make a garden in a desert." Or, that such a person "could make a bouquet out of nothing."

Cut flowers especially seem to know the hand that loves them and respond to its influence, and as they are transferred from the garden or the florist's shop to the home they offer themselves for many unique and varied decorations.

While the conventional holder for a floral centerpiece for the dining table is some kind of vase or jar in pottery or glass, there is nothing more attractive, especially for the out-of-town home, than a shapely basket in which a bowl of water is fitted.

So much interest is turned now towards handicrafts of all kinds that basketry has taken a foremost place with both amateurs and professionals. Some of the hand-woven baskets, in the natural color or stained in artistic tones, are peculiarly well adapted for flower holders. There are also Japanese baskets of dark-brown wicker work that give a color base for a bunch of flowers.

In the illustrations the baskets are of different shapes, but each is well-made and symmetrical, and the wide opening at the top of each permits a graceful display of blossoms.

We owe something to the Japanese for teaching us the beauty of single flower decoration—a contrast to our own too lavish assortment of kinds and colors. One beautiful rose in a slender glass vase will impart a touch of refinement to a room where a massive bouquet of many varieties of blossoms contributes only a sense of confused display.

It takes some originality of thought to make new and interesting combinations of flowers for the dining table, but



Pinks and pine needles



Tulips and pine



Lily of the valley and violets with pine are good



Roses and pine intermixed in a green basket

one cannot fail to accomplish good results with only one kind of blossom, if it is supplied with plenty of green leaves as a supporting background. With a basket holder that is graceful in shape, the eye is gratified not only by beauty of color, but beauty in line.

In the illustrations the long-needle pine is the motive for some charming floral combinations. Pinks, tulips, lily of the valley, roses and apple blossoms are utilized, each giving the color note in a quaint and unusual setting. The simplicity of this arrangement could hardly be exceeded, yet the artistic result is most convincing. The round-shaped baskets would, naturally, look best upon a round table, and the oblong basket be most suitable on a square or oblong table.

A charming idea that is followed out each spring in a country home is to bring in from the woods a full-flowered plant of wild violets and fit it into an earthen casserole. As long as the blossoms are fresh, this decoration is kept on the dining table. Other wild flowers are transferred in the same way for the living-room and piazza—cowslips, or marsh marigold, columbine and azaleas.

In arranging flowers for the dining table it is well to keep to rather low effects, or, if tall flowers are used, they should be grouped so they do not obscure the people who are to be seated. The latter is possible with carnations and stevia, or roses and maiden-hair fern.

In a parlor or living-room the tall effects are often the most satisfactory, breaking up the formality of long spaces.

During the summertime when the piazza becomes the chief sitting place for the household the flower arrange-

ments may well extend to this space. The thrifty homemaker will be prepared with flower holders of more substantial make than are in use inside the house, and whose possible breakage will not entail the expense of a finer ware.

Large green jars to stand on the floor can be filled with wild daisies; big brass bowls may hold wild asters and golden rod; the blue-and-white ginger jars may also be utilized for roses and garden flowers.

Hanging roses, for cut flowers are now made for us by the Japanese, and some of the prettiest of these are laced with wicker work. These are particularly suited for holding a few choice flowers that one wishes to protect from the wind.

Plant boxes are generally accepted now as a part of the furnishing of an open or closed veranda, and increased attention is being given to their construction from the artistic standpoint. Their decoration should, however, be kept subordinate to the flowers that they are to hold, as they are merely the frame to the picture.

On the right combination of colors of the plants in boxes depends their success as a decorative element. Nasturtiums and red geraniums are pleasing together. Pink geraniums, pink begonias and sweet alyssum are another satisfactory combination. Marguerites may be fitted in with any colored flowers to advantage.

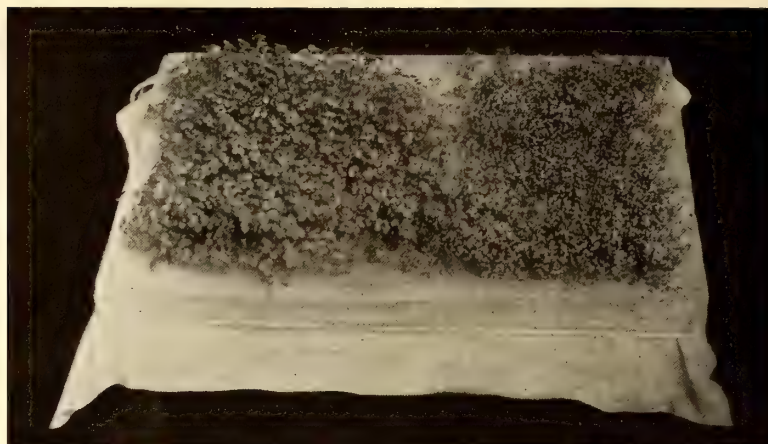
Flower boxes realize in concentrated form, so much garden pleasure, that it does not seem a waste of money to change the plants from time to time as they cease flowering.



Wild roses and pine in a small basket are sometimes used



Apple blossoms show well, mixed with pine in white willow basket



The growing crop of mustard and cress

Salad at any Time of the Year

By S. Leonard Bastin

THERE are few things in the household more prized than a supply of fresh salad. In the town residence, and it is to be feared in a good many country places as well, the regular use of greenstuff is not the recognized feature which it should be. Of course, everything depends upon the material being newly gathered, and nowadays, when the city dwellers must depend so much upon the shops, this is not an easy matter. By a little arranging, however, it will be possible to scheme so that a regular supply of salad may be secured, not only in the summer, but practically throughout the whole year. The method of culture which is outlined in the following paragraphs can be carried out in almost any situation; indeed the average living-room is well suited for the purpose.

The particular greenstuff which it is so easy to grow is the ever popular "mustard and cress." In all the salads which are available for the table there are not any more acceptable than the tender leaves of the bright, green seedlings. The old-fashioned manner of producing mustard and cress was to sow the seed on the garden bed or perhaps in boxes of soil, but this has been entirely superseded by the modern method. No earth or similar medium is required at all, and the culture throughout is so clean that even the most fastidious will find nothing to offend.

In order to get ready for the production of the salad it is first of all necessary to construct a frame-work of wood. This should be made of four pieces about two inches deep, and rather thin in proportion, tacked together in the form of a square or an oblong. For those who wish to save themselves the trouble of making a frame it may be pointed out that excellent substitutes are to be found in the sides of wooden sweet boxes, when the bottoms have been knocked out. It may be well to strengthen the frame somewhat in this instance by the addition of a few tacks to those already in place. In

order that a succession of crops may be obtainable it is wise to construct several of these frames, so that a number can be in use at the same time.

The next step will be to secure some large pieces of flannel. This material should be of good quality, rather thick in texture, and if it is not new, it must be strong and in good order. The pieces of flannel should be cut to allow a good inch all round beyond the size of the frames. Now get some strong twine, and after stretching the flannel over the frames tie the cloth round the woodwork, in the manner shown in an accompanying illustration. The flannel should be quite tightly strained over the frame, and as this is rather difficult to do, it may be useful to indicate a different method. This is only applicable when new flannel is being used and the mode of procedure consists in tacking the cloth around the sides of the frame instead of tying with twine. Get the stuff as tight as you can, but as a final measure thoroughly saturate the flannel with water. When dry it will be found that the shrinking of the cloth will have tightened it up so that it is almost like the surface of a drum.

Mustard and cress seed is to be obtained at any garden store. The seeds are sold separately, and a few cents will command a sufficient quantity to make a good start in the growing of the salad. The germination of cress seed is a comparatively slow process when compared with the rate at which the mustard will come to perfection. On this account the cress, the seeds of which are the small brown ones, should be sown first. Take one of your frames which has

the flannel in position and sprinkle the surface of the cloth with water. Now with a small spoon take a quantity of the seed and scatter it rather thickly over the flannel, trying to spread it as evenly as possible. If the starting of the seeds is wanted to take place quickly the frame should be removed to a dark cupboard; it is a well established scientific fact that seeds always germinate more rapidly when light is absent. The matter of temperature is of some importance and a fairly warm



The seeds should be well watered

place should be selected. As showing the possibilities which exist in any house in this direction, it may be mentioned that excellent crops of mustard and cress have been raised on the hot water cistern which supplies the bath. All the while, careful attention must be paid to watering, and if the seeds are in a very warm place it will be necessary to supply moisture three or four times a day.

At the end of the fourth day, if all has gone well the cress seeds should have burst through their protecting cases. The time has now come to sow the round, yellow seeds of the mustard. It will not be necessary to scatter these quite so thickly as was done in the case of the cress. As the little cress seedlings will now be coming on apace it will hardly be possible to keep the frame in a completely dark place during the germination of the mustard seeds. Some other plan must be devised to keep the strong light away, and perhaps one of the best is to get a piece of stoutish cardboard and place this over the mustard seeds. It is wise to keep the covering-in material saturated with water. In about two days the seedlings will have burst through their cases and we may then take away the shelter. It is not well to keep the growing salad in a place where the illumination is very strong, although we must allow sufficient light to ensure that the leaves shall take on a nice, fresh green color.



Adjusting the flannel to the growing frame

If the frame is put in front of a window, or any place where the light all comes from one direction, the seedlings should be turned around daily so as to make certain that the growth of the stems is fairly upright.

In about a week or ten days, the actual time varying with the degree of warmth which is available, the crop will be ready for cutting. It is hardly necessary to say that the mustard and cress should not be gathered until just before it is required for use.

A good, keen knife is the best implement to cut the material with, the upper part of the little plants being grasped with the thumb and finger, and the severance being made close to the roots.

The salad not being in the least soil stained, will not require washing in the ordinary way; all that is necessary being a rinse in a bowl of clean, cold water. The greenstuff is then ready for use.

Of course, the pieces of flannel may be used again and again, but after the growing of a crop it is desirable to free the material from the remains of the roots before making a further sowing.

This is not quite so easy as it may appear to be at first sight, and perhaps the best way of cleansing the cloth is to let it get quite dry and then to spread it on a hard board and brush it quite clean.

Ice Cream as a Health Food



THE State experiment station at Ames, Iowa, has invented a new frozen dairy product called lacto, which contains large numbers of lactic acid bacteria in a dormant condition. Metchnikoff, the famous Russian scientist, who is at the head of the Pasteur Institute at Paris, says that in a considerable measure old age is caused by the putrefactive bacteria in the intestines. These bacteria produce toxic poisons which cause ill health, old age, and finally death. He recommends as a remedy the taking into the body of lactic acid bacteria. These are entirely harmless, and they produce an acid condition in the intestines which is fatal to the putrefactive microbes.

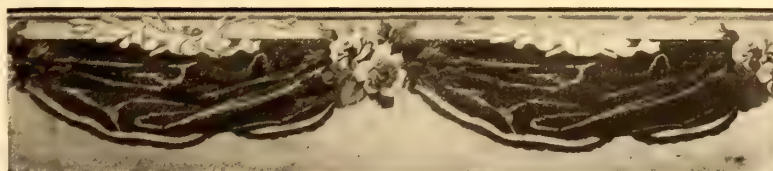
In certain districts of Bulgaria, where sour milk forms the principal article of diet, the people live to an old age not approached elsewhere. People in America do not take kindly to sour milk, and it was with the thought of furnishing lactic acid bacteria in a more palatable form that lacto was introduced.

The palatability of lacto is shown by an experiment carried on at Ames. Out of 179 persons who sampled lacto, 128 pronounced it very good, 37 good, 6 fair, and 8 poor. Comparing it with vanilla ice cream, 111 reported that

they preferred lacto, 9 considered it equal to ice cream, and 59 preferred the ice cream. Comparing lacto to sherbet, 123 preferred lacto, 30 preferred sherbet, and 6 considered lacto equal to sherbet. At the college creamery both lacto and ice cream were made and sold at the same price last summer. An average of eight days' sales showed that 46.8 per cent. of the sales were of lacto. This is a very remarkable showing for a new product.

Lacto is made of loppered whole or skim milk, with the addition of sugar, eggs, lemons and flavoring material. It contains less fat than ice cream, but more protein. It has a much higher food value than sherbets and ices. Lacto can be made at a lower cost than ice cream. It cannot be so easily adulterated with gelatin, gum or corn starch. It is more digestible than ice cream, and can be eaten in almost any quantity without ill results.

Freezing does not hurt the lactic acid germs, and they retain their vitality even after the product has been stored for some time in the frozen condition. Bacteriological analyses of lacto show that it does not contain any other forms of bacteria than the lactic acid produces. This is notwithstanding the fact that no especial pains were taken to keep other bacteria out of the product, and goes to prove that lactic acid is fatal to putrefactive bacteria.





Handicraftsman

Conducted by
A. Russell Bond

Designing a Bilateral Stencil

By Catherine A. Jensen



MUCH has been written about the art of stencilling; about the fabrics, the colors and the methods to be employed, but the stencil itself one is supposed to purchase ready made.

However, it is not always possible to find in the shops a stencil that conforms exactly to our ideas or that harmonizes with the surroundings in which it is to be used. Besides, there is a certain satisfaction in having the work all our own from start to finish, and also in being the proud possessor of an original design not to be found in the public market or obtainable by every chance purchaser who may have the price.

A bilateral stencil is easily made and is often surprisingly beautiful, considering how little time and talent are necessary to its development.

A piece of medium weight drawing paper, either oblong or square, according to the proportion of the required stencil, is folded through the center and placed doubled, ready for drawing, with the open edge to the left; the drawing is begun on the right or closed edge of the paper, which when opened up will form the vertical axis of the design.

Any flower or decorative form may be used; either followed closely as to structure or used simply as a guiding motif. The only important rule that we must have in mind is the one of growth or "tangential union" as it is called. A very simple matter—merely to remember that lines spring from about the same center and must have a harmonious relation to one another. This is well illustrated by the Greek anthemion shown in the headpiece.

For a simple stencil let us take for instance the flag lily, Fig. 1, or "fleur-de-lis." We begin with one of its three upright petals, drawing only half of it against the folded edge of the paper (A) (on being cut and unfolded it will appear complete). The right edge (B) of the next petal is drawn tangential to the first petal; the form of the left edge (C) of the second petal is optional; again the right edge of the third petal (D), which is next in order to be drawn, must be tangential to the left edge of the second petal. In other words, opposite edges must be harmonious.

The spaces left among the petals or forms

should not be larger than required to hold the paper together—one-eighth to three-sixteenths inch is about right for the usual size of the stencil.

In the proportionate area of one form to another, *i. e.*, petals, calyxes, leaves, etc., we must follow as closely as possible to the facts as shown in our flower or plant. Nature is infallible in this law of beauty.

In making abstract designs (which it is not advisable to do at first), avoid repeating forms of exactly the same shape and area. Neither should one draw meaningless forms, mere uneven shapes having no relation to one another, and with no claim to beauty in either line or proportion. One cannot make a beautiful whole by combining several ugly or indifferent parts.

The second motif used in Figs. 2A and 2B, is based on the early spring flower sometimes called "bleeding heart." A little more latitude is allowed in these two designs, particularly in Fig. 2B. The lines, instead of running parallel or nearly so, aim to form between them a space that is graceful in shape and suitable in size.

Large forms are sometimes divided into several parts, the separation occurring at the most slender or delicate portion of the shape (Fig. 2A) to prevent the breaking of the stencil, and also to add variety to the design.

The subject for the fourth stencil, Fig. 3, is the peacock feather, treated with the necessary freedom that its construction requires, that is, highly conventionalized. Developed in a harmonious mingling of blue, green, brown, and a little orange, as suggested by the natural object, it makes a beautiful stencil design.

For a beginner, however, it is wiser to use but one, or at most two colors, in any design, and these need not in any way depend on the true color of the object used as a motif. We are in no way startled by Delft pictures of blue wind-

mills and trees, or by studies of the human figure sketched in red chalk by the old masters, for a combination of graceful form and beautiful color is the requirement in good design—something that will conform to the surroundings in which the decorated object is to be used.

In cutting out the stencil the paper must be held double, as when drawn upon; if a board and sharp knife are not available, the paper may be held in the hand and

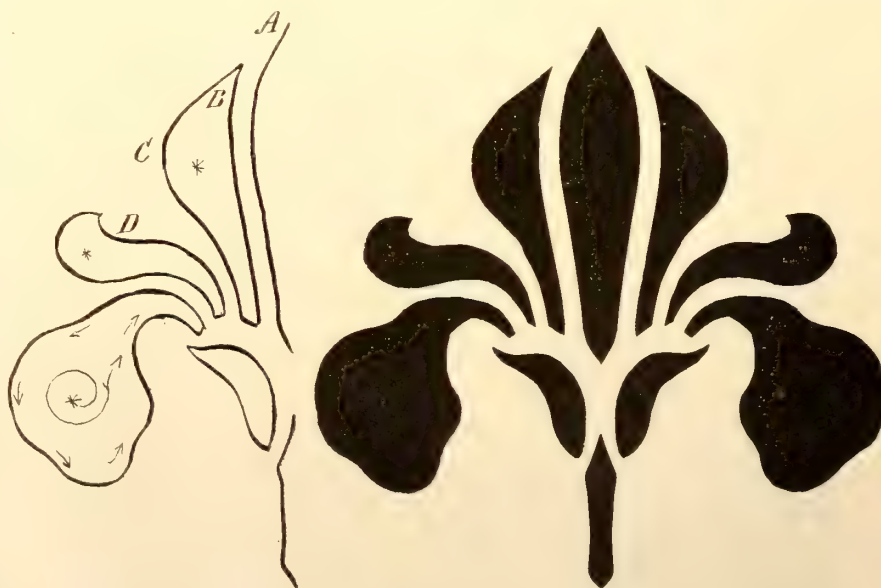


Fig. 1—Drawing and stencil of a "fleur-de-lis"

cut with a small sharp-pointed scissors; in this case, however, all forms that are not directly on the folded edge must be begun by piercing the center with the scissors point and cutting out a small piece so as to give freedom of movement

There are numerous stencilling mediums on the market, prepared oil colors, dyes, etc. One of the simplest and the cheapest, entailing very little trouble, is the ordinary wax crayon used by school children. It comes in boxes of as-



Fig. 2A—"Bleeding heart" design



Fig. 3—Peacock feather design



Fig. 2B—Variation of the "bleeding heart"

for the scissors. If the cutting is begun directly on the line of the design it is very apt to tear. One of the stencils, Fig. 1, is marked with a star to show the beginning of the inner cuts. Then follow in the direction of the arrow.

sorted colors, and can be blended by working one color over another; it can be used on any material, even on suede leather or chamois; when applied to linen, silk or any washable material it is made permanent by pressing with a warm flatiron.

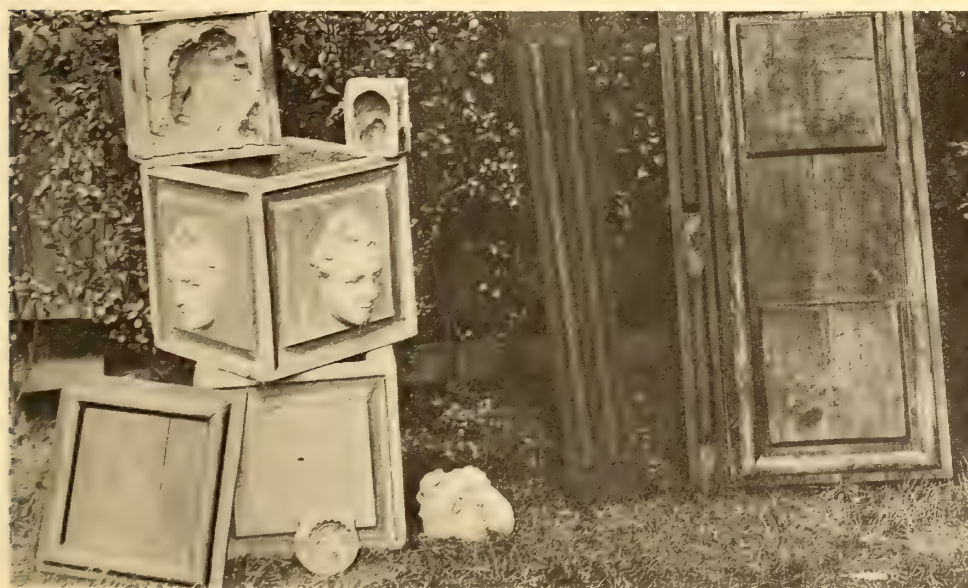
Home-Built Ornamental Flower Urn



THE highly decorated flower urn pictured below was not made by a sculptor, professional or amateur. Yet the carving appears to be rather good. Inspired by a series of articles on concrete garden furniture, which was published in AMERICAN HOMES AND GARDENS not long since, Mr.

Robert Spinner, of Weehawken Heights, N. J., determined to make some experiments of his own. Instead of paying \$125 to \$200 for a large flower urn for his front lawn, he

of a face was thickly covered with oil and set in a box filled with soft plaster of Paris until the plaster set. The mold thus formed was then oiled and filled with cement. In this way the cement faces were cast, and then they were secured to the sides of the urn with pure cement, neatly wiped so as to conceal the joint completely. Success with the small model encouraged Mr. Spinner to make the large urn. All the ornamental features were cast separately, and cemented to the sides of the urn. The monkey faces were taken from a beer pitcher, the moon faces from a jelly mold,



Preliminary work and molds for the large urn



Completed concrete flower urn

undertook to construct one himself out of concrete. First a small model was made, which is shown in the illustration at the left-hand side. The sides of the mold were put together with screws, so that they could be taken apart without danger of breaking the concrete. Then a plaster model

and the spheres were cast in a five-inch copper ball. The ball was cut in two, and each half was completely filled, after which the two hemispheres were closed one upon the other, so as to make a solid ball; a method which obtains success as marked as that in the case of the small model.



The rear of the house showing the court

A Bungalow Made of Terra-Cotta Blocks

By Mary H. Northend

Photographs by the Author



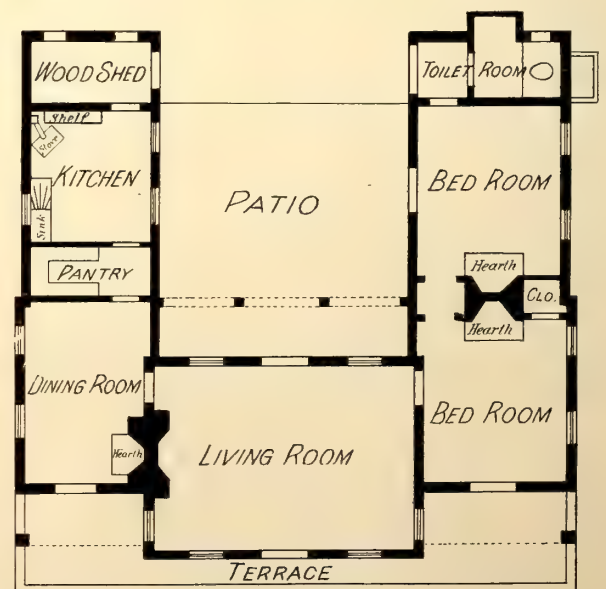
LAIN and substantial in appearance, the bungalow home of Mr. F. R. Bangs, at Wareham, is most attractive. It was designed primarily for comfort, and its well-planned rooms and picturesque environment tend to produce this desired result. The low, sweeping lines of the exterior afford the appearance of ample space, and the two wing-like projections adjoining the main portion, break the monotony of straight lines, and, in addition, constitute with the front part three sides of a hollow square.

The front of the dwelling faces the ocean, and surrounding the remaining three sides are tracts of woodland. Emerging suddenly from a wooded path, one cannot fail to be impressed with the picturesqueness of the whole. The light and dark tints of the terra-cotta block exterior, combined with the red of the brick columns laid on cement foundations, the gray of the slate roof, and the white of the wooden window shutters, contrast charmingly with the varied greens of the trees, and the deep blue of the water.

The house in finish is semi-fireproof, most of the floors being of brick, and many of the partitions of terra-cotta blocks, with sills of cement. On either side of the main front are loggias, used as outdoor living quarters, and connecting by dull-finished North Carolina pine doors with interior apartments. A narrow brick terrace



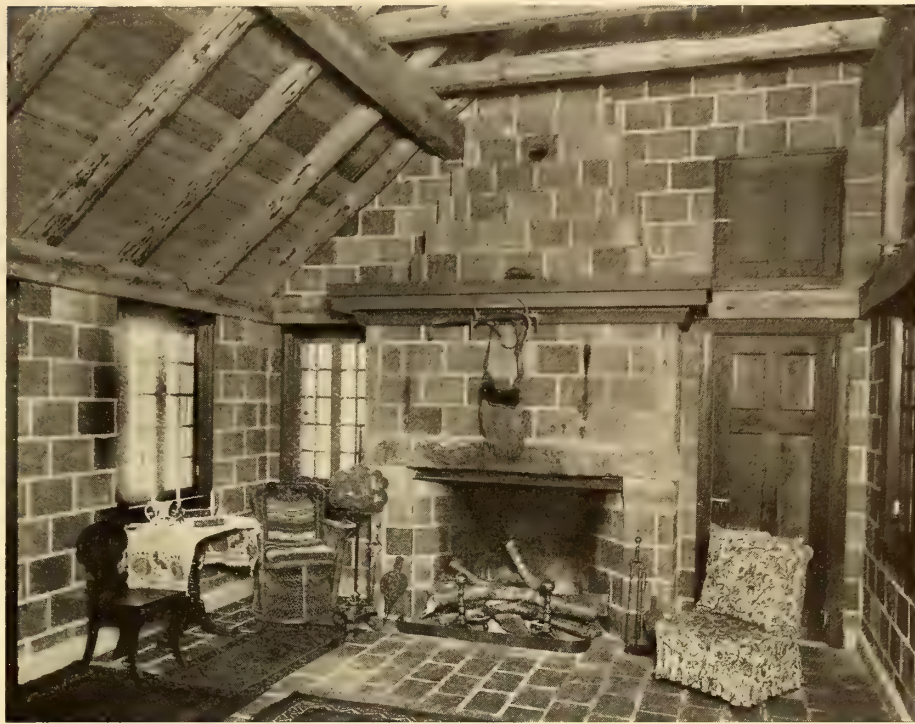
The front of the house



Floor plan

extends across the entire front, and from here the entrance door opens into a spacious apartment which serves the two-fold purpose of living-room and dining-room.

Here the wall finish is of terra-cotta blocks, and the floor of deep red brick. The rafters are left exposed to view in their rough finish, and beneath the eaves at one side is convenient storage space. Small-paned windows, of the casement type, are plentifully provided, and the paneled doors,



The living-room

is used for storage purposes. A similar recess tops the door at the end of the dining-room portion.

To the right of the living-room open two connecting bedrooms, each provided with a cement fireplace with a brick hearth. The finish of these apartments is North Carolina pine, the walls being entirely paneled in this wood. The windows here, as in all the rooms of the bungalow, are of the casement type. Beyond is the toilet.

To the left of the main apartment is



The kitchen



One of the bedrooms

three inches thick, opening into connecting rooms, are in keeping with the dignity of the whole. The feature of the apartment is the great fireplace at one end. Above the opening proper is a slab of fieldstone, and adorning the chimney-breast at a point level with the window tops is a mantel of North Carolina pine. At the right is a closet, and just above is a small door which opens into a recessed space, lighted from the outside by a casement window, which



The dining-room

the den, finished in North Carolina pine, and characterized by a handsome terra-cotta block fireplace. From here leads a bedroom, and beyond is the kitchen, showing a finish of North Carolina pine, with buff-tinted plaster walls, and floor of brick. This wing ends in the woodshed, equipped with separate exterior entrance.

One of the illustrations shows a kitchen provided with plastered walls and paneled partitions.

The cost of the house complete was \$3,500.

The Modern Kitchen

By George E. Walsh

WE accept without question the idea that the kitchen should be both clean and sanitary, but we are not always so sure that the "efficiency" of the kitchen is a matter of vital importance to every member of the household. Yet the kitchen is the laboratory of the house where are prepared all of our meals and where nearly three-fourths of the actual housework must be performed. The arrangement and equipment of the kitchen must, therefore, exert a more or less influence upon the whole matter of house-keeping, even to that of keeping servant girls. A dark, gloomy, and poorly arranged and equipped kitchen has

nearly 1,100 meals a year, it is estimated that a woman will have to walk about 200 miles, if the distance from the kitchen range to the dining-room is only 25 feet. If we add five feet to this walk, as the result of an unnecessarily large kitchen, the number of steps required will increase the distance by some 40 miles a year.

There should be some definite ratio between the size of the economically arranged kitchen and the size of the house. Reduced to a scientific basis, it is estimated that for a house suitable for a family of five or under, the kitchen should average ten by twelve feet, and for larger families twelve by fourteen would be sufficient. Seldom should the kitchen exceed fourteen by fifteen feet even for the larger houses. Economy of time and labor in the kitchen must in this respect be considered as the most important factor in its efficiency. Architects in cities where buildings touch one another find the problem of designing the kitchen, so as to get the maximum of daylight in it, a most difficult and puzzling one, but it is a maxim of the profession that the kitchen must in some way be arranged around the outside of the house, if it can be possibly done, so that there are outside openings. Even so it is not always accomplished. But in the suburbs and country no such problem confronts the designer. It is easy enough to build the kitchen so that it will get all



Fig. 1—A convenient arrangement of kitchen sink and closets.

been responsible for the loss of many good girls, who, otherwise satisfied, would not consent to work under such depressing surroundings.

Until recently architects have not given the designing of the kitchen its proper value. It was generally the last room to consider in making plans for a house, and consequently it was tucked away in some corner without much thought of its suitability or efficiency. Even its size was not carefully considered in its relationship to the rest of the house. Even to-day we find this matter of size of the kitchen one of great variation. One house will have a small, cramped kitchen, and another an unusually large and commodious affair. Both are wrong from the standpoint of the housewife who must use her kitchen as a workshop. The objections to the large kitchen may be apparent from a little calculation. For instance, in the preparation of



Fig. 2—A different arrangement with the same principle of economy of space as Fig. 1

the daylight needed. But for sanitary and other reasons, the kitchen of the country house should be arranged so that it will get sunlight as well as daylight, for at least a few hours of each day. The sun is the greatest purifier and



Fig. 3—The kitchen has an abundance of light, which is essential

destroyer of germs, and its entrance into the kitchen for even a short time will do much toward improving the sanitary conditions.

The ideal location of a kitchen in the country is on the north, with windows on the east or west. This permits the sun's rays to enter it a part of the day without unduly heating it in summer, as may be the case where there is a southerly exposure. For the sake of ventilation windows should be placed on at least two sides, so that a cross draft can blow all the odors away.

The interior arrangement of the kitchen must to some extent vary according to local conditions, but there should always be considered the question of economy of time and labor. The grouping of kitchen range, sink, gas stove, and closets so that one does not have to cross a long space in walking back and forth from one to the other is a matter worthy of careful attention. Some well-arranged and equipped kitchens of various sizes are shown in the illustrations, and they will help to demonstrate this point of economical efficiency.

The illustration shown in Fig. 1 represents a convenient arrangement of a kitchen sink and closets. A window opens on either side of the sink, providing an abundance of daylight at all times. Closets, with table tops and space for dishes, are built in on either side of the sink, and they get all the advantages of the light streaming in through the windows overhead. A small closet over the sink, and the dumb-waiter on the left, combine to add compactness and convenience to the whole arrangement. The kitchen range and gas stove are on the right, also close to the sink and closets. With such an arrangement one might almost sit in a chair and perform half the day's work without rising or taking many steps.

In the illustration shown in Fig. 2 we have a different arrangement, but never-

theless with the same principle of economy of distances carried out. The entrance to the dining-room is close to the sink, the gas stove and the kitchen range. The outside door is placed on the other side of the range, and is conveniently reached from the center or side of the room. The windows in such a kitchen should be located opposite the range so that a draft across the room from door to windows could be created. This is a good arrangement for a square kitchen where two sides have windows or with only one side provided with such openings. In the latter case the shelves and closets should occupy the space not pierced by window openings.

In the illustration presented in Fig. 3 the kitchen has the advantage of an abundance of daylight directly over the sink, where much of the work must be performed. Owing to its oblong shape, and comparative narrowness, the kitchen range and gas stove are placed directly opposite, instead of on one side. This makes the distance from the dining-room table to sink or range about equal, and necessitates

no extra steps to reach either. Likewise, the door opening outside is close to the sink. The grouping of doors, windows, sink, stove and range so that it is handy to walk from one to the other makes almost an ideal arrangement for a kitchen of this size and shape.

In the last engraving (Fig. 4), which is that of a modern kitchenette where all the cooking is done on a gas range, the convenience to the dining-room will be noted. The bell annunciator, the whistle tubes, and the electric lights are all grouped together so that one would not have to move far to attend to any of them. In actual measurements the distance from the dining-room table and the stove would be a trifle less than fifteen feet. This might save about eighty miles of steps in a year, in preparing and serving the meals, over another kitchen where the distance between table and stove was twenty-five feet; a matter of real importance to the kitchen worker.



Fig. 4—A modern kitchen where all the cooking is done on a gas range

Dark Blue Staffordshire

THE DR. SYNTAX POEM AND THE SYNTAX PLATES

By Alexander M. Hudnut

SUGGESTIONS TO INEXPERIENCED COLLECTORS

DARK blue Staffordshire, sometimes called Historical China, is a specialty in ceramics which has a peculiar interest for lovers of Americana. The crude representations of American scenes and buildings which appear on this ware are of considerable historic importance. Long forgotten structures which existed in the early part of the nineteenth century are reproduced on the various pieces of these old dinner sets, and in many cases are the only pictures we have of these buildings. This old blue china is scarce, and the difficulty of getting together a fairly good collection of it possesses a fascination for those who are fond of collecting rarities.

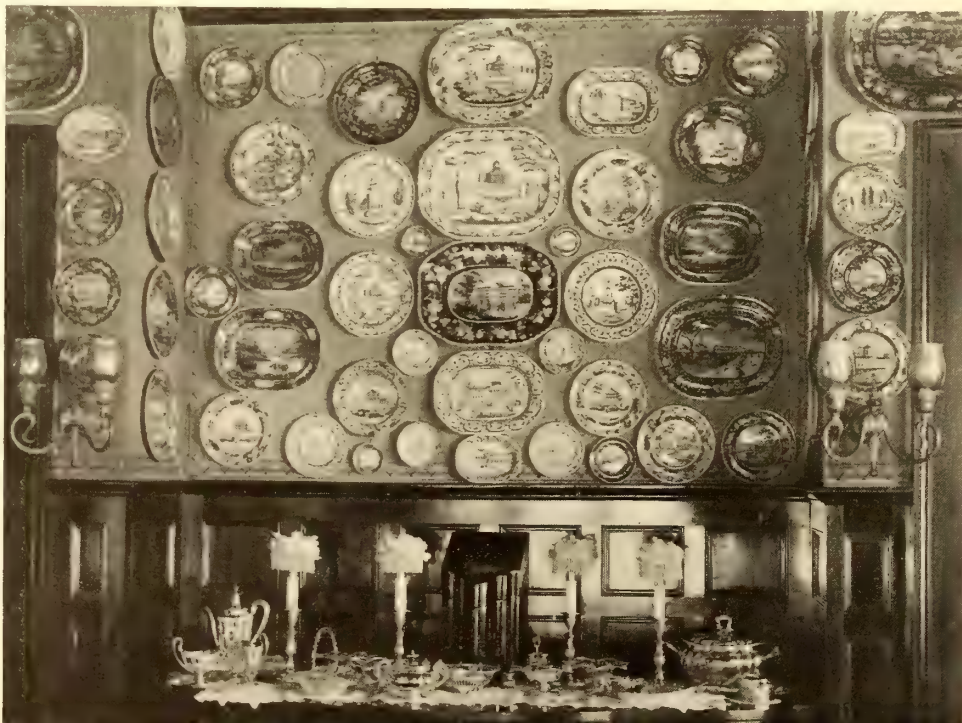
The articles which appear from time to time in current periodicals on this subject give much general information. Each writer treats the subject from a different point of view, but their purpose seems to be to impart information to people who are quite ignorant about blue china and who may possibly, as a result of reading the article, become interested enough to start collecting.

Beginners, as well as old collectors, like to hear something about the relative market values of different plates. The selling price gives more than a suggestion of the rarity of a piece, and, while it is not an infallible guide to values, it helps a collector to classify this old blue ware from the commercial standpoint. Whatever references I may make on this subject are based upon my experience as a collector, and I give them to you for what they are worth. The literature available for one's education in old blue Staffordshire is descriptive and historical. It

leaves one in possession of a catalogue of names and photographs showing how pieces will look if found. What a new collector would like to have in addition to this is a list of those plates and platters which are comparatively easy to secure; then another list of those which are moderately scarce, followed by the group of rarities and concluding with names of unique pieces. While I cannot cover this ground fully within the limits of one article, I shall try to throw a little light on the subject, mentioning some very rare pieces and making a few suggestions to the young collector.

The only course available to one starting a collection seems to be the beaten track of the traditional collector. If you are looking for old blue china there is just one way to do it, and that is to go out and search for it. If you see any plates hanging in the window of an antique dealer's store my advice to you would be to take the name of the man and make a careful inquiry as to his reliability. If you

find out that he has a reputation for this, then go in to see what he has to offer. If you have been collecting for a year or so you will become a sufficiently good judge of blue china not to be deceived by counterfeits, and then you could begin to rely a little upon your own judgment. The beginner should only trade with the most reputable dealers. Anyone collecting historical china would do well to obtain bound copies of the "Old China" magazine, a publication which was



Showing a collection hung on a dining-room wall

discontinued in September, 1904. They are a little difficult to get but I should advise a collector to persist until he secures these volumes. They will be of great help to him. Another valuable work on the subject of historical blue ware was written by R. T. H. Halsey, and published in



A platter with a medallion of Jefferson, Washington, Lafayette and Clinton. English view in center. Erie Canal at bottom

1899 by Dodd, Mead & Co. This book contains photographic reproductions in color of blue plates and platters which give one an exact idea of how these pieces look. It is a great help to a collector to have in his mind a picture of a piece he is trying to secure.

A collection of historical china in addition to the American views, usually includes pieces showing the arms of twelve of the thirteen original states, the so-called Dr. Syntax plates and platters, the plates showing the Wilkie designs, and the Don Quixote set. Some people include in their collections the English views, but these pieces are not rare and possess but little interest for the connoisseur.

Mr. Edwin Atlee Barber, secretary of the Pennsylvania Museum and School of Industrial Art, in Philadelphia, published a book in 1901 called "Anglo-American Pottery." Mr. Barber's book is profusely illustrated and it is one which a collector cannot afford to be without. It is full of interesting information and is one of the chief sources from which a collector draws his elementary knowledge prior to collecting. In the back part of Mr. Barber's book is a directory of collectors, which gives one the names and addresses of many people who are interested in this kind of china. There are also advertisements in the back of the book which a collector will find of value.

One of the purposes of this article is to talk in an informal way about some interesting specimens of this blue china, and to give collectors some little idea of the relative

values of different pieces. The subject of values is a difficult one. I have known plates to sell ten years ago for \$75 each, which can be bought to-day for \$8 or \$10; and plates and platters of that time sold at \$100, which now can not be had for \$1,000. I have had a platter offered and sold to me by an out-of-town dealer for \$50 when a platter of the same design was being offered for sale at a New York antique store for \$250. This will show how erratic the china market is, and how very necessary it is to become well informed as to values before venturing to make purchases entirely on one's own judgment.

The potters of Staffordshire, England, had the commercial instinct highly developed. There was in America an intensely bitter feeling toward England and everything which was manufactured there. The effects of the Revolutionary War had not subsided when the War of 1812 broke out, and about the year 1820, when the Staffordshire potteries commenced to decorate their ware with American views the attitude of Americans toward British goods was extremely hostile. Notwithstanding this fact, English artists were sent over to America by the Staffordshire pot-



A platter showing "The Errand Boy," one of the Wilkie series



Vegetable dish—"Dr. Syntax Sells Griggles"

ters with instructions to make sketches of American scenes, American buildings, and some of the prominent American cities. These sketches and paintings were afterward put in the hands of engravers, who reproduced them on copper plates, and then the process of transferring these copper plate engravings to the china was introduced. When we look over the views which these English artists made, we are amused at their choice of subjects. They might have done a great deal better had they been more thoroughly familiar with our country, and it may be said also that they could have done far worse than they did. They made sketches of some of the Harvard buildings, also Columbia, but they entirely overlooked Yale and Princeton Universities. They made sketches of seven American churches and by good luck they made a very representative selection. They favored the cities of New York, Boston, Baltimore and Philadelphia, making a larger number of sketches in these than they did elsewhere, which was quite proper. They made a flying trip through the Middle West, in their search for important cities, and made sketches of Detroit, Louisville, Sandusky, Columbus and one or two other towns. In their search for scenery they favored the Hudson River and the Erie Canal.

One of the devices they adopted for the purpose of making this china popular in the United States was to print on the upper edge of a plate or platter a medallion portrait of some prominent and popular American or friend of America. On many plates will appear simply a single medallion. On others there will be two medallions: Washington and Lafayette, and on some few of the platters, heads of Jefferson, Washington, Lafayette and Clinton appear. One of the most curious things these potters did was to select a plate or platter which had an English view on it, and to place on the upper margin medallion portraits of the four prominent men just mentioned, and at the bottom margin of the platter, beneath the English view, some scene along the Erie Canal. The second illustration shows a platter containing a view of Harewood Hall, York, England. At the top are medallion portraits of Jefferson, Washington, Lafayette, and Clinton, at the bottom is a picture of the Erie Canal at Albany. The platter was made by Stevenson, and has the oak-leaf and acorn border, which was characteristic of Stevenson's ware. This particular platter hung in one of the cases of the Smithsonian Institution at Washington for about ten years, and was supposed by everyone to belong to that institution, but it was discovered that this collection had been merely loaned, and it was the intention of the owner to withdraw it and sell it. In this way a number of the pieces came into the collection of the writer.

The so-called medallion pieces have always been very rare, and collectors would do well to pick them up whenever an opportunity offers. It might be mentioned in this connection that Harewood Hall was one of the views selected by Josiah Wedgwood for the decoration of the Imperial Russian dinner service which he made in 1774 for Catherine II, Empress of Russia. I thought this might be of interest in view of the fact that this dinner service is perhaps the most famous one in Europe and odd pieces from it are greatly sought by china collectors.

Seven designs drawn by the famous Scotch artist, Sir David Wilkie, were reproduced on old blue china by the Messrs. Clews, and are known as the "Wilkie plates." The rarest one of this series is the 19½ by 14¾ inch platter called the "Errand Boy," as shown by the illustration. Part of this



Three very unusual Syntax plates in color. The upper one, "Dr. Syntax at Home"; the middle one, "Dr. Syntax Setting Out for London," motto "For My Dear Boy"; the bottom plate, "Syntax on His Travels."

view appears also on a 3½-inch cup plate. An "Errand Boy" platter in proof condition would be worth \$250.

Mr. Frederick Keppel, in his admirable book, "The Golden Age of Engraving," says of Sir David Wilkie, that as early as 1825 he "had produced both etching and dry-point work of the right sort." Wilkie was born in 1785 and died in 1841.

Another series of blue Staffordshire ware is known as "Dr. Syntax plates." They are beautiful and decorative. Many of them are excessively rare. One's pleasure in considering this group of plates can be heightened by a little knowledge about the "Dr. Syntax Poem." In May, 1809, there appeared in London a magazine called the "Poetical Magazine," and the Syntax poem, then called "The Schoolmaster's Tour," started with this number. Its publisher was Mr. R. Ackermann. This magazine came out once a month, and its specialty was the reproduction of original compositions, especially drawings. There was employed by Mr. Ackermann, an old gentleman of good literary ability, and of a poetical turn of mind, who wrote metrical illustrations of these prints as they appeared in the "Poetical Magazine." His articles were all unsigned, and the general public were in ignorance as to his identity. A well-known artist by the name of Rowlandson started a series of pictures which appeared to tell a continuous story. The first Rowlandson etching in this magazine was called "Doctor Syntax setting out on his tour to the lakes." The first draw-

ings of this series were submitted to the unknown writer referred to above, and at the request of Mr. Ackermann he started to write in verse a description of these pictures, recounting the adventures and travels of a certain mythical personage known as the Rev. Dr. Syntax. What the pictures failed to portray, the author supplied from his imagination. When we consider that this series of prints came out month by month during a period of two years, and that a poem was spun around them which, when completed, amounted to ten thousand lines, we are forced to admit that the achievement is unique in its conception and accomplishment. It possesses, above every other feature, the quality of originality. We are told that the artist and the writer had absolutely no personal connection or knowledge of each other, and the



Inside of fruit dish showing the very rare view of "Dr. Syntax Entertained at College"

chances are that they never became acquainted. After the "Poetical Magazine" had published this series of prints and the story told in verse which went along with them, the reading public of London exhibited an unusual degree of interest in this fictitious history of Dr. Syntax, and numerous requests were sent to Mr. Ackermann that he reproduce in book form the Syntax poem. The writer and the artist were both consulted, and agreed to revise their work as far as possible, and get it ready for publication. The result was the publication, in the year 1812, of the first volume, which was called "A Tour in Search of the Picturesque, by the Rev. Dr. Syntax," and the title page of the book gives the following information: "Published May 1st, 1812, at R. Ackermann's Repository of Arts, 101 Strand," and on the colored prints, which are numerous throughout the book,

is given up to a description of his wanderings and adventures. These Rowlandson etchings were all colored by hand. This fact becomes evident by comparing the colored prints of the "Poetical Magazine" with those which appeared in the first edition of the Syntax poem, "The Tour of Doctor Syntax in Search of the Picturesque." In cases where the prints were made from the same plate the pigments used differ in each impression, showing that the artists who did the coloring were not particular about matching their shades. This comparison also reveals the fact that in the printed volume of 1812 Rowlandson did not use all of the old plates, but etched new ones and inserted some which did not appear at all in the "Poetical Magazine."

The second volume in this series was not printed until August 1st, 1820, and is called "The Second Tour of Dr.



Cover of tureen showing the rare view, "The Banns Forbidden"



Inside of tureen—"Dr. Syntax Setting Out on His Second Tour"



Soup tureen showing "Dr. Syntax and the Gypsies"

we find the following: "Designed and etched by Rowlandson." This first volume, in brief, described Dr. Syntax as being a poor clergyman, and having a hard struggle to get along. He appears in the poem to have had a number of accomplishments; among them, he was a very good artist, and a fairly skillful musician. Mrs. Syntax was not a very lovable woman, judging by Rowlandson's pictures. She was rather ungainly in appearance, and somewhat given to nagging. Dr. Syntax finally decided that he could get along better if he gave up preaching and went out on a sketching tour. So he mounted his old horse, taking along his sketching materials and his violin, and the first volume

Syntax in Search of Consolation." I have only made a hurried examination of this second volume, but judging by careful perusal of the illustrations, I conclude that Mrs. Syntax died, and Dr. Syntax, while not absolutely prostrated by grief, felt that he had met with a great loss, and must seek consolation somewhere. This seems to have been his excuse for a second tour, more extended than the first, and offering a greater variety of adventure. He was entertained at one time by gypsies, and later on was captured by highwaymen. He attended young ladies' boarding school commencements and university banquets. Once he officiated at a marriage ceremony, and there are very few



Three cup plates making the view of "Dr. Syntax and the Gypsies"

things that one might trump up in their imagination which Dr. Syntax did not do, according to this simple, old-fashioned tale. He seems to have had his share of experiences with horses, as he sold and traded frequently in these, and in one of the pictures some one had palmed off on him a blind horse, which is represented as rushing madly into a stage coach with Dr. Syntax on his back, terribly frightened and minus his wig, which had been jostled off. It seems to have been during this tour that Dr. Syntax decided that he would marry a second time, so in the third volume, published May 1st, 1821, we see on the title page the "Third Tour of Dr. Syntax in Search of a Wife." As far as I have been able to discover he did not have very good luck at first in finding a wife, although he seems to have interviewed a great many people with this object in view. Finally, he advertised for a wife, and there is an illustration showing the doctor standing in a room, surrounded by a crowd of females, all of them struggling for supremacy.

It was about the year 1820, or a little later, that the Staffordshire potters in England commenced to decorate their china with popular subjects, and inasmuch as the story of Dr. Syntax had awakened widespread interest throughout England, these Staffordshire potters reproduced on their plates and platters the most interesting of Rowlandson's drawings. The author of the Syntax poem was 80 years old at the time of the publication of the third volume. His identity is not positively known. Modern editions of the Dr. Syntax poem, ascribe the authorship to William Combe.

In the Syntax poem there are eighty colored illustrations by the artist, caricaturist, and "well-known print seller of the Strand," T. Rowlandson, to whom we have already referred.

Thirty-seven of these views have been reproduced on Staffordshire ware. There may be others which have not yet been discovered. Collectors are interested in this series, because of their rarity and because they are among the most perfect specimens of dark blue printing to be found.

The rarest Syntax piece, without doubt, is "Dr. Syntax Entertained at College." I only know of the existence of

one, which is in my own collection. I have heard rumors that there was another, but have never been able to locate it. Next in importance and rarity comes the large "Harvest Home" platter. At the Burritt sale, several years ago, in the American Art Rooms in New York, one sold for \$470. Since that time I have not heard of one being offered for sale. The "Harvest Home" scene occurs also on a large punch bowl.

"Dr. Syntax and the Gypsies," which appears on the sides of a soup tureen, and also on three cup plates, is another rare view. The unusual picture, "The Banns Forbidden," appears on the cover of this tureen, and I have never seen it on any other piece of blue ware. The three cup plates making up the picture of "Dr. Syntax and the Gypsies" are very hard to find. Separately they are worth about \$35 each. Together the three are worth \$150. Next in rarity to the pieces mentioned are the platters: "Dr. Syntax Sells Griggles," "Pat in the Pond," "Noble Hunting Party"; and the plates: "Dr. Syntax Sketching the Lake," "Dr. Syntax Setting Out on His First Tour," "Dr. Syntax Setting Out on His Second Tour."

The plates in colors, three of which are shown in the illustration, are not exact reproductions of the Rowlandson drawings. They belong to a later period. The work is crude and the maker is unknown. They are very hard to find.

Although only thirty-seven Syntax pictures have been printed on blue Staffordshire plates there are a great many varieties of these pictures. For example, "Dr. Syntax Sketching the Lake" appears on a small plate, the background being white, the border having a decoration of pale green and white rosettes, and the picture itself in the center of the plate being the regular Staffordshire blue. This same scene appears on the ladle of a gravy boat. A number of the Syntax views appears on plates with different borders, showing that some other potter besides Clews undertook to reproduce these Rowlandson pictures. Some of the scenes will occur on a platter, also on a plate, and again on a gravy boat or in the bottom of a soup tureen. Collectors usually accept these different varieties, and consider them distinctive pieces in their collections.

Note.—Mr. Hudnut will continue his paper on Dark Blue Staffordshire in the June issue of AMERICAN HOMES AND GARDENS. It will be illustrated by the historical plates depicting American scenes.





Fig. 1—Cobblestones and brown-stained shingles are used for the exterior of this bungalow

Bungalows of Interesting Type

By Robert Prescott



THE more one becomes familiar with the type of houses which have been erected in lower California during the past few years, the more one appreciates the value of the bungalow, which has become of peculiar interest to the home builder of that section of the country. So free in architectural form and simple in construction has this kind of building become in its conception that it has fixed a standard which is now accepted as the best type of bungalow now being built. There is no question but that this style of building is the cheapest example of frame construction that can be erected at the present time, and, while there is no doubt as to its being best suited to the climatic conditions of the western coast, it can also be easily adapted to the needs of the people of the East. The cheapness of these buildings is, of course, the direct result of the character of their construction, for while a cellar, for instance, is necessary for a dwelling of any kind built in the East, which is to be used for both winter and summer, it is eliminated in California for the reason that the climatic conditions are such as to make it perfectly safe to health

to dispense with this part of the house. Many of the bungalows in California are designed by architects who have made of them a special study. But in most instances, especially in the ones illustrated in this paper, they have been planned and built under the direction of the owner and are the more interesting on account of the fact that they represent his or her individual taste, which necessarily brings about a greater variety of design and of materials than could otherwise be found had they been constructed under more conservative conditions.

The bungalow built for Mrs. A. F. Miller, at Pasadena, California, and illustrated in Figures 1, 2, 3 and 4, is of a more pretentious type than many of the buildings of the sort presented in this article. It is constructed of brown-stained shingles for the exterior treatment, and has ample stone chimneys and porch columns. A study of the plan will show a large living-room with an open fireplace built of stone, a dining-room with a built-in buffet, a kitchen, three bedrooms and a bathroom, while a semisecond story includes extra guest rooms and servants' quarters. The living-room and the dining-room are trimmed with redwood, the former having a beamed ceiling and the



Fig. 2—The living-room

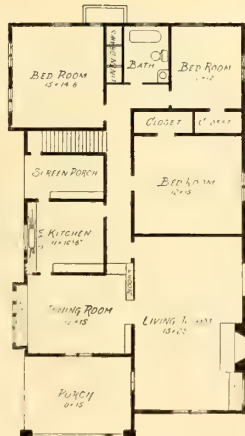


Fig. 3—Floor plan



Fig. 4—The dining-room

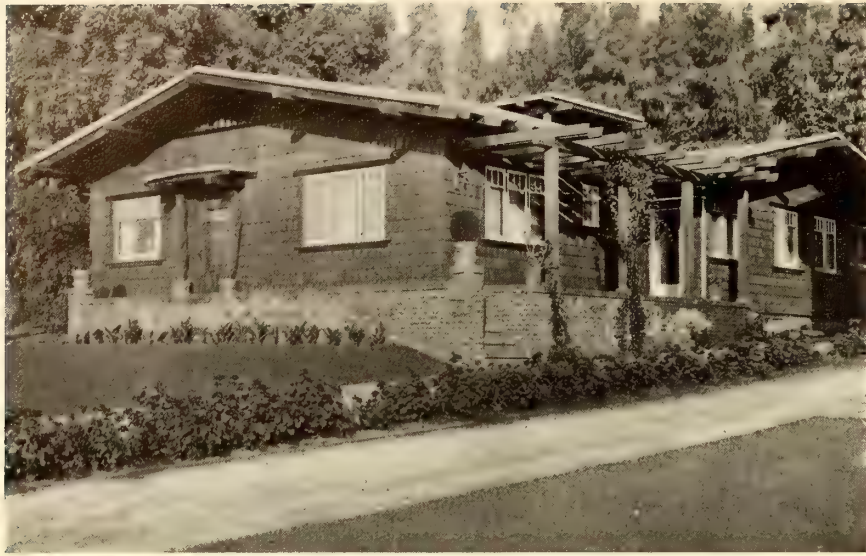


Fig. 5—Red brick and shingles are harmoniously combined

latter a wainscoting and ceiling beams. This bungalow was designed by Mrs. Miller, and the entire cost was \$3,277 to build.

The bungalow built and designed by Mr. Allen C. Steele, at Pasadena, and illustrated in Fig. 5, is most artistic in its de-



Fig. 6—A combination of stucco and shingles is used

ping roofs, which are of Swiss chalet character. The first floor contains six bedrooms and a bathroom. There is also a cellar under this building. The cost of this bungalow was \$3,100.

Mr. H. V. Hall, of Pasadena, designed for himself the bunga-



Fig. 7—A bungalow built of rock-faced stone and clapboards

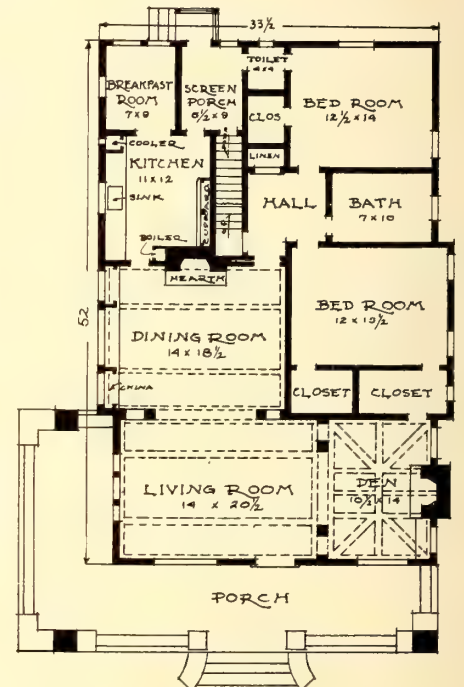


Fig. 8—Floor plan

sign. A combination of red brick and brown-stained shingles is harmoniously arranged one with the other for the construction of the exterior walls, and the whole effect is enhanced by the slo-

low illustrated in Fig. 6. A different kind of material was used for this little dwelling than for those already described. The first story, and the balustrade and the columns to the porch are



Fig. 9—A bungalow of simple design and construction. Cost, \$800



Fig. 10—The characteristics of the Swiss chalet are prevalent in this design



Fig. 11—A bungalow of the cheapest construction. Cost, \$500

built of stucco; the gables and the roof are shingled. The house contains four large rooms and a bathroom on the first floor, and two rooms on the second floor. Cost \$2,600.

The bungalow illustrated in Figs. 7 and 8 shows a modern

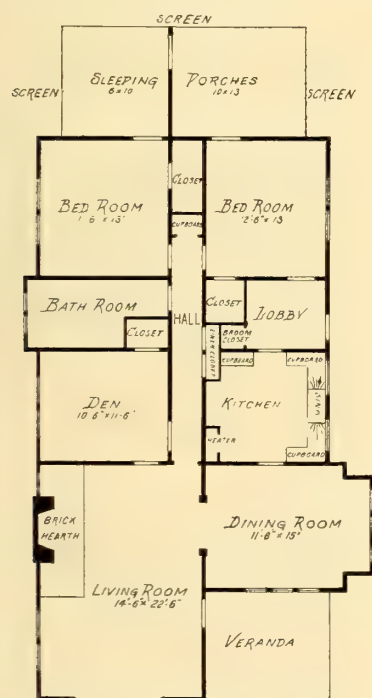


Fig. 13—Floor plan

dwelling built at Pasadena, California. It is constructed of rock-faced stone, brown-stained clapboards and trimmings, and has a shingled roof. This is an unusually attractive bungalow and the



Fig. 12—A house of stucco, cobblestones and clapboards. Cost \$2,800

combination of materials is worked out in a harmonious manner. The entrance to the structure is direct to the living-room. This living-room and the den occupy the entire front of the house, and are separated one from the other by columns supporting an arch.



Fig. 14—A typical bungalow of interesting style

The ceilings of both rooms are beamed. The den contains an open fireplace built of stone with a bookcase built in at one side. Similar archways supported on columns separate the living-room



Fig. 15—The porches are connected by a terraced wall



Fig. 16—Field stone and shingles are the materials used. Cost, \$1,900

from the dining-room. The latter has a beamed ceiling, a low buffet with windows built in over, and an open fireplace. The kitchen, breakfast-room and screened porch occupy part of the rear of the house. In addition to these rooms there are two bedrooms and a bathroom on this floor. The second story contains extra guest and servants' rooms.

A bungalow of simple design and construction is illustrated in Fig. 9. It was designed and built by the owner, Mr. T. W. Dale, of

Los Angeles. Rough boards placed perpendicular on the framework, with strips covering the joints, were used for the exterior walls, while cloth and paper cover the interior wall surfaces. It contains five bedrooms and a bathroom. The cost was \$800.

A house of unusual beauty and design, and also resembling a Swiss chalet in its exterior treatment, is the one built at Hollywood, California, and illustrated in Fig. 10. It is situated on the side of a hill, thereby permitting a two-story arrangement. Wide redwood slabs are used for shingling the outside wall. A feature of the exterior is the cobblestone terrace wall and the hanging porch of the second story of the house. The trimmings and windows are painted white.

Mr. LuVerne Sanders Reid designed and built the interesting bungalow at South Pasadena which is presented in Fig. 11. This example, constructed on the typical bungalow plan, is low and ram-



Fig. 17—An excellent design for a bungalow

bling and is of the cheapest construction. Matched sheathing boards stained brown are used for the exterior walls, and the lattice screened porch, over which are growing vines, gives distinction to the whole general scheme. There are five rooms and a bathroom in the interior. Cost \$500.

The bungalow built for Mr. Sylvanus B. Marston, at Pasadena, from the plans of Mr. H. A. Doty, of the same place, and shown in Fig. 12, is an attractive dwelling, con-

structed of stucco, cobblestone and narrow clapboards. It contains six bedrooms and a bathroom. Cost \$2,800.

A typical bungalow of interesting style is illustrated in Figs. 13 and 14, and was built for Mr. G. Lawrence Stimson, at Pasadena.

The bungalow shown in Fig. 15 illustrates a dwelling at South Pasadena. The design is worked out in a combination of red brick and brown-stained shingles.

Rock-faced field stone and brown-stained shingles were used to build the house of Dr. C. F. Metcalf, at South Pasadena, illustrated in Fig. 16. The combination of materials has been very well worked out by the architect, Mr. J. G. Pierce, of the same place. The interior is plastered and contains five rooms and a bathroom. Cost \$1,900.

The bungalow illustrated in Figs. 17, 18, 19 and 20, and built at Pasadena, is different from the other bungalows illustrated in this article. The arrangement permits of securing a direct vista through the house.

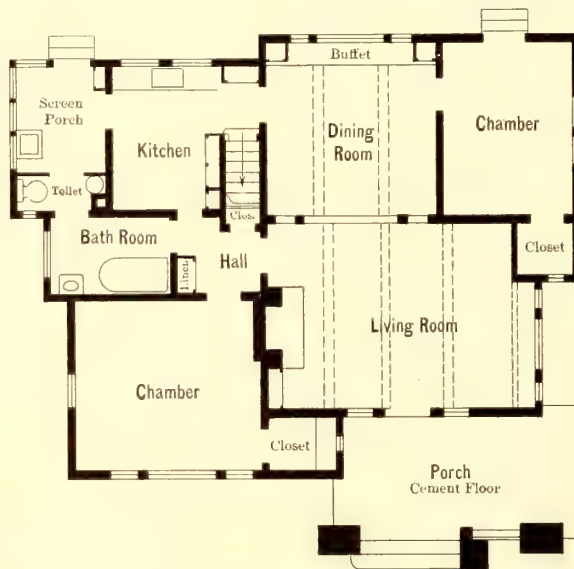


Fig. 18—Floor plan



Fig. 19—The dining-room



Fig. 20—The living-room



Furnishings for the Home

Decorative Curtain Schemes

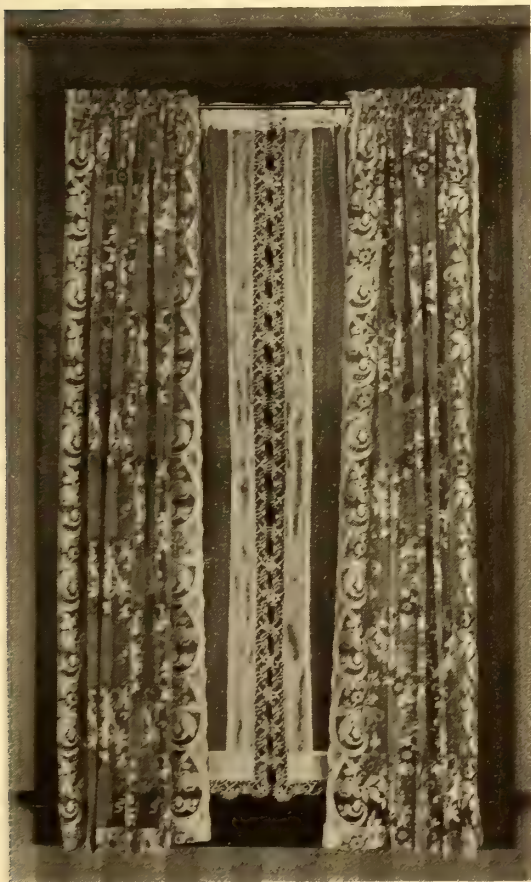
By Mabel Tuke Priestman



SELECTING curtains for the home is no easy task, not because there is so little to choose from, but because there is so much. We are apt to start out with a theory and a half defined plan of what we intend to buy. We ask advice from those who have not seriously given the subject any thought at all, and are guided by their advice because of our own indecision. It is not, therefore, to be wondered at

that the house with draperies selected in this haphazard style is not always successfully treated, or a well considered scheme the result.

In order to avoid mistakes and to get the best possible hangings that will not only give satisfaction to those who occupy the home, but will give pleasure to all who see them, we must first consider the house as a whole, and then strive to treat each room successfully. One of the first essentials is to find out what the market provides, and learn a little



A hand-made Cluny lace curtain of French bobbinet is used for the sash curtain. The over-curtain is valuable when a rich effect at small cost is desired, as the madras has a border on each side and can be purchased for 90c. a yard, forty inches wide. The madras is imported and comes in all colors; this material is an old standby that is always in fashion and makes for artistic homes.



Sometimes curtains in dark colors can be found with a design in pale colorings



Aurora cloth bordered portières are among this season's novelties. A portière of unfadeable fabric of fifty-inch material and two and a half yards long for \$9.00 a pair is worth knowing about; curtains 32 inches wide of the same material and two and a half yards long, with enough material for a valance 18x64 inches, can be purchased for \$6.50. These fabrics come in a wide range of colors.



Cheesecloth curtains stenciled with a red berry design are very decorative in a seaside cottage. The walls are olive green and serve to throw into relief the cream curtains.

about the prices. It is important to know how much we can afford to spend. It is not always by any means that the least expensive material is the cheapest. A very coarse fabric that cannot be washed or cleaned when it has lost its freshness is an extravagance, of which no thoughtful housewife should be guilty. Too great an outlay on expensive curtains may absolutely spoil a well furnished home; for all should pull together. The simply furnished bedroom should have the simple, quaint drapery that will prove to be the needed finishing touch. A dining-room in heavy Mission furniture would look ridiculous with elaborate lace curtains, or even dainty white muslin. Rather the choice should be something that suggests sturdiness and durability, a fabric of rugged simplicity that will give the keynote to the decorations of the room. Color may be introduced by needlework, or by use of the block print, or the ever useful stencil onto a material of natural tone. Some of the following would be appropriate—casement linen and a certain linen known as Flemish, which has a mat finish and is very soft and pliable, a characteristic not often found in linens, which are often too stiff to make a well appearing and graceful fold. These Flemish linens come in cream and ivory shades and in cream gray, and the pale brown of unbleached linen. A sturdy net, somewhat heavy in weight and appearance, may be used against the glass, or that charming undyed Singapore lattice cloth that wears and washes year after year, and always looks well.

Some curtains lately seen, appeal most strongly for the Mission room. A heavy net in tea-color was ornamented with an open pattern, darned with silver white floss. This was used for the sash curtains, the overdrapery and valance were of raw silk in almost a mulberry shade devoid of any ornament. The windows were low and wide, and four silk strips, less than a yard wide, with a valance seemed to pull together the soft painted buff walls into the scheme. A small design stenciled in panels above a brown stained woodwork dado called for portières of Craftsman's canvas to match the raw silk curtains. The motif in the panels was repeated in a

stronger design on the bottom of the portières.

A comparatively new material called Aleyth cloth—a transparent fabric warranted not to fade—is suitable for a room furnished in Craftsman's style. It comes in a good line of colors and can be used as a summer over-curtain, or when color against the pane is desired. The fact of its being sun-proof makes it invaluable, and it is fast superseding silk on this account. It launders beautifully, coming up as fresh as new material. It is suitable for stenciling and having no pattern this is an improvement. "Aleyth" cloth comes in white and ivory, as well as in colors; it, therefore, is used as much for sash curtains as for over-curtains. There are several qualities, the least expensive being one dollar a yard.

Another new portière and over-curtain fabric is called "Aurora cloth." It is suitable for rooms furnished in Mission style, or could be used in any sitting-room. "Aurora cloth" is almost unfadeable. It

may be lined or unlined; in fact it gets its name from the soft glow of color seen when the light shines through the curtains. The designs are good and unusual, and are conventional. The figured fabric costs \$1.65 a yard, and the plain \$1.25. "Aurora cloth" also comes with borders and may be purchased at \$9.00 for a pair of portières two and a half yards long. The curtain material without the borders is 32 inches wide. A pair with enough material for a valance 18x64 inches cost \$6.50, two and a half yards long. This fabric comes in a wide range of colors.

Plain walls, with cretonne draperies, especially if the design is voyant, give character to a bedroom, and have a cool summery look when used in the living-rooms. The sash curtains look best plain, to set off the pattern of the cretonne, especially when trimmed with really handsome edging. Irish crochet is unusual and makes sash curtains of best quality muslin, or scrim, very attractive.

Cretonne draperies are much used in halls. They are such a pleasant change from winter velvets and tapestries, and the fact of their being a la mode leaves no excuse for



Plain walls with cretonne hangings in a cretonne of rather voyant design help to give character to a bedroom. The sash curtains of very fine muslin are unusually attractive with their trimming of crocheted lace; when the curtains are worn out the crochet will still be in good condition for another term of years.

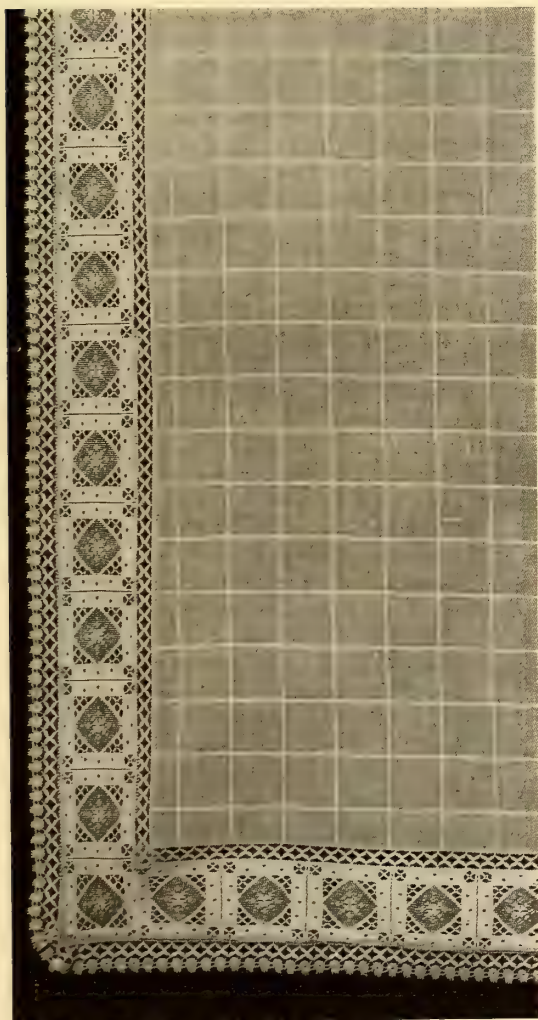
dispensing with portières and curtains during the summer months. The dreary, bare look of vacant doorways has a most depressing and inhospitable appearance that should not be tolerated. Chairs and sofas covered with loose covers of the same material as the hangings serve to give a feeling of unity. Many of the cretonnes and chintzes for sitting-rooms have strong patterns with birds of gay plumage scattered over the surface. Some of these designs are copied from old English prints over a hundred years old, and such a chintz makes a perfect drapery for a Colonial room, whether it is a living- or a sleeping-room. They seem to blend with old mahogany and striped wall papers. Some of the patterns are small, but others again are very large. Of course the latter can only be used in a large room. The parrot and cockatoo are superb cretonnes that have made most decorative dining-rooms. The cretonne may be repeated on a threefold screen, or as loose covers for the chairs, if not used as portières, but the cre-

good honest work, and the difference in the quality will be apparent. Well made curtains can be purchased at practically any price.

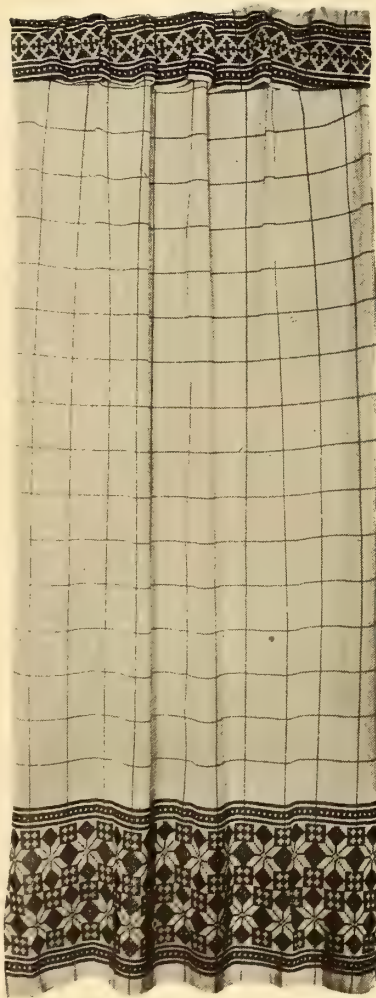
A résumé of a few of the new curtains, with prices, may be of interest to our readers. An attractive little curtain, suitable for a girl's bedroom, or a simple drawing-room, is of muslin, hemstitched. It has a woven border of bunches of flowers. A pair of curtains 36 inches wide and two and a half yards long cost \$2.50. The flowers come in three colors, blue, pink and yellow, so that the color best suited to a special room may be selected.

An artistic looking curtain costing two dollars in muslin, with a broad open hem, is 42 inches wide and two and a half yards long, with a striped effect in a leaf motif with polka dots between.

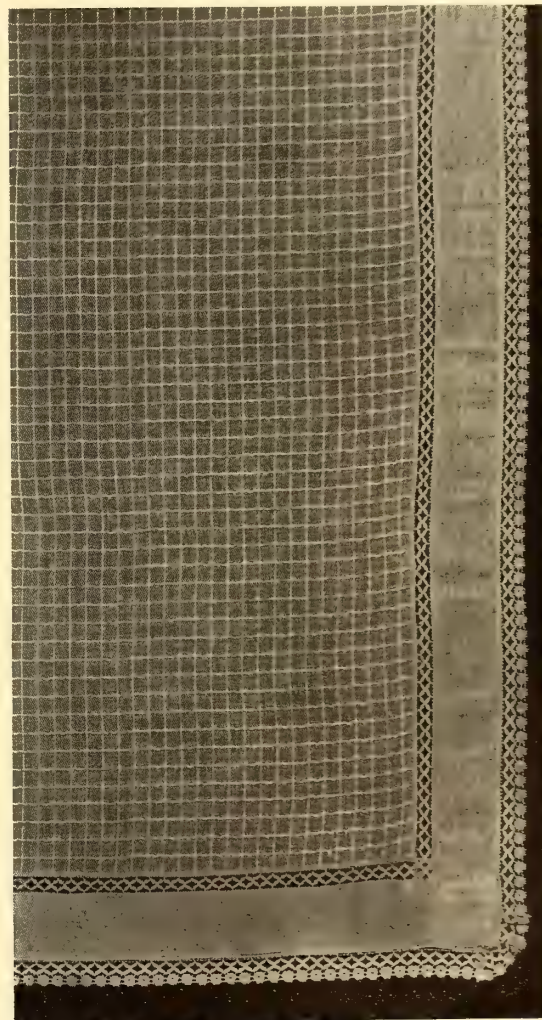
The present fashion for cross-barred scrim curtains is responsible for some very artistic sash curtains that combine well with plain over-curtains. Some of these scrims



A cross-bar scrim is now the most popular curtain of the day. They can be purchased for \$6.75 a pair, forty-two inches wide and two and a half yards long, in écreu shade; scrim has somewhat taken the place of the Filet net curtains that have been so long the fashion.



Most beautiful curtains can be woven in the hand loom that will last a life time. These curtains are designed and woven by Miss Elizabeth Glantzberg.



There is something very neat about a well-made scrim curtain; there always seems good value for the low cost. A pair of curtains two and a half yards long and forty-two inches wide can be found for \$5.50 in écreu color.

tonnes are so strong that they seem to need to be used for more than curtains in order to give balance to the room. They should be lined and interlined. It is not necessary to line and interline all cretonne curtains, as so much depends upon the room, and whether they will be used in winter as well as summer, for cretonne is extremely popular for all the year round draperies. They can be lined with cheesecloth when there is not much room for over-curtains. The cheesecloth may be cream, or some dominant color in the pattern may be chosen for the lining.

At one time ready-made curtains used to be very carelessly done, especially the inexpensive ones, but the growing demand for neat workmanship has resulted in even quite cheap curtains being well made. Open hems on curtains, as low as two dollars a pair, seem remarkable. Examine the stock of a first-class store that takes pride in only carrying the goods of houses that have gained a reputation for

have strongly defined designs that have enough pattern to make the combination with a plain fabric an ideal one. Scrim curtains are much in favor now, partly because they have the appearance of a high-priced curtain, and yet are comparatively inexpensive. They are delightfully soft in texture, and are finely woven. In écreu they keep clean a long time, and for some reason look richer in this shade. Some of them are neatly hemstitched and edged with a neat little Picot edge. Others again are plain, with a broad hem, then an insertion, a broader hem and a deep edging. Others again are much like Filet curtains. The main part is plain with a broad hem, and sewn onto the edge of the hem of the Filet looking lace insertion with a Picot edge. These curtains per pair, in the sizes already given, begin at \$2.50 a pair, and run up to \$5.00, and for \$9.00 something entirely out of the ordinary may be obtained, and they are decorative in every detail.



Nubian



Alpine

New Breeds of Goats

By Jacques Boyer



CERTAIN breeds of goats possess special aptitude for being modified in various directions by intelligent selection and judicious crossing. The experiments which have recently been carried out in France by Crépin prove that the Caprine species can be greatly improved in this way and that the rearing of goats can thus be made profitable.

The Alpine goat, the best known breed, yields a large quantity of thin milk which is very suitable for the feeding of young infants, and it continues to furnish milk for a long period, if it is protected from the cold and rain of winter. The large size of this breed makes it a promising subject for experiments in the production of still larger and better breeds, by crossing with breeds which possess other desirable qualities.

The Syrian (Mambrino), Nubian, Maltese and Murcian breeds, for example, are hardier than the Alpine. The Mambrino and the Nubian, especially, easily adapt themselves to all climates, and crossing with these breeds would undoubtedly improve the common goats of Europe and America. They yield a fine, rich milk and the celebrated Aleppo butter, which is scarcely inferior to the best Normandy butter in richness and flavor, and does not reveal its origin by any peculiar taste. It is notable, also, that the penetrating and disagreeable odor of various goats is not present in these Oriental breeds. By crossing short-haired native goats with a Nubian, Crépin has obtained superb animals which, very curiously, are superior, as milch goats, to either of the parent breeds.

These encouraging attempts have brought about the establishment in France of small goat farms, conducted by amateurs, who are endeavoring to produce, by cross-breeding and rational feeding, animals possessed of certain useful or ornamental qualities. It is also proposed to establish, in and around Paris, dairies for the production of goats' milk for the use of infants and of invalids who require milk that is easily digested.

Goats are notoriously insusceptible to tuberculous infection and they can be kept very well in the city, furnishing milk rich or poor in fat, according to the breed, but always fresh and pure. Unfortunately there exists, in several

countries, a prejudice against feeding infants with goats' milk, which is popularly regarded as too stimulating. There is no trustworthy evidence in support of this opinion. The inhabitants of Greece, Malta and Naples are not nervous wrecks, yet they use goats' milk almost exclusively.

Goat-keeping, intelligently conducted, should be a very remunerative occupation. In Algeria and Tunis, where goats' milk is a staple commodity, the milk of one goat is worth about 40 cents a day, and it would have the same value in Paris. The profits of goat-keeping, furthermore, will be increased when it becomes more generally known that goats' flesh is as palatable, digestible and nourishing as mutton, and when the butchers will buy fully matured animals, as well as kids. Goats' milk cheese is already highly esteemed; some breeds furnish butter of the finest quality; and the hide and hair of the goat are largely used in the manufacture of articles of clothing and ornament. A goat can be kept in small quarters and fed cheaply, with a daily ration of four or five pounds of hay, seasoned with kitchen refuse. Goats furnish more than five times the fertilizer value of ordinary barnyard manure. Hence, in Germany, goats are considered to be more profitable than hogs.

Goats, when kept in numbers, were formerly lodged in groups of three or four in box stalls, where they could move freely. The wall of the building formed the back of the stall, which was inclosed on the remaining three sides by breast-high wooden partitions, the front partition having a door. A rack was affixed to the back wall and a trough was placed beneath the rack.

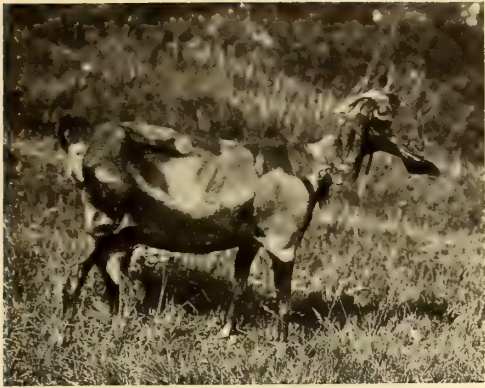
This system saves space, but it has defects, in view of the natural habits and disposition of the goat, which prodigally pulls down the fodder from the rack, but is too fastidious to eat that upon which it has trampled. The result is that three-fourths of the fodder is wasted and the animal is insufficiently nourished, unless an enormous quantity is supplied. Furthermore, Al-

pine goats are so quarrelsome that when one goes to the rack her companions endeavor to drive her away by savage thrusts with their horns, and the weakest of the company often goes hungry.

M. Lamarque has remedied these defects by doing away with the lateral partitions and separate stalls, and tether-



M. Lamarque's experimental flock of goats



Nubian goat

ing his goats to the front partition by chains which are long enough to allow the animals sufficient freedom of movement and short enough to prevent them from annoying one another. The partition is little more than three feet high. In front of each goat is a rectangular opening

through which the animal can thrust its head and feed from a galvanized iron trough placed below the opening, outside the partition. Scattering of the fodder is prevented by surrounding the trough at feeding time with a portable wire screen.

A water trough is affixed to the inside of the partition, between each two openings. All partitions and other parts are removable, so that the stable is easily kept clean. In these conditions the goats, secure from annoyance, lead a peaceable existence and attain a maximum size and yield of milk, if they are kept clean and are not crowded. They should be placed at least three feet apart and the depth and height of the stable should be not less than six or seven feet, giving about 140 cubic feet of air space to each animal.

Although goats endure cold very well, they are injuriously affected by dampness. Hence the stable should be heated in winter. An old German proverb says: "Grapevines and goats are never too warm." Goats also require an abundance of clean and wholesome food of the best quality. The Alpines and other great milk producers have

green fodder should not be given to them, except as a stimulant in case of loss of appetite. A pound or so of bran is given as an appetizer before the ration of hay, and bran is also sprinkled over the chopped carrots, beets, potatoes and Jerusalem artichokes, which may be fed with advantage. When beans, peas, maize, barley and other grains are given, they should be soaked in hot or in cold water. Oil cake may be given in small quantities, and goats, like all herbivora, should have free access to salt.

The following daily rations are recommended by M. Crépin: For a goat weighing 105 pounds, or near that mark, 2 1-4 pounds of second crop hay, 2 1-4 pounds of beets, 1-4 pound of oats. For a large milch goat, 5 1-2 pounds of second crop hay, 2 1-4 pounds of beets, 1 pound of bran. For a goat weighing 66 pounds, 1-6 pound of bread, 1-2 pound of flaxseed, 11 pounds of beets and 2-3 pound of hay. For a general ration, 3 1-3 pounds of hay, 4 1-2 pounds of vegetables, 1 pound of oil cake, 2-3 pound of barley.

The Alpine appears to be one of the best breeds for the production of milk in France, as the yield continues for a long period and the milk is not rich, and is consequently best adapted for the feeding of infants. A small farmer or city dweller keeping a single goat can easily keep the animal in milk for at least two years. Kids are usually born in April, and are weaned at the age of three months. Before this, however, they should not be left constantly with their mothers. A longer and more abundant yield of milk



Nubian buck



Alpine goat



Improved stable for goats

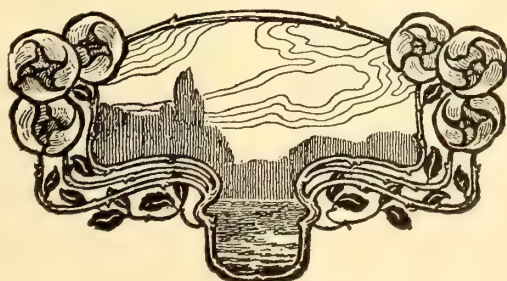


Nubian-Alpine cross

enormous appetites. They will browse upon woody plants and leaves and buds of trees, but their milk is greatly improved, in quantity and quality, by a diet of lucerne and sainfoin. They thrive upon good meadow hay, but not upon hay made from soft, watery grasses. The aftermath suits them better than the first cutting, and, even in summer,

is secured by periodical suckling or milking. Some Alpine goats have maintained a good flow of milk for more than three years.

It would be interesting to repeat in America these experiments in the breeding and keeping of goats, both for commercial and nutrition purposes.





A Premier car being driven through Golden Gate Park, San Francisco, Cal.

The Motor Car for the Man of Moderate Means

By Stanley Yale Beach



OW that automobiles are turned out in large numbers similarly to watches and sewing machines, and like these, with all parts interchangeable, it is possible for the man of moderate means—the owner of a small country house, perhaps—to own and maintain a runabout or light touring car for his own use and that of his wife, or for the use of his entire family. Whether he will purchase a two or five-passenger machine depends upon the size of his family and the use to which he intends putting his automobile.

The man with a small family and with limited means can procure a single-cylinder runabout nowadays for less than \$500—\$450, to be exact. These machines, two of which were thoroughly tested the past winter in mail collection work at Atlantic City, and five of which are now in daily use there, are the principal examples of the single-cylinder "voiturette" that has been so popular during the last two or three years in France. They can be depended upon to carry two or three persons at a 30- to 35-mile clip on any good road, and to negotiate all ordinary hills and poor stretches of road met with in traveling about the country in the vicinity of any of our large cities. In fact, last summer one of these small runabouts traveled from Atlanta, Ga., a distance of 1,100 miles, in six days, while at the present time a small tri-car of another make has almost completed a trip across the continent.

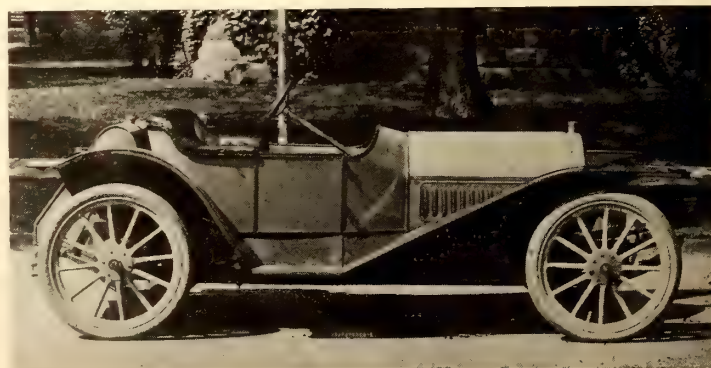
If higher speed is desired, together with the capability of dashing up hills without changing gear, and of negotiating extremely bad roads without difficulty, a light four-cylinder runabout, such as the Ford or Hupmobile, should be the choice of the small householder. These cars have the advantage of light weight and abundant power (16 to 24 H. P.), and they are well worth the difference in price, even though this makes their cost nearly double. They can be purchased for from \$725 to \$900.

Next in price, as well as in power, come the gentlemen's roadsters. These can be had with a rumble seat or without it, and with an open or closed body, as in the examples shown in the photographs. The latter type has the seat placed farther back, as a rule, than the former, and often the polished copper fuel tank is placed crosswise behind it. These roadsters are fitted with powerful four-cylinder motors of from 24 to 30 H. P., or over, and they are of sufficiently light weight to be capable of speeds up to 60 miles an hour or more. They range in price from \$850 to \$1,250; and for the man who can afford it, the extra amount invested in one of these more powerful cars will be money well spent. Besides their greater capabilities, the difference in price appears in their finish and in the accessories that go with these cars.

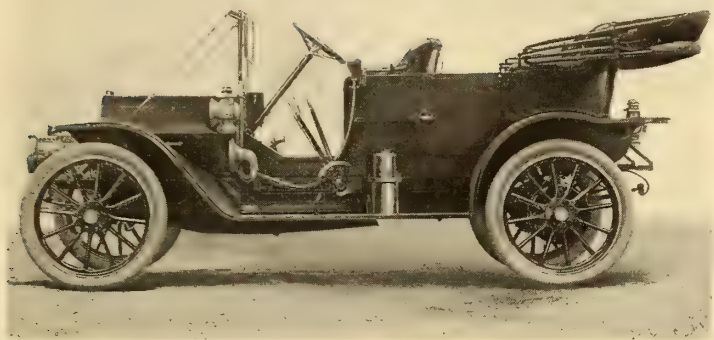
In the touring car class, which is the one in which the man with a moderate-sized family is likely to be interested, good four-cylinder machines can be bought for from



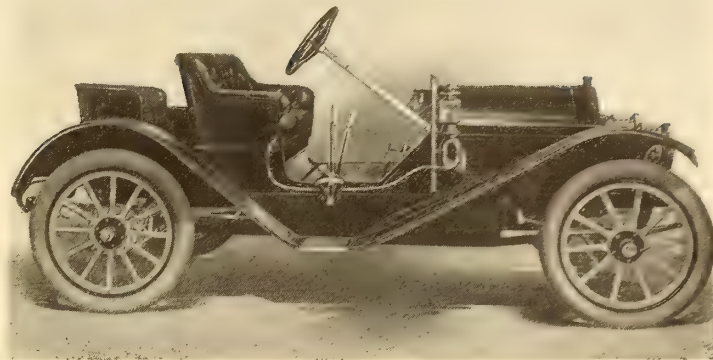
The Ford 4-cylinder runabout



Regal gentleman's roadster, fitted with side doors



The Reo "30" five-passenger touring car



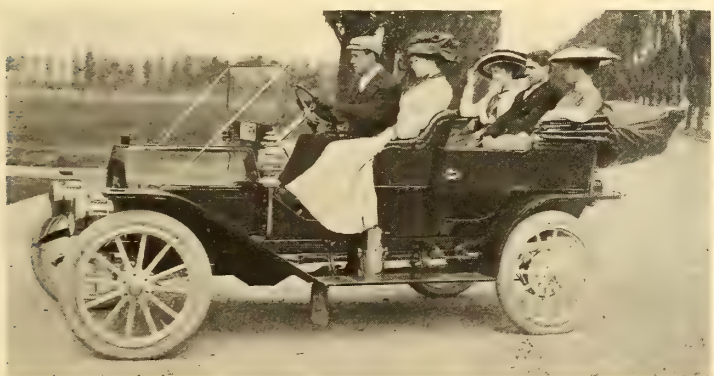
Hudson 20-horsepower roadster, with rumble seat

\$900 to \$1,500. Several examples of such machines are illustrated herewith. With these, as with the roadsters, powerful four-cylinder motors having magneto ignition are regularly employed. The motors are sufficiently powerful to take the cars, fully loaded, at a good clip, up fairly steep hills, and also to pull them through any bad stretches of road that may be encountered.

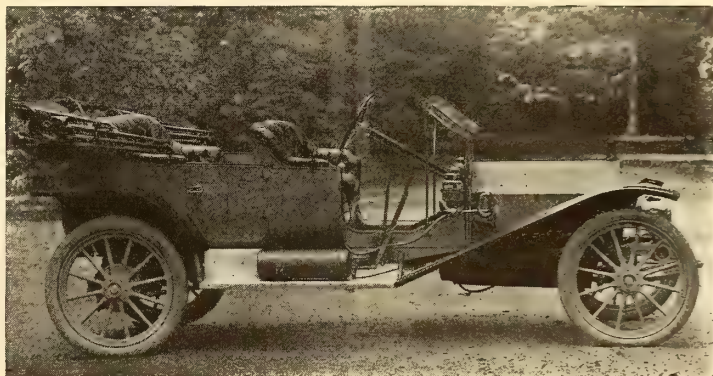
While many accessories can hardly be expected to be included in a touring car costing \$1,500, there are several such machines on the market that are furnished complete with a top, horn, and lamps for this figure. In purchasing an automobile it is always well to note what accessories go with the car, and if the machine is an open touring car, a

doubt that they will do so if urged by the purchaser, at any rate provided he is willing to stand the slight additional expense. Electric headlights offer the great advantages of being instantly available without stopping or slowing down the car, while the dynamo used with this lighting system keeps the common ignition and lighting batteries always fully charged. The new tungsten-filament lamps give fully as brilliant a light as acetylene. It is whiter and has no flicker, nor does it ever smoke or go out because of lack of gas.

Next to the headlights the most useful accessory is an odometer, as it is always a good idea to know how far you travel each day and what is the total mileage per month



The E. M. F. "30" touring car



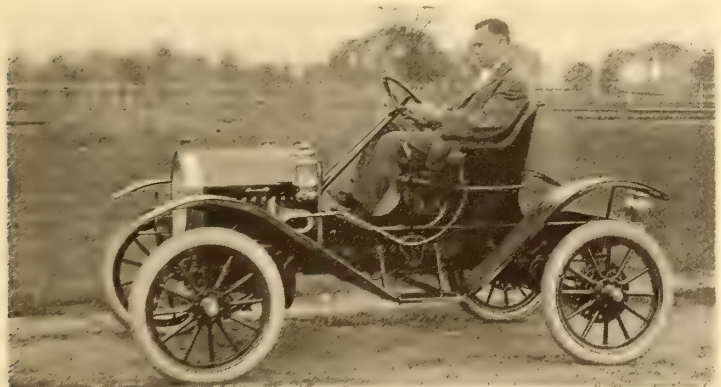
Four-passenger Hupmobile touring car

Cape top should always be fitted. Otherwise one is liable to be caught in the rain at some time or other and to receive a thorough drenching.

If the purchaser has anything to say regarding the accessories that are furnished with his car—and what buyer has not?—he will see to it that electric headlights and battery-charging dynamo are fitted by the manufacturer in place of the acetylene lamps and gas generator or tank of compressed gas that are ordinarily supplied. Several first-class electric lighting systems for automobiles are now on the market, and while the automobile manufacturers have not regularly equipped their cars with them, there is no

and per year. An odometer can be purchased for two or three dollars and mounted beside the front wheel; but if one can afford it a combined speedometer-odometer driven by a flexible shaft and mounted on the dash-board is, of course, preferable. Such an instrument costs from \$50 to \$75 and is an excellent investment giving, as it does, to the chauffeur a constant indication of the speed of the car and the distance covered. The latter knowledge is essential in following the road directions in the Blue Book or other route-indicating publications.

From the above brief account one can see that the automobiles of 1911 are better and cheaper than ever before.



Brush 10-horsepower single-cylinder runabout



The Maxwell-Briscoe 4-cylinder touring car



A garage built of shingles. The flat roof prevents obstruction of view from the house

The Inexpensive Small Garage

By H. P. Wilkin



WITH the increasing use of the motor car, it has become more and more the custom to house the machine on the premises of the owner, particularly in rural and suburban places, where the owner finds it more convenient and economical to keep the car within close proximity to his home. By this means he not only saves from \$10 to \$20 a month on storage and cleaning, but he also prevents the car from being taken out without his permission for "joy riding," and has it always handy for use and inspection, which is particularly desirable at the end of a long ride, when one wants to get warmed up, washed and into dry, clean clothes with the least possible delay.

The practice of keeping the car at home is more practical and satisfactory now than it was in former years, since motor cars have been brought to the degree of reliability and durability that makes frequent and expensive repairing unnecessary. The average owner of a runabout, or a small touring car finds it no very troublesome task to clean and adjust his car as use and circumstances demand; or, if his premises are large enough to warrant employing a man for general work, the cleaning of the car, at least, can be delegated to him safely if he possesses ordinary intelligence.

Usually in suburban places and in the outlying residential parts of cities, the distance to a public garage is not great, and for that reason there is no need to provide expensive repair facilities in the private garage. They can be of the simplest nature, inexpensive, and occupy very little room; in fact, can be disposed on an ordinary workbench and in a small wall cabinet. Consequently, the structure for

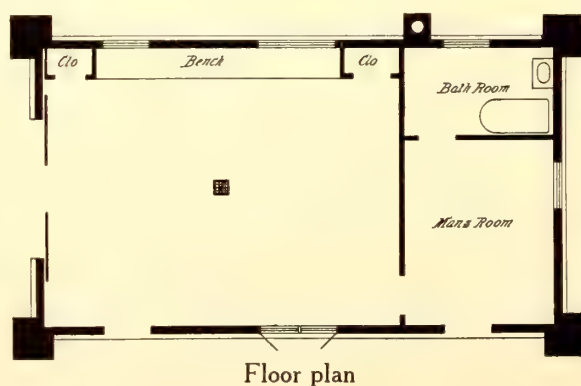
housing the motor car does not need to be any larger than will afford protection to the machine and freedom of action for cleaning, oiling and adjusting it.

There are often numerous objections to building a permanent private garage. The services of an architect might be required, construction might take too long, and the noise and debris of building would be objectionable. More important than these considerations, however, may be the fact that the possessor or intending purchaser of the automobile is only a tenant and does not care to spend several hundred dollars on the construction of a special garage that must be left behind and become a total loss to him in the event of a change of residence.

It was a foregone conclusion, when the motor car made its appearance, that the portable house would be adapted to its needs. There is no necessity for building expensive structures for the housing of a motor car, unless, indeed, you have the money to do so. You can buy in the open market, for a small sum of money, structures that

can be set up in a few hours and that will answer all the needs of a moderate purse. One can afford to be fairly liberal in the matter of size and price in buying a portable garage because he will save the cost of the structure in two years in storage that would otherwise go to the public garage.

This situation is very naturally met by the portable or knockdown garage, a construction that has come into widespread and common use among motorists. The advantages of the portable garage are so generally recognized that more than a score of manufacturing companies in the United States have found it worth their while to cater to the wants of automobilists in this line. These are scattered



all the way from Portland, Me., to Seattle, Wash., a number being located close to the source of lumber supply in Maine, Minnesota, Michigan, and Washington. The great majority of the portable garages are made of wood, although there are several companies that produce such garages of fireproof material, such as galvanized, rolled and pressed steel. The portable garage is generally used for housing one and sometimes two cars, but it can be bought in a variety of styles and sizes, and is, in fact, usually of such construction that the dimensions can be increased indefinitely, at least in one direction, by adding units to the walls and roof. They are so simple to put together and such explicit directions for erecting are sent to the purchaser when shipping the sections, that expert carpenters do not need to be hired; but when carpenters are hired they can erect a garage in a day or two at an expense of about \$25.



A garage built of log slabs on a wooden framework



The side of a hill is a good place to build a garage

needs only one finishing coat after it has been erected. Fireproof metal garages 10x14 feet, with gable roof, one pair of end doors, one window, but no floor, can be bought for \$124; or one 16x20 feet for \$208. The material is galvanized iron and steel, which does not need to be painted unless desired, and the roof panels are fluted and the wall panels embossed. There is a fireproof portable garage of beautiful design, which is made of Monarch galvanized level steel with the Dunbar double-locked sections, which makes them simple to erect, and which can be bought for from \$120 to \$450. A garage of this kind, 9x11 feet, suitable for one car can be purchased for \$120.

By way of comparison with these prices, it may be well to mention that a plain frame garage 12x18 feet, with hip roof covered with cedar shingles, finished outside with

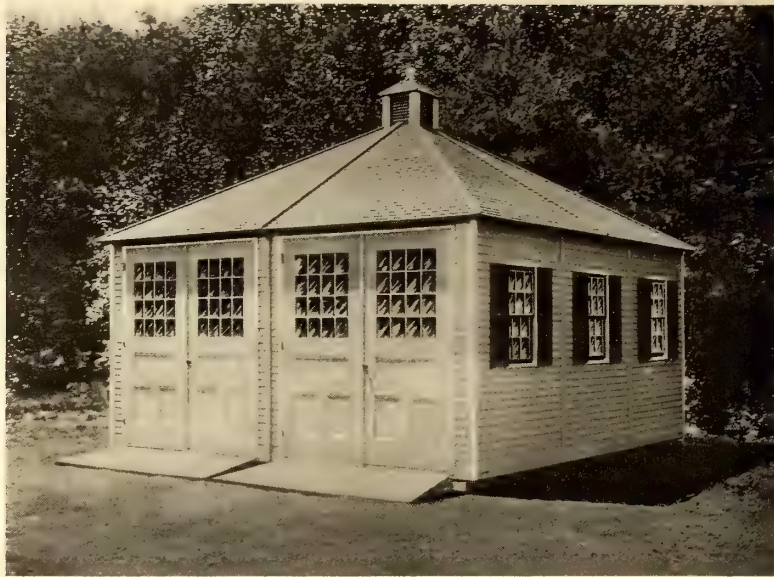
Added to the advantages already pointed out, is the fact that the cost of one of these garages erected and ready for use is usually considerably less than the cost of building a permanent garage of equal size, serviceability and appearance. Knock-down or sectional garages can be bought at prices ranging from \$135 for one 9x13 feet, outside measurement, with a gable roof, double-hinged doors and three windows, to \$465 for a double or two-car garage of the same construction, measuring 18x20 feet, fitted with two sets of glass paneled doors and provided with a sleeping-room, 7x9 feet, in the rear, for the use of the chauffeur. Probably the most inexpensive garage is one costing \$175, which has dimensions of 14x20 feet, gable roof, six windows, double entrance doors, and a side door, a two-foot workbench about ten feet long, and a five-shelf cupboard with hinged doors. This garage has one coat of priming paint, and



Rough stucco garage built to correspond with a house



A portable garage



A twin portable garage

stucco, and plastered and whitewashed inside, cost the purchaser \$200 when bought with a new house. The cost to the builder is believed to have been in excess of this amount.

Different manufacturing companies have different methods of construction, but the underlying idea in all so-called portable garages is that they are ready-made and assembled in sections so that they can be easily and securely put together. The illustrations, with the exception of four, show garages built of various kinds of material. One of them is built of shingles, with a flat roof, so as not to destroy the view from the house,

while a second is built among trees and is constructed of log slabs. A third is built of rough rock-faced stone and

is placed on the side of a hill, and a fourth is constructed of stucco, with a stucco wall and gable roof.

These are all excellent examples for a permanent garage. They show a great variety of design and are built of a varied combination of material. They are representative of the individual taste of their respective owners. In most instances they have been designed and built to harmonize with the house to which they are attached. One of the garages, however, was constructed in a clump of woods, quite removed from the house, and in consequence the material selected for its construction was

wooden slabs. It harmonizes well with its site and is less noticeable than if it had been constructed of other material.



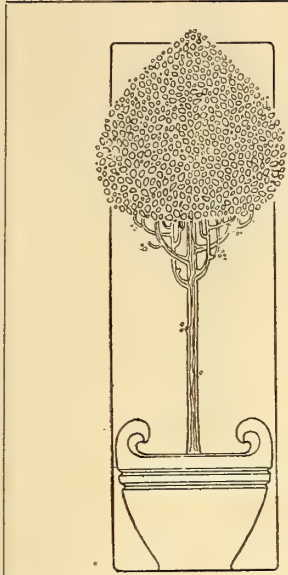
Rough stucco is effective for a permanent garage



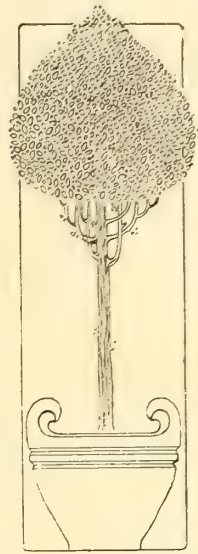
A portable fireproof garage made of metal



A portable concrete garage for \$150



The living-porch is built at the side of the house



Two New England Houses

By Paul Thurston



HERE is no more fascinating type of house than the Dutch Colonial farmhouse so frequently seen throughout New England. It is of a character which, with a few modifications, lends itself in the adaptation for the modern house of to-day. The architects, Messrs. Adden and Parker, of Boston, Mass., have adopted this style for the residence of Mr. Edward O. Kenney, at Reading, Mass. It is an interesting type of building, for the reason that it represents all that is simple and yet combines all the features of comfort and repose. The site upon which it is built is a level one, facing directly east, and it relies chiefly upon its own individuality and proportions. An old apple tree and some elms in the distance claim relationship with the general features of the house and give a certain amount of dignity to the estate.

The underpinning is built of rock-faced stone laid up at random. The superstructure is of frame and the exterior of the house is covered with matched sheathing, building paper and white cedar shingles, which are painted white. The trimmings are also painted white, and the blinds a dark bottle-green. The roof is covered with shingles, is stained a dark shade of gray, and is in harmony with the main body of the house.

The entrance porch is a feature of the front of the house. It has uprights, between each pair of which is built latticework, and the whole supporting a roof of

elliptical form. Within the enclosure there is built a seat. The entrance door is paneled and has a small lattice window on either side. The main living-porch of the house is built at one side of the building, and is reached from the dining-room. This living-porch is enclosed with screens in summer and glass in winter. The plan of the house is rectangular, without projections of any kind except the porches.

The hall is a central one and contains a staircase, which serves for the whole house. It has white painted newel posts, balusters and risers, and a mahogany-stained tread and rail.

To the left of the hall is the living-room, which extends the entire depth of the house, with windows on three sides. It has a large open fireplace, built with red brick facings and hearth laid in white mortar, and is furnished with a Colonial mantel of good design. Bookcases are built in the wall space at the left side of the chimney breast.

The dining-room occupies the right-hand side of the house and is furnished with a large butler's pantry, which connects the kitchen with it. This pantry is fitted with cupboards below the counter shelf, and shelves enclosed with glass doors above. The small built-in china closet in the dining-room helps out the pantry arrangement, and at the same time adds a touch of quaintness to the effect of the room. This room, as well as the entire house, has a white painted trim.



The entrance-porch

The kitchen is separated from the main part of the house by a passageway under the front stairs and the pantry between the dining-room and the kitchen. The kitchen is provided with range, dressers, sinks, and a lobby large enough to admit an ice-box.

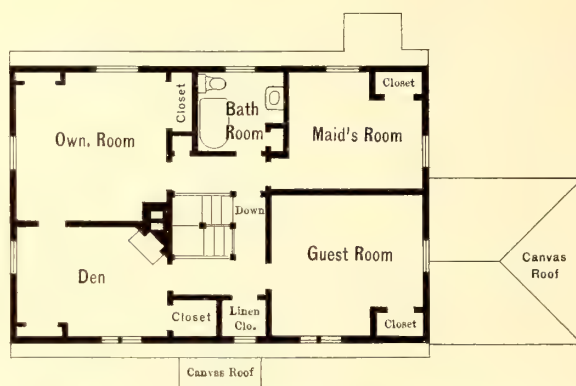
The second floor contains two bedrooms, provided with large closets, and a maid's room. There is also a bathroom furnished with porcelain fixtures and exposed nickel-plated plumbing. A den, opening from the owner's room and provided with an open fireplace, can be utilized for a bedroom, if desired. The cost of this house was \$3,027. The efforts of the archi-



The living-room



First floor plan



Second floor plan

tects and owner were exerted to produce a simple, practical house which would have character and combine all the essential features of the modern dwelling for a small amount of money, and the result has been most satisfactory.

The second house was designed by the same architects, for Mr. Harry L. Dane, at Reading, Mass., and is of a different style from the one built for Mr. Kenny. It is a copy of the old New England village house. The site upon which it is built is very heavily wooded

with large pines and birches, and the structure sits down among them in a manner not often seen in a suburban building lot.

The color combination on the out-



The house of Mr. Edward O. Kenney at Reading, Mass.

side of the house is somewhat unusual. The shingles with which the exterior walls are covered are stained a light transparent gray. The shingles of the roof are stained red and the trimmings a light green, a color scheme which has become a factor in setting the house into its background.

The house faces the west, which provides the long living-room on the south end with light on three sides and the dining-room on the northwest corner with light on two sides, both rooms opening onto piazzas, which are arranged with screens and glass, and which add materially to the livable qualities of the home.

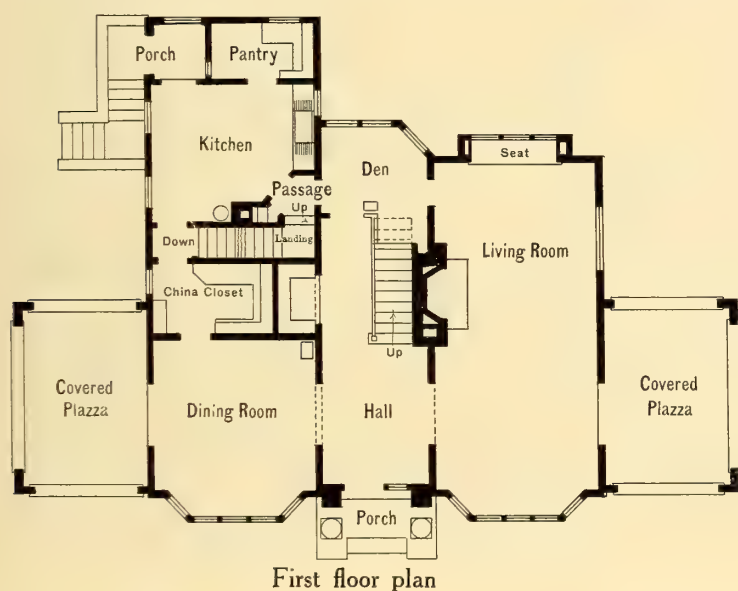
The hall is a central one, extending through the house



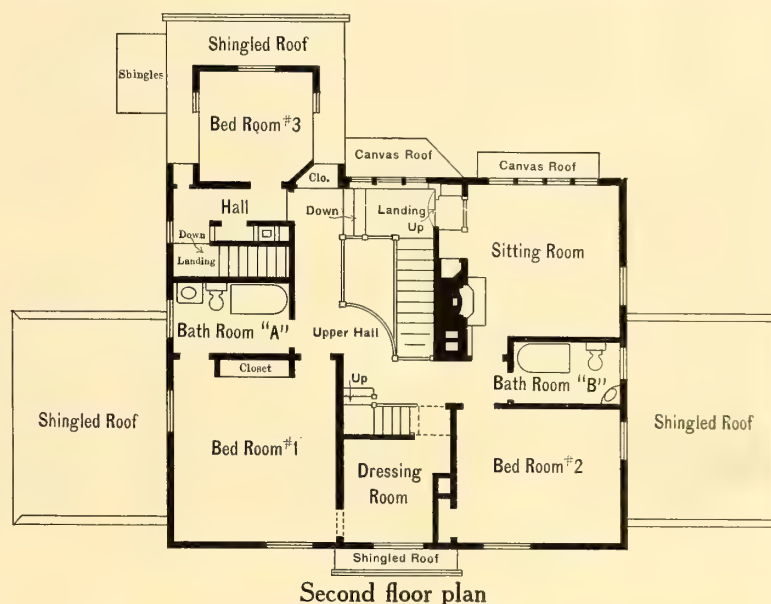
A shingled house of good design

venient place for the telephone and one for desired seclusion on occasions. The space under the stairs is utilized by a built-in desk. The stairs have white painted balusters and risers and a mahogany rail. A low Colonial dado extends around the hall and up the stairs to the second story. The wall space above this dado is covered with imitation Spanish leather in rich browns, greens and blues.

The living-room is trimmed with cypress finished in a dull brown tone, and harmonizing well with the two-tone paper which covers the walls. The fireplace is built of brick, with facings and hearth, and is finished with a mantel of Colonial style. A window seat is built in front of the three win-



First floor plan



Second floor plan

and terminating in a den under the main stair landing, which, although of small dimensions, has proved one of the most attractive features. This snug retreat connects by a narrow door with the living-room and forms a con-

dows at the rear of the room. French windows open onto the living-porch built at the side of the house. Both the living-room and the dining-room have bay windows at the front, glazed with small lights.



The hall



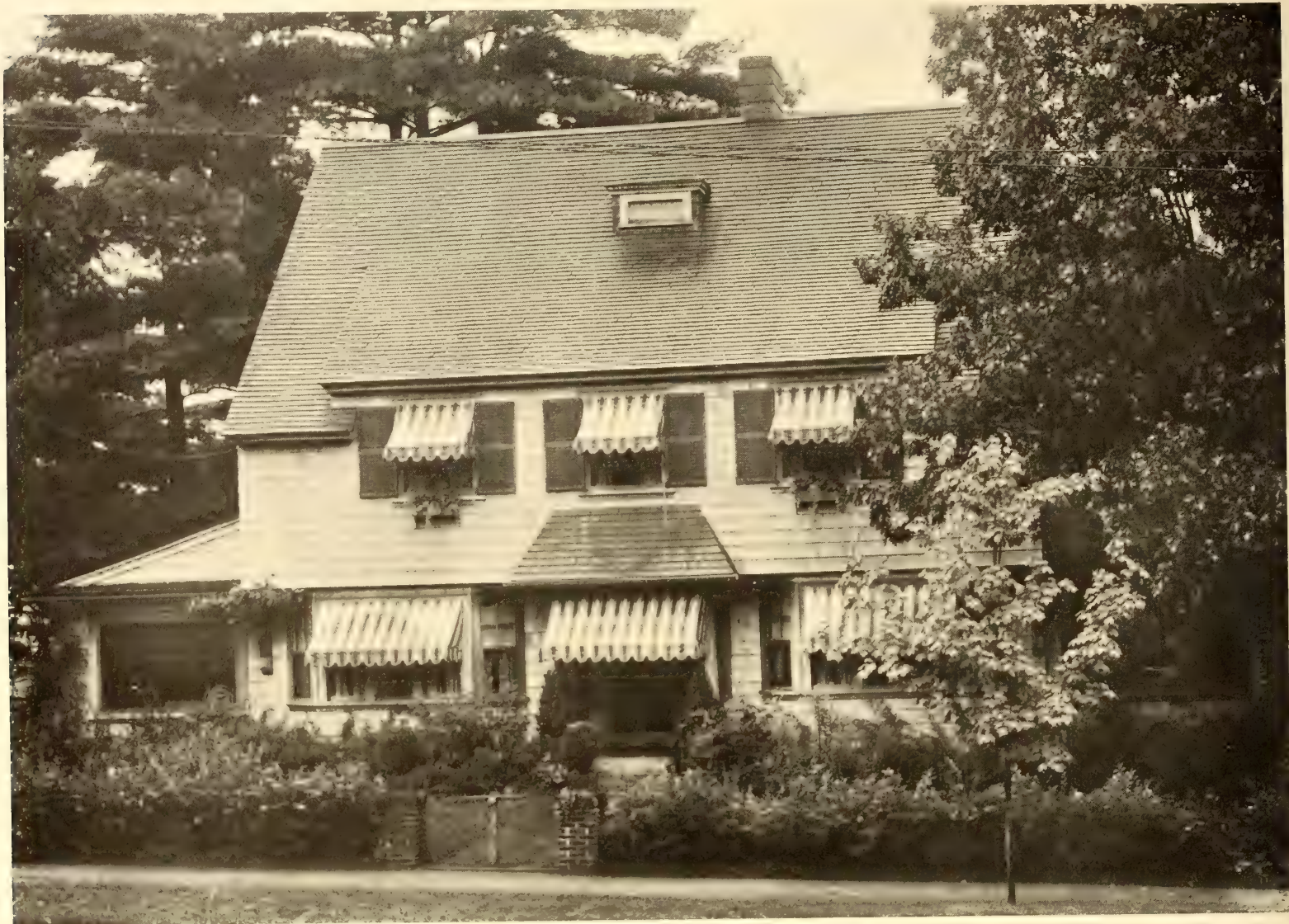
The dining-room

The dining-room has a white painted trim and a white painted dado, with the wall surface above covered with a gilt and green wall paper. French windows open onto the dining-porch, which is enclosed with screens in summer and glass in winter, and is used for dining purposes.

The butler's pantry separates the kitchen from the din-

and a maid's room over the kitchen, the last being completely shut off from the rest of the house. There are also two bathrooms, which are furnished with porcelain fixtures and exposed nickel-plated plumbing.

The third floor contains two bedrooms of good size, two trunk rooms and ample storage space.



The house of Mr. Harry L. Dane, Reading, Mass.

ing-room and is furnished with dressers and every modern appointment. The kitchen, which is reached from the hall by a passageway, and also from the dining-room, is provided with all the necessary modern fixtures. The kitchen is built at the northeast end of the house and has exposures on three sides, thereby giving to it plenty of light and ventilation.

An attractive feature of the house is the staircase, with its landing windows leading to the upstairs sitting-room. This second story contains three bedrooms, a sitting-room

Directly underneath the kitchen is the basement, which is on the level at the rear. This basement contains a laundry, heating-room, fuel-rooms and a storage-room.

The interior furnishings are very simple and have been carried out with the idea of securing a quiet, subdued and uniform effect. The house has been developed both interiorly and exteriorly in an unusually consistent manner, and the whole forms a suburban estate of more than exceptional interest. The cost of this house was \$4,940.





An apple orchard in blossom

Spraying the Apple Orchard

By Benjamin W. Douglass, State Entomologist of Indiana



AFTER a lethargic existence of many years the orchard owners of America are at last awakening to a realization of the possibilities in apple culture. There is not a neglected "home orchard" in our country but that could be brought back into a good bearing condition, and made to produce perfect fruit. This is a condition that is realized by many farmers who would gladly give their trees proper attention if they knew what to do. They realize their trouble, but do not know the cure.

In the following pages I have taken no account of any other branch of orchard work save that of spraying for the fruit. This work is now beyond the experimental stage and successful spraying is based on a few broad and well established principles.

WHAT TO SPRAY FOR

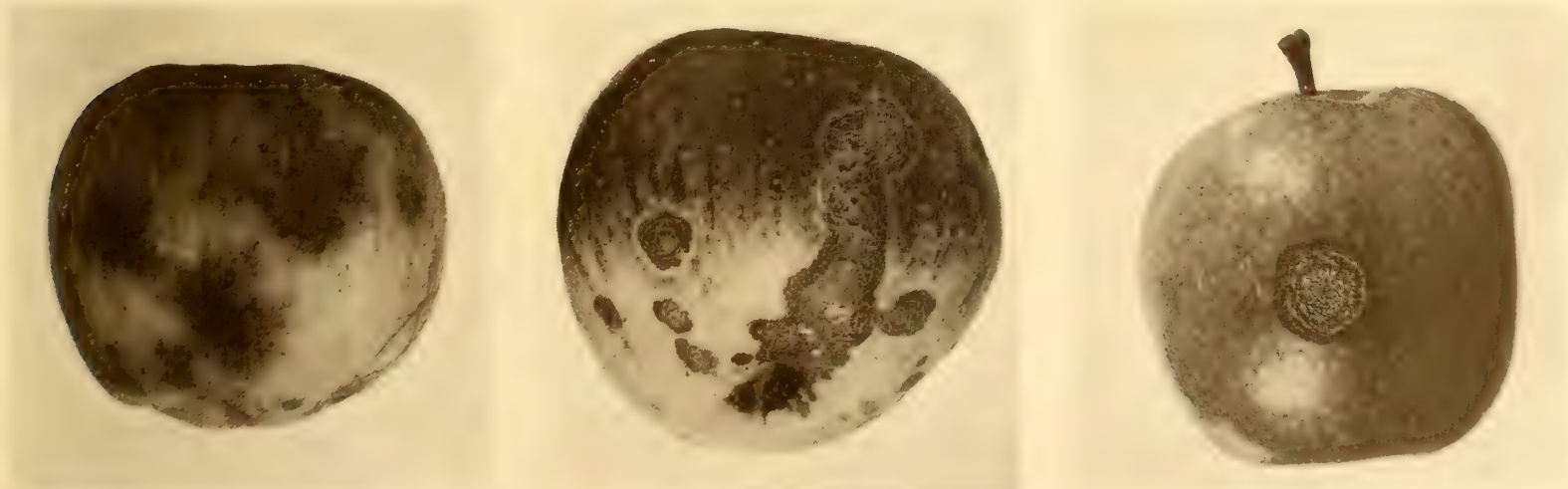
In all orchards there are two classes of pests which render fruit growing difficult. These may be characterized as insect pests and fungous diseases, and being of entirely different natures it is obvious that the same spray solutions will not be effective for both classes of troubles.

As a result we must plan some way in which the two different sorts of troubles can be combatted by spraying with a single solution. Before taking up this part of the question it would be well to briefly review the principal insects and fungous diseases which interfere with the growing of perfect fruit. It is expected, of course, that the serious horticulturist will make a thorough study of his local conditions and that he will be well posted on the troubles which actually occur in his own orchard.

Consequently, in preparing the following list of insects and diseases, I have included only the more serious which are certain to be found in most sections, leaving to the individual orchard owner the task of picking out his minor troubles and devising means of combatting them.

The following list of insects which are responsible for defective fruit includes only those forms which obtain their food by actually eating the substance of the plant on which they occur. Consequently all of these insects will be destroyed by an application of some internal poison, like arsenate of lead.

The Codling Moth.—This is, perhaps, the most common and the best known of all insects which injure the



Apple blotch

Apple scab

Bitter rot

apples, though comparatively few people have ever seen the insect in the adult stage. The larva of the moth is the stage in which we most commonly see it, and it is this larva that is in most cases responsible for our wormy apples. The codling moth lives through the winter under scales of bark in the apple orchard, and in any other sheltered place it may find. In the spring of the year the adult moths emerge and lay their eggs on the young shoots of the apple tree—not necessarily on the young apples. When the eggs hatch the young worms crawl to the nearest fruit and enter the apple at the calyx end. This is a fact that should be remembered, as it will be mentioned later on in connection with the spraying.

The second brood of the codling moth frequently does considerable damage and unless the spraying for the first brood has been very thorough the injury from the second brood may be even greater than that of the first. The subject of determining the time of the appearance of this second brood will also be mentioned later on under the discussion of spraying.

The Lesser Apple Worm.—In some sections this insect has for many years been confused with the codling moth. In fact, in some orchards it is by far the more injurious of the two insects. It resembles the codling moth, not only in appearance, but in life history. The work of the lesser apple worm, however, differs from that of the codling moth in that the second brood seems to be much more numerous than the first, and that most of the injury is done at this time. The codling moth also ceases its work at the end of the summer, while the lesser apple worm frequently remains in the fruit throughout the winter. We find that the life history of this insect varies somewhat with the different localities, and we are now at work upon a seasonal study of the insect. Very frequently we find examples of the work of this insect where only the surface of the apple has been damaged. This makes a very bad form of injury, as it not only ruins the appearance of the apple, but renders its keeping quality very low, causing evaporation at the point where the skin is destroyed and very rapid deterioration of the fruit.

The Plum Curculio.—This is a very small beetle that injures the apple by laying its eggs in a slight opening which it cuts in the skin of the young fruit. These openings are crescent shaped.

The plum curculio winters in the trash on the ground under the apple trees and in sheltered crevices, and emerges in the early spring to feed on the first leaves which appear. It can at this time be poisoned by the application of any arsenical preparation, as will be mentioned later on.

The Apple Curculio.—This is a very similar insect to the plum curculio, and its work may be recognized by the fact that the punctures which it makes are not of a crescent shape, but are round in outline. The insect also differs from the plum curculio in that the adults do very little feeding in the spring of the year. This makes it a form that is almost impossible to control by the application of any insecticide. We have found in our work, however,

that trees sprayed with the lime and sulphur solution are much less liable to be injured by this insect than are trees sprayed with any other solution. It would appear from our experience that the lime and sulphur solution acts as a repellent to this particular insect, and that a considerable degree of protection may be had by spraying with this solution. The insects apparently do not like the odor of the solution, and stay off of the trees to which the lime and sulphur has been applied.

These four insects constitute the principle chewing insects which are injurious to the apple.

FUNGUS DISEASES RESPONSIBLE FOR APPLE INJURY

Apple Scab.—This disease is, perhaps, the most injurious of all the fungous diseases we have to deal with. It is distributed over a wide area, few American orchards being exempt from its ravages. The apple scab lives over the winter on the dead leaves of the apple trees. In the spring of the year, when the warm rains come, the disease develops on the dead leaves, and spores are set free to be blown over the orchard and reproduce the disease on whatever part of the apple tree they may happen to fall. Thus we have the apple scab occurring on the leaves, on the fruit, and on the growing stems. The first spraying is to prevent the infection of the young foliage by these spores, which are blown up from the ground where they occur on the old leaves. This is an important fact to remember. Too many orchardists consider apple scab as merely a disease of the fruit. As a matter of fact it is quite as serious on the leaves as it is on the fruit, and unless the leaves of a tree are kept in a perfectly healthy condition the trees cannot mature a reasonable crop of apples.

Bitter Rot.—This is another serious disease of the apple. Fortunately, however, it is not so widely distributed as apple scab, many apple orchards showing no trace of the disease at all. Where it does get into an orchard, and is neglected for a number of years, it becomes one of the most difficult diseases to control, and the schedule for spraying which will be taken up later on is not designed to apply to districts affected with bitter rot. This schedule for spraying will, of course, give some results in an orchard which is badly infested with the bitter rot, but in addition to the four sprayings mentioned, at least one or two others should be given later in the summer. Bitter rot affects not only the fruit, but the branches as well, producing on the branches the dead rough areas which we know as cankers (similar can-

kers may be produced by several other diseases). It is from these cankers that the disease spreads over the trees and infects the fruit. Consequently a great deal of good can be accomplished by careful pruning in the orchard before the time of the spraying.

Apple Blotch.—In the south this is one of the most injurious diseases, and in some orchards and on some varieties it will be even more injurious than the apple scab. Likewise it will be a more difficult pest to control. Like the apple scab, the blotch appears on the fruit, the leaves



Apple showing the injury caused by Bordeaux mixture



Perfect apple sprayed with diluted lime and sulphur



Apples from an unsprayed tree

and the twigs, wintering over in the cankers on the young twigs.

These cankers may be readily recognized by the fact that they are a characteristic cinnamon brown color.

Unlike the apple scab, the infection from the apple blotch takes place comparatively late in the development of the apple—the first infection occurring about a month after the period of bloom. Consequently, the first spraying for the prevention of this disease should be made some time between three and four weeks after the petals have fallen.

Black Rot.—This is a disease that is sometimes confused with the bitter rot. It occurs not only on the fruit, but on the leaves and branches as well. On the branches it is responsible for very serious cankers and often we will find entire trees destroyed by this disease.

Brown Rot.—Brown rot is more properly called storage rot, being much more common on stored fruit than it is on the fruit in the orchard. Well grown fruit, however, will be more resistant to the brown rot when put in storage than will fruit that has been neglected in the orchard, poorly grown, misshapen and cracked. On some varieties the brown rot makes its appearance in the orchard while the fruit is still on the tree. This is notably true of the Jeniton, a variety which often cracks in the fall of the year as it hangs on the tree. These cracks give excellent entrance points for the spores of the brown rot fungus, and as a result we have the disease occurring in the orchard. Where the trees are sprayed with diluted lime and sulphur, the fruit is much less liable to crack than if it is neglected, or if it is sprayed with Bordeaux mixture. Consequently, proper spraying with diluted lime and sulphur, as will hereafter be recommended, will do a great deal to control this rot on the Jeniton and other varieties which are subject to the brown rot in the orchard.

SPRAYING

WHAT TO SPRAY WITH

As has been mentioned before, we have two general classes of pests which work to prevent proper development of the apple. Consequently, we must have a solution which will deal with both of these pests at the same time, or else we must make two separate and distinct sprays. It has been found in practice that a "shot-gun prescription," such as the following, will not only prevent the fungous diseases, but will poison all the chewing insects mentioned as well. This preparation is termed a "poisoned fungicide." The following solution is recommended:

Commercial lime and sulphur solution (similar to that used for the control of the San José scale in the winter time)	1 gallon
Arsenate of lead	3 pounds
Water	40 gallons

Any of the common brands of commercial lime and sulphur solution now on the market will prove effective for this work. The arsenate of lead which is used should be tested with litmus paper before it is added to the lime and sulphur solution.

The arsenate of lead should be neutral in reaction—that is, it should not affect either red or blue litmus paper.

Very often the preparations of arsenate of lead which we buy are what are known as acid arsenates, and will turn blue litmus paper red. Such a preparation should not be used in connection with any lime and sulphur solution, as it causes the sulphur solution to decompose and lose its efficiency.

TIMES TO SPRAY

The exact time for spraying must be determined by the orchardist for his particular locality. I have no faith in spraying calendars, and the following schedule of sprays is not to be considered to be an exact calendar for apple spraying in any sense of the word. It is simply a recommendation that has been found to be effective in many sections.

First. This spraying is applied before the blossoms open, and is intended to prevent the early infection of the apple scab on the leaves, and is also intended to poison many of the plum curculio which feed on the young leaves at this time.

Second. This spraying is made after the petals have fallen, and is intended to poison the codling moth and the apple worm, and some of the late feeding curculio; to prevent scab and to repel the apple curculio. This spraying must be made after the petals have fallen and before the calyx lobes close. In fact, it should be made just as soon after the petals have fallen as possible. In no case should this spray be made when the flowers are in bloom, as a double injury may result. In the first place the arsenate and the sulphur solution may destroy the essential flower parts and in the second place, the bees, which are gathering nectar from the flowers, may be poisoned. This would be an injury quite as serious to the orchard owner as to the bee-keeper.

Third. The third spraying is made from ten days to two weeks later. This spraying should also be made, if possible, before the calyx lobes close, and is intended to



Apples from a sprayed tree

supplement the second spraying, to cover up any defective work which might have occurred during the work of the second spraying, and also to allow for any solution that might have washed off during the intervening rains.

Fourth. This spraying should be made some time in July at the time of the hatching of the second brood of codling moths and apple worms. The appearance of this second brood varies with different localities and with different seasons. The only way in which spraying can be accurately timed is to take a few apples affected by the first brood of moths and place them in a "Mason jar" and tie a piece of cheesecloth tightly over the top of the jar. These jars can then be set in the orchard where they will be subject to the same weather conditions as the apples on the tree. Beginning early in July the jars should be watched daily and when the adult moths appear a few days should be allowed for egg laying. The spray should then be applied to the orchard and should be applied thoroughly, as only painstaking work will be effective in preventing injury from this second brood of moths. The second brood usually enters the apple, not at the calyx end, like the first brood, but at the side of the apple where two apples touch. It is also of great value in thinning the fruit in the orchard to remove one of two apples which are hanging in contact with each other.

HOW TO SPRAY

Many orchard owners who are willing to spray do not have the slightest idea as to how the work should be done. They often shy at the expense of spray pumps and at the difficulty of working them. As a matter of fact, a small pump is less costly and is far easier to work than is a plow. No agriculturist would consider working a two-acre garden without a plow, but many of them will attempt to grow perfect fruit without a spray pump.

SPRAY MACHINES

The commonest type of spray outfit used in small orchards is what is known as a barrel outfit and consists of a

barrel upon which is mounted a small force pump. To this latter there is attached one or more hose connections with lines of hose running from the pump and at the end of the line of hose is an extension rod (so called) to enable the operator to direct his sprays more advantageously. At the end of the extension rod is a nozzle which is capable of producing a fine driving mist. In connection with the spray pump there must be some attachment which will cause the mixture in the barrel or tank to be violently agitated, thus preventing the solution from settling and interfering with the results obtained from the work. Any variations in this spraying outfit will consist simply in variations of the items mentioned—that is, the barrel or tank, pumps, hose, extension rods and types of nozzles. Tanks may vary considerably in design and in size, some orchardists preferring to use a comparatively small tank in the shape of a thirty or a fifty gallon barrel. This, of course, makes the cheapest outfit and the one most generally adapted to the use of the small orchard owner. Larger tanks may be made of wood or sometimes of metal. Wood tanks, however, are always preferable and large tanks should be mounted on wheels so that the center of gravity is low in order to enable the outfit to drive over rougher lands than it otherwise could.

The greatest variation in outfits will, of course, be in the matter of pumps. There are many different designs of spray pumps on the market and nearly every design is made in a number of sizes.

One point in the selection of any spray pump is to see that it is provided with an adequate air chamber. This air chamber is necessary in order to secure a uniform pressure on the hose. Pumps will also vary in the method in which they are operated, the simplest of course being operated by hand, just as any pump would be operated. This, while being the cheapest and the simplest form of pump, is likewise the most expensive to operate, because it requires the entire time of at least one man to keep it going. Some styles of spray outfits are arranged with gears attached to the wheels of the wagon on which the tank is mounted.

Planning a Seashore Garden

By Martha Haskell Clark



THE seashore garden is primarily a garden of annuals. Winter storms, drifting sand, poor soil, and high winds all combine to make a perennial garden a thing of uncertainty, except for those whose purses are very long. These favored mortals, by dint of deeply dug beds, loam carted at fabulous prices from inland farms, and trained gardeners, many of whom are on guard not only in earliest spring, but in the winter itself, may hope to possess a truly satisfactory garden of perennials in the wilderness of sand that characterizes most of our seashore resorts.

But for the ordinary garden amateur, possessed of more enthusiasm than coppers, and with the longing to brighten his brief vacation with a few flowers, the difficulties confronting him at the first glance at his shifting and wind-blown garden plot, often prove insurmountable. He has heard the cost of gardens around him, skeptical neighbors have dampened his ardor with well meant advice, and in the end he decides that a seashore garden, while delightful to the inward eye, is best left to the realm of the imagination.

But that it can be a thing of beauty, as well as of little cost, has been proved over and over again by garden lovers even with slim purses.

There are two pitfalls in the making of a seaside garden,

into which the novice is most likely to tumble headlong. The first is his tendency to consult the catalogues, pick out his favorite flowers, sow his seeds, and then spend the rest of the summer in wondering why they do not grow and blossom. If he passes this rampart in safety he is very likely to find that when his garden is at last in blossom it is a glaring flame of color. For it is a fact that many of the plants suitable for a seaside garden are of the most vivid hues; and one needs to make a very careful selection of colors if he wishes his garden to be a place of rest as well as of beauty. In no variety of garden should blue, white and the pale, cooler tints be used more lavishly.

The first thing to consider in the making of a seaside garden is the matter of wind-breaks. These may be only two feet high, but in most localities they are an absolute necessity. Knowing the prevailing winds, if possible, plan your garden so that your cottage or stable may be a shield, and if this is impossible there are a variety of wind-guards to choose from. Bayberry and sweet-fern bushes are native to most coast resorts, and make admirable hedges, being transplanted easily if cut back heavily and well watered. They can be transplanted at almost any season except mid-summer. Birch brush driven into the sand and overgrown with climbing vines makes a simple and really beautiful screen when in blossom, and any variety of fence may, of course, be treated in the same way.

The next important point is in preparing the soil, and here it is that the well-to-do man has his greatest advantage. For some sort of soil you must have loam to mix with your sand, and give body to it, or your garden will not do itself and your aims justice. The poorest, scantiest loam, or woods or earth will work wonders; rotted kelp and various sea-weeds are also good, but must be used more sparingly. Some sort of body you must have for your beds, or the first puff of wind takes seeds, bed and all over to your neighbor's grounds. A few barrels of poor loam, will be sufficient for a very successful garden.

After having prepared your soil and staked or marked out your flower-beds, the next point in order is to select your flowers. Here there are three points to remember: 1—Choose only such plants as your catalogues list as doing well in full sunlight, or better, that you yourself can vouch for from experience. 2—Choose only plants of medium height or low growth. 3—Select your colors carefully.

Most of the plants, with a very few exceptions, that are listed as doing well in full sunshine, can be grown to advantage at the seaside. Salt air and mist seem to have the faculty of bringing out more beautiful and vivid coloring than conditions inland.

The care of such a garden, once planted, is no more difficult than that

of any garden of annuals; in fact it has the advantage of producing fewer weeds to be laboriously grubbed up. In seasons of prolonged dryness it should be mulched with old sea-weed and watered every evening.

As to fertilizers, I have found that twenty-five cents'

worth of nitrate of soda is enough for a garden of ordinary size, but it must be applied very sparingly, and only after the plants have gotten well above ground. A thin powdering over a bed, taking care that it does not lodge

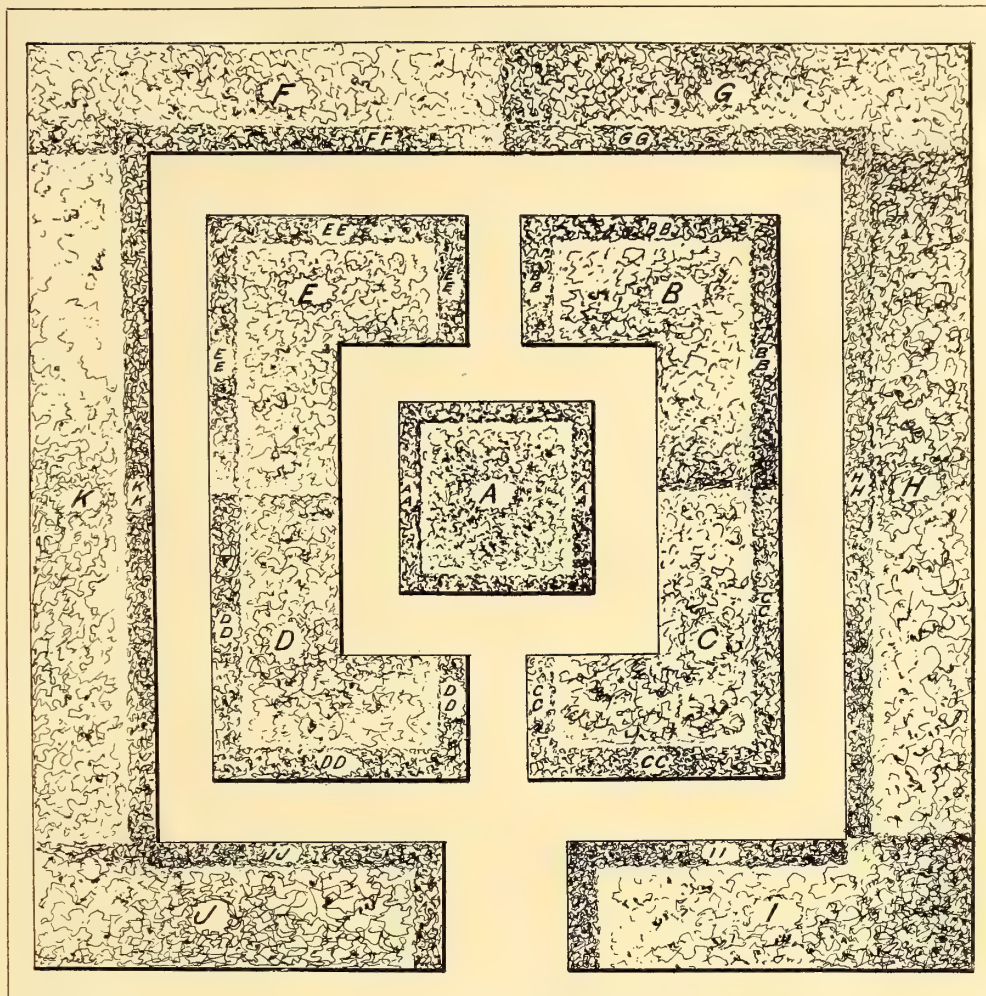
on the foliage, applied just before a rain, will work wonders.

If your seashore cottage is in a settled community, it is a good plan to commission some fisherman, or his wife, to sow your seeds for you in the spring. For if, as is the case with so many, your vacation is limited to a portion of the summer, you are likely to find your garden just beginning to bloom when you depart, if you wait until your arrival before the seeds are sown. If you do make use of an ally, be sure that he or she has some little garden "sense," or you may find your seeds buried six feet under ground.

A plan is furnished in this article of a seaside garden that has proved to be successful. The whole garden occupies a space only thirty feet square, and is easily cared for. The plants have been chosen for beauty, for color and for fitness in trying conditions. There are many others, of course, that would do equally well. The whole price of seeds for this garden does not exceed three dollars. It can be planted for a smaller sum by using less care in selecting colors. The cost of preparing the garden varies so in different localities that it is impossible to give

an estimate. Of course, such a garden, once prepared, will last for many years, with the addition of fertilizers each year.

The accompanying key, with notes on the plants used, explains the plan.



KEY TO PLAN OF SEASHORE GARDEN

- A. Annual pinks, mixed colors.—Buy one package of punctatus, or laciniatus, for singles; imperialis flore pleno, or laciniatus flore pleno, for doubles.
- aa. White annual pink for border.—Buy "Snowball" for double flowers, Hedderiggii "The Bride" for single flowers. Double much to be preferred.
- B. Calliopsis; golden yellow.—Buy variety "Cloth of Gold" for a good pure yellow. Avoid mixed colors.
- bb. Asperula azurea setosa; azure blue, fragrant.—Easily grown, and makes a beautiful combination with the yellow. Should be well watered.
- C. Candytuft, mixed colors.—Buy one package mixed colors and one of the tall white. Sow together.
- cc. Dwarf white candytuft; fragrant.—Very successful, and makes a fine edging.
- D. Bachelor's Buttons; mixed.—Buy one package of mixed colors, and one of deep blue. Sow together.
- dd. Eschscholtzia, pink and white.—Buy variety "Dainty Queen" and Rose Cardinal.
- E. Eschscholtzia, shades of yellow.—Buy varieties Californica, alba, and Golden West.
- ee. Ageratum, blue.—Buy dwarf blue. Easily grown, and blooms profusely.
- F. Marigolds, yellow and brown.—Any varieties may be selected. All do well, and the range of color is good.
- ff. Dwarf Morning Glory, mixed colors.—Little known plants, but exceedingly good for bordering, and easy to grow. Flowers remain open all day.
- G. Drummond Phlox, mixed colors.—Buy mixed, or select colors, according to individual taste. All are good.
- gg. Dwarf phlox, or star phlox.—Buy one packet each of pink and white, for edging.
- H. Annual poppies, mixed colors.—Sow selected taller-growing kinds at the rear. Shirley mixed in front. For tall-growing kinds the following are good: "Admiral," red and white; "The Bride," pure white; "Virginia" and "Miss Sherwood," pink and white; "Fire-dragon," scarlet, black and white. Avoid double poppies at the seashore. They are a display of parti-colored mush most of the time.
- hh. Sweet Alyssum, white, fragrant.—Buy common Sweet Alyssum. It is the most successful in sandy soil, and most fragrant.
- I. Petunias, pink and white.—It is unsafe to trust to the mixed seeds, as so many magenta shades are included. Select one package each of pink and white, or safer still, stick to white alone.
- ii. Dwarf Petunias, white.—Buy only the white variety for edging.
- J. Annual Chrysanthemum, various colors.—Buy one mixed packet of the old-fashioned "Painted Daisies." Splendid for the table and last a long time in water.
- jj. Godetia, mixed colors.—A little-known annual of beautiful coloring and easy culture. Especially successful in a seaside garden. Is worthy of a whole bed to itself.
- K. Dwarf Nasturtiums, mixed.—Too well known to need description. Any mixture bought from a reliable firm cannot be improved upon in blend of coloring.
- kk. Sweet Alyssum, white.—Described above.

For flowering vines for covering fences, or arches, the following can all be recommended. Many beautiful annual kinds will not succeed at the shore. The following have all been tested and will give satisfaction. But all must be kept well watered and mulched or they will become stunted. Common Morning Glory—Avoid newer and fancy hybrids. Is apt to prove brittle in windy situations. Balloon Vine—White flowers, curious seed-vessels. Hyacinth Bean—"Daylight" a pure white, is the best variety. Gourds in variety—All succeed well, and are both curious and ornamental.

Of these vines the first two are the most certain to give good results.

A trailing plant that always succeeds is the Portulaca. Now that seed of it may be bought in separate colors very good effects can be produced by its use alone. The mixed seeds contain magenta shades. This plant is especially good to trail over rough banks, and can hardly be placed in too sunny and hot a situation.

Planning Small Country Places

Queries Answered by Charles Downing Lay



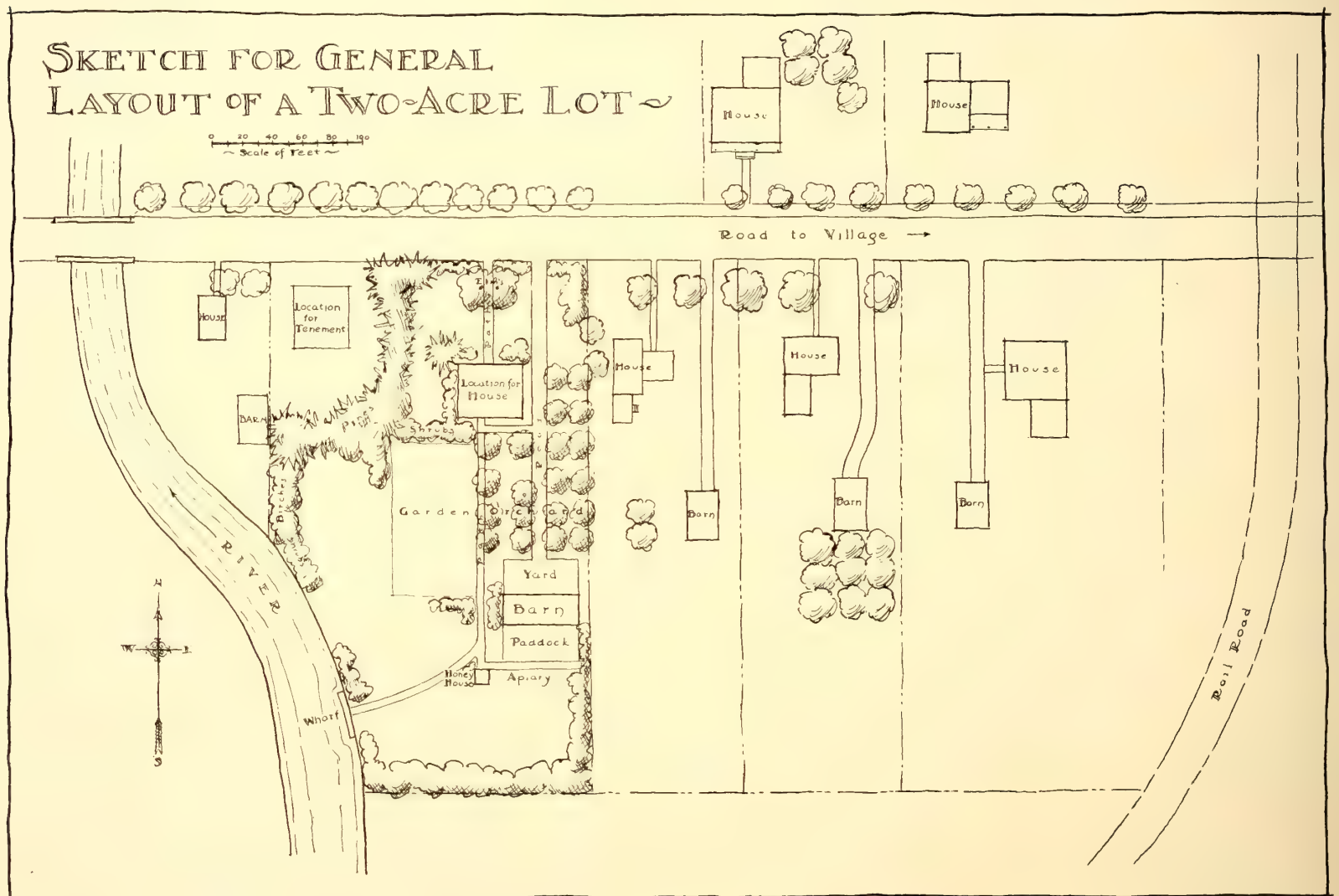
AM sending you a rough sketch of our lot and the picture of a bungalow I am intending to build, and I would like your criticism and ideas about placing the house and the barn, position and kind of shrubs and trees (kinds that would be hardy for this climate). I would like to place the house so that I could put another house (some time) further west, for a tenement. It would need no barn and might have less frontage than the first house, and I want most of the land in the rear for a small garden and a few more apple trees. I have 75 swarms of bees and want a small honey house in back. I have one horse and a cow. Four constitute my family. We cannot go

two large elm trees. The road is at the east of the house and goes between rows of apple trees to the barn. Back of the barn there is a paddock or barnyard for the cow to have her winter (and perhaps summer) airings. From the back of the house a straight path leads through the garden (with the orchard on the east) to the barn and the honey house and the apiary.

This path, it will be noted, is the only one on the place, so that whenever one goes to the barn or honey house or dock one passes through the garden. This is a great enjoyment, and a great time saver for busy people.

The ground near the river is to be kept in grass, with shrubs along the river, the garden and the buildings.

The tenement is in an inconspicuous place, and the plant-



into extravagance as our income will not allow it, but we would like it neat and attractive, and everything in harmony."

This problem is very well stated and the plan which accompanied it is drawn with unusual care. It has been a pleasure to work out the new scheme shown in the first illustration, entitled "Sketch for General Layout of a Two-Acre Lot," because the place is full of promise, and if the details are done simply and entirely without showiness it will be a very charming place.

We shall be glad to give, at a later time, details of the garden, and of the planting of the place.

In designing this plan it was obvious that the path to the front door should be straight and should pass between the

ing which screens that from the house serves also to keep off the north winds from the house and garden.

We believe the whole arrangement is very convenient and harmonious, and that the place will some day be very beautiful.

"I have made a sketch of my grounds as well as I can. My husband is a business man and has no time for a garden, and no suggestions to make for the home grounds.

"The lot is graded down to the walk. There is no fence in front or on the left side as far as the hickory tree, where there is a retaining wall for our neighbor's lawn, which is in good condition and a credit to any neighbor.

"The house is only 25 feet from the front walk. I am fond of shrubs and vines, but do not know what or where

to plant to get the best results. We have been four years getting the grounds as they are, and I did not want to spoil them."

This plan was unfortunately drawn without any scale, so that our plan, presented in the illustration entitled a "Plan for a Small Place in a Country Town," though suggestive, is

of the house, or about 60 feet deep. This lot is on a southern exposure of a hill, and has no shade except that cast by a barn on an adjoining lot.

"There is an embankment around the house about 18 inches above grade and about 6 feet wide.

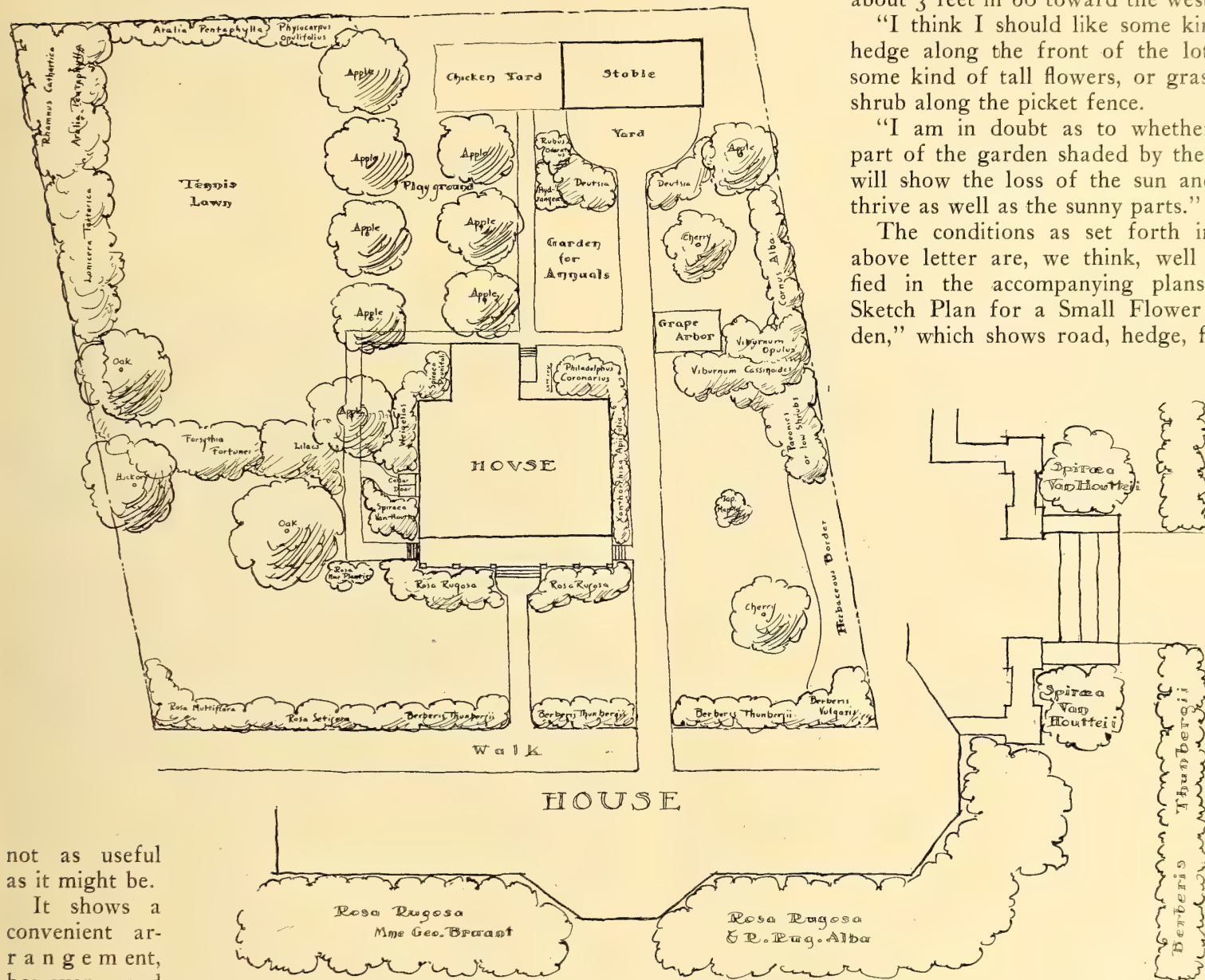
"I want a 6-foot driveway to run from the street alongside of the house, to allow coal teams to enter. The lot has a down slope of about 3 feet in 60 toward the west.

"I think I should like some kind of hedge along the front of the lot and some kind of tall flowers, or grass, or shrub along the picket fence.

"I am in doubt as to whether that part of the garden shaded by the barn will show the loss of the sun and not thrive as well as the sunny parts."

The conditions as set forth in the above letter are, we think, well satisfied in the accompanying plans, "A Sketch Plan for a Small Flower Garden," which shows road, hedge, flower

PLAN FOR A SMALL PLACE IN A COUNTRY TOWN



not as useful as it might be.

It shows a convenient arrangement, however, and one that will always look well and that will be easy to keep in order.

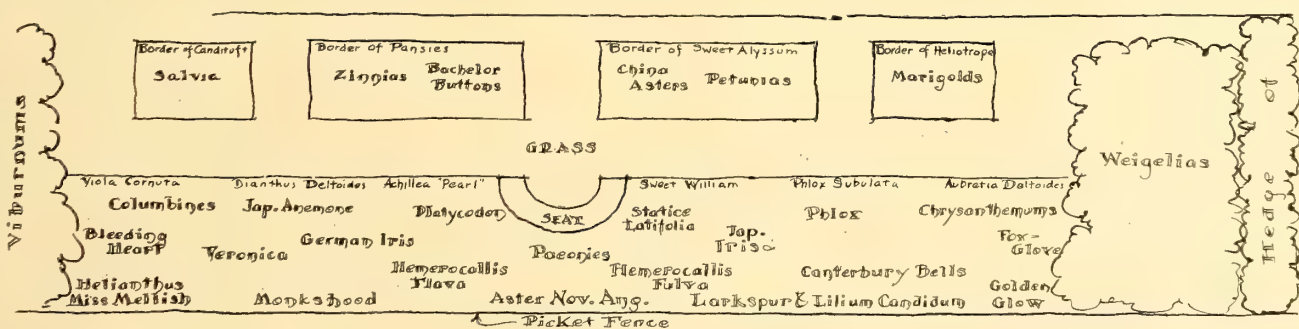
The herbaceous border, the shrub border and the plot for annuals are pleasing features, and properly carried out would give any place distinction.

"I am enclosing sketch of grounds upon which I have recently built a house costing \$8,000, and I would appreciate it if you would lay out on this sketch a suitable plan for a garden—one not too expensive.

"My lot is 60 feet front and 145 feet deep. I desire to have a flower garden run from the street line to the end

garden with grass paths, tall things against the picket fence, and planting on the embankment around the house.

It will be noticed that there is a path and a seat on the axis of the dining-room windows, and that the scheme is simple and inexpensive, but thoroughly practicable, and very good to look at. The barn shadow will be a help.



SKETCH PLAN FOR A SMALL FLOWER GARDEN

1 2 3 4 5 6 7 8 9 10
SCALE OF FEET

A Garden Miniature Arbor

By George A. Avery



SOMEWHAT frail and perishable trifle this, that rears its rustic form in all the majesty of leaves; or a thing that gives the little builder a fair castle which puts out of business for an outing day its neighboring big house in the rear. But we are sure that cosiness reigns within the

enclosure; the patchy lights and shades are as real as those that suffuse an imperial pergola; and withal, the cool retreat is more than a possession, it is a creation, built by

and a pinnacled arbor, the smaller of which is seen to be stanch enough to support the use of a ladder in its construction. The completed work is in Fig. 2 where the upright posts of the tepee frame are hidden by foliage.

An odd bit of planning (Fig. 1) is exhibited by having the uprights in the rear extend beyond the base, while the front ones are well within the enclosure. Whether this was simply doing the builders mechanical worst, or was intended to make a small open court effect up to the edge or front of the tea table, is a question. But, like all other items of

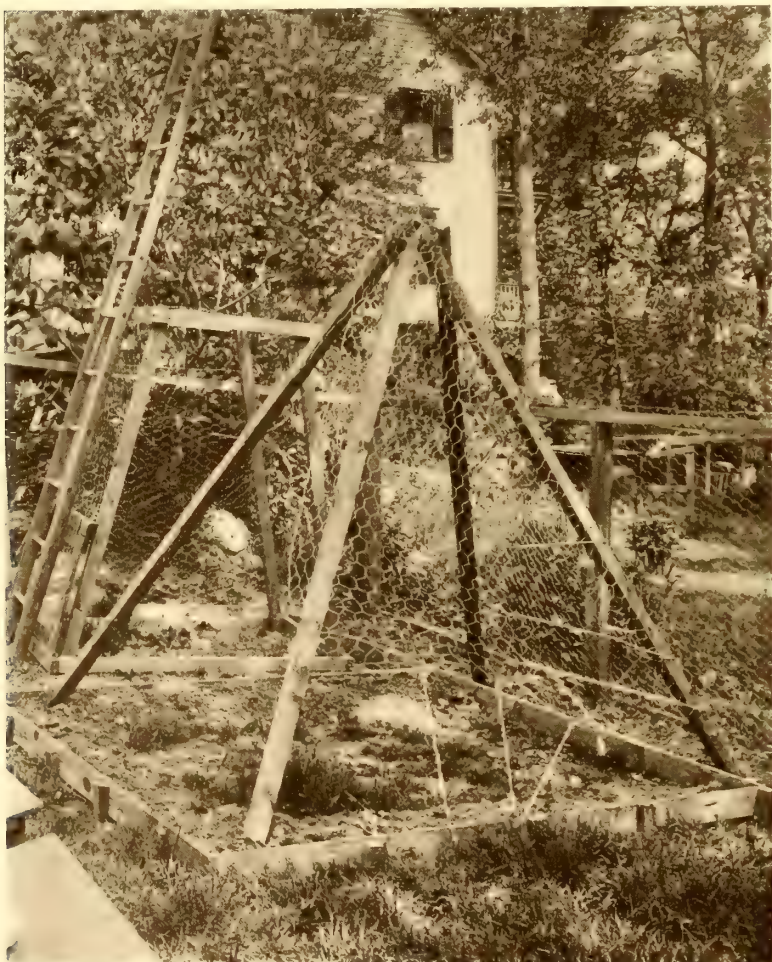


Fig. 1—The arbor in construction, with upright posts covered with wire



Fig. 2—The completed arbor covered with vines

the hands and wits of the youthful architects, who are enjoying within, a 5 o'clock tea. Any child as old as they can make one a little better or a little worse with the means at hand, which comprise garden dimensions of small extent, no mechanical skill, and only a few cents' worth of outlay.

When finished, no child labor contributory to its erection could have its stick more deeply notched by success than in this work of so pleasing a form, embracing so comfortable a nest. The whole effect is charming and the chances for enjoyment are so fine within its shady precinct that one could scarce suggest a better novelty for the children's playground acre.

It might be that, even if this arbor plan and scope had been calculated out to a hair by an expert, no better result could have been reached, for it is an ideal shelter, and one bound to feel its way into a child's ambition to imitate or to excel.

In the engraving, the first work is shown in Fig. 1, and it gives a view of the skeleton or frame of both a flat roofed

this novelty in construction, it is a mere detail, and one may go on extending the wire round the rear, sides, and part way up the front, and tie and nail and brace without any particular concern, for time will cover all inequalities with an ample outergrowth of grapevine, morning-glory, wistaria, or any one of a multitude of green climbing plants with eager tendrils.

An appreciation of the value of the arborette is made easy by the exceptional picture of the doll's party at a table spread with petite ware and good things enjoyed by the youthful arborites, an accomplishment which is likely to make a practical breach in many of the old-fashioned forms of outdoor playhouse amusements, for instance, such as the mud-pie bakery. So one may apprehend, who does not lack prophetic instinct, that structures such as these will yet dot many a yard or garden in the summer season, and be a bower where the child arbor-wife can entertain her little guests, the studiously inclined youth can work in peace, or the boy and his dog can hold their leafy fort.

GARDEN NOTES

CONDUCTED BY CHARLES DOWNING LAY

MY MINIATURE GARDEN

By Mrs. P. L. GILL

LAST summer we rented a small house on the north shore of Long Island. There was quite a little ground around the dwelling, so I determined to grow my own vegetables.

I knew nothing at all about gardening and my plan was much ridiculed by my family and friends. I was told that the garden would be a failure and that whatever I did get out of it would cost me many times more than the vegetables I could buy. So much fun was made of my project that I determined to keep strict account of every cent I spent on the garden and of everything I got out of it, the latter valued at the market prices.

I selected a plot of ground about 30x35 feet at the back of our lot, and early in May engaged an old German to spade it up, plant the seeds and take care of it for me until we took possession of the house the first of June. His time amounted to \$2.25. He used 75 cents worth of fertilizer, and planted radishes, beets, peas, string beans, corn and lettuce, the seeds costing 65 cents. He also set out six tomato plants and one row of lettuce plants, amounting to 25 cents. He laid out the garden in twelve 30-foot rows made up as follows:

Four rows of peas, two rows of string beans, two rows of radishes (when they were exhausted we planted our second lot of beets in their place), two rows of lettuce, one row of beets, one row of tomatoes and four rows of corn in two plantings. My further expenses were as follows:

50-foot hose and nozzle.....	\$5.29
Trowel	.29
Hoe	.33
1 quart measure	.20
2 packages beet seeds for second planting	.10
Frames for tomato plants and man's labor setting them up	.75

\$6.96

These, with the items cited before, that is, the man's labor, the seeds and plants, made a total of \$10.86. This was my entire outlay on the garden. Perhaps it was not quite fair to charge up the entire cost of the hose and gardening implements, for of course they were in perfectly good condition at the end of the summer and can be used again. But the season was, as any gardener will remember, an exceedingly dry one, and I feel that the hose fully paid for itself in keeping the plants in good condition through the long drought.

After we moved to the country the first of June, I did all the work of the garden myself. One of my mistakes, and I made a good many, was that I had planned too small a garden. I am not strong and I was afraid, being totally unused to the work, that I would not be able to look after a larger piece of ground. I found, however, that I could have worked a piece twice the size—and doubled my profits. But to go back—as I said, I did all the work myself, except for a little help on Saturdays and Sundays from my busy husband.

Here is a list of what we got out of the

(Continued on page xxi)

CONSIDER THE LILIES

By GLADYS HYATT SINCLAIR

MANY people have a strong fondness for lilies and roses who care very little for lesser flowers. Yet they seem to think "having flowers" means having quantities of annuals and perennials with here and there one of their great favorites. The expense involved deters some from investing in the garden queens; the mere lack of boldness and determination to have what they want and leave the rest seems to hold others to the conventional mixture.

Isn't it a little odd that, while we Americans are so quick and vigorous in maintaining our individual preferences in music and books, in buildings and furnishings and dress, we should think our gardens must ever hold the same flowers that grace our neighbors' gardens, only venturing a change of arrangement? Why doesn't the man who has numbers of his favorite, the setter, have all sorts of his favorite, the carnation? Why does the woman gardener who delights in lilies as she does in Persian kittens, eschew every other animal and grow every other flower?

Many places large enough to have everything and a rose garden have the rose garden; but why do we so signally fail to consider the lilies? Of their majesty and beauty there is no question; but I think most lily worshippers do not know that there are lilies enough to satisfy the most ambitious, to please the most fastidious and to keep a garden a-bloom from May to October.

In many Oriental languages, according to good authority, lily means a flower—a blossom. To most of us the lily brings the image of purity and the white lilies are the prime favorites of their family. Of these the old, old Madonna lily (*Lilium candidum*), is the easiest to grow, most dependable and one of the most beautiful. It is the same hardy white lily that graced our grandmothers' box-bordered gardens, finding their severe lines and formal arrangement the very best setting for its immaculate and nun-like beauty. *Candidum* bulbs of the largest size cost but one dollar and fifty cents a dozen, or ten dollars a hundred. They must be ordered early and planted in August or early September before their autumn growth begins. The bulbs should go a foot apart, as they multiply rapidly. In my experience and that of others, *candidum* is the only lily not benefitted by deep planting. A covering of three inches is enough for large bulbs, where other lilies would need six.

It is a sorry fact that the "lily disease," a sort of blight, is partial to the *candidum*. Dusting the bulbs with sulphur before planting helps, and Bordeaux mixture sprayed on the foliage every spring before the blight gets a foothold, is the best preventative. *L. candidum* blooms in June and July. When stalks with one or two open flowers are cut and placed in water every flower will open and the house will be filled with exquisite perfume for a week. It is best to plant



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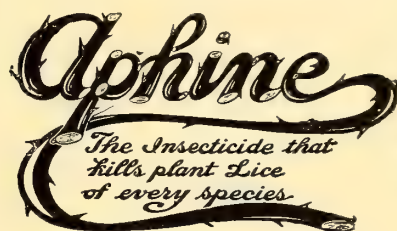
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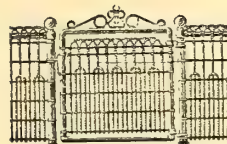


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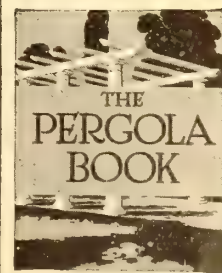


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them in the open sun, although they do well with a south and east or a south and west exposure.

Next to *candidum*, among white lilies, stands *L. speciosum album*. It blooms in August, not long after *candidum*, in the cooler states. Each petal of this lovely lily has a pale green band through its center and the growth of the plant is much more free, but less dignified, than *L. candidum*. All the *speciosums* are thrifty and hardy with protection. They can stand open planting when near large bodies of water, but in inland gardens do better in the shade of large trees. Care must be taken, when planting here, that the lilies are not robbed of food by the trees.

L. longiflorum, though oftenest seen in the hothouse, can be grown in the garden if well protected in winter. Its long, waxen trumpets are just as wonderful under a June moon as on Easter morning—and I have known bulbs to bloom at Easter and again, after a rest, in June.

The old European Turk's cap lily has produced a white variety, *L. Martagon album*, having the same cluster of small lilies as its purple parent; and while we welcome this newcomer as being hardy and thrifty, and pretty, its white is far from being the glistening waxen thing we call lily white. *L. Martagon album* is grown more extensively in England than here and few dealers catalogue it.

Of lilies white with pink or crimson, *L. speciosum rubrum* is undoubtedly the best for American gardens. Its flowers are large, the recurved petals painted with rich crimson and with spots of darker shade. It blooms immediately after *speciosum album*, usually early in September. The variety *roseum* is often confounded, by dealers, with *rubrum*, the only difference being *roseum's* lighter tint of red. *Speciosum punctatum* is white, not stained at all, but with distinct rose-colored dots on each snowy petal. And from Massachusetts, not so long ago, came the glorious *speciosum Melpomene*. This is a rich ruby-red lily with spots of darkest garnet. It is sometimes sold as *speciosum magnificum*. All the *speciosums* are valuable lilies, willing to grow and bloom if they have half a chance. If trees are not available as shade for them, an eastern exposure, in front of shrubs or a wall, is next choice.

L. Washingtonianum is a California lily. In that state it grows as high as five feet, and bears twenty very fragrant white blossoms with reddish-pink staining and fine purple dots. Then it must be a beauty, indeed. But it is not easy to grow in the East, and is usually about two feet high, with from three to eight blooms. It needs more petting than most gardeners are willing to give.

It is a great pity that the glorious gold-banded *L. auratum* develops a fungoid disease of the bulbs in America, and it disappears completely after a year or two in our gardens. It has one of the largest of lily blooms and carries its flowers so as to show their fullest beauty. Nothing could be finer than these great open gold-banded, crimson-dotted lilies with their heavy Oriental scent. When a dozen of these bulbs of the largest size cost but two dollars and fifty cents, it scarcely seems possible that the first one brought to this country was sold for ninety dollars. At their present price all lily gardens may have a few of the queenly *auratums*, even though they need renewing often. Plant them with

(Continued on page xxii)

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HELPS FOR THE HOUSEWIFE

BY MARGARET SEXTON

Spring House Cleaning

THE time for spring house cleaning is here. Don't attempt to clean your carpets by taking them up, but rather use a vacuum cleaner. With one of these machines several rooms can be cleaned each day. Carpets that are so old and worn they couldn't possibly stand being taken up and being beaten can be cleaned right on the floor without tearing them at all, and oh, the quantity of dirt that comes from them; it makes one ashamed to think that so much dirt had accumulated. For cleaning mattresses and tufted furniture there is nothing that comes up to it. There is an attachment which also comes for the cleaning of walls. No woman who has tried this method of cleaning house will ever be satisfied to do her spring and fall cleaning in any other way. It is necessary, of course, to have two persons to work the machine, one to pump, the other to use the tube. It is a wonderfully satisfactory way of cleaning house, and so quickly accomplished, and very cheap at that. Carpets can be just as beautifully cleaned on the floor as though they had been taken up and beaten in the good old-fashioned way, with all the effort to take out the tacks, brush off the carpet paper and wash up the floors. The cleaning is done without a particle of dust flying about, which would be greatly appreciated by the one who must clean.

When renovating and refurnishing your summer house look to the comforts and conveniences of the guest room. Any guest will greatly appreciate a set of cretonne or silk covered coat hangers. It is very annoying to find when one goes visiting that they have thoughtlessly left behind their coat hangers, or perhaps their trunk or suit case would not accommodate them. If the guest room is well equipped with hangers, which are so necessary for the good appearance of the clothes, it will be a great satisfaction to your guest. Also a pair of trouser hangers will be a nice addition to the comforts of the guest room. A soiled clothes bag, paper, pen and ink also go to making your guest comfortable. These little things cost very little more than the thought of them, but will be greatly appreciated, no doubt, by the occupants of your guest rooms. As a last thought, be sure that in plain view is a well-filled work basket, with coarse and fine cotton, needles, silk, emery, tape measure, thimble, scissors, etc.

The following way will be found excellent for the treatment of matting which has become faded—that is, to paint the matting with a varnish wood stain. Before applying the stain, however, the matting should be thoroughly cleaned, first brushing with a soft brush and washing up with clean cold water. When the matting is quite dry apply the varnish wood stain, which, if painted, one light coat will be sufficient. A particularly good color is light willow green varnish stain. The floor can be treated as an ordinary painted floor.

Though good care is taken of them, gilt frames often become tarnished, and just what to do with them to make them "look just like new" is a problem. They can be so easily and satisfactorily cleaned by using ordinary gin and a camel's hair brush. The gin can be used without fear of injuring the gilt, and the soft brush will clean every crack and crevice. After the gin has been used the frame should be polished with a soft cloth. The result will be very satisfactory.

Nothing will clean mirrors more beautifully than the following way—all dullness and specks quickly disappear under the process: Add to a teaspoon of whitening sufficient cold tea to make a paste. Before applying the paste, wash the mirror off with a little warm tea. Dry well with a soft flannel cloth, then apply the paste with a woolen cloth. When the entire surface of the mirror has been rubbed off with the paste, then polish off the mirror with a goodly quantity of tissue paper. This is soft and will not scratch the mirror and has the virtue of being an excellent polisher.

Never use soap on white wicker furniture when you wish to clean it. The inclination is to do this, as it does not seem possible to clean the furniture, or, in fact, anything that can be washed without using soap. But it is a possible thing to clean wicker furniture beautifully with a strong solution of salt and water. Soap will surely turn wicker yellow if used on it. If you wish to "refresh" your wicker furniture entirely, if it is shabby looking, after washing it, paint it, being careful to have the paint well mixed, also thinned out to the proper consistency. A very effective way to treat wicker furniture is to paint it dull black and make cushions for your chair and couch of material khaki color. Khaki itself is quite well enough to use and makes a really very good looking room.

The season for waging war against moths will soon be here. In another month the careful housekeeper will be putting winter flannels and winter clothes in general away where moths cannot get at them. Of course, there is supposed to be nothing better than a cedar chest, but not every one can afford these efficient things. A good substitute for a cedar chest can be made by painting with a small paint brush an ordinary closet with cedar oil. Be careful to go into every crack and crevice. The result will be an excellent mothproof closet, with very small expense and very little trouble.

The uses of turpentine are many, both for cleaning and medicinal purposes. It is cheap and does its work well.

After scouring closets and shelves clean, use turpentine generously over these scrubbed places. It will drive away any possible vermin, such as roaches, ants and mice. The odor is not bad, being a clean smell. When doing the spring cleaning, take apart all the beds. After washing all the parts with cold water and soap, dip a paint brush into turpentine and go over all the beds wherever there is any chance of bugs.

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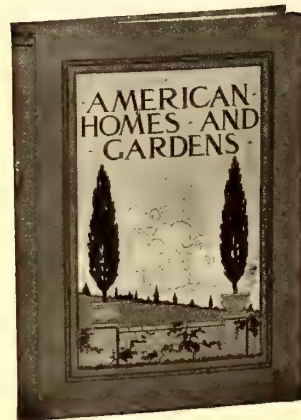
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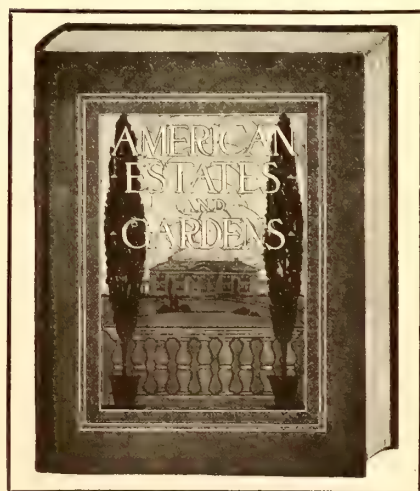
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rounding grounds and gardens; the work of the landscape gardener has rivaled, in its dignity and spacious beauty, that of the architect. If but little is known of our great estates, still less is known of their gardens, of which, in spite of the comparatively short period that has been given for their growth, we have some very noble instances among us, which are illustrated and described in the present volume. This work is printed on heavy plate paper and contains 340 pages 10½x13½ inches, enriched with 275 illustrations, of which eight are in duotone. It is handsomely bound in green cloth, and stamped in black and gold, and, in addition to being the standard work on notable houses and gardens in America, unquestionably forms a most attractive gift book.

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CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds. All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in House Furnishing

By ALICE M. KELLOGG
A FRIEZE FOR A DINING-ROOM

A CANADIAN correspondent, Mrs. J. M. B., of Ottawa, writes, "I would like your advice about improving the side wall between the ceiling and the plate shelf in my dining-room. At present it is tinted a cream-white like the ceiling. Below the plate shelf is a two-toned red paper which I do not wish to change. Would you try to match the red paper and use it above the plate shelf? Or, would you use a tapestry paper? Is the space too wide for one of the picture borders that you mention from time to time in your Correspondence Department? The depth of the space is thirty-six inches. The woodwork in the room is oak stained a dark brown, and the furniture matches the woodwork. I have a good many ornamental plates and dishes on my plate shelf."

The space above the plate rail will look best if it contrasts with the lower wall. As there are decorative objects to be displayed, it would not be well to use a picture border or a tapestry paper. A two-toned buff paper printed in a small, closely set pattern would make a good background. A narrow picture molding to match the woodwork would give a simple finish under the ceiling. The ceiling should be re-tinted the same tone as the buff paper. While there are a good many attractive picture borders, there are only a few as deep as the room requires.

OCCASIONAL TABLES

"I wish to buy two or three small tables for my living-room and would like to know of any special styles which you would recommend. The furniture in this room is all upholstered except a divan and a rocking chair. The wood that shows on the divan and rocking chair is mahogany. There are also some mahogany book-cases with glass doors.—M. B., Columbus, Ohio."

For a room that is made the general sitting place of the family, some small tables for occasional use are indispensable. The tea-table already set with tea things is not now in vogue, but a small mahogany table is usually kept in readiness to hold a tea tray; a work stand with small drawers that is capable of holding a drop light is a convenience for the sewing members of the household. This table could also be of mahogany. One of the small teakwood stands with straight legs is especially desirable for holding a vase of flowers or a plant, as the top has a marble slab set into the frame. There are also small mahogany book-stands that may be carried from one part to another. A tip table is always a convenience, as it is ready to meet any extra demand. The folding card tables are almost a necessity in these days of general card playing, but these would naturally, be kept out of sight when not in use.

TRIMMING A FOUR-POSTER BED

A New England reader, Miss F. J. B., has lately come into possession of a four-

(Continued on page xx)

Garden Work About the Home

By OLIVER INGRAHAM

THE following letter presents an interesting problem, but one that it is not possible to answer definitely.

"Please give me as much information as you can about starting a greenhouse for my own pleasure, and also for profit. I would want to start in a small way at first: want to have a suburban place, but hardly feel able to live without the place would pay expenses at least.

"1. What would a small greenhouse cost in this climate?

2. How much ground would you suggest in case the business grew?

"3. Do you think in a town of 15,000 population a business of this kind would pay?

"I will heartily appreciate your kind reply."

It is impossible to say what a small plant would cost in your town, because we don't know exactly what "small" means to you, but the greenhouse builders will be glad to give you an estimate on any size house you may select, and to advise you about the proper size for your purpose. A good house 20 feet by 200 feet costs about one dollar per square foot near New York.

If you have five acres of land it may not be too much for a comfortable home, and if your business grows so that the five acres are all in glass, you will probably be prosperous enough to buy a new place. There are plenty of men making a living on 5,000 square feet of glass, and one acre would accommodate that, and the house and other necessary buildings. The size is determined by the income required and by the amount of capital available. It is obvious that you cannot make a large income from a small house.

The population of the town does not matter as much as its purchasing power. There are lots of florists making a living in much smaller towns, particularly when they are within shipping distance of a larger market.

Near New York, rose growers figure that one thousand dollars profit per year for a house 20 feet by 200 feet is a good profit, when there are fifty such houses. In your case, however, the profit might possibly be greater, if you could manage to supply your local market with just what it will absorb in the way of flowers and potted plants.

"I HAVE bought 7½ acres of ground and have ordered 150 fruit trees to plant this spring. This summer or next I shall build a bungalow.

"The plot is nearly square. It is divided in halves by a row of trees running north and south. At the northern end of this row of trees is a clump of trees on the highest part of the place. From this clump the slope is even in every direction.

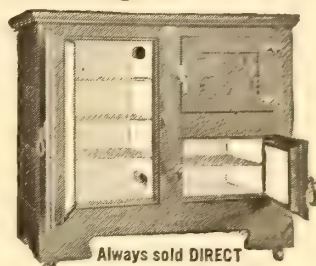
"The western half of the property, about four acres in extent, is now planted to wheat. The eastern half of 3½ acres is in pasture.

(Continued on page xxi)

Write for our Free Book on Home Refrigeration

This book tells how to select the Home Refrigerator, how to know the poor from the good, how to keep down ice bills, how to keep a Refrigerator sanitary and sweet—lots of things you should know before buying any Refrigerator.

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and any length; in any color or color combination. 65 regular shades—any other shading made to match. Send for color card.

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THE NORFOLK CHAIR

(without cushion) With Arm Rest and Magazine Pocket.

Size of Seat, 20 in. x 20 in. Height of Back, 34 in.

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NEW YORK

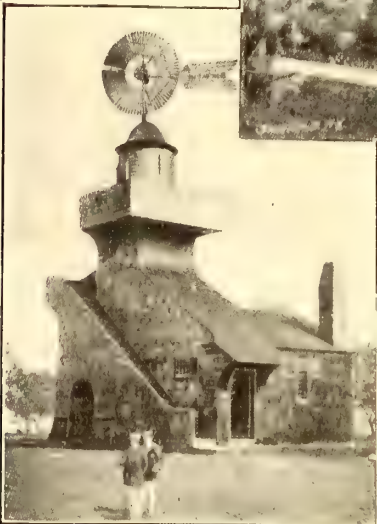
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Factory: Jersey City, N. J.

Problems in Home Furnishing

(Continued from page xix)

post mahogany bedstead. In her letter she says:

"I wish to put the handsome old four-poster bedstead that has just been given to me in my guest room in place of the brass one now in use. This bed has always been draped with white dimity and ball fringe with a spread of knitted cotton. My guest room is papered in gray with a border of pink roses. There is a good deal of white woodwork in the room and I would like to introduce some color on the bed. What would you suggest?"

Your guest room will certainly be more attractive with a colored material on the four-post bedstead. There are some gray materials called "jaspé," printed in lattice patterns with pink roses that would be suitable. While these seem expensive at two dollars a yard they are in the fifty-inch width. The valance around the tester and bed-spread may be made of the flowered material edged with chintz braid, and the lower valance around the foot of the bed may be of plain gray "jaspé."

DOOR HARDWARE FOR A COLONIAL HOUSE

"We are building a small house in the suburbs, following the simple lines of the New England houses of the early nineteenth century. Outside, the house will be painted white with green blinds; all of the woodwork inside will be painted white except in the kitchen and the pantries; as we use gas the lighting fixtures will be at the side in the shape of candles, with lamps for extra lighting. The point now to be decided is the hardware for the doors. Should these match the dull brass on the lighting fixtures?—P. W. T."

On the first floor in the hall and living-rooms the old brass would be most appropriate. There are simple, good patterns to be had that will correspond with Colonial feeling in the architecture. Upstairs in the bedrooms and bathrooms the glass knobs could be used to advantage. In selecting these the smooth surfaces that fit the hand comfortably should be given the preference.

SUMMER PILLOW COVERS

A request comes from a southern reader, Miss L. M. J., Charleston, S. C., for ideas about covering the sofa pillows in the parlor, den and piazza; whether these should be of plain gray linen or of colored materials.

There are so many beautiful and inexpensive wash materials to be had this season that it would not be difficult to select really attractive pillow covers for warm weather. In the cretonnes there are lovely combinations of colors from thirty-five cents upwards. The newest patterns are a mixture of birds and flowers. Then there are the English chintzes at seventy-five cents a yard that look almost like paintings so carefully are they printed. In the wide width linen taffetas, fifty inches wide, there are tapestry designs that will stand longer wear than the cretonnes. Among such a variety it would not be difficult to choose something tasteful for the parlor, den and piazza of a southern home. These figured materials would certainly be more pleasing than the plain gray linen.

The New Building Estimator

BY WILLIAM ARTHUR



A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, \$2.50 post paid

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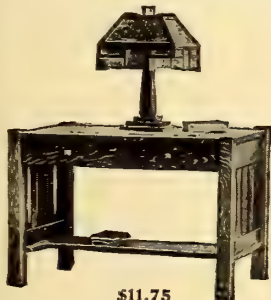
from our factory to the user cuts out such useless and heavy selling expenses that our low prices are logical. What is better still, there can be no doubt as to that most important consideration—the quality.

You see just what you get—and you get *Quarter Sawed White Oak*—rich in beautiful flake and grain. Selected stock of this kind costs twice as much as the plain sawed red or white oak used in most furniture. No stain disguises cheaper substitutes in our furniture; no defects can be concealed. It comes completely stained and finished, but



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not being assembled, it is open to careful inspection—a solid satisfaction to the most critical, and a big saving in the cost to you.



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the hard work is done at our factory—even the holes bored for screws—and you thus have the joy of creation, shorn of all the arduous detail and all the difficulties. To illustrate, the McKinley Rocker at the head of this article comes in four completed sections. The two sides are each entirely assembled,



\$17.75, 3 leaves, 45 in. top

the front rail fitted to slip into the mortised joints, as is also the back and seat. The Settle is equally simple, and even the Pedestal Dining Table is one of the simplest pieces to put together; there are but three sections.

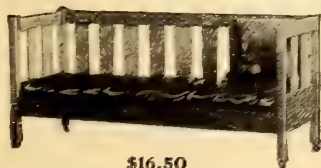


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log It will prove fascinating to the lover of artistic Arts and Crafts furniture—it will delight the housewife—and it will please the man who pays the bills. Mission Lamps, "Willow-weave" furniture and Cluny Lace Curtains are also shown. Write us to-day and we will mail a copy free, and tell you of our liberal guarantee that enables us to say "Your money back if you say so." Address



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SECTIONAL
"COME-PACKT"
TRADE FURNITURE MARK

Garden Work About the Home

(Continued from page xix)

"Any advice, any suggestions or any help will be appreciated."

This is a case where help is difficult, because our correspondent does not say what kind of trees he has purchased nor whether the place is to be all orchard or orchard and small fruits and vegetables; whether it is to be lived in all the year and is to supply a large part of the income, or whether it is simply a home for the summer.

The suggested location of the house, south of the clump of trees, east of the row and a little below the brow of the hill, is a good one. It will be cool in summer and sheltered from the wind in winter.

The vegetable garden might be north of the house, where space could also be found for bees, pigeons and fowl of various kinds.

The road to the house should enter the place just west of the existing row of trees, keeping close to the trees all the way to the barn on the northern boundary of the place. At a convenient point a branch road would lead to the front door of the bungalow.

When we are supplied with more definite information about this place, and know more about the tastes and desires of the owner, we shall be pleased to give more advice.

MY MINIATURE GARDEN

(Continued from page xv)

garden, valued at the village market prices, which of course varied through the season:

560 (112 bunches) radishes	\$2.78
51 heads lettuce	3.75
12 quarts peas	1.20
11½ quarts beet greens, 37 (7 bunches) beets	.77
20 quarts string beans	2.00
81 ears of corn	1.58
24 quarts tomatoes	3.60
	\$15.68

We picked the first of the radishes on the 4th of June, and the first heads of lettuce on the 10th. Our first beet greens were gathered on the 23d and the first of the peas on the 29th. We had string beans by July 4th, the first beets on the 20th. Corn made its appearance on August 16th and tomatoes on August 20th. By the time we returned to the city on the 24th of September the vegetables were about exhausted, excepting the tomatoes. The vines were still loaded with green and half ripe fruit, which it seemed a waste to leave. I am sure the tomatoes must have lasted all through October.

Of course, inexperience shows very plainly in my summary. We had too many radishes and not nearly enough beets and peas. The lettuce, string beans, and tomatoes were our best crops. The corn was delicious, but we did not have so big a yield as we should have had and the ears were small. I am inclined to think that this was because we did not give it enough water.

At the end of the summer my account book showed this summary:

Credits	\$15.68
Debits	10.86

Balance

My family admitted that my garden had not been a failure, for the vegetables had been delicious and I had saved the family pocketbook the enormous sum of \$4.82.



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PAINT
AND
LESS OF IT**

You may think you'll save money and get about as good results by using a low-priced or a hand-mixed paint this spring, but you'll find it does not work out. For a few months, it may compare favorably in brilliance and appearance with the best. But under the stress of weather and climate you'll soon note the difference.

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Your painting is an investment of a special character and you should consult a specialist regarding it. The Lowe Brothers dealer in your locality is thoroughly posted on paint and the painter who recommends "High Standard" is generally the best man in his line. See him before you paint.

Inspect the season's color combinations in "High Standard" and ask about "Mello-tone," a flat oil paint for interior walls—Linduro enamel, for wood and metal surfaces—"Little Blue Flag" Varnishes for every purpose.

Get a copy of "Harmony in Color" showing latest favored combinations. Also "Common Sense About Interiors." Both Free, or send 25c and get "Good Homes by Good Architects."

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HICKS' TREES

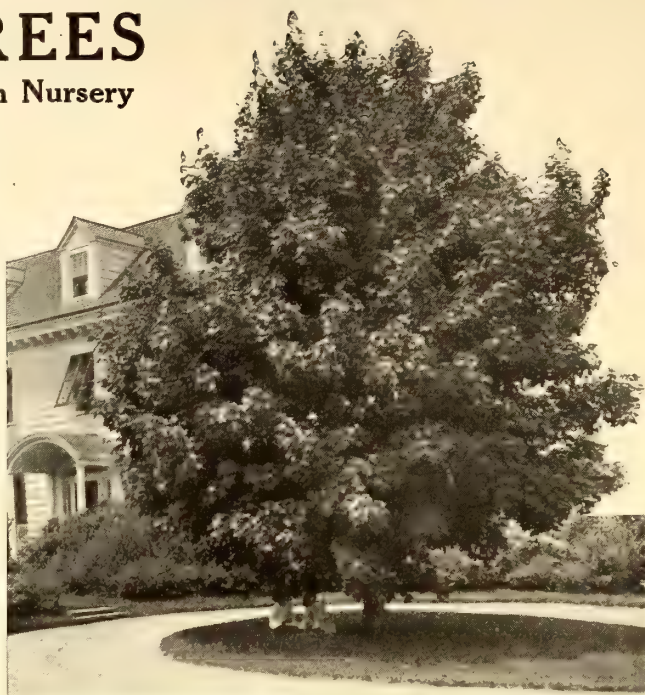
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AND a very unusual nursery it is. A nursery filled with the choicer standard ornamental trees. Trees from 3 inches to 40 feet high, and in price from 1c. each to \$150. You are bound to find what you need at this nursery.

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One of our catalogs called "Hicks' Trees" shows not only the trees in the nursery but how we can go to your region, look over the country for a radius of several miles, and move to your grounds the best available trees for landscape effects. An absolutely bald knob on a Connecticut estate we transformed into an ideal building location by moving to it Elms and Maples 30 to 50 years old.

May is a good shipping and planting month for Cedars, Evergreens and Rhododendrons. We have unusually fine specimens of each. Come to the Nursery and see for yourself. If you can't come—then order by mail. Your shipments will be prompt and to your satisfaction.



A fine Norway Maple like this one costs \$20.00 to \$35.00
We have hundreds like it in our nursery.

ISAAC HICKS & SON, Westbury, L.I.

CONSIDER THE LILIES

(Continued from page xvi)

speciosums in half shade. They are August's glory.

Of clear pink lilies the new *rubellum* stands ahead. It has all the good qualities of the *speciosums* with a wonderful soft pink color. It blooms in June with *Kremeri*, another beautiful rose-colored lily, whose flowers are very large and faintly sweet. *Rubellum* grows a little the taller and should stand behind *Kremeri*.

L. Thunbergianum, or *elegans*, variety *roseum*, is one of the prettiest of pink lilies. It is early, will grow for anyone in full sunshine with plenty of food, and is dainty enough to grace a queen's garden.

Where pink lilies shade into rosy yellow or apricot tints, will stand *L. Batemanii*, crowning its four foot stalk with three or four peachy blooms in July. In front of it should grow *L. Wallacei*. This grows only about three feet and is a capricious beauty. Sometimes its two or three immense flowers come in early July—again not until August. Some bulbs sold for *Wallacei* are not the delicate apricot, but run to stronger shades, approaching reddish yellow.

L. elegans, variety *Wilsoni*, is a beautiful low growing apricot lily, as easy to manage as all the *elegans* clan. It reaches only two feet and its hardiness and freedom should make it a favorite. There are many varieties of *L. elegans*, shading from apricot through yellowish red to true red. All are excellent lilies for American gardens. They ask little; full sunshine, rich diet and plenty of water when blooming. Most of them grow low—from one to three feet and bloom through June and July. They cost but a dollar or a dollar and fifty cents a dozen and are a fine investment for worshippers of the lily.

With the *elegans* should be planted *L. bulbiferum*, sometimes catalogued *L. umbellatum*. These grow to much the same height and run through about the same shades as *L. elegans*, needing the same treatment. Many *bulbiferums* have the loveliest tints, enhanced by black spots. It is one of the oldest lilies known. It holds its flowers directly up to the sun and, in favored situations, will bloom as early as May.

The familiar tiger lily comes in orange-red shades. One who has never seen a large clump of it, well fed and flourishing, can hardly imagine its possibilities.

Colored much like the tiger lily is *L. Canadense*, a native American lily. It grows wild in the East as far south as Georgia, always in low, marshy ground. In the garden it requires shade and plentiful moisture, and mucky soil should be supplied if possible. It grows three to four feet high and blooms in June with very large lilies, the petals recurved to the stem and spotted with brown or dark red. The variety *flavum* is clear yellow with the dark spots. It does not grow as strong as the variety *rubrum*, which is not true red but reddish-orange.

L. superbum, another native lily, taking exactly the same soil and position as *L. Canadense*, follows the latter in bloom. In late July and August and sometimes into September this grand lily will throw up its stalks four to six feet, bearing a candelabra of from twelve to twenty very open lilies, carried nearly face down and not much recurved. In color it varies from the orange-red of tiger lilies to

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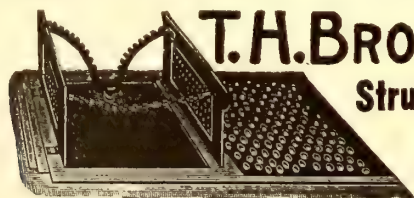
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an unbeautiful yellow. The latter color is rare, however, and *superbum* lilies, where they can have shade and moist footing, are grand things.

L. croceum is the "orange lily" of old gardens. It is of easiest culture, and very bright in July, when its erect, funnel-like flowers appear on rather short stalks—scarcely four feet. It should grow with *bulbiferum* and *elegans*.

Of lilies truly red May brings two: *L. tenuifolium* or Coral lily and *L. pulchellum*, by some authorities called a variety of the wild *L. Philadelphicum*. Both bear small flowers. *Tenuifolium's* blooms are of brightest red, waxy and very fragrant. The footstalks are horizontal, making the flowers "face" down, and as they grow only about two feet high, one must cut the separate blossoms to see all their beauty. Nothing adds a brighter note to the garden of May than these lilies, and they should be planted freely.

L. Chalcedonicum is from Palestine—the lily which all Solomon's glory could not equal. *Chalcedonicum* is a treasure indeed, asking as little as any lily that grows and shaking its vivid, waxy blood-red flowers from the top of a four foot stalk. All lily gardeners should begin the reds with *Chalcedonicum*, as it improves with age and will not disappoint the merest novice.

L. pomponium is red, of a lovely shade. It is about three feet high and easy to grow, and is pronounced "lovely" or "horrid" according to one's sense of smell. This lily has a very peculiar scent. Some cannot get enough of it; others cannot stay near it; so a lily buyer is wise who proceeds slowly with *pomponium*.

Among yellow lilies the Nankeen lily easily takes first place. It is called *L. excelsum*, *L. testaceum* and *L. isabellinum*. It is said to be the only hybrid lily known, the child of *Candidum* and *Chalcedonicum*, and is as easily grown as either of its parents. The flowers of golden yellow with a blush of apricot follow the *candidums* and are held with the same rare grace. It is a pity that these lilies are so expensive—five dollars a dozen. *L. Parryi* has clear, pale yellow blossoms with horizontal footstalks. The blooms spread wide and the tips recurve. It is easy to grow and lilies of its color are not common.

Hemerocallis flava, the lemon day-lily, completes the list of yellows except for the yellow varieties of *L. elegans* and *L. Canadense*, already mentioned. *Hemerocallis flava* is rather tall, very slender and graceful, with fragrant funnel-shaped flowers and will grow for anyone in sun or half shade.

As to the culture of lilies, success lies mainly in three words—drainage, water and protection. Make lily beds deep with good, light loam soil and let it be very rich. Some authorities say: "no manure for lilies." Manure for lilies, yes, and plenty; but very old manure and placed so deep that the roots will find it—not the bulbs. For all except *canadense* and *superbum* the best drainage must be provided and all lilies need abundance of water when in bloom.

Many authorities, too, emphasize the need of the partial shade for the finer lilies. All will do well without shade, except the two mentioned, if the ground is well shaded to keep the bulbs cool. Leafy perennial plants supply the right condition in hardy borders. In a garden of lilies alone a mulch is necessary, and stable litter is best.



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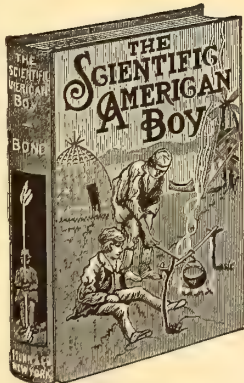
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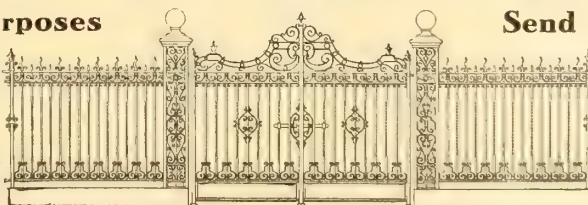
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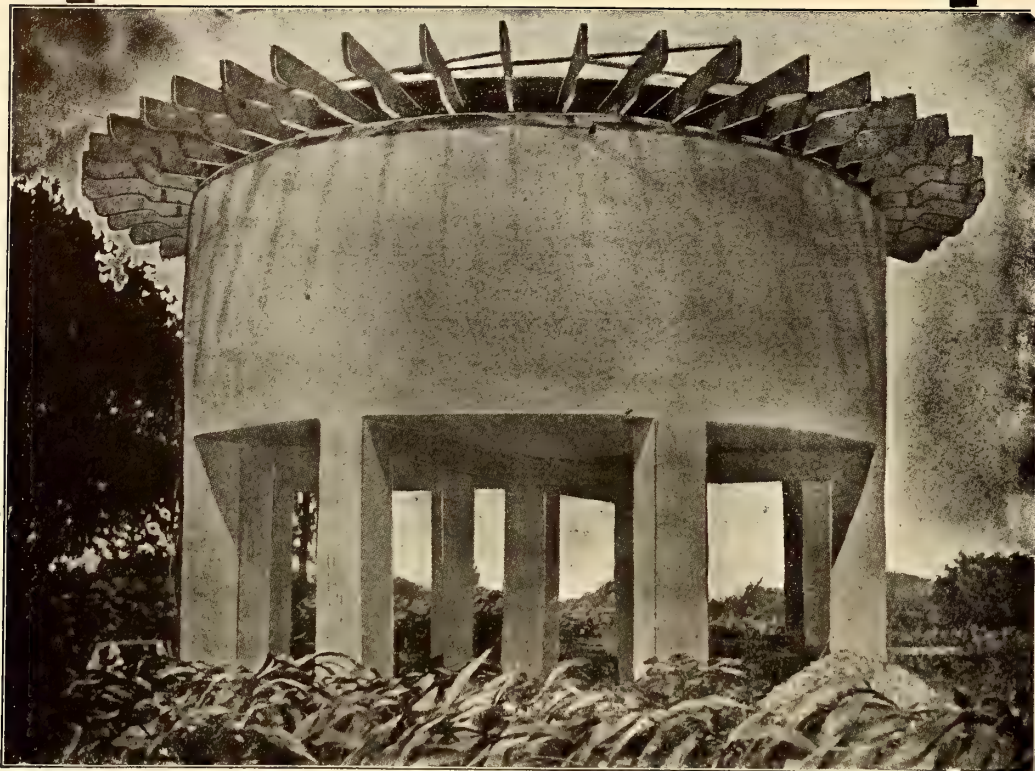
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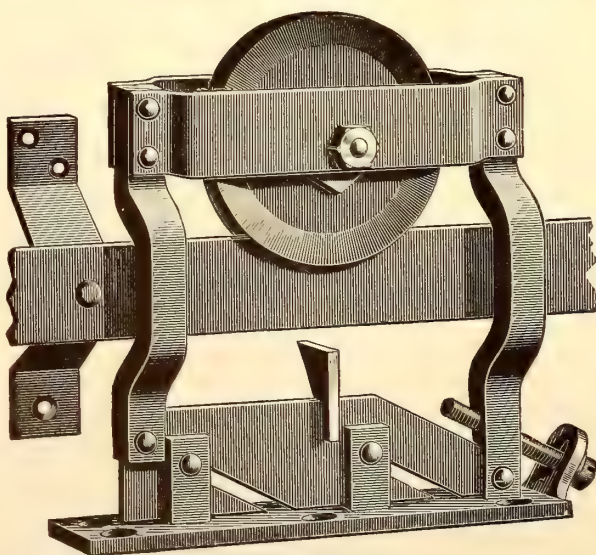
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434-466 Prospect Street, Poughkeepsie, N. Y.

About Thanksgiving Day, when roses receive winter protection, cover the lilies too, with four to six inches of litter. Uncover with the roses in the spring.

Lilies really call for a background of green to show their beauty. Trees, shrubs, vine-covered trellises or walls not only give the air of an exclusive court with the queenly lily as sovereign, but supply the verdure that lilies lack and all flowers need. Evergreens make the best background, cedars for choice. But if tall shrubs be used, by all means have white-flowering shrubs. The lilies of color, while quite amicable among themselves, will war fiercely with the colors of many flowering shrubs.

A REMARKABLE VEGETABLE POISON

RECENT experiments have demonstrated the existence of a poisonous substance of very remarkable qualities in the seeds of so well known a plant as the ricinus, or castor-oil plant, a common ornament of our gardens.

It has long been observed that these seeds frequently proved fatal to animals who fed upon them, or to children who swallowed them by accident, but the toxic principle has first been isolated, as yet in very impure form, by Prof. Robert of Bostock, the process consisting of maceration in a solution of sodium chloride. Even now the pure preparation cannot be obtained because of the small amount of the poison and the difficulty of separating it from associated albuminoids.

Even so its terrible potency is shown by the figures of Prof. Ehrlich of Frankfort-on-Main, who estimates that one gramme of ricinus is sufficient to kill one and one-half million guinea-pigs. This tremendous death-dealing power surpasses that of all other poisons known to us as enemies of living matter; such, for example, as strychnine and cyanide of potassium.

According to Dr. B. Rewald in *Kosmos*, this quality alone would make the new poison of interest to scientists, but this interest is increased by the discovery of a very unique "poison stability" in this product. That is, if a quantity of poison be injected into an animal insufficient to kill but enough to cause severe illness, the animal upon recovery is capable of enduring a second dose sufficiently large to kill a fresh animal instantly. Moreover, the dose may be increased gradually a thousand-fold or even ten thousand-fold without causing unfavorable symptoms.

This can, of course, be done to some extent with other poisons, such as arsenic and morphine, but in these the possible dose always remains in very moderate proportion to the death dose, and corporeal disturbances are always manifested, while these are absent with the ricinus.

Another striking peculiarity is that in the blood of these immunized animals an antitoxin is formed. This likewise has not yet been isolated in pure form, but it has been possible to work with it as a fixed quantity.

When this antitoxin, found in the blood serum of an immunized animal, is injected into a freshly poisoned animal, it will prevent the development of toxic symptoms, and will also cure one which has already become ill. A similar action is of course well known in the case of bacterial infections, such as diphtheria, tetanus, etc.

Moreover, this vegetable poison shows another similarity to bacteria. We know that the blood serum of animals which have

been previously treated with a bacterial poison possesses the property of agglutinating bacteria of its own sort floating in some medium, such as, for example, water—a property not possessed by normal blood serum.

Ricinus in solution possesses a like property, since within a short time it causes the red corpuscles to form a gelatinous clotted mass.

But different kinds of blood vary in susceptibility to this action. For example, pigeon's blood and dog's blood show the reaction immediately, while it is absent or very slight in that of goats, lambs, and cattle.

Besides ricinus there are some rare seeds which contain bodies exhibiting similar properties.

It is certainly very singular and noteworthy that on the one hand highly developed plants and on the other hand the lowest forms of life, should produce poisons which so strikingly resemble each other in their fatal qualities, in their creation of immunity, and in their power of agglutination.

HOW LEAVES KEEP CLEAN

THE shape of leaves is one of the first things a student of botany learns to distinguish. Even the most careless observer sees that some trees and plants have leaves with smooth, rounded edges, while others have their leaves furnished with long points or divided into narrow lobes terminating in drooping or curved ends. While these leaf shapes have formed a subject of study ever since botanical science has existed, it is only within recent years that one of the most remarkable purposes which the points of leaves serve has been clearly brought out. It was shown, as the result of some special investigations made in Germany, that the long points quickly drain off the excess of moisture deposited upon the foliage in heavy rains. This ready method of disposing of a surplus of moisture is important to some plants. It also serves as a means of cleansing the surface of the leaves. Round leaves do not so easily get rid of the rain-water, and it has been noticed that they remain dusty and dirty after a shower, the escape of the water by evaporation not tending to cleanse them, while long, narrow and pointed leaves are washed clean and bright.

STANDARDIZING BREAD

SIR ALFRED FRIPP, Surgeon in Ordinary to the King of England, and some other equally eminent British medical authorities, have issued a jointly signed statement in which they express the opinion that there is a national necessity for the fixing of the nutritive value of what is sold as bread. They argue that milk must conform with a certain standard, and there seems to be no reason why bread, which is equally important as a food, should not be made the subject of governmental control. Indeed, the standardization of bread is somewhat more important, since it constitutes about two-fifths of the weight of the food of the working classes. To quote the statement: "In view of the inferior nourishing qualities of the white bread commonly sold we urge legislation making it compulsory that all bread sold as such should be made of unadulterated wheat flour, containing at least 8 per cent. of whole wheat, including the germ and semolina."



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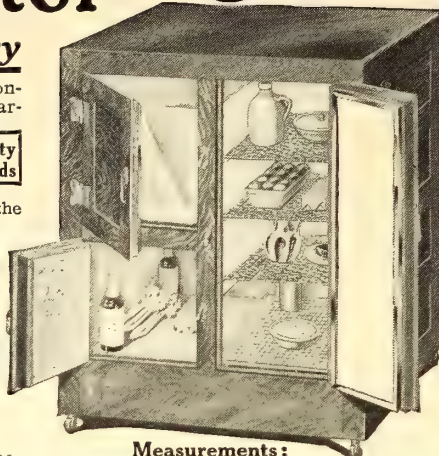
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TRANSPLANTING

By IDA D. BENNETT

TO insure the successful transplanting of any form of plant life, whether from hot-beds, cold-frame, flats in the house or the mere shifting of place in the garden, it is essential that the ground be thoroughly prepared and in the best of condition. Mere stirring or ploughing of the soil is not enough; it should be ploughed, if a garden, spaded if flower beds and then dragged and raked again and again until the soil is thoroughly pulverized and free from hard lumps, weeds, roots and large stones. This requires the going-over of the grounds in all directions several times, but it is work and time well expended, as upon this mechanical condition of the soil will depend in a great measure, the availability of the plant food it contains and its power to retain moisture. Soil left in poor tilth parts with its moisture rapidly and is much more seriously affected by drought later in the season.

Furthermore, the care of a garden planted in well-prepared soil is much less than when this part of the work is slighted; the use of the rake does away with a multitude of weeds, which, were the culture less close, would escape notice and this continued use of the rake in the garden throughout the season will give wonderful results in the eradication of weeds.

It is not desirable—at least in the case of the flower garden, though with a well stocked hot-bed to draw on, it is well to make the most of the season by planting a few early things, which may be readily replaced if the frost catches them—to set out tender plants until danger of hard frost is passed; this time will vary with the latitude, the season and various conditions, which will be clear to the resident of any particular locality. All stock to be set out should be in prime condition—having been hardened off for a week or more previous to transplanting and should have been thoroughly watered the night before. Transplanting should, preferably, be done in the forenoon while yet the plants are fresh from their night's sleep. Everything should be in readiness for the work before a plant is lifted from the hot-bed and only as many plants should be taken up at a time as can be safely gotten into the ground before they wilt.

The state of the weather will have much to do with the handling of plants, as on some days they will move with little or no wilting, while on hot, humid days the greatest care is needed to preserve their freshness until they can be gotten into the ground. Generally speaking, a clear, bright day gives best results in transplanting and a hot, muggy one the poorest; morning is to be preferred to evening for the work for the reason that the hot sun and dry air preserve the dust mulch, which should surround every newly set plant, while the dew of evening tends to draw the moisture to the surface of the soil, destroying the dust mulch, which would then have to be replaced by the hoe or trowel the following morning.

In lifting plants from flats or from the hot-beds, care should be taken not to break or in any way injure the roots. I have seen gardeners grasp a handful of plants by their tops and pull them bodily from the soil, leaving most of the fibrous root-system in the ground. This should never be done; instead, the trowel should

be passed down beside the plants until well below the bottom of the roots and a block of the plants lifted together. These should not be separated except as they are placed in the ground, unless the weather is exceptionally favorable for transplanting. If very hot and muggy it will aid materially to place the roots in a basin of water, but unless this is necessary, they will handle better and adjust themselves better in the ground if taken just as they come from the soil.

The distance apart at which the plants shall stand will depend upon their nature, but it will be better to err on the side of too much room than too little. In planting vegetables, all catalogues give the distance apart at which the various sorts should stand and this should be respected.

The lines of planting and the points at which the plants should be set should be marked out before beginning work, and everything being on hand—watering pot or pail and dipper, trowel and in case of flower beds, a board on which to stand or kneel when setting plants near the center of the bed—the work will go forward rapidly.

In setting the plant, a hole should be made with trowel or dipper of sufficient size to accommodate the roots of the plant, and when this is placed with the roots in as natural a position as possible, a part of the earth should be replaced in the hole and pressed gently about the roots; the hole should then be filled with water and when this has settled the remaining earth should be filled in and the whole smoothed off with the trowel, leaving a dry, dust mulch about the plants. As all this involves some little outlay of time, it will simplify matters to make all the holes before setting the plants, then go along the rows, dropping a plant into each hole and drawing the earth about it. The holes should then be filled with water, which will have settled in those first filled by the time the end of the row has been reached, when the finishing work of filling up and dusting off may be pushed rapidly to a finish. In this way a good many hundreds of plants may be put into the ground in first class shape in a morning's work; better still, if the work has been properly done the plants will all live. When the planting is completed, the rows should be looked over to see that no moisture has drawn to the surface as the preservation of the dust mulch is the secret of successful transplanting. Where this has occurred, the trowel must be brought into use again to restore the dry soil, bringing some from another part of the bed if necessary. Of course, if plants are set during a rain, the dust mulch is out of the question and is not needed, but as soon as the weather clears the planting should be gone over with hoe or trowel and a dust mulch established; the plants will need no further care then for a few days, or until they have become established and cultivation is in order, but that is another story.

Do not protect newly-set plants in any way and do not water for three or four days at least; I have known people to set out plants in the most scientific and workman-like manner—dust mulch and all complete and then, at the edge of evening, go around with a watering pot and soak each plant with water, which the first rays of the morning sun would proceed to soak up together with moisture placed in the hole for the substance of the plant during its period of adjustment to the new conditions in which it found itself; a few hours later a lot of wilted and dying plants prone on the ground attested the outrage inflicted upon them.

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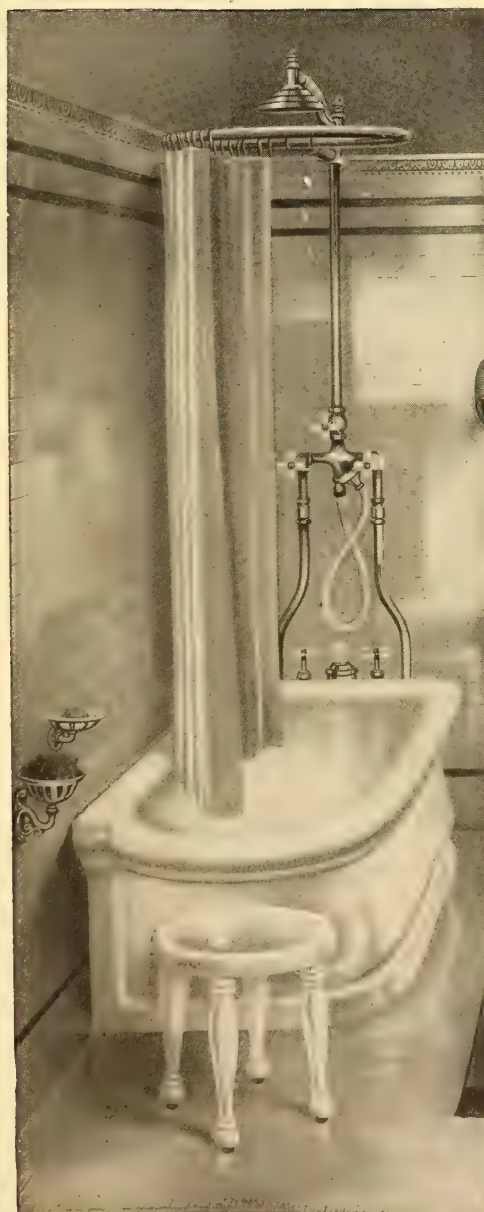
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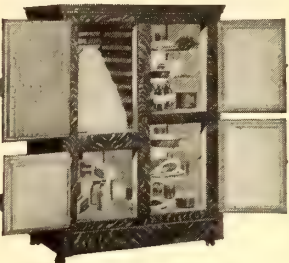
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When for any reason the plants have been left too long in the hot-beds or have become crowded and have "kneaded over" so that some length of the stalk lies on the ground, making fresh roots at the point of contact, it will be well in planting such specimens to make a trench long enough to lay the plant therein so that only the erect part of the plant remains above ground. Tomatoes are prone to this habit and when planted in this way do very well indeed, as they have a much stronger root system than when grown in a normal way. Cosmos is another plant of like habit, and whenever this occurs it should be planted, or rather, trenched, in a way to make available the entire root growth and give a clean, upright growth above ground.

But drought, irregular growth and injudicious planting are not the only troubles of newly set plants; the nocturnal cut-worm lies in wait in all newly worked land, or adjacent thereto, ready to feast upon any tender, green things he comes across, and the destruction wrought in a single night by this pest is sometimes surprising. Every one who plants and tends a garden should make it a business of first importance to visit his plantings the first thing every morning and inspect the condition of the plants; many will be found cut away just above the surface of the ground and when this occurs, the perpetrator should be found and summarily dealt with. Usually a slight stirring of the ground about the decapitated plant will discover the culprit in the form of a fat, gray, brown or reddish worm, curled up asleep and digesting his ill-got meal.

One should never allow a plant cut off in this way or missing from any cause to remain unreplaced. Set another at once and preserve the full complement of numbers. This is where the great advantage of a hot-bed is demonstrated, as enough plants may always be left in the bed to replace any likely loss from worms, wilting of plants or any other causes save frost. Of course, if a hard frost catches one's entire planting it may tax the resources of an average hot-bed to replace them; for this reason it is well to hold one's hand somewhat in the initial planting of the garden.

In the setting of such plants as are likely to require staking—as cosmos, dahlias and the like—it is a distinct advantage to set the stake at the time of setting the plant, as in this way all damage to the roots is avoided. It is almost impossible to thrust a stout stake down into the ground beside a plant of much root growth without causing injury to the root; especially is this the case with plants which make a mass of spreading tubers like the dahlia.

In transplanting plants from one part of the garden to another, especially those hardy things which do not take kindly to removal and are apt to shed the earth from the roots when lifted, the operation is safeguarded by first digging the holes the plants are to occupy in their new position and then lifting the plant on the spade with as little disturbance as possible and carrying it, still on the spade, to the hole and slipping it carefully in place. If a little water has previously been poured into the hole and then the earth firmed about the roots and more water applied and the whole finished off with a dust mulch as in the case of seedlings, few, if any, plants will be the worse for the transference.

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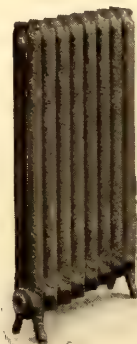
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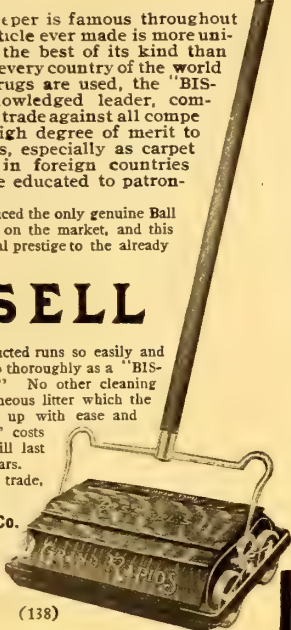
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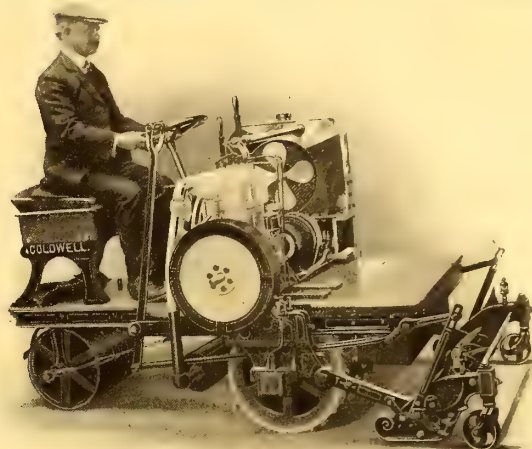


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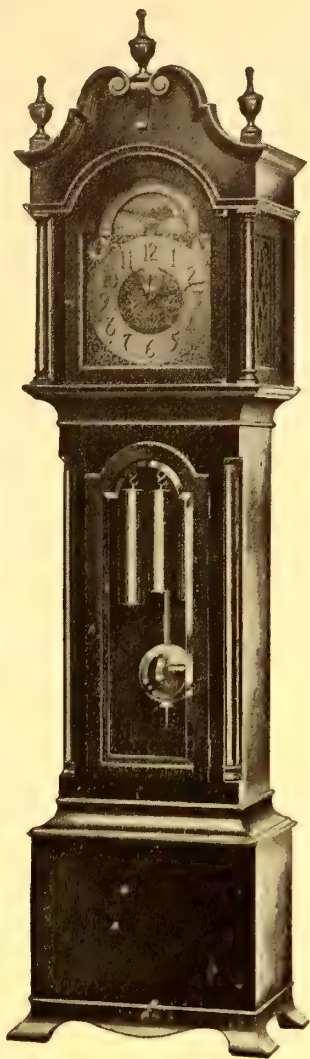
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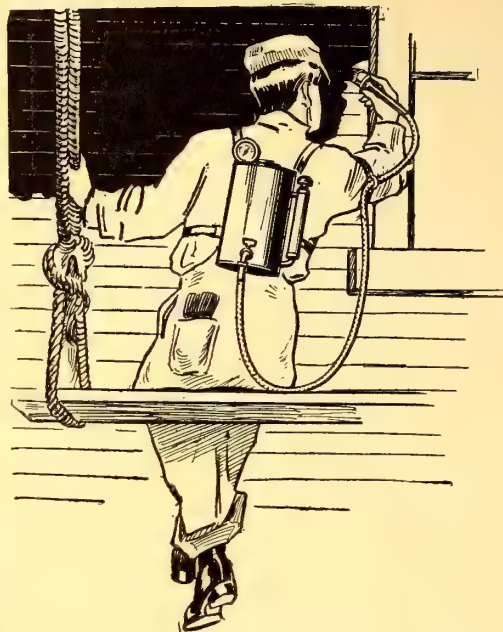
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SOIL POLLUTION BY HOOKWORM

SINCE the discovery by Dr. Charles Wardell Stiles that the hookworm is responsible for the low mental and physical condition of the "poor whites" in many parts of the South, the problem of soil pollution has engaged the attention of the United States Public Health and Marine Hospital Service as well as of local health authorities.

Under the direction of Prof. Stiles and Dr. Charles R. Gardner, experiments have been conducted with a view to determining the length of time that hookworm eggs may retain their vitality in the soil under various conditions of drying and of temperature. From these experiments it appears that it is not safe to assume that the sand under and around a privy is entirely free from infection with hookworm even five months after the privy was last used, although the infection is considerably reduced at the end of four months.

Under water, where the fecal material undergoes decomposition, most of the hookworm eggs are dead in about ten weeks, though some survive that period. It seems very probable that in three months all hookworm eggs in fecal material would be dead if this material is subjected to decomposition; at any rate, it would not be safe to use such material for fertilizer in less than three months.

Chloride of lime has been used as a disinfectant in solutions of about one pound to ten gallons of water. Experiments show that this solution does not kill all the hookworm eggs in from 22 to 40 hours.

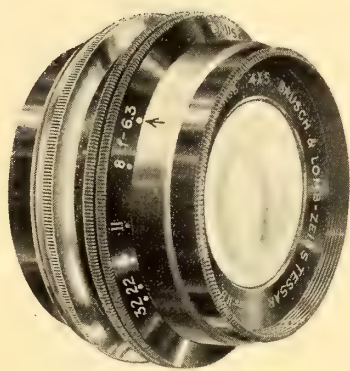
Incidentally these experiments brought out the fact that eggs of various species of flies, including the common or "typhoid" fly, are still capable of development, and that the flies are capable of reaching the open air, even when the fly-blown material containing the eggs is buried under from 17 to 22 inches of sand.

THE ADVANCE OF PLANT LIFE

WHEN, years ago, there occurred the tremendous volcanic explosion in the Straits of Sunda, "the biggest noise the world ever heard," half of the island of Krakatoa was blown away and every vestige of life was destroyed on the remaining half. The ground was buried under hot ashes and burning pumice stone, varying in depth from three feet to nearly two hundred feet. No vegetable germ could possibly have survived the catastrophe. Yet, only three years after the eruption, when Krakatoa was explored, various species of plants were found flourishing there.

It was shown that they could not have been carried there by human agency, because men had not visited the devastated island. The character of the new plants was such as to prove that they could not have been derived from the former vegetation of Krakatoa, even if any living remains of that vegetation could have existed in the burned and buried soil.

The nearest land on which any plants grew was the island of Sibesie. Sumatra is twenty miles and Java twenty-one miles from Krakatoa. Yet a dozen kinds of ferns and several species of flowering plants and grasses were discovered by Treub flourishing on the shore and in the



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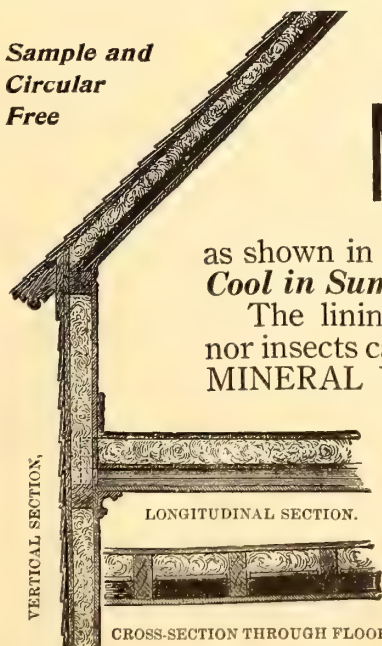
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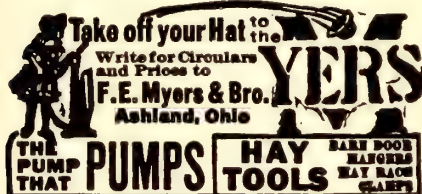


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mountainous interior. That some of these forms of vegetation had been carried there by the ocean was indicated by the fact that seeds of littoral plants were found scattered on the shore.

As to the other plants, the history of their appearance upon the island seems to have been as follows: First, a thin film of a simple form of vegetable life, derived from floating germs in the atmosphere, covered the pumice stone and, through chemical action, brought its surface into a condition fitted for the nourishment of ferns and later of flowering plants. The seeds of these were brought by the winds and birds and, as soon as the soil was capable of supporting them, they took root and, bathed in the equatorial sunshine, began the work of clothing the barren island anew.

Renewed attention has recently been called to this reappearance of vegetation on Krakatoa in connection with the general subject of the origin of plants that inhabit islands. Nature shows herself entirely capable of conveying the germs of plant life for long distances by means of the ocean and the atmosphere, aided by the birds. When man comes to her assistance, the work goes on apace.

Of more than eighty species of plants inhabiting the Laccadive Islands, which are simply the tops of a group of submerged mountain peaks in the Arabian Sea, half of whose inhabitants have been, at times, swept off by storm waves, it is believed that fifty-six have been introduced by man, eleven by the sea, two by the winds, and two by birds.

There is nothing more impressive in modern science than the story of what has been learned of the gradual conquest of the earth by plants.

WHITE CEMENT

COLORED surfaces or objects in cement are made by adding pigment to the surface layer, but the natural color of the cement must be taken into account in selecting and apportioning the coloring matter. For this reason numerous attempts have been made to produce a white cement. Often colored cements are made by adding suitable metallic oxides before the furnace process. Ordinary Portland cement takes its hue from the color of the substances entering into the raw material, such as iron and manganese compounds. Nearly all the clays and marls contain such oxides, so that it is difficult to have a white cement. Dr. Wormser overcomes the difficulty by a process in which he obtained white cement from ordinary clays and even ferruginous clays. The crude mass is mixed with 2 to 5 per cent of sal ammoniac and during the furnacing process this is volatilized and escapes in the shape of fumes. It may be recovered by passing the fumes through scrubbers in which the sal ammoniac (ammonium chloride) is absorbed by the water. Chloride of iron also passes in the fumes. The furnaces should be of the small vertical type and this increases the cost of production, but on the other hand the product brings a higher price. If an absolutely white cement is not needed, a more economical process is to use chloride of zinc for treating. The resulting product always retains a small amount of this salt and it has a slight greenish tint.

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THE MIXING OF CONCRETE

THE question as to how much water should be used in mixing concrete has often come up for discussion among engineers in Europe, and opinions seem to be divided in this regard. The German Concrete Association has been giving this matter its attention for some time past, apropos of the standardizing of concrete testing methods. In order to elucidate this point, tests were made by preparing concrete in two different places and by different workmen. A great number of samples were then prepared having an aggregate weight of nearly 100 tons. During a period of five years these men put through a series of tests as to resistance to various strains. These experiments are now completed and the results have been published. Among other results the work carried out at the testing laboratory of the Stuttgart Technical School with samples made at the laboratory itself by the same workmen and under the same conditions, showed that for a proper composition of concrete the maximum strength appears to be obtained by using the smallest possible amount of water compatible with the production of a good mixed concrete.

However, the use of the minimum amount of water requires the greatest care and can only be practiced by very skillful workmen. Otherwise it is to be feared that the concrete will not be homogeneous. The conclusion is drawn that in proportion as the workmen are less skilled, greater security is given by increasing the amount of water. It is also to be noted that other factors enter in here, such as the variable humidity of the sand, gravel, etc., variations in the hygrometric state and temperature, and others, and that these also have an influence on the amount of water needed.

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THE cathedral of Poti on the Black Sea in Russia is built entirely of reinforced concrete. It is of the Byzantine type, designed somewhat after the St. Sophia structure of Constantinople. As the loose sandy soil near the Rion River, upon which the building is located, will admit of but little weight on the pile foundation, reinforced concrete answered the purpose very well, and it took less than a year to build, against ten years for the Batoum and other Russian cathedrals, besides costing much less. It has a main dome surrounded by half-domes covered with sheet iron. A pressure of but twenty pounds per square inch was permitted upon the foundations.

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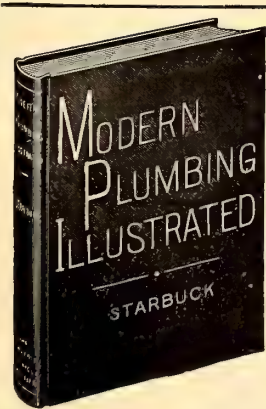
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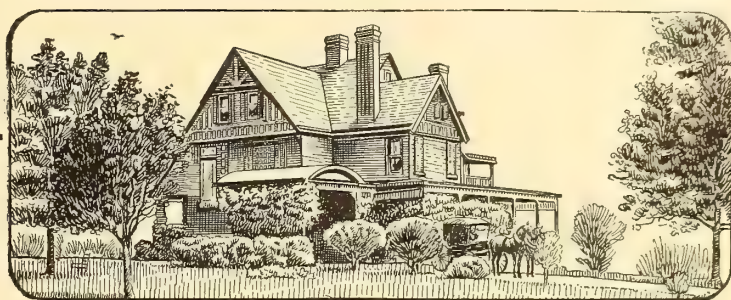
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Be careful to write the names and addresses plainly and don't fail to put your own name and the address at which you are receiving American Homes and Gardens on each list you send.

Address all lists to Circulation Department, American Homes and Gardens, 361 Broadway, New York.

FRUIT DISEASE INVESTIGATION

THE investigation and study of fruit diseases have been vigorously pushed and have shown a healthy progress. The destructive tumor disease of limes and other citrus fruits has been shown to be of fungous origin and attacks oranges as well as limes. The new methods of spraying with sulphur compound by pathologists of the Department of Agriculture has been widely adopted by apple growers. The investigation shows that fine fruit can be produced and protection secured against fungous disease without the injurious effect resulting from copper compound. Bordeaux mixture is still being used, but in the spraying of apples it has taken second place. Special attention has been given to the experimental work in perfecting the method of using the new sulphur sprays for the fruit spot and leaf disease. As a result, fruit growers who have used the new sprays have secured fine crops of the best apples they have ever grown. Spraying has very largely prevented the fruit spot and leaf disease known as cedar rust, or orange rust, prevalent in the Blue Ridge and Alleghany mountain district from Pennsylvania to Tennessee. The peach growers of Virginia, West Virginia and Georgia have been prompt to adopt the discovery of spraying with self-boiled lime-sulphur for brown rot and scab, which has resulted in the removal of some of the factors which rendered the growing of this fruit uncertain. The pear blight eradication methods have been in extensive use on the Pacific coast.

THE DEPARTMENT OF AGRICULTURE AND NEW FRUITS

THE attention of the Department of Agriculture has been called to a dispatch published in various California papers stating that the department had originated a new type of navel orange and that several thousand young trees were ready for distribution this month throughout California. These statements as published are misleading and are apparently based on a misapprehension of the facts. The department has no new navel oranges nor new citrus fruits of any kind for distribution in California at present. Experiments in the breeding of new navel oranges and other citrus fruits have been under way for several years, but these experiments are still in the preliminary stage. None of the new sorts will be distributed until thoroughly tested under the auspices of the department and found to be of promise. None of them has as yet fruited, therefore it is not known whether any will be of commercial value.

DEW WATER

THE ancient "dew drops" of England have their modern counterparts on the Rock of Gibraltar, where drinking water is obtained by the condensation of the abundant dew in especially prepared basins. The primitive process consists in making a hollow in the ground and filling the bottom with dry straw, over which is placed a layer of clay. On a clear night the clay cools very rapidly, and the dew is condensed into water in the basin. The pond is improved by putting a layer of asphalt or Portland cement under the straw. At Gibraltar the present practice is to use wood instead of straw and sheet iron instead of clay.



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VACATION NUMBER

THE July issue of AMERICAN HOMES AND GARDENS will be devoted to vacation topics.

This number will contain beautifully illustrated special articles on sports and pastimes, which will include houseboating, camping, outing with a portable equipment, fishing, hunting, and everything pertaining to vacation life. Each of the articles has been prepared by an expert and will be presented in so detailed a form as to be readily understood in solving the problems which so often confront the vacation-seeker who desires to spend a profitable and pleasant holiday.

In addition to these subjects the issue will contain articles of practical value in household affairs and timely garden work about the home.

The table of contents published on page x, in the current issue, will give a synopsis of the contents for the July number of AMERICAN HOMES AND GARDENS.

SHALL NIAGARA FALLS BE PRESERVED

THE power developing companies at Niagara Falls are not satisfied with being allowed to run their works at full speed upon water for which they do not pay one cent, but they still seek to have the amount diverted from the Falls on the American side increased 28 per cent. This would give them some 50,000 horse-power additional, worth to them nearly a million dollars a year. According to the army engineers and the Lake Survey authorities, damage has already been done, which will be greatly extended if diversion is increased. The American Civic Association, which has led in the fight to save Niagara for the people, insists that the power people have now enough and they should not be allowed to encroach farther upon the Falls. The able, ingenious and plausible gentlemen who are interested in power developments at Niagara Falls, and whose investments have been completely respected in the fair and equitable legislation promoted by the American Civic Association, continually assert that the casual visitor can see no difference in the Falls. Each of them denies the least intention of himself injuring the Falls, but he is silent as to the effect of the combined abstractions from the great cataract, except when he can find an "oldest inhabitant" who is sure that he can notice no difference. Abraham Lincoln once said in notes for a lecture on Niagara Falls, that the value of the great cataract was not so much in its grandeur as in its power to excite reflection and emotion in the people who saw it. He might, had he known how travel would be stimulated, have gone further and added some statement as to its value as a cash-producing asset to the people of the United States. Those who depend on figures rather than on fact when discussing the development of electric power at Niagara Falls often refer to the percentage of diversion included in the total twenty limitations, and insist that a diversion of 25 per cent. will

reduce only to that amount the glory of the great cataract, but will not materially change its form to the eye. But the wild glory of Niagara Falls results from the uneven character of the bed of the river, set with great rocks, which gives the wonderful rapids, and from the jagged edge of the stupendous cliff over which the mighty flood from four great lakes plunges one hundred and sixty feet into a rugged cauldron. It is known that at normal flow the covering of water on some rocks of the rapids, and on portions of the crest line of the cataract, is very thin. Taking a half-inch from the twenty-foot green heart of the Horseshoe Fall would not be noticed, but the same general half-inch takes all that covers some rocks, and half and more in other places, so that it can be readily seen that if this were reduced a greater damage would be inflicted upon what is one of America's greatest natural beauties. The power companies on the American side are developing about 190,000 horse-power from the water abstracted from the Falls, which, according to the findings of the engineers, has seriously injured the great cataract. Not one cent of revenue to the people rises from the production of this power, but the companies derive a gross revenue of \$3,800,000. It is now proposed, by drying up the Falls 28 per cent. more on the American side, to add another million to this gross revenue. If this gross revenue could be, as it never can be, distributed to the people of the United States, who own the Falls, it would amount to about four cents apiece each year. No one has yet been known to say he would rather have the four cents than the opportunity to see the Falls.

Obviously, the value of Niagara Falls to the people of the United States, aside from Lincoln's reason for their existence, and in simple dollars and cents, is far greater as a spectacle to attract travel than as a source of water power for a few stockholders and for the promotion of restricted industry.

Past experience has demonstrated that the American people want the Falls preserved for their beauty for all of the people. To make sure of their continued preservation further definite action is now demanded, and it is to be hoped that those in authority who have charge of this matter will see that earnest endeavors are made for their continued preservation.

THE SMOKE NUISANCE

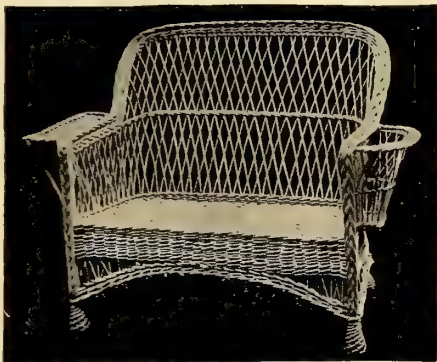
THE American Civic Association has published its second edition of the Smoke Bulletin.

This new edition is timely because of the very general and growing interest in the subject and the active efforts being put forth by many cities for the abatement of the smoke nuisance.

Coming from the chief organized antagonist of the abuses to which the face of the city is subjected, the report should be of use to all intending to exercise activity in attaining good civic ends.

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THE RESURRECTION PLANT

THE Resurrection Plant, whose botanical name is the *Anastatica*, is sometimes called "The Rose of Jericho." No other plant has been credited with so many extraordinary qualities, and none has been of greater service to quacks and charlatans ever since its peculiarities were discovered.

It has been called "the resurrection plant" by reason of the fact that, when apparently dead and dry, it often assumes again the color of life as soon as its root is plunged into water. Its buds swell with new life, the leaves of its calyx open, the petals unfold, the flower stalk grows, and the full-blown flowers appear as if by magic. It is not, strictly speaking, a rose at all; the stem divides at the base and bears spikes of pretty white flowers, which change into round fruits. When ripe the leaves fall, the branches grow hard and dry, and fold inward so as to form a ball.

In autumn the plant is uprooted by the storms and carried toward the sea. There it is gathered and exported to Europe, where it is highly prized for its hydro-metric qualities.

All that is necessary is to place the end of its root in water, and soon the plant is seen to begin a new life, develop its parts and unfold new roses. When the water is removed, the spectator sees the magical plant grow weak; its petals close and the leaves pass through the last agonies of vegetable life and die.

The resurrection plant grows in the sandy regions of Egypt, Syria and Arabia, and has long been connected in popular superstition with the Holy Land and the life of Jesus. In certain countries it is still believed that this remarkable flower blooms every year on the day and at the hour of the birth of Christ, and pious pilgrims still report finding it at every spot where Mary and Joseph rested on their flight into Egypt.

EFFECT OF RADIUM EMANATION ON PLANTS

RADIUM produces by its spontaneous disintegration a gas which is usually called radium emanation, but for which Sir William Ramsay suggests the name *niton*, derived from a Greek word which signifies brightness. Niton or radium emanation is a radioactive chemical element which disintegrates rapidly and has a very brief existence.

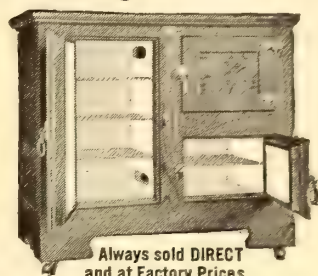
Fabre has communicated to the French Biological Society the results of his experiments on the effect which the radiations of the emanation produce on germination and growth in various vegetable organisms. One of the organisms selected was black mold (*Stengmatocystis nigra*). The "optimum" or most favorable dose of radiation, which developed the mold in four days, was found to be $\frac{1}{2}$ microcurie per cubic centimeter of air. (The curie is the unit of radio-activity and the microcurie is one millionth of that unit.) The "abiotic" dose, which kills the black mold, is 1 microcurie or more per cubic centimeter.

For the common white mold (*Mucor mucedo*) the optimum dose is 1 microcurie per liter of air. In the case of *Lilium catharticum* the dose most favorable for germination and growth is $\frac{3}{4}$ microcurie per liter of air, while this species of lily is killed by 40 microcuries per liter of air.

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¶ These designs have been contributed by twenty-four well known architects from different sections of the United States.

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Motion Study

A Method for Increasing the Efficiency of the Workman

By FRANK B. GILBRETH

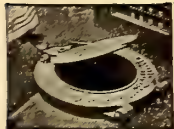
¶ This is a scientific investigation of the conditions governing the number of motions made by workers, and the methods of reducing this number. The author has discovered that many factors, such as physique, race, nationality, early training, nutrition, tools and appliances, have a bearing on the subject, and these various influences are discussed in the order of their importance. He shows that the manner of supplying the workman with his raw material has an important bearing on the number of motions made. Since fatigue will influence greatly the methods of doing work, it is important that the raw material be placed in a position which will require the least number of motions to transport it to its final position, thus producing the least fatigue which is proportionate to the number of motions made.

¶ The book is concisely written and should be studied by every manager and employer of labor who is interested in reducing labor cost.

¶ 12 mo, $5\frac{1}{4} \times 7\frac{3}{4}$ inches, 135 pages, 44 illustrations.

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VACATION NUMBER

American Homes and Gardens for July

Houseboat Vacations

The kind of houseboat and where to locate it, are important questions when planning a houseboat vacation. It is customary to plan for a permanent summer vacation, having a floating home anchored in some picturesque and quiet spot within reach of the men of the house, who make a daily journey to business from their summer home on the water. Phebe Westcott Humphreys has prepared an excellent paper on the subject of houseboat vacations, and has given much information as to the best means by which a holiday can be spent with profitable results. Those interested in houseboats ought not to fail to secure the information contained in this article.

Outing with Portable Equipment

Outing with portable equipment is annually growing more popular. With far less than the weight of an ordinary trunk taken to a summer resort on a vacation, one can carry, rolled up, on his back, when tramping, his own folding canoe, then launch and paddle it, and, afterwards as a folding tent, sleep in it on shore. A. William Masters has prepared a paper on this subject, which is illustrated, showing how one or a party can enjoy a trip on the lakes, with a portable equipment which, under ordinary circumstances, would be impossible—an article that ought to appeal very strongly to huntsmen who are interested in such a subject.

How to Build a Houseboat for \$300

The proposition of spending a summer afloat is one which appeals to many persons fond of the water, but the cost of a yacht large enough to accommodate comfortably a family for a period is prohibitive to the majority. A solution of the problem of living cheaply and snugly afloat is found in the houseboat. Frederick K. Lord tells in his paper and shows diagrammatically how a houseboat can be built for \$300, which offers many recreations and fascinations for the lover of the floating home.

A Boat-House Remodeled Into a Summer Home at a Cost of \$500.

At the foot of the second cliff at Scituate, Mass., and at the left-hand side of the roadway, stands the picturesque summer home which was remodeled from an old boat-house, that for years had done service as a fisherman's workshop. Lillian Harrod tells an interesting story of how this boat-house was transformed into a habitable dwelling.

How to Prepare Eggs

It is not often that so great a variety of ways to prepare eggs is shown to the average housekeeper, as is explained and illustrated in an article prepared by Lydia M. Westcott. This paper includes a large number of recipes which will be helpful to the housewife.

Camping in the Country

A camping place for the summer is one which covers every variety of habitation. Not so many years since, a home occupied only in the warm weather months was exclusively for the fortunate possessors of assured incomes. Edith Haviland has prepared a paper on the subject of camping in the country, which is illustrated by numerous engravings, showing appropriate designs for dwellings of moderate cost to be erected on wooded sites, along the seashore or in the mountains. Many suggestions are offered in this article, and it is one that ought to be of assistance to the vacation-seeker.

Fishing in Barnegat Bay

There is nothing more delightful than a day spent in fishing on Barnegat Bay, a pastime which invites, entices, fascinates and compels its devotees to seek it at sunrise and reluctantly leave it as the sun goes down behind the horizon. William H. Ballou has prepared an excellent paper on the subject of fishing, giving detailed advice as to the best methods to pursue in order to secure a successful day's outing.

A Bungalow Designed by the Owner

Occupying a slightly position not far from the little railroad station in the town of Sharon, Mass., stands the interesting bungalow which forms the illustration for a paper prepared by Mary H. Northend. It is a delightful little house and one that is worth knowing about. Exterior views and floor plans accompany the article and give a comprehensive idea of its general character.

Saving Vegetable Seeds

The gardener who saves his own seeds has a distinct advantage over the improvident soil worker who relies solely upon seed dealers. He can perfect the desired variety of vegetable, ensure the vitality of the seeds and vouch for their purity. The work is not difficult, as it merely requires vigilance to see that the ripened seeds do not escape, and some care as to their proper selection. M. Roberts Conover has prepared a paper on this subject, which is illustrated, and which shows how the saving of vegetable seeds may be accomplished.

Handicraftsman

This department will contain two articles suitable for the vacationists.

The first one is on Posters for the Summer camp, by Beryl King, who illustrates how ordinary posters can be applied to interior decoration.

The second article, by Alice K. Van der Veer, is on Artware with Pebbles and Putty, which tells how one can select pebbles, and form vases and jars by the use of putty. Some excellent examples are shown in this paper.

PRESERVING EGGS WITH WATER-GLASS

EGGs in large quantities are successfully kept in cold storage for many months, but this method cannot be employed by small dealers or housekeepers. Of the numerous chemical processes which have been devised, only two, the water-glass and lime-water processes, have been generally adopted. No satisfactory explanation of the preservative action of water-glass (sodium silicate) has yet been given. The simplest theory is that the pores of the egg shell are stopped by a precipitate of gelatinous silica and that the solution of one part of water-glass in 15 parts of water protects the eggs from the air and from bacteria. The colloidal solution cannot traverse the membrane which covers the egg. A mixture of water-glass and calcium carbonate hardens in the air, although no chemical reaction, causing the formation of calcium silicate, takes place. R. Berger concludes from his experiments, published recently in the *Zeitschrift fuer Chemie und Industrie der Kolloide*, that the product which is formed from the water-glass and the calcium carbonate hardens in the air, although no absorption occurs, and stops the pores. Solutions of soap and other colloids were found to exert a similar preservative effect on eggs. The best result was obtained with a mixture of water-glass and a 10 per cent solution of rosin soap containing the smallest possible excess of soda. The temperature of the water-glass was 120 to 125 deg. F.

THE COLOR OF FLOWERS

THE colors of flowers have been frequently studied from the chemical point of view as well as from the biological—that is, in relation to the adjustment of plants to their surroundings. But very little has heretofore been done with the physical problems involved. A recent study of the physical basis of the colors in the petals of flowers brings out the fact that the brilliant appearance of many flowers is due not to the character of the pigment in the cells of the petals, but to the presence of air spaces between the cells in the deeper layers; these inclosed air bubbles reflect from their surfaces in such manner as to give the brilliant appearance. The great variety of colors among flowers is produced by a comparatively small number of pigments. The explanation for this lies in the fact that a few pigments combined in different ways or in different proportions produce a variety of effects. Thus, a combination of two complementary pigments, one of which absorbs the light rays not absorbed by the other, will produce the effect of "black." In a similar manner gray tones and browns are produced. The shape of the epidermal or skin cells is also found to modify the effect by modifying the refraction and the reflection of light.

POLISHING POWDER FOR GLASS

RUB calcined magnesia down with pure benzine, so that a mass is formed sufficiently soft to allow drops to be pressed out of it. This mixture must be kept in closely stoppered glass bottles to retain the very volatile benzine. A little of the mixture is placed on a pad of wadding or cotton and the glass rubbed with it.



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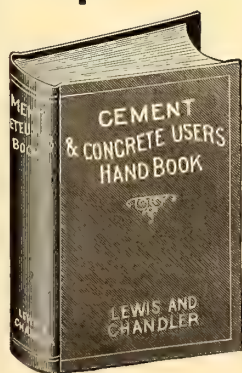
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I. Historical Development of the Uses of Cement and Concrete. II. Glossary of Terms Employed in Cement and Concrete Work. III. Kinds of Cement Employed in Construction. IV. Limes, Ordinary and Hydraulic. V. Lime Plasters. VI. Natural Cements. VII. Portland Cement. VIII. Inspection and Testing. IX. Adulteration; or Foreign Substances in Cement. X. Sand, Gravel, and Broken Stone. XI. Mortar. XII. Grout. XIII. Concrete (Plain). XIV. Concrete (Reinforced). XV. Methods and Kinds of Reinforcements. XVI. Forms for Plain and Reinforced Concrete. XVII. Concrete Blocks. XVIII. Artificial Stone. XIX. Concrete Tiles. XX. Concrete Pipes and Conduits. XXI. Concrete Piles. XXII. Concrete Buildings. XXIII. Concrete in Water Works. XXIV. Concrete in Sewer Works. XXV. Concrete in Highway Construction. XXVI. Concrete Retaining Walls. XXVII. Concrete Arches and Abutments. XXVIII. Concrete in Subway and Tunnels. XXIX. Concrete in Bridge Work. XXX. Concrete in Docks and Wharves. XXXI. Concrete Construction Under Water. XXXII. Concrete on the Farm. XXXIII. Concrete Chimneys. XXXIV. Concrete for Ornamentation. XXXV. Concrete Mausoleums and Miscellaneous Uses. XXXVI. Inspection for Concrete Work. XXXVII. Waterproofing Concrete Work. XXXVIII. Coloring and Painting Concrete Work. XXXIX. Method for Finishing Concrete Surfaces. XL. Specifications and Estimates for Concrete Work.

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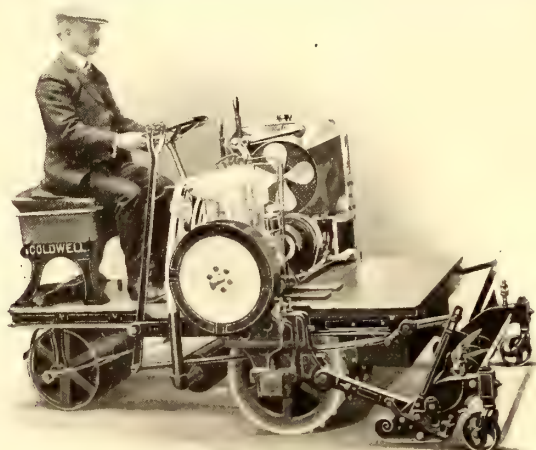
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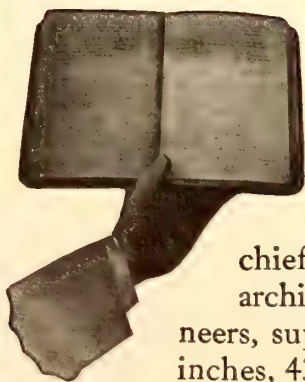
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BY WILLIAM ARTHUR



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THE JUMPING BEAN

THAT extraordinary product of the vegetable kingdom, the "jumping bean," is derived from a bush, closely resembling the coffee bush, that grows in the Yaqui River country of western and northern Mexico. The bush attains a height of from three to four feet, and the hundreds of blossoms that it puts forth are of an olive-green tint which, after ripening, turns to a buff gray. Within each blossom are two "fertile" seeds, and a third, which is the home of a small, exceedingly active worm, whose performances are responsible for the queer conduct of the bean. When this worm merges from its prison it becomes a beautifully colored moth.

The seeds of the jumping bean blossom in the month of May. Then the female moth deposits one egg on the pollen of the flower. As the flower develops it forms a triangular-shaped shell on two sides, with a convex shape on the other. Within this the chrysalis develops into a grayish-brown worm about one-tenth of an inch in diameter and about half an inch in length. This worm lives inside its cell for a period of six months, or until the middle of November. Then, climatic conditions being favorable, it bores a hole through the end of its shell and flies away as a moth, to mate in its turn and perpetuate the species.

If, however, it is brought in the bean to a colder climate the worm will die in the shell. Cut a small hole in the end of a jumping bean about an eighth of an inch in diameter, and in less than one hour the worm will cover the break with a white fibre-like exudation from its stomach, working the mouth round the opening until the hole in the shell shall become completely closed.

Kept in a moderately warm place, and not packed too tightly, the jumping beans will live for five or six months to mystify and amuse. The jumping is caused by the worm's curling itself into a ball and then springing out to full length against the side of the shell, thus making the bean jump from the hand into the air.

AGE OF FISH

UNTIL within recent years there had been ascertained no trustworthy way of finding out the age of fish. It has been shown that mere size does not indicate the age. Reibisch, Heincke, and others have discovered that many of the bones, scales and otoliths of fishes have annual age-rings, resembling those in tree-trunks, and by means of these Wallace and others have determined the rate of growth of plaice, showing that some specimens attain the age of twenty-five or even as much as twenty-nine years. Age can now be correlated with size and weight, although it appears that the sexes have a different rate of growth.

PAINTING WINDOW SCREENS

WHEN repainting window screens and screen doors, give them a couple of coats of white paint, or else use a light tint, in place of the conventional black or dark green. Screens painted in this way possess the peculiar advantage of presenting an unobstructed view to a person on the inside looking out, while a person on the outside is prevented from looking into the house by the reflection of the light from the wire of the screen.



AMERICAN HOMES AND GARDENS



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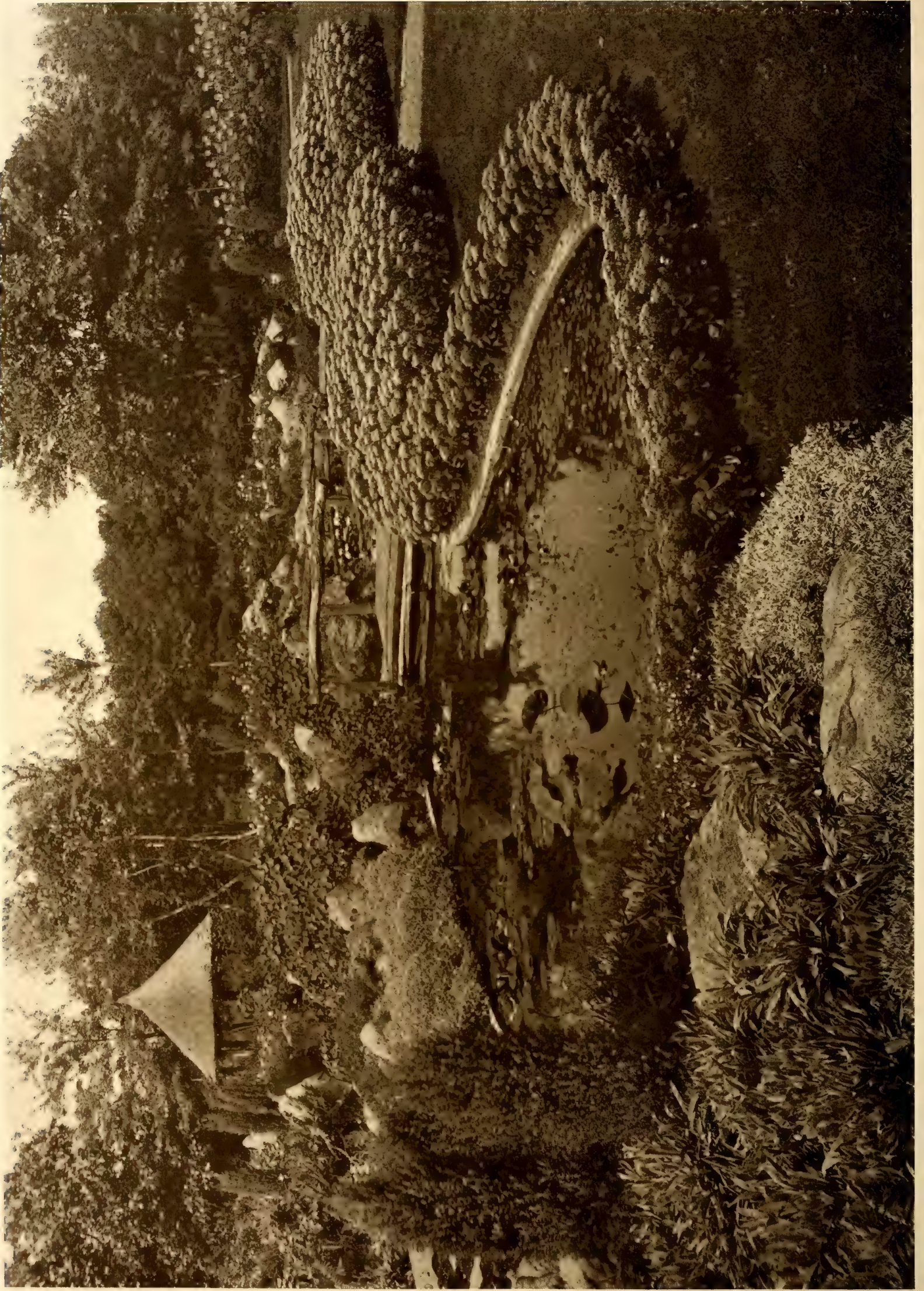
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The Brook garden

AMERICAN HOMES AND GARDENS



Volume VIII

June, 1911

Number 6

The Prize Garden of George E. Barnard, Esq. Ipswich, Mass.

By Mary H. Northend



TEN acres of garden constitute the principal feature of Mr. George E. Barnard's estate at Ipswich, Mass. Viewed from any portion of the house or veranda, the wonderful color schemes seem a part of an exquisite picture, and, indeed, it was with this idea in mind that the flowers were planted. Time and a great deal of thought have been required to produce this result, but the completed whole is

well worth the effort made, and it is rarely that one finds a garden which shows such beautifully blended tints.

The garden is divided into two parts—the hill garden on the north, and the lower garden at the west of the house. The two gardens are about the same in area.

A twelve-foot terrace on the northern slope was cut down to natural grade and the sub soil hauled to the lower garden, raising one acre of the latter three feet.

The higher garden consists chiefly of a herbaceous



Part of the upper garden and the terrace showing the plan of the border



A general view of the garden

border about eight hundred feet long, backed by shrubbery and terminating in two circles twenty-five feet in diameter, forming a wide entrance to the summer house.

The herbaceous border is edged twice yearly. Five hundred white pansies were planted the first of April. These were replaced in June by five hundred white petunias, thus keeping an unbroken edging until frost.

Going farther along the northern slope, and still backed

Erfordi, and the third row standard heliotrope alternating with abutilon. The two circles mentioned were planted in April with annual silene, with myosotis used as an edging. In June the silene was replaced with Bar Harbor Beauty Petunia, and the myosotis with *Ageratum Stella Gurney*. In the spring the circles had for a background *Digitalis purpurea alba*. These are now replaced by Richard Wallace canna.

The lower garden consists first of a series of oblong squares running east and west, and flanked on the northern side by the early vegetable garden, and on the southern side by herbaceous borders. The paths, however, connect beyond the squares and rose garden, and commence to curve, serving to form the English garden, rockery, alpine and water garden, and then continue to the borders of the Ipswich River. The space occupied by these gardens was originally covered with water and an apparently endless depth of black mud.

A flight of rustic steps conducts one to the first square, which is planted principally with perennial vegetables, such as asparagus, sea kale, globe artichokes, rhubarb, etc. The whole square is edged with a double row of white verbenas. The second square is planted with annual vege-



The silver birches and the lake

tables, and is bordered on two sides with yellow gaillardias and on the remaining two sides with *Verbena venosa*.

The third square commences with the greenhouse, which is used for raising annuals and bedding plants, followed by a crop of English forcing melons. The remainder of the square is taken up with dwarf fruit trees and bush fruits, flanked on one side with a row of trained espaliers, and on the other side with salvia Zurich, the end being planted with blue asters.

The fourth square is planted entirely with the different *Brassicas*, following the strawberry crop, and is bordered on the sides with salvia Zurich, pink asters, mixed zinnias, and *Celosia plumosa*.

The fifth square commences with a pergola, covered with grape vines.

Then follow the different summer vegetables. It is flanked on the different sides with a row of espaliers, herbaceous border, and cosmos.

The sixth square is planted with strawberries for next year's fruiting, and is enclosed with cosmos, *Salvia farinacea*, *Viscaria* and the herbaceous border.

The herbaceous border on the south side is arranged to match that which flanks the fifth and sixth squares, the gravel path between the two borders being four hundred feet long. One hundred feet of this path is covered with a newly built pergola overgrown with climbing roses.

The rose garden consists of one thousand hybrid teas, which are planted in three-foot beds, cut out of grass in scroll form, and extending entirely across the garden at the end of the square. Across the broad path from the rose garden are four formal beds, the first a carpet of dwarf scarlet verbenas edged with *Sedum carnea*, and dotted with abutilon and violet petunias trained as standards. The second bed shows a carpet of alyssum edged with *Alternanthera rubra* and dotted with crimson geraniums and *Coleus Golden Bedder*. The third has a carpet of *Mesembryanthemum*, edged with *Sedum carnea*, and dotted with pink geraniums and iresine. The fourth shows a carpet of forenia, edged with yellow *Alternanthera* and dotted



The rockery in the garden

with snow-storm petunia and *Champaepeuce discantha*.

The remainder of the beds which complete the English garden are first a flanking bed, one hundred feet long, carpeted with blue verbenas, edged with dwarf white petunias, and dotted with *Datura Wrightii*. A second bed, thirty feet in extent, is planted with tall yellow and edged with dwarf yellow *Antirrhinum* and dotted with King Humbert canna. A third bed, seventy feet in extent, is carpeted with orange gaillardias, edged with orange nemesia, and



One of the garden walks



Part of the formal garden

dotted with blue salpiglossis. A fourth bed, one hundred feet long, shows a carpet of pink *Antirrhinum*, with edging of pink saponaria, dotted with Richard Wallace canna. A fifth bed, measuring thirty feet, has a carpet and edge of crimson nemesia, dotted with *Cleome pungens*. The sixth and seventh beds, arranged on each side of the rockery path, are planted alike and consist of a carpet of dwarf white petunias, dotted with *Salvia patens* and edged with dwarf white Verbena and white saponaria, alternating.

The rockery was constructed with stones and boulders taken from the estate as the work proceeded. The plant-

ings are arranged in blocks and drifts and average about one hundred plants of a given kind to each block, including a choice array of alpines.

The water garden is arranged partially inside the rockery. It is sixty feet long, and in shape is like the figure eight, with a rustic bridge across the narrow part. One portion is planted with hardy lilies, and the other part with tender lilies.

To the southwest of all, and contiguous to the river, is the thatched summer house.

The gardens were designed by John S. Critchley, who also directed the execution of the work.



The naturlesque garden



Fig. 1—A portable bungalow on the cliffs. Cost, \$600

A Summer Home and Furnishings for \$1,000

By Alice M. Kellogg



WITH the advent of warm weather the popularity of the summer vacation becomes evident. Not so many years ago a trip to the country during the hot weather was considered one of the luxuries of the well-to-do, or the necessity of the overworked, the sick or the convalescent.

Among other rapid changes in this country, the summer vacation has been adopted by all kinds and classes, for reasons of recreation and health. In many families this brief outing is looked upon with more enthusiasm than the longer stay in the winter home. Children in the larger cities count the days before their emancipation from conventional life, and often begin to plan for their little pleasures in the country months in advance.

In one home, the joys of summer time in the country are anticipated by the young people writing out a list of the belongings they plan to take away with them, and over the countless revisions of this list many happy moments are spent.

A summer outing now means something more comprehensive than a brief vacation. In fact, there is a growing

and apparent desire for the permanency of the home element during the warm weather.

Boarding-house life makes its own appeal to the overstrained housekeeper, but its restrictions are soon felt, particularly with young children to be cared for.

The opportunities for hospitality in the home are never as much desired as during the summer, when the "simple life" brings varied out-of-door enjoyments.

The summer home has become, in fact, an impelling attraction in our fast-progressing civilization. The question to be met by that large majority with moderate incomes is, how to secure at a reasonable expense a comfortable shelter.

Unless a family has definite leanings towards a particular locality it is often difficult to select the site for a summer home. One season the seashore may seem the best choice; another year there are specific reasons for choosing the mountains, or another

of the family turns the decision.

We have many of us often wished we could transplant our comfortable city or suburban dwelling to the coast or into the woods for a warm weather retreat; and the idea,

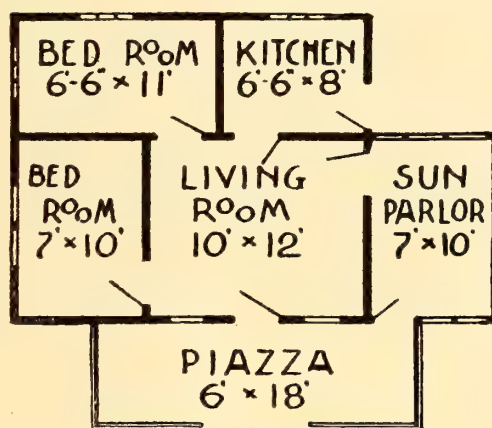


Fig. 2—The floor plan of the portable bungalow



Fig. 3—A writing desk



Fig. 4—Morris chair

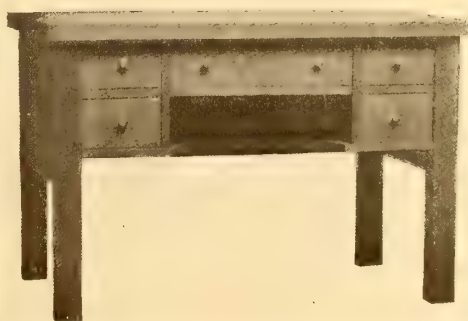


Fig. 5—Library table

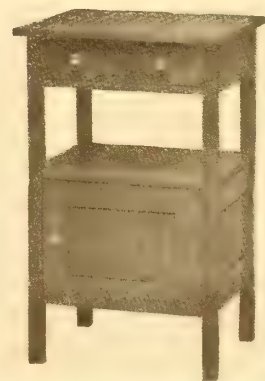


Fig. 6—Night stand



Fig. 7—Breakfast table



Fig. 8—Serving table



Fig. 9—Drop-leaf table

in modified form, can be realized by purchasing a portable house and setting it up wherever the fancy leads. So durable and compact are these fold-up houses that they do not partake of the toy element, to be played with and thrown away, but belong to a distinctive architectural class, where the practical thought for home comfort is carefully united with artistic detail.

Since the inception of this idea, its development has been rapid, following the modern exactions for exterior beauty and good interior arrangement.

For a family of four the floor plan illustrated gives a front piazza, a side piazza or sunroom, a living-room, kitchen and two bedrooms. The cost of the house is \$600 complete. If a permanent site has not been select-

ed, there is often an advantage in renting a lot in the preferred locality and testing its good qualities before buying.

The consideration of the house and lot being disposed of, then comes the important question of fitting up the various

rooms in a tasteful manner. Allowing four hundred dollars for the furnishings, one may select anything needful for this amount and find that the summer home, inside and out, has cost only the modest sum of one thousand dollars.

In the matter of furniture, unless one has kept in touch with what the shops are offering for bungalows and cottages, it is difficult to imagine how far a restricted amount of money will go, and what it will do. The illustrations are suggestive of the newer and more tasteful designs that may be had now at very moderate prices. A selection from these, duplicating some of the single chairs, would come to two hundred and fifty dollars, leaving a hundred and fifty for rugs, window shades and curtains, bedding, kitchen utensils and table



Fig. 10—Suggestions for the interior treatment of a bungalow

ware and other necessary appointments.

The illustration shown in Fig. 10 offers a suggestion as to how the living-room of a bungalow can be finished on the interior. The draperies to the windows are particularly



Fig. 11—Dining table



Fig. 12—Sideboard



Fig. 13—Round drop-leaf table

well selected and hung.

As the living-room and the dining-room are combined in one, the conventional equipment of side-board and dining table might be omitted, and, as a substitute for the latter, the gate-leg table used, illustrated in Fig. 14. A serving table like Fig. 8 would be useful, but would not characterize the room as strictly an eating place.

With one of the small drop-leaf tables (Figs. 7 and 9) the large library table (Fig. 5) would not be required, but the small writing desk (Fig. 3) with its compartments for note paper and envelopes would fill a specific need and be a decorative feature of the room.

Three types of dining chairs are shown in Figs. 16, 17 and 19, the first with a leather seat at \$5.25, the second with a rush seat at the same price, and one with a wood seat at \$3.75. The armchairs for each of these costs extra, but their adaptability for piazza use would compensate for the increased outlay.

In fitting up the bedrooms, the two styles of beds illustrated may be had in the single or double size for the prices given. Three bureaus are illustrated at different prices, and, if close economy must be practiced, the plain chest of drawers with separate mirror could be chosen. The night stand (Fig. 6) at \$5.25 could also be used as a washstand or table. Figs. 26, 28 and 30

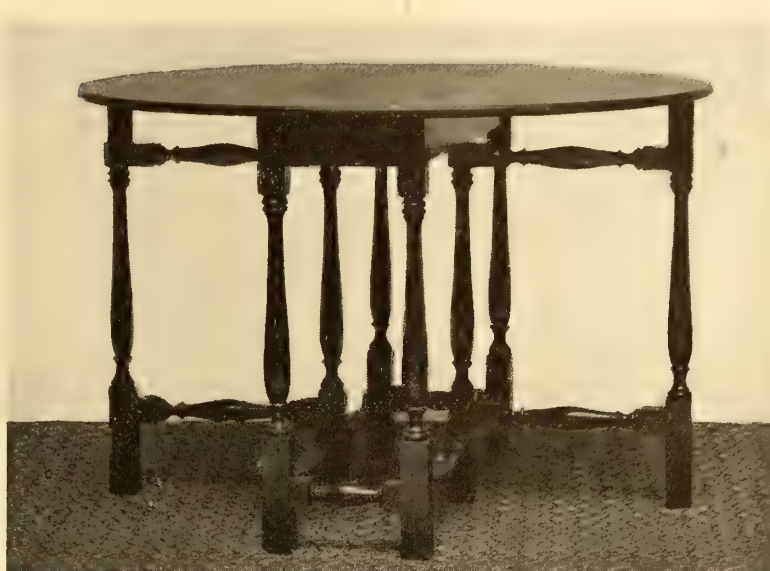


Fig. 14—A gate-legged table



Fig. 15—Blue china. Willow pattern. Price \$12.89 for 100 pieces

are all adapted for bedroom use, but the one with rush seat could be considered also for the piazza.

Writing desk (Fig. 3) \$9.75; morris chair, with cushions (Fig. 4) \$25.00; library table (Fig. 5) \$18.75; night stand (Fig. 6) \$5.25; breakfast table (Fig. 7) \$6.75; serving table (Fig. 8) \$5.25; square drop-leaf table (Fig. 9) \$3.75; dining table (Fig. 11) \$16.50; sideboard (Fig. 12) \$34.50; round drop-leaf table (Fig. 13) \$3.75; living-room table (Fig. 14) \$15.00; side chair, leather seat (Fig. 16) \$5.25; side chair, rush seat (Fig. 17) \$5.25; side chair, wood seat (Fig. 19) \$3.75; armchair, wood seat (Fig. 18) \$7.50; four-post bedstead (Fig. 23) \$16.50; chiffonier with mirror (Fig. 24) \$13.50; twin beds, each (Fig. 25) \$12.00; side chair (Fig. 26) \$6.75; rocker (Fig. 27) \$7.50; side chair, cane seat (Fig. 28) \$1.75; rocker, cane seat (Fig. 29) \$2.50; side chair, wood seat (Fig. 30) \$2.75; rocker, wood seat (Fig. 31) \$3.50; plain bureau (Fig. 32) \$12.75; Colonial bureau (Fig. 33) \$22.50; chest of draws with mirror (Fig. 34) \$9.75.

In the allotment of money for furnishing, there is no provision for the small items, such as table covers, flower holders and pictures. These may usually be borrowed from the winter home.



Fig. 16—Side chair



Fig. 17—Side chair



Fig. 18—Armchair



Fig. 19—Side chair

With the most important part of the furnishings planned for, the accessories may be roughly outlined in an elastic way: Opaque window shades (ordinary width and length) each seventy-five cents. Rugs for living-room and two bedrooms, one dollar a square yard. For piazzas, fifty cents a square yard. White cheesecloth for curtains, six cents a yard. Bed springs, \$4.00; mattress, \$8.00. Lamp and candlesticks, \$10.00. Table china (German earthenware), \$20.00, and kitchen utensils, \$25.00.

These prices would naturally be raised or lowered according to the specific needs of the family, the quantities called for and the quality selected.

A most serviceable and practical kind of china to select for a summer home is the blue china of the willow pattern as shown in Figs. 15 and 21. This is an open set, in that whenever any piece is broken it can be easily replaced. Sets of one hundred pieces can be purchased for \$12.89.

The old Colonial glass is also the most practical kind for service. It is of good style, being modeled after the antique patterns, and is inexpensive. The glasses shown in Fig. 22 cost from 63 cents per dozen for the smallest (cordial) glass to \$1.49 per dozen for the tallest (ale)



Fig. 20—Colonial candlesticks



Fig. 21—Blue china. Willow pattern



Fig. 22—Colonial glass

glass. These glasses, being in a broken set, they can be bought in half-dozen lots if desired, for there is no saving in buying full dozens.

The Colonial glass candlesticks illustrated in Fig. 20, cost from 15 cents for the smaller one to \$1.49 for the largest one.

These are very serviceable for the dining table and for general use throughout a summer home, especially if it is located near the seashore, and

are preferable to brass, which requires a great deal of cleaning.

Summering in a portable cottage makes few exactions in the way of furnishings, yet the ideals of good taste in each selection need not be lost sight of, nor need the artistic balance of color effects be forgotten. In fact, some attention paid to these points will only be in keeping with the trend of the times.

In the living-room and the bedrooms, for instance, the plain walls would be relieved by some decorative effect at the windows. White cheesecloth has been suggested for its cheapness and dainty appearance, but its satisfaction would be considerably increased by the addition of stencil work in a pretty color combination, running the pattern down the sides and across the bottom. Stenciling is so generally understood now, even by those without any artistic

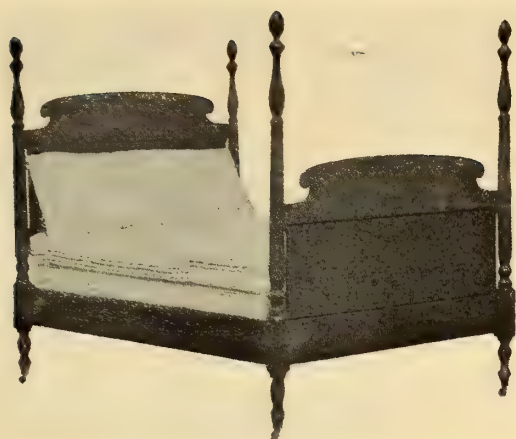


Fig. 23—Four-poster



Fig. 24—Chiffonier



Fig. 25—Twin beds

training, that it is not at all an impossible feat to decorate not only window, but door curtains. The materials are sold at the department stores and the patterns at the art shops.

Another way to ornament the curtains is to buy some cretonne with a design showing flowers in stripes, and cutting

in buff and white would suit the color of the partitions of a portable house; or, to give a contrasted effect, the blue and white or green and white would be pleasing.

A large rug for the living-room could be chosen in rather a bold pattern, but in subdued colors, which would not show the dust or sand that would be brought in. Olive-green and



Fig. 26—Side chair



Fig. 27—Rocker



Fig. 28—Side chair



Fig. 29—Rocker



Fig. 30—Side chair



Fig. 31—Rocker

out the stripes and applying them as bands along the sides and across the bottom of the curtain. This would be an easy task for any one skillful with the needle.

If more of an outlay can be made for curtain material—thirty-five cents a yard—there is nothing better than the figured Japanese cotton crêpes. A bamboo and palm design

gray combine well for such a place, with pleasing effect.

In the bedrooms the rag carpeting, sold by the yard at fifty or seventy-five cents, could be cut into sizes suitable to lay on the sides and at the foot of the bed. Or, one's own rag strips could be woven by a local workman, for so much interest is felt in the revival of the art of hand-weaving.



Fig. 32—Plain bureau



Fig. 33—Colonial bureau



Fig. 34—Chest of drawers and mirror



A Summer Home

RESIDENCE OF E. C. STANWOOD, ESQ.
KENNEBUNKPORT, MAINE

By Henry Hawley



THE house built for E. C. Stanwood, Esq., at Kennebunkport, Me., presents an excellent example for a Summer home, with its large, open, well-ventilated rooms and ample piazzas. The principal feature of the house is its elongated form, low and rambling, which makes it present a picturesque effect. The site on which it is built is well wooded with pines, and the building rests upon a knoll of sufficient height to permit its overlooking the sea. The underpinning, the wall for the terrace and the chimneys are of rock-faced local stone laid up in a rough manner. The exterior walls of the building are covered with shingles and left to weather finish a soft brown, while the trimmings are painted a dull olive green. The roof is also covered with shingles and is painted a dull green with a harmonious effect. The entrance is direct into a central hall, which extends through the house. This hall is trimmed with cypress and is finished in a Flemish brown. It has a beamed ceiling and a paneled wainscoting to the height of five feet, at which point a plate-rack extends around the room. At the entrance front of the house there is a paneled seat, over which there is grouped a cluster of small

windows. The staircase is recessed in an alcove to the left of the hall, and has an ornamental balustrade and a paneled wainscoting extending to the second story. The living-room, which forms the principal feature of the modern summer home, is placed to the right of the entrance. The woodwork is of cypress, finished in a soft brown tone. It has a paneled wainscoting, finished with a plate-rack, and a beamed ceiling. The large open fireplace is built of rock-faced boulders for the facings, and it has a hearth of red tile and a mantel at the height of the wainscoting, supported on carved corbel brackets. There is an attractive overmantel of Gothic design. To the left of the fireplace there

is an inviting nook, with seats and windows. The den at the rear of the living-room is treated in a green weathered oak finish. It has a wall covered with batten strips forming panels. These panels are covered with crimson burlap. There is an open fireplace, with brick facings and hearth and a mantel, at one side of which there is a paneled seat. The dining-room is designed in Colonial style, and is treated with white enamel. The walls have a paneled wainscoting to the height of seven feet, and the latter is finished with a plate-rack, above which the wall surface is covered with a blue and white wall-paper, the whole rising to the ceiling, which is paneled and beamed. A china closet is built in at the left of the pantry door, with a cupboard beneath the counter shelf, and shelves above, enclosed with glass doors of lattice design. The fireplace has a red brick facing and hearth, and a mantel of Colonial style. The butler's

pantry is fitted with all the best conveniences, and the kitchen, laundry and dependencies are provided with all the necessary modern appointments.

The color scheme of the second floor is harmonious and effective. The woodwork is painted white, while the walls of the various rooms are treated in one tone. The master's bedrooms are placed at the front of the house, so that



The house rests on a knoll amid the pines

each one may have a view of the ocean, while the hall from which they are reached is built at the rear of the house. There are two bathrooms, furnished with porcelain fixtures and exposed nickel-plated plumbing. The servants' rooms and bathroom are built in the extension over the kitchen, and are accessible by a private staircase leading from the first floor. The third floor contains extra guestrooms and bath, and storage space.

The scheme of designing this dwelling was commenced with the conviction that the highest aim in architectural motive was to construct a building that would in every way attain the purpose intended.

Mr. Stanwood wanted a summer home that in arrangement of the rooms, in the design of the exterior, and the building of the porches, would represent the expression of the best thought obtainable for the building of a house that was intended only for summer use, so he employed Messrs. Chapman and Fraser, architects of Boston, Mass., to carry out his work and ideas. That they have succeeded goes without saying, for the house and its appointments meet with all the requirements demanded of it. The grounds about the estate are naturlesque, and have been left in their primitive manner, and are in keeping with the ruggedness with which the Maine coast abounds.

The only development that was thought necessary was the building of a roadway from the highway to the entrance porch, and the service part of the house.

Some planting has been done about the porch, at the entrance, at the side of the building and wherever it was found necessary to soften the curves of the landscape. Shrubs have been placed among the pines that require shady places in which to develop with the best results. Only such shrubs as grow well on the coast have been selected, and these are perennials, planted so as to require as little care as possible, and at the same time to blend with the natural characteristics of the site upon which the house is built amid primitive surroundings.

From the entrance porch, which is built at the rear of the dwelling, a roadway leads to the stable and the garage, which are constructed in the rear of the property, and within appropriate distances from the house. The stable is designed in keeping with the architectural scheme of the dwelling to which it belongs, and is most harmonious in every detail.

Its exterior walls are covered with shingles and left to weather finish a soft brown, while the trimmings are painted a dull olive green. The roof is also shingled and is painted a dull tone of green, which blends well with the color scheme of the trees which overhang it.

The interior of the stable contains an excellent carriage room, and a space large enough to accommodate a number of horses.

Both the stable and the carriage room are equipped with every modern appointment.

The coachman is provided with quarters, consisting of two bedrooms, living-room and bathroom in the second story of the structure.

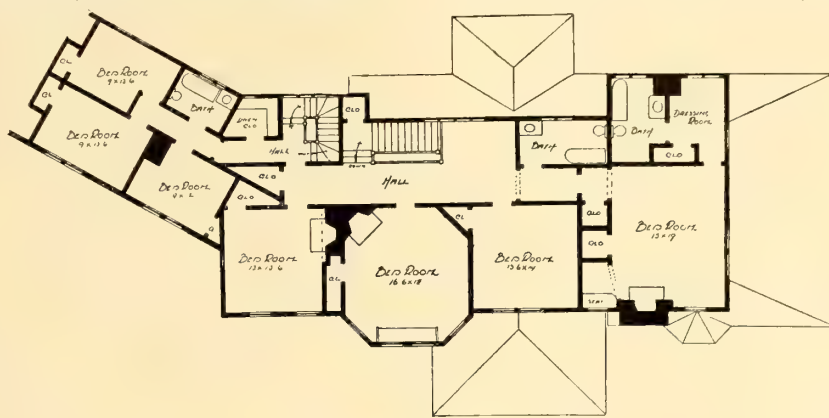
In addition to these there is ample storage space for hay and feed.

The garage is built separately from the stable and its appointments are all that are required for the service of a modern up-to-date motor house.

In the planning of a country estate it is difficult to secure so delightful a result as is presented in the accompanying illustrations. There is perfect harmony, everywhere, in the relations of each

of the buildings, one with the other in their architectural scheme and in the harmony with their surroundings, in the interior decorations and and furnishings, and in the whole general scheme and policy outlined by the owner and his architects.

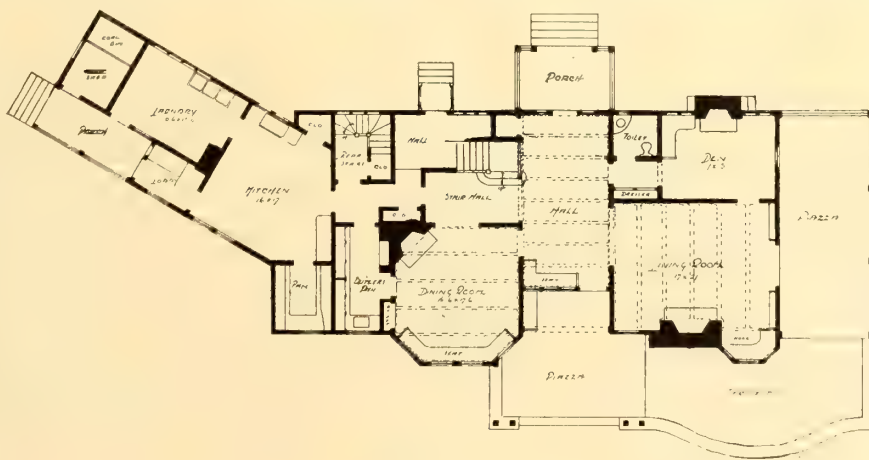
Plenty of thought has been given to the solution of a problem which in most surroundings of this kind are considered difficult, for it is interesting to note that while this house is very modern in its building, the estate has been a semi-wilderness for many years. Yet thoroughly new as this house is, it fits into the landscape, and forms part of the estate in a thoroughly natural way.



Second floor plan



The dining-room



First floor plan



HANDICRAFTSMAN

Conducted by A. Russell Bond

Home-Made Pottery—IV

By W. P. Jervis



AT glazes are so refined, so restful to the eye, and by their unobtrusiveness harmonize so well with almost any surroundings, that they have practically supplanted the bright glazes except for the more utilitarian articles of daily use. The charm of a mat glaze is its color, and perhaps more than that, its texture. It follows, therefore, that simplicity of shape is best calculated to emphasize these two qualities. But it is permissible to add to the shape some suggestion of modeling, provided it is not too pronounced in character, for it serves rather to call attention to the color and texture, just as a patch emphasizes the beauty of a lovely face.

Individual pieces, no two alike, are easily made either by incising or modeling in low relief. The choice between these two methods usually depends on the shape of the piece, and must be left to the discretion of the worker. It may appear premature to speak of glazes at this stage, before the piece is ready to receive it, but it is not really so, for in many if not all cases some attention must be given to the ultimate result from the very start, and if this is intelligently considered a certain beauty must result.

Incising, where a mat glaze is to be used, should be boldly drawn while the ware is still green, and as the glaze is very thick, should be deep enough to allow the design to be plainly seen after the glaze has been fired. A tool with a smooth, rounded point should be used. This will probably leave a little roughness on the edges, and when this is the case, often the result of the ware being too soft, it can be put aside for a time, and when leather-hard these feathery edges can be carefully pared away with a knife. When bone-dry it may be further smoothed with a little worn sandpaper, O or OO.

If you use a repeating border, the quickest and surest way of dividing the piece in the requisite sections is to use a plate-divider, which will give you any number of divisions you please. One of these can be bought for twenty-five cents, or it is an easy matter to make one on a piece of white cardboard. Having decided on the space a section of the design

is to occupy, make a careful drawing, and from this make a tracing. On the reverse side of this tracing go over the outline with hektograph ink and allow it to dry thoroughly. Place on the desired position on the ware, and either with a flat wood modeling tool rounded at the edge, or the thumb nail rub it gently and evenly, and a perfect print on the ware will result. One such tracing will give you a dozen impressions. With a little care when perfectly dry the tracing can be re-inked, though it is usually better to make new ones. This hektograph ink costs fifteen cents a bottle, and will last for a year's work. Strongly diluted with water, it makes an excellent medium for sketching on clay ware and entirely disappears in the firing. Simple additions in low relief to any shape may be added by means of coils of clay. These should be rolled very thin and placed in the desired position on the pieces with the assistance of a little water. Taking a flat wooden tool, the coil is drawn gently but firmly into the body of the piece until it loses its applied look and becomes apparently a component part of the piece. Be careful not to leave any hollow places, or in drying the piece is apt to break loose. In the case of a leaf, the clay is drawn only from the inner surface of the coil and in quantities sufficient to leave only a thin edge. This edge can be manipulated with the

fingers or thinned with a knife. The examples shown here have all been made from these clay coils, and the work goes very quickly. Be sure that every particle of clay drawn from the coils is sufficiently damp and is pressed firmly into the piece so as to preclude the possibility of its separating during drying and firing. Very good decorative effects can be obtained by what is called *graffito*, a

modification of the Italian word *sgraffiato*. Clay of one color being superimposed on another, a design is drawn out and the upper clay removed with a sharp tool, thus leaving the design in the lower strata of clay. For mat glazes this can be carried further. After the design is made, the spaces between can be removed with a flat-pointed tool. This gives a fine texture to the ground, and while it differs from the ordinary *graffito*, some very good results may be obtained. To secure this texture the clay must only be removed in small sections at a time. Where fine lines are required a needle mounted on the

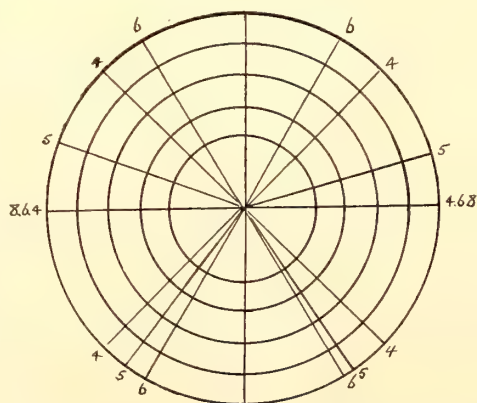
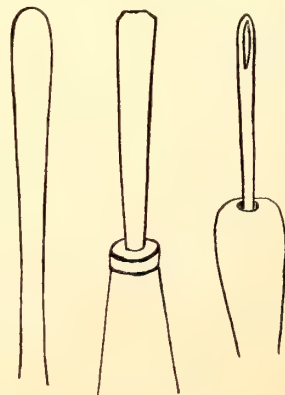


Plate divider and modeling tools



handle of a penholder makes an excellent tool, and if the inside edges of the eye are sharpened by passing through it small strips of emery paper, the clay as it is taken out by the point will come through the eye in a worm-like thread. The best for this purpose are darning needles. Extra colors, where required, can be added with the brush.

When pottery has been dipped in a colored clay, a certain amount of this will gather on the foot, and it should be removed before firing so that the bottom of the piece shall present a workmanlike appearance. Fasten a piece of coarse sandpaper with tacks on a level board, and with a rotary motion of the hand rub the foot of the piece on it, and this will give you a clean foot. Wet clay pieces can also be leveled on the bottom, when necessary, by this same motion, only the sandpaper is dispensed with, and instead a little water is sprinkled on the board.

Still another method of decorating unfired clay is to cover it with an opaque tin enamel. The decoration can either be applied on the unfired enamel or it can be fired first and then decorated. This enamel is a pure, hard and shining white, and its opacity is due to the addition of tin to an ordinary lead glaze. The triumphs of the Italian potters of the Renaissance, those of Delft and Normandy, were all accomplished on this enamel. Oriental pottery was reaching Europe, and the beautiful white body inspired the European potters to imitate it. While not an original invention, Luca della Robbia reintroduced it into Europe, and with such a beautiful medium to work on, artists of prominence eagerly seized the op-

portunity to perpetuate their work, and many noble examples can be found in our museums. To apply this enamel to unbaked clay and obtain a perfect covering requires some dexterity. The ware itself must be perfectly dry. The inside must be done first, and this is accomplished by pouring in some of the enamel and with a rotary movement of the

hand this is made to cover the whole of the inside surface, the surplus being emptied out in the operation, for a moment's delay will cause the enamel to be uneven. It is well to practice this first with a glazed piece. The piece is put aside, and when dry the hand or fingers are placed inside and it is immersed up to the top in the enamel.

With the other hand clean the bottom with a damp sponge, and your piece is ready to decorate. The colors for this purpose are what are known as underglaze, and come in great variety. Add a very little mucilage to the colors, as this makes them flow freely; but be sparing in its use, or the color may blister during firing. From the spongy nature of the enamel the painting must be done in quick, bold strokes. In the firing the colors sink in the enamel and are exquisitely soft. The piece is now ready for firing, but must be handled

very carefully, as the colors are easily rubbed. After the first fire, an additional softness may be gained by dipping in a transparent white glaze and refiring.

This manner of decoration is particularly attractive to the amateur who wishes to work at a low heat, as the tin enamel can be compounded to mature at a heat very little higher than that necessary for the ordinary overglaze painting.



Some examples of Rockwood incised pottery



Graffito—an effect produced by clay of one color superimposed on clay of another





Fig. 1—The esplanade and fountains

Some Long Island Homes

By Paul Thurston

THE author, on his travels last Fall, took a trip along the south shore of Long Island, and to his surprise and delight he found the handsome group of houses which is used to illustrate this paper. These houses are at Brightwaters, L. I., and have been constructed for a modest sum of money, and are within the reach of people of moderate means. The site upon which they are built has been richly endowed by nature with picturesque lakes, superb beaches, amid oaks and balmy pine woods. It was not until recently that the man of limited means had the opportunity of enjoying the privilege of owning a house in the country, something which the improved system of rapid transit has made largely possible for him to accomplish.

The first illustration, Fig. 1, shows the cascade of lakes and the esplanade with fountains, from which broad vistas are obtained of the great canal extending into the Great South Bay, which is swept with ocean breezes. Homes of

artistic design and modern appointments line the banks of the canal and the interior lakes, which extend inland some distance from the sea.

The house built for Mr. Charles H. Raynor, and illustrated in Figs. 2 and 3, will be of interest to one who may desire a larger amount of sleeping-room space in preference to the living quarters. The second story of this house covers a greater area than the first story, and a greater number of bedrooms are obtained by the extension of the second story over the piazza of the first story. The first story of the house is constructed of cement stucco and the second of shingles, stained brown, while the trimmings are painted white. The interior throughout has a white painted trim, and the interior arrangement of the various rooms is most excellent.

One of the finest sites is the one chosen by Charles Oddie, Esq., which is built at the head of the lake and is illustrated in Figs. 4, 5 and 6. This is an excellent house and is ideal either for a Summer or a Winter home. It



Fig. 2—A house of stucco and shingles



Fig. 3—A second view shows the west side



Fig. 4—The piazza and sleeping-porch is a feature of this house

is of good design and is built of stucco. Among the principal features of the dwelling are the broad piazza, which

at the level of the second story. The entrance is direct into the living-room, which, with the dining-room, occupies

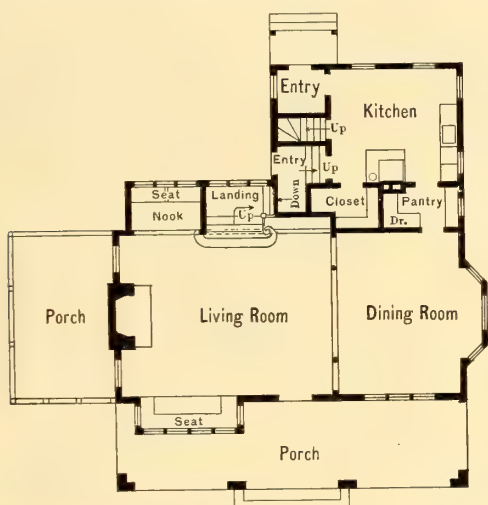


Fig. 5—First floor plan

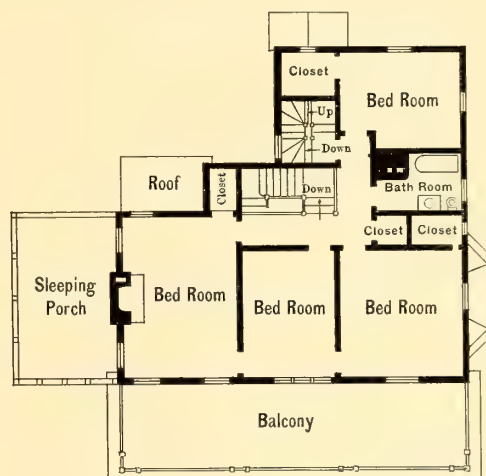


Fig. 6—Second floor plan

extends across the front, the enclosed living-porch opening from the living-room, and the screened sleeping-porch built

the main part of the first floor. The woodwork throughout the interior is painted ivory white enamel. The living-



Fig. 7—A good design for a modern stucco house



Fig. 8—A dwelling of gray cement stucco and white trim



Fig. 9—The exterior walls of this house are constructed of cement stucco

room has a bay window with a paneled window seat, and an open fireplace built with brick facings and hearth and mantel.

French windows on either side of the fireplace open onto

The dining-room is separated from the living-room by an archway supported on columns. The butler's pantry and kitchen are fitted up with the best modern appointments. The second floor contains four bedrooms, a sleeping-porch



Fig. 10—First floor plan

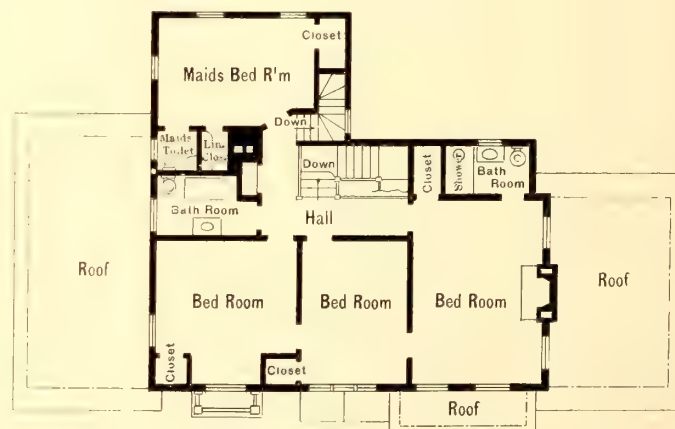


Fig. 11—Second floor plan

the living-porch. An ornamental staircase ascends from this room to the second floor. To the left of the main landing of the staircase is a built-in nook, furnished with a paneled seat, over which is built a cluster of small latticed windows.

and a bathroom. Messrs. Slee and Bryson, of Brooklyn, were the architects of this interesting dwelling.

The house of Mr. C. H. Norton, illustrated in Fig. 7, and designed by James L. Burley, architect, of New York,



Fig. 12—French windows open from the dining-room to the living-porch



Fig. 13—Another view of the house, showing the pergola porch



Fig. 14—A house built of stucco and shingles

presents a good design for a modern stucco house. The exterior walls of the building are covered with cement stucco and the roof is covered with shingles and stained a deep red. The interior of the house is trimmed with oak; the

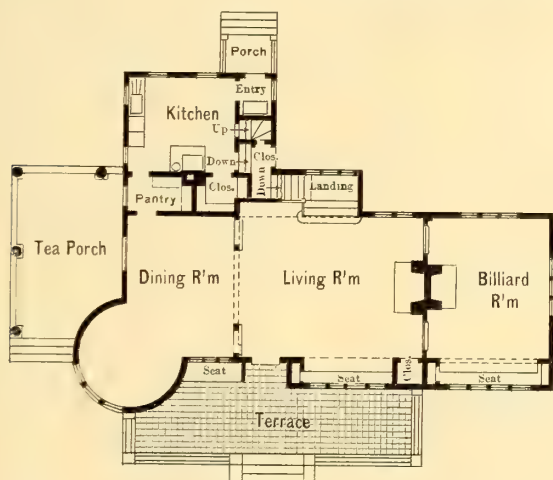


Fig. 15—First floor plan

reception-room, hall, library and dining-room have paneled wainscotings and beamed ceilings.

The hall is separated from the reception-room to the right and the library to the left by archways supported on

square columns. The fireplace in the library is built of brick and has a stone mantel. The fireplace in the dining-room has facings and hearth of Philadelphia pressed brick and a brick mantel. The kitchen and its dependencies and the maids' rooms occupy the remainder of the floor space in the first story. The second story contains four bedrooms provided with large closets, an outdoor sleeping-porch and a bathroom. These bedrooms are treated with a white

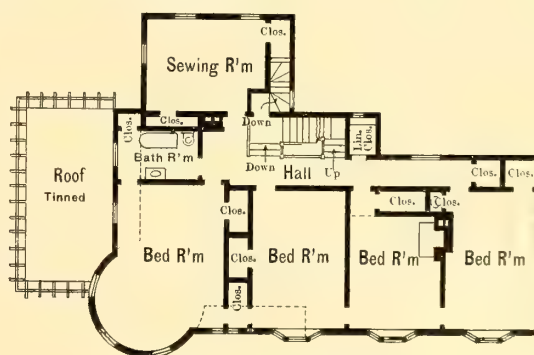


Fig. 16—Second floor plan

painting trim and the walls are decorated in one color scheme.

Mr. A. White Pierce designed the house illustrated in Fig. 8, and built for Frank K. Heinz, Esq. This is a house



Fig. 17—A view of the house through the trees



Fig. 18—The stairs ascend from the living-room

of special construction, is square in form with its lines frequently broken by ornamental windows and doorways, which relieve the monotony and the severity of the exterior walls. A low sloping roof, covered with shingles, is stained a deep red tone in harmony with the yellow gray stucco and the ivory white trimmings.

The plan shows a large living-room and living-porch built at the front of the house. The entrance to the living-room is direct from the entrance porch, opposite which is built an open fireplace. To the right of the fireplace an ornamental staircase ascends to the second story. A bay window is built at the right side of the room, while opposite it is a French window opening onto the living-porch, which is at the side of the house. The dining-room is separated by an archway and connected with the kitchen through the butler's pantry. The kitchen, its dependencies and lobby are trimmed with cypress, finished naturally, and are fur-

height of seven feet, at which point a plate-rack is placed. Broad French windows open onto the living-porch built at the side of the house. The kitchen and dependencies are fitted up complete and a private staircase leads to the maids' rooms on the second floor, over the kitchen. This floor also contains three bedrooms and two bathrooms.

The house illustrated in Figs. 14, 15, 16, 17 and 18 was built for Henry W. Ackerson, Esq. This is an interesting house of good design, with a cement terrace at the front, having a floor covered with red quarry tile and enclosed with a balustrade, from which the entrance to the house is reached. The first story is constructed of cement stucco, while the second story is covered with brown-stained shingles. The shingled roof is also stained a soft brown tone and the trimmings throughout are painted ivory white.

The living- and the dining-rooms are trimmed with cypress, painted ivory white. The living-room contains a

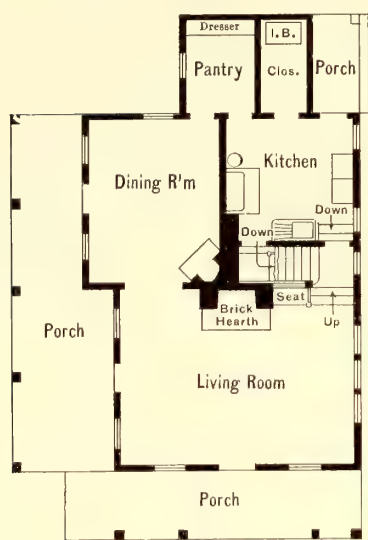


Fig. 19—First floor plan



Fig. 20—A leanto-roof house

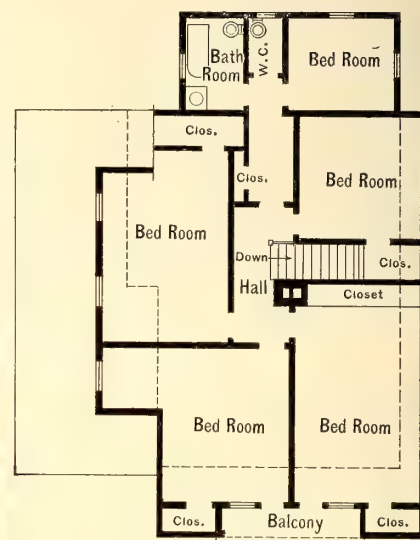


Fig. 21—Second floor plan

nished with all the best modern improvements. There are four bedrooms and a bathroom on the second floor.

The house built for Walter Minton, Esq., and illustrated in Figs. 9, 10, 11, 12 and 13, was designed by Messrs. Slee and Bryson, architects, of Brooklyn. The exterior walls of the house are constructed of cement stucco, and are relieved by the two porches, built at either end of the house, and the latticed casement windows with which the house is provided. The roof is covered with shingles stained a soft green tone, which harmonizes well with the gray stucco and the white trimmings.

The living-room is entered direct from the entrance porch. Both this and the dining-room are treated with white enamel paint. The living-room has a window-seat and an open fireplace built of brick furnished with a Colonial mantel. An ornamental staircase, with white risers and treads and a mahogany rail and balusters, ascends to the second floor. The dining-room has a paneled wainscoting to the

staircase with white-painted treads, risers and balustrades, and a mahogany newel post and rail. There is a window seat and an open fireplace built with brick facings and a Colonial mantel of Georgian style. Doors on either side of the fireplace open into the billiard-room, which is trimmed with oak. This room is a particularly handsome one for the reason that it has a dome ceiling, which gives it a greater height. It has a paneled wainscoting and an open fireplace built with quarry tile facings from the floor to the ceiling. The house illustrated in Figs. 19, 20 and 21 represents a dwelling of the leanto-roof kind, the feature of which was copied from the Colonial house so frequently seen in New England. All of the houses illustrated in this paper have servant's quarters placed in the third story, with bath, and ample storage space, while the cellar of each of the houses has a heating apparatus, fuel-rooms and every necessary fixture which goes to make a house livable.





Furnishing the Home

Cretonne and Summer

By Mary Edith Griswold

Photographs by Helen D. Van Eaton



HERE is not a home which cannot be improved for summer service by a touch of freshness and color with the addition of cretonne, the whitewash brush or the paint pot.

The proper way to begin the making ready for summer is with an old-fashioned housecleaning. Let in the sunshine and the air, use plenty of soap and water, a good scrubbing brush and enthusiasm. This is a task and one which must be done in a spirit of fun, gracefully, with the head working with the body. The only way to ease the inevitable work and to keep it from becoming drudgery, is by lightening the mental attitude. Fix the attention on the attainment of beauty, freshness, and comfort and they will all be easily attained.

The whole house may be embellished with cretonne, but few housewives are possessed of sufficient enthusiasm to reach all round in one season. If she has embellished the sitting-room last year, the same covers are good for this season if they have been carefully washed and put away.

When one has decided

upon the use of cretonne for summer, freshness and comfort are assured, but the attainment of beauty is entirely a question of taste, and the disposition for taking pains. A pretty pattern of cretonne which would go well in one place would look horrid in another. The pattern and the color must harmonize to create a whole scheme.

In selecting everything new for an old room one must consider the color, style and texture of the things which you have already. If this rule is regularly followed each room will always be in harmony. So before buying the summer cretonne you should consider the colors desired and the style of the pattern. After that measure exactly the amount of material needed. Do not buy twenty yards and then find you are two and a-half yards short and the piece is all sold

before you go back to get the shortage, or do not have an extra yard left to go into the rag bag. If the material is expensive, even a half yard counts and anyhow it is an inefficient way of doing things.

Buying cretonne for summer is a pleasant task. The material is so pretty. New and temperamental patterns appear each year, but the dearly prized rose pattern of youth (probably there



A sleeping-room furnished in good taste



The chairs and draperies to the windows are of flowered cretonne

never was a time when the pink rose upon a white field (which was not used) is still present, as beautiful as ever. The prices range from nineteen cents to a dollar a yard, and there are always bargains to be had for less even than the former charge.

If only one room can be adorned for summer perhaps the sitting-room where the family assemble would give the most happiness to all. It is the room which gets the hardest wear always and is in constant need of a change.

One of the pleasantest summer sitting-rooms I have ever seen was made by the family without the help of any professional workmen. It was a small room, so the problem was: How to make seating enough for everybody without crowding?

This question was solved by building a succession of box couches all round the room, with corners fitted with bookcases. The top shelf was wide enough and high enough so that one sitting or lying on the couch could see to read by the lamp on the top of the bookcase.

The frame for this extensive piece of furniture was rough packing boards made from packing cases. The book shelves, sides of the couches, mattresses, pillows were all covered with cretonne, so that the quality of the lumber did not make any difference.

The top of this couch was sixteen inches from the floor and three feet wide, so that any single mattress would fit. It is always wise to use standard sizes, because when you have finished using a thing in some particular place it can be used without alteration in another. An enormous amount of waste could be saved in the household by the adoption of standard sizes for everything. So if you use a three-foot couch the top mattress will be available for the single beds later on, or old mattresses may be used in this way.

The difficulty of leaning backward in a seat three feet wide was obviated by building a back, eight inches wide, across the length of the couch.

This is essential to comfort, as nothing could be more uncomfortable than sitting upon a seat which is too wide. The wall was covered with grass cloth of dull green tone, to harmonize with the green of the draperies.

The portières in this room were also of the same cretonne.

The sash curtains were brought into the scheme of color by having half-inch strips of green sateen folded and stitched upon the scrim in diagonals. This is a wonderful improvement upon the plain white curtain and suggests the dim subdued light of cathedral windows, a pleasant intimation on a hot day, and a good quality of sateen will wash beautifully.

Children's rooms are very adaptable to a fresh bit of color in the summer time. Childish eyes instinctively see and appreciate beauty more keenly than older eyes, which look within more and more as the years pass.

A girl's room may be done in the sweet rose pink tones which are so plentiful in cheaper cretonnes. The bed-spread, the bureau scarf, the window curtains in a new material will make her happy for a long time.

The boy's room is happier in darker colors and some of the patterns designed "not to show the dirt" (as they say in the shops) will make the boy happiest. He can lay his treasures from the fields upon such a cover without fear of reproof.

The dead or alive things which a boy picks up and carries home to treasure for a time are important, as through them he learns more than can be estimated and the possession of them in peace will make him love home. So for the boy a dark background may be selected for the display of the things more attractive to him.

All bedrooms can be improved with cretonne. It makes the most attractive counterpanes, curtains, covers for boxes and chests, and scarfs for the night table, dressing table or commode.

The counterpane may be finished with lace, fringe, tassels, or in the simplest way possible, a hem. The pillows can be



A room furnished with figured cretonne for the window and bedstead

equipped with covers of the same material as the counterpane, which can be removed at night and put on again in the morning. Or the pillows can be put away, or put out to sun every day and their place taken with a bolster.

The handiest bolsters are made of cardboard, rolled and fastened together, say ten inches in diameter, and covered first with white cloth and then with cretonne like the coverlid. They are light and can be easily lifted out of the way to the top shelf in the closet each night, or tossed on the chairs.

The cushions for willow chairs and furniture are most attractively covered with cretonne. It requires very little material to make these cushions and the artistic housewife will take great pains in selecting a variety of designs which will "go" together. It is more restful than the repetition of the same pattern too often. For use in covering old-fashioned rocking chairs, and the popular upholstered easy chairs, cretonne has no equal. If the springs are in perfect condition, and the original cover has not begun to bag or sag it is an easy task to re-cover chairs. Patience and a tack hammer are about all the equipment needed.

A charming spare bedroom may be accomplished by papering the walls with cream tinted striped paper, tinting the ceiling light cream and using gold picture molding.

The floor is of golden oak and the furniture is enameled white. The draperies and bedspread are figured scrim with a delicate rose design. The spread must be used over a plain white underlining.

Home-made rugs complete the floor.

A guest chamber should have only what is necessary for the comfort of guests. With little care and pains, windows can be made pretty with little expense. One can purchase



A divan built of packing boxes and covered with cretonne

plain net or scrim and add a band of lace insertion and have the edge finished with lace. Another pretty way is to buy a pretty design in the striped cretonne and applique with buttonhole stitch around the cut-out design. One may use sash curtains full length or with an overdrapery gracefully thrown over the curtain pole. The edge should be finished with cotton fringe of the prevailing color. The illustration also shows a pretty stool which may be made from a butter tub. The lid may be hinged and the top padded with excelsior and cotton batting. Then cover with strong cloth to hold the materials in place and re-cover with cretonne, using brass headed tacks, and finish the bottom with a ruffle and an excelsior roll covered with cretonne and fastened at the top.

The variety of devices for sewing materials which can be made from cretonne are unlimited. There is the sewing screen, made over either an old or a new frame. It has no fixed rule of construction, but the handiest ones are those that fold into the centre panel and have pouches for materials, pegs for spools, a pin cushion, needle book, and hooks to hang scissors upon.

Picture frames, pin trays, lamp shades, letter racks, pin cushions, and all sorts of fancy boxes can also be made of cretonne. None of these require much capital in dollars and cents, but they do require time and taste.

It is with such devices that a touch of color can be introduced into the dimmed drawing-room, the worn-out library, or the familiar sitting-room.

One yard of cretonne is sufficient to cover the largest lamp shade, and you can use the old frame and fringe. The simplest pattern is a square of the cloth thrown over the frame, with a hole cut in the middle for the collar around the projecting chimney.



Cretonne cushions are used for the willow furniture



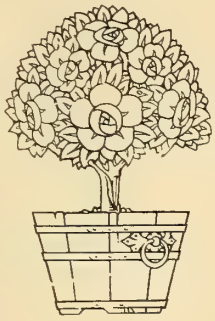
Box couches and bookcases are built in around the room



A rocking chair of excellent design

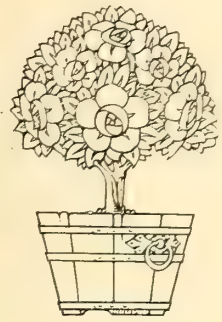


The living-room in the country home of C. C. Merritt, Esq., Pelham, N. Y.



A Country Home

By Burr Bartram



ONE of the most surprising houses that the author has ever found is the one which has just been built for C. C. Merritt, Esq., at Pelham, N. Y., and which illustrates this paper. The most striking feature is the fact that the exterior has the appearance of an old New England farmhouse built some hundred and fifty years ago, instead of being of recent construction. The owner selected this type of house for the design of the new building, which has been very carefully carried out in every detail by his architect, Mr. Herbert N. Baer, of New York. The exterior, with its walls covered with hand-split cypress shingles, which are given a coat of whitewash, and the wooden blinds, painted midas green, help to accomplish the effect desired, and the result shows a very excellent copy of its prototype.

A greater surprise, however, is in store for one when an entrance is obtained to the interior, for here one finds that the architect has departed from the simplicity of the farmhouse to the splendor of a more pretentious home and its

furnishings, and while this is true, there is a perfect harmony throughout.

The entrance is direct from the front door to the vestibule, which forms the access to the main part of the dwelling.

The great living-room, extending up to the peak of the gable which forms the roof of the building, is of excellent proportions and is splendidly furnished. This room is trimmed with chestnut, stained and finished in an old English oak of a soft brown tone. A paneled wainscoting extends around the room to the height of the top of the windows, above which the wall space is covered with a tapestry paper of a combination of old blue and green tones. The timbers of the roof are exposed to view, are dressed, and form a very interesting feature of the interior. An ingle-nook occupies one end of the room, under the gallery which extends across and forms a passageway to the various sleeping-rooms in the second story. This ingle-nook has a fireplace built of rough brick laid with white mortar joints, with its facings extending up through the roof of the house. Paneled seats are built at either side of the fireplace. An ornamental stair-



The exterior of the house, showing its farmhouse characteristics



Another view of the house



Second floor plan



First floor plan

case ascends from one side of the ingle-nook to the gallery in the second story.

From the vestibule level a door opens into the dining-room, which is also trimmed with chestnut. Some good

tapestries are hung on the wall, and mahogany furniture completes the furnishing of the room.

The kitchen and its dependencies are complete, and a servant's-room is provided adjoining the kitchen.



The ingle-nook under the stair landing in the living-room



The dining-room



The boudoir

The second floor contains a guest room, facing the front, and the owner's room and boudoir in the rear. The owner's sleeping-room has a wall covering of old rose Chippendale paper. Old mahogany furniture, including a four-poster bed, carries out the character of a Colonial house. The boudoir opening from the sleeping-room is designed in a differ-

ent period. The walls are paneled; the woodwork is painted white enamel, and the panels are covered with a light blue silk.

The whole general color scheme throughout the house has been worked out in keeping one with the other, and is a very excellent representation of a delightful house.



The owner's sleeping-room



The garden walk is bordered with white phlox terminating in a tub of hydrangeas

The Camera in the Garden

By Frederick C. Beach



OWING to the improvements in the manufacture of color sensitive photographic plates within the past few years and their use in the camera in combination with special color screens interposed within the camera, between the lens and the plate, it becomes a comparatively simple proposition now to photograph flowers and trees in such a way that the resulting negative will render the greens, yellows and reds of the object photographed in their true value, showing detail where formerly there was a blank, with tonal values in the high lights which were apt to be too hard. Equipped with the camera lens, tripod, orthochromatic plates and screens just mentioned, the devotee of the garden beautiful may, as the season progresses, secure accurate photographic records of the various plants, flowers, flowering bushes, etc., while they develop and mature, with so little trouble that the records can be studied with reference to general effects in the color grouping of the flowering portions of the garden, from different points of view.

Besides this, separate flowers may be photographed for the purpose of illustrating their particular features when in half or full bloom, and may be enlarged from the negative up to their full size when desired, to more fully examine the miniature portions.

In making time expo-

sure on low beds of flowers, where it is desired to obtain a view looking directly downward, it is well to have a duplicate tripod head made with a supplemental camera baseboard hinged to one side, having a screw socket in the baseboard for the purpose of securing the camera bed thereto. It is then only necessary to elevate the hinged baseboard from a horizontal to a vertical position and to secure it there by suitable means, in order to cause the camera to point directly down upon the flower bed below and obtain the photograph. The tripod legs are spaced apart somewhat more than usual to bring the lens nearer the flowers underneath. The closer the lens is brought the larger will be the image on the ground glass. This also requires a somewhat longer camera bellows than usual.

Peculiar or artistic groupings of small flowers, in a space three feet square, can in this way be photographed map-like, so to speak. When the lens is so close to the object, the exposure must be a trifle longer, as the lens is at a greater distance from the plate and the light action on the plate is slower. By using what is called a large stop in the lens the exposure may be shortened.

The proper time of exposure can be readily calculated or ascertained in advance by the use of exposure meters or tables which are supplied by photographic supply dealers.

One of the annoyances in photographing delicate single flowers in the garden



A picture taken from the house

is their liability to move back and forth just as the lens is opened for an exposure. Usually the best time to operate is in the early morning or late in the afternoon, before the wind rises or after it dies down.

If one becomes dissatisfied with photographs in monochrome of flowers, and desires to see how they look in the color of nature, we have what is known as the autochrome plate, that produces in one operation a positive on glass, having all the true colors of the original flower or group of flowers. They may be made in sizes from lantern size, three and one-quarter by four inches, to five by seven and eight by ten, and be hung in the window as transparencies. Stereoscopic, natural color flower photographs on glass are

wonderfully interesting. There is also the new Ives Color Process plate, in which three sensitive plates are exposed in a special camera all at one time. From each of these three duplicate negatives, separate positive prints on a transparent film are made, and each film respectively colored or tinted blue, yellow or red, with special dyes. When dried, the color films are superimposed over each other and clamped between two transparent thin glass plates, producing a composite graded colored picture of great brilliancy. One advantage of this process is that any number of duplicate color reproductions can be made from the negative by the manufacturer of the apparatus, when desired, or by the photographer himself.

Thus we see that by the use of the camera in the garden, not only the form and peculiarities of a given flower may be preserved in monochrome, but also in its true colors as observed by the eye. When these are projected in a lantern on a screen they afford pleasure and interest to the observer.

To the botanist the camera is useful in photographing the structure and cross section of plant or flower stalks, which will enable him to arrange the photographs for comparison in groups of different species in any given general class.

They can be photographed when fresh, and thus show more clearly the structure than when the specimens are in a dried condition.

When the image on the negative is very small, enlarged positive prints can be made to a uniform size on any of the usual bromide papers supplied by dealers in photographic materials, which will enable the botanist to easily compare the prints because of their good record.

To go a little further in the study of flower structure

he can arrange a small microscope on the front of the camera in place of the usual lens and remove the viewing eye-piece, then insert this viewing end of the microscope into the front part of the camera to come opposite the ground glass, at the rear.

Now, by placing, say, the center of a flower on the stage of the microscope opposite the lens and properly illuminating the object, and looking at the ground glass of the camera under a dark cloth to cover the head and exclude the exterior light, the magnified image of the pollen dust in the center will be observed on the glass and can be increased to any desired size. The dust globules have different shapes. Then the plate is inserted in the camera back and the exposure made.

Comparisons of the pollen of different flowers can thus be secured, which will make a valuable record for future preservation.

By obtaining photographs of flowers of uniform size the botanist can secure them on the same sheet along side of the dried specimen. This will show their natural appearance when growing.

The possessor of a kodak camera can obtain fairly good negatives of flowers on the usual kodak film (which is orthochromatic as to certain of the plant colors), by viewing the flowers or group of flowers through the finder for properly locating the position of the image on the film.

In a good light with the aperture of the lens adjusted to f-16 one to three seconds exposure will be sufficient. If the light is weak, as at early morning or near sunset, the exposure may be increased possibly to five seconds.



A glimpse of the garden walk



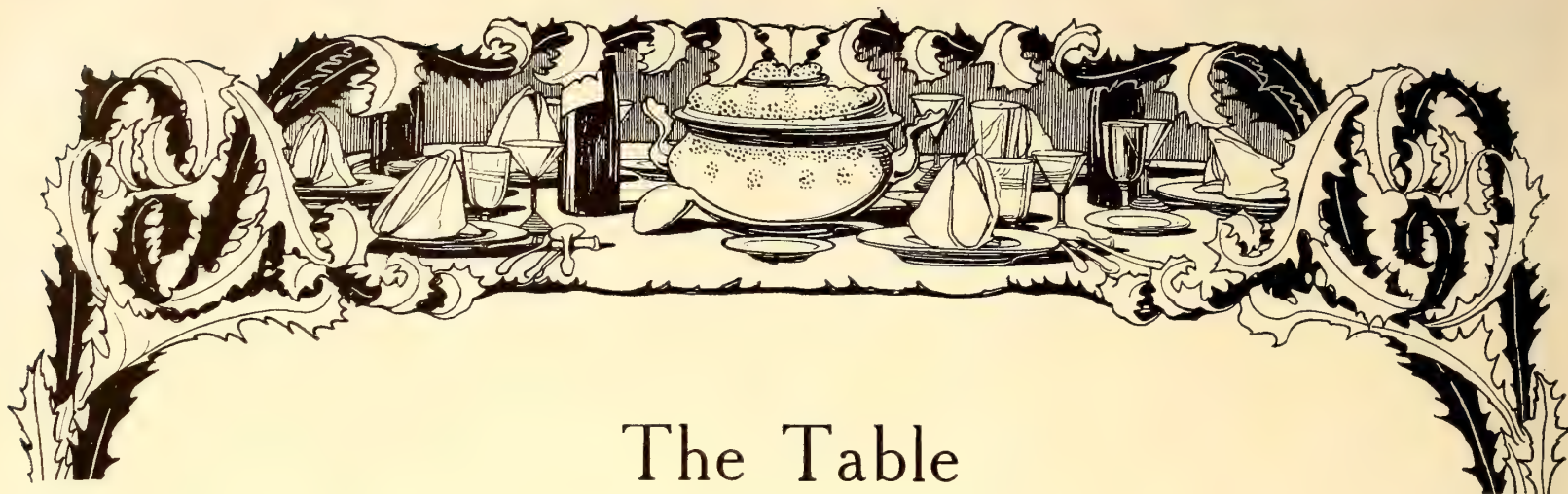
Rose bushes are massed against the terrace



A photograph of peonies in bloom



A bed of rhododendrons



The Table

How To Make Salads

By Margaret Sexton



A SALAD that tastes extremely good and is most attractive can be made in the following manner and is unique in its appearance. To make it, select medium sized apples that are firm and regular in shape; pare these very carefully and core them; then slice the apples in a cucumber or a potato slicer, which will form the apples into rings; slice only one apple at a time; when this is finished put each slice in place, making the shape of the apple again; place each apple on a leaf or two of lettuce, and at the face of the apple put a border, as it were, of finely cut up celery, making a fringe about the celery of watercress; also place a spray of the watercress in the core of the apples. Have the apples arranged individually, so that each guest may serve oneself to salad conveniently. Have French dressing passed with the salad, so that each person may pour it over the salad to suit the taste. This salad should be made at the very last moment, as the apples, if allowed to remain long after being pared, will turn dark and be most unpleasant looking rather than attractive, and white, as intended. Mayonnaise may be served with this salad as well as the French dressing. This is all a matter of taste.

A seasonable salad for spring dinners and a very delicious one, too, is made from a variety of vegetables, those that most people are fond of, except perhaps spring onions; these may be added or left out, according to the taste. Boil and allow to become perfectly cool a bunch of fresh asparagus; cut it up, saving only the real soft part. Slice thin, two medium sized cucumbers and place on ice; also slice three or four medium sized tomatoes; these also should be put on

the ice. Just before serving, mix all three vegetables together, with the addition of the onions if desired. Put the salad on fresh crisp lettuce leaves and over it spread a generous quantity of mayonnaise dressing. It should be borne in mind that the vegetables must not be combined until the very last moment, as they are of a rather watery nature, which would have a tendency to make the salad unpleasantly wet. This condition does not exist at all if well done.

There is no salad which makes a prettier appearance (and which is really very tasty) than tomato jelly. Added to these two virtues it is most easily and quickly made and is very inexpensive. A quart can of tomatoes will make sufficient jelly to serve individual salads for nine or ten people, and each portion be a generous one. To prepare the jelly put the tomatoes from a quart can on to boil in a granite pan and put all the seasoning in at the same time. This comprises half a medium sized onion, eight whole cloves, the same number of whole allspice, two bay leaves, two teaspoonfuls of sugar, one of salt, and a dash of pepper. Allow this to cook a sufficient length of time, so that the tomato can be easily rubbed through a fine sieve. Use only a granite or wooden spoon when stirring tomatoes, as a tin one gives the fruit an unpleasant taste, due to the action of the acid of the tomato on the tin. When the tomato is strained, put it in a quart measure, adding water until you have three half pints of liquid. Dissolve one package of Minute or Instantaneous Gelatine in half a pint of boiling water before you put the tomatoes on to boil. When you are quite sure that the gelatine is completely melted add it to the tomatoes, stirring them well together. You will then have a quart of liquid which is ready to be put in molds or jelly glasses,



Apple salad arranged in a large dish



Individual apple salad

selecting those of a size and wetting them with cold water before putting in the jelly. This helps to bring the jelly whole from the mold. In two hours you have fine, tender, firm jelly. Serve individually or on a large dish, placing each form of jelly on a lettuce leaf. A teaspoonful of mayonnaise dressing on each form of jelly not only gives a pretty color, but is necessary as well. Garnish with watercress beside the lettuce, as the two greens make a very pretty combination of color. This salad makes a nice refreshment for

dressing or have the dressing passed in a bowl or pitcher, for each person to use or not as desired. Although simple, this is an exceedingly nice salad.

Cucumber jelly is delicious to serve as a salad with lettuce and mayonnaise. The cucumber should be pared and scraped very fine on a perfectly clean grater. Grate sufficient pulp to fill two teacups. You will probably need four medium sized cucumbers to accomplish this. Season the pulp with salt and pepper to taste; add also the juice of one



Tomato salad arranged in a large dish



Individual tomato salad

an informal evening after playing cards. With crackers, cheese balls, and a glass of ale, it is quite a tempting little viand.

A good thing to have on hand in your refrigerator is a head of lettuce. When an unexpected guest arrives there is no end of changes that can be wrung on that same head of lettuce, if one has a little ingenuity, and in so doing you can save the reputation of the meal, even if somewhat unprepossessing at first, by serving an appetizing salad, the expense of which is almost nothing. Select the tender leaves, wash and drain them and then lay on the ice in a dampened napkin, so that they may become fresh and crisp. Cut bacon into thin strips across each of its slices and put into a frying pan and fry until brittle and brown, but not burned. Stir the bacon constantly with a fork while frying, and when done drain off all the grease and set the bacon away to cool. When preparing the salad sprinkle the scraps of bacon over the lettuce. Cut up olives stuffed with pimientos and put these also on the lettuce. Pour over it all a rich French

lemon. To three-quarters of an ounce of gelatine add a half cup of boiling water, and when this is thoroughly dissolved stir it into the cucumber pulp, being sure that it is well mixed together. The jelly should be served very cold. It is nice, if convenient, to make the jelly in individual forms. Use jelly glasses. Rinse them out with cold water before using them; it will help to make the forms come out more easily. Make each glass about two-thirds full.

The latest salad is grape fruit and tomato. The latter must be thoroughly ripe, but very firm. Cut both tomatoes and grape fruit in very small pieces. Put each in a separate bowl and place on the ice until they are thoroughly chilled. Just before serving the grape fruit and the tomatoes they should be tossed lightly together. Then put into the salad bowl, which has been lined previously with fresh lettuce leaves. When the fruit and the tomatoes have been placed on the lettuce leaves pour over them either French dressing or mayonnaise. The latter will probably be preferred on a test of their merits.

Frozen Fruit



THE chemical changes produced in fruit by freezing and thawing have been investigated by Otto and Kooper. For example, analyses were made of ripe sloes and of the same fruit which had been kept 4 days after 5 hours exposure to a temperature of 23 to 25 deg. F. The loss of weight, chiefly water, was found to be 13.6 per cent. The proportion of acids decreased from 9.18 to 6.57 per cent., and the tannin from 9.45 to 6.82 per cent., while the proportion of sugar increased from 30.48 to 31.75 per cent., and part of the glucose was converted into the sweeter

fructose, or fruit sugar. The decrease in tannin is probably due to oxidation, by which the tannin is converted into red and brown substances, designated as "pholobaptenes." The fruit lost much of its astringency and acquired an agreeable subacid flavor. In medlars which had been frozen and kept 8 days after thawing the sugar decreased from 41.13 to 37.37 per cent. the acids from 4.36 to 3.50 per cent., and the nitrogen from 3.08 to 2.68 per cent. In Japanese quinces, kept 18 days after freezing and thawing, the sugar decreased from 16.91 to 7.60 per cent., the acids from 24.11 to 12.71 per cent., and the tannin from 3.82 to 1.84 per cent.



Dark Blue Staffordshire

HISTORICAL CHINA DEPICTING AMERICAN SCENES

By Alexander M. Hudnut

SUGGESTIONS TO INEXPERIENCED COLLECTORS



THE name "Historical China" is used to designate those pieces of blue Staffordshire pottery which are decorated with American views. It applies also to the English views, but is rarely used in this connection. Just why some pieces should be rare and others common is impossible to explain.

One might suppose that platters would always be rarer than plates because of the proportion of plates to platters in a regulation dinner set. But there is no such rule. Many of the rarest and best known pieces are in the form of plates. It sometimes happens that a collector who possesses a unique specimen finds that several duplicates of his prize have been discovered in some old packing box or barrel. The future may have in store many disappointments of this kind for collectors of blue ware, and yet there is an equally good chance that some of these old hidden-away packing boxes may bring to light views and varieties of historical china which are now unknown. The American scenes which appear on this china are in many cases puzzling to collectors for the reason that there is no complete list giving every known variety.

There is only one way of getting a complete list and that is by becoming familiar with all of the best known collections and writing down the names of every piece needed in one's

own. Take for example the "Nahant, Near Boston" plate. This is a view of a hotel which was built about 1820. It seems to have been a sort of roadhouse and watering resort. There are three varieties of this plate, which are reproduced in the accompanying illustration. The two rarest are the two with the oak leaf and acorn borders. The plate with the tree on it is very rare, especially when in fine condition.

Most of the large collections have it, but it is difficult to find and is easily worth \$150. The Nahant plate with the acorn border and without the tree is very nearly as rare as the one with the tree, but it probably would not command so high a price. The plate with the eagle border is not rare and usually sells for about \$25.

The British potters never allowed national pride or patriotism to stand in the way of commercial instincts. As they were manufacturing china for the American market they selected views which they thought would please Americans. This will account for a representation of the Battle of Bunker Hill which is found on a small platter, also in the bottom of a large soup tureen and on the tray which goes with it. This tray has eight round perforations in the upper and lower margins which are supposed by some to represent bullet holes. I have seen this same picture in a vegetable dish. It is a rare view and commands a high price in whatever form it appears. The little



A group of American views

platter is the hardest to find and is usually among the last dozen to come into a collection.

The platter shown in the illustration called "Junction of the Sacondaga and Hudson Rivers" is one of the most difficult of all American views to obtain. This scene is copied from a print by W. G. Wall. I only know of the existence of four of these platters and it would be hard to estimate on their value. Should the piece ever appear at a public auction and should collectors get bidding against each other for it, it might run up to a very high price.

Another platter illustrated in this article, and in the

not have this "Brooklyn Ferry" platter and said he would highly appreciate it if I would let him know if I ever came across one which was for sale. Considering the excellence of

Mr. Tompkins' collection and the length of time he had been collecting this is significant, and throws much light upon the rarity of this platter, which he had never been able to secure.

The next four illustrations show two views of Mount Vernon and two views of the Capitol at Washington.

The following quotation relative to the residence of our first President may be of interest: "The Mount Vernon mansion was built by George Washington's brother, Lawrence, who settled there



Three varieties of plates: "Nahant, near Boston"



Soup tureen: "Pennsylvania Hospital," on sides; "Boston Almshouse," on cover



Inside of tureen: "Battle of Bunker Hill"

finding of which all collectors have experienced great trouble, is "The Esplanade and Castle Garden" platter. It is not so difficult to obtain as the piece just described, but it is one of the rarest of the American views. I have known collectors who paid as high as \$500 for it. While this platter comes in several shades of blue, it is one of the pieces which exemplifies the very finest shade and quality of blue used by the Staffordshire potters, which, in this extremely fine color, is worth more than one in the ordinary shade of blue.

Another unusual and very rare piece is the small "Brooklyn Ferry" platter with the ivy leaf border. Some of the best existing collections are without this piece. I remember distinctly a letter I received from the late Eugene Tompkins, of Boston, in which he asked me if I would bear in mind that he did

in 1743 and named the estate in honor of Admiral Vernon, under whom he had served." * * *

"In 1858 the mansion and two hundred acres were sold for two hundred thousand dollars to the Ladies' Mount Vernon Association." This little plate and vegetable dish showing the view of Mount Vernon are not very hard to find and have not any unusual commercial value. Two views of the Capitol building at Washington appear in the illustrations. The old Capitol building was burned by the British in 1814 and the subsequent Capitol building which took its place is shown in the accompanying view. The artists sent over here by the English potters to make sketches, coming

as they did about 1818 to 1820, could not have sketched the old Capitol building while it was standing. We therefore infer that they obtained this picture from a con-



"Battle of Bunker Hill" platter



"Junction of the Sacondaga and Hudson Rivers" platter



"Esplanade and Castle Garden" platter

temporary print or from some drawing or painting of the old Capitol building which existed at the time. These plates showing the Capitol view are not very rare or valuable, but they are of much interest.

In a majority of cases the name of the picture on a plate along with that of the potter who made it is stamped in blue lettering on the back. The employees in these English potteries had probably never been in America and all the views were unfamiliar to them. It was undoubtedly due to this fact that many errors in marking plates occurred. Frequently we find the wrong name on the back of a plate. Some friends of mine have the little plate of the "Old Capitol Building at Washington" and the name on the back of it is: "Mount Vernon, seat of the Government of the United States." I have seen a "Battle of Bunker Hill" platter which was marked "Fort Gansevoort."

The "Governors Island" ten-inch soup plate is a unique specimen. It is one of the most beautiful, besides being one of the rarest of American views. Its color is the best blue known. I know of the existence of five of these plates. Should others be discovered the value will decline in proportion to the number found. At present \$500 about expresses the market value of this piece.

Our next illustration shows a washbowl in the bottom of which is the "Arms of Maryland." The Arms of twelve of the thirteen original States appear on this blue china. (The Arms of New Hampshire are missing).

Of these twelve Arms pieces the three plates which reproduce the Arms of New York, Rhode Island and South Carolina are not rare. They are worth about \$30 each.

The Arms of Massachusetts come on a small vegetable dish. It is moderately scarce and is worth about \$75. All the other Arms pieces are rare: Pennsylvania, Connecticut, Maryland, North Carolina, Delaware, Virginia, Georgia and New Jersey.

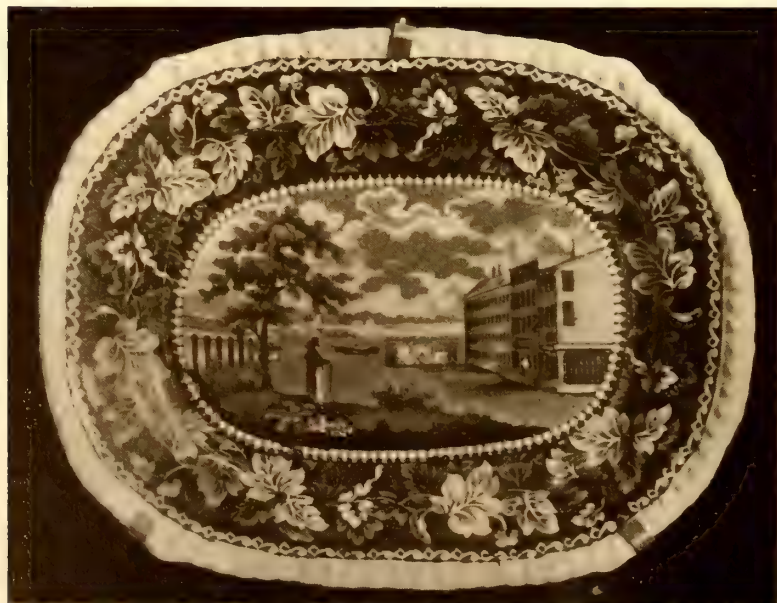
If one could buy these eight pieces for \$2,500 he would be fortunate. Pennsylvania is probably the hardest one to find. The others are equally rare. I do not know of any collection which has them all.

Views of the New York churches are not easy to get in old blue. Only one or two of the best collections have the ten-inch soup plate, "Church and Buildings Adjoining Murray Street, N. Y."

It ranks with the "Governors Island" plate in rarity and value and is just a shade harder to find. The little seven-inch dish "Dr. Mason's Church" is the same building which appears on the ten-inch soup plate just mentioned. It is not nearly so rare, but in good condition brings about \$150.

Next in importance to the "Church and Buildings Adjoining Murray Street" is the little six-and-one-half-inch "St. Paul's Chapel" plate with a medallion of Washington on the upper margin and the Erie Canal view at the bottom.

I only know of one collection which has it, but I am not sure that there is not another one somewhere. It is safe to



"Brooklyn Ferry" platter



Washington vegetable dish: "Mount Vernon"



"Old Capitol Washington," destroyed by the British in 1814



"Capitol at Washington," rebuilt after 1814



"Mount Vernon, country seat of Gen. George Washington"

place it in the group of *very rare plates*. Without the medallion and Erie Canal view "St. Paul's Chapel" is still a hard plate to find and worth about \$150. It sold several years ago at an auction sale for \$210, but since that time a few extra ones have been found and the price has declined. "St. Patrick's Cathedral, Mott Street, N. Y.," appears on a six-and-one-half-inch plate, also on the sides of a small gravy pitcher. This view is a very rare one. About ten years ago it was considered one of the scarcest of all blue plates. Constant and continuous searching has brought to light about half a dozen of them. If a collector is without it and one turns up for sale my advice to him would be to buy it. It is never wise to encourage a dealer in asking extortionate prices and if you think he is overcharging you just refuse to deal with him. Never take

this step, however, unless you do it intelligently. It would be well for dealers to keep in mind the fact that there are

not so many active collectors of historical blue ware as there used to be. An overcharge is not dangerous in the case of

great rarities. In such cases the asking price is usually fixed by the owner and the dealer merely acts as a broker or agent. The collector accepts or refuses. Sometimes he makes a lower bid. I beg to remind you, however, that dicker-ing for such a piece is risky if you really want it. The matter of overcharging occurs among the lower or middle grade of plates and with inexperienced collectors. An unscrupulous dealer could easily get \$50 for a plate worth \$15 or \$20 if the buyer happened to be a credulous beginner. I have before me a list of thirty or more very rare views which I must pass by without even a mention. It has been stated that interesting items of American history are sometimes suggested by the views on



"Governors Island" soup plate

these old plates, and because of this the name "historical china" has clung to this ware. A few examples will illus-



Wash bowl: "Arms of Maryland"



"Church and buildings in Murray Street"



"Dr. Mason's church in Murray Street"

trate it. On a small saucer is a picture of the "Chancellor Livingston" steamboat—a small side-wheel vessel which undoubtedly resembled closely the "Clermont," which Robert Fulton invented in 1807 and which made regular trips between New York and Albany. Chancellor Livingston was the financial backer of Robert Fulton. The Livingston family in those early days controlled all the steamboats plying up and down the Hudson River. "Thomas Gibbons, Grandfather of Mrs. Ward McAllister, tried to establish a competing line of boats, and a long litigation ensued.

stitutional Governor. On May 30, 1908, the body of Governor Clinton was removed from the National Capitol and buried in Kingston, New York, the ancient capitol of the Empire State. The credit for promoting and carrying through the construction of that great waterway which connects Lake Erie with the Hudson River—a distance of 363 miles—belongs to Governor De Witt Clinton more than to any other one man, and the whole story, which would make volumes of interesting history, is suggested by the crude pictures which the Staffordshire potters have given us.



"St. Patrick's Cathedral," Mott Street



St. Paul's Chapel," Medallion of Washington at top; Erie Canal at Little Falls at bottom



"St. Paul's Chapel" in lower Broadway

Daniel Webster represented Thomas Gibbons and was successful in the final appeal before Chief Justice Marshall." Thomas Gibbons then started a line of steamboats on the Hudson and Cornelius Vanderbilt was one of his commanders and his "Commodore." The picture on the saucer brings to mind another important historical event. In the gallery of old Federal Hall, which stood at the head of Broad Street fronting on Wall, where the United States Sub-Treasury now stands, on April 30, 1789, General Washington was inaugurated first president of the United States. Chancellor Livingston administered the oath of office to the president. The country seat of Chancellor Livingston was called "Clermont" and this is the origin of the name of our first steamboat.

The building of the Erie Canal and the important part which Major General George Clinton took in that great enterprise are recorded on this old blue china. Three views along the canal are shown and there are two inscription plates eulogizing Governor Clinton—New York's first Con-

Many other plates are equally rich in historical suggestion. Almost every kind of collecting has an insidious charm. One possessed of ample means can buy libraries of rare books and choice works of art in unlimited quantities. High bids will often secure the masterpieces of Rembrandt, Hals and other great masters of painting from the galleries of Europe. But the rarities of old blue Staffordshire are unprocurable. They are not in the market and cannot be bought.

In conclusion a word of advice to new collectors: Never buy a cracked or broken plate unless it be one of the greatest rarities. Avoid plates which are a bad color—particularly the purplish blue. A poor blue plate is only worth one-half as much as the same plate in a rich dark blue color. A chipped or cracked piece, or one where the glaze is badly scratched by knife marks, is not worth having in a collection. Aim to have only proof specimens and never deviate from the rule unless the piece offered be of such rarity that a slight blemish could be overlooked.



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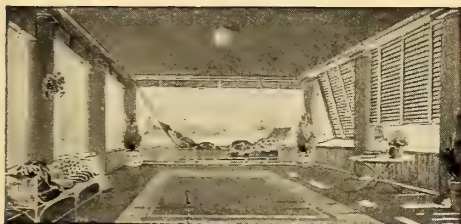
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THE BORDER GARDEN

By ANNIE H. QUILL

IF you have moved to a new location this spring and if in the yard there are any tumble-down sheds or fences that are an eyesore, they can be hidden by a border garden. To do this will mean some work, but it will also mean a quantity of fresh vegetables all summer. Clean up and burn all the rubbish, and spade up a border all along the sheds or fences that will get the sun for even a short time. I would use a fertilizer; only a little will be needed, and it can be bought in small quantities.

Nearest to the walls or fences I would plant the Dutch Case Knife pole beans; these I know to be a fine snap bean, and if you should have more than you need green, the balance can be dried and are excellent baked. They are exceedingly productive, and so very long that only a few pods will be needed for a meal. These should be planted about a foot apart, and three or four beans in a group or hill. It will make a difference of two or three days in their growth if they are soaked for an hour or two before planting. When they are well above the ground, pegs can be driven into the ground and a string tied to the peg, and the other end of the string fastened to a nail in the fence or wall. The beans should be planted as near as possible to the fence, and about eighteen inches from the beans, all along the edge of the strip, beets and lettuce may be planted. These should be thinned out and transplanted, first about two inches apart, and later thinned out again to four inches apart; the second thinning of the beets will make nice greens and the tender lettuce is delicious, even though too small for salads.

I find that fine cucumbers can be raised by taking a length of poultry netting (if you keep poultry, they can be planted outside the hen yard fence), and fastening it to stakes driven in the ground and planting seed of the Japanese climbing cucumber along this wire just as you would plant sweet peas. When the plants are up and the real cucumber leaf forms, thin them out until they are a foot apart. They will need a little training until they catch the wire, after that they will take care of themselves and bear wonderfully. They are finely flavored, firm and crisp. Cucumbers need a good deal of moisture at the roots and should have a good soaking every night if possible, but it is a great help to put the fresh grass cut from the lawn about the roots and leave it there, it will keep the moisture about the roots even after the grass has dried. Nearly anyone can have such a garden, even in a tiny city yard.

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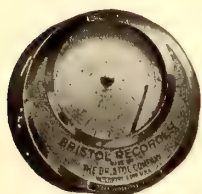
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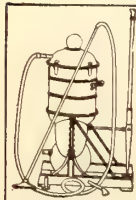


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GARDEN NOTES

This department is conducted by an experienced and practical landscape architect, who extends an invitation to the readers of AMERICAN HOMES AND GARDENS to send to the Garden Editor inquiries on any matter pertaining to the developing of the garden and the home grounds. Letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this department.

ROSE GARDENS

By CHARLES DOWNING LAY

A ROSE GARDEN now holds much more delight than a rose garden twenty years ago, because our roses are now much better and their variety is greater.

The old rose garden was a place set aside for growing the finicky and, at most seasons, unlovely hybrid perpetuals, and its object was not only to give the roses a place where soil and situation were the best, but also to keep them out of the flower garden, where they were in competition with other flowers when in bloom and where their own presence was undesirable after they had bloomed.

A rose garden now, however, should look well at any season, and should be full of roses from June to October.

The formal rose garden should be enclosed by a lattice fence or by a pergola on which to grow climbing roses. If it is a lattice fence, let the strips of wood in the lattice work be stout, say, $\frac{3}{8} \times 2$ inches, and let them be set not closer than 5 inches for the vertical slats and 8 inches for the upright ones. This gives about the minimum space for weaving the roses in and out as they grow. This is far the prettiest way of growing them. It is much better than tying to a wire. The fence should be high; 8 feet would be good, but better, 10.

The climbing roses are perhaps the most notable recent addition to the rose family. They are in every shade, from the crimson rambler to the pure white Wichuraiana.

The following are good varieties: Dorothy Perkins, Lady Gay, Daybreak, Wedding Bells, Hiawatha, Flower of Fairfield, Tausandscho, South Orange Perfection, Gardenia, Debutante, Minnie Dawson, W. C. Egan and Dawson. All are perfectly hardy without protection.

Other climbing roses are Climbing Clotilde Soupert, Climbing Belle Seibrecht, Devoniensis, and many others having tea blood and being, therefore, slightly tender.

As a border inside the trellis I should like to have many of the best species of roses. Multiflora for its pure white flower and delicious fragranec; *setigera* for its late pink bloom and graceful stem; *rugosa* for its brilliant color, and *rugosa alba* for its delicate whiteness. The Lord Penzance hybrids of the sweetbriar would have a larger space. They are wonderful in color, and no fragrance is so sweet. With these could be planted some of the old-fashioned roses, among them the damask rose, the moss roses, the cinnamon rose, Harrison's yellow and Persian yellow, and, of course, Mme. Planter.

This would be the place too for the hybrids of *rugosa* and, if the garden is a large one, for all the beautiful native roses which prolong the season of bloom and are beautiful flowers. The white va-

WATERCRESS: ITS CULTURE AND USES

By ELMA IONA LOCKE

NO farm, or home grounds, with a spring or running stream should be without the piquant watercress. Wherever there is a perpetual watercourse, it will grow. It may be grown either from seeds or from roots or cuttings. The places best adapted for raising it are gently flowing brooks or quiet, shallow waters, supplied by springs, and of a depth of from one and one-half to four or five inches. The cresses will not reach their best estate in sluggish water. A gravelly or chalky bottom is the most favorable and if only a muddy bottomed stream is available, the mud may be removed and gravel substituted.

If growing plants are not available for a start by roots or cuttings, the seeds may be obtained from any large seed house, and may be started in the house in early spring, in shallow boxes of moist earth. When large enough to handle, the young plants are then transplanted to the borders of the stream, and set about one foot apart in rows, eighteen inches or more between the rows.

In a few weeks the growth should be sufficient to allow of cutting for use, and the gathering should always be done by cutting, never by pulling or breaking, as that destroys the roots. With a good set of plants and in a favorable situation, cutting may be done as often as once a week.

The beds should be cleaned twice a year, doing but a small section at a time, the roots lifted, divided, and replanted, to assure a perpetual supply. All weeds, mud and rubbish should be cleaned away, and in replanting, the youngest and best roots selected and returned to the bed, where each may be retained in its proper place by a stone placed upon it.

Through May and June the first replantings may be made, assuring a supply for August salads, and the second cleaning, during September, October and November, in preparation for the spring supply.

In summer, the cutting should be very close. After three or four cuttings, the plants begin to grow stocky, and thereafter may be cut freely and often.

If grown for market, and there is always a good demand for it, the fresh, tender sprigs should be cut about four inches from the top and tied in bunches about as large as can be conveniently grasped by the hand, the stems even, like bunches of asparagus, and all tough or wilted sprigs rejected. The gathering and marketing should be done in the early morning, to insure delivery while fresh and crisp.

A southern woman describes how pin money was made from watercress, even where a stream or spring was not available, as it was in the city. The seeds were planted in a flower pot, in soil well mixed with sand and gravel; a paper

(Continued on page xx)

fitted over the top of the pot kept the soil moist. When the plants were large enough, they were transplanted to tubs and old barrels, filled also with soil, sand and gravel, no fertilizer being required. Kept constantly moist, the cress was ready to be picked in three weeks, and weekly thereafter.

Where there is no opportunity for growing the watercress, the upland cress, or the garden cress may be grown in any garden, and afford a fair substitute, as they resemble the watercress in form and flavor. Also in winter, when the watercress is not in season in the north, the other cresses may be grown in pots or boxes in window or greenhouse.

The seeds should be sown in small quantities and often, to assure a constant supply for daily use. The cresses, it is claimed, contain very valuable medicinal qualities; they are a very wholesome addition to the menu, and should be used freely by all. They are usually employed only in salads, but may be used in other ways. Cress vinegar, for flavoring salads, sauces, etc., is made by bruising in a mortar one-half ounce of garden cress seed, and letting it stand for two weeks in a quart of cold, boiled vinegar; then strain and bottle for use.

The watercress makes one of the most wholesome of salads, and may be used alone or mixed with cucumbers, tomatoes or other vegetables. Cold boiled beets, cut in dice and mixed with the cress and served with French dressing, makes a nice salad.

Watercress chopped makes a delicious flavor for sandwiches, either alone or mixed with other filling for flavoring.

The cress is sometimes cooked and served like spinach, and is also stewed and seasoned with salt, pepper and butter, with a trifle of flour added for the thickening.

A tasty dish is rice and cress. Boil until tender one cupful of rice in salted water; drain, and let steam for five minutes. Meantime wash, dry and break two bunches of watercress; fry it until crisp in a tablespoonful of butter. Then arrange the rice in a deep dish in alternate layers with the cress, having rice at top and bottom. Scatter grated cheese over the top.

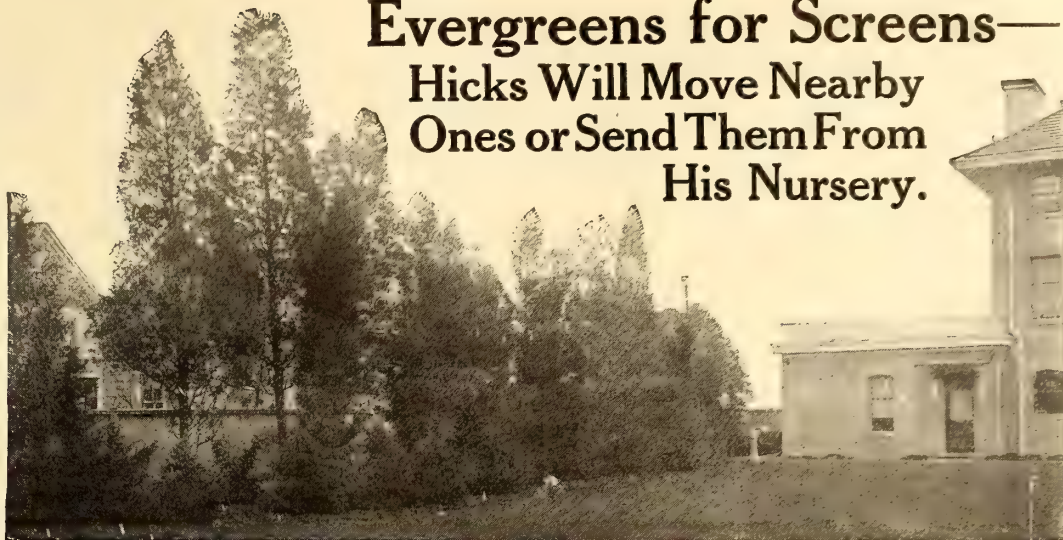
PLANTS THAT LIKE COLD

CLIMATE affects the inhabitants of the sea just as it does those of the land. As Arctic land-plants cannot flourish at the equator, so in the Arctic and Antarctic oceans marine plants are found that are unable to survive in warm water.

Among the most remarkable of these cold-water plants are the *laminariaceæ*, a kind of sea-weed, which sometimes attains a gigantic size, exceeding in length the longest climbing-plants of the tropical forests, and developing huge stems like the trunks of trees.

Investigation has shown that these plants flourish in the coldest waters of the polar seas, and that they never advance farther from their frigid homes than to the limits of "summer temperature" in the ocean. The genial warmth destroys them, just as a polar blast shrivels the flowers of a tropical garden.

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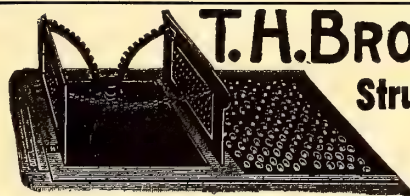
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Preserves That Are "Sightly"

"Delectable Sweets and Sours" from Famous Colonial Recipes

By PHEBE WESTCOTT HUMPHREYS

COLONIAL housewives took special pride in their ability as hostesses to set forth delicious preserves that were both "tasty" and "sightly." Too frequently the modern hostess must be content to serve her sweets with the fruit so mashed and broken that the conserve resembles marmalade rather than preserved fruit. Keeping the fruit whole and "sightly," in the clear, firm, jellied syrup, and yet having it tender, is coming to be a lost art among careless housewives. Even for those who have among their most treasured possessions genuine colonial recipe books telling, in delicate tracery of old-fashioned handwriting, the secrets of success in preparing delectable "sweets and sours," considerable common-sense reasoning and a careful study of the nature of the fruit to be preserved will be necessary.

PRESERVING RIPE BERRIES

When raspberries, strawberries or any of the small, juicy, ripe berries are put directly into syrup, and cooked sufficiently to form preserves, the result is far from sightly. To preserve the fruit in comparatively whole, and in attractive form, make a hot syrup by adding a little water to the sugar—that has been measured pound for pound to preserve the fruit—and as the syrup boils skim it carefully, until the syrup is clear. Then add the berries and cook slowly until thoroughly cooked through and tender. Small fruits are dropped directly into the boiling syrup, and when done are carefully skimmed out to avoid breaking. The syrup is then boiled down to the right consistency for preserves and poured over the fruit, or the fruit is carefully added to the thick syrup; and when the whole is boiling hot it is quickly sealed in glass jars.

When cooked down to a thick, heavy preserve, these sweets can be kept in glasses, or small jars, the same as jelly; with only a covering of paraffin over the top, before slipping on the tin cap or paper cover. But sealing in air-tight jars is better for the "sightly" preserves, where the fruit is retained as whole as possible in the thick amber syrup. Do not put away the sealed jars until cold. Give an extra screw to the cover, and wrap in manila paper before setting them away in the preserve closet.

CHERRY PRESERVES

Ripe, sour cherries make the most delicious preserves of any of the small fruits; but there is also a "little trick" in keeping them at their best in form and taste. After carefully stoning the cherries, keeping their form apparently whole and unbroken, allow an equal weight of sugar. Sprinkle the sugar over the fruit and let it stand about an hour before

cooking. Drain off the juice and boil it slowly about fifteen minutes, skimming until it is perfectly clear; then add the cherries and cook slowly until they are tender, and the preserve is thick and clear, and seal in small jars while hot.

MANIPULATING QUINCES

Knowing one's fruit, or being acquainted with its nature and requirements, is especially necessary in manipulating quince preserves. Authorities on preserving and canning too frequently give general rules for selecting fruit, preparing the syrup, proportioning of fruit and sugar, cooking and sealing; without mentioning special treatment of special fruits. Should the preserves of sliced quinces be put directly in the syrup to be cooked, or be added for quick cooking after the syrup has boiled, like the small fruits and berries, the result would be total failure; for the quince thus treated will invariably be tough. The quinces should be cut into uniform slices or disks—much smaller than the usual "quarters"—to make the preserve sightly; with the small pieces snuggled close together in the clear, thick syrup. Cook the sliced quince in water until tender, as it is the cooking in sugar syrup that toughens it. When done, and thoroughly tender, strain off the water, leaving the pieces unbroken. Use this water with its rich flavor of quince to make the syrup allowing half a pint of water with a pint of sugar for each quart of sliced quinces measured before cooking. When the syrup has cooked until nearly "ready to jell," add the tender quinces, boil gently a few minutes longer, thoroughly blending quinces and syrup, without mashing; and seal in air-tight jars.

RHUBARB VARIETY

While enjoying the rhubarb pies and sauces and baked puddings, a good supply of this healthful spring relish should be canned for winter use. The firm, well-developed stalks have better keeping qualities than the earliest of the young stalks—a secret not generally understood in rhubarb canning. For immediate use in pies, puddings and sauces, the rhubarb should not be peeled, as the reddish peel improves the color and the flavor after stewing or baking, and cooks up perfectly tender. For the hot canning process, the peel should also be retained; but for the cold canning methods, it is wise to remove all the thin outer skin. This precaution has been found to improve the keeping qualities.

COLD WATER CANNING

Cut the stalks into half inch lengths, fill clean glass jars with the pieces well packed in, and pour in sufficient clear, cold water to fill all the spaces, being careful to get out all air bubbles. Care in sealing and in removing the air bubbles is the whole secret of success. The bubble problem is solved by setting the jars, filled with the rhubarb, directly under the faucet, and allowing the water to



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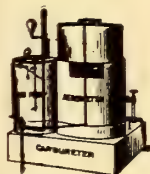
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run vigorously into the jar until it overflows for a minute or two, taking all bubbles with the overflow. Or, in the same manner with pump water—continue the pumping for a moment after the overflow. The sealing must either be done under water or while the water is still flowing. Neglect of this secret is the cause of the many failures in keeping the rhubarb sweet and fresh. Use new rhubarb; have them placed on the jars, then, while the water is still flowing screw on the tops of the jars. Another good plan for sealing is to set the jar in a deep pail; let the water flow directly into the jar of rhubarb until it overflows and fills the pail, then reach down with the rubber and the top, and seal the jar while under water. When wanted for use this rhubarb is simply drained in a colander, then sweetened and stewed, when it can be used the same as fresh rhubarb for puddings and pies.

There is so little jelly quality in rhubarb juice, that for jelly-making it will be necessary to mix apple juice—one-third apple and two-thirds rhubarb—to insure good results.

PIQUANT FLAVORS FOR PICKLES

When fresh horseradish is in season in the early spring, it will give additional flavor to many varieties of pickles. Old-time housekeepers used to delight in giving special flavors to cucumbers, for instance; and many other winter pickles were made particularly appetizing for spring relishes. In these days we are prone to take as little trouble as possible, and simply freshen the cucumbers as they come from the brine, give them their hot vinegar bath, or boil them until tender in vinegar, and serve them simply as "sour cucumber pickles." By following this good old New England recipe we can secure the desirable piquant flavor with little extra work.

Take the large cucumber pickles direct from the brine, whether from the pickle keg in the home cellar or from the grocers. Let them lay in water over night to freshen, then cut the cucumbers in quarters, lengthwise. Place a layer of pickles in a porcelain-lined kettle, then a layer of sliced onions and bruised horseradish root and small pieces of red or green peppers. Repeat the layers of cucumbers and onion-horseradish-and-pepper flavoring, until the kettle is about half full. Pour over this one quart of good cider vinegar, heat very slowly, and boil gently until the pickles are tender. The whole mixture is preferred by some; but in order to use this pickle simply as cucumber pickle with a piquant flavor, take out the cucumbers with a fork, discard the onion and horseradish, place the pickles compactly in a stone crock, strain and reheat the vinegar and pour it over the cucumbers boiling hot. When cold, tie the top of the crock with a firm cloth covering, and they will keep until used.

Another spicy pickle of flavored cucumbers is made by taking the small cucumbers or cutting large ones in half. When taken from the brine, lay them in a jar, cover with thin slices of small, green peppers, and pour on sufficient cold water to cover. Let them stand over night, then drain off the water.

Boil together sugar and vinegar in the proportion of one cupful of sugar to each quart of vinegar; boil with this syrup a spice bag containing a tablespoonful of ground cinnamon, a teaspoonful of

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INSIDE

OUTSIDE

Burlington Venetian Blind Co.
339 Lake St.
Burlington, Vt.

(Continued on page xxi)

Noteworthy Articles ON TIMELY TOPICS

SEWAGE AND ITS DISPOSAL. A review of modern methods. By H. Lemmoin-Cannon. *Scientific American Supplement* 1551.

ELECTRIC LIGHTING FOR AMATEURS. How a small and simple experimental installation can be set up at home. *Scientific American Supplement* 1551.

CHEMICAL AFFINITY. Simply explained by Sir Oliver Lodge. *Scientific American Supplement* 1547.

CASE-HARDENING. By David Flather. *Scientific American Supplement* 1547.

ELECTRIC IGNITION SYSTEMS. A comprehensive article by E. W. Roberts. *Scientific American Supplement* 1546.

CONCRETE. A general article on its merits and defects. *Scientific American Supplement* 1543.

REINFORCED CONCRETE. Some of its Principles and Applications with practical Illustrations. *Scientific American Supplements* 1547, 1548, 1551.

ELECTRONS AND THE ELECTRONIC THEORY are discussed by Sir Oliver Lodge in *Scientific American Supplements* 1428, 1429, 1430, 1431, 1432, 1433, 1434.

WIRELESS TELEGRAPHY. Its Progress and Present Condition are well discussed in *Scientific American Supplements* 1425, 1426, 1427, 1386, 1388, 1389, 1383, 1381, 1327, 1328, 1329, 1431.

HOW TO CONSTRUCT AN EFFICIENT WIRELESS TELEGRAPH APPARATUS AT SMALL COST is told in *Scientific American Supplement* 1363.

SELENIUM AND ITS REMARKABLE PROPERTIES are fully described in *Scientific American Supplement* 1430. The paper is illustrated by numerous engravings.

LANGLEY'S AERODROME. Fully described and illustrated in *Scientific American Supplements* 1404, 1405 and 1546.

STEAM TURBINES. Their Construction, Operation and Commercial Application. *Scientific American Supplements* 1306, 1307, 1308, 1422, 1400, 1447, 1370, 1372, 1521. The articles have all been prepared by experts in steam engineering.

PORTLAND CEMENT MAKING is described in excellent articles contained in *Scientific American Supplements* 1433, 1465, 1466, 1510, 1511.

THE TANTALUM LAMP. A full illustrated description of a lamp having a metallic filament and burning at once without preliminary heating appears in *Scientific American Supplement* 1523.

THE WATERPROOFING OF FABRICS is thoroughly discussed in *Scientific American Supplement* 1522 by an expert.

THE SPARK COIL, ITS CONSTRUCTION AND MAINTENANCE, is the subject of a painstaking article in *Scientific American Supplement* 1522.

ELECTRIC IGNITERS FOR GAS ENGINES are discussed in *Scientific American Supplement* 1514.

CARBURETERS, a subject of immense importance to automobilists and the users of oil engines, is well treated in *Scientific American Supplement* 1508.

EPICYCLIC TRAINS, which play an important part in toothed gearing, are ably described in *Scientific American Supplement* 1524.

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CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in House Furnishing

By ALICE M. KELLOGG

LIVING-ROOM DECORATION

MRS. J. B. S. of East Orange says: "Please give me some idea as to my living-room paper. It is a light, sunny room for most of the day. The ceiling is beamed, woodwork a gray brown, neither light nor dark, but there is a good deal of it in the room. Window and door frames are wide and plain and at the end of the room there is an inglenook with heavy settle ends, and a fireplace with a broad shelf. The side of the room opposite the door has four casement windows with seat. Rugs are antiques, furniture old mahogany and a little black oak. Have held up sample after sample, but cannot seem to hit the woodwork correctly. Room 14x26. Cottage curtains to sill only of yellow brown silk."

In this room the woodwork plays an important part, as there is so much of it. I would pin up in different parts of the room samples of every kind of paper nearly suitable, wrapping paper or even butcher's paper will serve. Study these for a day or so and you will find your choice narrowing successfully. As your curtains are yellow your woodwork brown, the wallpaper may safely be a tone between the two. As there is little design in your materials, chair and sofa coverings being plain, and the room is large, the paper may be a figured one. There should be some blue object in the room, old blue in some rug, cushion or vase. A medium shade of green would look well, but if the room is sunny the paper would have to be renewed soon.

Another correspondent inquires about improving her bathroom. "My bathroom needs improving, but I do not know what to do with it. There is a wainscoting of white cement marked off like brick work, a flat rail dividing it from a plain wall above. The house is new but has settled and the corners are somewhat cracked. Floor is tiled, porcelain tub and basin, mahogany seat and tank. Rug two tone in blue."

If you have your rug already it will be best to build up from that. The cement should be painted with white paint, two flat and one enamel finish. For the wall above, choose some one of the bathroom papers; there are some extremely pretty ones now with high finish. Of course the paperhanger will plaster up the cracks before hanging the paper.

Mr. F. Richards writes: "This suburban house we have just moved into has a fine porch, 12x32 feet. I would like to furnish it somewhat this summer, but can spare only thirty dollars on it. It has the sun in the late afternoon."

You can do a good deal with this amount, and I submit two suggestions. The awning will undoubtedly furnish and

(Continued on page xix)

Garden Work About the Home

By OLIVER INGRAHAM

THE labor of gardening is often irksome to the amateur because his tools are not good. Farm tools are made for farm laborers and for farm conditions and are heavy, strong and lasting. The tools for gardening should be light, well balanced and sharp. There is no sense in using a heavy hoe in the fine soil of a garden. A sharp light hoe will cut the weeds much better and with less effort.

Besides being heavy and clumsy, farm tools are often badly adapted to garden work. For a hoe get a ladies' hoe with a small sharp blade and a springy handle. Use this for a shallow stirring of the soil after rain or for weeding. For deeper cultivation use a light four-tined potato digger. This will stir the soil more deeply and more thoroughly than a rake, and it is easy to handle, and may be used between plants that are less than a foot apart. The hoe shaped like the ace of spades is a very useful tool for cultivating or for making drills.

I have just imported from England a Sproughton hoe, which seems very promising. It is like a Dutch scuffle hoe, but the edge is held only at one side, so that one can cultivate all sides of a plant without changing ones position. It has the further advantage of having two edges so that it can be pushed like a Dutch hoe or drawn toward one like an ordinary hoe. Spades should be of several sizes—one a nursery spade with a long blade and an iron bound handle; another should be half the usual length with a small narrow square blade. This can be used in place of a trowel, and is good for collecting. There should also be a short-handled shovel. Long-handled shovels or spades have no place in the garden, and they are wasteful implements anywhere. Spading forks should always be used for spading up the ground. They are usually too heavy. I have found a short-handled manure fork with sound tines cut short (about 10 inches) a better implement.

The wheel hoe with its various attachments is, of course, indispensable in any vegetable garden.

English trowels of cast steel are the only kind it pays to buy, and the same may be said of sickles.

Good tools are worth all they cost in comfort and ease of working, and in the increased labor which one may accomplish with them in a given time.

I DON'T wonder that you are disturbed by the large bill-board which has just been erected across the road from your house. There are many ways to attack the bill-board evil, and if you can arouse a strong public sentiment they are bound to succeed.

The most effective way is to approach the owner on whose property the bill-board is erected, and to point out to him that he is unneighborly to permit it, that his personal pride ought to keep him from being willing

to make money from such objectionable advertising of other people's wares.

If the owner is not moved by your appeals, you can then go to the advertiser and say that he will lose your trade unless he removes his sign, and that he is likely to lose the trade of others for the same reason. You can also impress upon him the cost of such advertising in the actual money spent and its excessive cost per person who reads it, compared with advertising in any daily or weekly paper.

If the bill-board is used for theatrical posters, you could probably convince the manager of the local theatre that it is not to his advantage to advertise his productions in that way. Managers of playhouses are very susceptible to public opinion and if you can get an expression of opinion from some club or society you will have little difficulty in convincing the advertiser if he is a local man.

If it is a food or a soap that is advertised your difficulty will be greater, because such advertising is done wholesale through agents, and it is hard to touch the managers in the right spot.

Roadside advertising is one of the greatest nuisances we have to-day. It is spoiling many beautiful drives. It has spoiled the scenery one sees from most railroads, and it is a greater offence to the eye than a glue factory is to the nose.

It is already controlled by law in many communities, and the day is not far off when all bill-board advertising will be prohibited by excessive taxation or by police regulation on the score that an offence to the eye should not be permitted.

■ Problems in House Furnishing

(Continued from page xviii)

shade your porch just when you need it most. But its price precludes the buying of many chairs. If you can borrow from the house when needed it will not matter so much. If the space over steps is not very wide, you may perhaps get an estimate cheaper than I have put down. If you choose green stripes, have the furniture green, and the same color introduced in the cushions. If red stripes have mahogany stain and flowered cushions. Railing boxes similar to window boxes, bright with sweet alyssum marguerites, red or pink geraniums and begonias, and trailing vinca, will complete a charming porch and color scheme, and modest in price as well.

Swinging seat	Awning	\$15.00
2 wicker chairs	Willow chair	6.00
Table	Table	4.00
2 small rock-ers with		
Pillows	splint seat ..	2.50
	Pillows	300
		\$30.00
		\$30.50

"My upstairs sitting-room is now in use for my youngest boy. It is very bare and I would like to paper it for him, but so that I could use it later for myself."

Have you seen the blue gingham rooms? They are very quaint and old-fashioned looking. In buying your gingham choose that variety in which the threads running one way are white, the other blue, giving a homespun appearance. Match it to a lighter toned paper (cartridge or oatmeal) of the same hue. Make sheer white cottage curtains to the sill only, with over-curtains and short valance of gingham. The valance of the bed



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ALCOHOL Its Manufacture Its Denaturization Its Industrial Use

The Cost of Manufacturing Denatured Alcohol in Germany and German Methods of Denaturization are discussed by Consul-General Frank H. Mason in *Scientific American Supplement* 1550.

The Use, Cost and Efficiency of Alcohol as a Fuel for Gas Engines are ably explained by H. Diederichs in *Scientific American Supplement* 1596. Many clear diagrams accompany the text. The article considers the fuel value and physical properties of alcohol, and gives details of the alcohol engine wherever they may be different from those of a gasoline or crude oil motor.

In *Scientific American Supplement* 1581 the Production of Industrial Alcohol and its Use in Explosive Motors are treated at length, valuable statistics being given of the cost of manufacturing alcohol from farm products and using it in engines.

French Methods of Denaturization constitute the subject of a good article published in *Scientific American Supplement* 1599.

How Industrial Alcohol is Made and Used is told very fully and clearly in No. 3, Vol. 95, of the *Scientific American*.

The most complete treatise on the Modern Manufacture of Alcohol, explaining thoroughly the chemical principles which underlie the process without too many wearisome technical phrases, and describing and illustrating all the apparatus required in an alcohol plant is published in *Scientific American Supplements* 1603, 1604 and 1605. The article is by L. Baudry de Saunier, the well-known French authority.

In *Supplements* 1607, 1608, 1609 we publish a digest of the rules and regulations under which the U. S. Internal Revenue will permit the manufacture and denaturation of tax free alcohol.

A comparison of the Use of Alcohol and Gasoline in Farm Engines is given in *Scientific American Supplements* 1634 and 1635 by Prof. Charles E. Lucke and S. M. Woodward.

The Manufacture, Denaturing and the Technical and Chemical Utilization of Alcohol is ably discussed in the *Scientific American Supplements* 1636 and 1637 by M. Klar and F. H. Meyer, both experts in the chemistry and distillation of alcohol. Illustrations of stills and plants accompany the text.

The Sources of Industrial Alcohol, that is the Farm Products from which alcohol is distilled, are enumerated by Dr. H. W. Wiley in *Scientific American Supplements* 1611 and 1612 and their relative alcohol content compared.

The Distillation and Rectification of Alcohol is the title of a splendid article by the late Max Maercker (the greatest authority on alcohol) published in *Scientific American Supplements* 1627 and 1628. Diagrams of the various types of stills in common use are used as illustrations.

In *Scientific American Supplement* 1613 the Uses of Industrial Alcohol in the Arts and in the Home are discussed.

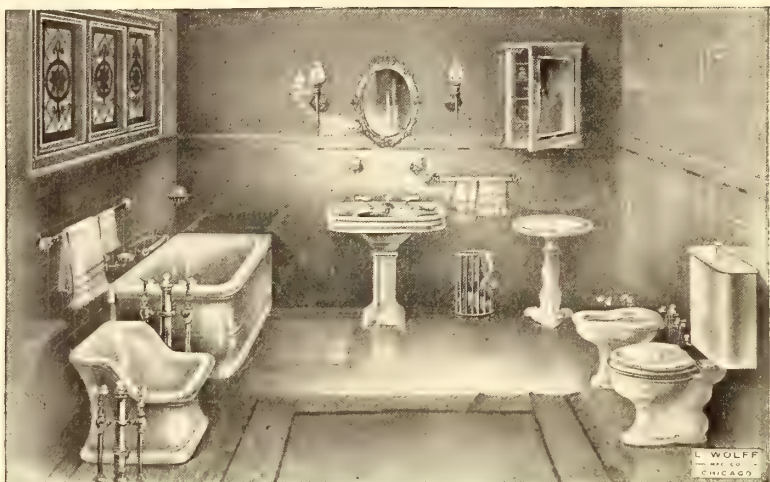
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CLEVELAND, OHIO, - - - Builders Exchange	WASHINGTON, D. C., - - - 327 Bond Building
KANSAS CITY, MO., - - - 1204 Scarrett Building	BUFFALO, N. Y., - - - 61 Manchester Place
CINCINNATI, OHIO, - - - - -	- - - 506 Lyric Building

to be of the gingham, also the box for toys covered and the gingham box pleated around the sides. The rug should be a heavy, rag rug, blue predominating. If the white quilt on the iron bed soils too readily there is a charming cretonne that comes, very Japanese in appearance, blue trunks of trees, odd and gnarled in appearance. This could be sewed together in lengths to throw over bed and pillows; also a border could be made of it and sewed on the gingham window curtains and valances.

"We are refurnishing our dining-room with a delightful present in the shape of a check, and would like ideas for the same, although we have pretty well decided to get mahogany furniture for it."

As your check seems ample to cover the cost of such a handsome set of furniture why not finish the room in corresponding style. As a background for such heavy pieces of mahogany as you have already chosen, a deep dull blue (Madonna blue it is often called) for the wall paper would be very rich. A Chinese rug (copy), now so much sought after and admired, with blue peachblow and black in a bold handsome design for the floor. Your scarfs on sidetable and sideboard should be heavy lace or linen, solidly embroidered. Place only a few articles on the sideboard—chafing dish, brass or copper bowl for fruit. Cut glass will not look well displayed in this room. You will be pleased if you place a large Chinese plaque with the blues of the rug and wall in it.

"What color wall paper shall we have on the private hall of this little flat? It is now a cranberry red and is horrible."

A warm buff, plain or indistinguishably patterned in two tones is the color for the hall. You will find it considerably lightened.

ROSE GARDENS

(Continued from page xiv)

riety of *rosa lucida* should not be omitted. Inside this border I should have a white gravel path, enclosing in turn a number of beds devoted to the tea roses and the hybrid teas.

Tea roses bloom all summer, their colors are superb and their fragrance unsurpassed, except by the sweetbriar. They are easy to grow, they do not suffer in dry weather, and they can be protected in the winter by throwing earth around them eight or ten inches high. There are hundreds of varieties, and all, I suppose, have some merit. At any rate, one can choose by color and not make a mistake.

Any good soil will do for these roses, and they will grow and bloom without coddling.

Whether the hybrid perpetuals should be included in this garden or not I cannot say. Personally, I would leave them out, because the hybrid teas have the same size and substance and are better bloomers and in every way as satisfactory. A rose garden of this modern sort should be at least fifty feet square: a hundred would be better. It will be very easy to care for, because after the first two years it will be impossible to cultivate the border, and the only labor will be that of spraying and of keeping the paths and hoeing the tea rose beds. Tea roses should be planted in beds four feet wide, with three rows of roses alternating in the rows. Each plant will then be about eighteen inches from its nearest

The Scientific American Boy at School

By A. RUSSELL BOND,

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¶ This is a sequel to "The Scientific American Boy" and like its predecessor is brim full of practical suggestions, all of which are entirely new. The construction of the apparatus, which is within the scope of the average boy, is fully described and the instructions are interwoven in a fascinating story, which makes the book interesting as well as instructive to the boy. This volume contains instructions on surveying, sounding and signalling, the building of dams, canals and canal locks, truss bridges and several different types of boats. Sun dials, clepsydras, seismographs, gliding machines, kite photography and camera hunting are a few of the other interesting subjects taken up. Other unique ideas are water kites, fish-tail boat-propellers, bicycle sleds, geyser fountains, etc. No boy of a mechanical turn of mind can read the story without being inspired to try his hand at making the devices.

MUNN & CO., Inc. Publishers, 361 Broadway, New York.

neighbor, and the narrow beds make it easy to take care of each plant.

Our garden in the winter will be almost as beautiful as in the summer. The rose hips are brilliant in color, and the warm tones of the branches, in contrast with evergreen trees at the back and the snow, perhaps, on the ground, make a very cheering winter scene.

I know a lovely informal rose garden planted among the rocks and cedars of a New England hillside, with the climbing roses in the tops of old apple trees and the tea roses nestling beside a boulder. It is a bird-paradise at all seasons. With this material there is no end to the beautiful things one can do.

Preserves That Are "Sightly"

(Continued from page xvii)

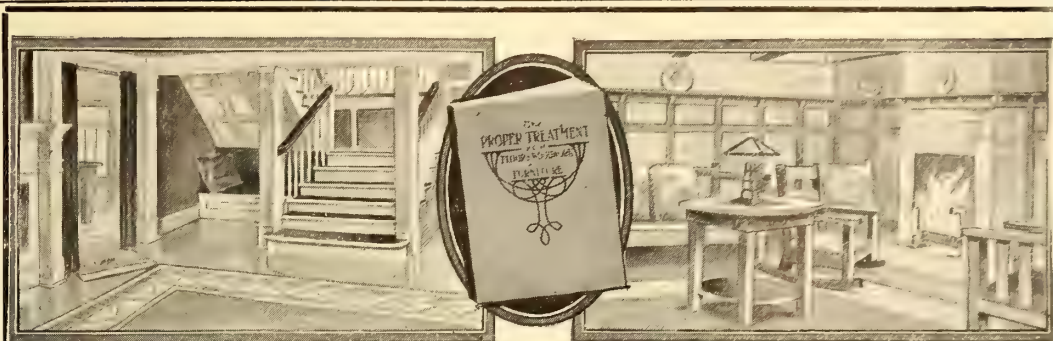
cloves and one of ginger. When the liquid is boiling vigorously, pour it over the cucumbers; leave the jar uncovered until the contents are cold, then cover and set in a cool place; and the pickle will be ready for use in about a week.

SPRING CHILI SAUCE

It is naturally supposed that the only time to make chili sauce is in the autumn, when green tomatoes can be secured, but according to some good old recipes that are now the favorites in the collection of a modern housewife, the really good chili sauce is one that can be made in the spring as well as in the autumn; one in which canned tomatoes may be used, and in which anchovies serve to give the piquant flavor. With two quarts of canned tomatoes use two quarts of vinegar, twelve anchovies, twelve large onions, and one tablespoonful each of cloves, mace, red pepper and black pepper; three tablespoonfuls each of salt and sugar; and two tablespoonfuls of ground ginger. After washing and soaking the anchovies and pulling them into bits, place the entire ingredients in a preserving kettle and boil for four hours, until reduced to about half the original quantity. Strain through a fine sieve, and the result is a thick, rich, smooth sauce, of most appetizing flavor. The best plan for keeping it is to bottle, cork and seal, and lay the bottles down in a cool place.

SWEET FRUIT PICKLE

When the first sweet cherries come into bearing, they may be used to form a delicious pickle. The later cherries, the morillas and pie cherries and others of tart flavor will be best for the canning, preserving and jelly making. For the pickled cherries use two quarts of vinegar, three pounds of sugar, one ounce each of cloves, cinnamon and allspice, and seven pounds of cherries. Steam the cherries until tender, then place in a jar. Boil the vinegar and sugar together with the spices in a bag. Pour the syrup while hot, over the cherries and let them stand twenty-four hours. Again boil up the syrup and pour over the fruit while hot. At the third boiling, drain all the syrup from the fruit and boil down until the syrup is thick and rich; pour it over the fruit while boiling hot; and when cool cover the jar and set in a cool place



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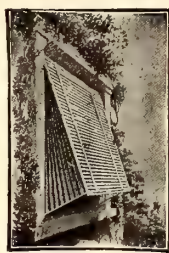


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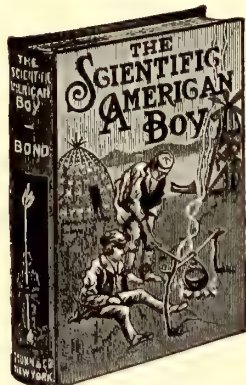
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The Scientific American Boy

By A. RUSSELL BOND

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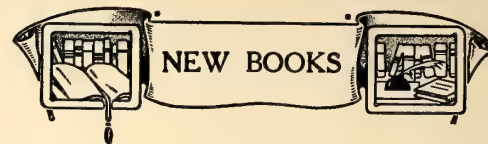
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AUTOMOBILE MECHANICIANS' CATECHISM.

By Calvin F. Swingle, M.E. Chicago:
Frederick J. Drake & Co., 1910. 16mo.;
110 pp. Price, \$1.25.

As the name implies, all the information given is conveyed in the form of questions and answers. This is a very practical way of acquiring knowledge of a subject. Should the student desire to test his knowledge and his capacity for clearly expressing it, he may write his own answers and compare them with the answers given. On the other hand, the index allows of the use of the catechism as a "searchlight in trouble-finding." Should the tyro find himself stalled on some country road, unable to place the trouble, he turns to the index, finds "Breakdowns—what to do" and has expert advice immediately, in the fewest possible words. Inserts, showing the plan and elevation of a chassis, with all parts numbered and named, add greatly to the completeness and utility of the handbook.

THE MINERALOGY OF ARIZONA. By F. N.

Guild. Easton, Pa.: The Chemical Publishing Company, 1910. 12mo.; 103 pp.; illustrated.

Arizona is notably rich in mineral deposits, and its mountains and canyons have been attacked with such enthusiasm that the yield of specimens has been proportionately large and noteworthy. In their mode of occurrence, and in the beauty and variety of the crystallizations, the minerals found in this part of the country present unusual features. Vanadium, tungsten, and molybdenum are not uncommon, and the chemical and geological conditions which brought them into being well repay investigation. The recent discoveries of coronadite, morencite and arizonite are chronicled, and the compositions of these deposits are given.

MOTION PICTURE HANDBOOK. By F. H.

Richardson. New York: The Moving Picture World, 1910. 12mo.; 176 pp.; illustrated. Price, \$1.50.

In this age of the motion pictures, such a handbook as this will not lack for readers. It tells everything which the would-be operator ought to know, and some things which the full-fledged operator should be familiar with, but, judging from results, is not. The source of the light, the wiring, resistance devices, lenses, carbons, the film, the various makes of projectors, all these are subjects of vital importance in the skillful manipulation of the motion picture machine. Managers may also turn these pages with benefit, not only because managers should know something of the art on which their business depends, but also because the final chapter appeals especially to them, its heads being the selection of a theatre location, employees, advertising, film service, tickets and vaudeville.

SUCCESS IN MARKET GARDENING. A New

Vegetable Growers' Manual. By Herbert Rawson. New York: Doubleday, Page & Co., 1910. 12 mo.; 271 pp.; illustrated. Price, \$1.10 net.

This is a revision and amplification of a book of the same title by the late W. W. Rawson, father of the present author. It covers market gardening methods in a general way, from the choice of a location and

the preparation of the soil, to the gathering, handling and packing of the crops. There is a helpful section on the capital and labor required, and others dealing with implements, and with insects and preventives.

BRAYLEY'S ARRANGEMENT OF FINGER PRINTS IDENTIFICATION AND THEIR USES. By Frederick A. Brayley. Boston: The Worcester Press, 1910. 12mo.; 118 pp. Price, \$2.

The wonderful possibilities of finger print "signatures" have long been recognized by foreign criminal departments, and the system is now adopted by police, secret service, United States army and navy; and banks, insurance companies, bond companies, secret societies, and all lines of business, where a perfect system of identification is necessary, are considering this system with a view to adopting it. This exhaustive treatise was prepared, under the supervision of an expert, from data supplied by Mr. Henry Richardson, the head of the Massachusetts Bureau of Criminal identification. This system of classification is in conformity with that in use by the British government central offices, United States government, and the various police departments of the United States; it contains original and valuable data for filing finger prints.

BUCH BERUEHMTER INGENIEURE. By Dr. Richard Hennig. Leipzig: Otto Spamer, 1911. 308 pp.; 43 illustrations.

Ten biographies of distinguished engineers are included in the volume before us. The men discussed are William Siemens, James Buchanan Eads, John Ericsson, Ferdinand de Lesseps, Alfred Nobel, Sir Henry Bessemer, John Fowler, Nicolaus Riegenbach, Otto Jutze and Max von Euth. The biographies in the main seem well written, and may be regarded as giving accurate details of the lives of the men discussed. One wonders, however, why so eminent an engineer as Sir Benjamin Baker is referred to as "ein gewisser Benjamin Baker," for surely Sir Benjamin Baker's part in the erection of the great Forth bridge was as great as that of Sir John Fowler. Also why Brunel, who was probably the greatest English engineer that ever lived, is not made the subject of one of the biographies.

WHITE PAINTS AND PAINTING MATERIALS. By W. G. Scott, C. E. Chicago: The Modern Painter, 1910. 8vo.; 493 pp.

The plan on which this book is built commends itself favorably to the reviewer. The first section deals with "the physical test of paint." Then are considered in order the several kinds of white paints, classified according to their bases; lime, magnesia, barium, alumina, silica, zinc, lead and organic materials. Incidentally products not strictly falling under the heading of paints are dealt with, such as putty and various kinds of pastes. A concise account is given of the sources of raw materials, the manufacturing processes, and the methods of analysis of interest in connection with the several paints and other materials treated. A very useful set of tables is appended. There is a good index, but we miss a synopsis of the chapter-contents. A definition which occurs in a footnote of the "Table of Elements" seems to require revision. We read there: "The melting point of a gas is supposed to be the temperature at which the *liquid-gas* begins to assume the gaseous form." The wording of this appears to us unfortunate. But this is a mere oversight in what seems to be an excellent book.



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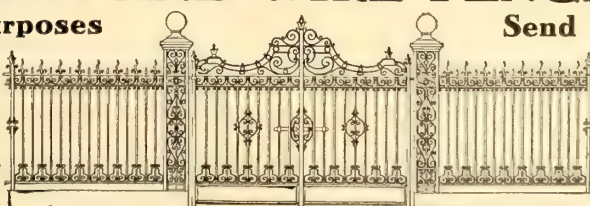


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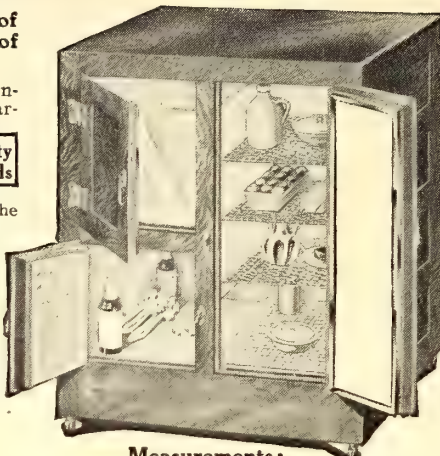
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361 Broadway, New York

JUST PUBLISHED

AN INTRODUCTION TO ZOÖLOGY. By Robert W. Hegner, Ph.D. New York: The Macmillan Company, 1910. 350 pp.; 161 illustrations. Price, \$1.90 net.

The text book before us has been designed to cover the field of the introductory course in zoölogy which is now given at several of the leading universities, courses dealing with invertebrate types only, and followed by a course on vertebrate types during the second half year. This explains some of the omissions which are to be found in works of this character, and why only a few animals belonging to the very important phyla, as viewed from an evolutionary standpoint, are considered. These few types, however, are intensively studied in an endeavor to teach the fundamental principles of zoölogy in a way that is not possible without a superficial examination of types from all the phyla. Morphology, instead of being especially emphasized, is co-ordinated with physiology, ecology, and behavior, thus serving to illustrate by a comparative study, the probable course of evolution. The animals are treated not as inert objects for dissection, but as living organisms whose activities are of fundamental importance. An excellent glossary has been included which ought to prevent the confusion which students usually encounter when suddenly confronted with a number of scientific terms.

THE GEOLOGY OF BUILDING STONES. By J. Allen Howe, B.Sc., F.G.S. New York: Longmans, Green & Co., 8vo.; 455 pp.; illustrated. \$2.50 net.

Students of architecture will find this a very edifying collection of facts relating to the geology of building stones. As it is an English work, naturally it deals particularly with those materials found in the British Isles, only brief reference being made to the stones of other countries. The author has had the advantage of assistance and advice from prominent architects, quarry owners, and merchants, and has been allowed to reproduce important figures and plates from government bulletins and foreign works.

THE ART OF CROSS-EXAMINATION. By Francis L. Wellman. New York: The Macmillan Company, 1910. 404 pp. Price net, \$2.50.

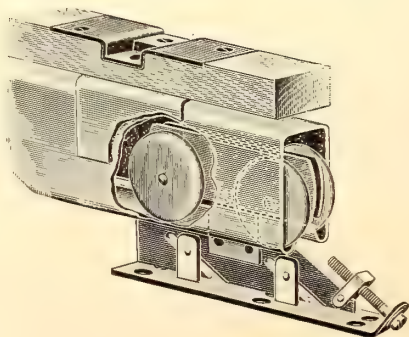
Although the title of this instructive volume would seem to indicate that it would be of interest only to the reader of legal bent or training, this most assuredly is not the case. The author, himself a master of the difficult art of cross-examination, has discussed this important subject with so much clearness, and with so complete an absence of specifically legal or technical terminology, that even the lay reader without a smattering of the law will find its pages of fascinating interest. Portions of Mr. Wellman's book, particularly those recounting parts of the cross-examination of famous cases, can be read with the lively pleasure one would accord to a thoroughly readable novel. For this second edition Mr. Wellman has practically rewritten his book, so important are the additions, though the first few chapters, as he states, in his preface, have been left substantially as they were originally formulated. The chapter on "Cross-examination of Experts" has been rearranged, while chapters have been added on "Cross-examination to the Fallacies of Testimony" and "Cross-examination to Probabilities—Personality of the Examiner," etc. In place of Mr. Choate's cross-examination of Russell Sage in the third trial, the present volume contains the far more amusing and instructive cross-examination of the second trial.

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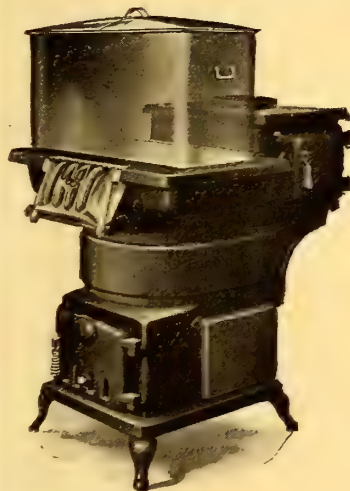
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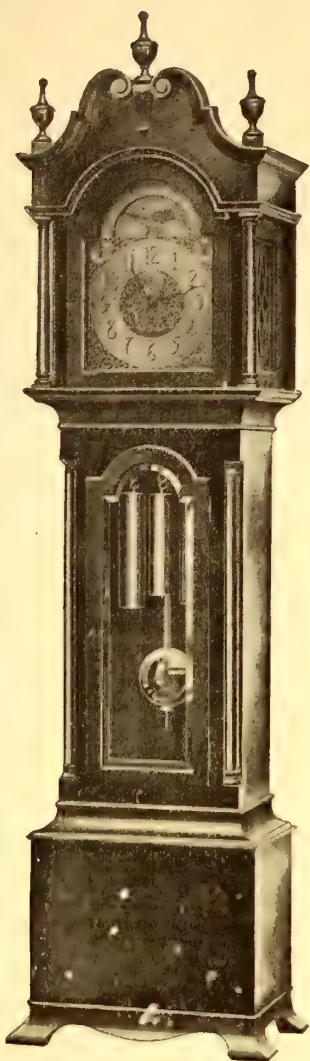


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JULY, 1911
Vol. VIII., No. 7

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Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydras; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

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ONE by one industries of various kinds, about which for centuries there has clung the atmosphere of romance, are losing their glamor, by reason of the advancement of practical science. For instance, pearl diving. The era of naked divers exposed to peril from sharks has passed away; modern progress equips the pearler with a suit of India rubber, copper breastplate, with leaden weights back and front; helmet, glass paneled and with telephonic attachments; air pipes, life lines and a submarine searchlight. Thus furnished forth, the pearl diver may spend six or eight hours at the bottom of the sea, whereas in other times three minutes made a record.

Although pearls are found in nearly all molluscs and even in univalves, like the Australian halotis, a kind of barnacle, true pearls are produced only by the pearl oyster or mother of pearl shell. The latter is really the diver's bread and butter. The shells are nearly as large as a dinner plate and weigh two pounds when cleaned. They fetch from \$500 to \$750 a ton.

The ancient fisheries were chiefly in the Indian Ocean and Persian Gulf, but nowadays the best pearls come from Ceylon and from Australian waters, especially Torres Straits. Pearl fishing in Ceylon is a government monopoly. In March the fleet starts for the pearling grounds, each vessel with twenty or thirty divers and their assistants. But the headquarters of pearling are to be found in the desolate country extending from Exmouth Gulf to King Sound, in Western Australia.

Chinese and Malays as well as tribes of native blacks are there to-day, but the old nude divers, the reign of terror and piracy where a large haul was made, these and similar conditions have passed away, giving place to fleets of luggers carrying modern diving outfits and representatives of capitalists in the person of the master pearlers. Here is 600 miles of coast line, with perhaps 3,000 hardy adventurers engaged in the pearl trade.

There are some thousands of Japanese, Manilamen, Malays, and men of other races, acting chiefly as crews for the vessels. The vessels are schooner rigged and from seven to fourteen tons burden. Each carries a master diver and a crew of four, one of whom is the diver's assistant and works the air pumps.

The shells are found on ledges about ninety feet down in the sea, but they are far more plentiful at greater depths. Fortune awaits the inventor of a diving apparatus that will enable the pearler to work in comfort a hundred fathoms down.

A good day's work is anything more than two hundred pairs of shells. The business is absolutely speculative. One diver may gather ton after ton of shells without securing anything of greater value than a few seed pearls, while another may take a fortune out of a day's gathering.

The most famous pearl discovered in Australia of late years is known as the Southern Cross. It consists of a cluster of nine pearls in the shape of a cross. This freak of nature was picked up at low water on the Lacipede Island by a beachcomber, who, after burying it for some time for superstitious reasons, sold it for \$50. It afterwards brought \$50,000.

The worst enemy the Australian pearl divers have are the storms that annually visit the coast. As to sharks, they rarely attack a diver in modern dress, and he can always frighten them off by letting a few air bubbles out of his dress. Other enemies



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To the Real Owners of Niagara Falls

YOUR property is in danger. You must act quickly if you would save for yourselves and the Nation one of the most magnificent pieces of scenery in the world—Niagara Falls—which draws each year more than a million visitors—a great army of travelers who spend Twenty-five Millions of dollars there and on the way. This vast income will increase if the Falls remain as a great spectacle. **Would it be good business to destroy the source of such an income?**

Here Is the Danger

The Falls have "unquestionably been seriously injured by the diversions already made" by the Power Companies, to run their giant turbines. This is the formal report of the Chief of Engineers of the United States Army, after two years of accurate measurements and records. And he reports that "additional diversions, now under way, will add to the damage." The American Fall is very thin in places. The Bridal Veil is less in volume. Hundreds of feet on the Horseshoe Fall are barely covered. Portions of the Rapids are much less impressive.

The Power Companies, seeing an opportunity to increase their income more than Five Millions of dollars annually, are fighting the reenactment of the Burton Bill, **which expires June 29, 1911.** They want now the maximum limit of water allowed under our Waterways Treaty with Canada. This would mean an **INCREASED DRAIN** on the Falls of **SIXTY-EIGHT PER CENT** beyond the amount of water now taken by these corporations. They also want the limit removed on the transmission of power from Canada.

It Is to Your Interest

to have Mr. Burton's Senate Joint Resolution 3 passed **without amendment**, thereby preventing the passage of measures that would benefit only a few private corporations at the expense and the shame of the whole American people.

The Burton Bill, passed in 1906 and extended in 1909, was **more than fair** to the Power Companies. It gave them all the water they could then use, or were preparing to use. It did not stop any going enterprise. The Burton Resolution will continue permanently these fair, just, and protective provisions of the original Burton Bill.

Will You Help

to save this great National Asset from the Aggressions of Forty Millions of power-company capital? Write or wire your Senators or Representatives in Congress. **DO IT TODAY.** Write for further facts to the American Civic Association, which first called President Roosevelt's attention to the National ownership of Niagara. Send us copies of the replies you get. We are fighting for your rights and we need your assistance. Protect your own interests by using a dozen postage stamps. Tell your friends.

AMERICAN CIVIC ASSOCIATION

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Washington, D. C.

are the sea snakes, the smaller octopi, the stingray and the blowfish.

After a day's take of shell has been conveyed ashore the shell opener begins work at once. The pay of the men is \$30 a month, plus ten per cent on the value of the pearls found. Some idea of the magnitude of the industry may be obtained on learning that in one year five hundred and twenty luggers paid an annual five-dollar license to engage in the trade, and that they took many thousands of tons of pearl shell; while as to the pearls themselves, the customs duties in the pearl town of Broome exceeded \$5,000 a month.

The treasury authorities of Western Australia estimate that they receive at least \$100,000 a year in dues from the pearlers. Hardly a month passes without the discovery of pearls having a market value of from \$5,000 to \$15,000 each. A beautiful pink pear-shaped specimen weighing two hundred and six grains was found last season and sold for \$80,000.

Before setting, pearls are classified according to size on a setting board, and the delicate work of drilling a valuable specimen is invariably done by an old-fashioned hand apparatus. Moreover, no matter how valuable a set of pearls may be they are invariably strung on fine silk thread.

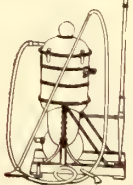
Inland pearl fishing forms no mean industry in this country. Although pearls have been gathered from the fresh water mussels of our country as far back as the time of the aborigines, yet the hunt for them did not become systematic and general until shortly after the middle of the last century. Since then nearly every stream east of the Rockies has been prospected in the search for these valuable parasites of the pearl mussel.

One of the finest pearls ever secured in the fresh waters of the United States was found in Notch Brook, near Paterson, New Jersey, in 1857. It weighed ninety-three grains. Subsequently it became known as the Queen pearl, and was sold for \$2,500 to the Empress Eugenie. Owing to the great increase in the value of pearls in recent years, it is now worth more than five times that amount.

Shortly after the year mentioned what was probably the largest pearl ever found in these waters was taken in the same brook.

A CATSKIN CARRIAGE ROBE

HAVE you ever seen a catskin carriage robe with the skins in their natural colors? If not, you would be as much surprised at its beauty as the writer was, when a young nephew who was visiting me from the country brought his robe out for admiration. It was really beautiful, but it seemed also remarkable as the handiwork of a boy not yet seventeen. He had bagged the cats of all the neighborhood, killed them and tanned the skins. But the lining was still more remarkable. It was of blanket-like material, and this boy had himself taken the wool as it came from the sheep, washed it, dyed it, spun it into yarn, put the yarn on a loom, and had woven it into the cloth, thus alone completing the production of the cloth lining. His father had a small woolen mill driven by a water wheel and covering a floor space of probably 40x60. In these days, when the large factories specialize labor so that different persons perform the different steps in the production of a cloth, it seemed remarkable that the boy should have, single handed, converted the raw material into the beautiful finished article.



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NO WELL-GROUNDED COMPLAINT AGAINST THE FARMER

AFTER presenting many details with regard to the increase of prices on farm products between farmer and consumer, the Secretary of Agriculture declares that "the conclusion is inevitable that the consumer has no well-grounded complaint against the farmer for the prices that he pays. The farmer supplies the capital for production and takes the risk of his losses; his crops are at the mercy of drought, and flood, and heat, and frost, to say nothing of noxious insects and blighting diseases. He supplies hard, exacting, unremitting labor. A degree and range of information and intelligence are demanded by agriculture which are hardly equaled in any other occupation. Then there is the risk of overproduction and disastrously low prices. From beginning to end the farmer must steer dexterously to escape perils to his profits, and indeed to his capital, on every hand. At last the products are started on their way to the consumer. The railroad, generally speaking, adds a percentage of increase to the farmer's prices that is not large. After delivery by the railroad the products are stored a short time, are measured into the various retail quantities, more or less small, and the dealers are rid of them as soon as possible. The dealers have risks that are practically small, except credit sales, and such risks as grow out of their trying to do an amount of business which is small as compared with their number."

In continuation of this subject, the Secretary of Agriculture suggests that the problem of high prices is one for treatment by the consumer. "Why do not consumers buy directly from the farmers?" he asks. "A distribution of farm products in this simple way has already begun in England where co-operative organizations of farmers are selling by direct consignment to co-operative organizations of consumers in cities. Farmers' co-operative selling associations are numerous in this country, but co-operative buying associations among the people of cities and towns are few. Aside from buying associations maintained by farmers, hardly any exist in this country. It is apparent, therefore, that the consumer has much to do to work out his own salvation with regard to the prices that he pays. Potatoes were selling last spring in some places where there had been overproduction for 20 cents and in some places for even 9 cents per bushel at the farm, while at the same time city consumers in the East were paying 50 to 75 cents per bushel, although there was nothing to prevent them from combining to buy a carload or more of potatoes directly from the grower and for direct delivery."

NEW FORAGE CROPS

Many new forage crops from all parts of the world are being tested every year. Only a few of these possess sufficient value to compete with the crops now grown. Four such plants, however, recently introduced, have given such admirable results that there can be little question that they will prove of great value. Experience of the last three years has shown that Rhodes grass is especially adapted to the Gulf coast region. In southern Florida three cuttings have been made during the winter months and as many as six during the entire season. This grass has fine upright stems and good seed habits and should be extensively cultivated in this region.



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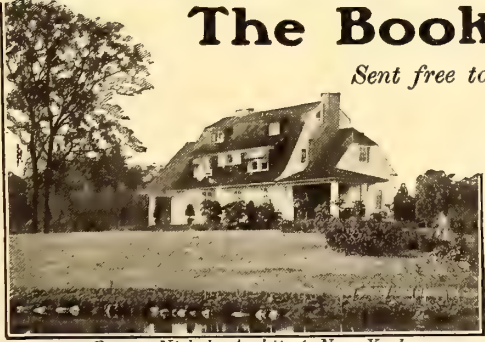
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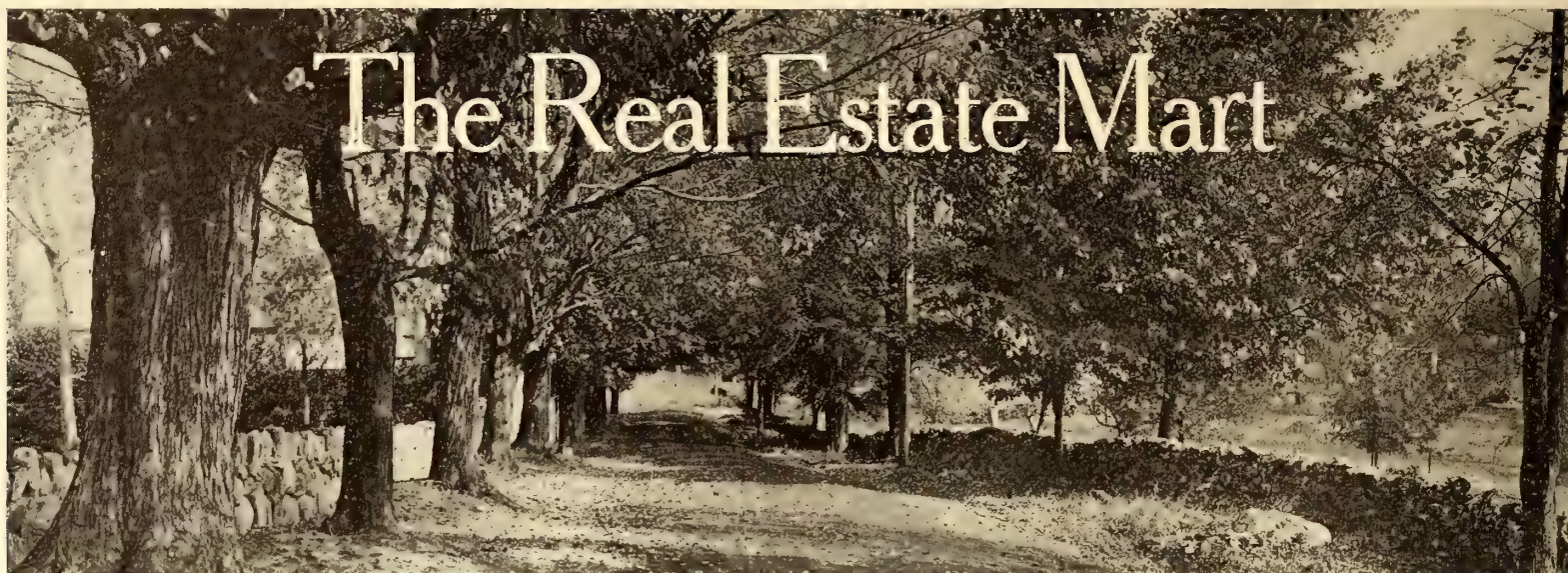
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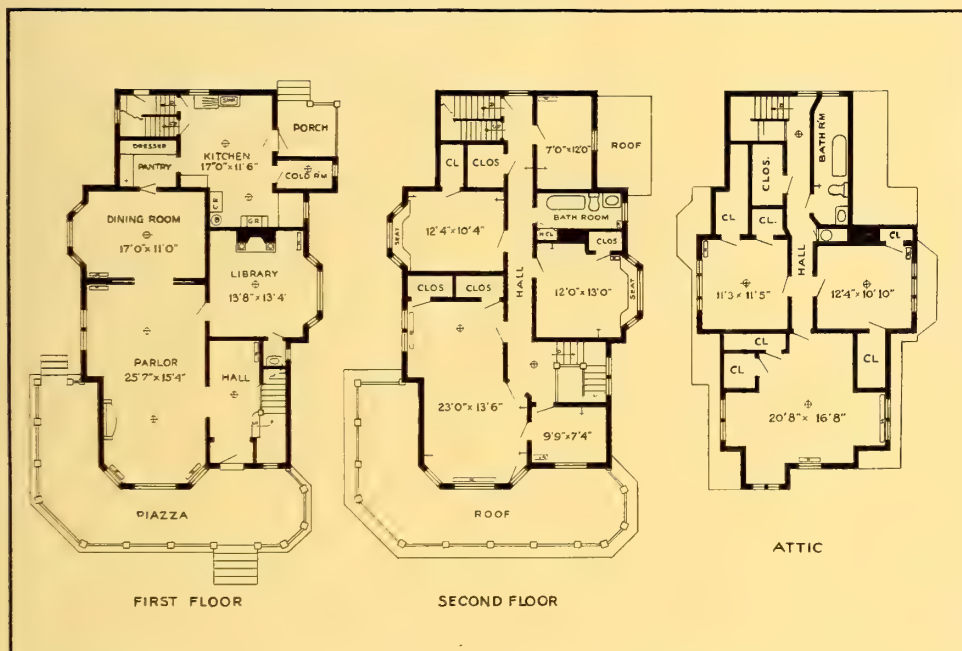
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WOOD fibre has come into general use as a substitute for the cotton rags and other materials formerly employed in the making of paper. This fiber is called pulp, having taken the name which used to be given to the cotton and linen fiber when it had been prepared by maceration for spreading into sheets of paper. The wood fiber used to be prepared, not so many years ago, by a wholly mechanical process. The blocks of wood were ground or rasped off by action applied obliquely to the grain. The length of fiber depended partly upon the angle at which the block was held during this process.

In place of the old mode of obtaining wood pulp, chemical treatment of the wood is now in vogue. As formerly, the bark is stripped from the wood to secure fibers of uniform quality. All discolored or decayed parts are removed for the same reason. Then the wood is cut across the grain into thin chips, which are carried to the top of the mill and dropped into large drums about fourteen feet in diameter and twenty-four feet long.

The drums are made strong enough to bear a pressure of from seventy-five to two hundred pounds to the square inch. When a drum is packed full of chips it is filled with sulphuric acid and other chemicals. The wood is converted into a cotton-like product, which is then pressed dry and mashed. It is next mixed with water, rolled flat, and cut into shape for bundling. In this condition it is said to be made up of sixty per cent. moisture and forty per cent. fiber. In this shape it goes to the paper mill. Generally speaking, it is found better to pay the freight on the contained water than to cheapen the cost of transportation by pressing out the water, for the pulp packs hard when it is dry.

One cord of spruce wood is estimated to make twelve hundred pounds of dry fiber.

THE ASIATIC BRICK

WE SHOULD hardly expect to learn much of the arts of civilized life from the tribes of Central Asia, yet, it seems, they make better brick than we turn out. The barbarians employ the same material that we do, and, curiously enough, the thing that imparts superiority to their process of brick making is one of the most powerful agents of western civilization—steam.

When the Asiatics have baked their bricks for three days, the opening of the oven is closed with felt which is kept wet, so that the bricks still intensely heated are enveloped in steam.

The process causes a remarkable change in the character of the bricks. From red they turn gray, and at the same time acquire a remarkable degree of toughness and hardness. Although porous, they give out a sound, when struck, like that of clink stone; and they are said to resist the effects of weather much better than do the bricks of western make.

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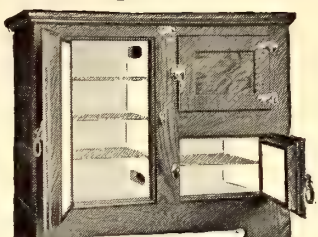
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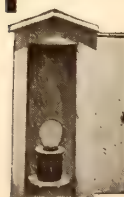
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21 Farrar Street, Lynn, Mass.

THE SHAPES OF EGGS

THERE was recently had before the Zoological Society of London a mathematical discussion of the differences in the shapes of eggs. A few eggs, like those of the owl and the tortoise, are spherical, or nearly so; a few, like the grebe's or the cormorant's, are elliptical, with symmetrical ends; the great majority, like the hen's, are ovoid, or blunter at one end than the other. The hen's egg is always laid blunt end foremost. Eggs that are most unsymmetrical are also eggs of large size relatively to the parent bird. The yolks of eggs are spherical, whatever the form of the entire egg may be. This has been shown to be due to their being enclosed in a fluid, the "white," which makes the pressure everywhere on the surface of the yolk practically constant.

FARM ENGINES

THE agricultural commission of the French Automobile Club holds a course every six years, and gives prizes to cultivators who make the best use of gasoline motors for farm work. It is especially desired to encourage small plants which are mounted by the farmer himself and show an ingenious use of the motors. M. Yvonnet-Thovareck received the first prize for a very well designed plant where a 1½ horsepower motor can drive no less than nine farm devices, such as straw cutter, root cutter, crusher, grindstone, circular saw, well pump, besides various dairy machines. All these are in the same building and are belted to different counter-shafts. This gives him \$600 yearly saving. M. Thiebaut uses a second-hand tricycle motor for a thresher and other devices. For plants of this kind the commission awarded sixteen medals or cash prizes.

THE ART OF FELLING CHIMNEYS

AN interesting method of felling lofty chimneys is practiced in England. The originator of this method, a Manchester man, is credited with having felled, without accident, more than 100 chimneys which for one reason or another had become useless. Some of these were from 200 to 250 feet in height. The method consists in removing the stones or brick near the foot of the chimney and substituting an underpinning of wood, which is afterwards set on fire. About two-thirds of the area of the base is removed up to a height of 5 or 6 feet, so that most of the weight rests upon the underpinning. Experience has shown that when the work is properly done the chimney leans slightly toward the side where the underpinning is inserted, and when a slight crack appears in the masonry on the opposite side the time has come for the fire to be applied. As the chimney falls it partially telescopes in consequence of the shock produced by dropping into the void left by the burned timbers.

ARTIFICIAL FURS

A NEW process for producing artificial furs is described in La Nature. The raw pieces of pelt are frozen, and the skin carefully shaved off, thawed and sent to the tanneries to be made into leather. The frozen fur which remains is allowed to thaw slightly at the bottom, so that a small part of the hair is freed from ice. This thawed portion is then covered with a solution of rubber, which is allowed to set. The result is that large seamless pieces of fur are obtained much cheaper than those which come with the natural skin.



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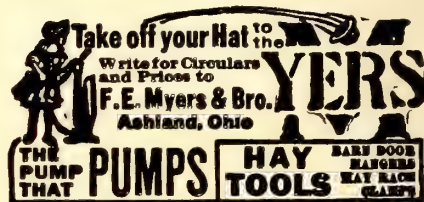
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SPECIAL FEATURE ISSUES OF AMERICAN HOMES AND GARDENS

THE policy of the publishers of AMERICAN HOMES AND GARDENS for the coming year is to make a special feature each month of one particular article prepared by a well-known author and to be properly illustrated. By this means we shall be able to accomplish a larger work and to render greater service to our readers than can be obtained in any other way. In carrying out this plan it is the intention not to disturb the regular course of our usual method of publication more than is indicated in the present announcement.

AUGUST NUMBER

THE subject which is to be specialized in the August issue of AMERICAN HOMES AND GARDENS is "The Management of the Water Supply for the Country House." This is a very timely subject. It is one that will appeal to those who are interested in the attainment of an adequate supply of good water for their country homes and there is none more important or essential to be considered in the selection of a site for the building of a country house. John F. Springer has prepared an excellent paper on the subject, which is profusely illustrated by photographic views, showing the various systems, from wind-mill power up to the automatic water supply. There is no question but that the various systems presented in this paper are within the reach of any one who owns or contemplates owning a place in the country which may be situated outside of the limit usually supplied by local water companies. It is a subject worth the information given, and Mr. Springer tells it in a very practical and readable way, and shows by illustrations how the means may be easily and properly supplied to country dwellings in different localities and conditions of supply.

AMERICAN HOMES AND GARDENS

THE three salient points which the reader should consider before subscribing to a magazine are the merits of the book, its utility to him personally and the price of the publication. AMERICAN HOMES AND GARDENS occupies a position in the magazine field which is unique; unique, for the reason that it stands on its own merits and not on the methods pursued by the publishers of other magazines of its class. AMERICAN HOMES AND GARDENS is a home paper. Its pages are dedicated to the home, its decoration, its furnishing, its equipment, and to the planning and beautifying of the home grounds. A comparison of its pages with those of other magazines that make an attempt to follow its example, are too obvious to merit more comment. The editor of one of the leading Western magazines wrote to the publishers, stating that he "considered the Annual Small House Number the finest issue of

its kind that he had ever seen." It is certainly gratifying to receive this kind of an endorsement from so experienced an authority, and the publishers were pleased to learn of additional proof that it is fulfilling the demand for the class of literature and of art that is presented in its pages.

AMERICAN HOMES AND GARDENS stands for the best in home-building. Every page contains a suggestion for the home. It teaches the beauty of building the house; it expresses the charm and the scope of developing the home grounds; it gives helpful advice as to some of the best methods to use in decorating and furnishing the interior of the home; it presents articles of a more intimate character such as the arrangement of the table and the preparation of foods; all of which are prepared by the best expert writers on the various subjects, which are presented in an intelligent and readable manner.

THE CARE OF MILK IN THE HOME

THE subject of the production and care of milk is so prominently before the public at the present time that we believe the publication of a paper on the subject will be of interest to our readers and will be helpful in bringing about better conditions for the care of milk after delivery by the dealer.

The article which is presented in the pages of this issue, gives the detailed information on the proper care of milk which is one of the most perishable and the most valuable foods.

THE BOY GARDENERS

ALL over the land there is a new and keen interest in gardening. Many schools have made gardening a part of the regular school course, the object being to stimulate and aid childrens' home gardens and, incidentally, the care and improvement of the home yards.

To plant a garden is a natural impulse with children. They take to it voluntarily and with enthusiasm.

Just to handle the cool, clean earth, and sow little seeds is to have the joy of seeing and touching real things. The appearance of the first leaf of the tiny shoots in our school gardens is a time of rejoicing.

Those of an inquiring mind are impelled to take the plants out of the earth now and then, to see how they are getting on.

Garden training is a good thing for a boy, as it is a most important factor in the development of character, for with the proper training the child raises with a crop of flowers and vegetables, a harvest of patience, perseverance, unselfishness and bodily strength.

I believe that school gardens should be connected with every elementary school wherever practical, so as to make, in a social way, a closer relationship between the school and the home.

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A BOOK YOU SHOULD HAVE

GET this book before you plan your bathroom. It pictures and describes 24 model bathroom interiors, ranging in cost from \$74 to \$3,000. Each illustration shows clearly every detail of equipment. Accompanying is a description of each separate fixture shown, with the price.

An important feature of "Modern Plumbing" is an authoritative article on Imperial and Vitreous Porcelain and Enameled Iron plumbing fixtures. It shows where and how each should be used to secure the most satisfactory results.

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FIG TREES IN THE SOUTH

EVERY home in the South, however small, should have one or more fig trees, for they are so easily grown, and produce three abundant crops each year.

To protect from frost always plant on a sunny exposure and enrich the soil well, for, although they do very well without care, they prosper by cultivation. They are easily started from cuttings planted late in the fall, and remember that they will bear the second year if the central bud be pinched off early in the second spring.

The little trees produce three crops every summer, the first being among the earliest fruits to ripen, and there is never a time in the summer when they are wholly without fruit. The crop of July and August is the largest, while the last, gathered late in the fall, when fresh fruits are scarce, is the sweetest of all, though the figs are smaller in size.

From five bushy trees in her back yard a lady sold \$50.00 worth last year, besides having all that she needed for preserving and eating in the home.

The fruit cannot well be shipped in its fresh state, but is most easily preserved or dried and is well worth cultivating even on a small scale.

A GARDEN SLATE

A GARDEN slate is one of the greatest joys to children when they have outgrown the sand-pile, and it is such an easy thing to put in. For this procure a large piece of slate, any size from two to five feet square, from the stone-cutter's establishment. Select a pretty, shady part of the lawn and embed it in the grass. It looks pretty with the grass growing close around its edges, and the children invariably gather about it, not only using it for a tally sheet in their various games, but drawing upon it all manner of pictures.

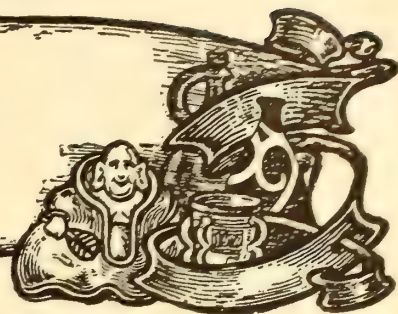
Let them keep their box of crayons in some handy outdoor nook, and in it several erasers and colored crayons as well as white. For out under the blue sky, with Nature for a teacher, the child's fancy will find expression in painting its sketches.

THE PAWPAW

THE pawpaw is good for a back door garden, or anywhere that you throw slops or water; just where you would have a dahlia bed. The cranberry and elder fill the odd corners, and you can let the barberry take care of itself—which it will surely do. The mulberry is long-lived, hearty, and likes the fat soils of swales and old gardens. The barberry is sometimes used for hedges, but this is not advisable, for the tree becomes bushy, and displays a tendency to die out in some of its shoots every year. Unless constantly watched and trimmed, it becomes unsightly. The cranberry or viburnum is brittle, and sometimes breaks in winter storms. The persimmon and mulberry alone require much room; each tree about twenty feet in diameter of space. Every one of the six affords bird food, which to the country home maker is no small item. Our bird allies are to be provided for as much as our cows and horses; and this one will learn on getting anything like an ideal country home.



American Homes and Gardens for August



The Management of the Water Supply for the Country House

The special article for this issue will be a paper on the management of the water supply for the country house, by John F. Springer. It is an excellent and important contribution to the subject, and is well illustrated with views showing the various systems used in supplying water to the country house.

The first thing that engages the attention of the country and the suburban resident, in connection with the water supply, is the water itself, and it is peculiarly a timely subject at present, and is one that ought to be of popular interest to both the suburban and the country dweller.

Home-Made Summer Furniture

There is no doubt but that any man or woman with a kit of tools of small cost can easily make the subjects which are illustrated in the paper on Home-Made Summer Furniture, by Mary Edith Griswold. The article tells in a very simply way how these may be accomplished, and the photographic views presented in the engravings show the results. It is a subject of seasonal value, and will be of interest to those who desire to secure convenient accessories to the summer home without the outlay of much money.

Two Types of Stucco Houses

There is no class of house that is of greater interest than the stucco, and the two which form the subject of this paper are particularly interesting for the reason that they represent two distinct styles, built in two different parts of the country. Burr Bartram has described both of the houses in a most interesting way, giving such information as will be helpful to the prospective home-builder.

How to Arrange Porch Trays

Breaking away from non-essentials, novelty and dainty serving forms the secret of success for the home caterer in hot weather. Phebe Westcott Humphreys tells in her paper how decorative trays of spacious dimensions may be secured at a little cost, and how to arrange them for use at a porch entertainment. The article tells how to arrange the trays and what to place upon them, and the engravings show how it may be attained.

A Notable Home

A house of notable importance is the one built for George D. Barron, Esq., at Rye, N. Y., which illustrates an excellent paper by Barr Ferree, who describes the house in the most intimate manner, pointing out the essential features which go to make up so great an estate as the one which forms the subject for this article. It is a house worth knowing about; one that will be of interest to those who desire to learn something of a dwelling and garden of this type.

Willow Furniture

There is no more interesting feature for the summer home than the use of willow furniture. It is adaptable for the porch or for the indoor living-rooms. Willow chairs of the kind shown are excellent for bedroom use, as well as for the living-room. The article shows designs for dining tables, tea tables, sideboards, book-cases, settles and chairs, suitable for any part of the house. Vernon Powers has prepared a very instructive paper on this subject.

A Model Settlement of Workingmen's Houses

The houses illustrated in this paper represent a small group of dwellings built in the vicinity of Chicago for the use of workingmen. The interesting feature of the illustrations of these little dwellings is to show how it is possible to build a number of houses after one plan, and yet, by changing the kind of materials, a greater value is added to the general aspect of a suburban street. These houses are of low cost, and will be of interest to those who desire a home for a small sum of money. They are well described by Paul Thurston.

Rustic Furniture for the Garden

The fact that the majority of people fill their houses with seats and leave their gardens unfurnished is a puzzling one, for the reason that it is generally conceded that the garden is the pleasantest place in which to sit and rest. Helen Lukens Gaut writes interestingly on the subject, and shows by illustration the various forms of furniture which may be employed in a garden, and which will be helpful to those who would like to improve the beauty and comfort of their garden spot.

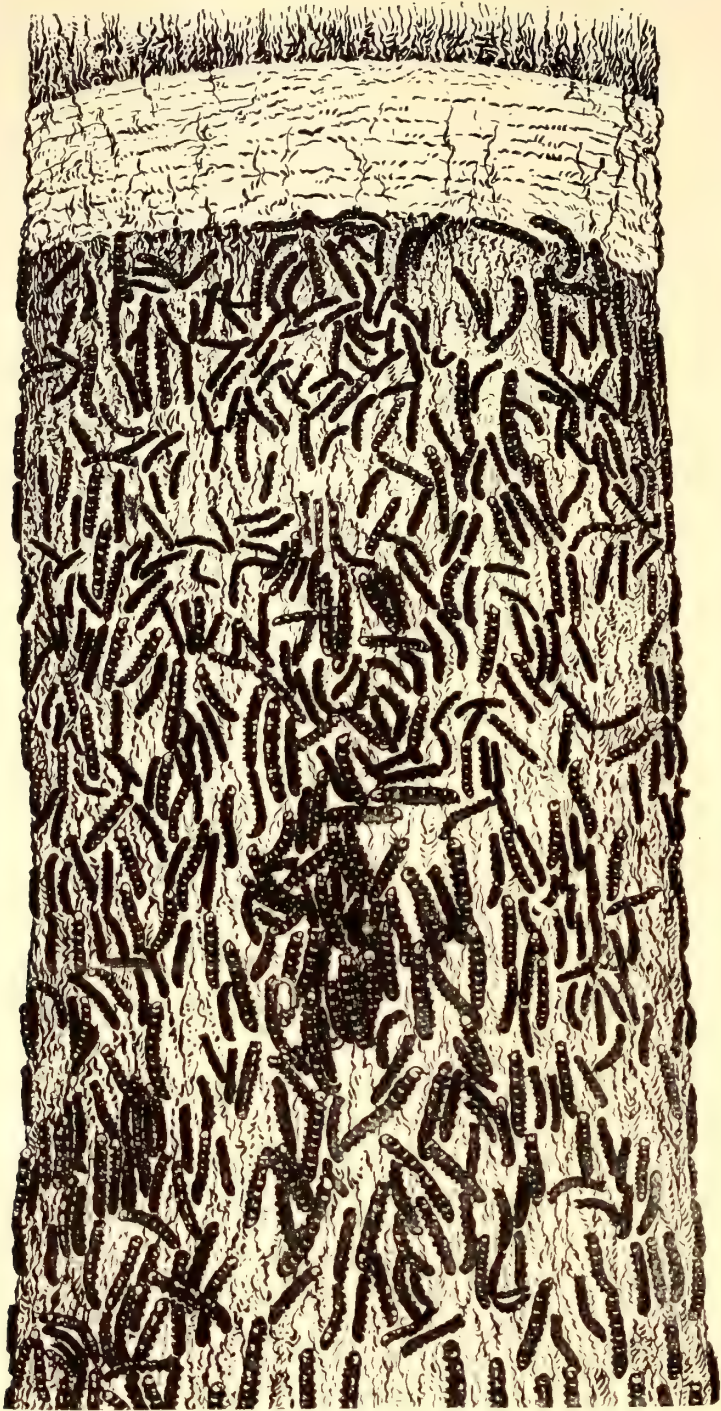
The Counterfeiting of Art Objects

The love of curios and antiques, which has become so widespread at the present day, has given rise to a new industry, thoroughly typical of modern technical perfection. This is the science of preparing highly artistic counterfeit reproductions, a skill which, under the impetus of most thriving business, has reached the highest level of modern attainment. Jacques Boyer has written an excellent paper on the subject, which is profusely illustrated, and which shows how the various works of art can be duplicated by the counterfeit reproductions. This article will be of peculiar interest to the collector, and will be a guard against being imposed upon when selecting curios or ancient art remains.

The Value of Hedges for Home Grounds

There are not many places in the suburban or country village but what are benefitted by a length of hedge in some part of the premises. In the ordinary home grounds of a few rods, or a few acres in extent, more or less space is devoted to a vegetable garden, which should be hedged. Ida D. Bennett shows by illustration how it is possible to improve and beautify the home grounds.

PESTS AND PARASITES



GYPSY-MOTH LARVAE PREVENTED FROM ASCENDING THE TREE BY A BAND OF TREE TANGLEFOOT.

This is one of the efficient means of control and especially for the protection of trees adjacent to infested territory.

(This picture and comment reproduced by courtesy of the "National Geographic Magazine," Washington, D. C. Copyright, 1911.)

An article in the April number of the "National Geographic Magazine," of Washington, D. C., entitled "Pests and Parasites," gives startling figures on the damage insect pests cause to trees and plants. It urges the necessity of national inspection of all imported plants and trees. The Gypsy and Brown-tail moths imported into Massachusetts have cost that State many millions of dollars and killed countless trees which it will take generations to replace. These pests are spreading all over New England and Northern New York, and there is great danger of their over-spreading the entire country.

The article contains several photographs of actual conditions, illustrating the best means of control, one of which we reproduce above, showing a mass of caterpillars crowded below a band of Tree Tanglefoot, which effectually prevents their ascending the tree. They will soon starve below the Tree Tanglefoot, being unable to reach the leaves—their natural food. This banding compound, Tree Tanglefoot, is especially effective against the moths named and also Tussock moths, which greatly injure shade trees in all the States bordering on the Great Lakes.

One application of Tree Tanglefoot is sufficient for the season, as it will remain sticky about three months fully exposed to all weather conditions; ten to twenty times as long as any other known substance.

Tree Tanglefoot is now practically the only banding compound used, its superior lasting qualities having made it universally preferred.

Its advantages over bands of burlap or cotton batting are, that it gives absolute protection where other bands give only partial protection and require daily inspection, and, in the case of burlaps especially, the killing of caterpillars which have congregated below it—a most disgusting task.

It also has a great advantage over spraying, in that, being non-poisonous, neither the trees themselves nor the birds which may eat of their berries, fruits or seeds, are poisoned. Birds are an important factor in destroying injurious insects.

It is now believed by some horticultural and entomological authorities that continuous spraying of trees results in their being gradually poisoned, the poison being found in the wood, the leaves and the fruit, apparently absorbed by the sap and carried to all parts of the tree.

In the hands of the amateur, Tree Tanglefoot is the safe preventive, as spraying must be done by experts, else immediate and serious injury may result.

Tree Tanglefoot is put up in one, three, ten and twenty pound cans, ready for use. It is easily applied with a small wooden paddle or putty knife. Full directions appear on each can. The price is 24c to 30c per pound. Each pound will make about nine lineal feet of band.

Tree Tanglefoot is made by The O. & W. Thum Company of Grand Rapids, Mich., the manufacturers of Tanglefoot fly paper, which is used in every village and hamlet in the United States and Canada, and has also an extensive sale in every civilized country in the world, having been the standard in quality for 25 years. Tree Tanglefoot is as much superior to all other tree banding compounds as Tanglefoot fly paper to all other fly papers. In case local seed dealers or druggists have not yet a supply of Tree Tanglefoot, this can be obtained directly from the manufacturers.

Government, State, city and village authorities now use 80 to 90 per cent of the Tree Tanglefoot manufactured, but its use by private individuals to care for their trees is increasing rapidly because it affords protection for the least cost and is the safest and simplest remedy against Gypsy, Brown-tail and Tussock moth caterpillars.

A YARD ORNAMENT

A QUICKLY-GROWN, exceedingly artistic ornament for the back or side yard may be made by putting into the ground a dead tree about six or seven feet high and planting about its roots moon vine and morning glory seeds. These spring up very rapidly; one blooms in the morning and the other in the afternoon, and if the supporting tree be bushy, the vines will festoon themselves over it in the most graceful fashion. It may be placed as a shade before a too-sunny window or made to screen some unsightly object. Better still, it may be moved about the grounds from year to year just as desired.

SOOT AS A FERTILIZER

SOOT taken from either wood or soft coal stoves is the best known fertilizer as it contains many of the elements necessary to plant growth. This was told me some years ago by a landscape gardener, and my experience has proven it, especially in the rose garden.

To get full use of it, dig a hole at the roots of the bush, put in one or two shovelfuls, mix a little soil with it, and then cover with more earth to keep the wind from blowing it away. Water the bush thoroughly, and the good work begins. It gives a richness to the coloring of the rose and deepens the green of the foliage, while the stems grow decidedly longer. Use it about potted palms and ferns in the same way.

HERDING CATTLE BY AEROPLANE

THE uses of the aeroplane are becoming more numerous every day, but novel indeed is the use to which his Blériot monoplane was put by M. René Simon at Houston, Texas, on the 27th ultimo, the opening day of the engagement there of the international aviators. M. Simon flew out over the plains, and rounded up a large number of steers by circling above them and swooping down upon them. When he had got the herd together, he succeeded in driving them right up to the fence of the aviation field by employing similar tactics. The cowboys looked on in amazement, and upon his alighting, they thanked Simon for having so cleverly and expeditiously herded the cattle. The following day, at the Houston meet, M. Roland Garros ascended to a height of 7,000 feet, and was lost in the clouds for fifteen minutes. M. Simon flew over the spectators in the grand stand only five or six feet above them—so close indeed, that the hats of many were blown off.

FRENCH BUTTERFLY FARMS

THERE are in France butterfly farms, the object of the farmers being to rear rare genera of the Bombycidae, the silkworm family. By crossing, some new varieties have been obtained, and these are much sought after by museums of natural history.

Endeavors are also being made in France to acclimate species of silkworms indigenous to other countries. The farms contain oaks, ailanthus trees, pines, plum trees, castor oil plants, and other plants, the leaves of which serve as food for the caterpillars. Cocoons are hatched on branches protected by gauze, and, for the sake of uniform temperature, the insects are often kept in a room until after the first molting, when they are placed on bushes in the open air, and protected from birds by coverings of muslin or tulle.



AMERICAN HOMES AND GARDENS



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American Homes and Gardens for August.

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A peaceful charm of canal travel produces an indelible memory picture, delightful to recall

HOMES AND GARDENS



Volume VIII

July, 1911

Number 7

Houseboat Vacations

Where Small Cost, Merry Hours and Fine Health Go Hand in Hand

By Phebe Westcott Humphreys



THE sort of houseboat to choose, where to locate—or better still, where to journey—are important questions when planning a houseboat vacation. It is usually customary to plan for a somewhat permanent location, having the floating home anchored in some picturesque and quiet spot, within reach of the men of the house who may make a daily journey to business from their summer home on the water. The fact that this anchored home need not of necessity prove permanently located will give considerable satisfaction even when there is little opportunity of taking

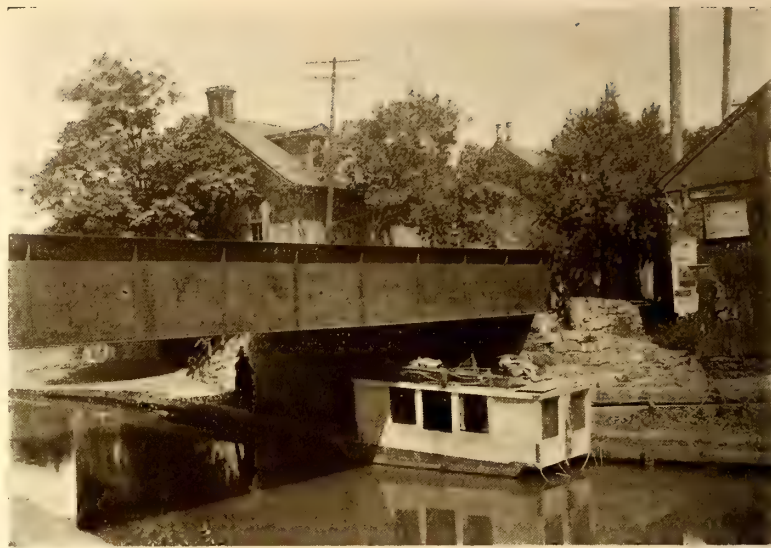
advantage of it. The Saturday afternoon half-holiday, and the quiet Sundays when the men may enjoy uninterrupted pleasure in the water craft have an added zest when a tug boat or motor boat pulls the comparatively stationary home out in midstream, and tows it down the river or creek to fresh allurements in scenic attractions and social recreation, with new neighbors "down shore." Still more delightful is the houseboat vacation in which the floating home changes its location daily, or keeps constantly on the move from day to day. This is for the party who must be content with a two or three week's vacation, and the entire company of congenial spirits, co-operating to bear the ex-



In the quiet, inspiring mountain sections, with tow-path boy and horse the only sign of life



It is interesting and instructive to visit a lock-keeper's home



Lodged for the night under the bridge

penses of the trip, may lay aside all thoughts of business for this limited period. There are many beautiful waterways between the Mississippi River and the Atlantic Ocean, that have been satisfactorily tested for houseboating; but nothing can quite compare with our beautiful, peaceful altogether-charming old canals for perfection in houseboating. During the present universal controversy on the question of inland waterways, there has been considerable indignation expressed over the abandoning of certain well-known canals, in various parts of the country; and a widespread demand that they shall be restored to their former usefulness, when they can compete with the railroads in the reduction of freight rates. But these picturesque canals, in their partial disuse, have served a very delightful purpose during recent years for houseboat travel, and they are simply ideal. With an experienced canal mule, or a horse accustomed to the towpath, the problem of motive power is quickly and inexpensively solved; the rental or the building of the houseboat will depend upon the permanency of the houseboat vacation. If a canal trip by houseboat is to be simply a



On the deck cushions under the canvas cover at noontide

special outing for a single vacation, it will be better to rent a small houseboat by the week, with the equine motive power hired for a corresponding period; and the provisions may be collected on the way, through the many towns and villages passed en route; with the fresh milk, vegetables and fruits bought directly from the farmers whose fertile acres border the canal. When the houseboat is to serve as a permanent vacation home, to be used year after year, it will be better to have it built to order, with the conveniences and makeshifts of its limited quarters endeared to the possessors by the personal supervision in their arrangement.

The houseboat on which we took our first canal vacation had a bit of interesting history that might serve as a practical lesson to many, in solving this outing problem. It was a zealous, consecrated minister, of a comparatively poor church, who owned the tiny but convenient floating home. Living all his life in a rented home, and changing occasionally when the abode had become homelike just as a fresh "call" to a distant church demanded another uprooting of home ties, it became the dearest wish of the



A fascinating stretch of canal through level country



Among the ever-changing allurements of the Lehigh Mountains

minister's family to possess at least a little vacation home that they could call their own. It seemed unwise to build or buy a country home, even if one could be secured within the limits of the preacher's salary, as the next call might take them too far from the country or the shore cottage to make it available for summer occupancy even during a short vacation. But a movable home, and better still, a floating home, came as an inspiration to the minister's wife, who was gifted with a special fund of home-making ingenuity. The romping children of the family demanded a healthful out-door vacation, free from restrictions of boarding house life in the country or at the shore; and the numbers of the flock of young people comprising the ministerial household made it imperative to provide a vacation outing where the economies as well as the pleasures of home life might be continued throughout the summer.

The expense involved in building and furnishing this

the owners. At a call from a suburban church to one in the city the vacation home was towed many miles down the river, and anchored in a picturesque nook sufficiently close to the new home to be within reach by trolley, and here the family would spend their midweek vacations throughout the summer, and return to the city home refreshed for Sunday duties.

The question of profit from this summer home came about in this wise: A friend of the minister, and an admirer of the ingeniousness of his helpmate, decided that such a real home on the water would be ideal if it might be rented for periods of two weeks or more, for a cruise up the canals or down the river. The rental contract called for special care of the boat and its furnishings, with thorough repairs for any possible damage, and the replacing of any articles broken or injured among the house-keeping utensils. With judicious renting to personal



There is a peculiar fascination in the unfrequented waterways

little houseboat has been a disputed question among the minister's friends—one which he has laughingly declined to answer, as he declares that it might seem like trifling with the truth, so inexpensively was the craft constructed. With the gift of an abandoned mud scow for the foundation, the personal supervision and work of the youthful minister in its construction, the enthusiastic co-operation of wife and children in providing, contriving and constructing the furnishings from walled-in bunks, wall-seat-storeroom couches and folding tables, the result was that both houseboat and furniture combined the perfection of usefulness and home-likeness with inexpensive construction.

For several years this convenient little floating home has served the ministerial household with the most delightful vacation outings at comparatively no expense. In fact, during several summers it was known to provide a profit for

friends, who would feel the responsibility of extra care of the floating home and all its belongings, it was found to be possible for one or two rentals of two weeks each, to pay the original cost of building and furnishing the houseboat, and, with brief future rentals (though reserved for personal use during the greater part of the summer), to stand entirely on the side of profit.

It is claimed that canal houseboating is especially hard on the houseboat, because of its rough usage in passing through the numerous locks. It must be remembered that many of the most fascinating stretches of canal pass through comparatively level sections of the country, where lock maneuvering will not be difficult, but even in the more troublesome locks, the houseboat can be taken through with scarcely a scratch, with careful management on the part of those in charge of the boat—for one must not expect the

lock-tender to show any extra interest in this matter.

Our party of nine, with the dainty little craft, traversed one of the most difficult and most alluring of the fascinating canals of the mountainous regions of Pennsylvania, without a mark on its painted walls. In ascending the Lehigh mountains, it was necessary for a distance of only a few miles to climb up the mountain sides through most amazing feats of engineering. In one instance there was a sheer "water jump" of twenty-four feet, and only those who have passed through the experience of making this rise in a tiny houseboat, can conceive of the real delights of a canal vacation therein. When we entered the peaceful looking lock at its lowest level, there seemed to be little cause for apprehension, even when the lower gates were securely closed and we found ourselves locked in a "well" twenty-four feet deep, with rough wooden walls on every side, and only the blue sky in view above. But when the water began surging in from the upper gate, to lift us gradually to the higher level, we found that there was actual cause for alarm; not only for the welfare of the freshly-painted walls of the dainty watercraft, but for the safety of its inmates. The surge and tumble and swell on the incoming waters would scarcely be felt by the great cumbersome canal boats resting solidly upon the rising flood, but with the light houseboat

We found one of the greatest delights of the canal trip in visiting points of interest and historic landmarks near the waterway. We tied the houseboat to a convenient tree near the canal and the horse within reach of convenient pasture, and the entire party then explored the surrounding country-side or climbed some fascinating mountain path for the view, or the traditions of its neighborhood. We also found that one of the most interesting features of social intercourse, in passing through the numerous locks in the canals that climb the mountains to the upper coal regions, consists in "visiting" at the homes of the lock-keepers. Those of you who have enjoyed a single vacation in canal houseboating, and have followed the usual custom of passing directly out upon the upper or the lower level—as the case may be—with only a nod or a word of greeting to the lonely lock-keeper and his wife, must try our plan on the next trip and pause for a little personal call at the lock house and garden. They are frequently lonely people at the majority of these locks, situated at long distances apart, along the more level stretches. They see only the usual canal boatmen and the mule drivers on the tow path, and the sight of a gala houseboat, with a jolly party of vacationists is delightful in itself, and doubly so when the party will stop to "visit."



Anchored at a canal town for supplies



The scenic attractions in the hill country

sitting well up on the water, there was tossing and swaying and plunging that threatened to beat the boat from side to side against the walls of the deep lock.

With each member of the party stationed at the various windows of the houseboat with a stout pole, and the two most daring members watching from the roof to view the dangers from every side, and to give directions, it was possible to pole the frail craft into the center of the lock throughout the filling of the well; and we sailed out on the open waters at the summit of the lock with the view of the magnificent mountain scenery that opened before our fascinated gaze, well repaying all the anxieties of our memorable climb.

While this particular lock of twenty-four feet is an exception in climbing the Lehigh mountains (the climbs being shorter and more frequent in going farther up the mountains by canal), houseboats have during recent years passed through still deeper locks in the canals of upper New York state, and yet there has never been the slightest cause for alarm when the party in charge has been expert in poling; for the only danger lies in the dashing of the lighter craft against the sides of the locks with the rapid inrush of waters that would not affect the canal boats for which the locks were constructed.

By the way, an interesting item for your notebooks will be the reminder that the best of home-made bread, cakes and pies, may frequently be obtained from the good housewife of the lock-house, at no greater cost than the baker's supply at the nearby village. And even the rough-and-ready appetites of the ever-hungry houseboaters can detect the difference in deliciousness. Besides the replenishing of food supplies, the wealth of legendary lore, and traditions of the mountain fastnesses and all the country-side surrounding the canal, may be secured at first hand from the lock-keepers, who have spent the greater portion of their lives at the locks.

With bathing suits and canoes included among the indispensables in houseboat paraphernalia, an early morning swim or vigorous paddling up the stream gave us ravenous appetites for the camp-fire breakfast each morning; for we invariably prepared the hearty breakfasts over a big blazing camp-fire on shore, instead of within the limited quarters of the houseboat kitchen. Then, after the generous morning feast, the horse was brought from a nearby stable, rented from a farmer for the night; and with the slight rental, apples and sweet corn and quantities of milk were frequently "thrown in" by generous farmers, who were delighted with the advent of a houseboat.



Making ready for the day's outing

Fishing at Barnegat Bay

New Jersey's Broad Expanse of Inland Water That Has Become the Playground of Many Cities Surrounding It

By William H. Ballou



BARNEGAT BAY, like a big park, lies in the center of a population of perhaps 8,000,000 people, within a radius of eighty miles. It invites, entices, fascinates and compels its devotees to seek it near sunrise and reluctantly leave it as the sun goes down in the great piney woods bordering it. The

blue of its water is drawn from that of the empyrean, and between is a golden yellow horizon that harmonizes with multi-shaded greens bordering the bay and the dazzling whites of the huge sand-dunes along the ocean front. Go where you will, no stretch of water more charms and delights, in its every mood of calm and anger. Even in the excitement created by playing weakfish, blue fish or striped bass, one is ever conscious of the gorgeous natural surroundings, the loud roar of the distant surf and the scent of the sea.

Among the thousands of devotees on the bay every form of passing away time may be observed. Some are hauling in fish, some awaiting a bite, some lunching under cabin decks or canopies, and many of the fair sex may be seen reading novels. Card parties are not infrequent on deck. At North Point Beach, at the entrance of the bay—or inlet, as it is termed—are gathered clam-bake parties, picnics, bathing groups, and the ever-

inevitable regulars casting far out into the surf for channel bass. On Mud Channel, Cooper's Slough and Cedar Creek oyster beds, will be found the largest group of catboats close together, with parties of weakfishers. During the day hundreds sail to Barnegat Bay for luncheon, to climb the stairs of the lighthouse (one of the highest), and to walk on its beautiful broad beach. Among the endless diversions, rifle-shooting at low tide has many devotees among both sexes. While not a few live in their own craft on the bay, the majority reach the angling grounds from hotels from five to twenty miles distant, on every form of sail and motor craft.



Fishing for weakfish off the inlet

Anglers may be divided into the regulars and irregulars. The regulars are those who pass much or all of their time during the season angling on the bay or streams, and who have their expense accounts cut according to their desires and financial conditions. Barnegat Bay is the popular summer pleasure ground, both of the classes and the masses, of the almost continuous city from New York to Philadelphia, and both named cities included. It is a water that may be reached in the early morning for a day's sport.

It is convenient for the large over-Sunday class. It is so placed that families may reside anywhere around it during or out of season, and to enable the men to run into the city

daily for business and out again at night. One class, which is constantly increasing, comprises the autoists who make runs to it, some merely for a shore dinner, others to remain over a few days, and others to stay for several weeks. Surrounding the bay are the hotel towns of Barnegat Bay, Harvey Cedars, Surf City, Beach Haven, Barnegat, Waretown, Forked River, Toms River, Island Heights, Seaside Park, Bayhead, etc. Of these, Forked River, Waretown and Barnegat Bay are the nerve centers of the angling, and have the largest accommodations of hotels and boats. Forked River, by reason of location, number of hotels and boats, draws the largest crowds during the summer, and lesser crowds during the remainder of the year. The round-trip fare from New York is \$3.45, and may be reached by four express trains daily or Sandy Hook boats, changing cars at Ealontown. The rates of board at the village hotels are \$2 per day and \$10 per week; at the big hotel on the bay, \$3 per day and upward. There are ample garage accommodations for regulars and parking places for motor machines of irregulars. Catboats may be rented at \$5 per day, and motor boats at from \$6 to \$8 per day. By combining parties, the boat expense may be reduced per person to fit the pocket of the individual. As a rule, the regulars own their own craft of every type and cost, while a few of them charter a captain and his boat for the period needed, ranging from a week to the entire season. Strangers are advised that the resorts which front both the ocean and the bay, on the great sand-dune between, include Barnegat City, Harvey Cedars, Surf City, High Point and Beach Haven, which, with Bayhead, Seaside Park and Island Heights, are reached by the Pennsylvania Central Railway. All the other resorts named are on the line of the Jersey Central Railroad, excepting Toms River, where both roads touch.

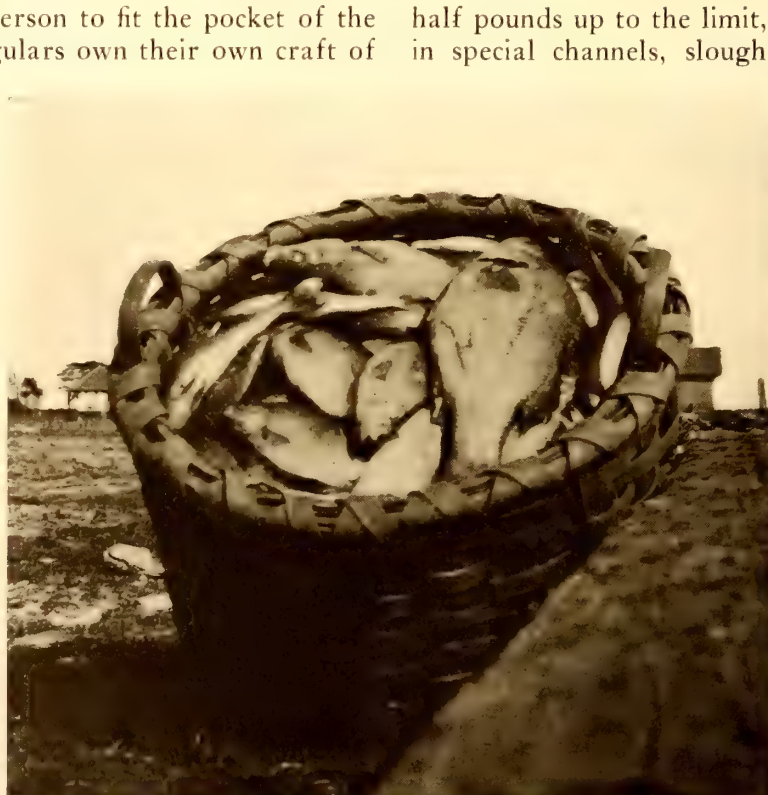
The majority of anglers go to Barnegat Bay for



Waiting patiently for a bite



I have him



A bouquet of fish

weakfishing, the most popular and least expensive, perhaps, of the several types. Weakfish are the only species always in evidence, and an average of 20,000 of them a day are caught. Weakfish require no special tackle, and may be taken by the small boy and his string and pin hook. They must, however, be angled with either shrimp or crabs for bait, which cost cold cash. Shrimp are obtained from regular baitmen at \$1 per pint, and shedder crabs are \$1 per dozen. In other words, the bait cost averages \$1 per day per individual. A glance at the hundreds of anglers scattered over the bay would reveal every form of tackle, from a hand-line or cheap bamboo pole to the most expensive rod and reel. Persons who intend to hire a cat or motor boat need take no tackle with them at all, as each boat is amply equipped with it. Weakfish are divided into school fish and tide runners. The former are small, averaging a pound in weight, caught with shrimp as fast as one can haul in. They run in big schools, and professional anglers regard them as a pest greater than crabs; but not so the general public, which goes out for fish and do not care about size, so long as they are plentiful. Tide runners are large, ranging from two and a half pounds up to the limit, and are caught, as a rule, only in special channels, sloughs, flats and holes. For these, shedder or soft crabs are used as bait. They are most sought after by professional anglers, and are generally taken with the better class of casting rods, reels and lines. Professionals prefer a catch of a few large ones to any number of school fish. Tide runners are captured mainly in Mud and Bock's Channels, and Cooper's and Horsefoot Sloughs, all connected and forming really one general ground for them, where the boats follow them about as they move from place to place, chasing their food supply. Some do not aspire to catch either of these classes, but spend all of their angling time trying to lure the few ocean weak-



Fly-fishing for pickerel



The pickerel has got him

fish in the bay, ranging from six to ten pounds each. These fellows go into the bay apparently for soft crabs, and are seldom taken except in the marine grass or along its edges on flats. To get them requires the strongest casting rod, a long hook baited with soft crab, tied on with thread. Those who angle for them tow out a skiff to the fishing grounds. The skiff is anchored in a channel adjoining the marine meadow, and casts are made both into the grass and along its edges. The angler is satisfied to get one of these giants in a day, but some have had the luck occasionally to land a dozen of them. Most of the day is monotonous, but all monotony is off when a big fellow takes hold. He will then show more tricks for getting away than all the other species of fish combined, besides having the special protection of weak gills, which easily tear apart, releasing the hook, and on account of which he is named weakfish.

Bluefish require only a trolling line on Barnegat Bay, trailed behind a cat boat or motor boat, which the captain supplies to each of his fares. They enter the bay only occasionally, usually on full moons. Their presence is known to the whole bay by the actions of the boats always in the inlet. Activity of boats there is visible all over the bay, and can only be caused by a school of bluefish entering with flood tide. Their presence far up in the channels in the bay is always detected in the mornings, if they come in on a night tide, by the boats going to the angling grounds. Bluefish always "break"—that is, cavort about in the water, jumping

out and throwing up white spray that may be seen at a distance. When boats are noted darting back and forth in a school, most of the anchored craft abandon their weak-fishing and hurry to the chase. "Chumming" for bluefish is not practiced in Barnegat Bay, as there are no menhaden boats there from which to obtain oil fish. For that reason bluefish chummers go to Great South Bay, on Long Island, when menhaden bait only is to be had. Several bushels of oil fish are taken on board, ground up in a machine, so that a stream of chum constantly runs overboard. Anglers sit on the rear of the boat and let their lines run with the tide carrying the chum, the hooks baited with cut-up menhaden. Great South Bay has no crabs, and Barnegat Bay no menhaden. The former freezes in winter to such a depth as to destroy the crab spawn. There are no, or few, menhaden to be had in Barnegat Bay, because there are no oil factories within a hundred miles of it to induce their capture.

The premier angling of Barnegat Bay is for striped bass, which few except the wealthy indulge in. This species in salt-water bays are caught only with blood worms, costing from \$1 to \$2 per hundred. The worms are threaded on a spinner hook and trolled behind a row boat, with rod and reel. Men of wealth get after them almost exclusively, having big motor or house boats, big sloop or schooner yachts. The striped bass are caught only in narrow, unnavigable and nearly closed-up channels, running through marine meadows, where the grass tops just show at low tide.



Casting for drum fish from the beach



A fourteen-foot folding canoe ready for use



Carrying a folding canoe set up in the water

Outing With a Portable Equipment

By A. William Masters



OUTING with portable equipment is annually growing more popular. With far less than the weight of an ordinary trunk, taken to a resort on vacation, one can paddle his own folding canoe and sleep in his own folding tent, and comfortably carry both of them rolled up on his back when tramping. A soldier must take about seventy pounds of equipment on his back when marching, independent of the tent he is to sleep in when camping over night, which shelter goes with the jack train. The "outer," however, need not carry that amount of weight in tent and canoe combined, so lightly are such things constructed.

The canvas boat fills a modern necessity. It can be placed in water where no boats are available. It makes the owner practically independent of all other forms of travel, enabling him to reach the obscure places and live in them, where even the farmhouse is far distant. Food of to-day is also portable, done up in tin cans. Even coffee has recently been made portable—that is, a recent invention places it on the market in the form of a powder, a teaspoonful of which, merely stirred up in hot or cold water, makes a delicious drink, far better than can be bought at the majority of restaurants by the cup.

In past years, thousands of lakes and streams that afforded excellent outings, could not be utilized because there was no means of reaching them and no boats to enjoy them when reached. The folding canvas boat has placed all such waters within the reach of every outer. These ideal places in consequence now more and more attract those who delight in solitudes and quiet. They have no resort hotels, steamboats, camp meetings, Chautauquas, railways or noise. To-

day, at the end of the railway journey, the outer carries the folded canoe and tent under his arm or on his back. He may charter a buggy to cart his equipment to the nearest water or trough, as he pleases. The desired body of water has most always a stream leading to it from some railway station. If so, the outer has only to leave the train, set up his canoe and paddle or row to the desired lake or haven.

On the other hand, the canvas canoe or rowboat may be taken to the big and little resorts where there are abundant hotels and boarding-houses. The outer will then have his own craft with no exorbitant boat bill to pay. At night, if desirable, he can fold up his boat and take it to his bedroom. Assuming that a change in fishing is desirable, if the outer purposes to be driven ten or fifteen miles to some lake where there are no accommodations and remain over night or longer, all he has to do is to take his folding boat along, with tent tops, and sleep in it for one or two nights, or hoist his tent top if it rains.

Canvas boats are now made life-saving; that is, they cannot be tipped over by one man standing anywhere upon

them; if tipped over or filled with water by any cause, the smallest of them will still hold two people without sinking. It takes only five minutes to set one up or fold it up. It can be rowed twice as fast with only one-half as much arm power as a wooden boat requires. It is less expensive than a wooden boat. It has life-saving air chambers, double paddles or jointed oars, carrying ease, combination thwart seat, spreaders, oarlocks and camp chairs. It may also



A large fishing party in camp by a mountain lake

have tent tops, cabin ends or cabins covering the whole boat. The bottoms are flat, smooth and rigid. It never leaks and will last a generation, as the canvas is water-



Making ready for a landing for the night



A camp of the folding canoers

proofed, oiled and painted, thoroughly saturating it, so that it repels water like rubber, prevents mildewing and cracking and makes it proof against changes in temperature. The framework is made of high carbon, tempered spring steel and, being galvanized, will not rust in salt or fresh water. No tools are required to set up or to take down the modern canvas boat, and no instructions are needed by the beginner, who can set it up and take it down in the dark, if necessary.

There is nothing to get lost, such as bolts, nuts or cotter pins. The cross ribs, being fastened to a strong strap, cannot get misplaced, nor do they have to be sorted out. Long before the bull crosses the pasture, your folded burden is set up, you push off in your boat and you are beyond the reach of his horns.

The cost of an outing depends on the point of view, or the point of resources. It is easy enough to lay down the cost of equipment, as prices of 1911 were shown at the recent New York Sportsman's Show, continued on a lesser scale at sporting goods houses. Folding canvas boats begin at the 9-foot size and end at the 20-foot size. A 9-foot boat has 32 inches beam and 10 inches depth, either jointed oars or double paddles, carrying case, thwart seat, spreaders and air chambers. It will carry 350 pounds of weight. As a package to tote it is 3 feet long by 8 inches wide and weighs 30 pounds. Its price \$25. Prices then increase with length until 20 feet are reached at a cost of \$65. As lengths increase, the number of people that can be carried increase, the 20-foot boat, for instance, weighing only 120 pounds, will carry 3,000 pounds. Tent tops range from \$11 to \$18, according to the length of the

boat, and cabin ends from \$3 to \$7. Cabins to cover the whole boat range from \$9 to \$21.

It will be seen that the cost of equipment cannot be charged to one outing, as it will last for many annual outings. If one desires a separate tent, all that can be said is that they cost from \$3.50 up, and one may go away up. For the open, for roughing it, many prefer a sleeping bag, the priceless boon of scientific expeditions where all is tramp, tramp, day after day. Their range of cost is from \$7 to \$60.

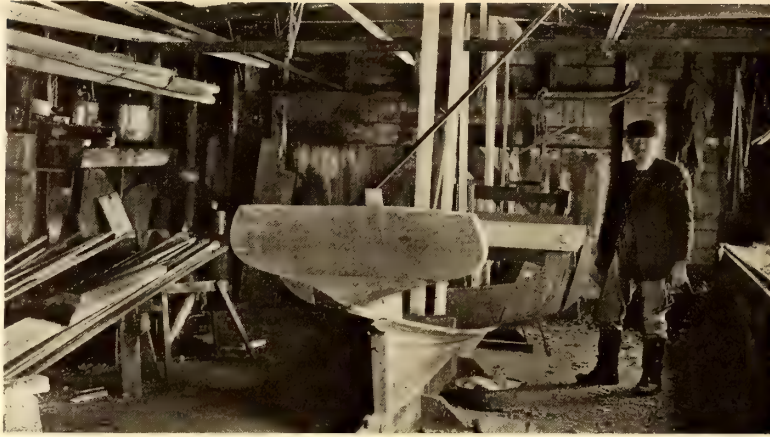
Assuming that you are a youth, with \$100 or less for your two or three weeks vacation, your folding canvas 9-foot boat and tent top would cost you \$36 for all the outings you are ever likely to make while young. To this add the amount of carfare. If you are to camp, there is so much to be apportioned for food, utensils for cooking and eating (which may be had at the 10-cent store), fishing tackle and perhaps a gun and shells. The gun and shells must be dispensed with unless you can afford a State license and unless you are to camp in the season when shooting is allowed by law. As a rule, two or more combine on a boating camping trip, dividing and thereby reducing the expenses and sharing the camp work. Those who have experience and can afford it may take along a man of all around ability, who will attend to all the camp drudgery. Say what you will, the proposed camper of small means can do far better with a canvas boat, by going where he can board at a farmhouse or small hotel at from \$3.50 to \$5 per week. The expense is less, and the outer has all of his time to wrestle with nature for pastime and relaxation.



Canoeing in the Adirondack lake with a folding canvas canoe



The expedition sleeps at a flying camp



The interior of the boathouse as it was

A Boathouse Remodeled Into a Summer Home at a Cost of \$500

By Mary H. Northend

Photographs by the author



AT THE foot of the second cliff at Scituate, Mass., at the left-hand side of the roadway, stands the picturesque summer home of Mr. Frank A. Bourne, the well-known Boston architect. It is remodeled from an old boathouse that for years had done service as a fisherman's workshop.

To one unacquainted with architectural possibilities the weather-worn little building, built on the edge of Scituate Harbor, its log foundations at high tide surrounded on three sides by water, seemed devoid of artistic qualities, but to the trained eye of Mr. Bourne, it contained just the desired requisites for an attractive summer home, and he accordingly purchased and remodeled it.

The building was in good repair, and after cleaning out the interior, the alterations required were made. The exterior was newly shingled and left to weather, and in place of the odd narrow little windows that characterized the workshop, conventional house windows were inserted. Dormer windows were thrown out at either side of the roof to make the second floor apartments more light-some, and at the front of the dwelling, a double-decked covered veranda was built, and screened in against mosquitoes, the lower portion to be used as an outdoor living-room, and the upper part to serve the purpose of an open air sleeping-room whenever desired.

The original front double doors were retained, and now open upon the lower veranda, while a new broad door, flanked on

either side by narrow windows, was cut in the second story to connect with the upper veranda.

The interior, which consisted of a single large apartment, open to the roof, was remodeled into a two-story dwelling, the rafters of the new laid second-story floor being left exposed and tinted a soft weathered gray. The first floor was left unchanged, except for the portioning off of a space for the small kitchen and toilet beyond, and the erection of a staircase to connect with the second floor apartments. The wall separation between the main apartment and the kitchen was contrived from a number of finely paneled doors, brought from the Wigglesworth house at Boston, and stained gray to match the old weather-worn woodwork.

The spaces between the upright beams in the main room were hung with a wainscot of yellow straw matting to a height of five feet and edged with a narrow horizontal beam that answers the purpose of plate rail. The floor was painted to harmonize with the woodwork, and to relieve the monotonous gray, bright-toned rugs were laid upon it.

The dining table was contrived from two old wood saw-horses with a drafting-board laid across them, and the artistic lamp which graces the center was made from a pickle jar equipped with a shade painted by Mrs. Bourne, who is an artist of ability. The area occupied by the old carpenter's bench that was in the shop at the time of its purchase, was converted into a storage space at one side of the room, and along



The interior of the boathouse as it is

two corners of the dining-room portion a cosy seat was built and boxed in underneath to serve as an additional storage space.

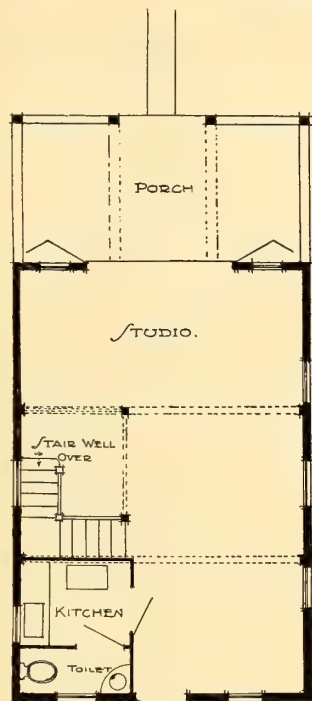
From the central beam depends the model of an old ship, emblematic of the building's original use, and from the rafter at the right hangs a candle fixture evolved by Mrs. Bourne from an old tin piece. Lanterns of various types depend at intervals from other beams, and furnish all the artificial light required.

The furniture in the room is almost entirely Colonial, picked up at odd times, and fitted into the chimney at one side is a queer old Franklin stove, that relieves the chill of damp and stormy days. The apartment opens at the front onto the lower veranda, of which it really forms a part, and from which a superb view of the surrounding territory is obtained. This is attractively fitted up as an open-air sitting-room, and adorning its rail are boxes, pots, and vases filled with bright tinted flowers.

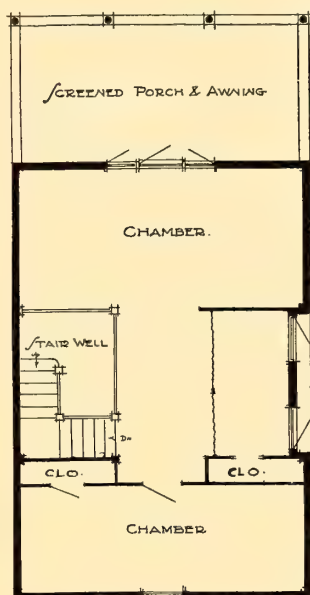
On the second floor are two



The boathouse on the shore



First floor plan



Second floor plan

chambers, a portion of the larger one being curtained off for a dressing-room, and at the front opens the upper veranda equipped as an outdoor sleeping-room.

The cost complete of the purchase and alterations was but five hundred dollars, and the result is an attractive, livable home, that

serves as a residence for its owners six months of the year.

The presentation of this article illustrates the possibilities of many of the discarded buildings which are so frequently seen along the seashore. The subject is presented in so interesting and pleasing a manner as to be readily understood, and will be very helpful to any one who is desirous of securing a habitation for the summer months at a small expense. There is no question but that there are many people who would like just such a house as the one illustrated herewith, and the publication of it is a timely one, for use in a study of the subject for the coming year, for the best time to select a site is during one's vacation.



One of the bedrooms in the second story



The dining part of the first floor



A Model Houseboat

How to Build a Houseboat for \$300

By Frederick K. Lord



THE proposition of spending a summer afloat is one which appeals to many persons fond of the water; but the cost of a yacht large enough to accommodate comfortably a family for a protracted period is prohibitive to the majority, therefore people swelter ashore in hot and uncomfortable hotels, and snatch such enjoyment from the water as chance and circumstances permit.

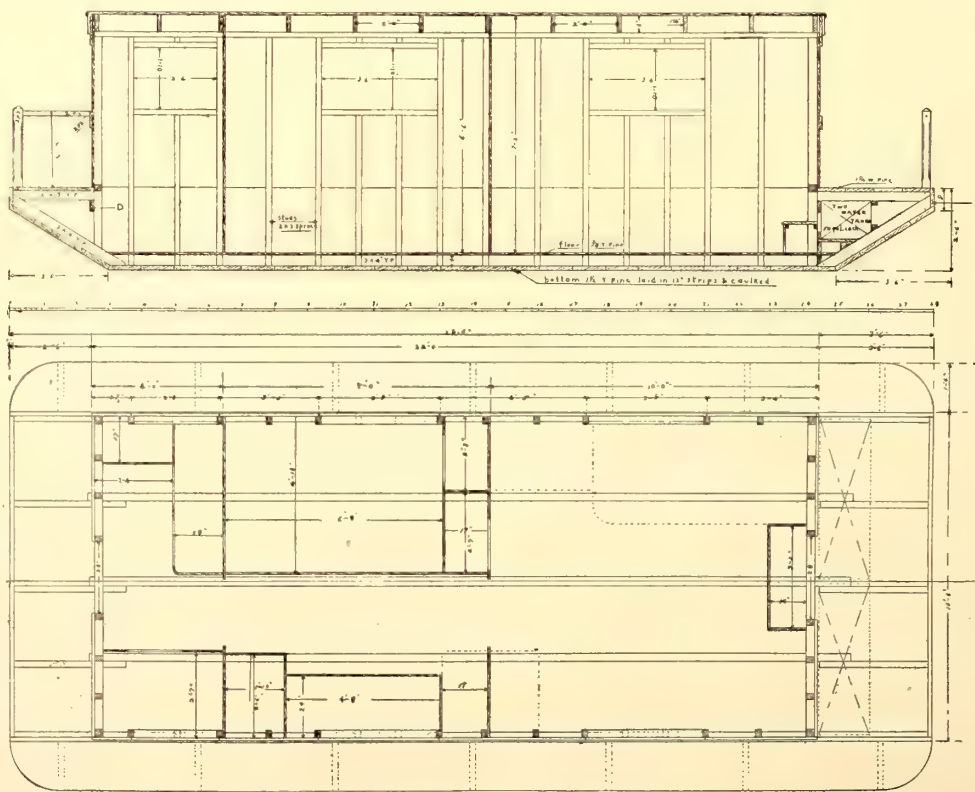
A solution of the problem of living cheaply and comfortably afloat is found in the houseboat. Such a life offers many charms and advantages. It is generally cooler on the water, and the air is fresher and better, being free from dust and land smells. Bathing is always "on tap," and the entertainment of friends is accompanied with more charm and privacy than in a crowded summer hotel. If the locality becomes tiresome the houseboat can be towed to another harbor for a few dollars, and there is no packing of trunks or tipping of servants when getting out of town.

The plans herewith shown represent a small houseboat capable of accommodating four or five persons comfortably for a very moderate price. It would cost four persons fifty dollars a week at an average-priced summer hotel. This amounts to six hundred dollars for three months, without extras. The boat shown here could be built for less than that. Then at the end of the summer it could easily be sold for more than half its value or kept for another year. In any case there would be a very large saving over living

ashore during the summer season under equally comfortable conditions. The cost of the boat would vary, according to whether it was built by amateurs and how elaborately it was constructed and fitted up. A moderate price ship-builder should build this boat complete with toilet and water tanks for five hundred dollars. As the boat is very simple in construction amateurs should be able to build it for about three hundred dollars. At a small additional cost an awning could be rigged over the house-top, thereby providing a fine, large, cool lounging space.

For those interested in building such a boat themselves the following hints on construction may prove useful: The first step in construction is to prepare the ground and build the sides and bottom of the hull. The ground should be prepared by driving posts and using stringers and blocks so placed that the hull may rest during construction on an absolutely level plane. By doing this a level and plumb line can be used to get the house and its compartments built plumb and true.

After the building



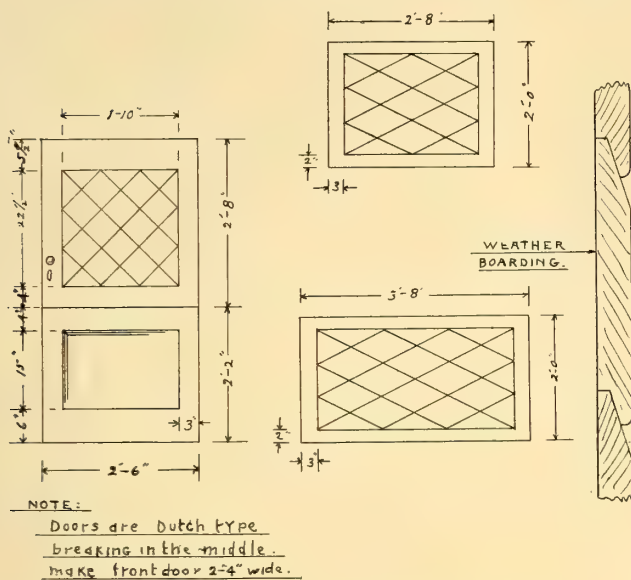
Sectional plan and side view, showing constructional details of the houseboat

foundation is prepared, start by getting out the sides. These are of 1½-inch yellow pine, laid three strakes to a side. As the depth of the hull is 30 inches the sum of the three planks should be 28½ inches to allow for the thickness of the bottom. The sides are held together by temporary strips of wood screwed to them. When thus secured fasten on the lower inside edges a yellow pine corner log 2 x 4 inches as shown in the cross section plan at A. The object of this is to stiffen the edge and afford extra nailing

surface for the bottom planks. Now set up the sides in their proper places on the building foundation and be very careful to see that they are perfectly plumb and level, otherwise the whole structure will be crooked. Nail three or four strips across the bottom to hold it in place and then put in the end pieces *B* of the hull. These are of 1½-

us the bare hull, and we can now proceed with the house frame and small decks at each end.

It might be well first to call attention to the two water tanks that are shown in the drawing. If these are to be put in it is well to do it now, otherwise some of the deck beams and deck cannot be laid, and it is more trouble to put them



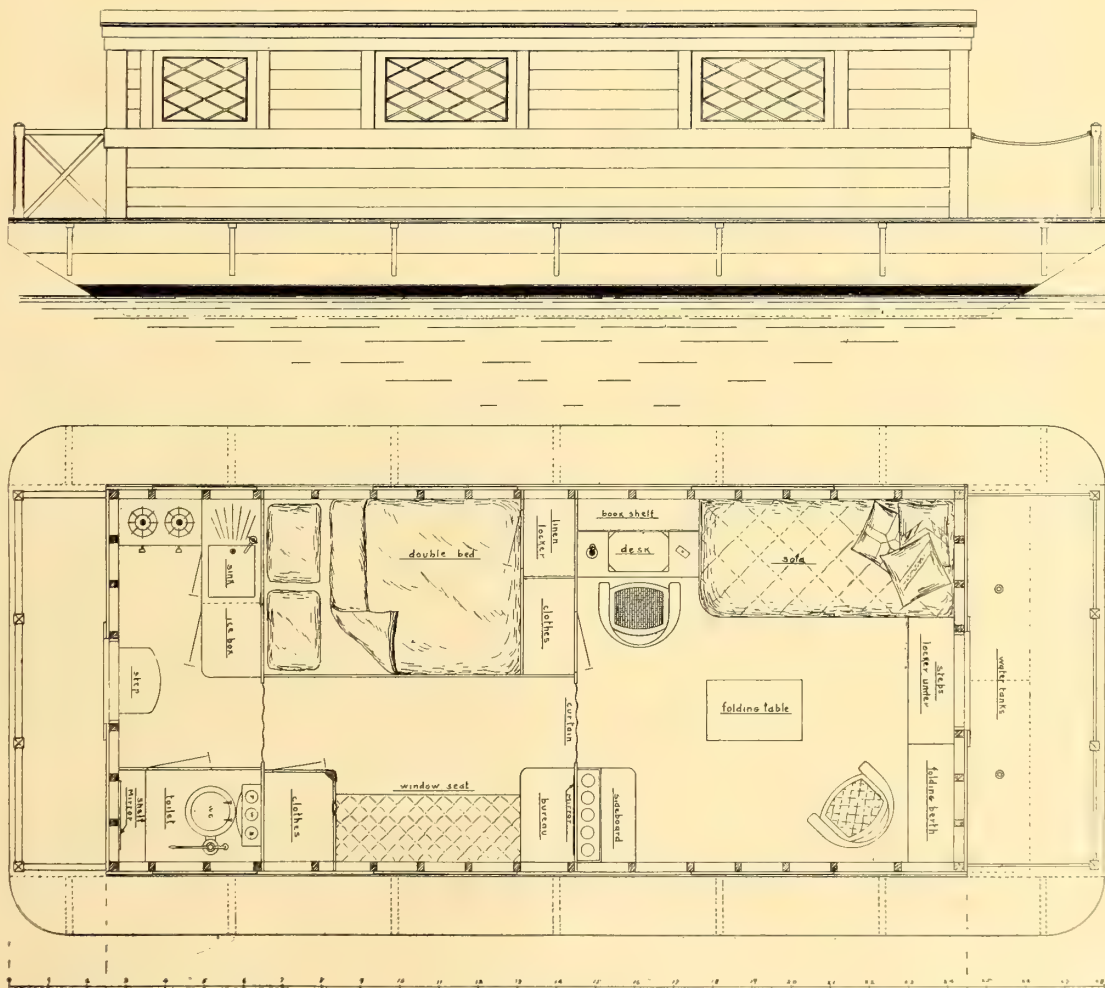
Cross-section of the boat

inch yellow pine. Next put on the planks which extend from the end pieces to the bottom. These planks, as well as the bottom ones, are of 1 1/2-inch yellow pine, and about 12 inches in width. Proceed to put on the bottom by beginning at both ends and working toward the middle. Plane the planks so that they touch on the inside and are open about

in later. They should be of 1-16-inch galvanized iron and fitted with filling plates to come flush with the outside of the deck. The supply pipes can be run under the cabin flooring before it is put down.

The next members to put up are the stud beams to take the weather boarding of the house. The beams are of

2 x 3-inch spruce. They should be cut into lengths of 6 feet 11 inches. Jog them over the corner log, *A*, and securely nail them to it. Fasten them to the side of the hull with stout galvanized iron nails, care being taken to get several very good fastenings in the lower side plank. The spacing of these beams will vary on account of the positions of the windows and partitions. The way to do this is to put up, first, all the beams that come at window openings



View showing the exterior and a plan of the interior of the houseboat

ly develop, which are hard to stop. Paint should be applied and a few threads of cotton laid along the edge of the sides to help make a water-tight job. After the bottom is on three 3 x 4-inch yellow pine stringers, *C*, should be fitted and nailed from the underside of the bottom. Carry these stringers up to the ends as shown in the plans. This gives

and partitions and then space up equally the intervening beams. The construction plan shows the dimensions and position of the beams. A sill, *C*, of 2 x 3-inch spruce, is now laid on top of the beams and fastened thereto securely. Put in the headers and sills for the windows and the studs immediately under them.



A divan makes an extra bunk for a guest

Proceed to finish the decks. Run $1\frac{1}{2}$ x 3-inch yellow pine stringers across the end studs $4\frac{1}{4}$ inches below where the top of the deck will come. Use 2 x 3-inch yellow pine deck beams, seven to a deck, including sides, and securely nail to the stringer and end board of the hull. A deck of $1\frac{1}{4}$ -inch white pine may then be laid in about 10-inch widths or less, and after being well painted, covered with No. 10 canvas. As the run boards on either side of the hull will serve conveniently as a staging for building, it may be well to put them on. The boards themselves are of $1\frac{1}{4}$ -inch spruce planks fastened to $1\frac{1}{2}$ x 2-inch yellow pine cleats spaced seven to a side, as shown in the plans. They are supported by $1\frac{3}{4}$ x $2\frac{1}{2}$ -inch yellow pine braces, securely fastened to the hull and joggled into the cleats.

The roof beams should next be put up. These are of $1\frac{1}{4}$ -inch spruce, 6 inches deep at center and 3 inches over sills. This gives a crown of 3 inches, just enough to shed water. The beams are spaced 2 feet on centers except where it may be necessary to vary them slightly so that they may serve as a backing for the partitions.

It is now in order to board up the sides. Use $\frac{7}{8}$ x 6-inch rabbeted boards of the type shown in the section. Start from the bottom and lay out the widths, as shown in the plan, so that they will come right for the finishing bands. Nail each board to every stud with two nails, and counter-sink and putty the heads. The sides are now ready for the finishing bands and window trim. Commencing at the corners, put on the vertical trim of $\frac{7}{8}$ -inch white pine 6 inches wide, and also the door trim. Then the horizontal band under the windows and the strake at the upper edge of cabin, which should be 8 inches deep, and finally the second band at cabin top and the window trim, both 4 inches wide. All the foregoing should be of $\frac{7}{8}$ -inch white pine. The trim at the window openings should be set back so that a shoulder is created by the studs and sills to form a rabbet for the window. The cross section plan will show this. The windows are hinged from the top and swung outward, as indicated.

Proceed to finish up the cabin roof by planking it over with $\frac{7}{8}$ -inch white pine boards laid in 4-inch widths and having a tongue and groove with a beaded edge underneath for a finish in the cabin. Paint the top well and cover with No. 10 canvas laid in a single piece. It can be obtained

in widths as high as 12 feet, and it is much better to use the single piece and get rid of seams which are liable to leak. Draw the canvas over the edge of the house, and after securely fastening with copper tacks cover them up with a half-round molding, as shown in the plan. The doors and windows should be $1\frac{1}{4}$ inches thick, and these plans will be sufficient to enable any one to get them out. The doors are of the Dutch type, that is, they open in two sections. They are more handy and convenient when thus made.

The first step is to lay the cabin flooring after painting the inside of the bottom. The floor may be of $\frac{7}{8}$ -inch yellow pine, laid either in 6-inch widths or in narrower widths, with tongue and groove. The former width is perhaps preferable in this case. Begin at one end and plank athwartship on the stringers and corner logs. Sweep out all shavings and sawdust as you proceed. After the floor is laid and smoothed up, the partitions and cabin fittings are ready to go in.

The interior is arranged to provide sleeping accommodation for a mixed company of four. Entering the house-boat from the after end the first compartment comprises the living-room, which is turned into a sleeping-room for the men at night. The doorstep has a removable tread, and is used as a locker. On the right a $6\frac{1}{2}$ x 3-foot couch is installed, fitted with a spring and mattress. Next to this is a desk with bookshelves above. Upon the opposite side, near the door, is a folding berth, shown standing on end. This is built simply like a hollow box, containing an ordinary spring and mattress. It is lowered down for use and afterward up-ended and held by a couple of hooks. In the opposite corner is a sideboard with glass rack above and drawers beneath to hold table linen. A folding table and two or three easy chairs complete the furniture in this compartment. Of course chairs and couch should be bought, but it would be more satisfactory to make the desk, sideboard and table, and this would not be very difficult if it was done simply of oak, in the mission style, and stained. The next compartment is for the ladies. Here a double bed is shown which may be taken from the house and installed, or built in like a regular bunk with drawers underneath or left open for the reception of trunks. There are two lockers at the foot, one for linen and the other opening into the sitting-rooms for the men's clothes, and a built-in bureau.



A writing-table is a necessary adjunct to life on the water



Camping in the Country

By Edith Haviland

Photographs by Jesse Tarbox Beals



CAMPING place for the summer" is a phrase that covers a great variety of habitations. Not so very many years ago a home occupied only in the warm-weather months was exclusively for the fortunate possessors of assured incomes. Vacations were taken by the majority of people by a brief visit to relatives who lived in the country, or by a few weeks' boarding near the seashore for the enjoyment of bathing and boating, or in the mountains where fine scenery, good walks and drives afforded entertainment.

Gradually this summer outing idea has developed and shaped into a desire for a more permanent stopping place, in fact, a home for three, four, five and sometimes six months out of the city, with the home element the attraction instead of some specific environment.

Perhaps the most interesting phase of this summer migration is shown in the efforts to achieve attractive dwellings at a moderate cost. The personal thought evinced in the illustrations given on this and following pages certainly gives distinction, and suggests experiments to others who are aiming in the same direction.

A rustic piazza gate in the first picture exhibits the care given in securing branches that balance each other in size and general outline. The forks crossed over the gate itself are particularly successful. With this door or

gate the end of the porch is particularly screened and the steps protected. The tubs of geraniums on the posts of the steps are another homelike touch that means much in the woods where gardens are almost impossible to cultivate.

In the other views one notices the different treatments for piazzas and terraces, to enable the dwellers to be out-of-doors as much as possible; the quaint roof lines; the approaches from the road; the relation of the surrounding trees to the house. In all of these the idea of simplicity has not been lost sight of in each and every effort to attain comfortable details.

In the Catskill Mountains there are several groups of summer camps or cottages. "Twilight Park," which was started by the Twilight Club of New York City, was one of the first of these. Onteora, or "Hills of the Sky," is noted as being the settlement of artists and literary workers. Byrdcliffe, which was described in this magazine last September, is a meeting ground for students and experts in

various arts and crafts.

On Long Island there are various collections of summer homes costing from five hundred dollars upwards, in which numerous experiments in construction have been made.

In the Adirondack Mountains the old-time "camp" is being superseded for something much more substantial and pretentious and the summer season is often prolonged late into the fall, with a return at the Christmas holidays for winter sports.

Outside of the State of New York there is as much interest shown in hamlets in the mountains or by lakes and seashore, and a remarkable feature is the distances which separate the city or

suburban residence from the summer camping ground. One settlement on the coast of Maine is composed almost entirely of Washington families. Another in Massachusetts is settled by people from Detroit and Chicago.



A rustic piazza gate



An appropriate entrance way



Steps of field stone



A real log cabin



The bay-window is a feature



Perpendicular slabs are used



Shingles and logs

A GROUP OF MODERN CAMP



A summer camp



An extensive upper porch



A terrace of logs



The stone chimney is the feature



Generous piazza space



Some rustic flower tubs

COSTING FROM \$800 UPWARDS



An appropriate entrance way



Steps of field stone



A real log cabin



The bay-window is a feature



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Shingles and logs



A summer camp



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Generous piazza space



Some rustic flower tubs

A GROUP OF MODERN CAMPS COSTING FROM \$800 UPWARDS



Fig. 1—The sandwiches remain fresh and appetizing if wrapped separately



Fig. 2—Packing the luncheon to carry successfully requires care and practice

Picnic Parties

By Ama Bird Stewart

Photographs by Helen D. Van Eaton



HE picnic season is here again, to the joy of the children. Many a mother who used to feel her heart sink when the little ones began teasing to take a meal out of doors now welcomes the chance. With a little forethought, a picnic luncheon can be arranged so as to mean less work than the

regular home meal, while the additional benefit to the children from a whole day out of doors is not to be estimated.

Nor are the younger members of the family, although their enjoyment may be more unrestrained, the only ones to whom a picnic appeals. The school boys and girls, the grown-up daughters, even the mother herself, will find pleasure in the hours so spent. There is no more charming way of entertaining the members of a young girl's class at school, the members of the older sister's Sunday-school class, or the members of the mother's own club. Moreover, no other form of entertainment admits of more elaboration at comparatively less expense; and yet, again, the picnic may be as simple as one pleases. As a social function the affair may be enhanced by the addition of suitable favors, such as straw "farmer" hats, paper sun-bonnets, or baskets to hold wild flowers. These may be purchased at a cost of from five to fifteen cents each; may be fitted inside each other to facilitate carrying, and will weigh next to nothing. The small outing of congenial

friends of the family party are no less enjoyable; in fact, the out-of-door luncheon deserves to be a regular proceeding.

The place for the picnic is the first consideration. The dweller in the city is almost always blessed with at least one park. Furthermore, one can usually find real woods—which are, of course, preferable—of easy access from some traction cars. The same holds good in regard to the

smaller towns. In the country the only difficulty would lie in the choice of a place, where so many are available. Oftentimes these little jaunts may take the form of excursions to some nearby point of interest, some literary shrine, or place of historic tradition. Under these conditions, the luncheon must be put up in a manner to admit of easy carrying. Lack of weight and lack of bulk are both requisites.

Many conveniences for the out-of-door luncheon have now been put upon the market. When a succession of such meals are planned, the Thermos bottle is almost a necessity, while the tea basket fitted up for the small party gives added pleasure in itself. This modern luxury, borrowed from our English cousins, will be found equally useful in traveling, especially for long journeys. Such a tea and luncheon outfit is illustrated in Fig. 6. It consists of an alcohol stove, tea kettle, creamer, sugar bowl, cream bottle, sandwich box, with two cups, saucers, spoons and napkins. Compactly fitted into a neat, durable case, this sells at \$16.74.

A more elaborate luncheon kit



Fig. 3—Ready for the picnic, with an individual basket of luncheon

is shown in Fig. 7. This is suitable for train or automobile traveling, as the slanting top of the case, covered with corrugated rubber, makes a comfortable footstool. The box holds a luncheon or sandwich case, two cups, saucers, plates, knives, forks, spoons, napkins, and space for a Thermos bottle. It sells complete for \$36.74.

The wicker luncheon basket, seen in Fig. 5, holds a service for four persons, besides a lunch box, wicker cases for glasses and bottles to prevent breaking, and salt and pepper shakers. The price of this outfit is \$24.74.

These luxuries, however desirable, are not of course within the reach of every one. A fresh, clean basket, if daintily packed, serves the purpose at very little expense, a well-woven one with a durable, hinged cover, costing only fifty cents. Individual baskets for children's out-of-door luncheons may also be purchased cheaply. Although the handles make the baskets much more easily carried, some people prefer clean pasteboard boxes. The lids of these are used as trays in serving the meal and the whole thing can be thrown away afterwards.

For the same reason many take a table cloth of paper instead of linen, if it is possible to secure one large enough. Attractive crêpe paper sets are now sold at a trifling cost, so that it is possible to carry out a regular color scheme of decoration. Whatever the table covering, by all means have paper napkins and plates; they are lighter, more compact, and minimize the amount to be carried home. When the site has been chosen for the feast, spread the cloth neatly on a level stretch of ground and unpack the food carefully. Nothing is more unappetizing than disorder, yet many picnickers after preparing a dainty meal, do not take the trouble to serve it attractively.

If possible spread the table near a spring. One wise woman, with whom picnics are a regular occurrence, always carries the luncheon in a bright tin pail which is afterwards

used for water. If lemonade is to be made, a lemon squeezer is a practical adjunct, or one may bring a bottle of strained lemon juice prepared and sweetened at home. For those who do not care for lemonade, the Thermos bottle can be brought into play for carrying any hot or cold drink, or a small alcohol heater can be tucked away for the making of tea.

Often it is enjoyable to bring some things separately and mix out of

doors just before serving. Many dainties otherwise impossible to carry can thus be served, but when hungry, impatient little folks are to be considered, it is better to have everything already prepared. It will always save muss and bother to open all olive and pickle bottles at home, and unless the trip is exceedingly long, to pour off the liquid before recorking and packing. Be sure to be provided with druggists' pill boxes of salt and pepper.

Wherever held, for whatever purpose, whether the meal be luncheon or supper, the main interest of the picnic centers around the contents of the luncheon basket. Here the home touch is pre-eminently to be desired. Wholesome materials in savory combinations daintily served are the prime essentials for a successful picnic.

Sandwiches are the staple of picnic diet, but their range is almost limitless. White, graham, whole wheat, rye or Boston brown bread, plain or toasted, may be used separately or in combination, while rolls, buns and biscuits and saltine or other crackers, vary the foundation still further. Picnic biscuits are not known so widely as they deserve to be. They are made of biscuit dough (preferably sour milk and soda biscuits) rolled to a quarter-inch or less in thickness, buttered, then covered with a second layer of dough and baked in a quick oven. When done they split apart easily for filling. They may be cut square to facilitate packing, if space is very precious. In preparing sandwiches, always cut the bread very thin and trim off the crusts;



Fig. 4—Nothing could be more tempting than a well-filled luncheon basket



Fig. 5—Automobile wicker luncheon basket, equipped for four persons



Fig. 6—Tea and luncheon outfit opened up ready for use

Fig. 7—Footstool luncheon kit with complete service for four

cutting into triangles or strips gives an added daintiness to the appearance of the sandwich.

Sandwiches will keep fresh and appetizing for days if wrapped separately in paraffin paper. This may be purchased almost anywhere at a trifling cost and is indispensable. Occasionally it may be found advisable to wrap cold meat sliced very thin in the waxed paper and carry buttered bread without filling. When paraffin paper is unavailable, wrap sandwiches in a slightly dampened napkin to keep

as cherries, apples, pineapples, seeded grapes, bananas or grapefruit give additional variety to the list. The up-to-date sandwich indeed proves its noble origin, and does honor to its godfather, the Earl of Sandwich.

The picnic menu is also enhanced by hard-boiled eggs, cut in half, the yolks mixed with mayonaise or other seasoning and put back into the whites. These should by all means be served upon a lettuce leaf.

Do not make the mistake of carrying too much heavy

New and Tempting Sandwich Recipes

NASTURTIUM SANDWICH

Cut bread very thin and butter, cover closely with nasturtium blossoms and spread with thick mayonaise before putting on the second slice, press closely together and wrap.

SWISS CHEESE AND WATERCRESS

Spread Swiss cheese with mustard and watercress and place between thin slices of buttered rye bread, or use soft cheese and watercress with graham bread.

CREAMED CHICKEN SANDWICH

Chop or grind fine, half a cup of the white meat of cooked chicken, add a tablespoonful of sweet cream and mix to a paste, mix in a hard-boiled egg chopped fine, salt and a dash of paprika, spread between biscuits.

MOCK OYSTER SANDWICH

Mash boiled oysterplant or salsify with sweet cream, add a little anchovy paste, season with salt, paprika or red pepper and spread between buttered bread or wafers. Serve with pickles.

CHICKEN LIVER SANDWICH

Mix equal parts of chopped olives and chicken livers with mayonaise, add a little chopped green pepper or sweet pickle and spread between one slice of entire wheat bread and one slice of white.

SARDINE SANDWICH

Mix a small can of sardines, oil and all, with two hard-boiled eggs chopped fine, add a teaspoonful of lemon juice, spread between slices of buttered bread or toast. A slice of peeled tomato, a leaf of lettuce or a sprig of watercress makes a pleasing variation of this.

NEUFCHATEL CHEESE

Mix Neufchatel or Philadelphia cream cheese with chopped nuts and pickles or pimentos (Spanish red peppers), add enough mayonaise to make a stiff paste. Or, spread cream cheese on a slice of buttered bread, and cover with a second slice spread with crabapple or quince

FISH SANDWICH

Bone and rub to a paste a cupful of cold boiled fish, add a dash of Worcestershire or other fish sauce, salt, pepper and a little olive oil and place on lettuce between bread.

CHERRY SANDWICH

Mix four parts of chopped fruit and one part of chopped nuts with mayonaise; a little cream cheese may be added if desired, and spread between biscuits or sweet rolls.

BACON SANDWICH

Chop crisp cooked bacon with hard-boiled eggs and pickle and use with graham bread buttered. Well cooked bacon alone also makes appetizing sandwiches, or it may be combined with lettuce and mayonaise. Always shave very thin and broil crisp.

TONGUE SANDWICH

Put cold sliced tongue and a thick slice of peeled tomato between buttered bread. Or, mix chopped tongue with sweet cream and spread inside French rolls.

HAM SANDWICH

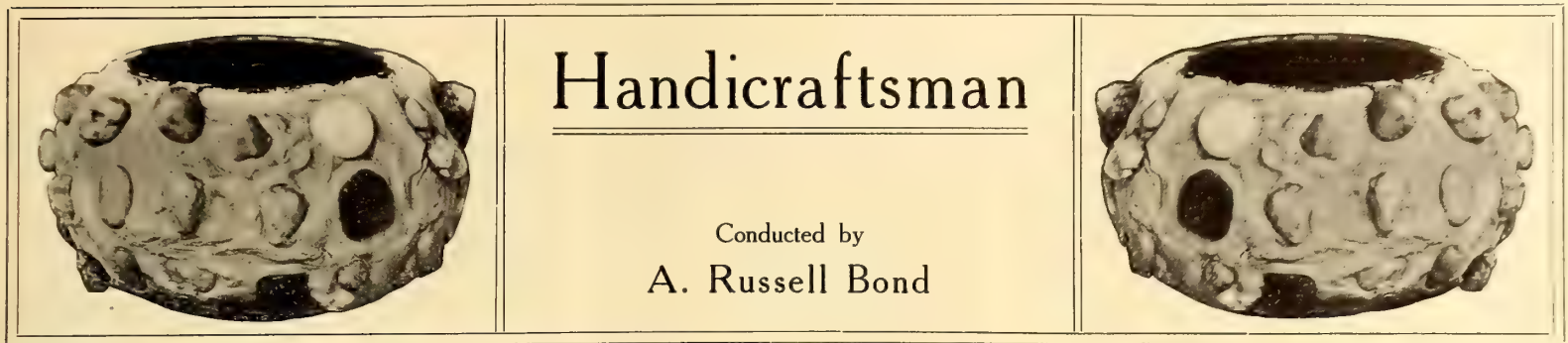
Chop together cold fried ham and hard-boiled eggs and spread between slices of buttered bread. Or, chop cold boiled ham and mix with chopped peanuts and enough mayonaise to form a paste, and spread between buttered crackers or picnic biscuits.

them fresh and in perfect condition. The day when the name sandwich connected only ham and cheese carelessly put between huge slices of bread, is happily forgotten. The simpler kind have supplemented, not supplanted, those of chopped meat or cheese combined with hard-boiled egg, mayonaise, nuts, pimentos, green peppers, tomato, cucumber, piccalilli, chopped pickle, olive or some other ingredient, made into a delightful whole. All kinds of salads, as well as figs, dates, nuts, and such fruits

cake. Individual cakes daintily iced and wrapped are easier to serve than the layer cake, while home-made doughnuts, thin cookies and apple turnovers form a pleasing change.

The last word, like the first word, in regard to the preparation of out-of-door luncheons, is daintiness. A little care in arranging the meal will more than pay for itself in the added savor and enjoyment, and the extra care is worth the while for the pleasure attained.





Artware with Pebble and Putty

By Alice K. Van der Veer



Used to be that the worth of a thing was estimated solely upon its money value. To a certain extent such is the case now, but fortunately we are beginning to realize that we should judge an article rather by its subservience to the end for which it was designed. Decorative and ornamental work, for instance, is meant to please the eye, and in proportion as this aim is realized the work is a success, no matter how crude the material employed. Handicraftsmen have done very much to establish this standard of utility. They have upset all traditions in their search for art materials to furnish the medium required by their original ideas. They have delved into the cellar after soap boxes and made them into bedroom furniture; they have raided the corner grocery for peach baskets and flour barrels which were later dignified by a place in the living-room; they have converted rough oats bags into sofa pillows. In fact, there appears to be no limit to the materials which they can employ artistically.

One of the most recent inventions of the handicraftsman is the use of putty and pebbles for decorative purposes. Putty makes a very cheap and excellent material for this purpose because it remains plastic for a time, but when set it becomes quite hard—much harder than one would suppose, and will withstand the action of water to a considerable extent. Pebbles may be bought at ten cents a package if one is so unfortunately situated that he cannot gather them himself. Of course one of the chief delights of the handicraftsman consists in making artistic work out of materials that cost him nothing, and it would spoil his pleasure to have to buy the pebbles no matter what they cost. They can be picked up in the bed of a stream, or along the shore, and selected according to color and size to suit one's taste.

The accompanying illustrations show what may be done

with these materials. Any stone bottle, stein, mug, or pitcher will serve as a body upon which to apply the decorations. The putty is laid on in a fairly thick coating and then the pebbles are embedded in it with what has come to be called "artistic carelessness." The pebbles will adhere to the putty readily, and in a day or so will be so tightly cemented that it will be difficult to remove them without the use of a pair of pliers. Not only may pebbles be used, but small sea shells as well, and the ground work of putty may be tinted to any shade desired. By carefully choosing the shells or the pebbles, they may be used to form regular designs, but the work is far more effective if the pebbles are applied in seeming carelessness. The entire surface of the vase may be so thickly crusted with pebbles as to produce a mosaic effect. Such work, however, requires very careful matching of pebbles both as to size and color, which may make the work too tedious for the average amateur.

Unless he is possessed of considerable artistic ability, the beginner would do well to avoid mosaic work and confine his efforts to the random effects described above.

Some handicraftsmen will doubtless find that putty is an excellent medium for flower decorations upon a vase or other ornamental piece.

One of the photographs shows a vase thus adorned. The putty is applied in lumps or strings, conforming approximately to the design that is to be carried out.

The plastic material can then be treated just like modler's clay, using the thumb and fingers to produce broad effects and employing modeling tools for fashioning delicate details.

The work will be found exceedingly fascinating, and, despite the humble medium,

some very artistic effects may be obtained. The decoration will prove sufficiently permanent for mantel ornaments and the like. After the novice becomes proficient with plain designs, work with colored putties may be attempted. To be sure, the putty may be painted after it has been modeled,



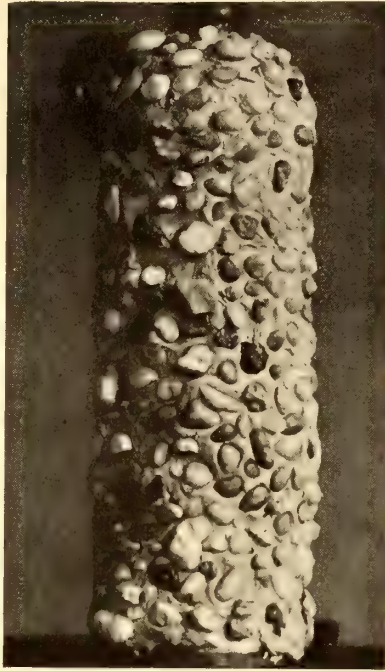
Putting on the putty

but the paint is apt to peel off in time, owing to the oily nature of the plastic material. A better plan is to make up separate batches of putty individually tinted, and then to

and the work is not seriously marred by chipping. This does not mean that there can be no shading of colors. On the contrary, if the putty is fresh and soft one color may be



A cheap vase becomes an attractive ornament



A pebble incrustated jug



A beer mug covered with pebbles

use the tinted material in modeling the design. The faults of superficial coloring are thus avoided. Leaves are green through and through, roses red through and through, etc.,

merged into another with a facility almost equal to that of painting in oils. Of course, the effects obtainable depend entirely upon the artistic ability of the individual.

Poster Wall Papering

By Beryl King



WERE it not so old and threadbare a good opening sentence for the following story would be the quotation "Necessity is the mother of invention." Not that we believe this quotation to be true. As everyone knows there are hundreds of inventions that are absolutely unnecessary and were born of the conceit or ignorance of some deluded inventor. A glance through the Patent Office Gazette will prove that this is so. However, it is a fact that many, if not most, of the best ideas have been evolved under stress of circumstances. The following is a case in point.

The time had arrived when the girl's own particular room needed papering. Her mother realized it, and the girl knew it only too well. But it was not a time when money could be spared for even

such important things as wall paper; and so the dingy room had, perforce, to retain its dinginess. One day the girl had an idea and she proceeded to carry it out without losing a minute; for she was that kind of a girl. She followed her luminous idea to the offices of various steamship companies and other establishments where handsome posters are given away gladly for the asking. Soon she had accumulated a large supply of pictures. The pictures were not cheap-looking chromos, for these steamship companies employ the best of artists to design their posters. They are intended to attract attention and are sent all over the world in lithograph form. Some of them are veritable works of art, depicting scenes in the countries to which the ships of the company carry passengers. Others contain fanciful views by artists of renown.

With these pictures the girl locked herself in her room. Then she pro-



Smoothing out the poster

ceeded to cut away all superfluous advertising matter, retaining only the more interesting illustrative part. In order to lay out an artistic pattern she arranged the pictures upon the floor. In this way the effect of grouping was observed, the color scheme studied, and the pictures arranged and rearranged to suit the girl's fancy, without actually pasting them down where they could not be removed without spoiling the prints.

When a good arrangement had at last been decided upon to her complete satisfaction, she proceeded to paste the pictures on the wall, using a pail of flour paste and a large brush.

The pictures were moistened and the paste was brushed on from the center out to the edges, as shown in the photograph. Care was taken to preserve the same arrangement as had been plotted upon the floor and the result was very effective. The choice of coloring had been very carefully worked out, and the dingy walls soon began to reflect the daylight in a hundred different hues.

When all was done the girl permitted the admiring household to come in and see her work. Here was a gorgeous scene of a sunset in Italy; beside it a group of quaint-looking Dutchmen gazing seaward at an incoming ship; in another corner, a gray castle on the picturesque Rhine. A study of the walls was almost like a trip to Europe, and best of all the novel wall paper was procured for the asking. In fact it was

given away gladly for it was made to be given away to anyone who would give it wall space. There are many advertisers of various kinds of equipment who would be only too glad to permit any number of posters for the asking of them; which would be found available for decorative purposes.



A corner of the wall-papered wall



Tacking up the pictures to get the color effect



Laying the pictures on the floor to get the proper arrangement

At any rate, the resourceful summer camper may receive a hint from these notes, which will prove to be of material assistance.

Now it is not at all probable that any readers of this story will be circumstanced just as this girl was, and find it necessary to paper their rooms with posters for lack of money to buy conventional wall papers. But no doubt many a one may profit by the ideas of this resourceful girl in

other directions. Posters would make an excellent decoration for bungalow walls or the wooden walls of huts, summer shacks, houseboats and the like. In such places the ordinary designs of wall-paper would be entirely out of place, but posters would be found quite in keeping with summer surroundings.

As in all decorative work, the appearance of the finished poster wall will depend entirely upon the taste and artistic ability of the one who selects and arranges the pictures. Since the materials are not made to order, but have to be taken as they come—in all shapes, large or small, gaily colored or delicately toned—the difficulty of carrying out a definite scheme is rendered extremely perplexing, if not quite impossible. Unless a great deal of thought is exercised in matching the various pictures there is a great risk of making the walls look like a cheap billboard or the interior of a trolley car. It will be found advisable

to cut the pictures freely into odd shapes, so as to give variety to the wall-paper. Advertising matter can thus be cut out without betraying the fact.

Frequently the interiors of temporary summer homes are finished with burlap, or some such light material. While it might not be desirable to cover the entire surface of the wall with posters, a careful selection of the best

views for the purpose might be grouped in such a way as to relieve the monotony of a burlap wall. For instance, it may be desirable to arrange the pictures in vertical or horizontal panels, with the colored burlap as a ground or mat.



The entrance porch to a Dutch Colonial house

Two Types of Colonial Houses

By Paul Thurston



THE small Colonial house illustrated in this paper is of Dutch character, and it embraces some of the latest ideas in modern architecture. It was designed and built to meet the usual conditions which the modern social and economic developments demand of the man of modest means who desires to live within commuting distance of a metropolis.

Harmonious within and without and built with an eye for convenience, economy and style, the house has something more—it has character.

With many there is a certain amount of sentiment created from long association with old mansions in New England and in the South, while to others, when seen unexpectedly for the first time, they excite more than a passing interest. We speak of them as "Southern" and "New England," according to various characteristics. Many architects have made visits to them in order to study the well-known types, so as to reproduce and render them suitable for modern building. The architect of Colonial times set about to carry out old rules with new means. He also made brickwork answer in place of the cut stone which would have been used in England. He often made a column from a tree, the diameter of which was much less than that called for by the rule of Vignola. Clapboards were laid close to the weather and near to the ground, waterproof building paper being unknown. To-day the situation is quite different, for a client selects his house by photograph or sketch made on paper, and instead of there being only several building materials, as it was in the time of the older builders, the modern one is now deluged with samples of new and inter-

esting material. Under these conditions it is not strange that the tendency of the times is to branch out into new styles rather than to conform to the old customs, and to apply the new methods and materials to improve just a little upon the work which the old builders did successfully. The house which forms the illustration of this paper is but one example, and it shows that the latter course is coming to be more and more the one which our best architects will follow in the development of future architecture for domestic use.

It will be noticed how well the square, blunt outline of the building suits the location of a restricted city lot. The simple detail of the architecture precludes a possibility of any pretensions to a larger house than it really is. The grouped windows of the lower story, with the formal entrance between, suggest at once the Colonial scheme. The ceilings are low. The marked difference between the ground plan and the two stories above is suggestive of the more domestic functions of the latter. This is further emphasized by the projection of the second story over the first, which conveys a feeling of extra comfort in the sleeping-rooms. The entrance is more than a broad doorway, for it bespeaks something of the dignity and the repose that is not ordinarily found in a house of this class. The first story of this building is constructed of red brick laid in Flemish bond in white mortar. The superstructure is formed of wood, and is covered on the exterior with wide white-painted clapboards. The roof is covered with shingles and is stained a dark-green tone, that blends well with the brickwork and the white-painted clapboards. The entrance is direct into the hall, which extends through the center of the house, and from which a staircase of graceful design ascends to the



A Dutch Colonial house built of brick and white clapboards

second story. To the left of the hall is the living-room, which opens onto the sunroom built at the side of the house. This room has a quarry tile paved floor. To the right of

plumbing of the type representing the latest improvements. There are two guest rooms and a suite of servant rooms in the third story.

A laundry, hot-water heating apparatus and fuel-room are placed in the cellar.

Mr. Joseph Duke Harrison, New York City, was the architect.

A feature of the second floor is the arrangement of the toilet separate from the bathroom, which is quite essential where there is but one bathroom on a floor. The extra space required, and the small expense attached, is more than made up in the great convenience obtained.

The linen closet opposite the bathroom is of good size and is well fitted up with drawers and shelves.

The sleeping balcony, built over the kitchen, is a prominent feature of this floor.

One of the bedrooms has a tiled hearth and facings, and a Colonial mantel made from a special design. A lavatory is built in between the two principal bedrooms, and is accessible from each.

An unusual feature in this house is

the hall is the dining-room. The woodwork throughout is nicely molded in simple, evenly-spaced members, and is treated with a cream-white paint; with the exception of the doors, the hand-rail and the treads of the staircase, which are of mahogany. Glass doors open from the hall into the living- and the dining-rooms, and are flanked by stationary glass panels, which serve to broaden the vista and add to the impression of spaciousness. The walls throughout are simply treated in yellow craft cartridge paper, producing a harmonious color scheme.

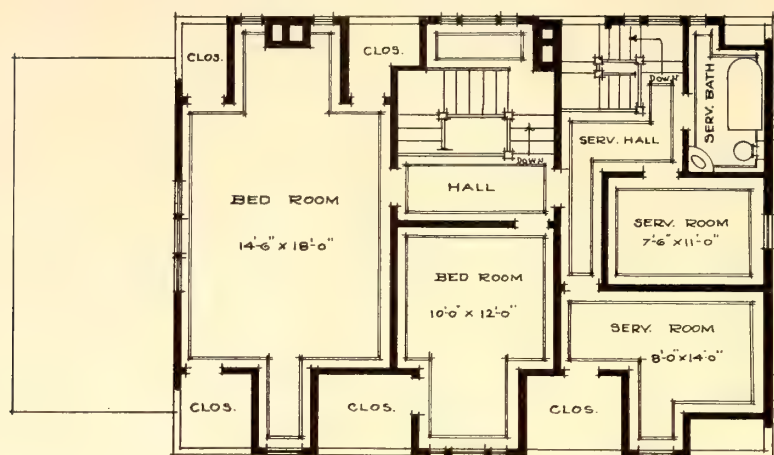
The furniture, which is exclusively of mahogany or rosewood, shows a careful selection from the Colonial and the Chippendale models. In addition to these works of art are the rugs, which are Persian of neutral richness. These two form the principal decorations of the rooms.

The living-room has a large open fireplace, with a hearth of quarry tile, facings of tapestry brick, and a Colonial mantel. The dining-room is most attractive in its appointments. There is a built-in china cabinet, a beamed ceiling, and a white wainscoting with tapestry panels.

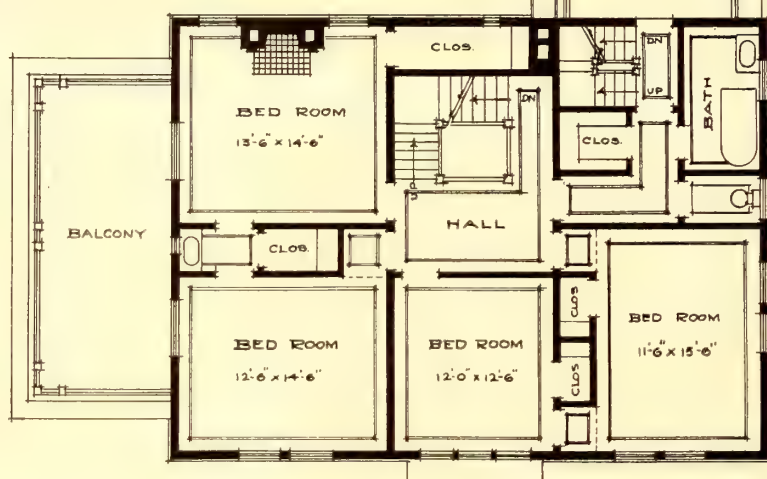
The kitchen, placed as it is in a rear extension, has the full benefit of a cross ventilation. The lights are placed low and at essential points, so as to be of greater service than is usually the case.

There are four bedrooms on the second floor, two of which connect through a dressing-room. Each of the bedrooms is done in a particular color scheme in good taste.

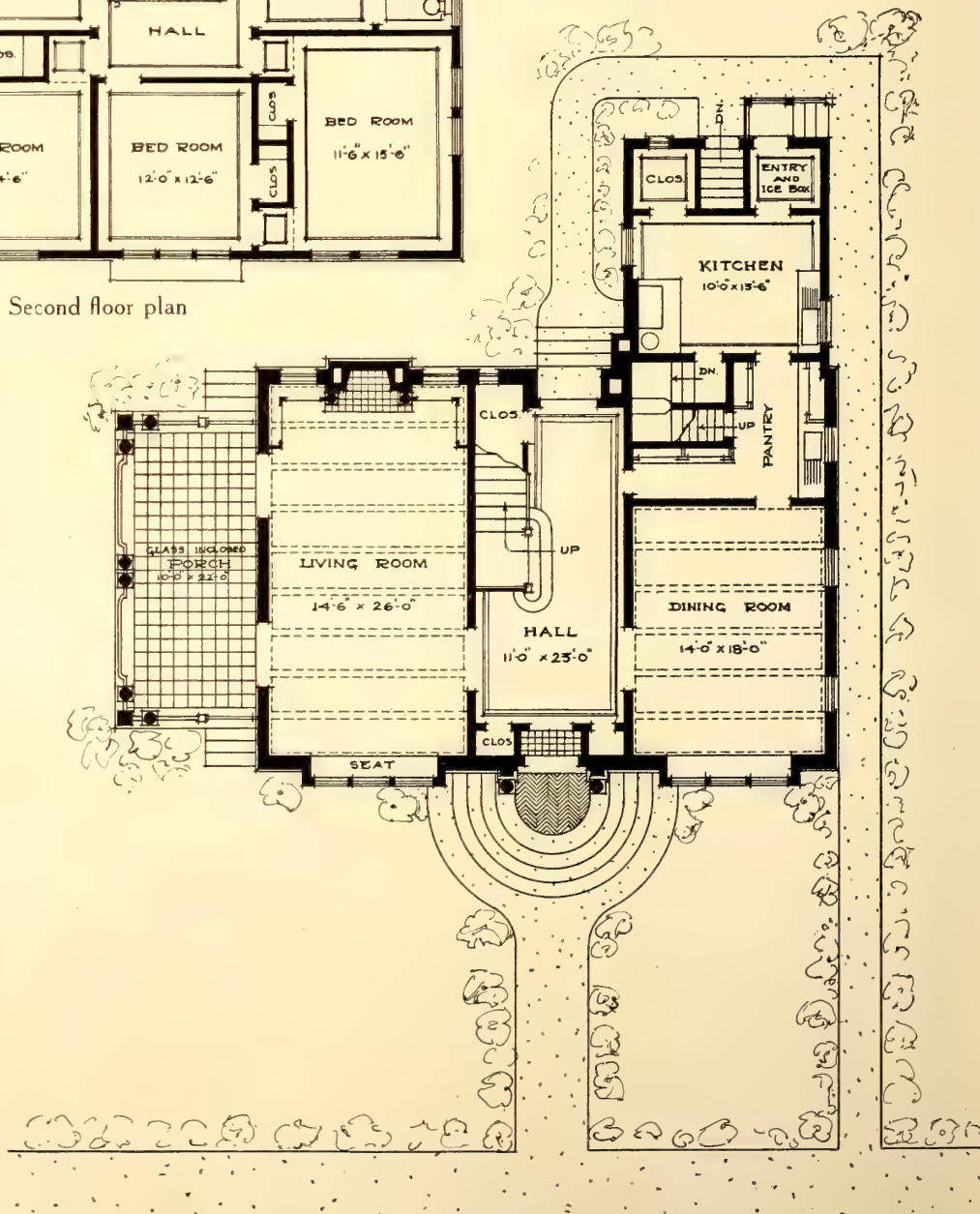
The bathrooms are complete in every respect, and are furnished with porcelain fixtures and exposed nickel-plated



Third floor plan



Second floor plan



First floor plan

the two stairways which ascend from the second to the third floor—the main staircase and the servants' stairway, the latter being the means by which the servant's room and bath-

room are reached in the third story. In addition to the servants' quarters, there are two rooms on this floor, one of which is large enough to be used for a billiard-room and the other for an extra guest room. The larger room is lighted on three sides, affording ample light and ventilation.

There are many houses of more pretentious character than the one illustrated in this paper, but there are few



The living-room

ing has been spared, either in the kinds of materials selected for its erection or for the manner in which they were put together, and they carry out the ideal sought by the architect in the conception of this building.

Considerable planting is now being done about the house in order to soften the lines of the dwelling, and also to form a setting for so delightful a house as the one designed by Mr.



The hall



The sitting-room

that comprise so many points of merit. When one considers the fine detail of the exterior, the excellent arrangement of the various rooms of the interior, and the desirable appointments contained therein, it is not surprising to claim that the acme of perfection has been reached in the designing and building of this model dwelling. From the beginning of the construction of the cellar to the execution of the most minute detail of the house, noth-



The dining-room

Joseph Duke Harrison, architect, New York city, views of which are presented in the accompanying illustrations of this paper.

The house should be the center of the picture presented to the eye, which a harmonious framework of grass, flowers, and shrubs will bring forth in all its beauty, and it is the owners' intention to relieve the severity of the home-grounds by a constant planting of desirable shrubs and flowers.



"Briar-Birch"—A Colonial house of the lean-to-roof type



HERE are few homes that have a more delightful plan, show a more charming touch of originality and true comfort, or have had pleasanter things said about them than "Briar Birch," the home of Mr. Theodore S. Holbrook, at Upper Montclair, N. J. The style selected for the exterior treatment

was the lean-to-roof type of the old Colonial Pennsylvania homestead. In its construction there were none other than the best selected materials accepted, making a remarkably substantial structure, as well as one of peculiar artistic merit. A brick-paved piazza court, fourteen feet in width and fifty-three feet in length, extending the full width of the house, is built at the front. Colonial columns, resting upon this brick-paved court, support the lean-to

roof, which extends down and forms the cover for the piazza. Two brick chimneys, constructed at either end of the building, give it its architectural feature. The exterior is covered with wide clapboards painted white throughout, while the roof is covered with shingles and is stained a soft-green tone, harmonizing well with the black-headed brick and the white-painted woodwork of the exterior.

At each side of the entrance to the house is built a wooden settle. The entrance is direct into the vestibule, from which access is obtained to the living-room, occupying one-half of the floor space of the first story. The vestibule, living-room and dining-room are trimmed in fumed chestnut. The floors are laid of selected oak, and are highly polished. The living-room has a beamed ceiling and an open fireplace, with facing of Roman brick laid in white mortar. A



The staircase ascends from the living-room

specially designed mantel completes the fireplace, at either side of which are built wooden settles. The ingle-nook has a row of book shelves extending around it to the height of four feet, above which the space is occupied by small lighted

The second story contains six bedrooms and a bathroom. The trim of this floor is of white wood painted white, while the doors are of mahogany finish and all furnished with old brass hardware.



The den

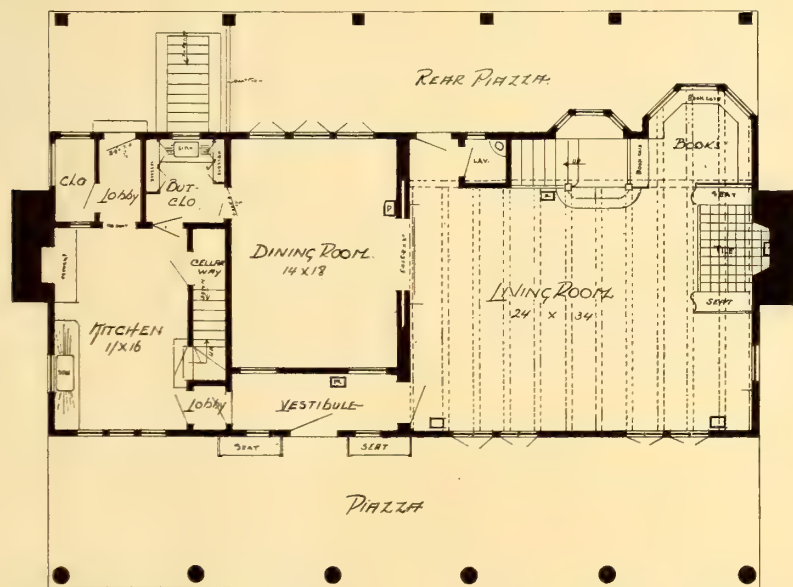


The living-room

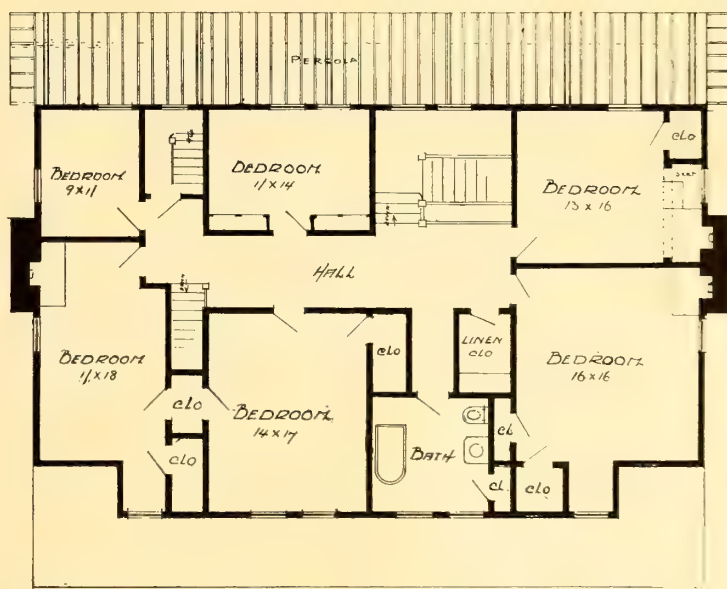
windows. The main staircase ascends from this living-room to the second floor. Sliding doors separate the dining-room from the living-room, which latter has its exposure on the garden built at the rear of the house. The butler's pantry

The third floor contains a study with a brick fireplace, three servant bedrooms and trunkrooms. The laundry, furnace and fuel-rooms are placed in the cellar.

The lighting fixtures were specially designed by the



First floor plan



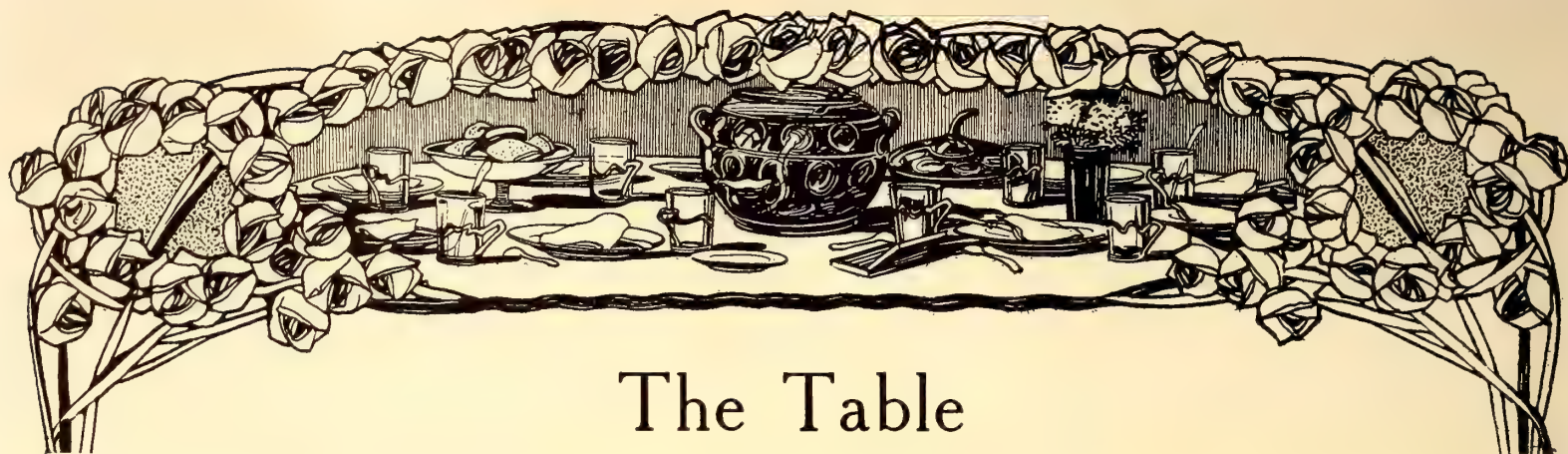
Second floor plan

and service department are finished in forest green, and are supplied with porcelain fixtures and nickel-plated plumbing. There is also a large rear piazza, reached from the living-room and from the French windows in the dining-room.

Craftsman Shops to harmonize with the interior treatment.

Mr. Albert S. Phillips, of Newark, N. J., was the architect of this interesting house, which cost in construction and material \$6,500 to finish complete.





The Table

How To Prepare Eggs

By Lydia Westcott

Photographs by Mary H. Northend



ECONOMICAL "kinks" in serving eggs, combined with picturesque arrangement, and the ringing of frequent changes on old and well-tried recipes, will form many tempting dishes for summer, when eggs will largely take the place of the more heating meat-dishes.

The hot egg dishes, the soft-boiled and poached and baked and scrambled eggs, and the numerous forms of omelets may be offered in many appetizing changes; but the salads and sauces, the hard-boiled eggs with various "stuf-fings," the canapes, and the numerous "egg-nests" appeal especially to the ambitious housewife who delights in picturesque cold dishes for hot weather serving; and still more especially to the ingenious hostess for serving at her porch teas and luncheons.

Samples of both hot and cold egg dishes are shown in the illustrations; and the other recipes here given can be quite as deftly and attractively arranged, to please the eye as well as the palate. In fact the plainest egg dishes may be made picturesque with little extra work on the part of the cook.

EGGS POACHED IN MILK

I will claim the invention of this dish until another comes forward to testify that she has given it a previous trial. In all my wide experience in studying and testing egg recipes and demonstrating them to the usual routine of changing cooks, and eager young housewives, I have invariably found that the only method followed was poaching in hot water. Some housewives find it satisfactory to simply break the egg in a cup and then slip it gently into a pan of boiling water.

Others use muffin rings; and still others the patent egg poachers; but hot water is used for the cooking. I find them much more delicious poached in hot milk, and every particle of the egg is saved, as the milk in which they are cooked is all utilized, while the water is thrown away. Milk toast or creamed toast with poached eggs forms a "hearty" summer breakfast dish, that makes meat unnecessary. Have the slices of toast delicately browned, salted, and slightly buttered; poach the eggs in muffin rings set in the frying pan of hot milk. When poached until the whites are set and the yolks still soft, remove the rings, slip each egg gently on a slice of toast arranged in an individual saucer (or arrange all the toast on a platter) and after placing an egg on each slice, pour the milk over the whole—sufficient to thoroughly soak the hot toast.

POSSIBILITIES OF HARD-BOILED EGGS

To convert the commonplace hard-boiled egg into a distinguished dish with a French name and unique flavor, is an art that appeals to the hostess contemplating an open-air luncheon. It is possible to have these dishes distinctly picturesque, as shown in the illustrations supplied by Mary H. Northend, with their practical and "tasty" recipes proving well worth trying. For the "Eggs a la Bonne Femme," Fig. 1, remove the shells from the required number of eggs, which have been hard boiled, cut off the tops and take out the yolks, being careful not to break the whites. Mince the yolks fine, and mix with equal parts of cold diced chicken and cooked ham. Season to taste, and fill the eggs with this mixture. Arrange around a mold of boiled rice and garnish with parsley.



Fig. 1—Eggs a la Bonne Femme



Fig. 2—Egg Timbales



Fig. 3—Stuffed eggs

EGG TIMBALES

For the housewife who does not possess the regular timbale molds, common coffee cups will do to serve the attractive dish shown in Fig. 2. To four well beaten eggs, add one scant cup of sweet milk, and season to taste with salt, pepper, and parsley if liked. Pour into buttered molds, stand the molds in a pan half filled with hot water, and bake in a moderate oven until firm. Turn out on a hot platter, garnish with parsley and serve with mushroom sauce. For those who like the flavor, a few drops of onion juice may be added with the pepper and salt for seasoning. If baked in large cups the four eggs beaten with the cupful of milk may be formed into four large timbales, but when baked in the smaller timbale molds, this mixture will be sufficient to fill six molds.

EGGS A LA CRÊME

Fill a buttered baking dish with alternate layers of sliced hard-boiled eggs and cracker crumbs, seasoning to taste with salt and pepper. Dot well with butter, moisten with a cup of thin cream, and set in a moderate oven until thoroughly heated and browned, and serve in the attractive form shown in Fig. 5.

BEET AND EGG SALAD

There are numerous forms of delicious salads to be formed with hard-boiled eggs. One of the most attractive, in form as well as in taste, is illustrated in Fig. 6. Cook one bunch of beets until tender, drain, peel and chop fine. Mince three hard-boiled eggs and one small onion fine and add to the beets. Heap on a plate and garnish with slices of egg and rings of onion and serve with boiled salad dressing, and one has a presentable, choice dish.

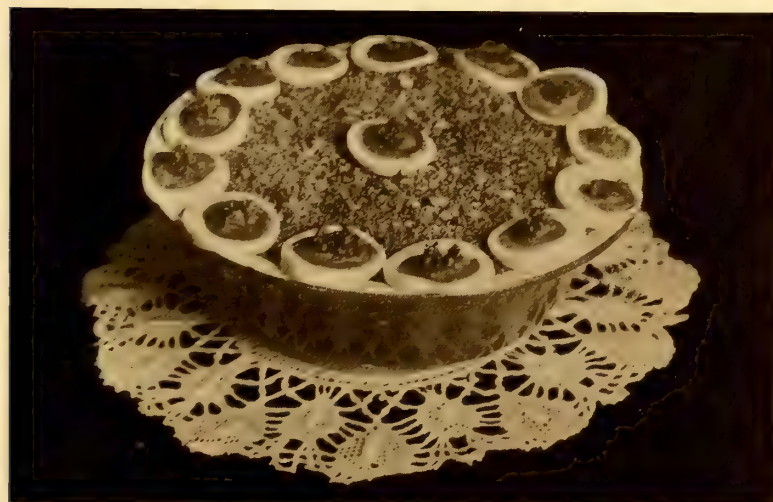


Fig. 5—Eggs a la Crème



Fig. 4—Egg canapés

EGG CANAPES

Fig. 4 shows an attractive form of serving egg canapés. Cut diamond-shaped pieces from stale bread, and fry golden brown in hot fat. Spread these with the yolks of two hard-boiled eggs rubbed into paste with a tablespoonful of anchovy or sardine butter and seasoned with salt, pepper and a little minced parsley. Garnish with parsley and the whites of the eggs cut in strips.

STUFFED EGGS IN TOMATO SAUCE

Cut six hard-boiled eggs in half, crosswise, and remove the yolks. Mash these fine with a spoonful of butter, half a cup of bread crumbs slightly moistened with milk, and a little finely minced parsley or scraped onion, and salt and pepper to taste. Fill the halves firmly with this mixture, press them together, and serve in hot tomato sauce garnished with parsley as shown in Fig. 3.

BAKED EGGS

Plain baked eggs form an appetizing dish, with a distinct flavor; and they are more easily digested than fried eggs.

Set small muffin rings in a deep earthen plate that has been well buttered. Break an egg into each ring, put a piece of butter on the top of each egg, season with pepper and salt, and place immediately into a hot oven. Bake until the whites are set. Then carefully remove each muffin ring, and slip the eggs from the baking dish to a hot platter, and garnish with lettuce leaves. They may be baked without the muffin rings, placing the eggs carefully with unbroken yolks close together in the buttered baking dish. But the rings form a firmer nest of white around each yolk. For a change, each baked egg may be served separately in a little nest of lettuce leaves, with a slice of lemon.



Fig. 6—Beet and egg salad



Field stone and shingles are the materials used for the exterior walls

A Bungalow Designed by the Owner

By Lillian Harrod

Photographs by the author



OCCUPYING a slightly location, not far from the little railroad station in the town of Sharon, in Massachusetts, is the interesting bungalow owned and designed by Miss Ethel Bushnell Hall. It stands in a clearing of woodland stretches, surrounded by broad sweeps of grassland, intersected with graveled paths, and it overlooks at the rear a vast area of fertile fields and valleys outlined in the distance by the Berkshire hills.

It is erected on a foundation of rough fieldstone, sufficiently deep to permit of the arranging of a good-sized cellar, entered from the outside by means of a bulkhead, and the severe simplicity of its long, low lines is pleasantly broken by large bow windows ensconced on either side of the great fieldstone chimney. Rails of fieldstone flank the front entrance steps, and posts of the same material support the pergola built out from above the side entrance door. The exterior finish is of shingles, left unstained, the wood tints gradually, deepening to a soft weathered gray, and the trim is painted dark brown. The sloping roof, with its deep overhang, is finished to correspond, and the monotony of its straight lines is agreeably intercepted by groups of dormer windows inserted at either end.

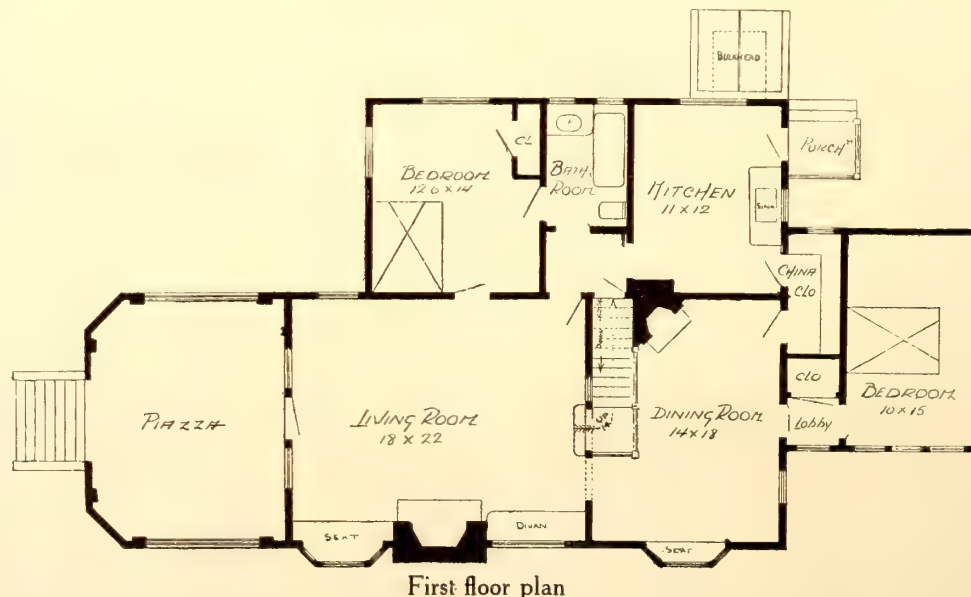
The entrance door gives directly upon the sun-room,

finished like the exterior in untinted shingles, with ceiling and floor of hardwood, stained and polished. It is ensconced in a sort of ell, commanding views on three sides, and it is fitted with great broad windows, glass enclosed during the winter months, but simply shielded by heavy screens in the summer season. Hangings in tones of green outline the window spaces, and coverings in the same tints adorn the corner seats.

From one end a broad door, flanked on either side by narrow casement windows, opens into the living-room, a spacious apartment, finished in hard wood stained to imitate cypress, with rough plastered ceiling, and walls hung with red Japanese grass cloth. A large art square in tones of red partly covers the polished floor, and smaller rugs of harmonizing colors are laid before the doorway spaces.

A great open fireplace built of rough fieldstone is arranged

at one end, and to the left, beneath the large bow window, extends a cosy seat outlined with dark red portières and cushioned in plush of the same shade. On the opposite side, below the long, low casement windows, extends another seat, cushioned to correspond, and topped with a narrow shelf for the display of pictures and knick-knacks. It is finished in imitation of an old-time settle, and extends part way around the farther end of the apartment close to the open space, from the left of which ascends a quaint



staircase, finished like the woodwork, and enclosed with an artistic screening. This stairway separates the living-room from the dining-room, being plainly visible in both, and constitutes a pleasing diversion from the more commonplace wall separation.

The dining-room is finished similar to the living-room,

which serves as hallway for a large chamber, a good-sized bathroom, and a finely appointed kitchen, the last named provided with a separate exterior entrance, and equipped with all modern conveniences. At one side is a large china closet, which also connects with the dining-room, and from the last named opens another entry, with storage closet at



The out door living-porch is the feature of a bungalow

with wall hangings of dark green, and a feature is the spacious bow window with cosy seat beneath. A large glass door hung with green portières leads to the side pergola, which in the near future promises to be a bower of vines and blossoms.

The living-room opens at one side into a small entry

one side, which connects with a nicely finished chamber.

On the second floor is a cosy den, containing a unique fireplace faced with moss-covered slabs, three large chambers, provided with lockers and closets, and abundant storage.

The house is heated by steam, and lighted by electricity, and its cost complete was but \$3,500.

A Studio Bungalow Built for an Artist

By Henry Hawley



WE PRESENT in this issue photographs of the studio bungalow of Mr. John Ray, which was built in the Caldwell Cedars Property at Caldwell, N. J., in 1909. In the design the effort has been to embody the feeling of the old American farmhouse, adopting the plan to the needs of the owner. The long, sweeping effect to the roof is obtained by breaking the roof into two pitches, thereby relieving what would otherwise be a stiff and conventional design. The exterior walls are covered with the broad, barn board painted white. The roof is carried out over the front porch for a distance of 10 feet, and a large overhang in front of the columns adds to the low effect of the building. The floor of the porch, which was composed of random bluestone flags laid in sand, is extended beyond the front of the columns for the purpose of placing ornamental trees and flower boxes. The windows and doors have all been treated with the long sash, 4 panes wide, the panes being made purposely small. The effect of the farmhouse type is still further augmented by the use of plain board shutters, with the battens screwed across on the inside, the severe plainness being relieved by the insertion of a star in the upper portion. The front door is made 4 feet wide and is split in two halves and hung by means of wrought-iron strap hinges, such as is seen on barn doors of

this period. The rear porch is similarly treated with flagstones, one-half being covered with a canvas roof, the balance being left open beams. A fireplace is provided in the corner of this porch, and means for closing in in winter, so that it can be heated and used as a dining-room. The dining-room thus formed connects with the kitchen by means of a slide.

The house is divided by two longitudinal partitions into three sections, the central section being devoted to the living-room while the right-hand section is wholly occupied by the studio. Both these rooms open up to the roof with the rafters and roof boards showing. The left-hand section is divided into two stories, the first floor being arranged in a kitchen, two bedrooms and a bath, while on the second story are a maid's room and an additional guestroom. As one enters the living-room, he is impressed with the feeling of the home atmosphere. Directly opposite the front door rises a rough cobblestone fireplace extending the full height of the room.

The room is ornamented with a plate-rail, placed at the height of the tops of the doors and extending around all sides. Below the plate-rail, the wall spaces are divided into panels by means of simple board bands, the panels being covered with grass-cloth and surrounded and finished by a simple molding. In the color scheme adopted, the woodwork is stained gray, showing the grain of the wood below,



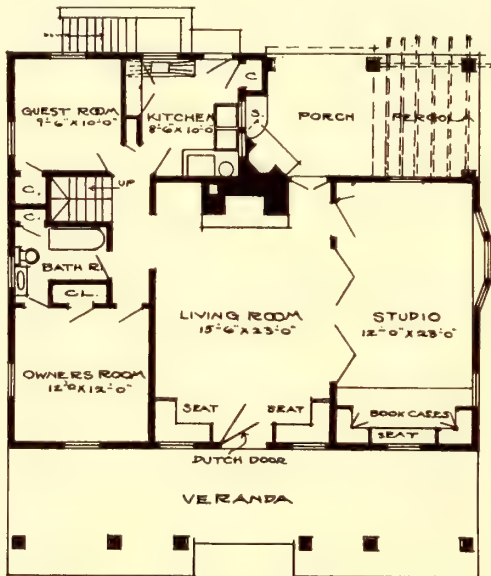
The house



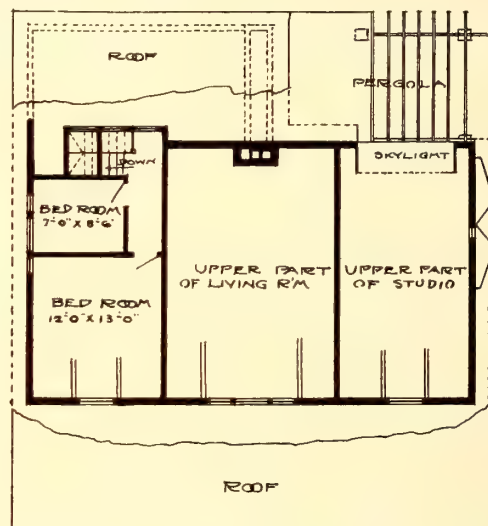
The porch

while the green of the grass-cloth and the light cream tint of the walls above add to the effect. The roof boards are painted a gray and the rafters brought out in a darker color, accentuating the structural lines of the building.

One very curious and accidental feature of the room is its perfect acoustics. The notes of the piano come out clearly with a ring, but with the absence of any echo. This is probably due to the two pitches of the roof not being equal in length or in slope. The living-room is connected to the studio by means of a single door, and also large folding doors are provided, so that the two rooms may be opened into one in case of any large social function. At the north side of the studio the skylight is ar-



First floor plan



Second floor plan

ranged so as to flood the room with an even light at all times of the year. Special attention was taken of the angle of the sun at its highest point, in order that no direct light would pass through this skylight. Directly opposite the skylight end or to the south, is built a raised platform with bookcases on either side, the platform being one step high. The purpose of this platform is not only for decoration, but may be used if desired as a model-stand. The bedrooms are made very low in ceiling height and are decorated with old-fashioned Colonial paper. Its cost

complete did not exceed \$5,500. Mr. Hobart B. Upjohn, of New York, was the architect of this interesting building, with attractive bungalow features.



The studio and living-room



The interior of the porch

GARDEN NOTES

This department is conducted by an experienced and practical landscape architect, who extends an invitation to the readers of AMERICAN HOMES AND GARDENS to send to the Garden Editor inquiries on any matter pertaining to the developing of the garden and the home grounds. Letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this department.

When and How to Gather Vegetables

By M. ROBERT CONOVER

WHILE vegetable gathering seems to be the simplest kind of garden work, yet there is a right time and a right way of doing it which the novice often misses. A careless person turned loose in the garden can do more harm in fifteen minutes than can be undone in as many days.

The first requirement is to know when vegetables are at their best; the second is to know how to gather them.

While vegetables gathered in the fall must be well matured for winter storage,

four inches in diameter and six inches in length should not be allowed by the man who enjoys the luxury of his own garden.

The white spine and kindred varieties of cucumbers are about right at four or five inches. Longer than this, the seeds are too prominent. These vegetables are of so rapid a growth that one must inspect his patch every day.

Pease are fit when the pod is plump and firm and just showing the outline of its contents. They must be gathered at this stage, for one day longer will spoil them. After the pod begins to fade the peas harden.

String beans should not be thicker than a lead pencil if they are at their best. Limas are ready when the well-formed beans can be felt in the pod.

Round or Irish potatoes proclaim their maturity by their yellowing foliage, which gradually browns and blackens under the July sun. When dug, they should not be allowed long on the ground, but removed to a shady place.

Sweet potatoes are usually ready in August.

It is best to dig a few to make sure that they are of the proper size. Those that are to be stored are dug in September, and require thorough drying.

As a rule, vegetable products that are grown above ground are nicer if gathered



Peas are ripe when the pod is plump and firm: just showing the contents

summer vegetables are wanted for their tenderness, their delicacy of flavor and that crispness which quick growth in rich soil insures.

For this reason beets, turnips, radishes, carrots, kohlrabi and young onions are best when they have attained but moderate size. They are then mild in flavor, cook quickly and are free from that stringiness which sometimes characterizes those of slower growth.

Heads of cabbage must be firm when pressed before they are taken. Head lettuce must be well formed and rather compact, but these never grow as hard as cabbage. Romaine lettuce is ready when properly blanched. Other varieties are cut about an inch and one-half above ground when the leaves are large enough to use. It will grow and be ready for cutting again.

Crook-necked and marrow squash for summer use are gathered before the rind hardens, and an egg-plant much exceeding



Summer vegetables are noted for their tenderness and delicacy of flavor

in the cool of the morning, before the dew has dried.

In gathering turnips, pull them carefully, so as not to disturb their neighbors, as it hinders their growth. This is true of beets also. Squash, cucumbers, peppers, toma-

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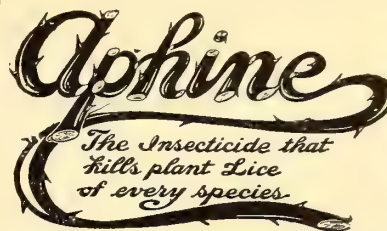
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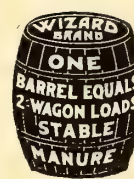
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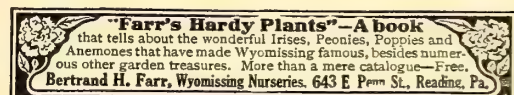
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View on grounds of Mr. C. W. Munson, Port Washington, L. I. In remodeling this farmstead for a country residence, there were several barns to screen. Cedars, Hemlock and Spruce trees, 20 to 35 feet high from our nursery were used.

Hicks Trees for August and September Planting

The readers of this magazine are probably not aware that transplanting Evergreens in August and September is entirely successful. We will ship from the nursery or from the collecting fields. In the latter we have over one thousand White Pine, Red Pine, White Spruce, and Hemlock, 8 to 30 ft. high. They have been root-pruned. A typical order for the place of moderate size includes several large evergreens at \$25, \$50 or \$100 for the important positions, using specimens 3 to 10 inches at from \$1 to \$25 and finishing with the smallest sizes in quantity to grow for future use. Such assortments may cost from \$150 to \$1500, and are most economical. Are there large evergreens in your neighborhood? We can move them fifteen miles to your grounds. Our special tree moving apparatus will take evergreens up to 40 ft. high and 30 ft. spread. Send for booklet "Evergreens for August and September Planting."



Red Cedar 20 feet high.

Isaac Hicks & Son
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toes, etc., may be detached from the vine by an upward twisting motion, but egg-plants had better be cut loose with clippers, as the stem is tough and liable to skin the plant if twisted off.

In picking peas and beans, grasp the stem firmly with one hand and remove the pod with the other, so as not to bruise the vine or loosen its roots.



Tomatoes must be allowed to ripen on the vine

Sweet corn, melons, etc., are the most puzzling to the amateur. Looking with an uncertain feeling upon an ear of corn wrapped in its snug husk, one at last summons courage to pluck it, only to find its kernels undeveloped. Even the most experienced sometimes fail in judging corn. An edible ear must have its grains shaped, but milky



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Corn is a difficult problem for the amateur

and tender. If too old, it will harden in cooking. Generally, when right for table use it hangs off from the stalk at an angle of twenty-three degrees or a trifle less; the tip of the silk has dried and the husk does not yield when the ear is grasped. Corn that has dried all its visible silk and divided its husk near the top is out of the list as a table vegetable.

(Continued on page xvii)

HELPS FOR THE HOUSEWIFE

If the readers of AMERICAN HOMES AND GARDENS desire any information concerning the subjects treated under this department, write to the Household Editor and receive such assistance as may be desired. All letters accompanied by return postage will be answered by mail. Replies that are of general benefit will be published in this department.

Possibilities of Small Fruits—Cherries Served in Appetizing Variety

By PHEBE WESTCOTT HUMPHREYS

FROM the time the first sweet cherries are at their best, in mid-June, until the last of the sour pie cherries and morillas are enjoyed, in August, they are the small fruit par excellence for giving delicious variety in desserts and salads, and in canning, preserving and jelly making for winter use.

For plain canned cherries, the early cherries—the oxhearts and other big, plump, sweet varieties—are the best. For the canning use less sugar than for the preserves, jams or jellies; half a pound of sugar to each pound of fruit will be sufficient. Pull the stems from the fruit, but do not stone the big cherries that are to be canned whole. Make a syrup by boiling the sugar with a little water (only enough to keep it from burning), then place in the cherries and boil gently until the fruit is done, without breaking. Pack the cherries closely in glass jars; pour over sufficient syrup to fill each jar; have perfect rubbers and caps, screw on the tops while the fruit is hot, and just before setting away in the dark preserve closet, when cold, give the tops a final screw, being sure that they are air-tight.

FOR WINTER USE

For the preserves and jellies the sour cherries are the best. Use pound for pound of fruit and sugar. In preparing the jellies, quantities of the cherries may be stewed with the sugar syrup to secure plenty of juice, and this may be poured from the fruit for the jelly and the fruit then cooked with a little fresh sugar and water syrup, and cooked down rather thick, to make a stiff preserve. The cherries should be stoned before beginning the jelly making, then none of the fruit need be wasted after straining off of the juice. The fruit that is broken and mashed in the jelly making will be as fine for the jams as fresh fruit cooked for the purpose. Not only the jellies, but the stiff jams and preserves may be placed in jelly glasses or small pars, the tops covered with a thin layer of paraffin; and metal or paper caps will then "keep" the fruit perfectly, with no danger of souring or moulding.

CHERRY SALADS

It is a comparatively new idea to utilize cherries in salads, and only those who have tested their possibilities in this form, for serving with cold or hot meats, have fully appreciated the sour cherries. For plain cherry salad, stone large sour cherries—preferably the big, juicy, almost black morillas—cut in half, pile on small white leaves of curly lettuce and serve with mayonnaise dressing. Select small, round, ripe tomatoes, cut out the stem ends, scoop out the centers, fill with chopped sour cherries, set each tomato on a leaf of lettuce and cover the whole with French salad dressing.

Chopped sour cherries and thin slices of oranges make another pleasing form of salad, to be eaten with game or poultry.

Finely chopped gooseberries and cherries, with lemon juice, form another distinctive salad with rich tart flavor, and variety may also be imparted by serving with different forms of egg dressing, the thin French dressing of olive oil, vinegar, pepper, salt and mustard, or the rich, thick mayonnaise dressings usually preferred with fruit salads.

CHERRY DUMPLINGS OR CHERRY DOUGHNUTS

This novel form of dessert may also be called cherry croquettes, or cherry balls, according to the form in which the dessert is molded before cooking in hot fat. Make a batter of one cupful of flour (sifted with a quarter of a teaspoonful of baking powder) one tablespoonful of olive oil, two tablespoonfuls of sugar, the yolk of one egg, and just enough cold water to form a "drop batter." Stir in a pinch of salt, and at the last stir in quickly the beaten white of the eggs and a cupful of stewed cherries that have been drained from their juice, sweetened and chopped. This thick batter may be formed with the hands, after flouring, into small balls, tiny dumplings or twisted doughnuts. Drop in hot fat and fry quickly to a golden brown, coat with powdered sugar. They are delicious served hot, with vanilla sauce, and when made in quantity may also be served cold as cherry doughnuts. Cherry dumplings may also be made the same as apple dumplings (for boiling or baking), with a big handful of cherries in each dumpling.

CHERRY PUDDING OF DIXIELAND

The good old Southern puddings of sour cherries and corn meal batter, boiled in a bag, are hard to beat either north or south. Make a good corn meal batter, as for "Johnny cake," with a cup of fine corn meal, half a cup of flour, a tablespoonful of butter, half a teaspoonful of salt, one egg, a teaspoonful of baking powder and enough sweet milk to make a very stiff batter, as the juice from the cherries will thin it while cooking. Stir in all the rich, ripe, sour cherries that the batter can be made to hold, allowing half a cup of sugar to each cup of cherries. The pudding should be so full of cherries that the batter simply holds them together. Place in a long pudding bag, drop into a pot of boiling water and boil without ceasing until the pudding is done. Rip the bag open at the end and down one side, roll out the firm, whole pudding, cut into thick juicy slices and serve hot with vanilla sauce, with butter and sugar creamed together, or with any rich pudding sauce.

CHERRY JUNKET

To one quart of new milk allow one rennet tablet, or three-fourths of a tablespoonful of liquid rennet. Allow the milk to become lukewarm on the back of the range,

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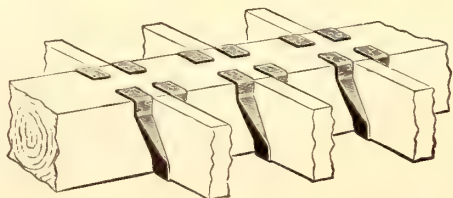
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then sweeten to taste and stir in the rennet. About five drops of almond flavoring to each quart of prepared rennet will increase the rich cherry flavor. Pour the prepared rennet directly into sherbet glasses to cool, filling about half full. When cool and firm and ready to serve, place chopped sweet cherries, or stewed and sweetened sour cherries, on the junket, filling the glasses full. Heap whipped cream on top and serve very cold.

CHERRY JELLY NESTS

In making a gelatine nest to hold various fruits and creams it is customary to first place a little of the prepared gelatine in the bottom of the mold and allow it to harden before setting a smaller mold, or a tumbler, on the firm bottom of jelly, to form a space for filling in the jelly between the two molds. A better plan is to set the tumbler within the bowl on a little ring of tin that will hold it up half an inch or more from the bottom. Soak a box of gelatine in a cup of cold water for half an hour; add a quart of boiling water and two cups of granulated sugar. Mix in the whites of two eggs and stir over the fire until the gelatine is dissolved. Pour into the small bowls, allowing a nest for each individual to be served. After filling the bottom of the bowls, set the tumblers on the little rings and fill in the space between the tumbler and the bowl with gelatine. Set in a cool place to harden. Just before serving, remove the tumblers and the rings and fill the jelly nest with fresh, sweet cherries, chopped with powdered sugar; or with stewed cherries from which all the juice has been drained. Keep in the ice box until ready to serve. Then, with a saucer held firmly over the top of each bowl, turn out the jelly nest and quickly turn it upright on the flat glass dish on which it is to be served. Dot a little whipped cream on the top of each cherry-filled nest.

CHERRY AND RICE COMPOTE

A few drops of almond flavoring should be used, instead of nutmeg or vanilla, for the boiled rice that is to form the compote of rice and cherries. Boil together a cup of sugar, half a cup of water and a cup of pitted cherries. Remove the cherries when done and boil the syrup until thick, like jelly. Put half a cup of rice into a quart of slightly salted boiling water; boil rapidly for fifteen minutes, then add half a cupful of rich milk, two tablespoonfuls of sugar, and place on the back of the range to simmer slowly until the rice is thoroughly done and puffed up, white, flaky and tender. Arrange nests of the rice in individual dessert dishes, and fill the centers with stewed cherries, or, if preferred, with fresh cherries halved and sweetened. Pour the heavy syrup over the cherries and rice just before serving.

CHERRY PIE AND CHERRY LUNCH

Make a rich puff paste, as for other pies, and fill with sour cherries well sweetened. The only precaution required in making cherry pie is to dust the bottom crust with flour to absorb the juice, and pierce the upper crust. For the cherry lunch, make turnovers of puff paste, fill with cherries, brush the tops with melted butter and bake quickly. Serve hot.

CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in House Furnishing

By ALICE M. KELLOGG

"MY son returns from college this spring and I am refitting two rooms on the upper floor for him. I shall buy nearly all new and would like it up-to-date. He will want twin beds, as he will entertain college friends."

The twin mahogany low-posters are very attractive, with wicker chairs, chiffonier, and night-stand with dull brass handles. The rug will please better if you buy a large size, say within two feet of the wall. The bed-throw, portiers and cushions should be some of the new bird chintzes which come in bold, handsome designs, also over curtains and straight valance over the top of the windows. The sitting-room should not have too much mission furniture. It is bulky and heavy to move. The table should be a round one, possibly leather covered, with copper nails. Gas or electric reading lamp, copper tray for matches, etc. Leather or burlap center mat. Book rests. The book shelves for larger books are in better taste, made in plain, simple lines, same woodwork as the furniture, no curtains or glass doors. Silk or homespun linen curtains simply hemmed, to sill, in whichever color predominates in the rug. Rug should be Brussels or Scotch.

Mrs. H. from Mt. Vernon asks; "I have a number of pieces of Canton that I would like to place in dining-room. We are having a plate rail put up, and will re-paper. The woodwork is nearly Flemish. Please send suggestions."

There is a wall-paper resembling burlap that would look very well below your plate rail.

Choose a wood tint that looks well with the woodwork. Above the rail use either a buff with indistinguishable pattern, or a blue that will harmonize with the Canton blue of the china. This must be carefully chosen.

A correspondent writes about Chinese matting. "Shall I use it again upon the bedroom floor of this suburban house. We are removing the matting now on the floor, as it is worn, but I am uncertain what to put in its place."

Mattings are not used as much as formerly. If the state of the floor will permit have it stained and waxed, and use one large rug, nearly covering the floor, or two smaller. You will find there is nothing handsomer, more durable or cleaner than a waxed floor. The rugs can be turned to prevent wear, and you will be better pleased.

"My daughter (sixteen), is dissatisfied with her room, but I do not know what to buy to make it prettier. I am much confined to the house, and do not see the new things in the stores. Bed and dresser must remain the same, but I can afford new papering, chair or two and inexpensive rug. There is a bay window."

Much can be done to improve this room,

There are very pretty, expensive and moderate-priced wall-papers in rose or lattice pattern, also English chintz papers that can be matched in material for the bed and chairs. Or there can be bought now, readymade to put up at windows and on the bed, the "Dolly Madison" organdie ruffled sets. The window curtains hem-stitched and valance straight or ruffled to match. These are printed in lavender, pink, rose and blue, in shadow and rose designs. The bed spread has a deep valance falling to the floor with the border, printed just above the hem. They are both dainty and girlish colors warranted to endure washing. Rewax or revarnish the floor, and buy a Scotch rug, gray, with plain center, rose design, in dull old rose, as a border. This comes at \$3.00 a square yard. Wicker chairs, one a rocker, with cushions of plain linen taffeta, and if you can afford a window seat with cushions and pillows of the same, I think your daughter will be very happy in the new appearance of her room.

"We have an old, white mirror frame, 36x22 inches, frame flat, 3 inches wide. How can I make use of it?"

If you can match the cretonne of your bedroom set, and cover the frame tight and flat, then have a mirror put in the frame you will find it a charming addition to your bedroom.

"Can you give me a suggestion for a gift to a friend for her living-room? About five dollars I have to spend."

Have you seen the jardinière baskets in gilt lattice work? A pretty design is one of wire in lattice work with ribbon and wreaths thrown over it. The inside pan is gilded in the same shade (an antique finish, not bright jet), with a flowering plant, or palm inside it, this will be a charming addition to any living-room. It can also be used on the dining table, porch or hall table.

Mr. J. B. of Gloversville writes: "We are building and would like suggestions about electric wiring. Even if we had the house wired we would not use electricity at present. So it seems a somewhat useless expense."

By all means have the house wired. It will increase its value when you come to sell, and it is very expensive to have it done after the house is built. Have the best of materials. Fixtures can be bought anywhere, gas and electricity combined, and some of them are very artistic. You will find it useful in your living-room (if you know beforehand where the piano and table are to be placed permanently) to have a connection through the floor. It will enable you to have a reading lamp on the table and the wire will be practically unnoticeable and far more convenient than if it were connected from an overhead fixture.

"Our oak dining-room table is nearly ruined by hot dishes. The white spots are so glaring, I am unable to use doilies at

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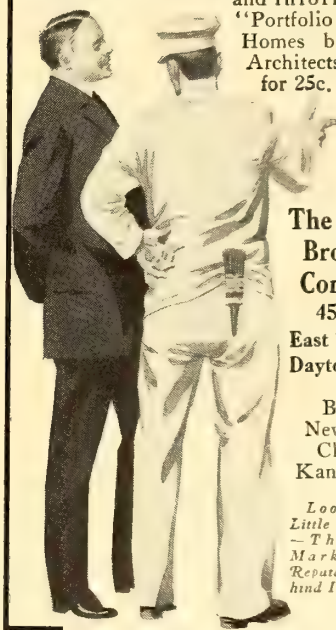
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No. 130 Weathered Oak	No. 120 Fumed Oak

Half Gallons—\$1.50 each

Don't you want this Book—Free—and samples of the Dye and Wax? Ask your local dealer for them. We have supplied him for your use but if he does not furnish you with them drop us a postal and we will see that the samples and book reach you at once. Ask for Booklet A.H.-7.

To Architects: Beautiful sample panels of all woods now in use for interior trim will be furnished to you upon request, finished with our Dye and Wax. These give the exact effects obtainable by their use.

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The Wood Finishing Authorities
Racine, Wis.



luncheon, and keep a large table cloth on between meals," writes Mrs. M. W.

The best way is to have the entire surface of the table scraped and refinished with wax finish. If you are at all handy it is not a hard job, only tedious. There are several mixtures sold warranted to remove paint and varnish quickly. Clear ammonia will do the same. Scrape the surface with a carpenter's tool for that purpose, let dry, sandpaper the wood and it is ready to restain. Perhaps your painter can restain it to the former color, and he will show you how to rub it down and keep it in good condition. The asbestos mats which now come in white linen washable scalloped cases, should still be used.

FURNISHINGS FOR THE HOME

THE demand for Mission, Colonial and Filet nets by the yard continues to grow. They must, of course, be provided for special places. Entrance and vestibule side-lights and transoms are helpful for sill curtains on the first floor. The charm and distinction of some of these nets is bewildering, but it goes to prove that no one must attempt to purchase sill curtains without first acquainting themselves with the good things the market provides.

Then there are curtainfabrics that are not to be found in the curtain department, but which make artistic curtains. A good quality of cheesecloth with a stencil border is effective. Cheesecloth can be made into unusual looking curtains by first wetting in cold water and then wringing tightly with the hands; when shaken out it will have turned into a crinkled drapery that is far more beautiful than the ordinary cotton crêpe, as the crinkles are so much larger and more decorative.

Many people have a great objection to shades, and the English method of hanging a double pair of sash curtains is a good one. Traverse cords are used with both sets. The top rows are usually kept closed, and each pair in the lower sash slightly pulled back. Where there are shutters, they do away with the necessity of shades, and are very charming in themselves. They are of linen color, and the material is casement cloth. This casement cloth also comes with small detached figures and is just the thing for modern English rooms. In Colonial rooms the plain casement cloth is the better choice.

An old favorite, and one of which we never tire, is Madras. The cream ground and colored flowers give a soft and pretty appearance to the room when they are used as sash curtains. Some people have a great objection to lined and interlined curtains, and for those who have this prejudice, the made Madras are appropriate for downstairs rooms.

Great care must be taken in the hanging of curtains to see that they just escape the floor, and inner curtains must not on any account be held back with cords, although this is still allowable with sash curtains. Traverse rings and traverse cords enable portières to be quickly drawn back, preventing them losing their shape if they are pulled to and fro by pulling the curtain itself. As heavy curtains of all kinds are a large item in furnishing, it is most important that such little details as tend to the care of the draperies are given a good deal of thought, and a little money wisely spent at the beginning in protecting them from wear will often be found to have been a real economy in the long run.

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Exclusive Manufacturers of
Koll's Patent Lock Joint Columns

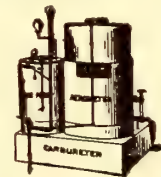


Suitable for
Pergolas, Porches or Interior Use
ELSTON and WEBSTER AVES., CHICAGO, ILL.
Eastern Office:
1123 Broadway, New York City

Our illustration shows the attractive effect that can be obtained by adopting pergola treatment for your garage. This adds but very little to the cost of the building and makes it an attractive feature of your general landscape scheme instead of an eyesore, as it frequently is.

DON'T COOK THE COOK

use
"ECONOMY" GAS
For Cooking, Water Heating and
Laundry Work also for Lighting
"It makes the house a home"
Send stamp today for "Economy Way"
Economy Gas Machine Co.
ROCHESTER, N. Y.
"Economy" Gas is automatic, Sanitary and Not-Poisonous



HESS MEDICINE LOCKER



The Only Modern, Sanitary
STEEL Medicine Cabinet

or locker finished in snow-white, baked
everlasting enamel, inside and out.
Beautiful beveled mirror door. Nickel
plate brass trimmings. Steel or glass
shelves.

Costs Less Than Wood

Never warps, shrinks, nor swells.
Dust and vermin proof, easily cleaned.

Should Be In Every Bath Room

Four styles—four sizes. To recess in
wall or to hang outside. Send for illus-
trated circular.

The Recessed Steel
Medicine Cabinet
HESS, 926 Tacoma Bldg., Chicago
Makers of Steel Furnaces. — Free Booklet.

When and How to Gather Vegetables

(Continued from page xii)

Melons are coy about proclaiming their ripeness, but bees can guess it and they will hover above them, attracted by their fragrance. When ripe, the stem of muskmelons parts readily from the fruit, and this condition is usually manifest by tiny cracks where the parting will take place. The Hackensack, Long Island Beauty and other creamy-fleshed melons show the faintest tinge of yellow through their netted surface when ripe, but the Emerald Gem, Jenny Lind and other green-fleshed melons do not when properly ripe.

With water melons the case is yet more difficult. Those whose powers of judging are not racial must reconcile themselves to some loss from bad judging. A wide, yellow area on the under side of the melon indicates ripeness. If when pressed the melon gives a muffled, groaning sound, its ripe inwardness has parted and the sacrificial moment has arrived. When the ear has become true, a light thumping on the surface will disclose the secret.

FOREST FIRES

DURING the year forest fires burned over an area of 3,000,000 acres, at a rough estimate, at a loss of \$25,000,000 and the destruction of over 6,000,000,000 feet of timber. During 1909 the burned area was 362,014 acres, as compared with 115,000 acres in 1906. It is charged that a considerable number of the fires were caused by incendiarism, which has led the department to offer a reward for the conviction of the incendiaries. Precautionary means are being employed by the department to reduce the fires to a minimum, such as the construction of roads and trails and the establishment of fire lines. During the year 5,500 miles of road and 16,000 miles of trail were completed. It is remembered that the forests be equipped with lookout stations located on high points, with telephonic communication.

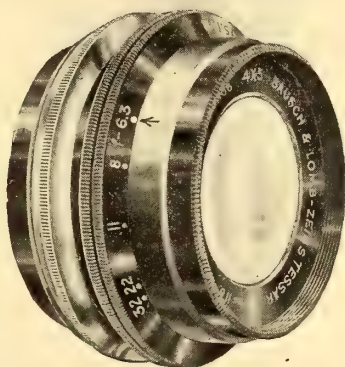
TALLEST OF TREES

IN New South Wales, Victoria and Tasmania grows a species of gum tree, *Eucalyptus amygdalina*, which probably represents the tallest of all trees of the globe.

The loftiest specimen of this tree yet measured towers to the height of four hundred and seventy-one feet. A prostrate tree, measured in Victoria, was four hundred and twenty feet long, and the distance from the roots to the lowest branch was two hundred and ninety-five feet. At that point the trunk was four feet in diameter, and three hundred and sixty feet from the butt the diameter was still three feet. The wood of this tree is hard and of good quality, it grows quickly, and yields a great quantity of volatile oil from its leaves, which are very abundant.

TORTOISE SHELL

THE finest of tortoise shell is said to be that which comes from the Indian Archipelago, although much of that obtained on the Florida coast is of the very best quality. There are three rows of plates on the back of the animal, called "blades" by the fishermen. In the central row are five plates, and in each of the others four plates, the latter containing the best material. Besides these, there are twenty-five small plates round the edges of the shell, known as "feet" or "noses."



WOULD you buy a musical instrument that limited your range of execution? Then why limit the scope of your camera when perfect reproduction demands the use of a

Bausch and Lomb Zeiss TESSAR LENS

For portraits, groups and landscapes, for the swiftest things in motion, for the most perfect detail, for use in waning light when other lenses fail, the Tessar has no equal. If you are an expert photographer, you will quickly appreciate the many qualities of the Tessar; if you are a beginner it will help you to greater achievements. Book-let J treats of better photography in an interesting manner. Write for it to-day.



Our name, backed by over half a century of experience, is on all our products—lenses, microscopes, field glasses, projections, apparatus, engineering and other scientific instruments.

Bausch & Lomb Optical Co.

NEW YORK WASHINGTON CHICAGO SAN FRANCISCO
LONDON ROCHESTER, N.Y. FRANKFORT

Vudor

Porch Shades



When sunshine and dust abound, when the very air burns under the fiery, sultry heat—Your porch will be as cool and comfortable and shady as you could possibly wish for; like an overhanging oak tree brought near the ocean breezes;—if it is protected with Vudor Porch Shades.

YOUR PORCH WILL BECOME THE BEST ROOM IN THE HOUSE

for a social call, a card party or afternoon tea, a cozy hour with a good book or a nap. Just enough light to read and see out; but preventing passersby from gazing in on you. Besides the porch will always be delightfully airy.

Vudor Porch Shades are very strong, won't warp or break or crack in any way. In delicate colors, stained (not painted) to harmonize with your porch. Ordinary porches can be shaded at a cost of from \$3.50 to \$10.00.

Send for Our Handsome Catalogue

Make your porch worth while this summer. Start now by writing for our handsomely illustrated catalogue which shows the various color schemes and styles—mailed free. We will also send you the name of the nearest Vudor dealer.

Hough Shade Corporation, 240 Mill Street
Janesville, Wis.

I WANT TO KNOW
Hough Shade Corporation
240 Mill Street, Janesville, Wis.
Please send your book and tell me where
I can see or buy Vudor Porch Shades.
Name
Address



CLINTON WIRE LATH

Clinton Wire Lath is Unsurpassed

for use in exterior as well as interior plaster work. A wire mesh made up of drawn steel wire of high quality, galvanized after weaving, and provided with our famous V-stiffeners affords the ideal material for supporting stucco.

Its unusual strength and rigidity prevents bulging or sagging. Smooth even surfaces are readily obtained while its stiffness and perfect key for the plaster eliminates all danger of cracking.

In use for more than fifty years **Clinton Wire Lath** has proved its durability. It is everlasting and absolutely will not rust away.

Write for descriptive matter

CLINTON WIRE CLOTH CO.

CLINTON, MASS.



GARAGES

COUNTRY AND SUBURBAN

A comprehensive work on country and suburban private garages, written by architects and others whose success in the designing and equipping of private garages is pronounced and whose authority is unquestioned.

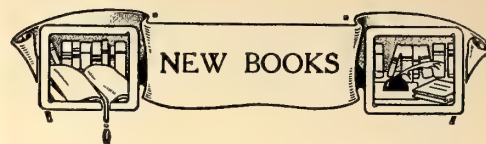
It contains one hundred perspective views, floor plans and working drawings of garages of recent construction, with a description of the latest and best methods of construction, and materials, for exteriors and interiors. The best interior arrangements for utilizing space, arrangement of windows to secure proper natural lighting, materials of floors and arrangement of pits are discussed. Other subjects treated are workroom and wardrobe; plumbing, heating and lighting of garages; contrivances for cleaning of machines; turntables; the safe handling and storage of gasoline and lubricating oil.

This book is bound in cloth. The size is 9x12½ inches.

Price, \$4.00, postpaid

For sale by

MUNN & CO., Inc., 361 BROADWAY, NEW YORK



THE NEW ART OF FLYING. By Waldemar Kaempffert. New York: Dodd, Mead & Co., 1911. Price, \$1.50 net.

In this book the principles of flying are reduced to their lowest terms, so far as popular expression is concerned. Without sacrificing in accuracy of statement, the author has explained in a very simple and clear way just why it is that a machine many times heavier than the air stays aloft at all; why it is so difficult to keep an aeroplane on an even keel; how that feat is performed; how a turn is made in the air; the principles of the aerial propeller; the difficulty of securing a light motor, and how that difficulty is overcome at present. Interwoven with the simple explanation of the principles of flight is a good deal of historical information of great interest and value.

A chapter on the perils of flying shows just how risky a business flying is, and what must be done to make it safe. Under the headings "The Law of the Air," and "The Flying Machine in War" will be found exceedingly interesting discussions of phases of aeronautics which are not commonly treated in popular books. A chapter on "The New Science of the Air" explains very succinctly how modern atmospheric research is conducted, how the results of that research will ultimately give us a better weather service than we have at present, and how the science of aeronautics will soon be benefited. Chapters are also to be found in the book on typical modern biplanes and monoplanes, in which a few types are described with sufficient fullness to bring out their differences strongly. The book is not so much a book of types as a book of principles clearly set forth, and is therefore not likely to get out of date in a short time.

SCHOOL ARCHITECTURE. A Handy Manual for the Use of Architects and School Authorities. Compiled by William George Bruce. Milwaukee: Johnson Service Company, 1910. 18mo.; 285 pp. Price, 50 cents.

The present edition embodies a decided advance over the former efforts and a practical departure in plan of presentation. In scope it is extended so as to include every phase of scientific school-house planning and to embody the latest and best thought and experiment on the subject. In presentation an entirely new plan has been adopted. Instead of presenting all subjects in topical form, arranged in alphabetical order, it has been planned to arrange the subjects with a view of giving them logical sequence and continuity. The ready reference feature which was emphasized in the former editions is preserved in an ample index and table of contents.

MODERN PAINTER'S CYCLOPEDIA. By F. Maire. Chicago: Frederick J. Drake & Co., 1910. 16mo.; 465 pp.

Among the subjects treated are: Adulteration of Paint; Blistering of Paint; Brushes; Calcimining; Carriage Painting; China Painting; Colors; Color Harmony; Color Mixing; Color Testing; Exterior Painting; Frescoing; Gilding; Graining; House Painting; Marbling; Oils and Driers; Oil Painting on Glass; Painting a Bath Tub; Painting in Distemper; Paper-

hanger's Tools; Paper-hanging; Pigments; Scenic Painting; Sign Painting; Stains; Staining; Stenciling; Statuary Painting; Turpentine; Varnishes; Varnishing; Water Color Painting, etc.

How IT FLIES. By Richard Ferris, B. S., C. E. New York: Thomas Nelson & Sons, 1910. 475 pp.; 150 illustrations. Price, \$1.20 net.

In this popularly written book, Mr. Ferris has given rather a good explanation, for the benefit of the man in the street, of the leading principles underlying the construction of aeroplanes and airships. In arrangement, his book differs not radically from the dozens of popular books which have been issued in the last year. There is the usual account of the atmosphere, the principles underlying flying machines, a description of the biplane and the monoplane, as well as a brief history of flight, the construction, operation and manufacture of balloons, dirigible and otherwise, a glossary, etc. So rapidly has the art of flying developed that some of the types which Mr. Ferris illustrates are now old. Thus, the old Voisin machine is illustrated, and not the new, although the new is mentioned. The old Antoniette machine, with ailerons, is illustrated and described instead of the newer machine with warping wings. Likewise the old model of the R. E. P. monoplane is selected for description instead of the new type.

How to KNOW ARCHITECTURE. The Human Elements in the Evolution of Styles. By Frank E. Wallis, A. A. I. A. New York: Harper & Brothers, 1910. 8vo.; 327 pp. Price, \$2 net.

Architecture and building are covered in this book as two branches of one subject. The object of the author can be plainly put thus: "After you have read this book you can, on looking at a building, say to what style and what period it belongs." Also, this is the first book on architecture to be illustrated by American models chosen by the author. The style of the book is direct and concise.

THE BOY'S BOOK OF MODEL AEROPLANES. How to Build and Fly Them. With the Story of the Evolution of the Flying Machine. By Francis A. Collins. New York: The Century Company, 1911. Price, \$1.20 net.

It is not surprising that at the present time, when the subject of aviation is so much in the public eye, that the boys should wish for a share in this fascinating science. A remarkable statement was made not long since by an army officer that the boys of America had already spent more money in experimenting on aviation than has the government. This is undoubtedly correct for wireless telegraphy as well as aviation. The number of aerial wires on the flat houses of New York is something astonishing. The various meets to fly model aeroplanes which have been held in New York alone have attracted widespread attention. The present book gives a succinct account of the methods of building model aeroplanes of all descriptions. The book is handsomely printed, the illustrations being printed on coated paper. This book will open a new world to boys.

POSTER ADVERTISING. By G. H. E. Hawkins. Chicago, 1910. 4to.; 88 pp. Price, \$3.

As advertising manager of the N. K. Fairbanks Company, Mr. Hawkins should certainly be qualified to speak helpfully and with authority on the subject of poster advertising. The advantages of this man-



The Good Road For Universal Service!

Every man's home faces on a road which connects with every other road and leads to every other home throughout the whole land.

Main highways connect with cross-roads so that a man can go where he chooses, easily and comfortably if conditions are favorable. But the going is not always the same; some roads are good—some are bad.

The experts in the South illustrate the difference by showing four mules drawing two bales of cotton slowly over a poor, muddy cross-road, and two mules drawing eight bales of cotton rapidly over a first-class macadam highway.

The Bell Telephone lines are the roads over which the speech of the nation passes.

The highways and byways of personal communication are the 12,000,000 miles of wire connecting 6,000,000 telephones in homes on these highways. Steadily the lines are being extended to every man's home.

The public demands that all the roads of talk shall be good roads. It is not enough to have a system that is universal; there must be macadamized highways for talk all the way to every man's home. A single section of bad telephone line is enough to block communication or confine it to the immediate locality.

Good going on the telephone lines is only possible with one policy and one system. Good going everywhere, at all times, is the aim of the Bell system.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

THE HOUSE BEAUTIFUL

COMPLIMENTARY PORTFOLIO OF COLOR PLATES

Notable Examples Of
INEXPENSIVE DECORATION AND FURNISHING

"THE HOUSE BEAUTIFUL" is an illustrated monthly magazine, which gives you the ideas of experts on every feature of making the home, its appointments and surroundings beautiful.

It is invaluable for either mansion or cottage. It shows how taste will go farther than money. Its teachings have saved costly furnishings from being vulgar—on the other hand, thousands of inexpensive houses are exquisite examples of refined taste, as a result of its advice. It presents this information interestingly and in a plain, practical way. Everything is illustrated: frequently in sepia and colors.

"The House Beautiful" is a magazine which no woman interested in the beauty of her home can afford to be without. It is full of suggestions for house building, house decorating and furnishing, and is equally valuable for people of large or small income.

Ex. Pres. Nat. Federation of Women's Clubs, ELEANOR M. HENROTIN, auth.

Our readers say the magazine is worth more than its subscription price, \$3.00. But to have you test its value, for \$1.00 we will mail you free, "The House Beautiful" Portfolio of Interior Decoration and Furnishing with a five months' trial subscription. The Portfolio is a collection of color plates, picturing and describing rooms in which good taste rather than lavish outlay has produced charming effects. The Portfolio alone is a prize, money can not ordinarily purchase. Enclose \$1.00 with coupon filled out and send to
HERBERT S. STONE, Publisher, THE HOUSE BEAUTIFUL



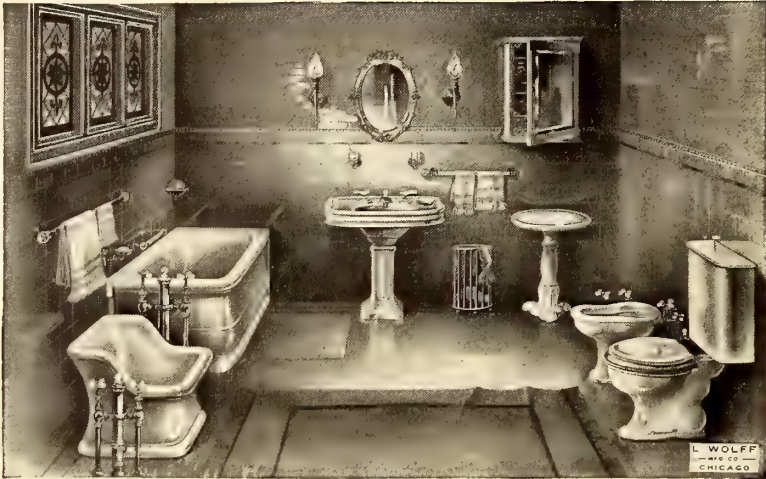
A "House Beautiful" illustration

You may send me your Portfolio of Notable Examples of Inexpensive Home Decoration and Furnishing free. I enclose herewith \$1.00 for a special rate five months' trial subscription to The House Beautiful.

Name.....
Address.....
Town or City.....
State.....

WOLFF PLUMBING

FIFTY-SIX YEARS OF QUALITY



DOES anything in the plans and specifications for a home interest a client—especially a woman—more than the bathroom and its equipment.

It is the *comfort-center* of the household; and so long as houses are built to live in, the far-sighted architect will take no chances there.

He knows that if it is not satisfactory the house will be viewed through dark glasses and mountains made of mole-hills.

The safe way is to specify bathroom, kitchen and laundry plumbing equipment that is manufactured throughout by one house, bearing the reputation that can be gained only one way.

That's "WOLFF'S" line.

ESTABLISHED 1855

L. WOLFF MANUFACTURING CO.
MANUFACTURERS OF

Plumbing Goods Exclusively

The Only Complete Line Made by Any One Firm

GENERAL OFFICES

601 to 627 West Lake Street, - - - Chicago
DENVER - TRENTON

Showrooms: 111 N. Dearborn Street, Chicago

BRANCH OFFICES

ST. LOUIS, MO., - 2210-2212 Pine St.	SAN FRANCISCO, CAL., Monadnock Bldg.
MINNEAPOLIS, MINN., 615 Northwestern Bldg.	OMAHA, NEB., - 1116-1118 Douglas St.
CLEVELAND, OHIO, - Builders Exchange	WASHINGTON, D. C., 327 Bond Building
KANSAS CITY, MO., 1204 Scarrett Building	BUFFALO, N. Y., - 61 Manchester Place
CINCINNATI, OHIO - - - - -	506 Lyric Building

ner of crying one's wares, particularly in local advertising, are plainly set forth; the size and cost of posters are considered; and many color reproductions of actual posters are given throughout the work. The writer does not confine himself to the conception and coloring, but goes on to give practical information on checking the service, connecting the advertising with the sales, the cost of posting by States, and general hints to advertiser and poster. Accompanying the reproductions of posters that have become familiar to all of us, are running comments epitomizing their faults and virtues. The official list of Associated Bill Posters is included in the volume.

FARM DEVELOPMENT. By Willet M. Hays, Assistant Secretary United States Department of Agriculture. London: Kegan Paul, Trench, Trübner & Co., Ltd. New York: Orange Judd Company, 1910. Pp. xix+391. 281 illustrations.

A notable contribution to the literature of agriculture in its practical aspects has recently been issued under the title of "Farm Development," by the Assistant Secretary of Agriculture, Willet M. Hays. From his long and wide experience as a teacher and investigator in the college and school of agriculture of the University of Minnesota and as administrative officer in the U. S. Department of Agriculture, Secretary Hays has prepared a most instructive discussion on soils, selecting and planning of farms, subduing fields, drainage, roads, and fences, introducing the whole with chapters dealing with the relations of general science to agriculture and with farming as a vocation.

THE FOREST AND THE SAW MILL. Chicago: National Lumber Manufacturers' Association, 1910. 8vo.; 269 pp. Price, 50 cents.

The eighth annual convention of the National Lumber Manufacturers' Association was held in April, 1910, at New Orleans. This is the official report of the convention, and is dedicated to those who are seeking practical means of forest conservation. Among the papers read before the assembly, and here given in full, are "The Problems of Private Forestry;" "The Lumber Production of the United States;" and a symposium of trade relations and conditions under such headings as "The Coastwise Trade;" "Waste of Natural Resources;" and "Insurance and Price Problems." It is hard to find a phase of the subject which is not ably presented. Freight classification, forest fire protection, the common interests of banks and lumbermen—all are carefully discussed by men thoroughly conversant with facts and conditions.

ART-CRAFTS LAMPS. How to Make Them. By John D. Adams. Chicago: Popular Mechanics Company, 1911. 12mo.; 87 pp.; 16 designs. Price, 25 cents.

The aim of this handbook is to enable anyone to construct from paper, cardboard, and wood, with the aid of a sharp knife and a little paint and glue, really artistic lamps for the hall, the den, the porch, and the dining-room. The designs run from simple portable lamps to four-light chandeliers.

THE AUTOMOBILE. Its Selection, Care and Use. By Robert Sloss. New York: Outing Publishing Company, 1910. 194 pp. Price, \$1.25.

A very good little book, that should prove valuable not only to intending purchasers of a machine, but also to those who already possess one.

CORNELL COTTAGES

SECTIONAL PORTABLE



STRENGTH

Carlos, Lee Co., Fla.,
Nov. 23, 1910
Wyckoff Lumber & Mfg. Co.,
Ithaca, N. Y.

Gentlemen:
The Cornell Portable House you sent me some time ago I consider to be a decidedly strong and well-braced structure, and it withstood almost the full force of the recent hurricane in this part of Florida and sustained practically no damage, whereas apparently stronger houses around it were demolished. It is a very good house and a handy one.

Yours truly,
LAPARITA HEALTH RESORT

SATISFACTION

Mamaroneck, N. Y.,
Aug. 2nd, 1909
Wyckoff Lumber & Mfg. Co.,
Ithaca, N. Y.

Gentlemen:
The little bungalow you made on your special design for me is exactly what I wanted. I congratulate myself in having put the work in your hands.

Very truly yours,
HENRY B. EDDY

Satisfied Customers "tell the story." If you need a practical, substantial building for any purpose, let us tell you what we can do for you.

ECONOMY

STAMFORD
NATIONAL BANK
Stamford, Conn.,
Nov. 10, 1910
Wyckoff Lumber & Mfg. Co.,
Ithaca, N. Y.

Gentlemen:
The No. 2 Garage which I bought from you I found to be very satisfactory in all respects, and I think I saved about 25 per cent. of what it would cost me to have had a similar garage built here.

Yours truly,
W. L. BALDWIN,
Cashier

Fireproof Garages a specialty

Illustrated catalog 4c. stamps

WYCKOFF LUMBER & MFG. CO., 410 Green St., Ithaca, N. Y.

ESTABLISHED 1888

National Photo-Engraving Company

Designers and Engravers for all Artistic, Scientific and Illustrative Purposes :: ::

Engravers of "American Homes and Gardens"

14-16-18 Reade St., New York

TELEPHONE. 1822 WORTH

Sample and Circular Free

A House Lined with

Mineral Wool

as shown in these sections, is *Warm in Winter, Cool in Summer*, and is thoroughly DEAFENED.

The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

CORRESPONDENCE SOLICITED

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY

VERTICAL SECTION.

LONGITUDINAL SECTION.

CROSS-SECTION THROUGH FLOOR.

SLIP A BOX OF
Keylor's
CANDIES
IN YOUR GRIP.

IT
TAKES
BUT
LITTLE
ROOM
AND
MAKES YOU
DOUBLY WELCOME



Summer Heat and Dust Cannot Harm the Furniture Dusted With LIQUID VENEER

If there is any one season of the year that tries furniture MOST, it is Summer. Doors and windows are open. Dust finds its way in. The heat makes fine finishes sticky and cloudy. What to do?

Dust every day with LIQUID VENEER. It is good for *everything*—from the cheapest kitchen chairs to the costliest piano—not forgetting all metal work, even to the very chandeliers.

Remember, LIQUID VENEER is not a furniture polish, but an everyday aid in dusting. When used on an ordinary cheese cloth duster it removes not only every speck of dust, but also finger marks, spots, stains, blemishes and scratches, at the same time restoring the original newness of the surface, whether it be wood, enamel, gilt, silver, brass or lacquer. Unequaled for hard wood floors. There is nothing "just as good" as LIQUID VENEER.

TRIAL BOTTLE FREE

To prove for yourself that LIQUID VENEER will do all this, that it will lessen house work drudgery, and that it will CHEER UP the home as nothing else will, sign and mail the attached "CHEER UP" Coupon today for a free sample bottle. Doing this costs only a two cent stamp and places you under no obligation. Sign and mail the coupon today—NOW.

Buffalo Specialty Company, 26 Liquid Veneer Bldg., Buffalo, N.Y.

"CHEER
UP"
COUPON

BUFFALO
SPECIALTY CO.
26 Liquid Veneer Bldg.
BUFFALO, N. Y.

Please send me, free, and without further obligation on my part, sample bottle of LIQUID VENEER.

NAME

STREET & NO.

CITY & STATE



THE most modern, and best illuminating and cooking service for isolated homes and institutions, is furnished by the CLIMAX GAS MACHINE.

Apparatus furnished on TRIAL under a guarantee to be satisfactory and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.

Send for Catalogue and Proposition.

Low Price
Liberal Terms

Better than City Gas or Electricity and at Less Cost.

C. M. KEMP MFG. CO.

405 to 413 E. Oliver Street, Baltimore, Md.

Are You Prepared to Fight a Fire?

Investigate the Fire Fighting Qualities of

Simmons Fire Equipment

Don't Wait for a Fire—Get a Fire Fighter Now!



For the HOME



For the YACHT



For the GARAGE



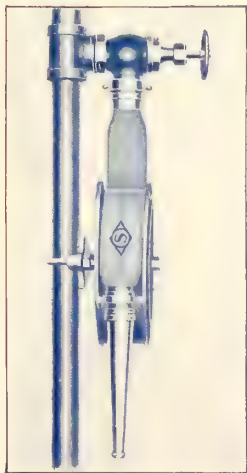
For the AUTOMOBILE

"Simmons" Fire Extinguisher

☐ Means instant fire protection at the critical moment. An ideal extinguisher for the home; portable, light and compact. Easily handled, nothing to get out of order. To operate—simply invert and an effective stream is right at hand. Its popularity is attested by the thousands now in use in prominent buildings, hotels and homes throughout the country. Let us send you one.

Capacity 3 Gallon, \$9.00, Delivered Anywhere

Our Catalogue on Fire Fighting Equipment Cheerfully Sent on Request
You Should Have a Copy



JOSICO
Fire Hose Reel for Interior
Protection

Simmons Hose Reel

☐ This device owes its great demand to the fact that it combines the features of a lawn sprinkler with the special qualities of a spiral hose reel. It is practically indestructible—also adds to the life of hose by thoroughly draining, after use, by its spiral wind. It is also neat and compact and can be handled and operated with ease. Price complete, fitted with 100 of our $\frac{3}{4}$ in. garden hose and nozzle, \$15.00.



Our Garden Specialties



Garden Hose

is practically everlasting, some of it having been in use for years and even now giving as good service as when first purchased. Of course this is materially due to its construction, it being carefully woven and having an inner tube of pure rubber, an important feature which exists but in few other brands on the market.

This in turn enables us to give it our broadest guarantee and accounts for its wide-spread popularity throughout the country.



SIMMONS DRY POWDER
EXTINGUISHER
Especially Adapted for
Yachts, Automobiles, Switch
Boards

John Simmons Company, 100 Centre Street New York

FNA
7100
A512
Mort.

Water Supply for the Country Home

AMERICAN HOMES *and* GARDENS



AUGUST, 1911
Vol. VIII., No. 8

MUNN AND COMPANY, Inc., Publishers
NEW YORK, N. Y.

PRICE 25 CENTS
\$3.00 A YEAR

Vitalite

The Long-Life WHITE ENAMEL



WHEN you plan a beautiful colonial entrance, tell your architect or painter to "Use Vitalite to make it white."

Vitalite never discolors, never cracks like ordinary enamels, but gives a full, rich, porcelain-like gloss that remains. It flows easily, dries hard and smooth without trace of brush mark or lap.

You can use it on all surfaces, indoors or out—on wood, plaster or metal. It

forms an absolutely opaque covering on all surfaces; you can make anything just pure white.

Vitalite is but one of the 300 Pratt & Lambert products typified by the famous "61" Floor Varnish, that durable, tough coating that makes floors mar-proof, water-proof, heel-proof.

Send for Free Sample Panel Finished with "61" and test it. Ask for "The Finished Floor"—tells how to finish and care for floors. If you are building or decorating, send the name of architect and painter and ask for our booklet, "Decorative Interior Finishing," a valuable guide to decorating the home. If your dealer can not supply the "P & L" Varnish you want, send to 119 Tonawanda St., Buffalo, N. Y. In Canada, 63 Courtwright St., Bridgeburg, Ontario.

"61" FLOOR VARNISH
PRATT & LAMBERT VARNISHES
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In the success of a magazine is the enthusiasm of its readers. In the past many new names have been added to our list as a result of the enthusiasm of our subscribers, hence we have evolved a plan by which they may be benefited in return for the aid they give us in increasing the circulation of "American Homes and Gardens."

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An accurate record will be kept of all lists received and for each new subscription we receive from the names sent to us, we will extend the subscription of the person who sent us the list for four months. Thus if we receive three new subscriptions from any list we will extend the subscription of the person who sent us the list for a full year.

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Mail all lists to Circulation Department, American Homes and Gardens, 361 Broadway, New York City.

Handy Man's Workshop and Laboratory

Compiled and Edited by A. RUSSELL BOND

12mo, 6 x 8 1/4 inches, 467 pages, 370 illustrations

Price, \$2.00 Postpaid

A Collection of Ideas and Suggestions for the Practical Man

EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is adverse to making public his methods of procedure. After all, he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

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NEW YORK

CONCRETE POTTERY AND GARDEN FURNITURE

By RALPH C. DAVISON



THIS book describes in detail in a most practical manner the various methods of casting concrete for ornamental and useful purposes and covers the entire field of ornamental concrete work. It tells how to make all kinds of concrete vases, ornamental flower pots, concrete pedestals, concrete benches, concrete fences, etc. Full practical instructions are given for constructing and finishing the different kinds of molds, making the wire forms or frames, selecting and mixing the ingredients, covering the wire frames and modeling the cement mortar into form, and casting and finishing the various objects. With the information given in this book any handyman or novice can make many useful and ornamental objects of cement for the adornment of the home or garden. The author has taken for granted that the reader knows nothing whatever about the material, and has explained each progressive step in the various operations throughout in detail. These directions have been supplemented with many half-tone and line illustrations which are so clear that no one can possibly misunderstand them. The amateur craftsman who has been working in clay will especially appreciate the adaptability of concrete for pottery work inasmuch as it is a cold process throughout, thus doing away with the necessity of kiln firing which is necessary with the former material. The information on color work alone is worth many times the cost of the book inasmuch as there is little known on the subject and there is a large growing demand for this class of work. Following is a list of the chapters which will give a general idea of the broad character of the work.

- | | |
|--|---|
| I. Making Wire Forms or Frames. | VIII. Selection of Aggregates. |
| II. Covering the Wire Frames and Modeling the Cement Mortar into Form. | IX. Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid with Colored Tile. |
| III. Plaster Molds for Simple Forms. | X. Concrete Pedestals. |
| IV. Plaster Molds for Objects having Curved Outlines. | XI. Concrete Benches. |
| V. Combination of Casting and Modeling—An Egyptian Vase. | XII. Concrete Fences. |
| VI. Glue Molds. | XIII. Miscellaneous, including Tools, Water proofing and Reinforcing. |
| VII. Colored Cements and Methods Used for Producing Designs with same. | |

16 mo. 5 1/4 x 7 1/2 inches, 196 pages, 140 illustrations, price \$1.50 postpaid

This book is well gotten up, is printed on coated paper and abounds in handsome illustrations which clearly show the unlimited possibilities of ornamentation in concrete.

MUNN & CO., Inc., Publishers

361 BROADWAY

NEW YORK

THE FREEZING POINT OF ORANGES

A SERIES of important and interesting experiments has just been carried out in the laboratory of Rollins College, Winter Park, Fla., by Dr. O. W. Sadler, Jr., for the purpose of determining the freezing points of the juices of different varieties of oranges. The juices of the ordinary orange, tangerine, grapefruit and tardiff (Valencia), were tested for this purpose.

In preparing for the test, several pieces of each variety from oranges from different trees were selected, and three samples from each piece were used for the test. The juice of each sample was strained and cooled, and with the thermometer immersed in it, was watched closely as the mercury went down, readings of the instrument being taken every few seconds, and at the moment freezing began, the temperature was carefully recorded. The following are the averages of the repeated tests:

Freezing point of the juice of the ordinary orange, 21.79 deg. F. Freezing point of the juice of the tangerine, 22.57 deg. F. Freezing point of the juice of the grapefruit, 22.16 deg. F. Freezing point of the juice of the tardiff, 21.87 deg. F.

The temperature of the freezing varied in the different samples of the same variety, the range being 19.40 deg. to 22.44 deg. F.

The thermometer used was a high-grade instrument that had been compared with the Rollins College standard thermometer, one of Henry J. Green's best instruments.

DISSOLVING GLASS IN WATER

EVERY kind of glass at a sufficiently high temperature must, it appears from German experiments recently made, eventually show complete solubility in water. Under pressure, glass dissolves in water heated to 410 deg. F. Sea-water more than 660 feet beneath the surface will remain liquid at that temperature, and if it penetrates the earth's crust where the temperature is equally high, it will, apart from the pressure, liquefy the silicates, or glassy rocks. The German experiments point to the conclusion that, at a depth of about five miles, silicates in contact with water are virtually fluid, and that the level of aqueous fusion in the earth is five times nearer the surface than is that of igneous fusion.

THE WATER MONKEY

AS temperatures rise and the demand for cool drinks increases, it is well to consider some means of securing a palatable cold drink that will not only be free from the objections raised by many to iced drinks, but will also be economical. Those who have been on ship-board in the tropics will recall the water monkey, a porous jar filled with water and hung in a breeze so that evaporation from its surface would cool its contents. Now that electric fans are universally used, it seems someone should invent a convenient, effective holder for a water bottle with wet cloths or some similar absorbent covering for the bottle to place in the range of an electric fan so that the latter would, by evaporating the water from around the bottle or other water holder, cool the water to a pleasant temperature for drinking. This need not in any way detract from the primary purpose of the fan and the cooling device could be made entirely independent of the fan and of the bottle and adapted to receive any desired form of water-holding vessel.

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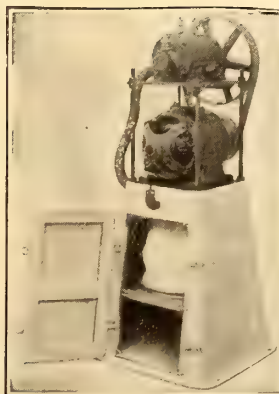
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THE IMPORTANCE OF A WOOD COLLECTION IN THE NATIONAL MUSEUM

PUBLIC attention should be directed toward the urgent need of a collection of North American woods in the National Museum at Washington. The lumber industry of the United States stands fourth in the value of its product. Yet there is no place in the United States where a complete collection of North American woods is exhibited except in the American Museum of Natural History in New York City. Timber merchants and wood users recognize the need of men technically trained for identifying woods. Such work can only be carried on in connection with a complete collection of authentic wood specimens. The demand for authoritative information regarding commercial woods is continually increasing.

Most large colleges and universities are provided with means for giving practical instruction in assaying. Ores and precious stones are in museum collections for observation, study and experiments. Every opportunity is afforded the student to become familiar with the subject in all its phases. It is vastly different when one looks for the same opportunities in that study of woods which is technically known as "xyology." Institutions of learning have collections of mosses and algæ obtained through considerable expense; they have microscopic slides of desmids and diatoms which have no interest to the average layman and only to comparatively few systematists. The economic value of the groups of plants represented by these objects is very small compared to the product of the forest, and yet the latter has received very little recognition in systematic museum work.

There are numerous purposes, each one of which in itself would be amply sufficient to justify a collection of authentic wood samples in the National Museum. The chief purposes are to instruct the public and to furnish materials for the investigator. In the main, the collection should consist of a reference collection and exhibition material.

A collection of woods should not alone be a storehouse of facts, but it is important that provision should be made from the start for a laboratory. The aim of a reference collection is two-fold, the one striving toward a knowledge of the structure of wood and the other toward the diffusion of that knowledge. The former consists in investigating and discovering new facts, while the latter tends toward educating the people and applying the discovered facts to the advantage of all. Aside from the need of this collection there should be a museum collection similar to the one in the American Museum of Natural History, New York city. No pains should be spared to secure similar material for exhibition purposes in Washington. In addition to the exhibition samples and enlarged microphotographs of transverse and longitudinal sections, it will be necessary to show specimens of leaves from the trees and a map giving the range of growth and information as to the uses of the wood.

Not only should every effort be made to obtain representative specimens of native woods, but the plans and buildings should be large enough to hold woods from other countries. It has been estimated that the collection of a complete set of North American wood samples alone would require a million dollars' endowment. Whatever the expenditure, it would be an unusually good investment of national funds. The

Poultry, Pet and Live Stock Directory



Shetland Ponies

An unceasing source of pleasure and robust health to children. Safe and ideal playmates. Inexpensive to keep. Highest type. Complete outfits. Satisfaction guaranteed. Illustrated catalogue free.

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Planning the Bungalow



HE September issue of American Homes and Gardens will have as its main article one on Planning and Building a Bungalow.

Other articles will deal with appropriate decorations and furnishings, and suggestions as to what is and what is not a bungalow.

Advertising Forms Close August 10th

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If You

are interested in Poultry,
Pets or Live Stock,

you will find these subjects described in forthcoming issues of

American Homes and Gardens

These articles will probably start with the next issue, (September) and each one will be of an instructive and interesting nature—written by the best authors in these lines.

The new advertising department under the heading

Poultry, Pet and Live Stock Directory

should have your careful attention. In writing to advertisers mention A. H. and G.

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Don't paint them. Stain them all over, roofs, siding, and trimmings, with

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Cabot's Stains are sold all over the country. Send for samples on wood, and name of nearest agent.

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THREAD and THRUM RUGS 16 FEET

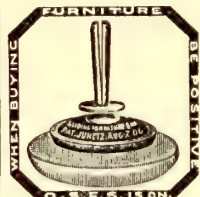
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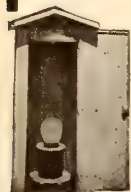
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Underground Garbage Receiver
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SECOND: This clean, convenient way of disposing of kitchen ashes, cellar and yard refuse, does away with the ash or dirt barrel nuisance. Stores your oily waste and sweepings. Fire-proof, flush with garage floor.



A Camp Necessity

THIRD: It supplies a safe and sanitary method to keep your water supply safe from pollution. It prevents danger from the house or typhoid fly, around camp or farm, disseminating its poisonous germs to your family. **Nine Years in practical use. It pays to look us up.**

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buildings and contents of the South Kensington Museum in London cost Great Britain about five million dollars, and competent authorities estimate that an auction on the premises would bring not less than one hundred million dollars. If suitable quarters are provided there is no doubt that a donation in the form of specimens and money, worth many times the original outlay, will be received. Large importers of foreign high-class cabinet woods will be anxious to exhibit samples of their choice woods. Not a few people are attracted by a collection of woods as much as by one of agricultural products. Undoubtedly a wood collection appeals to the public, and where this is the case much that is valuable will soon find its way to the museum. Foresters with zeal and ability will doubtless collect and donate samples of wood from all parts of the world. All that is required is to prepare the place and the proper publicity will guarantee the material in due time. Invaluable material can be readily obtained through consulates. Other museums having material in storage would doubtless loan or donate a considerable share of it to the national collection. Every country in South America would be glad to exhibit in the capital of the United States representative samples of the product of their forests. There can be no doubt that a national institution such as this would attract men of learning, for it would open an entirely new line of work from which the industrial and scientific world could draw invaluable information. Foreseeing the benefits which would result to science and industry by the successful establishment of a representative wood collection, it seems doubly imperative that immediate steps should be taken to carry these suggestions into effect.

TWO NOVEL FOLDING BOATS

THE advantage of a life raft over a life boat lies in the fact that the former occupies less storage space, compared to its capacity, than the latter. On the other hand, the ordinary raft, if loaded to its rated capacity, is far more liable to upset in rough water than the life boat, and is otherwise unmanageable. In order to render life boats less bulky, an inventor has devised a folding boat, which will permit of easy handling and be economical. The flat bottom of the boat is hinged along the center and the sides of the boat are hinged to the stem and stern posts, so that the boat may be folded in a perfectly flat position so that it can be readily stowed away in a minimum of space on board ship. The boat may be extended into position for use by merely operating a winch at one side. This serves to press the bottom down while the sides are extended by means of a pair of cross-braces hinged at one side and provided with rollers at the other bearing against plates on the gunwale. Every precaution has been taken to make the joints perfectly watertight by the use of rubber gaskets and mortise connections.

OIL-CEMENT CONCRETE

AN important investigative work during the last year was the development of an oil-cement concrete, and from results obtained the experiments indicate that it would be practical to use this material for floors, cellars, foundation walls, tanks, silos, manure pits, and similar construction, where strength, solidity and waterproof qualities are required.



This Portable Fireproof Garage

is the only absolutely fireproof portable garage. Made entirely of galvanized steel. No wood. Ashand-

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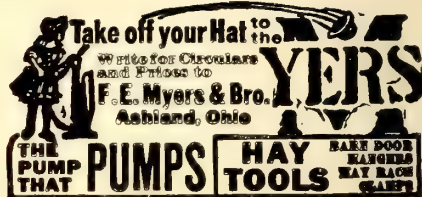
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SOLE MANUFACTURERS ... NEW HAVEN, CONN.



PLANNING THE BUNGALOW

THE dweller in city apartments should find in the bungalow a certain "homey" feeling unknown to the man who lives in the ordinary country house. It is in a sense a detached apartment—a one-floor home, with no stairs to climb, and many city dwellers have almost forgotten how to climb stairs. Because this home does not have to be sandwiched between other apartments, nor be confined within the limits of a 25x100-foot lot, it permits of a great variety of treatment. Bungalow architecture is so comparatively new that we have scarcely begun to realize its possibilities. Discussions of this subject full of practical suggestions, and illustrated with a large number of photographs, will be published in the September issue of AMERICAN HOMES AND GARDENS. Not only is the exterior of the bungalow odd and interesting, but the interior as well adapts itself to a large variety of novel arrangements. It should properly be looked upon as a very informal sort of building, hence much of the furniture and the interior decorations may be made at home. Some suggestions on making burlap curtains, table-covers, pillows and the like will also be contained in our September number.

ENGINEERING AND ARCHITECTURE

HOW comes it that engineering works of magnitude are so frequently devoid of any pretense to artistic beauty? Great dignity they have, and an impressiveness which is almost dramatic; but too often one's eye ranges over the whole length and breadth of one of these structures, in the vain attempt to gain from them at least some measure of satisfaction for that artistic feeling which is present, consciously or unconsciously, in the majority of men.

The engineer, of course, will tell you that a properly designed structure, one that adequately fulfils its purpose, is beautiful by virtue of its very adaptability; he will remind you that since his structures are works of strict utility, their broad outlines, their proportions, aye, and even their very details, are determined, not by human caprice, but by certain underlying and inexorable laws of mechanics, and that any wilful departure from these laws for the sake of artistic effect can be made only at considerable cost. He will remind you that since forces act in straight lines, it is imperative upon him to give to his engineering structures those rectilinear forms which are the despair of the artist and the man of "soulful" tendency.

Now, although the attitude of the engineer, as thus broadly stated, is perfectly consistent with the facts; and although a well-designed engineering work does possess a certain beauty, due to its perfect adaptation to its duty, it cannot be denied that in the case of many such structures, were an architect called in for consultation, he could suggest slight modifications of form, and even a modest use of architectural decorations, which would accentuate the purpose of the work, and, at a comparatively slight cost, add largely to its dignity and beauty.

That the engineer and the architect can collaborate to good effect is proved by the good taste with which archi-

tectural embellishment has been applied to that monumental structure, the Manhattan suspension bridge across the East River. Here the massive colonnades above the anchorages, the ornamental iron work of the finials above the main towers, and the slight decorative details of the floor system at once adorn the structure and emphasize its structural meaning.

AVIATION AND THE COUNTRY HOME

THE long-predicted era in which flying machines will be as common as automobiles is now so imminent that it behooves us to consider what effect it may have upon the architecture of the country home, or upon the arrangement of the grounds about it. Not only must the country estate be provided with its garage, but it must have its hangar too. It is possible that in order to provide a good landing place a flat-topped roof may be necessary in the more congested parts, such as country towns, but where there is plenty of room a suitable stretch of lawn will be almost indispensable.

This will no doubt call for changes in the plans of the landscape gardener. It may seem rather early to discuss these points, but it must be recalled that cross-country flying as a sport has gained a firm foothold in France and other European countries, and even in our own land we are making progress, as shown by the recent long flights of Atwood. A general discussion of the probable developments necessary to meet the requirements of aviation as an amateur sport will be given by Mr. Waldemar B. Kaempffert in the September AMERICAN HOMES AND GARDENS.

ALICE M. KELLOGG

WE are deeply pained to record the decease of one of our most valued contributors—Alice M. Kellogg—on the 14th day of June. Her article, "How to Build and Furnish a Country Home for One Thousand Dollars," well illustrates the temper of her mind. In this as in all her writings the practical tendency clearly appears; even the bungalow she felt to be worthy of ennobling thought. Our readers had recognized that her opinions on House Arrangements were conclusive, and turned to her at once for advice when an expenditure in this direction was determined upon. She had not only a refined taste regarding the proper fittings of the house, but a conception of the bearing of these on the life and thought of the occupants. She did not consider that the house was furnished merely because a quantity of furniture, no matter how elegant, had been placed in it; rather she believed that the furniture, like the house, should reflect the character of the owner.

Her book (1895), "House Furnishing Practical and Artistic," proved that she had mastered this new art. Its readers felt it was possible to give expression to noble ideas in selecting and arranging the furnishings of even the humblest homes. Its author must be credited with having labored to bring beauty into the household; with having the fixed desire to add to the dignity and enjoyment of the home.



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AN ELECTRICALLY-HEATED STEAM BOILER

A STEAM generator is made by a New York firm for use on trains running over sections of line in which electric locomotives are used. The generator consists of a cylindrical boiler arranged with its axis vertical and having tubes extending between tube plates at the top and bottom. Into each tube, which is closed at the bottom by a screw plug, there is slipped an electric heating element. This comprises a number of steatite tubes threaded on a metal rod with special stellate porcelain insulators of larger diameter between them. These porcelain insulators fit into a thin brass tube and serve to keep the resistance wire, which is wound on the steatite tubes, out of contact with the brass tube. Fine siliceous sand is used to fill up the space between the resistance wire and the interior of the brass tube. All the elements are connected in parallel to bus-bars through fuses which blow when the current rises to 60 per cent. above normal. A boiler 3 feet 10 inches in diameter and 4 feet 6 inches long (between tube plates), with 148 2-inch diameter tubes, has a maximum evaporating capacity of 850 pounds of steam per hour at 110 pounds per square inch, with current at 666 volts. It gave an efficiency of 91.9 per cent. at 653 volts and 470 amperes in a New York Central locomotive.

THE ATMOSPHERE OF CITIES

THE German scientists are studying the atmospheric conditions of their cities. The fact that sunshine lessens as population becomes more dense, and especially when the activity of industrial centers expands superficially and increases in intensity, has long been noted. An increasing tendency to fog has also been observed, and both are effects of the imperfect and incomplete combustion of coal.

Modern industry pays toll for this in the injury of delicate fabrics, the general depreciation in the value of many articles of trade and household use, and the increased cost of cleansing. Since the battle is waged with growing energy against tuberculosis, physicians and students of social science feel that the problem of purer air for the dwellers in cities has become one of the first importance.

Statistics have been collected for some time past. They demonstrate that little sunshine falls to the lot of the residents of industrial cities even when the sun is obscured by smoke particles. In no German city has the loss of sunshine, due to fogs, equaled that of London, where the foggy days during the three months of December, January and February increased from 18 to 31 during the last half of the last century.

INCREASING USE OF AUTOMOBILES BY FARMERS

ACCORDING to the Bureau of Statistics at Washington, a careful compilation of all available returns has shown that last year the farmers of this country purchased 26,000 automobiles—an increase of 85 per cent. over the previous year and more than 400 per cent. over the number of cars purchased by them in 1909. The farmers of the South and West especially have come to realize that the modern auto cars save both time and money for them, besides being put to use in various ways upon the farm. It is no longer a luxury, but a necessity, and consequently all who can possibly afford it are investing in machines.

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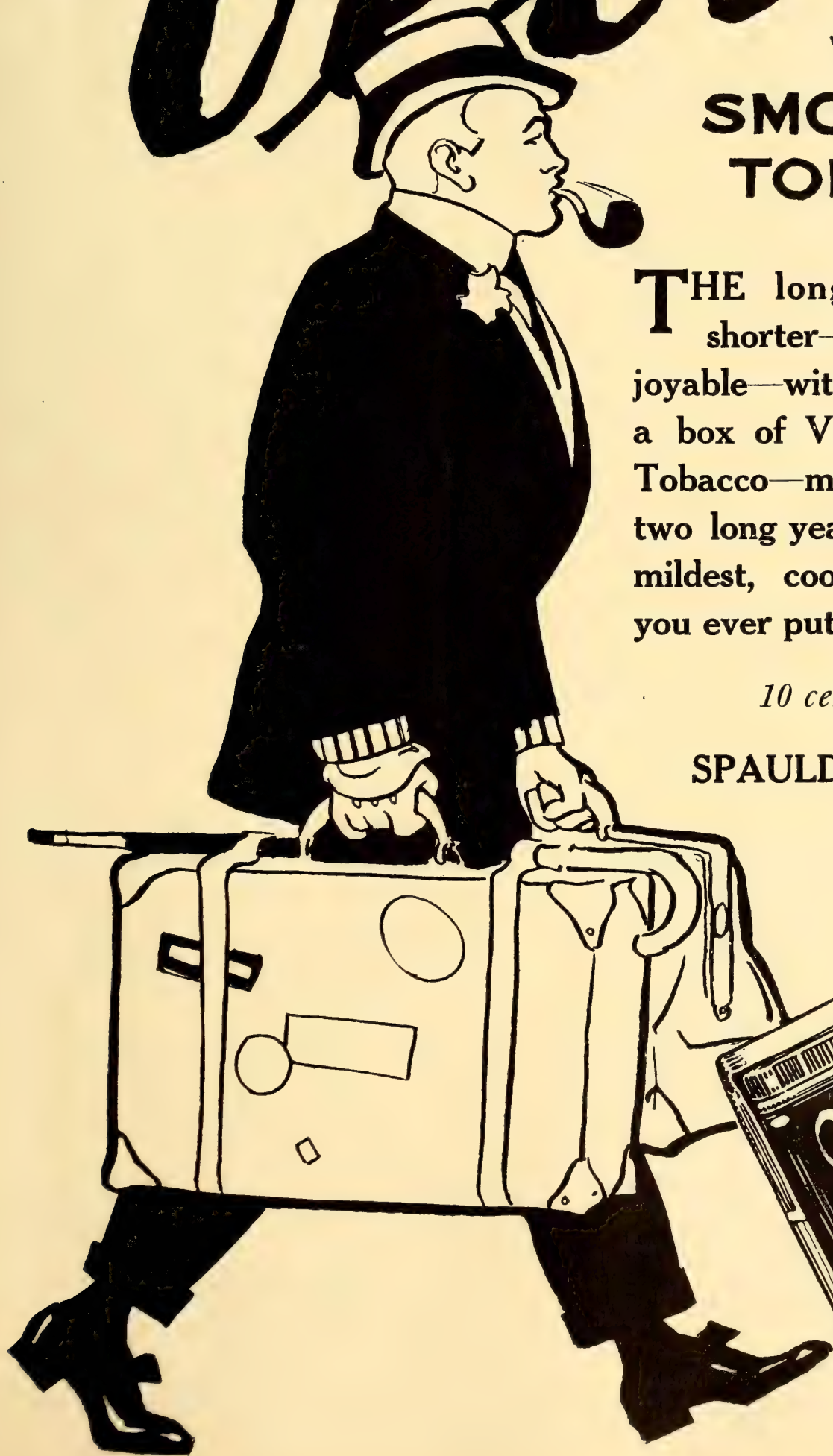
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ELECTRIC LIGHTING FOR AMATEURS. How a small and simple experimental installation can be set up at home. *Scientific American Supplement* 1551.

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CASE-HARDENING. By David Flather. *Scientific American Supplement* 1547.

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ELECTRIC IGNITERS FOR GAS ENGINES are discussed in *Scientific American Supplement* 1514.

CARBURETERS, a subject of immense importance to automobilists and the users of oil engines, is well treated in *Scientific American Supplement* 1508.

EPICYCLIC TRAINS, which play an important part in toothed gearing, are ably described in *Scientific American Supplement* 1524.

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PICTURE-FRAMING OUTFIT

THE Handy Man's Workshop is not complete without a picture-framing outfit. A device for holding the molding while nailing and gluing which is practical can be easily made as follows: The clamps can be secured from the tops of two old clothes wringers by sawing about three inches on either side of the screw. The base of the device should be a 2-inch hardwood plank, or better still, two pieces of inch board glued together with the grain of one running at right angles with that of the other. The size of the base ought to be 18 by 22 inches. A board 6 by 8 and 1/2 inch thick should be glued and screwed to the base, which can be readily done. Bolt the clamps to the base as illustrated, leaving sufficient space between the ends of the screws and the holding board to place the widest molding which one would use for any frame. This space must not be too wide, for the screw has a tendency to spring up when heavy pressure is applied. Small blocks are to be used when narrow molding is being held, or on any molding which the end of the screw would dent. The difficulty in making frames is in holding the pieces firmly together while nailing.

BUILDING MATERIALS AND NOISE

A GERMAN scientist named Nussbaum has for a long time been studying the question of the suppression of noise in dwelling houses. He has experimented both in the laboratory and in private houses. One point he has ascertained is that the more solid and tough and strong the building material is the more quickly and loudly it conveys sound, and its conductivity can best be tested by strokes with a piece of metal. The higher the tone the greater the conductivity.

Nussbaum has made many experiments with partition walls. He has found that those of tiles and cement transmit sound most and those of solid clay least. Between the two comes the wall of ordinary brick, and the more the brick is burned the more noise it transmits. A quickly hardening lime mortar is to be preferred to a clay mortar. One experiment showed that when a floor was covered with sand and cork mats spread over it hardly any noise penetrated to the room below, but that when the cork mats were joined together by any material underneath, noises were at once perceptible.

To the question, how are the sounds of the piano or the violin in the neighboring apartments to be excluded? Nussbaum has returned the suggestion that the ceilings be treated as he successfully treated his telephone cell, namely, to line them with a layer of zinc or lead.

DAHLIAS AND POTATOES

BY a kind of horticultural irony the dahlia, that popular flower that so often forms a conspicuous display at flower shows, has a dreadfully prosaic parentage. It has developed from the Mexican tubers introduced about one hundred and twenty years ago by the Swedish naturalist, Dr. Dahl, for the purely commercial purpose of supplementing the potato! The doctor's scheme did not meet with favor, and the dahlia dish soon disappeared from British tables, but the gardeners of the old country at once perceived the great potentialities of the flower, and accordingly proceeded to produce the double dahlia and other delightful floral fantasies.

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The garden front "Villa Aurora"

AMERICAN HOMES AND GARDENS



Volume VIII

August, 1911

Number 8

“Villa Aurora”

The Home of George D. Barron, Esq., Rye, New York

By Barr Ferree



HERE is a very real quality of livableness in Mr. Barron's home in Rye, which is all the more marked because it is a large house superbly appointed and built in the midst of an estate of about fifty acres. The residence is entered from the porte cochere at the northern end, the longer and more monumental east front, which affords a view of Long Island Sound, being reserved for family use

exclusively. Mr. George A. Freeman, of New York, was the architect.

The outer doors are provided with a handsome wrought iron grill, lined with plate glass, opening to an oval vestibule, the walls of which have a high paneled dado, the walls and ceilings being of a rich but quiet, low-toned, old-gold finish. The inner door conducts to an entrance-hall, which leads directly into the main or reception hall, which is arranged at right angles to it. There is no intervening door-



The portico front of the house

way, the whole space being completely open; and as the farther wall of the main hall is closed, the center being occupied with a stately and ornamental fireplace and chimney breast, a very fine perspective is obtained from the vestibule. The entrance-hall is spacious and affords room for numerous large and handsome pieces of furniture, which are placed on either side. The walls have a high wainscot of wood, painted ivory white, with Ionic pilasters that support the ornamented cornice. Above the dado the walls are hung with red silk damask, the color scheme being red and white. The ceiling is plain and the hardwood floor is almost completely covered with a large rug. All the rooms of the first floor are exceedingly lofty in height, and the floor areas are broad and spacious.

Immediately on the left on entering the outer vestibule are Mr. Barron's private offices; on the right is a doorway that leads to the service-rooms, which are completely shut off from the rest of the house. The only important room that opens onto this entrance-hall by means of a doorway, is the ballroom. It occupies

most of the space on the left. It is a charming and delightful apartment, the walls being supplied with a low dado of paneled wood, with larger panels that completely fill in the balance of the space below the decorated cornice. These panels have carved tops, and are of wood painted ivory white on a background of French gray. The opposite end is treated as a recess, with curved ends and free standing columns. The north wall contains the fireplace, of Pavonozza marble, surmounted with a decorative overmantel with mirrors in richly carved frames. The white ceiling has an elaborate centerpiece in hand-molded plaster. The window curtains are of white lace. It is a very light and agreeable room, and is completely adapted to the uses to which it is now put.

As the reception hall opens directly from the entrance-hall, and may be regarded as an expansion of it, the color scheme is also red and white. The walls have a paneled dado of about five feet in height, with Ionic pilasters that form upper panels, lined with red silk damask. The cornice is identical in design with that of the entrance-



The portico



The fountain in the formal garden

hall, and the ceiling is plain and without ornamentation. The carpet on the hardwood floor is of dark red to harmonize with the balance of the room, and the dark old-oak furniture is upholstered in the same material and color as the walls. The chimney breast is supported by pilasters. The mantel is of carved wood, the fireplace facings and hearth of polished red Numidian marble, the linings of red brick. A copy of Guido Reni's celebrated painting of "Aurora" is let into the frame of the over-mantel. It was executed in Rome from the original by special permission of the present Prince Pellavicini, owner of the Rospigliosi Palace, where on a ceiling the original was painted by Guido. Mr. Barron's copy is pronounced by Prince Pellavicini the finest ever made.

On the east end of the main hall are three windows, which are within the portico of this front; and through which the light is softened by red velvet curtains. On the west is the staircase, very broad and spacious, carpeted in red, and with white balusters and mahogany rail. It rises to a large oval

landing, lighted by a great oval bay window, with a built-in seat and white curtains. This arrangement is enormously effective; it admits much more light to the main hall below and to the second story hall above. The form and position of the landing are finely adapted to create a place so delightful in itself as this is. The stairs divide here, and from the landing continue the rise on either side, the balustrade being continued around a circular opening in the upper floor.

Two rooms open from the main hall, the library and the dining-room; the first is on the left, the other on the right. The library is finished in oak, with a wood dado of five feet. The upper walls are hung in green velvet, this being the prevailing color of the room. The curtains are green, likewise the carpet and the furniture. The wood oak mantel is richly carved; the fireplace has facings and hearth of dark red sandstone, with red brick lining.

Most of the walls are based with bookcases, with leaded glass doors richly but quietly ornamented. The dining-room is treated in olive green and white, with white



The staircase



The water garden and terrace



The dining-room



Th



A statue in the garden

dado and pilasters, the upper wall panels being hung with figured olive green silk damask. The fireplace has an enriched over-mantel, and facings and hearth of Alps green marble; the lining, as elsewhere, is of red brick. The window curtains are of the same material as the wall hangings, and are suspended before white curtains.

Beyond this point the house plan contracts to the area of a single room. This is the billiard-room. The woodwork

is a beautiful grained chestnut, and consists of a high dado with pilasters to support the cornice of the ceiling. The frieze is light buff, with small patterns in low relief. There are windows on one side, with built-in seat and platform; on the opposite side is the fireplace, faced with large red quarry tile. The over-mantel is at the height of the frieze and is paneled in chestnut. The window curtains are velvet and brown, and the furniture is upholstered in brown leather.

The final apartment in the direction of the axis of the house is the loggia. It is furnished as an outdoor sitting-room and decorated with palms, tropical plants and superb heads, trophies of the chase. It has three large round arched windows on the south front overlooking the terrace and formal garden and a large arched opening on each end. The glass double sash and steam radiators which make



The terrace and steps



The rear



The living-room

this room available for use as a sun-parlor in winter, are removed in the summer season, when it has all the value of a covered, yet outdoor palm room.

The whole of the three outer sides of the house is supported by a white limestone balustraded terrace. This is seen at its best immediately without the loggia, where its surface area has been greatly extended. It is paved with brick laid on edge, and has large grass plots, and borders of flowers—chiefly roses—located just within and below the balustrade.

Beyond and at a lower level, is the sunken formal garden. The main axis of this is at right angles to that of the house. On the east end is the pergola, semi-circular in form, the farther or outer boundary being curved and enclosed below with a stone wall. There is a built-in seat all around, and in the center of the open space is an Italian

table of carved white marble. The outer side of the pergola is thickly planted with shrubbery and flowers, and is the beginning of the floral development of the garden.

At the opposite end is a great spring-fed pond, enclosed towards the garden by a stone wall and stone balustrade, and reached by a central flight of steps with a section of a semi-circular wall on either side. The opposite side of the pond is left without formal enclosure, but the water there is



A statue in the garden



The house



The pergola



The dining-room



A statue in the garden

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The library



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A statue in the garden



The terrace and steps



The rear of the house



The pergola

thickly planted with water lilies, lotus and other aquatic plants, so that the formal garden on one side of the pond is supplemented with a natural or wild garden on the opposite side. The water between the two, forms a natural and very effective means of separation.

The formal garden lies between these two special points of interest and is laid out in a regular manner with paths of brick laid on edge, with plots of grass bordered with dwarf box, decorated with evergreens and other shrubs and plants. In the center is a pool with a fountain of white marble, a very artistic figure executed in Italy of a Triton blowing water from a conch. The remaining side of the garden is directly across from the loggia. A thick mass of shrubbery and trees encloses it on this south side, which is here entirely without formal treatment except for four statues of the Seasons in Carrara marble, arranged Hermes-like at intervals on this and on the side immediately opposite. An interesting feature of the formal garden is that the gnomon of the sun dial there, is made



The cow stable



The henry



The stable



The main entrance



The gate-lodge

of copper from Mr. Barron's mines in Mexico.

All of these parts and much more, may be seen and enjoyed from the loggia. Beyond the formal garden are shrubbery and trees, with broad open fields. In the distance, on the right, and almost completely hidden from the house, is the tennis court. There is the pond on one side; on the other is a spacious lawn, with meadows farther on, and behind them all are woods, with the world, doubtless, beyond, but here very remote, so very quiet and peaceful is the outlook.

The architectural exterior of "Villa Aurora" is beautiful and dignified. It is a fine example of the Georgian type (1714-1830), of which our modern Colonial architecture is an adaptation. The house is entered apparently from an end, since the longest and most ornamental front is without an entrance feature, the east lawn being unbroken by road or path. The front overlooking Long Island Sound has been selected for the most formal treatment of the exterior, and from the water it appears imposing to a degree.



The Management of the Water Supply for the Country House

By John F. Springer



THE very first thing that engages the attention of the country and the suburban resident, in connection with his water supply, is the water itself. But it is a matter of almost if not quite equal importance to know just what to do with the water when secured. There are, no doubt, certain lo-

cations and conditions where the distribution of the water supply through the house is a very simple matter. Thus, for a house located far enough below a spring, the distribution can readily be effected by installing a reservoir between spring and house. Gravitation will do the rest. But the combination of such circumstances must be only exceptional; and even in those circumstances the care and protection of the water, the pipes and the reservoir constitute a weighty problem.

Ordinarily, the water has to be pumped to the point from which distribution is effected. There are two prominent methods of exerting the necessary pressure. That best known, and to it some reference has already been made, is the gravity method. This depends upon the familiar principle that "water seeks its level." If there is an elevated reservoir, the water in the house will rise to the same level as in the reservoir, and no higher. If we wish the water to rush out of the highest spigot with some velocity, then the level in the reservoir will have to be maintained at some considerably higher level. Still, in order to get velocity we have to provide a certain excess

height to produce the desired pressure, and an additional height to overcome the friction of the water as it flows through the pipes and passes the bends. No very simple rule can be given as to this friction; but a great deal of subsequent annoyance may result where sufficient elevation is not secured when the tank is installed. While no simple and exact rule can be given, we can get a rough idea of the

necessary provisions to overcome friction by remembering three things: (1) The smaller the pipe, (2) the longer the pipe and, (3) the more turns, the greater is the friction. The bottom of the reservoir being the lowest possible level of the water, it should be taken as the level. Consequently, if we wish to raise water thirty feet above the sills of the house, the bottom of the reservoir should be put higher yet. How much higher will depend upon the velocity desired, the length and size of the pipes, and the number and character of the turns. It is much better to have too high an elevation than one too low. Those who are accustomed to a smart flow of water from the spigot will deem it an intolerable nuisance to wait for a slowly moving stream or dribble. It should be borne in mind that a single point where the diameter of the pipe is much reduced may have a very considerable effect. To sum up, the following directions may be given: Use large pipe,

have as few bends as possible, make these as round as possible, make the length of the pipe as short as can well be, and elevate the bottom of the water tank to a generous dis-



Fig. 1—A brick tower and wooden tank



Fig. 2—A brick tower with the tank hidden by the wall

full, or nearly full, when the drouth begins. Indeed, the wise thing would seem to be to have a capacity nearly double the amount for the drouth, so that a sufficient supply would be certain to be present when it began.

The support of a large body of water at a considerable height is really a serious problem, and expert advice ought ordinarily to be sought. In order to realize just what kind of a problem this is, consider the fact that the water which fills a 10,000-gallon tank weighs 83,000 pounds. Ten thousand gallons for a family using 500 gallons per day will only last twenty days. The support for 83,000 pounds must, of course, be a thoroughly adequate one. The tower may be of steel or it may be of reinforced concrete. Timber, brick or stone may be used. In any case, the total weight of water and tank must be thoroughly faced and provided for.

As to the strength of the tank itself, we have to remember that the water exerts a bursting pressure tending to disrupt the side walls. The bursting pressure ranges from nothing at the water level to a maximum at the bottom. If the bottom is ten feet below the level of the water, there will be a bursting pressure outward at that point of four and one-third pounds per square inch. A consideration of such facts will show that the tank must be strengthened to resist the outward impulse, and that the strength should increase toward the bottom.

The tank may be of wood, steel or reinforced concrete. In Fig. 1 we have an example of tower and tank. The tower is built of brick. As here, the tower, with its mantle of foliage, may be a beautiful addition to the picturesqueness of the grounds. Where the tank is of wooden staves, as in this instance, the metal hoops may be provided with turnbuckles, so that they may be tightened at will. The hoops may be placed closer and closer together toward the bottom; or if it is desired to have them at uniform intervals, this may be done. But the interval necessary at the bottom will control. Or equal

tance above the highest point of use in the house.

The size of the reservoir is also an important matter. If the supply is liable to fluctuation, as is ordinarily the case, then the reservoir must be at least big enough to tide over the longest period of drouth. In fact, it should be larger than the capacity necessary to cover the maximum "dry spell," for the reason that the reservoir may not be

spacing may be employed where the thickness of the hoops is adjusted to the varying pressures.

In Fig. 2 we have another example of the brick tower. Here the tank is enveloped and hidden by the wall. At the top, such a tower may be designed to provide an observation room. In Fig. 3 is shown still another example. The envelope is a frame one. It is not obvious whether the tank is supported by timbers or by masonry. Fig. 4 shows yet another tower and tank. There is an observation balcony, giving an ornamental character to the tower and affording a view in all directions.

At Great Neck, L. I., on the grounds of Mrs. B. H. Gilbert, is a tall tower of wood covered with stucco. This supports a tank having a capacity of fifteen or twenty thousand gallons at an elevation of perhaps seventy feet. This puts the water well up above the ridge of the house, and thus provides a good flow in the upper rooms. The balcony is gained from the outside, as shown in the view (Fig. 8). In Fig. 6 we have a wooden exterior in the form of a windmill. It is not always necessary that the tower itself shall be high. It will sometimes stand on a local elevation of the ground, although that may not be the case here. In Fig. 7 we have the same tower used for the support of the tank and for the accommodation of a windmill.

In case the water tower and tank are in service during the entire year, the resident in the Northern States may need to consider the question of freezing weather. The presence of a layer of ice may be no great matter under some conditions. In many structures it may seem desirable to prevent absolutely all freezing. This can be done by suitably enclosing the tank and surrounding it with a good non-conductor of heat—one of sawdust or tanbark.

The methods employed with the elevated tank are time-honored and have had extensive application. Another system, however, has come into vogue in recent years. It is the pneumatic tank system. Apparently this invention was made by Mr. J. L. White. The reservoir is not elevated at all. A pressure there must needs be, and this is supplied by compressed air. Essentially, Mr. White's system is very simple. He

pumps water into an air-tight reservoir. The contained air is crowded into a continually decreasing space as the amount of the incoming water grows greater and greater. If the



Fig. 3—A wooden tower with the tank hidden by the wall



Fig. 4—The tower is built in connection with the stable

procedure is continued until the air which formerly filled the tank occupies only one-half the space, then this cushion of air will exert the very strong pressure of about fifteen pounds per square inch on the water. This is equivalent to using an elevated tank with the water surface at the height of 33.9 feet. If we continue to pump water in until the air occupies only one-fourth of its former space, then we have

exert its pressure impartially in all directions; we desire its pressure on the water; we get it there, and everywhere else besides.

As the compression goes on, consequently, the tank will leak, unless it has been manufactured by skilled makers fully alive to the necessities. It is said to be a most difficult thing to construct an air-tight tank that will not leak. It



Fig. 5—Brick and stone tower with tank in the enclosure at top



Fig. 6—The tank and windmill is built on top of the tower



Fig. 7—A wooden tower with windmill at top and tank enclosed underneath

done the equivalent of lifting the water to the height of 101.7 feet. Now, all this is very simple in principle. We can, in fact, get any reasonable pressure desired by pumping in water and compressing the trapped air. A little thought will, however, show us that perhaps the practical carrying out of the principle will not be as easy as it looks. There are two principal difficulties: The air as it is compressed will

seems that a boiler that will not leak steam under pressure may nevertheless leak air under pressure. The particles of air are, apparently, smaller in size, or are otherwise competent to push their way more successfully through minute cracks. The air-tank must, accordingly, be better than a steam boiler needs to be. One of the principal builders of pneumatic apparatus states that the organization of the best



Fig. 8—A stucco tower with the tank surrounded by a balcony



Fig. 9—A tower designed in the form of a windmill

equipped boiler works in the world was unable "to handle the problems connected with the pneumatic system of water supply." Presumably, one of the chief problems was the



Two streams may be thrown over the house, using 1½ inch hose and ½ inch nozzles



Spraying the lawn by pneumatic pressure

ally in an ingenious way. There is a hollow cylinder made of metal and sealed. This floats on the surface of the water. By an arrangement of rods, it is connected with



Fifteen sprinklers can be run at one time

construction of the tank. This same company makes use of special machines for calking and riveting. With an absolutely tight tank, one great difficulty is overcome. The other large difficulty concerns the pumping. If one thinks a moment he will readily see that as the air pressure in the tank increases the work of the pump becomes more severe. It has to overcome the resistance of the water in the tank, and this water is under the pressure of the air. In consequence of the work which the pump has to do, its parts will have to be very strong and the joints will have to be especially tight. Whatever the pressure of the air in the tank, that is the pressure of the water in the pump trying to get out. The pump, then, must be a fine and strong piece of work—no better, perhaps, than a pump which raises water to an elevated tank whose level corresponds to the air pressure.

What seems to be a very fine thing about the pneumatic water supply system is that there is absorption of air by the water pumped in. This is due, no doubt, largely to the pressure. Air, as pretty much everybody knows, contains free oxygen; and oxygen is a great enemy of impurity. In consequence, the water in the tank will, no doubt, be benefited. Further, water that contains plenty of air is fresher and more palatable. Water supplied by a high-pressure pneumatic system will be filled with air bubbles as it comes from the spigot. The water at first has a milky appearance; but this quality passes, and water well aerated is what we finally have.

The absorption of air by the water will, of course, in time reduce the amount acting as a pressure cushion. It is necessary, therefore, to replace the air thus absorbed and carried off with the water. This is accomplished automatic-

ally in an ingenious way. There is a hollow cylinder made of metal and sealed. This floats on the surface of the water. By an arrangement of rods, it is connected with

Air is now drawn into the pump and then pumped into the tank. Here, the most of it will rise to the surface and join the air cushion.

As the tank of a pneumatic system is more safely and advantageously situated on the ground level, or even below it, we can if desired increase our pressure. Of course, the tank must be strong and tight enough, and the pump and the available power must be sufficient. Under such conditions, we can add to our pressure. A water tower once constructed would be rather difficult to elevate.

It is rather easy to protect the tank against cold.

This may be important for reasons other than those connected with freezing. It would seem better to deliver water somewhat less cold than would be possible with an exposed tank. It would seem, too, that in many cases the repairs

would be greater with the elevated tank. If mounted on exposed steel work, a good deal of painting will have to be done from time to time. Sometimes the elevated tank is put into the attic or other high parts of the house itself. In case of fire, the elevation would be insufficient to provide a very effective stream of water. During the fire, the tank supports may fail and

all help from this source vanish. If the tank system is used at all, there should be a special tower high enough to provide a good strong stream rising higher than the ridge pole. It is all very simple with the pneumatic system; any reasonable



Two pneumatic tanks are installed in the basement of this house



The larger tank is supplied from the well containing hard water; the smaller one from a cistern containing soft water

pressure can be provided. As might be supposed, a perfectly tight air-tank will cost more than one only tight enough to restrain water. A pneumatic tank, made by one of the most prominent makers, is said to cost about the same as an ordinary elevated tank with steel tower. It may be located below the frost line, thus at once eliminating the possibility of freezing.

A further reason for great elevation or a severely compressed cushion is to get pressure to accomplish filtration. A little consideration should make it clear that effective rapid filtration will require strong pressure, since a properly made filtration bed will probably set up considerable resistance to the passage of water. Of course, if the water is so pure that no filtration is necessary, then this additional pressure requirement will not have to be taken into account.

The pneumatic system is by no means in the experimental stage. It has been thoroughly tried out and its effectiveness demonstrated. One firm is prepared to supply tanks as small as six feet in length and two in diameter, containing ninety gallons, exclusive of air cushion, and is prepared to furnish tanks as large as forty feet long and nine feet in diameter, having a capacity of 19,000 gallons. If a greater storage capacity is needed, several tanks may be connected. Another manufacturer constructs tanks up to 15,000 gallons capacity. The 19,000-gallon tank, when two-thirds full of water, would weigh considerably over 105,000 pounds.

Having a supply of water, a tank, a pump, and necessary piping, there yet remains the question of power. There are the windmill and the hydraulic ram; there are the gas engine, the gasoline engine, the hot-air engine, the electric motor, and the steam engine. The conditions of individual cases of most suburban and country houses will eliminate one or more of these at once. Ordinarily, there will not be many to choose from. Thus special topographical conditions are necessary before a ram can be considered. Where it is possible to use it, however, it is probably the cheapest method. The first cost is not great, there is but little in the way of repairs, and the power itself usually costs nothing. With the windmill there is no expense for power; the same can hardly be said, however, as to repairs and upkeep in general. There are times when water is wanted and no wind is blowing. This difficulty can probably be pretty thoroughly overcome by having a sufficiently large tank. The fact that the wind blows at no expense is a powerful argument. If one lives near a trolley line and can arrange with the management, or in a district covered by a company distributing the electric current, then an electric motor may be the thing. Such an apparatus is simple to operate; the first cost is not great; it is compact, clean, and can be depended upon for

instant service. The cost of the current will vary in different sections of the country; it will sometimes vary with the time of day when the power is used. Thus, if the current is used in the earlier part of the night—say from 8 to 12 o'clock—a higher price may often be expected because of the demands for lighting purposes at that time. Conditions surrounding the water supply may be such that the householder can do his pumping at an advantageous time, and thus secure a low rate. All this should be remembered in considering an electric motor. The cost of its operation may turn largely on the time of day it is used. He must also consider any dangers that may arise from the use of a heavy electric current. With the most up-to-date safeguards and arrangements, dangers to life and property are minimized. The use of a gas engine will turn largely on the accessibility and cost of a supply. Evidently, economic conditions are much different in a district where natural gas is available, at thirty cents or less a thousand cubic feet, from what they are in one where the manufactured article, at \$1.00 per thousand feet, is the only possible supply. However, even where the gas itself is expensive, some other conditions may so control as to throw the choice to the gas engine. The gasoline engine is a very good piece of apparatus. The reservoir should, of course, be located at a distance from the engine and in a situation where the ill results of an explosion are minimized. The hot-air engine is an old and well-tried device. This is extremely simple in operation and is probably economical for small installations. The only direct expense in the production of power is for fuel and attendance. There are, in one of the prominent types, two vertical cylinders in which pistons move up and down. In the one, air is compressed; in the other compressed air is heated. The compressed air finds its way from the compression cylinder into the heating cylinder through a device known as a regenerator. The effect of heat on the compressed air is to give it great expansive power; this expansion is what drives the engine. The heating is done by means of a stove enveloping the heating cylinder. The stove may be run by kerosene, gas or anthracite coal. An idea of the expense can be gained from the following estimate of the makers: An engine able to lift 350 gallons per hour to a height of fifty feet will consume twenty cubic feet of gas, two quarts of kerosene or three pounds of anthracite coal per hour. An engine able to lift ten times as much water to the same height, in the same time, will consume 100 cubic feet of gas, five quarts of kerosene or seven to eight pounds of anthracite coal per hour. The steam engine is another solution of the power problem. Where the amount of work to be performed justifies, it is ordinarily economical.





Handicraftsman

Conducted by A. Russell Bond

Home-Made Summer Furniture

By Mary Edith Griswold

Photographs by Vahdah Van Eaton



BEAUTIFUL furniture for summer use can be made by a handy man or woman with a kit of tools which will cost under a dollar, the only really essential ones being a T square, a saw, and a hammer.

The ability to use these universal and simple tools will grow with practice and the gift to learn new tricks, but they do not require unusual abilities. Taste, tact and perseverance with a willingness to take pains will accomplish any of the things described in this article.

After you have learned how to saw a straight line, plane evenly, mark out your work and fit it together nicely there is nothing known to the ordinary carpenter's skill which you cannot do.

In the most enlightened homes a regular work-bench is found, having vises to hold the work, work stops, and tool rack. Of course upon such a bench are usually found more tools than those designated at the beginning of this article as necessary. There will be planes and bits and chisels and perhaps many more besides. With such an equipment wonderful things can be accomplished.

As such work is usually attempted by the children of the family, pieces which adolescents would naturally construct will perhaps be more suggestive to the greater number of readers.

Girls will usually begin by making something for their own rooms and the boys by making something for mother's. A shirtwaist and hat-box case is good for both. A very neat one can be made of four lengths of two-inch square pine lumber each piece four feet long, a top board of half-inch thick lumber and shorter lengths of the two-inch stuff for braces. These side-pieces also serve as rails on which to slide the boxes in and out.

This is a piece of furniture which can be made from boxes already on hand; the square hat box which is still in

good condition will do and if you begin with it you will have to regulate the sizes of the other boxes in consideration of it.

Beautiful patterns of such cases may be seen in the furniture and department stores. They usually have two deep boxes underneath the hat box long enough to hold a lady's dress skirt folded once. They will hold a summer suit each.

The space on the side of the hat box may be divided into two smaller boxes for holding veils, handkerchiefs, or the little accessories to a lady's summer toilette.

The handsome ready-made ones are covered with cretonne, but they are just as pretty and about as durable if covered with wall-paper. The general effect is the same because wall-paper comes in as pretty patterns as cretonne.

Another thing which boys or girls can make with their own hands is a sewing screen. The frame is made of lumber. Any kind will do, because it is completely covered with cretonne. It must be straight and planed off smooth,

or the cloth will not lie smooth and will look bad. The points of such a screen do not have to be dovetailed, or done in any fancy way. Cut off half the thickness from both boards so that they will fit together neatly and then nail them together with wire nails and drive the heads down deep with a nail set, being sure to rest the work on a flat iron, or some other solid piece of metal. Sewing screens have a top row of spools of thread, a pocket below to hold things in, and a



A kitchen table used for a desk with book shelves built on top

little table which lets down when required.

The wooden frame of this screen must be covered with the cretonne before the outside piece is tacked on so that there will not be any raw edges showing.

These are particularly nice for the nursery because they are light and easily moved about from place to place and they make mother look happy, forming a sort of lovely background for childish memory.

They are also nice for a young girl because they please

her aesthetic sense. Older girls often become very proficient in the making over of their rooms. The illustration of a young lady sewing beside her window shows what a clever girl can do with the plainest of things. The bookshelves were made of rough packing box boards, but they look delightful with the gold braid nailed to them with brass tacks. The desk is an ordinary kitchen table which cost a dollar and a quarter. The small articles on the desk were all made of nothing, practically. The blotter is a five cent sheet of strawboard with corners of cretonne. The tray for holding penholders is made of cretonne, as is also the lamp shade and the letter paper holder.

The window is a little bower, made by planting a few seeds in a box and the striped awning itself adds its note of cheerfulness.

The window curtains are cretonne almost the exact size of the window-panes and edged with cotton braid to make them hang well. They look like panels and keep out the strong summer light.

The beauty of such an arrangement is that one does not have to wear it out before making a change, or feel the folly of extravagance.

In making the shirtwaist cases there are several extra touches which may be put in with only a little more work. For instance it is a great convenience to have a transverse hinge in the lid of the boxes used for these cases. It saves taking the whole box out every time some little thing is wanted. These hinges are made of cloth and glue.

Cut the box lid in halves down a line from side to side, being careful to make a clean cut. Take a strip of strong drill the length of the lid and an inch wide, and cover it thoroughly with glue. To paste on lay the two edges together and smooth out the strip.

This strip is for the upper side of the lid. Now if you want to make a very good job of it wait till the first strip has dried and then prepare another strip of the drill with glue, lay the lid over the edge of the bench or table upon which you are working, being sure that the edges are at right angles to each other.

When you smooth the strip down to fit closely to the edges of the hinge, the cloth will be at right angles to the other edge. This will give the needed spring to the hinge.

Delightful small cases for the little objects which usually litter the boy's or girl's bureau can be made of old cigar boxes. The frame for such a small case needs to be substantial, though, or the little box drawers will not draw smoothly. The quarter inch boards upon which cloth is wound would make the nicest material for such work. They may be had for nothing from your friend the merchant or the janitor of a big department store, or bought for two cents apiece from a second-hand box factory. They are pleasant to work with because they are smooth and the lumber has been thoroughly seasoned and will not warp.

Good cigar boxes are made of cedar and have a delightful odor after they have been thoroughly soaked in water and the cigar labels scrubbed off. The black lettering which is always printed upon the wood will come off with

sandpaper and there you have a perfect little drawer for your case.

The difficulty will be to get four or five boxes of the same size, but there is nothing very serious about such a task if the carpenter has brains.

Cigar boxes may be covered with cretonne or wall-paper

can be pasted over them if the maker insists upon their being covered. These cabinets make perfect cases for holding spoons, knives and forks, or for spice closets. For the toilette table they may be made invaluable in holding hairpins, jewels, powder puffs and what not.

In making this as in everything else in life the success will depend upon getting the piece nicely made and in making the proportions right. There is a balance to everything.

Especially is this true in regard to the sewing screen. Good measurements for such a screen are three feet by a foot and a-half for each of the two pieces. The brace should not be put in the exact center of the frame because you want



Making a frame for a screen



Fitting a box lid with a cloth hinge

to use it for the spool rack, so about a third of the distance is correct. This piece is first covered with the cretonne and then a row of nails is driven in to serve as spool holders. If thin wire nails with small heads are used you will not need to file them off, but paint or gild them, to prevent rust.

An excess of straight lines is wearisome, so if you can it will be restful to have some of the corners rounded off, and some of the edges sawed into curving lines. The illustration of a sewing table illustrates the beauty of the curv-

A simple frame for it will be made of two-inch square lumber, cut into lengths for the legs, with a brace of the same material six inches above the floor connecting the two pair of legs, and a cross-piece to connect them. For light work such a frame will last a lifetime and not jiggle.

The top board must come over the edges of the box about two and a-half inches so as to give the whole a graceful appearance.

The sliding drawer underneath will have to be made to fit the frame. The piece of lumber which edges the top



A sewing table and a chest of drawers



A sewing screen with adjustable shelf and pockets



A chest of drawers and hat box

ing line. The general idea is a box on legs to make it handier to reach into, with a board top and a sliding sort of bin underneath which will pull out and in without disturbing the top of the table.

The making of such a piece of furniture is a perfectly simple process. Its beauty will depend somewhat upon the size and shape of the box. If you wish to make it of a packing box carefully select one at the grocery. After that it may be covered with cretonne, then lined and fastened to the frame.

of this bin is two and a half inches wide and a half-inch thick. Small cleats of half an inch square are nailed to the sides for grooves for the bin to slide on. The bottom should be about half the size of the top and the sides must be sawed out to fit. The seams should be glued as well as nailed. Then the cretonne can be put on, and the inside finished with either white enamel paint or lining cambric. A knob to draw it out completes the article.

The top and frame will look nicer if they are painted white and finished with enamel paint.

Cutting Wood With Paper



A TALLOW candle bullet can be fired through a board. A straw driven by a cyclone will penetrate a tree. A stream of water under high pressure will tear the skin off a man's hand. A copper disk, rotating slowly, can be cut by a steel cutting tool, but, if rotating at high speed, it will turn about and cut the steel. These facts suggested the following experiment on the cutting properties of paper. Everyone knows that the hand can be cut badly with paper, but the experiment was undertaken to discover whether hard substances, such as wood, could be thus cut.

A sheet of two-ply bristol board was trimmed to the form of a disk, ten inches in diameter, and a wooden spool

was glued to the paper at its center. An electric fan was dismantled of its fan and guard, and the spool was bored out to fit snugly on the armature shaft. A wood screw, with its point blunted, was threaded transversely through the spool, and against the shaft, to fix the paper disk securely thereon. The current was then turned on, and a pencil was held lightly against the edge of the spinning paper. Immediately the paper bit into the wood, and cut very quickly, with an exceedingly fine and clean kerf. When the lead of the pencil was reached the progress of the cutter was much slower because the graphite acted as a lubricant.

However, before long the pencil was cut in two and the bristol board showed no material wear.





The front of the house

Two Types of Stucco Houses

By Burr Bartram



THE great movement toward the use of cement in house construction is well exemplified in the two houses which form the subject of this paper.

The house built for Mr. W. L. Serrell, at Kenilworth, Ill., is an artistic expression of the highest accomplishment in cement construction. Mr. George W. Maher, of Chicago, the architect of this house, has taken special care to design a dwelling that would meet all the requirements of the owner, and at the same time afford him an opportunity to put his best efforts into a house of distinction.

The main walls are covered with cement stucco of a rough gray surface, while the half-timber work and trimmings are painted bottle green. The roof is covered with shingles and stained a moss green.

The interior arrangement of the first floor is perfect in regard to light and ventilation.

The entrance hall is built one step above the grade line, while four steps lead from the entry to the level of the first floor. The hall is a central one, with stairs

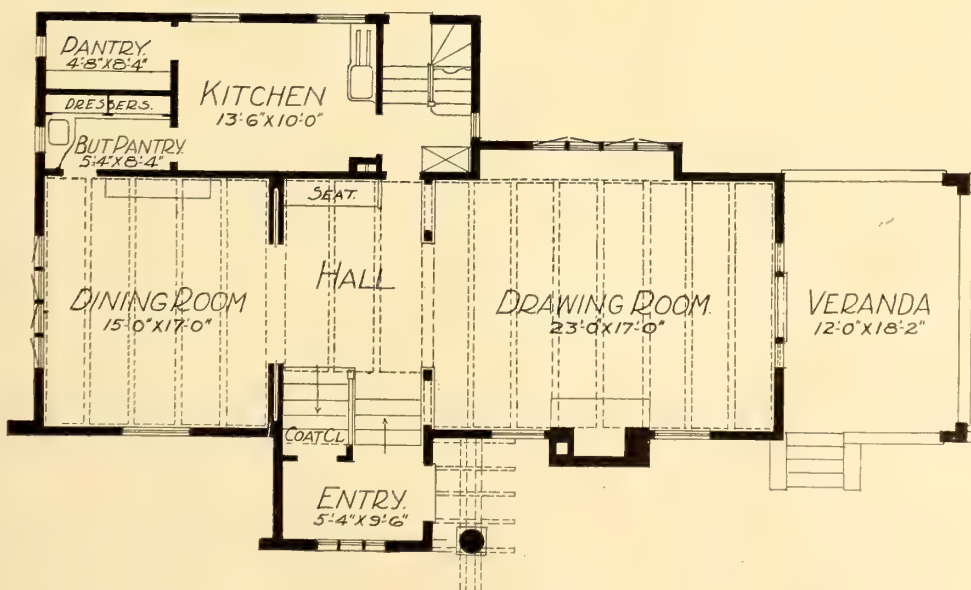
ascending over the entry to a broad landing, on which there is placed a cluster of lighted small windows.

This hall, the living- and dining-rooms are trimmed with chestnut, stained and finished in a soft brown tone.

The entire ceilings of the three rooms are beamed, forming panels, the spaces among the beams being tinted an écru tone of yellow, which gives life and lightness to the color scheme of the rooms. The main walls of the living-room have a tinted tone of the same color. The fireplace, built of brick with the facings extending from the floor to the ceiling, occupies the center wall space on one side of the room, while opposite the fireplace there is a bay-window furnished with a broad paneled seat.

French windows open onto the living-porch, which is the feature of the house. This porch is enclosed with screens in summer and glass in winter; and, being heated by steam, affords a place for the housing of plants during the cold weather.

The dining-room has a cluster of casement windows placed at one side of the room, while the inside wall space is occupied by a built-in buffet. A plate shelf extends around the



First floor plan



Exterior wall of the staircase



Main entrance of the building



The side and rear of the house



The living-room

room at the height of the top of the buffet. The wall space below the shelf is treated in a soft buff tone, while the wall space above the shelf is covered with a large-figured paper in golden brown, blue and green.

From the dining-room the extensive vista through the hall and the living-room to the living-porch is one of unusual range and fascination.

The pantries and kitchen are treated in a sanitary manner, and are equipped with all the best modern conveniences.

The owner's suite and guest-rooms occupy the second floor of the house.

The sleeping-rooms are treated with white enamel paint for the trim, while the walls of each room are finished in one particular color scheme. The bathrooms have tiled wainscoting and floors, and are furnished with porcelain fixtures and exposed nickel-plated plumbing.

The house contains ample storage space and two bedrooms in the third story, and

heating apparatus, fuel-rooms and laundry in the cellar.

Considerable cultivation is in evidence about the house, and the lines of the building have been very much enhanced by the beauty of the growing shrubs and plants. The approach to a house is the introduction, and the closely-clipped hedge at each side of the walk presents an inviting appearance in advancing from the street.

The ground plans are simple and permit the laying out of a lawn in front with a few bushes, which with the low hedge and several choice trees give just the effect needed for setting off the dwelling. In the rear there is more horticultural elaboration, as will be seen in the engraving, where there is some approach to a massing of plants and bushes, which with the low hedge and severity, which is the most pronounced, is the garden square built on the highest part of the roof of the living-porch at one end of the house.

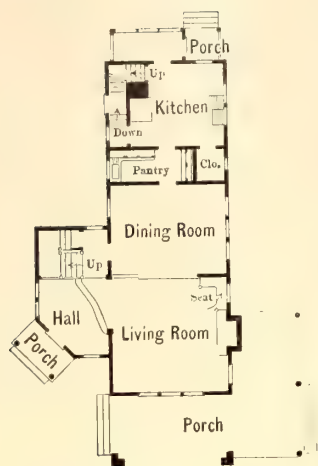


The fireplace in the living-room



The dining-room

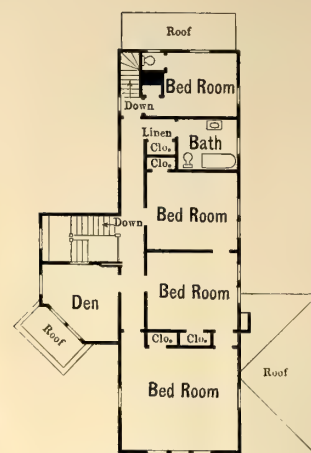
In selecting a dwelling of this type of stucco construction, the example presented in the illustrations was found and studied by the writer, and it impressed him with the value of the free style shown in the architect's work. Still another striking feature was the diffusion of colors, a scheme carried out in this instance in a way which furnishes many pleasant effects in the gray stucco and greens of the outside and in the tints of brown, yellow and blue of the interior. The last colors, while infusing the ceilings, walls and the like with warmth and life, also contribute a tone to the inside, which is in pleasing contrast to the gray of the rough cement construction and the opposing shades of the roof, the half-timber and the trimmings. In addition to the architectural points which work in stucco can achieve, he was also impressed by the practical plan of the dwelling and its effective ventilation.



First floor plan



The living-part of the house



Second floor plan



THE residence of George M. Jacobus, Esq., at Red Bank, New Jersey, which was designed by Fred M. Truex, architect, of New York, is perhaps one of the most interesting of its type of cement construction, for the reason that considerable liberty has been taken in the design. The departure from routine in planning this house is a feature of the interior arrangement. The entrance-porch, built at an angle, arrests attention by the unique way in which it is designed. It is separated, as it should be, from the living-porch. The extension of the second story over this porch is also a liberty in cement construction which has proven entirely satisfactory.

The exterior walls of the building are constructed of a light-gray stucco finish, and the roofs are covered with shingles stained a tile red, which harmonizes well with the gray stucco and gives a Spanish feeling to the general scheme. The porch floors and columns are built of re-inforced concrete.

The entrance-hall is built two steps below the level of the first floor. Both the hall and the living-room are trimmed with chestnut and stained and finished in a soft brown tone. The hall has a paneled wood ceiling and a concrete floor

marked off in squares. The living-room is well balanced by the fireplace being placed in the center of one side of the room. It is built of light gray brick, and is provided with a stone shelf. The walls have a low wooden wainscoting and a paneled wall extending to the ceiling, which is beamed. The panels of the walls are covered with golden-brown bur-lap. The dining-room, opening direct from the living-room, is also trimmed with chestnut and is finished in a similar manner. The walls are paneled from the floor to the ceiling, and the ceiling is paneled and cut in between chestnut beams. The floor of the dining-room is laid with re-inforced concrete in red and marked off in squares, and is one step above the level of the floor of the living-room.

The kitchen and the pantry are well equipped with all the best modern appointments. The kitchen walls have a wainscoting of Keene's cement to the height of five feet. This wainscoting and the entire walls of the kitchen are treated with white enamel paint.

The second floor is treated in a dull white enamel, and the doors of birch are stained and finished in mahogany. The den is trimmed with chestnut.

The bathroom is treated with white enamel and is furnished with porcelain fixtures and exposed nickel-plated plumbing. A hot-water heating plant, the fuel-rooms and a



The entrance front of the house

cold-storage room are placed in the cellar, and all these last, the so-called lesser rooms and accessories of a house—the kitchen, bathroom, pantry, fuel-rooms, etc.—need not in this dwelling be considered except that they are models of right dimensions and perfectly furnished.

The main structural work of this house has received



The living-room

ing and graceful treatment and one which releases the design from any conditions of severity. There is not space here to specify all the features of this house, but the illustrations will allow one to make an architectural excursion around and through this nicely arranged residence, and they point out the adaptability of the lower rooms for



The living-room, looking into the dining-room

more than the usual attention given by designers to residences. The dwelling is a rich example of varied combinations and some of these may boast of marked originality; for instance, the boldness of the projection of the small porch and its position in relation to all the lines of the plan. A porch placed in this way is singularly fitted to receive a very impos-



The dining-room

the harmonious disposition of furniture and accessories of indoor living. The house is very evidently built with the intention of securing comfort in the variable climate of northerly New Jersey, and will withstand effectively the coldest and most inclement weather, while the very extensive porch area will make outdoor summer life most enjoyable.



A stone and shingle house costing \$5,500



Stone, brick and stucco are the materials used



A gambrel-roof house of excellent design



A brick house costing \$5,200



A dwelling house of stucco costing \$2,500



A model house of excellent proportions

A GROUP OF MODERN DWELLINGS



A reinforced concrete house costing \$3,500 complete



A lean-to roof house of good design



A double-coursed shingled dwelling with hipped roof



An interesting house of combined stucco and shingles



Stucco and shingles are used to build this house



A gambrel-roof house of simple pretensions.

COSTING FROM \$2,500 UPWARDS



The Table

How To Arrange Porch Trays

By Phebe Westcott Humphreys

Photographs by Mary H. Northend

BREAKING away from non-essentials and novelty in dainty serving, is the secret of success for the home caterer in hot weather. The popularity of tray service is encouraging overworked housewives throughout the land to issue their own little emancipation proclamations, in regard to elaborate catering for the family, or the summer guests. Decorative trays of spacious dimensions may now be secured at little cost—in fact the size, the plan, the general durability and attractiveness of the popular porch tray of to-day, with its strong handles, and upright rim to prevent the dishes from sliding off, show the tendency towards simplicity in service; for the popular porch tray is of sufficient size to accommodate an entire meal for two, when it is light luncheon, or Sunday supper, that is being served.

The arrangement of the tray will depend upon the function of the serving. For the porch tea, or the light refreshments for the guest, it should be distinguished by its simplicity. Any effort toward display will detract somewhat from the gracious hospitality of offering cooling refreshment, or the restful "cup o' tea," after the guest is cosily settled in the comfortable porch rocker or among the cushions of the cool canvas-backed sewing seat—ready for a chat while nibbling at the dainty crackers and cakes, and enjoying the beverage.

Trays of assorted sizes should now be found in every summer home, as they may be bought in inexpensive and

durable form. It will be much wiser to have several of the less costly, rather than one big, elaborate, unwieldy affair, difficult to handle and not always appropriate. For the little oval tray of the one-guest-size (or, when used for home service, of the supper-for-two-size), may be used with or without the linen centerpiece or the small doileys. With a plate of salted wafers, and one of sweet cakes in the center of the tray, the pitcher of iced grape juice, or lemonade, should stand at one end, and the two tall glasses at the other; and the additional touch, for a festive occasion, may be a single half-blown rose with long stem, simply laid on the tray between the cake plates, to be claimed by the caller after enjoying the refreshments.

I know a gracious little hostess who possesses the knack of doing just the right thing to please and flatter each individual guest; and when a porch tray luncheon is in progress, or even the simplest of tray refreshments, the guest or guests will find their favorite blossoms on the tray if it is possible for the garden to supply them—whether it is a single beautiful rose, a bunch of violets, pansies, sweet peas, or one of the various annuals blooming in the garden beds at the base of the porch, or in the flower boxes outlining the railings. Flowers laid loosely on the tray are better than any attempt at vase or bowl clusters; as they occupy less room and all stilted appearance is avoided. No matter how carefully and painstakingly the tray has been arranged, it must have the appearance of having been "picked up" on short notice, with its attractive refreshment gathered together with little trouble or anxious



Fig. 1—A tray arranged for an afternoon porch tea



Fig. 2—Biscuits, sardines and coffee are arranged on this tray

thought. It is this knack in appropriate arrangement, that makes porch tray service appear so friendly and spontaneous a refreshment.

The illustrations show some exceedingly attractive trays arranged for serving porch teas and luncheons. Fig. 1 is simply a tea tray arranged for an afternoon porch tea; yet so dainty is the equipment, and the arrangement, that with little trouble in its preparation it will make the daily function of afternoon tea appear a festive occasion.

Fig. 3 is arranged for an appetizing porch luncheon. Here ginger ale, crisp biscuit, cream cheese, deviled herring

It is noticed that Figs. 1 and 2 have dainty little oval tea cloths covering the trays. Where there is pouring of either tea or coffee this is appropriate, and gives additional daintiness to the serving. Figs. 3 and 4 have the polished surface of the trays exposed, where only the cold drinks are served with lighter refreshments.

When a number of guests make it necessary to serve more refreshment than can be accommodated on one tray, two may be set side by side; and their attractive arrangement in this instance will require special care. The square-corner trays, of the same size, will be best; and they may be



Fig. 3—Uneda biscuit, cream cheese, ginger ale and deviled herring are arranged on this tray



Fig. 4—Lady fingers, sandwiches, cake and iced tea are placed on this tray

and prestallets are tastefully presented, the simplicity of the tray corresponding with that of the fare. When ginger ale, sarsaparilla and similar soft or "temperance drinks" are served, the bottles may be set directly on the tray, with the siphon bottle; with a plentiful supply of finely cracked ice in each glass. But the grape juice and the orange or lemonade are more pleasing in a tall pitcher, accompanied by the cooling tinkle of ice in the pouring.

Another porch luncheon is shown in Fig. 2. Sardines, biscuit and coffee form the appetizing repast attractively served. Fig. 4 illustrates a dainty tray equipped with iced tea, lady fingers, sandwiches and cut cake.

arranged to appear as one large tray when placed close together on the porch table, with some branches of quick-growing vines—pulled from the porch honeysuckle or cinnamon vine or other thrifty climber—hiding the place where the two trays join. Sweet alyssum blossoms or saucy pansy faces peeping from the vine tendrils will make this double-tray decoration one of exceeding beauty, while serving the purpose of utility. Quick-growing, profuse-blooming annuals, that bloom better when their flowers are picked daily, should form a part of every porch box or flower bed; and their use in the decoration of porch trays will be constantly appreciated.

Notes on Cacti



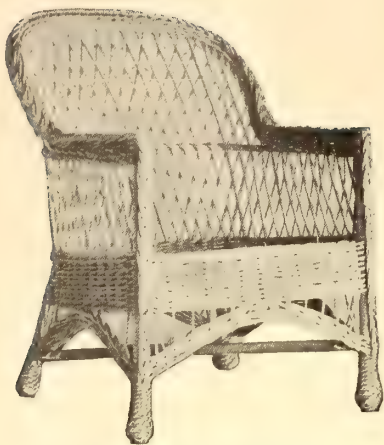
THE Echinocacti or Hedgehog Cacti are perhaps some of the most familiar of all the Cactus family. A number of these flower freely when they attain to a good size, but the group known as Echinopsis is much more worthy of attention. Nearly all these will blossom when they are fairly small, and the flowers produced are among the grandest of all the different kinds of Cactus. These plants like an open mixture of good fibrous loam and small pieces of sandstone, well drained pots, a liberal supply of water in summer and practically none in winter. One of the handsomest kinds is found in *Echinopsis Eyriesii*, a plant which bears long-tubed fragrant blossoms of a brilliant whiteness.

Another very free flowering kind is *E. Tubiflora*, a summer blooming species with white blossoms, whilst *E. cristata purpurea* may be recommended as a variety with beautiful rose-colored flowers. A method which is recommended as a means of making these plants flower is certainly singular, but it has the merit of being successful, when, as occasionally

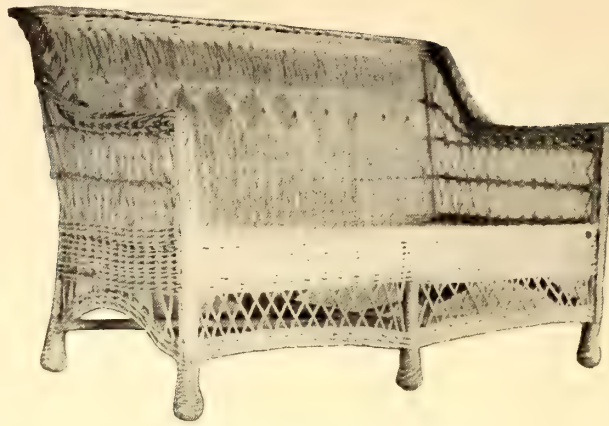
happens with these rounded Cacti, they refuse to bloom. With a sharp knife, cut right across the plant from one side to the other, thus taking its top off. The upper portion will probably grow if planted in sandy soil; but in any case the rooted half will shortly after start to grow very freely. The new shoots will increase very rapidly in size, and as soon as they become ripened will be likely to produce flowers.

In conclusion, mention should be made of the *Epiphyllum*, which are distinctive in that many of them naturally bloom in the autumn and winter. On account of the liability of most of these species to rot away, it is the custom to graft them upon stock of some other kind of Cactus.

The *Epiphyllum Coccineum* is a very beautiful variety and of fairly simple culture, provided perfect drainage is arranged. During very hot weather these plants require some shelter from the sun, as they require more shade than any of the Cacti. When the plants are in a healthy state the flowers are very freely produced, and the former can be relied upon to blossom with regularity.



Curved-back armchair



Settee of close-meshed weave



Square-back armchair

Furniture for the Home

Willow Furniture

By Vernon Powers



THE willow furniture industry, like so many other lines of business, began in an extremely crude and limited way. About eighteen years ago, two or three Polish families and one Englishman were making willow chairs in their homes and selling them to the stores, a few at a time, as they completed them. Since that period, several factories have sprung up, each employing from fifteen to fifty "hands," and the importation of foreign osiers for furniture-making now runs into the hundreds of thousands of dollars. The best willow comes from France, near the Belgian border, and the traveler may see acres upon acres of beautiful, tall osiers growing everywhere. The willow is planted carefully, and each year the shoots or osiers are cut close to the ground. No shoots or "suckers" from the willow trees are of sufficient pliancy to be of any value.

The osiers, as soon as cut, are gathered into bundles and placed on end in tubs of water, and allowed to stand for some time in order to aid the sap in running throughout the entire length of the stalks. Then the process of peeling is begun. This is accomplished by the aid of a specially designed knife, which is made in the form of a blade, with projections at either end, so as to be held in position by the fingers, thus bringing the blade between the fingers. A skilful "peeler" deftly runs his hand the entire length of the osier, removing the bark in a moment. The shoots are then gathered into bundles and bound by wires, ready for shipment. Each bundle is made up of carefully assorted stock, so as to have shoots of the

same diameter in one bundle. About four or five sizes of shoots are required in the manufacture of willow furniture. All of the weaving is done by hand, and several hundred designs of chairs, tables, swings, chaise-lounges, beds, sideboards, and dining-room suits are included. Like everything else made in America, the majority of the manufacturers are at present trying to vie with one another to see how cheaply the goods can be produced, and the department stores of the country are clamoring for low-priced goods.

The result has been to sacrifice quality, but a few of the leading manufacturers are adhering to prices which will warrant the making of the first-class goods. Cheap willow furniture is not sufficiently durable to warrant its purchase, but well-made French willow chairs will last a lifetime.

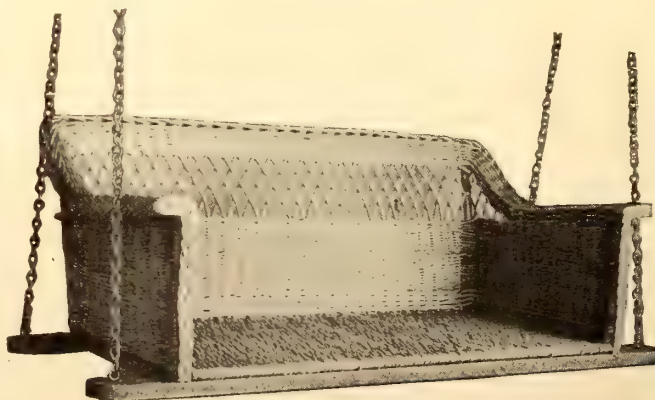
The original use of willow furniture was for the summer cottage or the porch, but today the variety of patterns and beautiful brown and tan colorings have induced consumers to

furnish their winter homes in part with willow. Many imitations of the willow furniture are made in reed, which is nothing more than the smaller sizes of rattan, and these

goods are not as strongly built as the willow pieces. Willow furniture, like everything else, can be produced at all kinds of prices, but if one desires strength, durability, harmony of color, and pleasing design, it cannot be obtained at cut rates. A tastefully and durably furnished willow room will cost, including cushions, from seventy dollars to two hundred or more. When this is accomplished, the purchaser will enjoy the ease that comes from the use of well-constructed ware when made of very good material.



Porch luncheon set



Broad hanging seat



Wheeled tray



Sewing-room table



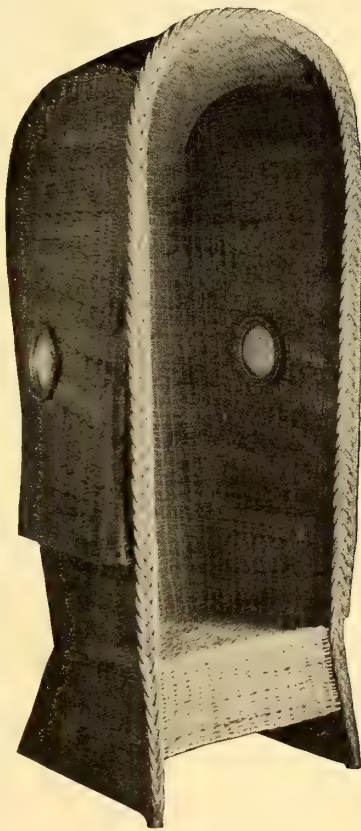
Reading table and book rack

In the modern wickerware stores the willow furniture goods exhibited make a favorable impression by the wide range and number of styles. But a close inspection reveals the fact that the cheaper grades lack the finish and fineness that are needed to stand the hardest usage of house service. This should lead a purchaser to practice real economy by selecting articles that are guaranteed to have the brand of the French willow. These very suddenly leap in price, but their material and workmanship are of so fine a class that the pieces are bound to hold their shape, color and durability for a satisfactory number of years. French willow stands to compete in all these essential qualities with much of the strongest leathers and upholstered materials in vogue, and is able to surpass the mass of furniture output of the day.

A surprising feature of this industry is the skill attained in designing the forms of willow frames. All articles that are fashioned in wood in the current forms of the art can be successfully, if not perfectly, reproduced by the weaving of osiers. A view of the accompanying engravings will show a result which makes it possible to claim that there is no size, shape or type of furniture incapable of being duplicated or invented in wickerwork. Whether the weaving is plain or intricate, the patterns are marvels of adroit workmanship. The most difficult turns, angles and combinations are negotiated in ways that make the contours and elaborations of all styles of willow furniture beautiful in their general appearance. The two massive armchairs, one at each end of the large settee, are different in the

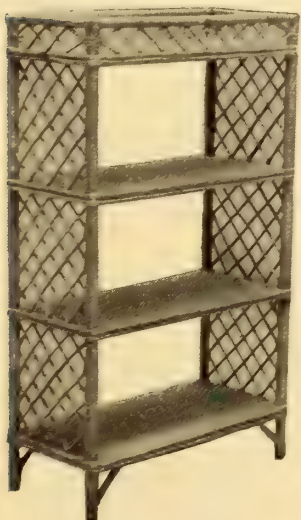
mesh of the weave, the forms of the back, and other details, and this variety shows the versatility of design and the skill of the weaver. The settee exhibits the refinement reached in compactness of weaving, and in the other articles

representing a desk, a table, a shade chair, a bookcase, a sideboard and a luncheon outfit of table and chairs, are seen average examples of the advance of willow pieces of porch and indoor furniture into their present popularity. Willow furniture of the types shown in the illustrations present many features that suggest articles appropriate to the utilities as well as the luxuries of a well-ordered home. Their appearance indicates that the pieces are capable of combining the means of carrying out one's ideas in making a corner cosy, a porch a place of repose, a bedroom or dining-room as well furnished as if the articles were fashioned of the more sturdy woods, and with the added advantage that all the pieces are easy to handle, refreshing in appearance, cool in use in warm weather, and when amply cushioned, perfectly comfortable for service and pleasing to the eye, in the colder seasons. These designs in numerous cases yield examples that are adapted to beautify a pretentious room sufficiently to aid those other contributions of objects and ornaments that inform it with artistic life. Just as significantly do some answer the practical needs of the working side of furniture, as shown in the wheeled tray, or on the side of luxuries when the

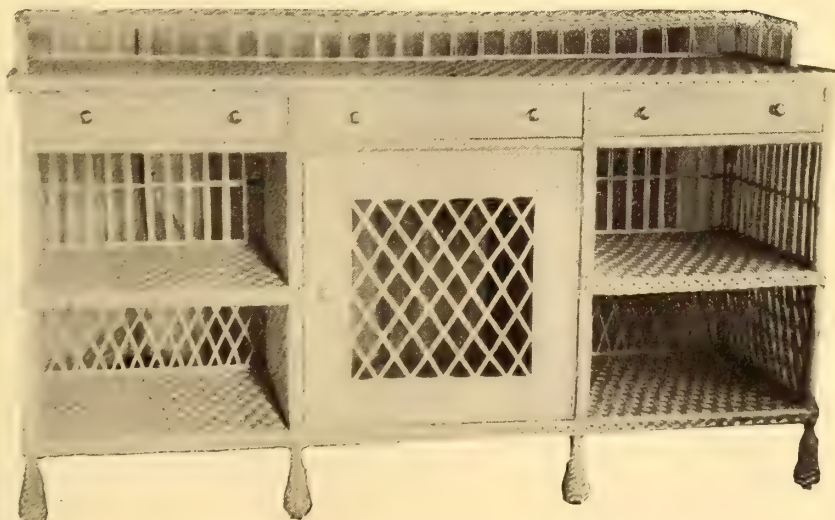


Beach chair

summer porch comforts are made very inviting in the hanging settee; points in all these cases obtained without any claim of purity of line or perfect scroll work.



Small bookcase



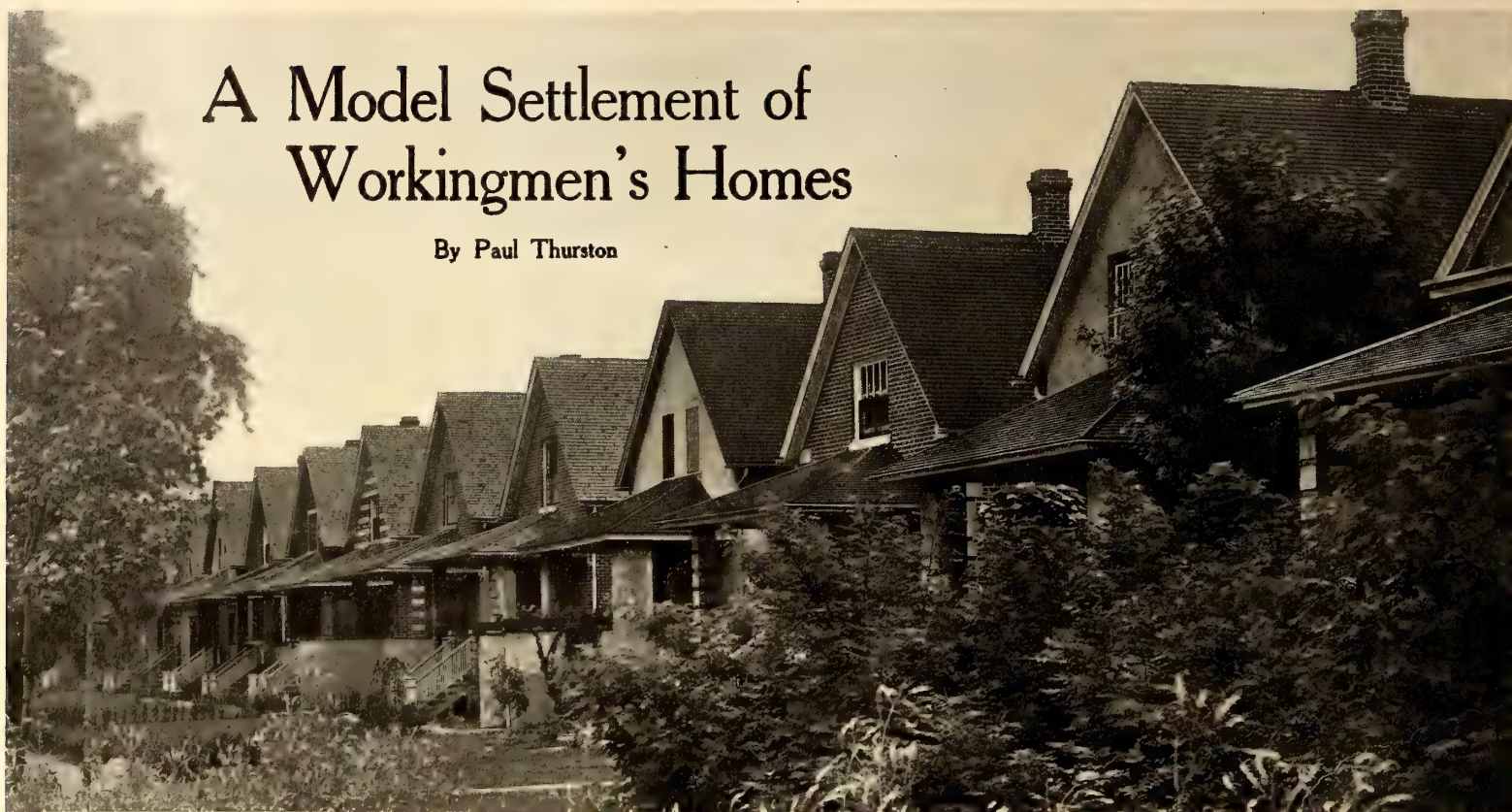
Sideboard for wicker-furnished dining-room



Writing desk

A Model Settlement of Workingmen's Homes

By Paul Thurston



A group of small houses built after one plan, and showing the value in the use of different kinds of material for their construction



THE village of Mayfair, just outside of the city of Chicago, is most fortunate in having two men as enterprising as Messrs. Sorensen & Olson, who have laid out several squares of land and have planned and built an interesting group of houses, some of which are illustrated in this paper. How best to make the settlement beautiful has been a subject of careful consideration. One of the rules of the village is that the front line and the division lines of each of the properties shall be divided only by a closely clipped hedge of privet. Every encouragement is given by the promoters to the land-owners to maintain the proper

keeping of their home grounds, so that the beauty of each street, which has been so earnestly sought, may be attained. There are no monotonous and depressing rows of brick and mortar in this group of little dwellings, but dainty individual houses are there, which, in time, will be covered with growing vines, thereby enhancing and creating a more effective appearance than at present obtains. A feature of peculiar interest is that only one floor plan has been used in the construction of these little dwellings, the point of distinction of each of the houses being found in the use which has been made of the various kinds of materials employed in their construction. This is due not so much, however, to the great variety of materials which has been



A brick and stucco house, cost \$3,400



A cement stucco house, cost \$3,350



A brick and cement block house. Cost \$3,300



A brick and cement block house. Cost \$3,300



A dwelling built of stucco. Cost \$3,300



A stucco and brick house. Cost \$3,350

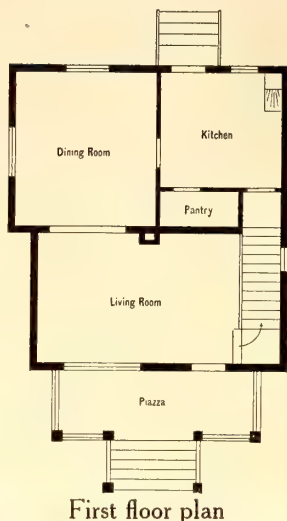


Cement block and brick house. Cost \$3,500

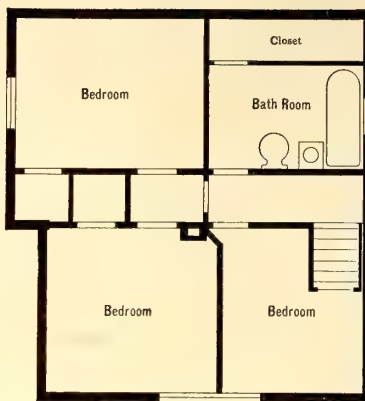


A cement block and brick house. Cost \$3,400

employed, as it is to the manner in which they have been combined. One of the houses may be built of stucco, another of brick, another of frame and brick, and so on, throughout the entire village, yet the general aspect of each house is distinct in character one from the other. In regard to the planning of these houses, there is only one standard type of dwelling. They have been planned, however, after much thought and careful study. Each house contains a large living-room, dining-room, kitchen and pantry on the first floor, and three bedrooms and a bathroom on the second floor. The houses are trimmed inside with the best grade of oak, for the halls, dining- and living-rooms, and with Georgia pine for the remainder of the dwelling. The floors are laid with maple. A considerable saving of space is attained by the elimination of a hallway, and by building the staircase to ascend from the living-room of the house. The kitchens are furnished in the best possible manner; the bathrooms are provided with porcelain fixtures and exposed nickel-plated plumbing. The cost of these houses ranges from \$3,000 to \$3,500, according to the materials used in their building. This is a very low expenditure, and is an important feature



First floor plan



Second floor plan



A home of stone and brick

in dwellings of this character. The dignity and simplicity of these houses are also matters to be considered. These features are of particular moment when one considers the high-priced conditions in the building trade at the present time. In the fashioning of these houses there has been one thought, and that has been to have an exterior which has all that is necessary to give each design an architectural character, and an interior so thoroughly

equipped as to meet all the modern requirements of their class, and at the same time to eliminate all unnecessary ornamentation and equipment. These workingmen's homes show to their full advantage in the illustrations. They seem fitted to occupy a nice point between attractiveness and comfort, which consists here in the charming variety obtained after building on a single plan. Exteriorly they have the air of a group of houses worthy to stand in full day in comparison with many less economic dwellings in the suburbs of any American industrial city; and the interiors will show a workingman's family benefits as large as are to be had in many types of homes. Differing

as they do from one another, these houses as planned will help the desire of purchasers to own homes with the hallmark of individuality, as here so favorably shown.

as they do from one another, these houses as planned will help the desire of purchasers to own homes with the hallmark of individuality, as here so favorably shown.





Counterfeiting old enamel miniatures



A studio in which imitations of antique vases are made



Treating an engraving to give appearance of age

The Counterfeiting of Objects of Art

By Jacques Boyer



THE love of curios and antiquities, which has become so widespread at the present day, has given rise to quite a new industry thoroughly typical of modern technical perfection. This is the science of preparing highly artistic counterfeit reproductions, a science which, under the impetus of a most thriving business, has risen to the highest level of modern attainments. As a striking instance illustrating this state of affairs, it is only necessary to call to mind the history of the famous tiara of Saitapharnes, which was purchased by the Museum of the Louvre at a price of \$40,000 as the masterpiece of a Greek artist of the third century. In point of fact, this object, which the curator accepted as an authentic handiwork of a Greek sculptor, was the work of a Russian named Rouchomowsky, who had fashioned it only a few months before in his workshop at Odessa, as was subsequently shown by the expert investigation of M. Clermont-Ganneau. Not only so, but the author of the work himself had in the mean-

time confessed to its fraudulence, and in order to prove his point, he carved before a number of witnesses, and without having the model before him, a fragment of the celebrated tiara. This performance bore testimony, if not to his honesty, at any rate to his remarkable skill.

It requires no small degree of erudition and a certain peculiar talent to impress upon a new product such a stamp that more or less expert connoisseurs are deceived into the belief that they have before them a real antique. We will pass in brief review some of the methods of the astute counterfeiter. There are consummate miniature artists, who imitate ancient enamels; others, workers in ceramic art, copy with scrupulous care beautiful old vases. We find painters, who, with more ambitious aim, study the signatures of the

great masters, which they strive to reproduce with almost incredible fidelity, in order to inscribe them at the bottom of some painting apparently dating from the Middle Ages, and destined for some American multimillionaire. There is further an army of artists of smaller caliber, men who impart an appearance of antiquity to a recently



Placing a patch on an ancient canvas

printed engraving, others who patch up with old cloth, paintings that they have torn; art furniture makers who impart a coat of patina to various ornaments, or who embellish with finely carved bronze articles of common origin.

There is hardly an object of interest to the archæologist or collector of curios that has not furnished a field for the work of the counterfeiter, from the stone implements handed down to us as a relic of a prehistoric age, to Etruscan vases and other archæological marvels of which certain experts in the art of mimicry make a highly remunerative specialty. In certain of the show cases of the Musée de Saint Germain are exhibited pseudo-specimens of lamps, purporting to originate from the catacombs, and false seals employed for marking the rough Roman pottery made from a red clay. There also stands a cruse of venerable appearance, of which the only authentic part is the neck, the remainder being formed from pasteboard. Europe holds no monopoly of these mystifying ceramic products. The Indians in the suburbs of Mexico carry on an extensive manufacture of Aztec pottery adorned with grotesque caricatures. These somewhat crude professionals do not even take the trouble to copy antiques, they simply carve quaint human figures with eyes and mouth formed of inlaid obsidian, uncouth animals, and various designs composed of concentric circles and transverse lines produced by the impression of a flexible reed. Serpents are modeled to serve as handles.

Imitation antiquities are also exported from Porto Rico in the Antilles. A specialty of Augsburg and Nuremberg is the manufacture of stoneware jugs decorated in many colors, and dated as products of the Renaissance period, though commonly only a few months old.

But where the imitator shines in his full glory is in the counterfeiting of paintings. Without attempting to enumerate all the ingenious processes of forgery which these artists employ, we may here indicate a few of the most cunning. The first step is to purchase an old painting of small value from a bric-à-brac dealer. This is carefully

washed, and a suitable subject, worthy of one of the great masters, is then painted over the canvas. The colors are mixed with ashes and soot to give them an appearance of age. Sometimes the same result is obtained by the process known as "marouflage."



The genesis of an "ancient" triptych (three-panel picture)

This consists in pasting over an old canvas treated in the manner just described, a recent copy of some ancient painting. With this our artist's work is nearly accomplished. It only remains to "bake" the picture, in order to dry and crack the color. If the scales formed are not sufficient in number, this slight defect can be remedied by the aid of a needle. If there is some little detail in the picture, which the artist finds it above his powers to satisfactorily counterfeit, he invokes nature's aid. He turns himself into a horticulturist of a peculiar kind, and, wiping with a moistened cloth the spot which is to be partially obliterated, prepares the bed for a growth of mold or fungus,

which in a few days covers the spot under treatment. Lastly the painting passes into the hands of the "monogramist," who duly inserts a suitable signature. The science of this specialist is one not easily learnt. He must have made a detailed study of the brushes used by the great masters; he has on file the initials and complete signatures as well as the dates of famous painters, copied from originals in the museums at Rome, Paris, Berlin, London or Madrid. He knows that such and such artist

always signed his paintings on the left, while this or that landscape painter invariably placed his initials at the bottom. Another, a painter of historical subjects, would sign his initials with a flourish on the right, while still another, the author of portraits would simply put his initials in "printed" characters at the upper left hand corner.



Gilding and varnishing furniture in the old style

It must be said that the "fake" painters of to-day can boast of most brilliant predecessors. Did not Paul de Vos copy Snyders, and has not David Teniers, the younger, counterfeited Tiziano? In the case of modern paintings the task of the expert becomes excessively difficult, for certain

highly honorable modern artists painted in the style of masters of the past. For example Vernon loyally composed subjects that Diaz might have signed. It will be readily understood that in this case all that is required is a change in the signature, and the value of the canvas is doubled or tripled in the eyes of the credulous amateur.

When we come to prints, engravings, and drawings, the list of fraudulent processes is long and varied. We shall here consider only the most typical. One trick of the trade is to print over an old proof some remark engraved upon a copper plate, in order to produce a "rare" specimen not previously catalogued. Another artifice consists in taking an old plate, and filling up the lettering of the title with Spanish white, producing impressions "*avant la lettre*," which sell for their weight in gold. Or again, the craftsman re-etches an old plate, which is then used for making impressions on old paper. This is finally given a suitable appearance of age by treatment with a decoction of coffee-grounds or other suitable material.

As for the manufacture of "old" enamels, the difficulty in describing the processes available is to make a selection from among the numberless imitations produced in Paris. The simple restoration of enamels is carried out with the aid of ordinary shellac. The buyer can very readily detect this kind of fraud by plunging the article in alcohol, which will dissolve off the "restored" parts. To imitate translucent enamels, gold leaf is pasted upon a metal backing, and when this is dry, it can be painted upon without fear of the colors flowing. The thin gold base, while imparting a brilliant appearance to the painting, imitates to perfection

the characteristic transparency which the famous enamel painters of Limoges knew so well how to produce. Terra cotta work is forged with even greater ease than enamel. On the other hand pottery betrays very readily any fraudulent practices. In the first place copies prepared by molding over the original invariably differ from the latter, for in the burning the clay shrinks by about one-twelfth of its volume.

Hence expert counterfeiters resort to other means for reproducing ancient masterpieces of this character. Take for example those exquisite Greek statuettes discovered some thirty or forty years ago in the ruins of Tanagra. Upon a wire frame work the sculptor models with fine plaster the figure to be reproduced, such as a castanet player, a satyr or a bacchant. He then applies over this model by means of a brush a mixture of powdered red brick and yellow ochre dissolved in a solution of gum arabic. A few spots of gilding scattered here and there complete the evolution of the statuette, which now presents the characteristic appearance

of the Tanagra specimens. The bazaars of Florence, Rome, Venice, Naples and other Italian cities teem with terra cotta "antiques" of this kind, which are sold to the unsuspecting stranger as recent finds from archæological explorations.

Of pottery and china, innumerable faked specimens are abroad. Ceramic ware of all times and places has been imitated, from common majolica of metallic luster to Bernard Pallissy plates and fine Sèvres porcelain. In order to impart to the forged products the appearance of the real article they are buried in manure, which causes cracks to spread over their surface. The edges of plates are deftly notched, and oil is run into the recently broken surface in order to take away its fresh appearance. Old vases with simple ornamentation are "improved" by the addition of elaborate designs. The faïence of Moutiers, Nevers and Marseilles is copied with great ease. More difficult to imitate is the so-called "*Vieux Sèvres*," a special porcelain, the manufacture of which has been almost completely abandoned. The mix of these artificial porcelains is composed of alkaline frits and carbon-

ate of lime. The glaze is very rich in lead, easily scratched by steel, and fuses at a high temperature. But this soft porcelain fetches a much higher price than the ordinary hard porcelain, made almost exclusively of kaolin and potash and imitated by ceramic artists of smaller caliber.

Manuscripts and books are forged very extensively. It requires, however, a certain erudition to correctly copy ancient writing, to imitate the illuminations, to apply the colors and the gold with a sure touch, to age the vellum and parchment, while yet

preserving their transparency unimpaired. In the case of books, the market price of a work may sometimes be considerably enhanced by merely re-printing the title page. This is a favorite trick of certain unscrupulous second-hand booksellers in dealing with the so highly esteemed works of the Romantic period. Again, there is nothing easier than to rebind a work of the seventeenth or eighteenth century in an old morocco cover which has served as the binding for some royal almanac, and

to then sell the volume as proceeding from some famous library.

To imitate worm-eaten, old furniture, crafty cabinet-makers will buy at a high figure old wood from demolished houses and sculpture from this chairs, brackets and the like, which they endue with patina with unparalleled skill.

To cover bronzes and medals with verdigris, they are first plunged into acidulated water and then buried underground for some time. In a few months the articles are well qualified to figure in show-cases of antiquarians.



Rebinding a rare edition in a cover bearing the royal coat of arms of Louis XIV



Treating bronzes with acidulated water before burying them in the earth to age them



Burying articles after treating them with acid to produce a coat of verdigris



Rustic Furniture for the Garden

By Helen Lukens Gaut



THE fact that the majority of people fill their houses with seats and leave their gardens unfurnished, is a puzzling one, for it is generally conceded, even by those who neither practice nor encourage the idea, that a garden is the pleasantest place in the world in which to sit and rest, or to entertain one's friends, provided of course the weather is amiable. In the plans and specifications of conventional society, a guest, when he arrives, unless the scene happens to be laid in Southern California, which is famous for its garden entertainments, is ushered straightway into the parlor, where

he is supposed to be interested and edified by a view of wall-paper, fresco, nottingham and mahogany, and nourished by a cup of weak tea, briefly enlivened by a clove and a slice of lemon. Under such conditions, unless, of course, he is in love with one of the young ladies of the house, his stay will be short; whereas, if he is led into the garden, where all about him are glinting sunbeams, delicious perfumes of flowers, the buzzing and fluttering of happy wings, and the sweetest music of earth—the song of birds—he will, seated there on the rustic bench that has been offered him, linger on, loth to leave, forgetting time in the joy of it all.

There is no hospitality in the world as enjoyable as gar-



A stone arched bridge with a rail of rustic wood which forms a picturesque safeguard



Rustic garden seat of eucalyptus. Roof thatched with stems of palm leaves



Rustic fence and pergola above a stone retaining wall

den hospitality. There is no home life equal to the garden home life, for with its naturalness, harmony and simplicity, it lifts one out of the mercenary, restless, quarrelsome



Rustic table of graceful design made of pepper wood



Brick makes an effective topping for cobblestone walls and pillars

grooves of thought, to higher platforms, where views of life are clearer and broader; in fact, a good-natured garden is a sort of rejuvenating moral and mental battery that fairly makes one tingle with good intentions and healthy ambitions.

After the home builder has furnished his house and planted his garden, he usually considers that he has done his duty to himself and friends, or, if he does realize what a garden seat or two might mean, he may have exhausted his funds, and finds that furnishing the outdoors is quite beyond his powers. In such cases, the suggestion of home-made rustic furniture may be happily received, for it is a type inexpensive, and quite appropriate for use in any garden, except in the dignified, formal garden, where only concrete, iron, brick or factory-made seats look and feel at home. If a man is even moderately clever with hammer, saw, chisel and nails—for these are all the tools required—he can make tables and chairs and benches himself, and derive both exercise and fun after office hours by so doing. When he has equipped his outdoor drawing-room with comforts, and he sits down cozily with his evening or his morning paper, or settles himself for a Sunday afternoon siesta, while good old Nature fans him, bathes him with perfume and inoculates him with music, he will wonder how he lived and endured the old, close, stuffy life between four walls, and his thoughts and heart will reach out in sympathy and regret to the lost years that were empty of this wonderful species of new-found rest.

Few practical suggestions can be given for designing and making rustic furniture, for it is an entirely personal matter with the builder, who should make the best of his individual taste and ingenuity. A curve or an angle in branch or limb will suggest some scheme, and as there are scarce two tree forms alike, there can hardly be exact similarity in the design of two pieces of rustic furniture, the size and shape being entirely dependent on the form and character of the material to be used. If possessing artistic notions, the builder can produce most graceful, attractive and comfortable results. A tree limb with a wide double curve will make an admirable top for a *tete-a-tete* chair. The fork of a tree will make an interesting back for a bench, or if consisting of three branching limbs, will answer for the legs of a table. A pleasing top for a rustic table is a thick round slab cut from a tree trunk. In making rustic furniture, in choosing the wood and putting it together, one should not overlook the fact that strength and durability are essential, for being constantly exposed to the weather, and in many cases the rompings of children, it is subject to considerable rough usage. Great care should be taken to nail the connections firmly. The wood should really be used when it is green, as at that time its natural dampness will rust the nails. It is claimed that a rusty nail will hold tighter than a smooth one. If the home builder lives near a forest, or if he is for-



Rustic pergola and seat make an attractive entrance to the garden

tunate enough to have a number of trees in his own yard, getting material for rustic furniture will be an easy matter. A limb cut off here and there from thick-foliaged trees will never be missed, and will, most likely, benefit rather than injure the tree. Brittle wood should be avoided for making furniture. Oak wood, with its shaggy curves and knots and twists is especially desirable, for with it can be made odd and original, as well as the strongest and most durable furniture. Sycamore, pepper, manzanita, cottonwood, alder, evergreen, eucalyptus and many other woods make substantial seats for the garden or veranda. Placed under a rustic, vine-covered pergola they are charming, and when ensconced in some secluded corner of the garden, with a quaint little palm-thatched roof above them, they are irresistible. A rustic bench may also be made into a delightful swing for the children, by attaching iron chains and hanging it to a rustic frame, which may, or may not be roofed or thatched. If any thought is given to dainty summer gowns or white flannel trousers, the seats of benches and chairs should not be of rustic, but of milled lumber, either in wide boards or narrow slats. Of the two, slats are much more attractive. Care should also be taken to see that the backs of the seats are smooth and free of splinters and rough places that will tear the clothing.

With rustic wood, some ingenuity and a little dexterity with tools, any number of interesting things may be made for the home garden, from chairs, swings, benches, tables, stools, flower baskets and bridges, to drinking fountains and sun-dials. While crude, and in many respects rough, there is a fascinating element about home-made garden and porch furniture. It has decided individuality, a quality that can not be found in manufactured goods. True, there are many beautiful examples to be found of shop-made rustic furniture, like old hickory, willow, etc., but at first glance you can tell that machinery has had a hand in their manufacture, and somehow they do not have the same restful message for you that one of your own creations would have.

It has been said that few practical suggestions can be given for producing rustic work, but one may be indicated with some chance of profit to the amateur, in the woodwork seen in the photographs. These will serve as studies of the effects produced in rustic structures and furniture. Their range shows types so varied and unexpected that one must conclude that he need neither despair of designing something as good nor fear that he cannot conquer, in a short time, all the details of the construction he has in view. The engravings encourage one to think that, in the absence of much experience and skill in designing and putting parts well together, he may get attractive and enduring results without much stopping to mechanize or to fret about the lay of each particular inch, as must be done in classic carpentry. If, at the end of his crude task, flawlessness is not



Eucalyptus wood effectively used in building a summer-house

attained, he may count on the free and plentiful aid of friendly leaves, boughs, stones, etc., to patch here and there some minor defects, which are somewhat apt to happen.



Rustic flower basket made of eucalyptus wood

GARDEN NOTES

This department is conducted by an experienced and practical landscape architect, who extends an invitation to the readers of AMERICAN HOMES AND GARDENS to send to the Garden Editor inquiries on any matter pertaining to the developing of the garden and the home grounds. Letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this department.

Saving Vegetable Seeds

By M. ROBERTS CONOVER

THE gardener who saves his own seeds has a distinct advantage over those improvident soil-workers who rely solely upon dealers. He can perfect a desired variety of vegetable, insure the vitality of the seeds and vouch for their purity.

The work is not difficult, as it merely requires vigilance to see that the ripened seeds do not escape, and to use care as to their proper selection.

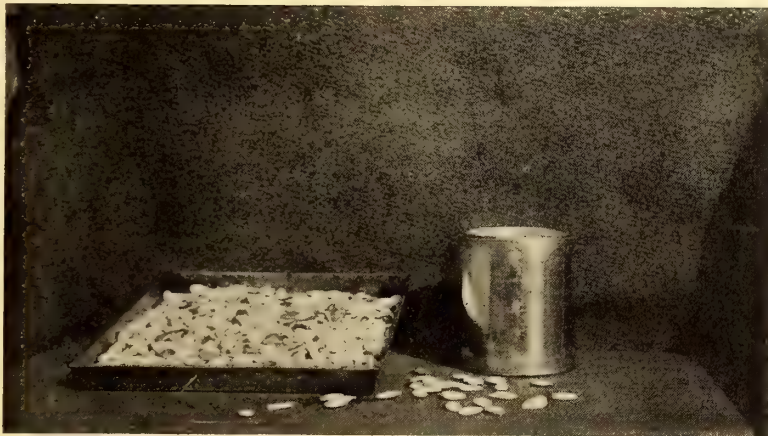
That the seeds may possess full germinating power, the fruit or pod which nourishes them must be allowed to fully mature upon the vine. Always select from the finest specimens as to form and flavor so as to insure these characteristics in successive crops.

A difficulty which confronts the gardener whose vegetables are close together in the small garden plot is that of crossing kindred species of vegetables which borrow one another's characteristics. It is very annoying to harvest watermelons and to discover that the "hard-head" or preserving citron which grew near the parent melon the previous year has influenced its character and flavor. It is equally vexing to have some of your summer crook-necked squash sharing the traits of the Boston marrow

vegetables from which the seeds are to be saved as remote as possible, and with intervening space occupied by unrelated vegetables.

To preserve the seeds, they must be separated from the fruit, cleaned, dried and stored in a dry place where mice cannot reach them. Tin cans with tight covers make excellent receptacles for seeds.

With pulp or marrow vegetables the freeing of the seeds from the pulp may be entrusted to the natural process of decay, the seeds being secured as soon as the pulp



Tin cans with tight covers make excellent receptacles if the seeds are thoroughly dried

has entirely ceased to adhere to them.

In the case of cucumbers which are eaten in the green state, the fruit must be allowed full growth and be allowed to turn yellow in the sun. They are then removed from the vine and laid aside until they soften, when the core and seeds are scraped out into a receptacle. With melons, squash, tomatoes, etc., the seeds are taken when the vegetable is in its most edible state.

After the seeds of these vegetables are removed they are washed in lukewarm water and rubbed gently between the hands to loosen the adhesive pieces of the core. After several washings, they may be laid upon a frame of small-meshed wire and dried quickly near the fire. Leaving them warm and

moist, however, would cause them to sprout. When thoroughly dry, a shaking in a draught of air will remove any particles of dried core remaining.

In the case of tomato seeds which separate from the core with great difficulty, the former and the pulp may be placed in a muslin bag and allowed to ferment slightly, with the result that the pulp will be easily washed away. At this stage it is very con-



The seeds of all pulpy and marrow vegetables are loosened from the core by decay

squash, or the latter mottling with the green of the Hubbard squash, which was a close neighbor last season.

The seeds of squash, cucumber and melons cannot be relied upon for purity if grown near one another.

Of course, this "mixing" is very noticeable among different varieties of the same vegetable if they are planted in proximity.

The only preventive is to plant similar

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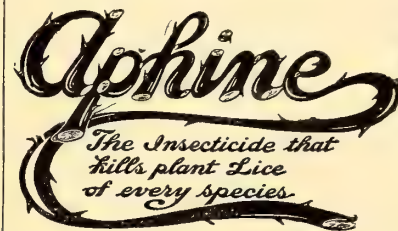
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venient to use a wire sieve of small mesh. Water may be poured through this over the seeds until they are clean. They are then spread out to dry.

The seeds of peppers do not require washing. They need merely to be cut away from the core, separated and dried.

Beans and peas are taken from the pod when it is dry and cracked, but the pods should be taken from the vine just before this condition is reached.

Radish, turnip and lettuce seeds are gathered by crushing the dried pod and shaking the seeds into a receptacle. Spinach and carrot seeds are saved by shaking them when dry over a pan. They need no washing.

In saving corn, use the finest ears and let them mature on the stalk. Turn back the husk and hang them in a dry place with the kernels exposed.

SOME FIRST FLOOR FURNITURE

NEXT to the dining table the sideboard is the important article in the dining-room. If the ordinary sideboard to match the dining-room furniture is to be used, it looks its best when standing against the largest wall space. Sometimes a built-in sideboard is preferred, and this is fitted into a recess that is usually reserved for it in the architect's plan.

Attractive china closets may be designed for the dining-room when the plan of a house is under consideration. One lover of Colonial ideas transplanted a china closet from an old house and made it the keynote of interest in his new dining-room. In another home the same idea was carried out, but the closet was built into the living-room, where it held a collection of antique china and silver. The handwork on the old wood made an entertaining study for everyone who entered the house, adding to the interest of the contents.

In the modern bathroom the medicine cabinet is now built into the wall with no projection of the door into the room. These cabinets are made for this purpose with the inside enameled with white paint and the shelves arranged to adjust at different heights. The door is usually covered with a mirror.

In the house of the bungalow type there is a special fitness in furniture built in to suit the needs of the household, as it lessens the care of a vacation home. The style and variety may be only limited by the ingenuity of the designer and the outlay that is to be made.

For the living-rooms one may make a wide bench or lounge with spiral springs and a cotton felt mattress, over which a spread of heavy linen may be laid. Although a lounge by day, it may be converted into a bed by night if there is an extra visitor to put up. Or, to economize space in the bedroom, one sleeping bench may be placed above another, like the beds in a Pullman car—a device that appeals especially to the young boys of a family.

If closet room is lacking in the bedrooms of a bungalow, a corner wardrobe is easily arranged with a top shelf on which to fasten a chintz curtain, with hooks against the wall for holding coat hangers. A box to hold underwear or shirtwaists may be contrived from a large soap box, covering it outside with a figured cotton goods, and on the inside with paper muslin. Some wide boards for a washstand may have attached two supports slanting backwards from the under part of the top to the wall in the simplest kind of construction.

HELPS FOR THE HOUSEWIFE

If the readers of AMERICAN HOMES AND GARDENS desire any information concerning the subjects treated under this department, write to the Household Editor and receive such assistance as may be desired. All letters accompanied by return postage will be answered by mail. Replies that are of general benefit will be published in this department.

Canning and Preserving Fruit

By MARIA PARLOA

THE common fruits, because of their low nutritive value, are not, as a rule, estimated at their real worth as food. Fruit has great dietetic value and should be used generously and wisely, both fresh and cooked. Fruits supply a variety of flavors, sugar, acids and a necessary waste or bulky material for aiding in intestinal matters, and they are generally rich in potash and soda salts and other minerals. Most fresh fruits are cooling and refreshing. The vegetable acids have a solvent power on the nutrients and are an aid to digestion when not taken in excess.

Fruit and fruit juices keep the blood in healthy condition when the supply of fresh meat, fish and vegetables is limited and salt or smoked meats constitute the chief elements of diet. Fresh fruit is generally more appetizing and refreshing than cooked. For this reason it is often eaten in too large quantities, and frequently when underripe or overripe; but when of good quality and eaten in moderate quantities it promotes healthy intestinal conditions and rarely hurts anyone.

If eaten immoderately, uncooked fruit is apt to induce intestinal disturbances. If eaten unripe, it often causes stomach and intestinal irritation, overripe, it has a tendency to ferment in the alimentary canal. Cooking changes the character and flavor of fruit, and while the product is not so cooling and refreshing as in the raw state, it can, as a rule, be eaten with less danger of causing stomach or intestinal trouble. If sugar be added to the cooked fruit, the nutritive value will be increased. A large quantity of sugar spoils the flavor of the fruit and is likely to make it less easily digested.

Nowhere is there greater need of a generous supply of fruit than on the farm, where the diet is apt to be restricted in variety because of the distance from markets. Every farmer should raise a generous supply of the kinds of fruit that can be grown in his locality. Wives and daughters on the farms should find pleasure in serving these fruits in the most healthful and tempting form. There are a large number of simple, dainty desserts that can be prepared with fruit and without much labor. Such desserts should leave the pie as an occasional luxury instead of allowing it to be considered a daily necessity.

In the season when each kind of fruit is plentiful and at its best, a generous supply should be canned for the season when both fruit and fresh vegetables are scarce. A great deal of the fruit should be canned with little or no sugar, that it may be as nearly as possible in the condition of fresh fruit. This is the best condition for cooking purposes. A supply of glass jars does cost something, but that item of expense should be charged to future years, as with proper care the breaking of a jar need be a rare occurrence. If there be an abundance of grapes and small, juicy fruits, plenty of juice should be canned or bottled for re-

freshing drinks throughout the year. Remember that the fruit and juice are not luxuries, but an addition to the dietary that will mean better health for the members of the family and greater economy in the cost of the table.

FRESH AND PRESERVED FRUIT FOR THE MARKET

If the supply of fruit is greater than the family needs, it may be made a source of income by sending the fresh fruit to the market, if there is one near enough, or by preserving, canning, and making jelly for sale. To make such an enterprise a success the fruit and work must be first-class. There is magic in the word "home-made," when the product appeals to the eye and the palate; but many careless and incompetent people have found to their sorrow that this word has not magic enough to float inferior goods on the market. As a rule, large canning and preserving establishments are clean and have the best appliances, and they employ chemists and skilled labor. The home product must be very good to compete with the attractive goods that are sent out from such establishments. Yet for first-class home-made products there is a market in all large cities. All first-class grocers have customers who purchase such goods.

To secure a market get the names of several first-class grocers in some of the large towns. Write to them asking if they would be willing to try a sample of your goods. If the answer is favorable, send samples of the articles you wish to sell. In the box with the fruit inclose a list of the articles sent and the price. Write your name and address clearly. Mail a note and a duplicate list at the time you send the box.

Fixing the price of the goods is important. Make it high enough to cover all expenses and give you a fair return for your labor. The expenses will be the fruit, sugar, jars, glasses, boxes, packing material, wear and tear of utensils, etc., transportation and commission. The commission will probably be 20 per cent. of the selling price. It may be that a merchant will find that your prices are too high or too low for his trade, or he may wish to purchase the goods outright. In any case it is essential that you estimate the full cost of the product and the value that you place on your labor. You will then be in a position to decide if the prices offered will compensate you for the labor and expense. Do not be tempted, for the sake of a little money, to deprive your family of the fruit necessary to health and pleasure.

PACKING AND SHIPPING

Each jar or jelly glass must be wrapped in several thicknesses of soft paper (news-papers will answer.) Make pads of excelsior or hay by spreading a thick layer between the folds of newspapers. Line the bottom and sides of the box with these pads. Pack the fruit in the padded box. Fill all

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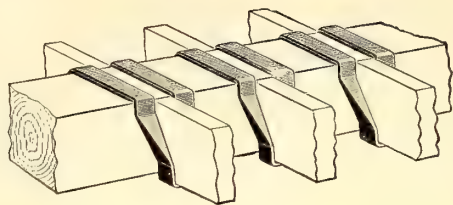
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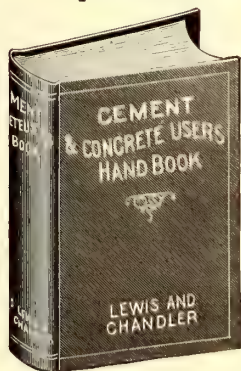
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I. Historical Development of the Uses of Cement and Concrete. II. Glossary of Terms Employed in Cement and Concrete Work. III. Kinds of Cement Employed in Construction. IV. Limes, Ordinary and Hydraulic. V. Lime Plasters. VI. Natural Cements. VII. Portland Cement. VIII. Inspection and Testing. IX. Adulteration; or Foreign Substances in Cement. X. Sand, Gravel, and Broken Stone. XI. Mortar. XII. Grout. XIII. Concrete (Plain). XIV. Concrete (Reinforced). XV. Methods and Kinds of Reinforcements. XVI. Forms for Plain and Reinforced Concrete. XVII. Concrete Blocks. XVIII. Artificial Stone. XIX. Concrete Tiles. XX. Concrete Pipes and Conduits. XXI. Concrete Piles. XXII. Concrete Buildings. XXIII. Concrete in Water Works. XXIV. Concrete in Sewer Works. XXV. Concrete in Highway Construction. XXVI. Concrete Retaining Walls. XXVII. Concrete Arches and Abutments. XXVIII. Concrete in Subway and Tunnels. XXIX. Concrete in Bridge Work. XXX. Concrete in Docks and Wharves. XXXI. Concrete Construction Under Water. XXXII. Concrete on the Farm. XXXIII. Concrete Chimneys. XXXIV. Concrete for Ornamentation. XXXV. Concrete Mausoleums and Miscellaneous Uses. XXXVI. Inspection for Concrete Work. XXXVII. Waterproofing Concrete Work. XXXVIII. Coloring and Painting Concrete Work. XXXIX. Method for Finishing Concrete Surfaces. XL. Specifications and Estimates for Concrete Work.

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the spaces between the jars with the packing material. If the box is deep and a second layer of fruit is to go in, put thick pasteboard or thin boards over the first layer and set the wrapped jars on this. Fill all the spaces and cover the top with the packing material. Nail on the cover and mark clearly: Glass. This side up.

The great secret in packing is to fill every particle of space so that nothing can move in the receptacle.

In the preservation of foods by canning, preserving, etc., the most essential things in the processes are the sterilization of the food and all the utensils and the sealing of the sterilized food to exclude all germs.

BACTERIA, YEASTS AND FERMENTATION

Over one hundred years ago François Appert was the first to make practical application of the method of preserving food by putting it in cans or bottles, which he hermetically sealed. He then put the full bottles or cans in water and boiled them for more or less time, depending upon the kinds of food.

In Appert's time and, indeed, until recent years it was generally thought that the oxygen of the air caused the decomposition of food. Appert's theory was that the things essential to the preservation of food in this manner were the exclusion of air and the application of gentle heat, as in the water bath, which caused a fusion of the principal constituents and ferments in such a manner that the power of the ferments was destroyed.

The investigations of scientists, particularly of Pasteur, have shown that it is not the oxygen of the air which causes fermentation and putrefaction, but bacteria and other microscopic organisms.

Appert's theory as to the cause of the spoiling of food was incorrect, but his method of preserving it by sealing and cooking was correct, and the world owes him a debt of gratitude.

In their investigations, scientists have found that if food is perfectly sterilized and the opening of the jar or bottle plugged with sterilized cotton, food will not ferment, for the bacteria and yeasts to which such changes are due cannot pass through the cotton. This method cannot be conveniently followed with large jars.

Bacteria and yeasts exist in the air, in the soil, and on all vegetable and animal substances, and even in the living body, but although of such universal occurrence, the true knowledge of their nature and economic importance has only been gained during the last forty years.

There are a great many kinds of these micro-organisms. Some do great harm, but it is thought that the greater part of them are beneficial rather than injurious.

Bacteria are one-celled and so small they can only be seen by aid of a microscope. The process of reproduction is simple and rapid. The bacterium becomes constricted, divides, and finally there are two cells instead of one. Under favorable conditions each cell divides, and so rapid is the work that it has been estimated that one bacterium may give rise, within twenty-four hours, to seventeen millions of similar organisms. The favorable conditions for growth are moisture, warmth, and proper food.

Yeasts, which are also one-celled organisms, grow less rapidly. A bud develops, breaks off, and forms a new yeast plant. Some yeasts and some kinds of bacteria produce spores. Spores, like the dried seeds of plants, may retain their vitality for a long time, even when exposed to conditions which kill the parent organism.

CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in House Furnishing

By MABEL TUKE PRIESTMAN

"WE have an old house in the country built of stone. On the first floor there are a great many windows, all of which have outside shutters. The closing of these every night is a serious problem. In the summer the fly-screens make it a difficult task, and in the winter one is chilled through, on a cold night, long before all the shutters are closed. Have you any suggestions to offer as to how our shutter-closing could be made easier?"—J. M. B., Mass.

There is a shutter-worker on the market that will solve your problem. It is a practical device for opening and closing shutters without raising the window, and it is self-locking and adjustable. The working parts of this shutter-worker are encased in the woodwork of the window, and are therefore not affected by heat or cold. They can be used on the windows of an old house as well as a new one; and they are attached in the following manner: A hole is bored through the casing to allow a rod to be pushed through it and fastened to the shutters on the outside. On the inside there is a handle and a small escutcheon-plate. This arrangement does not interfere with the sash-weights, and can be attached in any position on the blinds. When it is desired to open or close the shutters the handle is turned and they are opened, closed, bowed, or fixed in any position from the inside of the window without raising the sash or fly-screens. As the shutters lock automatically, it is impossible for them to flap, even in the most violent storms. The box holding the shutter-worker is small and neat in appearance. The handle is two inches long, and with the escutcheon-plate is not unsightly on the window. The prices vary from one dollar and a half to two seventy-five for a set consisting of two upper hinges, two hinge shutter-workers, handles, and escutcheons, according to finish.

A request for suggestions for window-seats comes from a "North Carolina Reader," who has bought a country house and finds that it does not possess a single window-seat.

There is no doubt that the window-seat gives an excellent opportunity for a decorative and convenient feature, especially when it is successfully incorporated with the architectural lines of the house. The living-room especially seems incomplete without some form of window-seat, particularly if it possesses a bay window. The bay may be circular or square, but whichever it is the seat should form part of the curtain scheme. The curtains with valances may be made so as to have the same color scheme as the window-seat, thus making the seat part of the whole. When planning for window-seats do not have them too high or too narrow. As they usually have a mattress, allowance must be made for the additional height that it will give. The

majority of homes do not have enough room for stowing things away. The window-seats may be utilized for this purpose by having them boxed with hinged lids. If the windows are placed high in the wall, a very decorative effect can be obtained by introducing a window-seat the entire length of the window. The high window is invariably long and narrow, and thus allows for a padded back between the seat and the window-sill. Another form of window-seat that gives service and adds to the general appearance of the room is when a window at one end of a room has a seat built and extended to the far side of the window in another wall. The seat built at right angles gives opportunity for the placing of a few book-shelves above the back of the seat on the longest wall space. An extended seat of this kind is greatly improved by the addition of a settle end on one or both ends, especially if the house is Colonial.

"I want your advice about color schemes and the decoration of a dining-room. The house is Colonial, and will be ready in the fall for occupancy. I have decided to have the library green, and the parlor must have some green, as it opens into the library, but I cannot make up my mind about the dining-room. We have mahogany furniture, and a beautiful old mantelpiece will be in this room. The woodwork is birch. There are handsome folding doors opening into the hall. I enclose a rough plan of the lower floor, giving the size of the rooms. I may add that our furniture is strictly Colonial and somewhat heavy; most of it is old. The glass cupboard was made to go with the old furniture. The chairs need new covers, and we shall have to buy a carpet or rug. Kindly give your advice about recovering chairs and floor-covering when suggesting color schemes."—D. S.

The rooms of your new house are large and well proportioned and call for a rich background. If not already in the specifications I would certainly have a paneled dado to the height of a chair-rail. Above this a scenic wall-paper would be appropriate. These papers are many of them copied from old scenic wall-papers; some of them are rich in coloring, while others are delicate in tones of gray. The choice being limited in this style of paper, the color scheme would have to be worked out later according to the tones of the paper. The woodwork must be painted white or ivory white, but the doors into the hall would look best mahoganized; as the wood is birch, it will take the stain very nicely. The other doors leading into the hall should be stained to match those in the dining-room. The woodwork of all the lower floor would look best painted white—a Colonial house demands it. I would have glass door-knobs or brass, and the floors of the downstairs rooms mahoganized. If the paper selected is in pale-gray tones a clear foliage green would look well on the chair-seats and for the heavy curtains. Green damask has an old-time appearance and would look well for chairs and cur-

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into so great favor is the actual saving they accomplish, making carpets and rugs wear more than twice as long. This saving is easily explained, as the rapidly revolving brush searches into the pile of the carpet or rug, lifting dust and dirt out, depositing it in the pans within the sweeper-case. If this dirt and sand is allowed to stay in the carpet, or is ground down into it by a broom, it acts as a grindstone, cutting the fibre of the carpet at each move on it.

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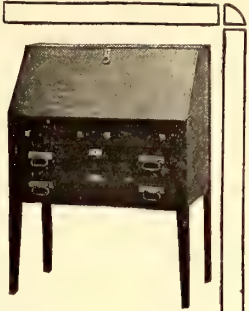
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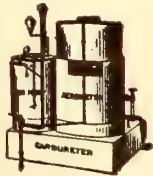
By A. RUSSELL BOND,

12 mo., 338 pages, 314 illustrations. Price, \$2.00.

This is a sequel to "The Scientific American Boy" and like its predecessor is brim full of practical suggestions, all of which are entirely new. The construction of the apparatus, which is within the scope of the average boy, is fully described and the instructions are interwoven in a fascinating story, which makes the book interesting as well as instructive to the boy. This volume contains instructions on surveying, sounding and signalling, the building of dams, canals and canal locks, truss bridges and several different types of boats. Sun dials, clepsydras, seismographs, gliding machines, kite photography and camera hunting are a few of the other interesting subjects taken up. Other unique ideas are water kites, fish-tail boat-propellers, bicycle sleds, geyser fountains, etc. No boy of a mechanical turn of mind can read the story without being inspired to try his hand at making the devices.

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The book is concisely written and should be studied by every manager and employer of labor who is interested in reducing labor cost.

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361 Broadway, New York

tains. If plain velour is preferred, it or upholsterers' velvet could be used with equally good effect. Haircloth the same shade could be used on the chairs if the velour or velvet is used for curtains. A green Brussels carpet made into a rug would carry out the color scheme in green and grays better than an Oriental rug. An entirely different scheme for the dining-room could be carried out in yellow and blue. There are some reproductions of Colonial papers sold to-day in self-tones; the patterns are small and inconspicuous. One I have in mind is yellow; this paper would look well with your old mahogany furniture. The chair-rail is needed, but it would not be necessary to go to the expense of paneling below the rail. The wall could be painted yellow to match the upper wall-paper, or the two-toned paper could be run below the chair-rail. This was often done in Colonial days, and is permissible. An Oriental rug with some clear blue would be my choice, and a large rug would suit the size and shape of the room best. If the price of such a rug would be prohibitive there are Wilton rugs in the finer qualities in golden tones that blend with the yellow paper I have in mind. The curtains and chair-seats should be Colonial blue in corduroy, damask or mercerized armure; the last material has a small Colonial figure and comes in very useful for Colonial furnishing. It is only one dollar a yard fifty inches wide. A heavier material would be more serviceable for the chair-seats; haircloth if the blues were the same tone. The patterns are very similar in the mercerized armures to the haircloths. If this simple treatment is carried out in the dining-room I should be tempted to use a light-tone foliage paper in the halls. There are several small patterns that are Colonial and furnish a hall better than a plain paper. If a scenic paper is used in the dining-room the two-toned yellow paper suggested for the dining-room would be admirable for the hall. It has a quaint appearance well suited to a Colonial house.

A reader from Ohio writes that she wishes for something new in the sofa-pillow line. She wants new pillows for library and parlor. The library is brown, furnished in Mission style. The parlor is lived in and simply furnished in green, with walls of tan-color felt paper.—Mrs. S. M. B.

Badly chosen pillow-covers frequently spoil a room that is otherwise well and tastefully furnished. It is therefore an important subject, deserving much more attention than is usually given to it. Perhaps the most important part of selecting pillows is the choice of the right coloring. They must be in harmony with the room. The pillows that are seen in the shops are usually trivial, and are too evidently made up of remnants. A pillow must never be purchased because it is cheap; it must be part of a complete whole, and show individual taste. The small amount of material required in the making of a pillow-cover allows for richness of effect and for individual treatment. It is impossible in a limited space to do justice to a topic of such vital interest; it can only be a mere hint as to what to avoid and what will be appropriate in the majority of homes. The library will call for strong substantial-looking pillows; some may be hair-filled and covered with leather, provided some of the chairs have leather seats. A large roomy Mission sofa would need leather cushions or Arras cloth covering, and it would be best to have the pillows to match in material and color. They should, how-

ever, have some sort of embellishment in the form of appliqué in a severely simple design. Such pillows would be used as a support for the back. One or two additional pillows for the sofa could be made of raw silk in bright red or yellow, just to add a touch of strong coloring to the brown room. A pattern of some kind could be embroidered on the silk, or a motif in block printing partly concealed with darning would be appropriate. The design must, however, be conventional and unobtrusive, and be a decorative flat mass of color rather than anything of a pictorial nature. The colors introduced in the pillows give opportunity for emphasizing some dominant note in the room. The rug or the lamp-shade may suggest what this touch of color should be. In a handsome room where leather is used a few cushions of the same material would be very harmonious. Leather appliqué, cut leather, or tooled leather would give an appearance of richness and simplicity, but there must be a soft down or feather filled pillow for use when lounging. Leather being a repellent surface could not be used except to lean against. The parlor pillows give more opportunity for variety. If there is a roomy sofa covered with a plain green fabric the background conditions are ideal. Embroidery, darning, or appliqué can any of them be used to ornament the pillows. Chinese self-toned silks, Shikii silks, the English cotton velvets with their beautiful designs by Morris and Voisey are all appropriate and for a room with tan walls; the atmosphere requires an individual treatment in the pillows and ornaments. The washable pillow-covers must not be overlooked, for they give a freshness to the sofa group, but they must be dainty in texture and exquisitely worked. Italian cut work, or Greek lace, or even Filet net, may be brought into service. They are made in the form of loose covers over silk pillows. The finish of a pillow must be appropriate. Fortunately, the days of frills and bow-knots are a thing of the past, and no woman who moves with the times will be guilty of such indiscretions. A silk cord for the silk pillow, or a plain seam or a hem extending beyond the edge of the pillow, are always in good taste. The leather pillow may have the edges left and be sewn with coarse leather thongs or stitched the size of the pillow with edges left free.

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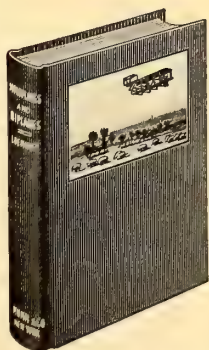
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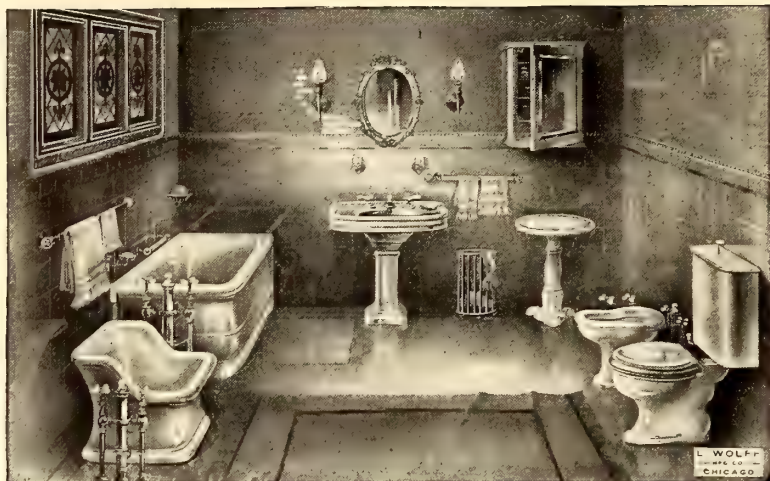
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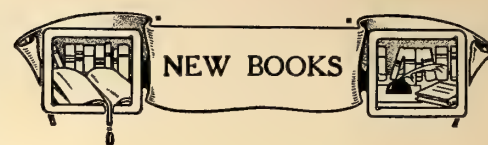
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THE AUTOMOBILE HAND BOOK. By L. Elliot Brookes. Chicago: Frederick J. Drake & Co. 12mo.; 701 pp.; illustrated. Price, \$2.

With its alphabetical arrangement of topics and its inclusive scope, this hand book is a veritable encyclopedia for the automobile owner or operator. Its leather covers of red and gold seem to embrace every principle and part of the automobile. Those who have it in one of the earlier editions will be surprised at the amount of new matter that has been added. It embodies all the more recent improvements, and everything connected with automobile construction and operation is explained and illustrated. While the gasoline motor receives, as is its due, the lion's share of the space, yet steam and electric propulsion have by no means been neglected. Transmission, wheel construction, and repair work are each taken up in turn, and plates and sketches are used whenever they are necessary to a clear understanding of the principles under discussion. A chassis plan on a large scale is the subject of one insert, with its thousand-odd parts all numbered and named. With all this abundance of information and suggestion, the volume lives up to its name and just comfortably fits into the hand.

DYKE'S AUTOMOBILE ENCYCLOPEDIA. By A. L. Dyke, E.E. St. Louis: A. L. Dyke, 1911. 8vo.; 407 pp. Price \$3.

There are so many treatises of this nature, each one claiming some advantage over the others in arrangement or manner of expression, that it is becoming increasingly difficult to fairly appraise their qualities or to justly commend one above the rest. Here we have twenty-nine lessons, positively packed with diagrams and illustrations. We are told how to choose, drive and maintain a car. Every point of construction and operation that it is necessary or advisable for owner or chauffeur to know is here given in the simplest language. One lesson is devoted to the rules of the road, the State laws, etc. These latter give the registration fee, the allowed speed and the required lamps. Another lesson covers the aeroplane and aerial engines. A chapter is given over to a discussion on building a home workshop, a garage, and the overhauling of old cars. The final section is a dictionary of motor words and terms. We must accord a word of praise to the way in which the illustrations have been shorn of all intricacy, showing only just what is necessary to the understanding of the question in hand. As a reference book, this should prove an acquisition to the motorist's library.

ELECTRIC POCKET BOOK AND DIARY. London: Technical Publishing Company, limited, 1911. 567 pp.; illustrated. Price, cloth, 50 cents net; leather, 75 cents net.

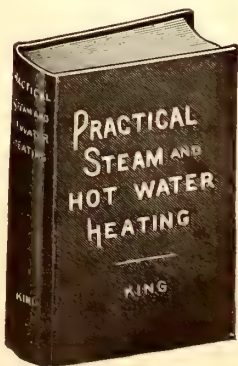
This stocky little annual has been brought down to date, and new matter has been introduced on the various rotary-converter equalizer systems; on balancers and boosters; on metallic filament lamps, and on the Edison storage cell. Altogether a large fund of information is compressed between its covers, and a feature of its make-up is the section of blank pages at the back, ruled as a daily record.

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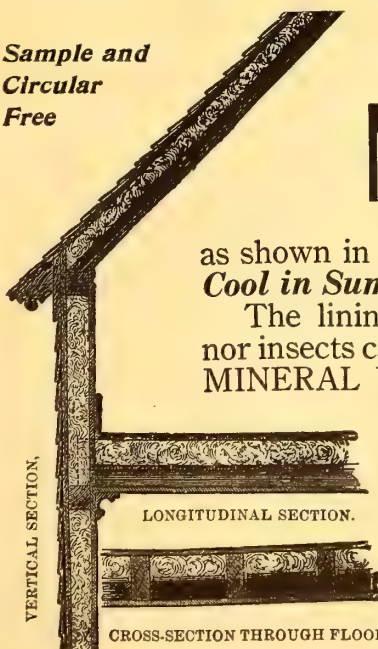
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CHAS. FIGARO

SEPTEMBER, 1911

Vol. VIII, No. 9

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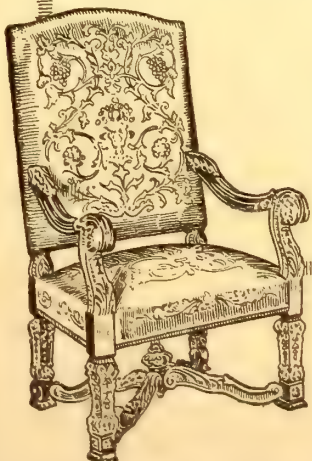
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FEEDING THE YOUNG CHICKS

By IDA D. BENNETT

THESE is no better food for the young chicks during the first days of their downy chickenhood than hard-boiled eggs minced fine, with plenty of scalded milk to drink; in a few days this may be supplemented with bread crumbs which have been soaked in milk or water until they crumble freely, and squeezed dry and crumbly—never wet bread with hot water or try to crumble it until sufficiently soaked; it should be crumbly and not soggy or over-wet, and only as much should be fed at a time as will be eaten up clean. To the bread crumbs and hard-boiled eggs may also be added corn-meal baked in a johnny-cake and then dipped in water or milk and crumbled; this is greatly relished by the little chicks and forms one of the best of foods.

After the chicks are a couple of weeks old less soft feed should be given and the main dependence placed upon grain of various kind—oats hulled or cracked, cracked corn and whole wheat making an excellent diet. If the hen has her liberty on a grass range and access to some bare ground she will pick up the greater part of the feed for the chicks, and that of a kind well calculated to aid their growth and digestion, but do not think that she can find all that they will require; they will need generous feed at least four times a day after they have passed the downy stage, and at least three times a day after they feather out.

The water-supply is very important for all fowls and especially for young chicks. The practice of supplying water in old tin cans cannot be too strongly condemned. Rusty tin produces oxide of tin—a poison for the fowls and one which induces laxity; most of the cases of so-called chicken cholera can be traced to rusty tin drinking vessels; iron vessels, on the contrary, are beneficial, as the iron given off in the form of rust is an excellent tonic for the fowls. The drinking fountains improvised from a flower-pot and saucer answer every requirement of the small chick, and larger pots may be adapted to the needs of the larger fowls. Anything large enough to drown a chicken or to wet its body, should it get into it, should not be allowed where there are young chicks. A little chick will get into a dish of water which barely reaches above its legs and will be so chilled that it cannot get out and will die from the exposure as surely as though drowned. The drinking-vessels need frequent emptying, cleaning and re-filling, and it is a good plan to keep a wire or whisk brush at hand for the purpose, as these will remove the scum which adheres to the sides much more thoroughly and quickly than a cloth.

Unless chickens are intended for broilers, too fattening food should be avoided, and those grains rich in bone, muscle and nerve production should be fed. Wheat, oats, ground beans—all are excellent food for the growing chick, building up a framework on which future layers of flesh and fat may be placed to advantage. But where chickens are to be fattened at an early age for market, then the principal reliance must be placed on corn, feeding freely of the cracked grain and supplementing this with the baked johnny-cake.

But grain alone will not be sufficient for the growing chick; it must have a

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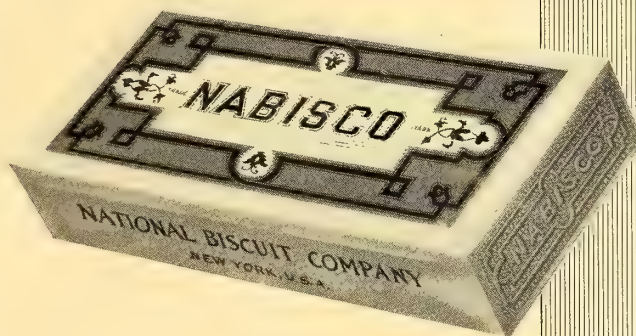
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certain amount of raw meat, and where this is not supplied by the insects and worms upon the range it must be furnished from table scraps, ground bone or meat scraps from the market. This may be fed in combination with the noon-time feed of soft stuff—table scraps, middlings, bran and the like.

Green stuff in some form is also a necessity, and where the fowls are confined in a grassless enclosure some means of providing the necessary amount of vegetation should be devised. In summer the most convenient way will be by way of the lawn-mower, a few moments' use of which, night and morning, will supply sufficient grass and clover, in a crisp, palatable shape, for a large flock. This should be placed before them the last thing at night and early in the morning, but should always be fresh and crisp if it is to be eaten with relish. The trimmings from green vegetables may be chopped up and fed, cabbage and celery being especially acceptable to the flock, and all table refuse is greedily eaten.

If the chicks have a comparative amount of liberty they will probably pick up enough gravel for the needs of their digestion, but lime should be provided in the way of ground bone, oyster shells, and the like, and a supply of broken charcoal should always be within reach, as this is an excellent corrective of indigestion and purifier of the blood. The closest watch should be kept for any signs of disease or of lice. The moment a fowl seems stupid, ailing or in any way out of the normal, it should be separated from the remainder of the flock until it is itself again or has developed a well-indicated case of illness; in the latter case, if of a contagious nature, it will be best to chloroform the bird at once and bury it deeply where the contamination cannot spread to the rest of the flock.

Lice are the greatest enemy of the poultry-raiser, and when suspected the most energetic measures should be adopted for their extermination, as no chickens will thrive when infested with lice. The first thing that should be done when a hen comes off her nest with her brood should be to examine her carefully for lice and dust her thoroughly with insect powder and place her in a perfectly clean barrel with clean bedding. The chicks should then be gone over carefully, examining every bit of their heads and under the bill and throat and dusting them well and placing them as fast as treated under their mother. If all lice are gotten rid of on the start or are not present little trouble will be had with the chicks later in the season.

In feeding young chicks the soft feed should not be thrown on the ground, but placed on clean boards and all uneaten food removed. Grain should be fed in long, narrow troughs, which the chicks cannot get into, and these should be placed on clean grass, gravel or on a board platform where there is no loose dirt or litter to scratch into it. The water dishes, also, should be similarly placed, and in as cool and shaded a part of the yard as possible.

Care should be taken to close the barrels securely each night and to count the chicks every time they go to bed, are let out in the morning or whenever they are fed. In this way if a chick is missing it may be looked for at once and in many cases saved.

Chicks should not be taken from the hen, as a general thing, until she weans

them of her own accord, nor should a hen ever be confined in a coop while the youngsters stray at will outside; the coop method is probably responsible for the death of more chicks than any other form of mismanagement; left at liberty with her chicks the hen will protect them from other fowls, from rats and from cats; confined in a coop she is powerless to aid them in any way. At liberty she will help them to find food, will hover them much more than when confined in a coop, and if in any trouble will frequently be able to rescue them. A hen confined in a coop is in a constant state of anxiety and excitement, and the coop is unfit for the nesting of the birds when night comes; left at liberty she will return at night-fall with her brood to a clean, dry barrel, where all will be safe and snug.

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A NOVELTY in cement construction is a concrete potato-peeler. It is an urn-shaped reinforced concrete vessel, which has a revolving disk in the bottom of the bowl, driven from below through bevel gearing, and designed to spin the potatoes around the inside of the bowl. The rough surfaces on the disk and bowl rub off the potato skins, and several sprays of water injected at the upper edge wash the potatoes clean and carry the refuse out at the bottom. It peels a peck of potatoes perfectly in two minutes, and while the machine is still running a door in the side is opened and the potatoes are ejected by centrifugal force into a galvanized iron receptacle. A motor of one-half horse-power capacity furnishes ample power, and the driving pulley is proportioned to give six hundred revolutions per minute to the disk. It is claimed that the machine saves 20 per cent. of potato which is wasted by hand-peeling, to say nothing of the saving in labor and time. Deep eyes and corners in irregular potatoes must, of course, be removed with a knife.

The machine is cast upside down, using mortar of a consistency which pours readily. The mold is made of cast iron, in several sections, and includes a collapsible core for making the bevel-gear chamber below the peeling-bowl. After the concrete has stood in the mold for several hours and has hardened sufficiently, the mold is inverted and the inner surface of the bowl is roughened with a steel brush.—*Concrete Age*.

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MOVING PICTURE CAMERA, AS A HAND-CAMERA, BY USING A GYROSCOPE

At a recent meeting of the Société de Physique, of Paris, an interesting method of taking moving picture views was presented by M. De Proszynski. Heretofore such a camera had to be mounted on a tripod to keep it quite steady, and it was generally turned by a hand-crank. The inventor succeeds in making a hand-camera for use in taking such views. He keeps it steady by using the principle of the gyroscope in an ingenious way, so that holding it in the hand causes no trembling. But the problem was how to drive the gyroscope and also the film machine, as an electric motor with a battery is not practical, neither is a spring motor. He uses a small compressed air motor devised for the purpose, and it is very compact. It gives no shocks when running, which is, of course, an essential point. A unique feature is that an ordinary bicycle pump is used to fill the air cylinder of the motor, so that the whole can be made in the form of a hand-camera about the size of a large kodak, and it is thus self-contained. The inventor showed what the camera would do by projecting some street views on a screen. These were taken when moving the camera about in the hand very rapidly, and the images were remarkably sharp.

MEDICINAL PLANTS

THE researches presented by Prof. Bourquelot to the Paris Academy of Medicine appear to show that the medicinal qualities of plants are greatly modified by drying them for use, and this action is much greater than may be supposed. The chemical as well as therapeutic qualities are found to be changed by the drying. Considerable experimental work was done in order to bring out these facts, and it is shown that when the plant is dried there is an interaction of the various bodies it contains so that some of these destroy others, and in this way many of the active principles of the plants are destroyed or made insoluble. However, it is of interest to note that this action can be avoided, or at least in part. By rapidly sterilizing the plants, by dipping them in strong alcohol at the boiling point, the author was able to prevent any further destruction of the soluble ferments. Owing to this method, he could separate out the chemical principles which existed in the living plant, and thus have a great advance in analysis of vegetable substances, which is always a difficult matter. He also prepared new pharmaceutical substances which will be likely to give very good results for medicinal purposes. It will be seen that these results are far-reaching and may be very valuable in the interests of future researches.

FORAGE CROPS TESTED

MANY new forage crops from all parts of the world are being tested every year. Only a few of these possess sufficient value to compete with the crops now grown. Four such plants, however, recently introduced, have given such admirable results that there can be little question that they will prove of great value. Experience of the last three years has shown that Rhodes grass is especially adapted to the Gulf coast region. In southern Florida three cuttings have been made during the winter months and as many as six during the entire season. This grass has fine upright stems and good seed habits, and should be extensively cultivated in this region.

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REMODELING HOUSES

SHALL we build or remodel? This is a question that has more than one answer. It is the general impression that an old house can be bought and remodeled for a smaller sum than a new house can be built. This is a fallacy. It is true, there are many houses that can be purchased for a small sum which were built long ago, in the time when buildings were put together to stay and made of materials that were more than sufficient to hold their own against the ravages of time. But, in order to adapt these buildings to present-day requirements, repairing a broken spot here, altering a staircase, introducing modern plumbing and lighting fixtures, one is required to spend so much that in nine cases out of ten he will find it more costly to remodel the old house than to build a new one. But is it possible to reproduce the architectural style, the picturesque setting and the general atmosphere of a quaint old home? Some recent work gives an emphatic affirmative answer to the question. But the task is not easy, and everything depends upon the architect and an intelligent co-operation upon the part of the owner.

Advice on the question of building or remodeling will be found in an article in the October number of *AMERICAN HOMES AND GARDENS*. A number of illustrations show how new houses may be given the charm and atmosphere of the old homestead, and how dilapidated old buildings may be reconstructed and remodeled to suit a present-day owner. A story is published of an old farmhouse that persisted as a weed in a neighborhood of modern high-priced up-to-date buildings. No one wanted the old house; it had no gas, no electricity, no city water, and not even a furnace; but the surroundings were very picturesque, and it captivated a man, who purchased it, and by a course of radical treatment converted it into a quaint mansion. This story is illustrated with pictures of the building before and after undergoing the process of remodeling. In this connection, the October number contains another article on converting garden landmarks, such as smoke-houses, spring-houses, and the like, into studios, workshops and music-rooms. By way of illustration, there is the description of an old tumble-down structure that had nothing to recommend it which was actually converted into a very attractive artist's studio that is the envy of surrounding estates.

THE SMALL MOTOR ON THE FARM

THE man who thinks that the farmer of to-day has shown no progress over the farmer of a hundred years ago is himself not up to date. We are making rapid strides in agricultural matters. Farmers are no longer content to do their work by hand, or even by horsepower. They know the value of the gasoline engine and the electric motor, and while electricity on the farm is still in its infancy, internal combustion engines are being very largely used. The time is not far distant when electric

motors will be used to a considerable extent. Electrical engineers of this country are beginning to investigate the farms, and are urging central stations in the suburban towns to extend their lines to the rural districts. There are a number of estates which have their own electric plants, generating sufficient power to perform much of the tedious work of former days in an expeditious and very economical way. A practical discussion of this subject is contained in our next issue.

BAYBERRY DIPS

THE present fad of reviving old-time customs seems to have neglected the "bayberry dips" of our forefathers. It is doubtful whether many readers of *AMERICAN HOMES AND GARDENS* know what a bayberry dip is. The bayberry bush, which grows in abundance along the Atlantic coast from Nova Scotia to Florida, and also on the shores of Lake Erie, bears in the autumn a wax-like berry. "Myrtle-wax," obtained from this berry, is not used to any considerable extent now, but at one time was the staple material from which most of the candles of our grandmothers were made. The fragrance of the wax is its chief charm. It used to be then the custom to blow out one of the candles at the "light-stand," so that the fragrant smoke, curling up from the wax, would fill the room with perfume. It would be well to revive this old-time candle, particularly at Halloween, Thanksgiving and Christmas time. Just how the candle can be made will be explained next month, when the berries are ripe for picking.

CURIOUS GOURDS AND MELONS

THE French gardener no doubt leads the world in his ability to produce a very respectable crop on a backyard plot. The intensive culture methods of the French should prove of great interest to us, particularly at the present time, for we are beginning to learn the value of economical methods. A novel gourd and melon farm is described in the next issue, in which the French method of forcing early growths is explained. Squashes and pumpkins are started under bell glass, thus producing an early season crop. At this farm not only are the edible gourds raised, but some very peculiar ones for purely ornamental purposes.

AGRICULTURAL EXPOSITION IN NEW YORK

NEW YORK is about as far removed from the agricultural center of the United States as any city within our borders. Yet here, in November, there is to be held a great national land and irrigation exposition which promises to eclipse any previous exhibitions of this character. By bringing the farmer and his work into a personal touch with our largest commercial center, not only will he be benefited, but a lesson will be taught to the city man as well on the dignity of the countryman's profession.



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WASHABLE WALL-COVERING

By J. MACKAY

WASHABLE wall-coverings are novelties which are as unknown generally as they are practical and sanitary.

Never was this fact impressed upon me quite so forcefully as when upon visiting a very wideawake little housekeeper friend of mine. I found her home fitted from foyer to kitchen with washable wall-coverings. Walls and ceilings were free from the least suspicion of dust and dirt—and always kept so, spotless, stainless, cleanly. Moreover, with the most expensive papers more wholly artistic decorative treatments could not have been evolved.

The halls were a quiet harmony of olive and copper tones. The big sunny living-room was done in imitation burlap effect in dull terra-cotta with a cut-out border of frost-touched oak leaves. The library showed the combination of a modern French design with a plain tone reproducing the deep glowing red which was the dominating shade in the figured texture.

Of the bedrooms, it was hard to decide which was the most delightful. One displayed upon its walls the reproduction of a quaint English print so perfect as to mislead a connoisseur in drapery stuffs. In another, Colonial treatment prevailed, and the gracefully patterned wall-covering was in strict accord. Still a third had its wall strewn with delicately tinted blossoms. In the dining-room, the library, the tiny reception-room, everywhere, this strictly modern texture appeared upon walls and ceiling. All might be subjected to frequent cleanings, and yet not one bit of artistic beauty had been sacrificed.

The material used with such charming effect had a pleasing dull finish, in some cases almost a "crêpey" appearance. No one could recognize in it the old-fashioned oilcloth. Yet such upon investigation it proved to be. It was perfected, or I might better say glorified, called by a new trade name, but still fundamentally oilcloth. A strong muslin foundation had been treated to successive coats of oil and paint, but with such skill that the results rivaled the most beautiful French, English and Japanese hangings.

Not only in the more formal rooms of the house had this sensible and sanitary wall treatment been adopted, but throughout its entire length, breadth and height. In the kitchen, pantry, laundry and bathroom, where cleanliness is the all-important end, it reached perhaps its highest degree of utility. Glaze finish from which every vestige of dirt and soil could be instantly removed had been found preferable for these rooms and frequently tiling patterns were employed. These appeared in tan, green, light and delft blue. The kitchen was the acme of spotless purity. The lower walls showed tiling effect reproductions of miniature Holland scenes. The upper walls and ceiling were of immaculate white.

FRUIT DISEASE INVESTIGATIONS

THE investigation and study of fruit diseases have been vigorously pushed and have shown a healthy progress. The destructive tumor disease of limes and other citrus fruits has been shown to be of fungus origin, and attacks oranges as well as limes. The new methods of spraying with sulphur compound worked out by the pathologists of the department has been widely adopted by apple growers. The investigation shows that fine fruit can be pro-

duced and protection secured against fungus disease without the injurious effect resulting from copper compound. Bordeaux mixture is still being used, but in the spraying of apples it has taken second place. Special attention has been given to experimental work in perfecting the method of using the new sulphur sprays for the fruit spot and leaf disease. As a result, fruit-growers who have used the new sprays have secured fine crops of the best apples they have ever grown. Spraying has very largely prevented the fruit spot and leaf disease known as cedar rust, or orange rust, prevalent in the Blue Ridge and Alleghany mountain district from Pennsylvania to Tennessee. The peach-growers of Virginia, West Virginia, and Georgia have been prompt to adopt the discovery of spraying with self-boiled lime-sulphur for brown rot and scab, which has resulted in the removal of some of the factors which rendered the growing of this fruit uncertain. The pear blight eradication methods have been in extensive use on the Pacific coast.

THE LUMINOSITY OF THE SUN

THERE have recently been published in France some stupendous figures with reference to the luminosity of the sun, as calculated by Nordmann, of the Paris Observatory.

By him the solar heat is placed at 6,482 deg. C. The sun's total candle-power is represented by him in a string of figures beginning with 18 followed by twenty-seven noughts. This inconceivable sum is equivalent to 1,994,000 for every square inch of the sun's surface. Again, some idea of the amount of light these figures represent may be had from the fact that the most powerful electric arc light has an illuminating power of only 20,000 candles.

Prof. Nordmann states that, from every bit of the sun's surface the size of a fingernail there issues a quantity of light that would be sufficient to illuminate the entire Avenue de l'Opéra for a whole night. Inasmuch as the sun's surface is estimated to be some 200,000,000 square miles, its total luminosity may be placed at 51,000,000,000,000 times that of the street mentioned.

This French observer has also undertaken the task of measuring the light and heat of various large stars, some of which are stated to be even more powerful illuminants than the sun. For example, Sirius is found by him to be about thirty times hotter than the sun, *i. e.*, 190,600 deg. C., while the Polar Star is a comparatively cold body of merely 8,200 degrees.

STAMPS MADE FROM GLUE

IN PLACE of rubber stamps, Gerhard, of Emden, makes stamps of glue. On the set-up type a few sheets of tinfoil are laid, and with the aid of a felt a single deep impression is made by means of a press. The tinfoil matrix is then taken from the mold and lightly oiled. About the matrix oiled lead sills are arranged, and joiners' glue, to which a little printers' roller mass has been added, is then poured in. After cooling, this can readily be detached. For the first few days after casting the stamp remains somewhat soft, but subsequently hardens, without losing the elasticity required for a stamp. The stamps made by this quick and cheap process must, of course, be mounted on wooden handles.



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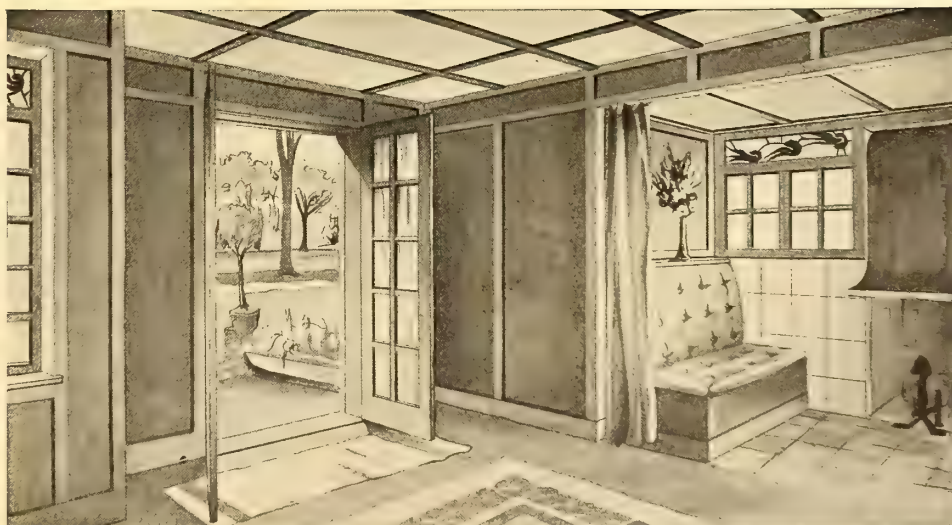
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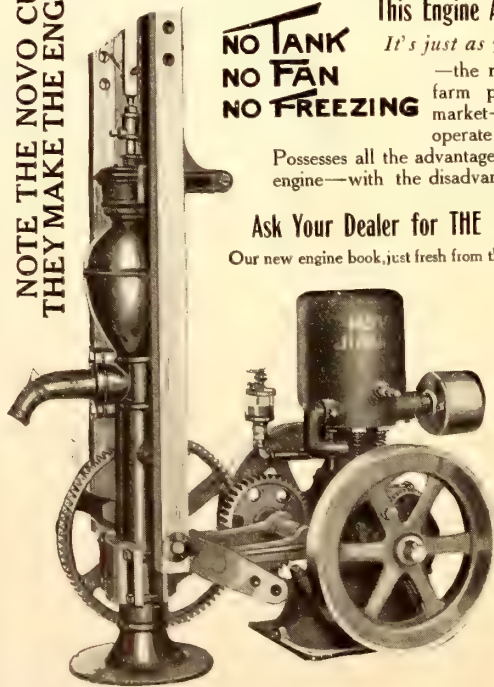
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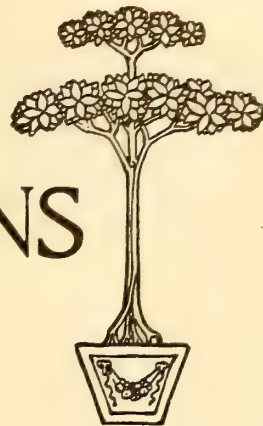
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THE EDITOR'S NOTEBOOK

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The city of Leipsic as it appears to the airman

AMERICAN HOMES AND GARDENS



Volume VIII

September, 1911

Number 9

The Flying Machine and the Roof

By Waldemar Kaempffert



If the aeroplane is ever to play as important a part in our daily lives as the automobile or the horse, if every suburbanite, ten years, and possibly five years hence, is to fly his own biplane or monoplane, if flying is indeed to become the sport which present-day prophets assert, it is possible that country and certainly city architecture will be modified in style. This modification will occur not because an aeroplane is bigger than an automobile, measuring, as it does, from thirty to forty feet in span, but, curiously enough, because of the manner in which it must start and alight.

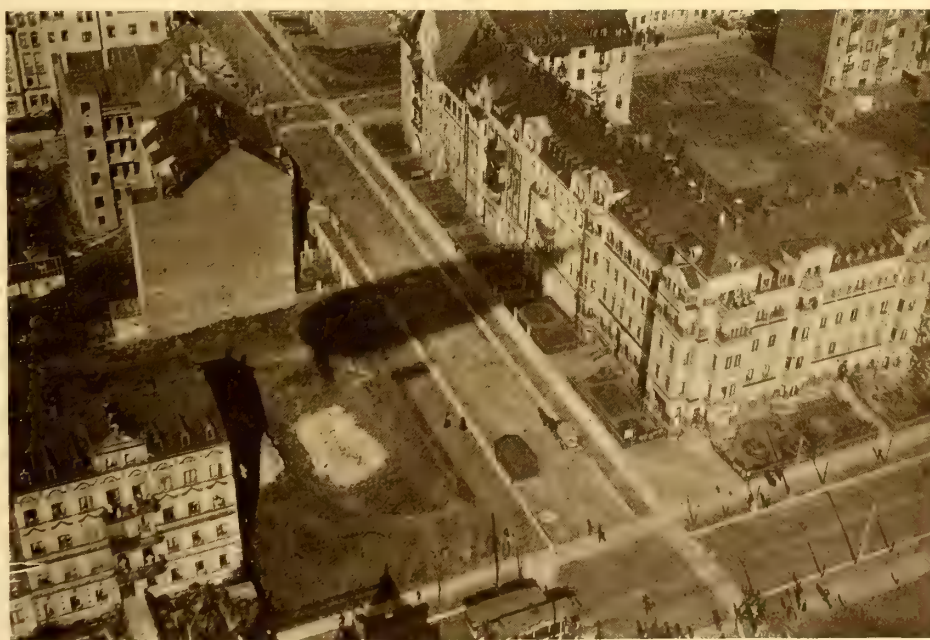
Like every soaring bird, an aeroplane must be in motion before it can fly. It cannot start straight up from the ground. There must be a preliminary run that may vary in length from a hundred feet to a hundred yards, depending upon the speed of the machine and the skill of the aviator. How necessary is this initial run, even in the case of a soaring bird, is set forth in the following graphic description of the commencement of an eagle's flight (the writer was in Egypt, and the "sandy soil" was that of the banks of the Nile):

"An approach to within 80 yards aroused the king of birds from his apathy. He partly opens his enormous wings, but stirs not yet from his station.

On gaining a few feet more he begins to *walk* away with half-expanded, but motionless, wings. Now for the chance. Fire! A charge of No. 3 from eleven bore rattles audibly but ineffectively upon his densely feathered body; his walk increases to a run, he gathers speed with his slowly waving wings, and eventually leaves the ground. Rising at a gradual inclination, he mounts aloft and sails majestically away to his place of refuge in the Libyan range, distant at least five miles from where he rose. Some fragments of feathers denoted the spot where the shot had struck him. The marks of his claws were traceable in the sandy soil, as, at first with firm and decided digs, he forced his way; but as he lightened his body and increased his speed with the aid of his wings, the imprints of his talons gradually merged into long scratches. The measured distance from the point where these vanished to the place where he had stood

proved that with all the stimulus that the shot must have given to his exertions he had been compelled to run full 20 yards before he could raise himself from the earth."

In some respects, the problem of alighting is more difficult than that of starting, because the machine must approach the ground at high speed in order to ride safely over the ground eddies, the swirls and waves that circulate near the ground. The aeroplane is accordingly mounted either



Parseval airship casting its shadow on Chemnitz, Germany



Knaterwitz, near Domreichenbach, as it appears from a height of several hundred feet

upon wheels or skids or both. In such machines as the Farman and Wright biplanes, the wheels are elastically mounted so that they may yield and permit the skids to perform their function.

A Wright or a Farman biplane lands on its skids and stops within a few feet. On the other hand, a Curtiss biplane, which has no skids and which lands upon the same wheels used in starting, often runs for a considerable distance before it expends its momentum. It is customary to use brakes on such a machine in order to arrest its motion.

This problem of alighting and starting has always perplexed the inventor of flying machines. The late Professor S. P. Langley adopted the plan of launching his successful models from the top of a houseboat, which could be turned in any direction so as to face the wind. The model was placed upon a car which fell down at the end of its travel, and thus released the machine for its free flight. The Wright brothers at first employed a similar device, consisting of a single starting rail, a car which carried the aeroplane and which ran upon the rail, and a system of ropes and falling weights to jerk the car suddenly forward. With that arrangement the Wright brothers were able to fly with a preliminary run of perhaps thirty or forty feet. Such special starting devices, however, are objectionable, because the machine must always return to them after it alights. For that reason, we find that all the aeroplanes of today, even the Wright biplanes, make their initial run on small wheels, fitted with pneumatic tires.

From this brief exposition of the necessity of making an initial run before leaping into the air, and of coming down at rather high speed, it follows that if flying is to become as popular as automobiling, every suburbanite and every

city dweller who owns a machine must have sufficient starting and alighting area at his disposal. Ground in the vicinity of our large cities is not cheap. Most suburbanites must content themselves with a quarter of an acre and less, about enough for a house of moderate size and a small lawn. It is obvious, therefore, that flying-machine clubs must be organized, with grounds sufficiently spacious to permit the starting and alighting of machines. Perhaps in a few years we may find existing country clubs building hangars for flying machines to accommodate their members. The well-kept, level swards of these clubs would certainly serve admirably the aviator's purposes.

The flying machine problem is more difficult of solution when we consider the limitations of the city. With the exception of the public parks, which can hardly be used for any other purpose than that for which they were originally intended, there are no large areas which would serve the airman's needs. Even if the streets and avenues were not already crowded with traffic, they would be found much too narrow for the use of an aeroplane about to take wing. Obviously, the aviator is limited to the house-tops—but not to house-tops with the round towers and gable roofs which at present lend variety to a city's architecture which is sufficiently monotonous as it is. The roof must be flat, and it must be large enough to permit the aviator to take his run. The ordinary house-top is manifestly inadequate. Probably the roofs of existing hotels and office buildings, and the roofs of special aeroplane hangars which will eventually be constructed, will satisfy the needs of the airman.

From an ordinary office building twenty stories in height, a machine could be launched with comparative ease, even though the roof might not be large. The machine could almost drop off like a bird, and with the air pressure created

by its rapid fall, could easily take wing. The length of drop would depend upon the design of the machine. A fall equivalent to five stories would probably be all that would be required.

The feat of alighting upon a roof would not be inordinately difficult. If aviators can land upon platforms built over the forward decks of warships, it is assuredly not asking too much of them to land upon the roof of a building of equal area.

If hotels are to have their aerial taxicabs, if bankers and brokers are to fly from their country residences to their offices, surely some different type of house-top must be designed for many structures whose roofs must serve as starting and alighting areas. The cornice, the parapet, the delicate spire, must give way to a roof as flat as that of an Egyptian temple. Here there is not much chance for the exercise of architectural imagination. A flat roof is a flat roof, and very little can be done to relieve its flatness. Whatever charm the tall buildings in New York may have as they are viewed from the decks of a steamship in the harbor of New York is due in large part to the piling of tower on tower, to the imaginative use of turrets and spires, to imitations on a gigantic scale of Italian Campaniles. Is all this to disappear? Will the architect be compelled to curb his fancy and to provide a succession of huge cubes, as flat upon their tops as they are upon their sides, in order that the man of the air may have a place from which to start and a place on which to alight?

Unless methods of launching and alighting are adopted radically different from those of the present day, it seems as if architects would be compelled to modify their present roof designs. Levavasseur, the builder of the Antoinette monoplane, is said to be experimenting with apparatus which will overcome some of the inconveniences mentioned. He is said to have experimented with forms of catapults which literally shoot a flying machine directly from the ground into the air. Any one who has read Langley's account of his tedious experiments in launching flying machines, experiments which included just such schemes, must realize how hopeless is the task of this projecting into the air a fabric so delicate as a flying machine.

Remote as the possibility is, it is more likely that the helicopter principle may be combined with the aeroplane principle; in other words, some form of lifting screw employed to push the aeroplane straight up from the ground.

Levavasseur is also said to be experimenting with a form of alighting device which consists of a wire on which a carrier travels. The aeroplane is supposed to fly up to the carrier, to catch it, and to slide down the wire to its hangar, very much like the cash carriers of department stores. Here again there would be considerable difficulty in seizing the carrier, particularly in a high wind. We can imagine a machine flying backwards and forwards in the desperate effort to seize the carrier.

Let us assume that the machine of the future, in which the gilded youth of the future will buzz over our heads, will of necessity land upon a flat roof in the city. If the number of flat roofs is large, how will the airman identify his own landing place? From a height of one thousand feet a town presents the aspect of a huge checker-board. How can the airman pick out the particular square which belongs to him?

The most obvious method of identification is that of numbering the roofs, a method which is in vogue to a certain extent in France and Germany, in order to direct cross-country aviators on their way. At nighttime distinguishing lights of some kind would be required, with the result that an air-port of the future may have roofs as brilliantly illuminated as its avenues. Even now we hear in Germany plans for erecting beacon lights to guide the airman on his journey, searchlights which will project a beam upwards into the gloom. In one of his most imaginative stories, "The Night Mail," a story in which he has given us a vivid account of some future aerial leviathans journeying through the atmosphere, Kipling speaks of this possibility, and also points out the dangers to the flying-man of a planet that is overlighted. Who knows but laws may be passed which will forbid a man from placing an advertising electric sign on his roof, lest he lead some airman astray? Who knows but the lighthouse board at Washington may have to establish a special branch for the erection and inspection of aerial lighthouses?

Who knows but the architect of the future may be obliged to lavish the same care upon the roof that he now bestows upon the façade of a public building, in order that the eye of the more æsthetic aviator may not be offended by chimney pots and tin cornices that are now invisible from the street, but painfully apparent from above? Who knows but hotels may some day be constructed which will have entrances on their roofs for the benefit of the tourist aviator.



A voyage over the Alps through the air. View in the neighborhood of Innsbruck

Cobblestones and Concrete in Bungalow Building

By Kate Greenleaf Locke



Often happens that the finish of a modern bungalow must be either cobblestones or concrete. Such really good effects may be produced with either that one may well hesitate between them. In the eccentricities of the bungalow, in its freedom from conventions, in its yet unexploited possi-

bilities, lie danger as well as fascinating possibilities. Judiciously treated, results that are novel and beautiful may be obtained, and ornamentation that might otherwise be deemed eccentric becomes logical and sane.

I have noted that the architect who scouts the idea of building bungalows for his clients often immensely enjoys working out a complete (rustic) confection for himself. It does not pay him to potter over one for a wealthy client, but it pays infinitely to plan one for his own living, a convenient and comfortable domicile, which holds all the modern improvements in steam, electricity, gas and pneumatic cleaning apparatus, and yet suggests the enchanting primitiveness of the Garden of Eden, and costs comparatively little.

A bungalow, to be a bungalow at all, must be inexpensive, at least apparently. If it has cost much money, the cost must be hidden. It may smile and smile, and be a villain; that is, it may

look the picture of simplicity, and yet stand for a large sum, if the owner so chooses. It is a protest against that ostentatious display which is the sin of the hour; it is the reaction

from the would-be-impressive architecture of which we have had so much in our cities and villages.

When the little volume of "The Simple Life" came as a surprise to the world it was accepted with acclamation; it was ushered into existence just at the time of the establishment of the modern American bungalow. The book and the times, strangely enough, combined to suggest

the same thought: to neglect the spurious and non-essential, and to urge the true and essential only. Therefore, if the main idea of the bungalow is simplicity, it is a sad mistake to load it with fantastic ornament of any kind.

The solid worth and rustic beauty of cobblestones as pillars, chimneys and foundations without, and as chimney-breasts and hearthstones within, have become recognized by all who have made a study of bungalows, and one rarely sees an abuse of them. The new craze for concrete has in many instances carried us far afield from its best possibilities, so that a material which affords so much pleasure when it is properly and artistically used, grates horribly on the senses when it takes the shape of the small, compact, box-like structures that we sometimes see yclept "bungalow" — structures that too often suggest unfinished mausoleums. It would be well to study its artistic uses, its necessities and possi-

bilities, before misusing this comparatively new material, because ere long our houses will be composed of it entirely.

When a shingled house is built around a paved court, and



The bungalow of Charles Parsons, at Pasadena, Cal., designed by Arthur S. Heineman, architect



In Mr. Parsons' bungalow, cobblestones, brick and plaster are employed, with the walls above shingled. Each second course of shingles is exposed, with a one-half inch strip beneath to produce a more rustic effect. Note the heavy timber of the head casing, which runs around the building just above the windows, and which accentuates the low, long bungalow lines

many of the California bungalows are designed in this way, the concrete pillars, in their original soft gray, form a charming contrast to the terracotta flags of the court, and in the hands of a good architect are a delightful accessory to the building. Wood with a rustic finish combines harmoniously with concrete in many ways. The old English style of beamed houses has suggested some of our most beautiful bungalows. The artistic sense is always pleased at the sight of beams and shingles stained a rich, soft brown and brought into direct contact with a slightly roughened pure-gray surface in concrete.

But however simple the treatment may be when concrete is used in small houses, there is bound to be a little more formality—a shade more of pretension—than in the cobblestone. The cobblestone is a child of the earth and seems to spring chiefly from the soil. When the stones are used as we see them in one of our illustrations, with an admirable realization of their full worth ornamentally, when the bungalow is built in the broad, low and generous lines of the one here pictured, there is such sincerity in its design and such com-

plete simplicity that we may almost proclaim it the ideal bungalow.

The skilful architect who wishes to obtain the deep shadows of a wide, low porch will so design his building that there are sunny windows, opening perhaps on an uncovered terrace. On the other side of the room into which this shadow falls he will assist the effect of his great cobblestone pillars by low-beamed ceilings and wide eaves, but he will take care that the sun is not shut out from a building crouching close to the ground, and that its bulk and solidity will not degenerate into heaviness.

To grasp the bungalow idea, one must have a keen sense of the atmosphere which a building radiates. "The spirit of the place" could not be more strongly emphasized than in defining the difference between a bungalow and a cottage, and until this difference is recognized and defined it is impossible to build a successful bungalow. Briefly,

I would say that while the cottage is snug and conservatively correct, the bungalow should radiate a certain independence. It is characterized by freedom from convention, and it should always confront one as a surprise



The front walk, which enters Mr. Parsons' bungalow at the side. The walk is of brick, as well as the steps leading to the porch



The porch of Mr. Parsons' bungalow, showing the front walk coming in at the side, brick walk, steps and tiled floor



The front porch of Mr. Parsons' bungalow, showing the front door and French sash side-light, with cobblestones, brick and timber details



Detail of a mantel in the residence of H. B. Ainsworth, at Azusa, Cal., designed by L. B. Pemberton, architect

that anything so beautiful and original could be built on such simple lines.

Whenever it is possible so to construct it, the bungalow should seem to spring from its environment; in a word, as if it were the natural outcome of its surroundings. In the Far West I have seen a house built of discarded railroad ties that was full of charm and was a model for comfort and convenience. Under its rare cluster of cottonwood trees, its one link with civilization stretching away in glistening lines of steel to east and west, the little bungalow fitted as perfectly into its surroundings and was as much a part of them as this little cobblestone house on the edge of an arroyo.

Under the shade of New England elms, smooth concrete with beams or the broken stone and rubble in which the country abounds would seem to be the material from which to build a bungalow.

A breath of old Mexico comes from the concrete house shown in another illustration. Its low roof of pink tiles, its jalouse, its lattice-work and iron grilling,



Beams embedded in plaster produce here a most happy effect

all lend it the charm which pertains to the houses of tropical countries. Its floors are flagstones or red terracotta. In winter these are overlaid with rich rugs. Its windows are casements, and many of them are leaded. It is built around a court in which are planted all of the tropical growths that attain perfection in Southern California.

The red roofs of Spain, the green shutters and casement windows of Italy and Germany, the iron balconies and grills of all continental Europe, are necessary to turn the concrete house into a delightful home.

Stone-flagged courts, pergolas, well-heads and fountains, and concrete garden-walls hung with vines, all lend themselves to the scheme which fits the bungalow. This unmistakable outcome of our modern American architecture may suggest the Spanish adobe of Mexico, the stucco farmhouse of Italy, the quaint thatched cottage of Tyrol, the Swiss chalet, or it may look as if it belonged beneath the cherry trees of Japan, and yet remain distinctly and definitely a bungalow.



A California bungalow of adobe and plaster. The roof is built of red tiles



Front view of the Archer bungalow

The All-the-Year-Round Bungalow of Mr. Charles A. Archer at Danvers, Mass.

By Mary H. Northend

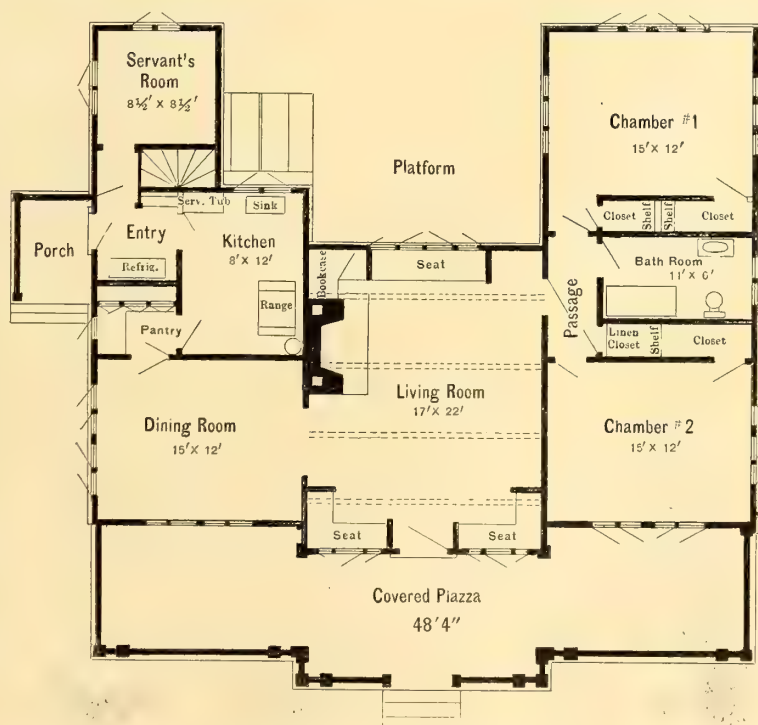


F all types of the small house, the bungalow is perhaps the most popular. The wide scope of possibilities and the convenience of arrangement which are characteristic of this type of dwelling render it deservedly worthy of consideration, and with an increasing appreciation of these facts, its

charm has grown apace. No other type of house permits of a broader development in the way of artistic devices, and no other shows an arrangement of all the rooms on one floor. The latter item is one that has done much to bring the bungalow into prominence, for the saving of steps in the course of a day's work that such a plan makes possible means much to the busy housewife. Then, too, the long, low lines of the bungalow are pleasing deviations from the high, irregular contours of other types, and the informal environment of the whole fosters a spirit of hominess—the true test of the successful dwelling.

One charming bungalow home is that shown herewith. It is typical of the highest development of this form of dwelling, its broad, sweeping outlines suggesting roomy interiors, and its width and depth pleasantly relieved by attractive devices, cunningly contrived. There is no hint of cramped ungainliness in the construction of this house; straight lines are intercepted where they might become monotonous, and the finely proportioned whole bespeaks careful planning. The rear is as attractive as the front. Two wing-like projections at either end of the main part afford the contour of three sides of a hollow square, making the space between the wings a terrace flanked at the outer edge by evergreens arranged in square tubs. The location, too, has been carefully chosen, and the result is that the bungalow seems an intimate part of its site. It graces the heart of a woodland clearing, with tall birches on all sides, openings here and there allowing glimpses of distant meadowlands.

The dwelling is the property of Mr. Charles A. Archer, and is located in the town of Danvers, in Massachusetts. It was designed



Floor plan of the Archer bungalow



A glimpse in the living-room



The dining-room of the all-the-year bungalow



Side view of the Archer bungalow, showing casement windows



The veranda of the Archer bungalow

by the owner, the construction being executed under the direction of Mr. Guy Lowell, architect, of Boston. It was built primarily for comfort, simple, sensible devices being depended upon for its chief ornamentation. The soft, dull tones of its shingle finish harmonize charmingly with the pure white of the trim, and the quaintly grouped windows, many of them of the casement type, add to the general attractiveness.

The broad veranda across the front, with a pergola top suggesting a continuation of the interior beams, affords a pleasant outdoor living-room, its entrance dignified by a slight widening, for a space of a few feet, on either side of the steps.

From here the entrance-door, of Dutch design, opens without preliminary of hall or vestibule into the living-room, a large, pleasant apartment, characterized by several interesting features. The walls of plaster, tinted ivory white, are battened in deep brown, and above are great rafters, the whole being open to the roof. Broad windows admit plenty of light and air, and beneath two of the groups extend cozy built-in seats. The handsome fireplace at one end, built of field-stone picked up on the estate, is the apartment's predominant feature, its ample dimensions, exerting an influence of cheery hospitality as the four-foot logs sputter and burn, throwing out a glowing radiance. Beside the fireplace is a large bookcase, finished to match the battens, and close at hand is a deep, bow recess, its small-paned casement windows, with seat

beneath, affording a charming glimpse of the rear terrace. Over the surface of the hard pine floor, rugs of warm rich tints are scattered, affording the needed touch of contrasting coloring.

Beyond the living-room is the dining-room, finished in plaster, tinted rose-pink, battened in dark brown. Groups of windows on two sides admit plenty of sunshine and air, and the room complete is charming in its simple finish and appropriate equipment.

From here leads the service department, provided with all the devices of modern housekeeping, and at the end of the wing is a servant's chamber.

In the opposite wing are located two large chambers and the bathroom, the former finished in plaster with broad windows and excellent closet space, and the latter equipped according to the most up-to-date ideas.

Complete, the house is a charming, livable abode. Its every room shows careful planning and due regard of details. Harmonious outlines characterize it, and the regrettable incongruity that mars so many really good designs is here conspicuous through its absence.

Notwithstanding the perfection accorded to



A cozy corner in the Archer bungalow

this home, the grounds may be successfully compared with it. The front expanse of these does not unduly dominate the site, for the pleasing features of surface treatment, the trees that have been left standing and the bushes, whether single or in clusters, are visible all around from the glorious pergola-topped veranda and the attractive rear.

Flying as a Sport for Women

By Stanley Yale Beach



THE true American woman is ever alert to find some new way in which she can vie with mere man. Athletics, golf, swimming and tennis, and the running of automobiles, have all been tried with success, and there is every indication that the new sport of flying will find favor with American women even more rapidly than it has done with their sisters abroad. In fact, America's first aviatress was flying at Mineola, L. I., a few months only after the first French women aviators had learned, or more than a year ago, to be exact. This lady, Mrs. Bessica Raiche, made flights in a Curtiss-type biplane of her own and her husband's manufacture last summer at the Aeronautical Society's aerodrome, and won the applause of all the aviation enthusiasts, who commemorated her flights with a gold medal set with jewels. She has helped construct several machines of different types since then, and probably there is no other woman in the United States today who has so complete knowledge not only of flying, but of the construction of machines as well.

Any one who has enjoyed a fast automobile ride on a perfectly smooth and dustless road, or a trip in a motor boat at twenty-five to thirty miles an hour in smooth water, can appreciate the exhilaration of piloting an aeroplane. The rush of air past one's face, and the smooth, fast, even motion—as steady as the movement of an electric launch on a mill-pond—make aeroplaning the most fascinating and exhilarating sport that has ever been devised. It is a sport that, even more than automobiling, requires quick thinking and rapid action, for upon the decision what to do and the instant doing of it depends, in an emergency, the life of the aviator and the passengers. Fast driving of an automobile serves as excellent training preliminary to learning to fly, and if possible this should be followed by several balloon trips, in order to get accustomed to floating high above the earth. While one seldom goes as high in an aeroplane as one customarily ascends in a balloon, the training obtained and the knowledge of the appearance of the earth from above is invaluable. Had Ladis Lekewitch, the Russian aviator who recently flew across New York, had this knowledge he would not have mistaken the Jersey meadows for a pasture lot and landed in them when his motor stopped while he was 8,000 feet above Riverside Drive. High flying is a necessity when passing over dan-

gerous places, and ballooning is the safest and easiest way to practice for altitude work in an aeroplane.

When a woman has once mastered an aeroplane, she will fly as fast or as high as any man. A woman enjoys the exhilaration of flight even more than does a man. Throwing caution to the winds, she will soar to great heights without thinking of the risks she takes. Therefore, an aviatress should have a thorough training before she is allowed to fly where she listeth, like unto the winds themselves.

This brings us to a consideration of the modern aeroplane and its ability to combat the wind. There are two kinds of machines in use today—monoplanes and biplanes. The former is the type developed and in vogue in Europe, while the latter, made famous by the invention of the Wright brothers, is the one chiefly used in America. Glenn H. Curtiss has developed a biplane somewhat smaller and less cumbersome than the Wright, and has succeeded in equipping it with a single pontoon, as well as with wheels, so that one can start from or alight upon water as well as land, at will.

He has christened the machine a "triad," since it is good for transportation on ground, over water, or in air. In this machine, as in practically all biplanes, the aviatress sits at the front of the lower plane, with the control wheel in her hand and with a V-shaped frame about her shoulders. If the machine tips to one side or the other, all she has to do is to lean to the high side (which she does naturally). In so doing, she carries the frame with her, and this sets the ailerons, or hinged flaps, at the ends of the wings in the proper manner and rights the machine. The Wright method is to warp the rear edges of the wings,



Photo by E. Levick

Miss Quimby flying for her pilot's license in a Blériot-type monoplane

which is accomplished by a lever. At the low side of the machine the rear edges of the wings, or planes, are bent downward, while at the high side they are flattened out.

To steer to right or left the aviatress has only to turn the control wheel the same as in driving an automobile, while to rise she pulls it towards her, and to descend pushes it away.

The control of a Blériot monoplane is slightly different. In this type of machine the motor and propeller are in front of the aviatress, who sits in the long body in line with the rear edge of the wings. Immediately in front of her stands a short post, with a tiny immovable wheel on top and a bell-shaped arrangement at the bottom. The post is mounted upon a universal joint within the bell, and the control wires are attached to the latter. Side-tipping is cor-

rected by moving the post to the high side, as before, and up-and-down steering by pulling or pushing it slightly. The machine is steered to right or left by the feet, which rest upon a tiller, such as is used on a bob-sled.

Besides being a faster machine, and one that is safer in case of a fall or head-on collision, a monoplane gives the psychological advantage of feeling that you are *in something*, and not perched on a seat suspended in space merely. One of the greatest improvements made in the monoplane of late is the use of a gyroscope to steady these machines. The gyroscope consists of a small wheel, about a foot in diameter, that revolves in a vacuum in an aluminum case at the rate of 10,000 revolutions a minute. This wheel produces a constant resisting force of twice the weight of the machine itself, to keep the latter from upsetting. As a result, the aviatrix does not have to concern herself with correcting side-tipping, the most bothersome and tiresome part of driving any aeroplane, especially in windy weather, but she can give her undivided attention to steering.

As there is only the steering in a vertical plane to look after, in addition to the turning to right or left, the flying of one of these machines is practically no more difficult than the running of an automobile.

Even without the improvement just mentioned, no athletic young woman who makes up her mind to fly will find much difficulty in learning. Miss Harriet Quimby, the dramatic editor of *Leslie's Weekly*, learned in thirty-two brief lessons at Mineola recently, and on August 1st she obtained her pilot's license without difficulty, while Miss Blanche Scott flies a Baldwin biplane with equal facility, and fre-

quently goes on a cross-country jaunt. These two young ladies are of quite different types, as can be seen from their photographs. The former never drove an automobile or engaged much in outdoor sports, yet she learned to fly in less time than it takes most men pupils, whereas Miss Scott was the first woman to drive an automobile from the Atlantic to the Pacific accompanied by a woman companion, and she practically lives in the open.

When American women awake to the fact that it is possible to procure machines capable of carrying four or five people in nicely upholstered closed bodies, like those of automobiles, it will not be long before the wealthy ones will have their touring aeroplanes, with licensed pilots to drive them, while their less well-to-do sisters will still continue to fly by themselves, or at times with one or two companions. They will find it possible to make an extended cross-country pleasure trip of an afternoon without the dust, noise and jolting experienced in an automobile, and especially without those multifarious dangers of the road, such as grade crossings, sharp turns in wooded country, *et cetera*, with which almost every automobilist has to contend.

The tonic effect of the pure air at heights of 1,000 or 2,000 feet can now be enjoyed in a very few minutes without a tedious journey by rail to the mountains. To learn how it feels to fly, one has only to go to Mineola or Nassau Boulevard and make a flight as a passenger in a Blériot monoplane, or a Wright or Curtiss biplane. Fifty dollars cannot be better invested by any woman who contemplates becoming an aviatrix or purchasing an aeroplane.



Mrs. Bessica Raiche, America's first aviatrix, at the wheel of her Curtiss-type biplane



Miss Matilda Moisant ready for a flight in a Moisant monoplane



Photo by E. Levick

Miss Harriet Quimby, the first licensed "pilotess" in America



Miss Blanche Scott at the wheel of Capt. Baldwin's racing biplane

Indian Designs and Stencil Work in Bungalow Decoration

By Edward Fesser



THE tendency of the married man of moderate means to own a small dwelling in the country is becoming more apparent every year, and whether he erects a bungalow or a rustic cottage upon his property, he instinctively desires a certain individuality to characterize his home. The bungalow can be built in a hundred different ways, costing anywhere from five hundred to five or ten thousand dollars, but in each instance the interior decorations should bear some relationship to the architecture of the exterior.

For the rustic bungalow, many appropriate and beautiful designs can be borrowed from the North American Indian, whose handicraft may be seen in any museum of natural history. The most enduring and satisfying effect for the living-room is strict simplicity, combined with certain harmonious blendings of color to add cheerfulness to the surroundings.

The flooring should be laid with narrow, matched boards (hardwood, of course, preferred), and stained either a dark green or a rich shade of brown, so that the grain of the wood will show through the stain. A grass rug can be bought for very little money, and this should be large enough to cover the floor within two or three feet of the walls. The rug, when bought, should have no pattern or design on it. After you have studied out and decided upon the general color scheme for the room, your own ingenuity will devise an appropriate border for the grass rug, which you can stencil yourself by following the few simple suggestions given below. A few bright Indian rugs or saddle-blankets thrown about the floor will give the touch of color necessary to brighten up the room.

For the wainscoting, the most effective device is the use of slabs with the bark on, which can be procured in unlimited quantities from the nearest sawmill. A slab, in the vernacular of the sawmill, is one of the four slices of a tree

or log with the bark on, leaving a rectangular timber for building purposes—and these slabs are sold for a song. Saw the slabs four feet in length, and nail them perpendicularly to the walls of the room, surmounting the whole with a shelf six inches wide, which can be stained a dark color. Irregular slabs showing large knots can be picked out to frame the doors and windows. If there be white birch in the vicinity, in any quantity, by all means use the slabs from this wood for the main living-room; but it will have to be sawed to order by the millman, as white birch is a soft wood and offers no inducements to the ordinary commercial lumberman.

For the walls above the wainscoting, use some textile material that has a perfectly plain texture, without a pattern, in a subdued tone of green, gray, olive, or dark red, and surmount this wall-covering with a frieze sufficiently wide to be proportionately in keeping with the height of the room. The frieze may differ in tint and texture from the wall-covering, and can be stenciled with an Indian design conforming with that chosen for the border of your grass rug.

By using slabs of different woods for the wainscoting of different rooms, a little contrast may be shown, and at the same time the same scheme can be maintained throughout the house. Individuality can be emphasized in the color of the textile wall-covering, as well as originality in the designs of the rug-borders and friezes. Cedars showing six inches at the butt end can be sawed in half, lengthwise, and used for the den wainscoting, alternating the butts

and tips, the agreeable odor of the cedar making the room the more attractive. The exterior coating, or bark, of the cedar, which is very thin and broken, should be entirely removed by means of a stiff wire brush.

The art of stenciling is as old as the hills, the oldest known craftsmen being the Japanese. There are many methods employed in both making and using stencils, the

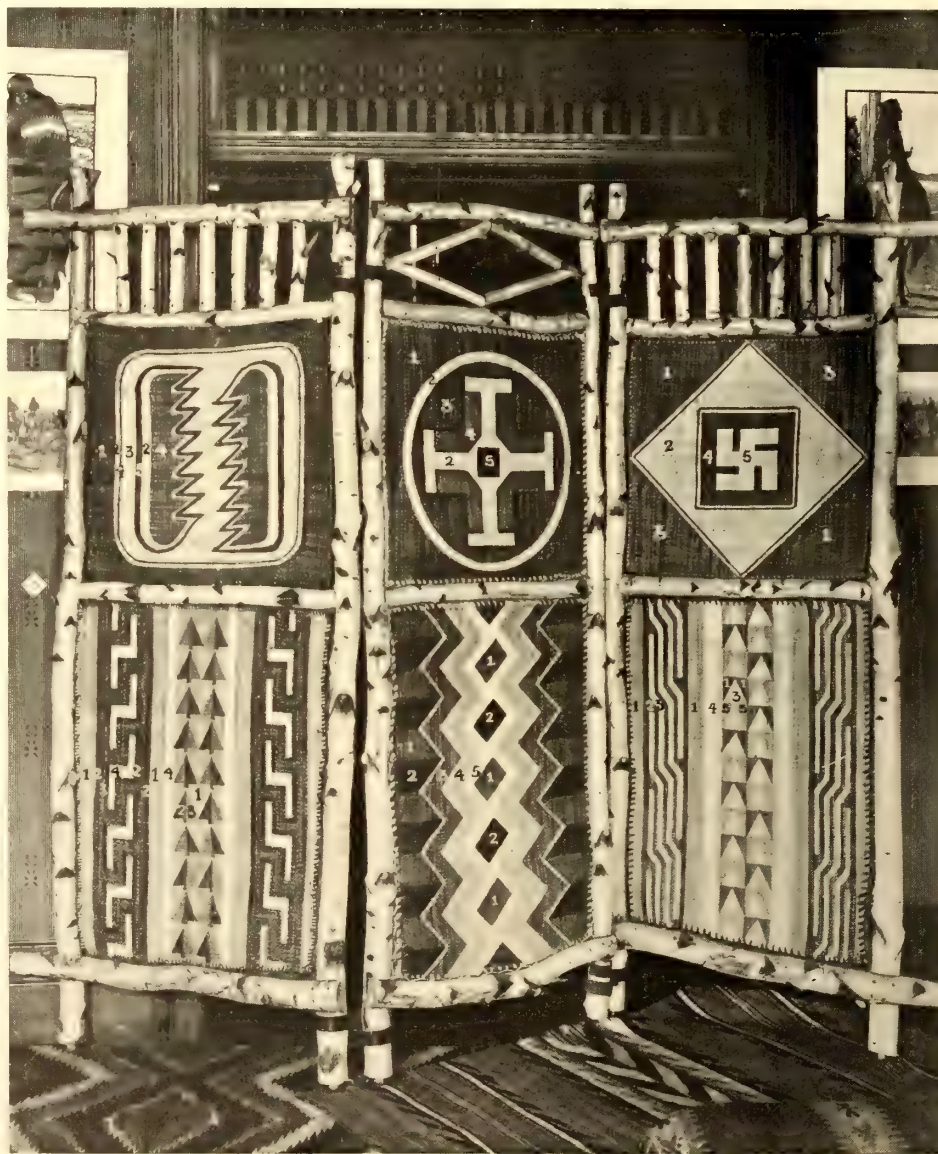


Fig. 1.—A rustic framework of birch, with design stenciled on Java coffee sacks

most complicated and expensive being the use of zinc sheets, where the design is cut through by means of acids and the color impression of the design laid on the fabric with the delicate graduation of the air-brush.

But the householder, looking for economy, need go to no such expense, when he can, by means of a few sheets of cardboard and a ten-cent blowpipe or an atomizer used for spraying charcoal drawings, accomplish the same practical result. The result, however, can only be arrived at through a certain amount of practice, or the design will appear spotty and irregular in depth of color. If the color be blown too freely through the atomizer, it is very apt to run down over the stencil and stain the material where it is not wanted.

The first thing to do is to pick out some design from an Indian blanket or basket, making elaborations or eliminations, according to the purpose for which the design is meant, and apply the theme to whatever use you wish to put it, be it frieze, mat-border, portière, pillow-cover, or screen-covering. Draw the design roughly upon your sketch block and color it, studying the effect in its relation to the general color scheme decided upon for the room, fixing definitely the proper proportions, as well as the relative values of the colors.

After you are quite satisfied, procure some sheets of good, stiff cardboard, about the thickness of the ordinary mounting-board used by photographers, and lay out your design with mathematical precision to scale. Then take a sharp penknife and cut out the first color to be used, leaving a bridge or connecting strip here and there to keep the narrower portions in place. Separate stencils must be used for each color, and in order to have them register correctly an easy method is to draw two straight lines at right angles to each other from the

exact center of each sheet, and extend the lines to the extreme outer edge; a small dot upon the fabric at the outer points of the intersecting lines on the first stencil will make the stencils following register correctly.

After the stencils have all been cut out, cover both sides with a generous coat of white shellac; this will stiffen the board and prevent the edges and points from curling or warping after the spray is applied. Stencils so made will be found as serviceable for ordinary purposes as those cut out from sheet zinc. Another very good way to prepare a stencil-plate is to use cartridge paper saturated with boiled linseed oil; this should be allowed to dry thoroughly, when it will be found transparent enough to lay over and trace off the design, no varnishing being needed.

In certain complicated designs friskets must be used. Friskets are pieces of cardboard cut in such a manner that when pinned to the fabric they will block out certain portions of the design that are already tinted, or such portions that are to be left flat—that is to say, the original tint of the fabric. Once the stencils are cut and ready for use, an infinite number of varied color schemes may be used with the same stencils.

Next, nail some matched boards together, forming a long rectangular drawing-board, and suspend it perpendicularly in such a manner that you can reach every portion of the design with the atomizer without stooping too much. The atomizer and wide-mouthed bottle containing the tint can only be operated from certain positions, which you will readily discover after a little experimenting. Pin your fabric in as even and straight a manner as possible, smoothing out all creases and wrinkles with the aid of small thumb-tacks; then pin your first stencil in place and apply the first

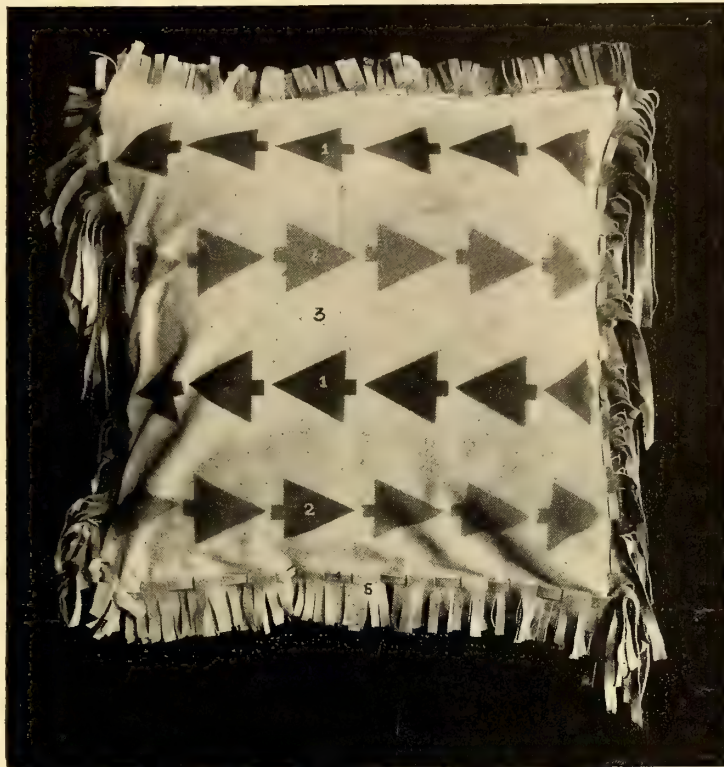


Fig. 2—Stencil work in its simplest form



Fig. 3—Made with the same stencil used for Fig. 2



Fig. 4—A design requiring only two stencils

tint. Where the design is continuous, as in the case of a frieze or portière, see that the keys joining the design register exactly, and continue the stenciling with the first plate, and let the color dry thoroughly before applying the second.

The choice of color mediums is very important, and it would be as well not to attempt the use of aniline dyes or coal-tar products, except in cases where the fabrics are not to be handled. Aniline dyes, in order to become fast colors, must be subjected to a high temperature or the fabrics boiled in their solutions. But when applied cold, some of the colors are apt to be treacherous and come off at the slightest touch.

After much experimenting, I have found that ordinary house paint or tube colors in oils give the most satisfaction; but, in order to mix them thin enough to be used with the atomizer, they must be generously diluted with turpentine and gasoline, or benzine; the last, being very volatile, will soon evaporate, leaving the colors fast when dry.

When the material to be stenciled has the consistency of canvas duck, matting, or grass goods, a regular stencil

much deeper tone than the smooth, giving an unusually pleasing effect. I have used these mats very successfully for wall-coverings in rooms of minor importance, as well as for the panels of the screen illustrated in this article, also for knockabout pillow-covers used on the porch swinging divan, and for friezes, and I have found the material durable as well as oddly ornamental. For a more expensive pillow-cover or coverings for chair-cushions or window-seats use sheepskins. These skins can be procured from large book-binderries for about thirty-five cents a skin. They are soft as chamois and take the tints well, and they are practically indestructible. In making pillow-covers like those illustrated herewith, take a whole sheepskin and mark out the square for the size required; then stencil thereon the design before cutting off the margins. After this is done, cover over the whole surface of the stenciled square with paper or cardboard, and spray the margins on both sides of the skin with any color or colors that will form a suitable contrast to the general scheme of your design. After you have laced the front and back of your pillowcase together by means of an upholsterer's bodkin and some tinted strips of sheepskin

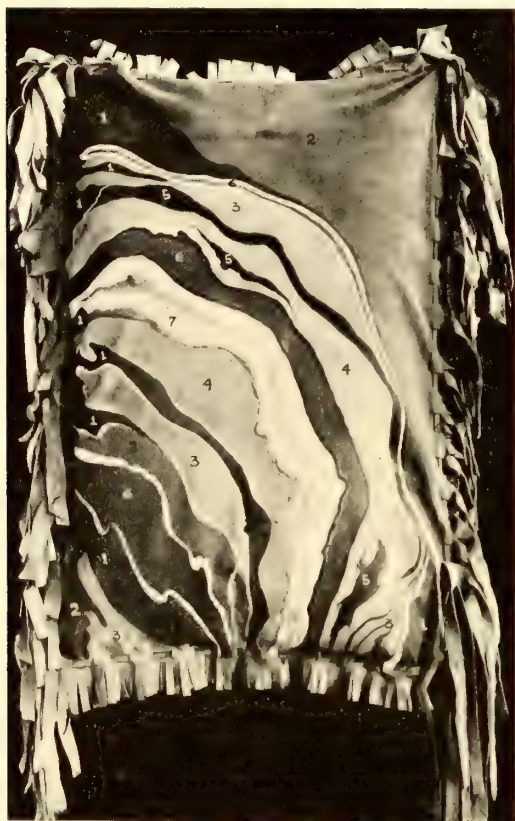


Fig. 5—An irregular design made partly with pieces of brown wrapping paper



Fig. 6—The body colors in this design are blown on



Fig. 7—The design represents the ceremonial dance of the Alaska Indians

brush can be used with better effect, using a thicker color than that used through the blowpipe; but if the fabric has a nap or villous surface, the blowpipe, or atomizer, should be employed. The atomizer ejects the fluid in a more vaporous form and can be applied in varying proportions upon such villous materials as velvets, velours and satins.

One of the cheapest, and at the same time one of the most satisfactory, materials to give artistic effects is the grass-woven Java mat. These mats can be procured from almost any of the large wholesale coffee-roasting houses for a nominal sum—about ten or fifteen cents apiece. They are the original mats, or sacks, woven by the natives of the island of Java and used for shipping the coffee beans to different parts of the world. The sides of the bag are sewed together with raffia, and when these bindings have been cut it will be found that there is a strip of irregularly woven material about thirty inches wide by twelve feet long, the bags when made up being of double thickness, folded. The grasses in the weave are both rough and smooth, and when the lengths have been tacked to the walls and stained the irregularities become manifest, the rough fibers taking a

about a quarter of an inch wide, cut the irregular margins into very narrow strips with shears, and your pillow is done. The same scheme may be carried out for the cushioned backs and seats of easy-chairs, only here the long-fringed margins should be trimmed up closer to the lacing.

For a central decoration the "Swastika," or good luck cross of the Indians, is very decorative. For unknown centuries this symbol has been used as a charm of fortune. Historically, it first appeared on Greek coins of the year 315 B.C., but it has been found among relics of races of a far more remote age. It is probably the oldest cross and the oldest emblem known. The shields of the ancient Britons in the British Museum bear this design.

While each of the Indian designs here illustrated has been actually employed in stencil work, their adaptability as well as real interest should be apparent at a glance. They are offered more as types of what might be accomplished than as definite suggestions. They obviously point the way to much individual ingenuity.

Fig. 1.—The framework of the screen is made of rustic white or silver birch with ball-bearing casters. The three

frames are joined together with broad leather hinges. The designs are stenciled on grass-woven sacks or Java coffee mats. The edges are rolled up tightly and laced with raffia to small eyelets screwed to the inside frame. The backs of the panels are covered with dark-green denim. The upper left-hand panel is taken from a war shield and the design represents the Indians' conception of sharks' teeth, denoting ferocity in war. (Zuni Indians.)

Color scheme—(1) Vandyke brown, (2) white, (3) straw color, (4) scarlet geranium (mix vermilion with crimson lake), (5) black. The upper center panel is taken from one of the solid wooden wheels of a hand-truck, used for transporting tepees and camp outfit, with a ceremonial cross denoting the four points of the compass. (Chimayo Indians.)

Color scheme—(1) olive brown (mix Vandyke brown with red and Prussian green), (2) white, (3) deep scarlet (mix crimson lake with vermilion and brown), (4) Prussian green, (5) black. Outline both inside and outside crosses with black. The upper right-hand panel shows the "Swastika," representing the "good spirit" of the Indians.

Color scheme—(1) deep indigo, (2) straw color, (3) deep scarlet (mix crimson lake with vermilion and brown), (4) black, (5) white. The left-hand lower panel denotes arrows in flight against an imaginary enemy with the swiftness of lightning, as typified by the symbols in the outer borders. (Thompson Indians.)

Color scheme—(1) light olive, (2) black, (3) deep scarlet, (4) white. The lower center panel is adapted from an Indian-meal bowl of pottery, made by the Mexican Indians.

Color scheme—(1) deep scarlet, (2) black, (3) indigo outlined with white, (4) cerulean blue, (5) white. The lower right-hand panel illustrates an Indian encampment, showing tepees snug and secure against bellicose forces, as represented by the lightning design. (Apache Indians.)

Color scheme—(1) cerulean blue, (2) indigo, (3) white, (4) straw color, (5) Pompeian red (mix Indian red with white). The tepees are white on fields of alternating red and blue.

Fig. 2.—Showing stencil work in its simplest form. The black arrows are cut out of the cardboard, and the same stencil shifted over and used for the red ones.

Color scheme—(1) black or dark gray, (2) deep scarlet, (3) left flat (the original tint of the skin), (4) red lacing, (5) fringe border, olive fading off to red on ends.

Fig. 3.—The same stencil may be used as shown in Fig. 2, friskets being used for half of the tinted portions at a time. These can be pasted lightly or pinned in place. If

the design has been laid out with mathematical exactitude, the stencil can then be reversed, and the alternating halves should register for the second tint.

Color scheme—(1) deep red-brown, (2) French gray, (3) light Pompeian red, (4) cerulean blue. The two borders with short fringe, light olive fading off to red; the long borders, olive fading off to dark Prussian green and deep red.

Fig. 4.—Only two stencils are required here, one for the dark blue and one for the red. The light-blue field is blown on first, using a frisket for the flat center.

Color scheme—(1) pale-blue field, (2) Delft blue, (3) deep Pompeian red, (4) left flat (tint of original skin). The fringe, canary yellow fading off to Pompeian red.

Fig. 5.—This irregular design is first laid out in pencil, and pieces of heavy brown wrapping paper cut as required for each color. The finer lines of both white and black are laid on afterward with a stiff brush.

Color scheme—(1) black, (2) deep red-brown, (3) buff, (4) Nile green, (5) deep Nile green, (6) Pompeian red, (7) white, (8) light gray. Fringed border, dark green fading off to deep red. The colors are separated by irregular lines of either black or white, as illustrated. Lacing, deep red.

Fig. 6.—The body colors are blown on, using friskets for the arrows, Swastikas and ceremonial cross. The parallel lines would best be done with a ruler and a stiff flat brush.

Color scheme—(1) red parallel lines on plain field, (2) deep navy blue, (3) light-blue parallel lines on plain field, (4) Pompeian red, (5) white, (6) black. Fringed border, deep tan fading to deep red. Lacing, black.

Fig. 7.—The design represents the ceremonial dance of the Alaska Indians, as typified by the figures of men and squaws. The outer and second margins are blown on flat, and only one stencil need be cut for each strip of figures and tomahawk-heads, blocking out such portions as are not in use. These designs are blown on top of the ground or body colors. The red tint should be of some opaque color, or the light blue will show through and form a purple that would constitute a blemish.

Color scheme—Outside border, tomahawk design, deep red-brown on field of light terra cotta. Inside border, figures, scarlet vermilion and Prussian blue alternating on field of cerulean blue. Central square left flat, the color of the skin. Central design, scarlet vermilion. Corner design, olive green. Fringed border, olive green fading to deep red-brown. Lacing, white; which improves the center tint.

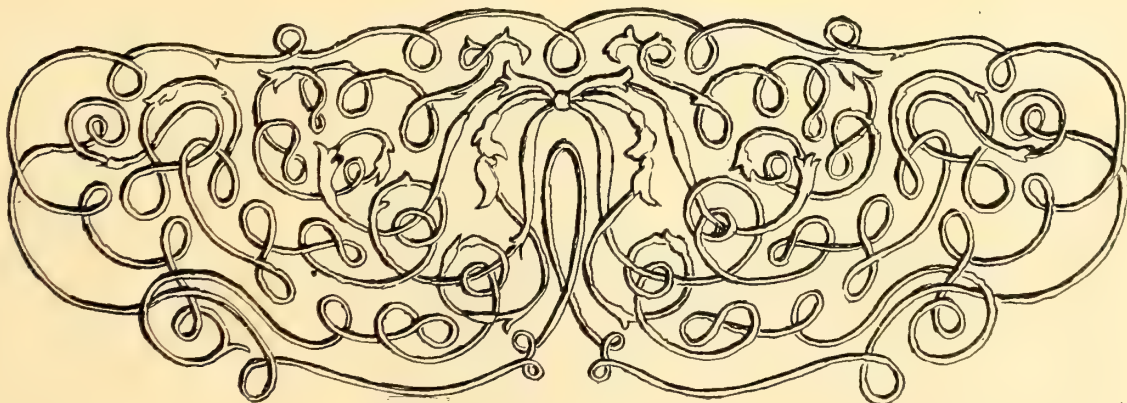




Fig. 1—Dining-room with tile and brick semi-ingenook fireplace. The head casing runs around the room, forming a frieze panel



Fig. 2—Mahogany red and brown wood stain in a bungalow in which all the construction (roof, walls, etc.) is exposed



Fig. 3—The front door and the living-room of the Charles Parsons bungalow at Pasadena

Color Tones that

By Kath



HERE are certain architects, famous for their bungalows, with whom it has become a fad to admit only the low tones of russet brown or bronze green in their buildings. Sometimes, as a concession, they permit these tones to run up the scale into a pale tobacco brown, but color—rich, strong, appealing color—is utterly tabooed.

Undoubtedly, this fad pointed in the beginning in the right direction. It was a protest against the use of pale colors in bungalows, where they are, in fact, utterly out of place.

There is much that has to be taught in connection with the furnishing of this new and popular type of house, or there is much to learn by the longer and sadder route of experience.

A few points that will appeal to the intelligence of a public that has not yet made a study of the bungalow may be helpful, and may save many from mistakes.

Strange as it may seem, there are certain colors that seem to belong distinctly to bungalow furnishings. The blue and white of the Japanese crêpes, that can now be found in every market, show up with great beauty against the wooden walls of a bungalow. There are also wistaria patterns, in purple, white and green, that add the greatest charm to a bungalow room; these are inexpensive stuffs that are filmy and yet strong, and are sturdy enough to find their place in such furnishings.

It is well to beware of the cheap, crass materials, in bold designs and strong colors, that are now being shown in the shops on all sides as "bungalow" curtainings. If there is a style of building in which it behooves the furnisher to beware of bright, crass colors, or cheap, fadable ones, it is the bungalow.

However, any stuff that is clear and strong—in white or cream, or pale clean gray—may carry out a bungalow scheme successfully. The point is that many things will be brought in by the shops for bungalows—as this is a popular term now—which would ruin the artistic beauty of a house. There are two ways of making a room effective in its furnishing, and both relate to color.

One is to adhere only to some cool, pervasive color, which strikes the beholder on entering, and the other is to pick out different features of the furnishing with rich and appropriate colors that blend in a harmonious whole.

Fit the Bungalow

e St. Clair

The first is the easier way, and on the whole the most effective. There is a keen delight in walking into a room, for example, in which that delicious shade of old blue which looks as if a breath of smoke had blown across it meets the eye at every turn. It varies in tone, perhaps, until it melts into the pewter and silver accessories of the room without a sigh. On all sides is the harmony of cold blue, changing into gun-metal gray, to silver gray, to silver itself. These subtle gradations of colors and tones are the delight of the sybarite in furnishings, and nowhere has he a better opportunity for experiment than in the modern bungalow.

Here everything conspires to show up his color scheme to good effect, and here he may safely introduce combinations that would be utterly out of place in a conventional house. The "studio," that generic term which cloaked so many sins, no longer reigns alone; the bungalow has arrived to fight for first place.

In illustration Fig. 1 we have a carpet which is old blue, with a silvery high light over it. This blue is deepened in the couch coverings and window scarfs, and lightened in the walls. Pillows of blue velvet, embroidered with silver threads, are tossed upon the couch, beside silk ones of silver gray. The woodwork and furniture are of silvery satinwood, and the electric-light fixtures are little pewter lanterns. The lamp of Tiffany glass on the table alone varies, with its rich tones of blue and green, the color scheme of the room.

It would be difficult to explain the reason why one instinctively combats the idea of flowered or figured walls in a bungalow. So many of them are built with wood paneling instead of plaster, and these are so simple and restful in effect, that it may be this fact has induced a feeling against the use of flowered papers.

Figured material, however, may be used delightfully with wooden walls, and is pictured in Fig. 2, an interior where the brown woodwork is offset by brocaded hangings in dull mahogany-red and white. Japanese baskets in black or dark-brown lacquer, and a few pieces of Japanese bronze, accentuate the scheme and assist in bringing the walls and hangings together. This room is very clean and rich in tone, and its carpet of neutral brown, "bungalow weave," does not interfere with its scheme of color.

There are many instances where it is important to keep the floor and side walls of a room absolutely neutral, and this is nearly always the case when a rich or striking figured material is used as drapery.



Fig. 4—This interior is finished in California redwood, acid-bleached



Fig. 5—Dining-room, showing archway with posts and buttresses, and with wide box-shelf, above which is a simple lattice grill



Fig. 6—Dining-room of Charles Parsons' bungalow, showing the Nouveau Art buffet

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By Katharine St. Clair



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While I would as a rule recommend the use of dull half-tones and softened shades of color in bungalow furnishings, there are some rooms that seem to call for a different treatment. The one pictured as Fig. 3 is one of these. Here we have a glow of rich and diversified coloring which well carries out this alternative.

This room has an ingle-nook fireplace, and the woodwork is treated to resemble teakwood. The walls between the beams and panels are a soft tobacco brown; one or two large chairs are upholstered in corduroy velvet of this color; the one shown in the photograph has a pillow of that delicious shade of old pink which holds a coppery tone. The lamp shade is of the same pink, and one chair is upholstered entirely with brocade in which this pink is mingled with silver threads. The note of pink runs through the entire furnishing of the room, and is softly and beautifully offset by the light dull brown of the draperies and walls. The rich blue of a large Cloisonné vase finds its counterpart in some of the figures of the Oriental rug on the floor; and although many colors are introduced, they are so selected and distributed that they blend in beautiful harmony.

The dining-room illustrated in Fig. 4 is absolutely simple in its treatment. Against the redwood paneling of its walls, curtains are hung of Japanese crêpe, having a pattern of clusters of purple grapes, with many green leaves on a white ground. The semi-diaphanous quality of this material makes it very effective when hung against the light. The rug on the floor is a neutral green; the buffet holds delightful bits of brass and copper.

In this clean little room every article has its decorative value. The purple and green curtains at its windows were selected because they showed up the brass and copper accessories most effectively, and because they contrast so charmingly with the redwood finish of the walls. It is simple in the extreme, but it is thoroughly successful.

Brown, that shades from a deep mahogany through the lighter tones to self-colored pongee, is a most effective coloring for a dining-room.

The walls of illustrations Figs. 5 and 6 are calcimined in a soft shade of brownish tan. This contrasts well with the chestnut stain of the woodwork. Curtains of a deeper shade of golden brown velour hang in the doorways, and there are scarfs of velour outlining the windows. Showing just beyond these velvet scarfs are others of silk pongee, and when sash-curtains are used at the windows they are of pongee.

It will readily be seen that these golden-brown stuffs, shimmering and rich, shading to the dull light tones of pongee, form an exquisite setting for the brass and copper vessels that are now so fashionable for dining-room use. An artist in his studio would arrange just such a background for his stuff.

A teakwood stand of Chinese carving, holding a brown lacquer jardinière, shows up beautifully in this room, the green of small palms or ferns being actually necessary to relieve the universal brown.

The materials that appeal to the imagination as appropriate for bungalows are raw silks and pongee for curtains, and these may be found in all of the dull half-tones that are so effective in a bungalow interior.

I have never liked net at the casement windows of a bungalow; nor is embroidered muslin appropriate. Such dainty materials, suggesting the furnishing of a boudoir, should be left for the cottage or the mansion; they decidedly fall outside of bungalow furnishings.

Such sturdy diaphanous white stuff as linen scrim, and even unassuming cheesecloth, I have seen used most effectively. In one very successful bungalow the woman who furnished it declared that none of her curtains cost her over seventeen cents a yard. She bought unbleached cotton by the bolt, and dyed it with her own hands the different beautiful colors that carried out the schemes of her rooms. The living-room, which was beamed and wainscoted with brown wood, was hung at its diamond-paned windows with some East India-looking stuff in a rich shade of orange. This proved to be the unbleached cotton goods, and as it corresponded precisely with the coloring of the plaster above her wainscot, and hung in beautiful folds, I did not see how she could have improved upon it at any price.

Her little dining-room had curtains in cold gray-green. Here the woodwork was stained silver-gray, and ferns in pewter dishes carried out the scheme.

Cushions of denim, in dull blue, brown and strong green, contrast well on a bungalow porch with the always acceptable Turkey red. On the outside of a bungalow a bit of brilliant color does wonders for the building, as its rustic finish is apt to look dull and uninteresting at times. A dim, and dull-looking bungalow may be made to show up at its best and to spring into real beauty by the addition of some graceful wicker lounging chairs that are cushioned with bright colors on its porch or in its pergola.



Burlap as a Bungalow Furnishing

By Catherine A. Jensen



THE recent movement for a return to the soil has laid a relentless though beneficent hold upon the city dweller, and it is hard to find a person with even a moderate income who does not show some symptom of the "garden germ" or the "bungalow bug" in either acute or incipient form.

That any, even a few, of these aspirants after having achieved what they longed for—a home in the country—should return to the cities, disappointed, seems regrettable and entirely unnecessary.

One of the errors made by these good people is that they take the whole matter too seriously; they cannot conceive how life can go on without all the multifarious things which incrust existence in the city—the very accessories which have rendered city life burdensome.

They insist on dragging with them into the free and fragrant country all the stuffy, stupid objects which for want of a better name have been aptly called "dust catchers," and by doing so make of themselves slaves to the dreadful Tyranny of Things. Fortunately the day of the omnipresent "tidy" is past. One can, in this year of grace, nineteen hundred and eleven, sit down upon a chair and be reasonably certain that on arising one has not a whole fancy-goods department hanging from his shoulders, neither does one run any great risk of being speared with the numerous pins used to "fasten" the aforementioned fancy-goods to their proper place; still, many of us can probably recall houses where, even at this present day, one could hardly find a space two inches square on either wall, dresser or table that was not littered with "ornaments."

Henry Ward Beecher once said that to be poor was not entirely without compensation; it certainly simplified both housecleaning and moving. Those words strike terror to our souls in proportion as we are burdened with this world's goods.

Still, we do not wish to divest ourselves entirely of the graces of civilized life as expressed in the softened contours of our home interiors; our senses would rebel at the almost cell-like simplicity of the bungalow prototype—so, by all means, let us have cushions and curtains and whatever else we actually require to render us comfortable during our truancy from high

civilization, but (here is the rock of our possible disaster), let us be wary of the textiles we select for the embellishment of our summer home.

We will consider for a moment the material of which it is constructed—the walls perhaps sandfinished or rough plaster, the woodwork, simple, unpolished, dull finished in stain and oil, showing the beautiful grain of the wood;

even the cheaper woods, like cypress, are so delicately marked that it seems a pity to cover them with draperies; or perhaps we also have a large open fireplace where logs may blaze on some unusually cool evening—a fireplace built of large cobbles and boulders.

How absurdly incongruous delicate lace curtains, silk scarfs and satin cushions would appear in such homely company.

Besides, the jovial sunshine which should be a welcome visitor in whatsoever nook he wished to linger, would make sad havoc with delicately tinted silks and satins. Our merry boys and girls as well as playful Rover and his friends—all eager to throw off city

restraint, would be deeply hurt to learn that couch-covers and curtains must be treated with deference and respect. All such annoying fabrics should be consigned to the cedar chest or to that limbo where "Keep Off the Grass" signs shall hobnob with other useless and obnoxious things.

However, as we are not rank iconoclasts we will suggest a substitute for those lares and penates which we have so ruthlessly destroyed.

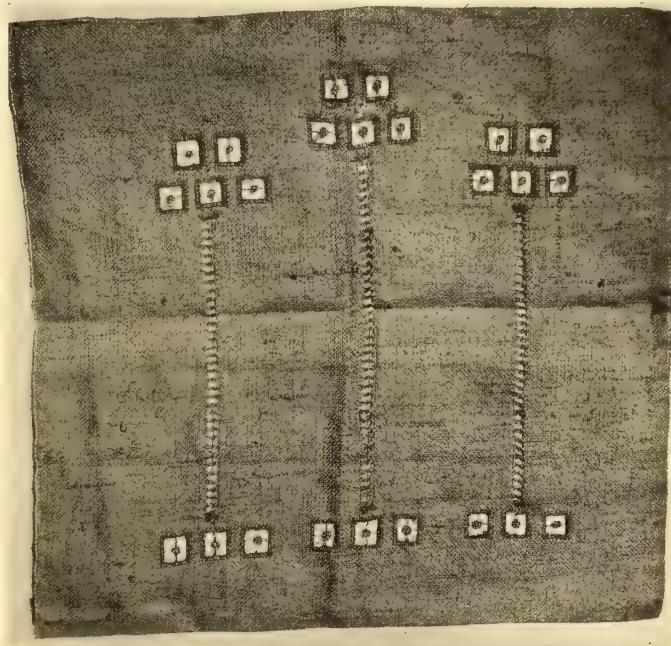
Burlap or one of its kindred textiles such as Monk's cloth or Russian crash makes excellent furnishing for bungalow purposes.

Let us whisper the next statement very low, lest we lose our reputation as good housekeepers—curtains, made of burlap, need never be washed; a good brushing now and then is all that is necessary.

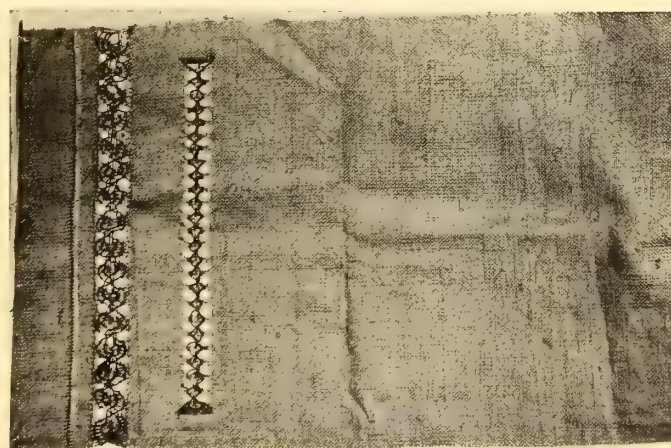
The natural color burlap is best, as it harmonizes with any

and every other color the room may contain; the sun also likes it, for, when time and opportunity offer, instead of fading the tone into a ghostly reminder of its younger days, the sunshine imparts a beautiful "burnt-orange" color to the material, rendering it more beautiful than ever.

The loose packing burlap, used by furniture dealers for



Fireside chair-pillow of canvas or linen



Library table-scarf

the safeguarding of their goods during transit, is by far the best for drapery purposes, owing to its open weave and consequent lighter and more transparent effect; it is also more pliable than the ordinary burlap; its price, too, is absurdly low—about eight or nine cents a yard, and at that rate my curtains have cost twenty-five cents per window.

The finished article can, however, be made as costly as desired by the addition of suitable needlework; that branch of the craft called "drawn-work" seems most suitable for this material, giving it an appearance of elegant simplicity; even the simplest hemstitching never looks cheap, but has a refinement peculiarly its own.

The method of making the first pillow will be apparent to anyone familiar with this kind of work. The squares are marked off in their required places by accurately counting the number of threads in and between them, using a soft crayon or pencil; then with mercerized cotton and a number 18 embroidery needle put the diagonal and diametric stitches across the square; the intervening spaces may again be divided, although for a small square the four intersecting lines will prove sufficient.

As the darning stitch which partly fills the center with the circular form requires an uneven number of spokes in the wheel in order to be continuous, one extra stitch or spoke must be added wherever the ensuing irregularity will be least conspicuous; the darning is begun in the center of the square, filling in as much or as little space as desired. After finishing the center, outline the square with button-hole stitch, the finished edge inward, then cut away the material back of the wheel design.

The squares may be arranged in any form desired, and connected by long lines of double hemstitching or slip-stitching.

The mercerized cotton should be of a contrasting color and the entire design backed by some brilliant material to add a touch of color to contrast with the neutral tones of the material.

The library table-scarf of which one end is shown in the illustration is decorated with two rows of Mexican drawn-work, one wide and one narrow, and finished with a deep hem.

The first step in doing the drawn-work is to carefully pull out as many threads from the fabric as the width of the pattern requires; this measurement is optional, of course. Hem-stitch both edges, and then tie the threads in the center in groups of five or six. The design consists of intersecting wave lines forming a number of ellipses, one inside the other, the number varying with the width of the pattern. At every intersection of one thread with another a slip-knot is made to keep the line in its proper place.

The geometrical sun-ray design used in decoration of the davenport pillow is one of the most easily made and effective stitches. The squares can be arranged in any geometrical grouping desired, all the squares to be of equal

size and enough threads drawn out around the squares to give a good openwork effect. A stitch to hold the thread is taken under the square, then the needle brought down to the edge of the square, three or four threads picked up and a hemstitch made, after which the thread is carried to the center of the square and brought under for the next hemstitch on the edge. Continue this till all four sides of the square is stitched, and a beautiful radiating design will be the result. Silk mercerized cotton or worsted of contrasting color should be used.

For portières this design done with raffia will make a most satisfactory decoration.

The butterfly design for the living-room curtains is worked very much in the same way as the square design on "Fireside-Chair" pillow; the squares, however, are considerably larger, in order to admit light, giving more airiness to the comparatively opaque material. The number and size of the squares should be regulated by the location of the room, whether sunny or on the north side of the house. Variety of design may be achieved by having groups of squares con-

taining one large and two small ones. Groups of five squares are also very decorative. As for the butterflies themselves, the center forming the body is darned back and forth to give a long form instead of round, as in the first pattern. Care should be taken not to make the body too large in proportion to the wings. The more spoke stitches there are put into the squares at the beginning the better; it will admit of making the wings larger and of a finer weave.

The wings are darned back and forth in the opposite direction from the stitches in the body. Care should be taken not to pull the thread too tight. The color of the body might be black, and the wings golden brown, peacock green and black. Another attractive combination is orange and black.

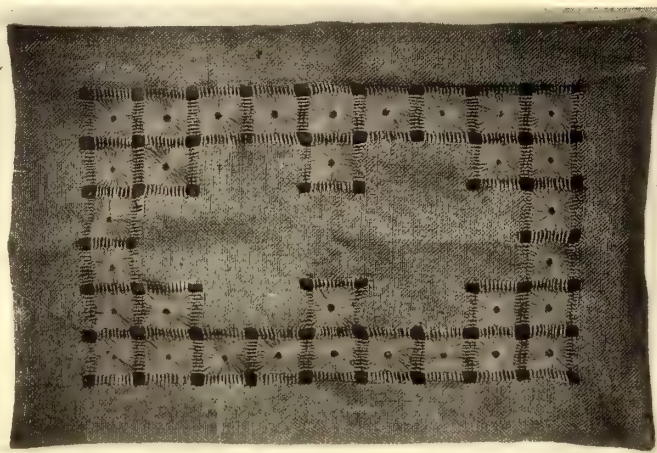
The square should be buttonholed in the medium shade where three colors are used, otherwise in golden brown.

Among the more expensive materials of this type of goods we find Caracas cloth—about fifty inches wide, costing sixty cents per yard. It has a sort of square weave, giving the "basket" effect, and is suitable for portières and heavy curtains; it comes in a charming "natural" color, more on a gray shade; besides being adaptable for drawn-work, it can be embroidered with heavy D. M. C. mercerized cotton, which can

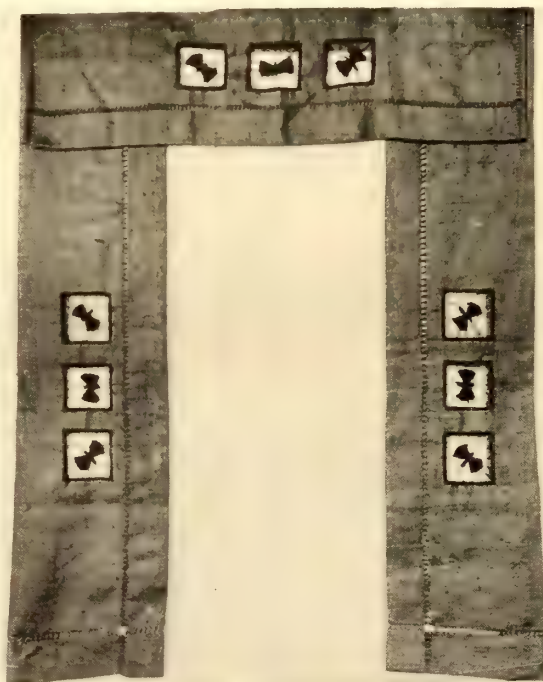
be had in all colors, or raffia may be used; the latter, with the addition of some large Indian beads, judiciously arranged, makes a very artistic draping.

Then there is Philippine cloth, which is more sheer than burlap and could be used to advantage on smaller windows, for which the other materials might be too cumbersome. Philippine cloth costs about forty cents per yard.

In order to have the floor covering in harmony with the rest of the furnishings a heavy cotton filler can be had which comes in solid colors and two-tone effects.



Davenport pillow-cover



Curtain for hall or living-room



The nasturtium climbs by means of its numerous leaf-stalks



The sweet pea is a tendril climber which unceasingly seeks support



The tacoma produces a twining stem and climbing roots

The Story of the Climbing Plants

By S. Leonard Bastin

TO the average plant the great problem of existence is that of finding room to grow at all. In the evolution of the different forms of vegetable life, all kinds of devices have been brought into being to make certain that a particular race shall secure the ascendancy in the struggle for a place. Perhaps no class of plants has been so successful in this direction as the large group of species which have adopted climbing methods to enable them to rise in the world. Long ago these aggressive vegetables have taken up a position which is quite unassailable. In the temperate regions it is the Honeysuckles and Brambles which have captured the hedgerows for their very own, while in the tropical jungles the giant Aroids and Asclepiads clamber to the summits of the highest trees. In themselves the climbing plants form a most interesting study, which owing to the wide distribution of the members of the group is more easily followed than that of almost any botanical course.

A feature which at once appeals to the student of the climbing vegetation is the variety of ways in which the plants realize their particular object. Nearly all the principal parts of the organism have been called into requisition in the different species and in not a few cases special processes have been evolved to aid the subject to rise. In a

general way all the climbing plants are able to develop very quickly—their growth in some cases being astonishingly rapid. By this means the plant is able to take advantage with the utmost promptitude of any support which may offer.

Perhaps the most widely adopted method of climbing is accomplished by means of the twining stem. It is observable in a large number of cases that weak-stemmed plants exhibit a tendency, more or less pronounced, to rise on some support. The ability to do so is largely due to a modified scheme of growth which has been called circumnutation. Darwin advanced the theory that the twining stem was but an advanced form of a phenomenon which was to be observed in practically every plant. The conception, although it is not universally accepted, is certainly worthy of serious attention. The student will be surprised to find, if he examines the stems of an assortment of plants closely, in how many instances a twisting of the stem has obviously taken place. This is at times to be seen even in the trunks of large trees, notably so in the case of the Yew. As a general rule the twining plants are not able to rise on a support except this is vertical or nearly so. A number of familiar examples of twining stems will occur to the mind of the most casual observer. Of these perhaps the Hop, the French Bean, the Convolvulus and the Honeysuckle are amongst the most



The tendrils of the Virginia creeper seek the dark



Clematis, a stalk-climber



Bean and hop



A twining clematis

striking instances. Certainly the most curious point about these plants which twist up supports by means of their stems is the constancy with which they will adhere to their peculiar mode of growth. Owing to this strange habit the twining species fall naturally into two classes from which there is no variation: those which twist from left to right like the hands of the clock, and those which travel in an opposite direction. Of the former the Hop is a good example, while of the latter there is no better instance than the Bean. Strangely enough, there are no possible means by which these twining plants may be coerced or caused to change the course which has been allotted to them. Just why they should be so constant to the one direction it must be admitted that no explanation can be offered.

A modified form of circumnutation is to be seen in the case of those plants which climb by means of their leaf-stalks. Of these we shall find excellent instances in the garden Tropaeolum and the several species of Clematis. As a general rule it is to be observed that the stalks of the foliage develop on ordinary lines until they come into

contact with any support. This irritation seems at once to bring into action a latent twisting tendency causing the stalk to twine itself around the object and thus secure a hold. Meanwhile the leaf itself carries out its normal duties without being in any way affected by the office which the petiole is performing. It is very often the case that the leaf-stalks of these plants twine around one another and in this way the subject is able to dispense with any outside help at all.

The root climbers form a most interesting group which by means of adventitious processes are able to rise with the greatest ease. One of the most common examples is that of the Ivy, a plant which produces an abundance of root-lets on the under side of its stems when occasion requires. These, owing to the minute hairs with which they are supplied, are able to adhere to surfaces offered by brickwork, or the trunks of trees. A curious feature of the Ivy shoots is the fact that they are endowed with the property known as negative heliotropism—that is, a tendency to grow away from the light. It will be realized that this characteristic causes the shoots to press closely against any support, and



Ampelopsis climbing by adhesive discs



The passion flower



Ivy climbing by roots

thus to retain the under side of the stem in contact with an object to which the roots can affix themselves. Another familiar example is the Tacoma, a plant classed with the Begonias, remarkable from the fact that not only does it produce quantities of climbing roots, but it also has a very pronounced twining stem. Thus when the situation is not favorable for one method of growth, the resourceful plant is always able to adopt the other mode of affixing itself.

It is clear that the thorns in many plants are useful as a protective measure, but in some instances it is found that these processes perform another office. Notably in the case of the Bramble (*Rubus*) and in some of the clambering Roses the prickles have been turned to account for the purpose of helping the plant to rise in the world. If these processes are examined it will be observed that the spines are of a curious hooked formation, such as would make it an easy matter for the shoot to become attached to any object. On occasion it is seen that the Bramble calls roots into action to help it to spread about. These are not adhesive, like the roots of the Ivy, and are only brought into service when a rooting medium is obtainable. Often enough a small quantity of vegetable mold will accumulate in the fork of a branch or between two rocks, and it is then that rootlets appear from the Bramble stem, and seize hold of the security offered.

Of the special processes which have been formed to meet the climbing needs of the plant the most strange are certainly the tendrils. These organs, which are really metamorphosed shoots, or altered parts of the leaf, at times seem as if they were endowed with something which is strangely like an intelligence. Some experiments conducted with the tendrils of a Pea plant showed that the organ grew out to a definite object with the greatest assurance. How the process could tell that the support was within reach, it is not at all easy to say. In a general way the tendril, right from its first appearance upon the scene, maintains an unceasing search for a support. This consists in a curious swaying movement just as if the plant knew that what it wanted to find called for a good deal of seeking before meeting with success.

One of the most striking plants to observe, which climbs by means of tendrils, is the Passion Flower (*Passiflora*). These subjects occur widely in America, and represent in all a large range of forms, most of them producing very splendid flowers, a fact which has caused them to be introduced as garden specimens all over the world. In their manner of attachment the *Passifloras* are very remarkable plants to watch. The tendrils which most of the species produce are very long and exceedingly sensitive. When the organ is in the highest state of its activity even the slight rubbing

of its under side with the finger will in a few seconds cause the tendril to incline inwards. If a support, such as a cane, is placed within reach of the process, a very short time will elapse before the object is encircled. As a rule the tendril will not be content with merely looping itself once around the support, but in order to make quite sure that there can be no slipping away, doubles or trebles the circles. Now comes about a very curious change in the behavior of the organ. If the tendril is closely watched it will be seen that a small crank-like process is formed; this, it may be noted, continues to make complete revolutions, swinging downwards and upwards with the greatest regularity. As this takes place the tendril is naturally coiled on either side of the crank portion, in one direction on one side and in an opposite direction on the other. Finally the coiling process slows down and at last ceases, and then the crank-like part appears as a straight section placed between two spiral portions. At times it will be noted that the tendrils develop several series of alternating spirals, and thus there may be more than one straight section to be observed. The purpose which the spiral conformation of the tendril serves is clear. In a general way we may be sure that it will tend to strengthen the organ, while certainly it allows a give in rough weather, and in this way prevents the plant from being torn away from its moorings.

The tendrils of the Virginia Creeper offer an advanced form of the particular process. At the end of these organs are small sucker-like attachments which are able to adhere to slightly roughened surfaces. By a marvelous provision these tendrils are endowed with a tendency to negative heliotropism, which causes them always to grow to the dark crevices, where, of course, they are much more likely to obtain a hold than would be the case out in the open. Perhaps even more remarkable are the little discs which are produced so abundantly by the *Ampelopsis*. The under side of these, if examined under the microscope, is seen to be thickly covered with very small hairs. Thus the plant is well able to climb even up a perpendicular wall, for the small cilia enter the composition of the brickwork and secure a very firm hold. The grip thus obtained is very secure—so much so that the discs continue to adhere even after the plant is dead. As much as a pound in weight has been suspended from one disc without causing a cleavage. As in the case of the Ivy, it is seen that the shoots of the *Ampelopsis* tend to grow away from the light, and in this way bring the suckers into contact with the support. Indeed, the *Ampelopsis* must be regarded as one of the most interesting climbers in the world, albeit it is such a common garden subject that few people have perhaps ever given a thought to its many and diversified wonders.





The old Bunk House made into a full-grown cottage

“The Bunk,” Kennebunkport, Maine

By W. H. P. Clark



HE “Bunk,” built for the needs and comforts of bachelor days and ways, by gradual shifting of partitions and by additions has grown into a cottage.

It was first built for the housing of boats and as a place for “bunking.” It is placed on the Kennebunk River bank, where

the channel runs near it, and where there is a small cove for the mooring of sail-boats. The bank is edged with willows and wild roses.

When the Bunk was first built it was looked upon with frank contempt by the natives; it was “too low to the ground,” the front faced the river instead of the river “road,” and it was shingled like their barns. The water-supply was from the roof, with gin-pipes painted white for storage.

The original Bunk had on the ground floor a large room. On the end toward the street was an entrance-porch which was half the width of the building, and a “galley” with bunks along one side, a stove, and a “hurricane.” The length of the building was fixed by the length of a shell which was hung from the ceiling and which obtruded its nose into the galley, being some thirty odd feet long. On the river end of the building was a veranda and a bridge to a pier on the channel’s edge, so

that boats could be got off at the lowest tide. The space above the roof consisted of one large room reached by companionway steps fitted with brass step-plates. This was strung with hammocks, not from the “rind of the hammack tree,” but of canvas, battens, and clews. The salt air from the near-by ocean, the kerosene of the “hurricane,” the tarred clews and the sound of the rote, gave these bunking quarters a genuine flavor of the deep sea.

Turning from the river road now, we approach the Bunk through a rustic gate, almost concealed by wild rose-bushes, and the path spread with white beach gravel is bordered on either side by perennials. Here bachelor’s-buttons give their touch of color, there poppies sway in the summer wind, and a fringe of asters yields promise of autumn flowering.

There is something in the very entrance-porch, with its flat stones, cement laid, that suggests hospitality, and one feels certain that the lifting of the brass knocker will bring its welcoming response.

The door opens into a small reception-hall, whose harmony of color immediately attracts; then through a

wide opening one enters the living-room, with high windows facing north, and there are glimpses of glowing color from the window-boxes outside. On the left is the staircase



Upper and lower floor plans

shown in the photograph. The balusters, some hundred and fifty years old, were taken from the Prescott Mansion at Newcastle, New Hampshire, when it was torn down about twenty years ago. On the wall hangs a quadrant, used in 1835 on the old clipper ship *Rasselas*, Stephen Jarvis master. On the piano is open music, and a violin just laid down, for both the wife and daughter have marked talent, and music is one of the many charms of the Bunk.

Beyond the staircase is a ten-foot opening into the other portion of the living-room, with windows on three sides, and the fireplace at one end, with an old-fashioned settle, and the leathern buckets, dating back to 1825, speak of the owner's New England ancestry. The fireplace is of Philadelphia face brick and the hearth is laid with red unglazed tiles.

This room is paneled with wide, unplanned spruce boards, and the ceiling beams are cased with the same material, and they are stained a warm gray. The ceiling between the beams and in the diamond-shaped panels over the fire-

place is plastered with cement plaster with a rough finish. The mantel, window-casings, stair-treads, and floor-boards are of red birch, oiled and waxed. The floor is a much darker gray than the walls. Some of the panels are doors to closets where are kept canoe paddles, tennis racquets, golf clubs, croquet mallets, and the many things that tell of the varied summer life of the family.

Wide double-sash doors open from the living-room on to a covered veranda, one end of which shows in one of the outside views. The roof is supported by rustic posts and, like the trimmings, they are painted ivory white. The rugs, tables, and cushioned chairs make a charming outdoor room where an early caller may find the family at breakfast, and where the dog "Rascal,"

hesitating between his loyalty to the family and his longing for a morning swim in the river, barks his welcome.

Kaleidoscopic are the pictures that one sees from the veranda at low tide of early morning, when the river is a narrow thread of blue, scarce moving between the dull browns of the flats, where a solitary clamdigger gives the



One of the quaint interiors



The brick fireplace



An old-fashioned walk

only bit of life, and as the tide comes in new scenes appear from the clubhouse beyond, from the creek which recalls the old Indian massacre, and from the "wading-place" where the Indians had their tents, canoes and launches. For flash of paddles has succeeded the steady stroke of oar, and swift motor-boats churn the water into white foam. But there is still the glimpse of old wharves in the distance and weather-beaten ways that tell of shipbuilding days, when a century ago a granduncle of the owner was collector of the port.

Beyond is the spire of the village church, gleaming white against the flaming colors that flood the sky as the sun loses itself in the water in the place, to which the Indians, moved as we are by its glory, gave some unpronounceable name that means Sunset Cove.

The living-room was refinished last spring. As the old ground floor was a little low-studded, being some inches less than seven feet in the clear, the entire second story was raised so as to get in the beams shown in the photograph, and with a height of eight feet from the bottom of these to the floor. Over this living-room are three bedrooms and a bathroom. In the one-story wing, which is at right angles with the old Bunk and the part described, is the dining-room, which finishes up into the roof. The walls above the

dado of painted duck are covered with tapestry paper; opposite the fireplace and mirror shown in the photograph is a china-closet with sash doors having diamond-shaped lights. Here one notices especially a dining-table darkened with passing of time, around which gathered members of the family in days gone by in one of the old historical Lexington houses, and at which Hancock and Adams were frequent guests, and old pewter and china that have been in the family since Revolutionary days.

Beyond is the kitchen, a good-sized pantry, shed-room, maid's bedroom and a bathroom. There is a small cellar under a portion of the living-room. The outside of the building is shingled, the wall shingles are stained a gray-brown color, the roof shingles left to the weather. The outside chimney, which shows in the photograph with a dove-cote, is laid with common bricks with bench headers, flemish bond. The tops of the chimneys are cemented. The sashes are painted white and there are casement windows throughout. The cottage is now lighted by electricity and supplied with town water.

The Bunk has stood a silent sentinel to the passing of the birch-bark canoe, the tholl-pin dories, the "hurricane," the gin-pipes, and the flannel shirt, while the cottage will stand to the coming of the new order of paraphernalia.

The Care of Milk in the Home



MILK is a perishable food. The length of time it remains sweet depends largely on the care it receives after delivery to the consumer. Keep it clean, cool and covered and it should remain sweet during the twenty-four hours in which it should be used.

Germs, to grow, require three important things, namely: food, moisture and moderate heat. Milk furnishes food and moisture and the room air furnishes the necessary warmth. Milk is therefore a very good medium for the growth of germs, if not kept cold.

Dust, dirt and flies are the carriers through which germs get into milk. Milk, therefore, should be protected from dust, dirt and flies.

Remember: the most important rule about the care of milk is: keep the milk clean, keep it cold, and keep it covered.

DISPOSITION

Do not allow milk to stand on the dumb-waiter, stoop, window-sill or other places where the driver leaves it. Place it promptly in the ice box.

ICE BOXES

Keep your ice box cold. Keep it well stocked with ice. You cannot obtain good refrigeration without a well-filled ice compartment.

ODORS

Keep your refrigerator clean. Keep it free from disagreeable odors. Milk absorbs unpleasant odors very readily. Strong-smelling foods, such as onions, garlic and strong cheeses, should not be kept in the same compartment with milk or butter.

HOME-MADE ICE BOXES

Where ice boxes are not available, some makeshift arrangement should be provided. The Department of Health has recommended the following:

"An emergency ice box may be constructed by placing a piece of ice in a covered tin pail or bucket having a hole in the bottom. An old leaky pail will answer.

"Place the bottles of milk in direct contact with the ice, and cover the whole with a heavy cloth or blanket. The pail may be kept in the sink."

TEMPERATURE

The Sanitary Code provides that milk should be kept at 50 degrees F. or lower. Milk purchased from stores should be delivered in a clean condition and at or below the required temperature.

BABY'S MILK

Keep the milk prepared for infant feeding in nursery bottles in the ice box until just before using. The practice of heating the baby's milk at evening and keeping it warm until the night or early morning feeding is very bad. The heat thus maintained is most favorable to the growth of germs.





An interesting California house which suggests the Dutch Colonial style of architecture

A Handsome and Practical California Home

By Charles Alma Byers



SO much has been written about its bungalows, that the Easterner might well be excused for presuming that Southern California possesses no other style of homes. The presumption, however, would be erroneous, for the architecture of Southern California homes is probably of a more varied character than is that of any other particular locality. In fact, it borrows from architects everywhere, and no matter what the style may be, it is blended into its new setting of semi-tropical verdure with an appropriateness that causes the importation to seem as if it had known no other environs.

The attractive home illustrated by the accompanying photographs, whose architecture is a suggestion of the so-called Dutch Colonial, is located near Los Angeles, California, and was designed and built by Arthur Rolland Kelly, of that city. It contains eight principal rooms—reception-room, living-room, dining-room and kitchen, besides the hall and a screened porch on the first floor, and four sleeping-rooms, as well as a sleeping-porch and two bath-

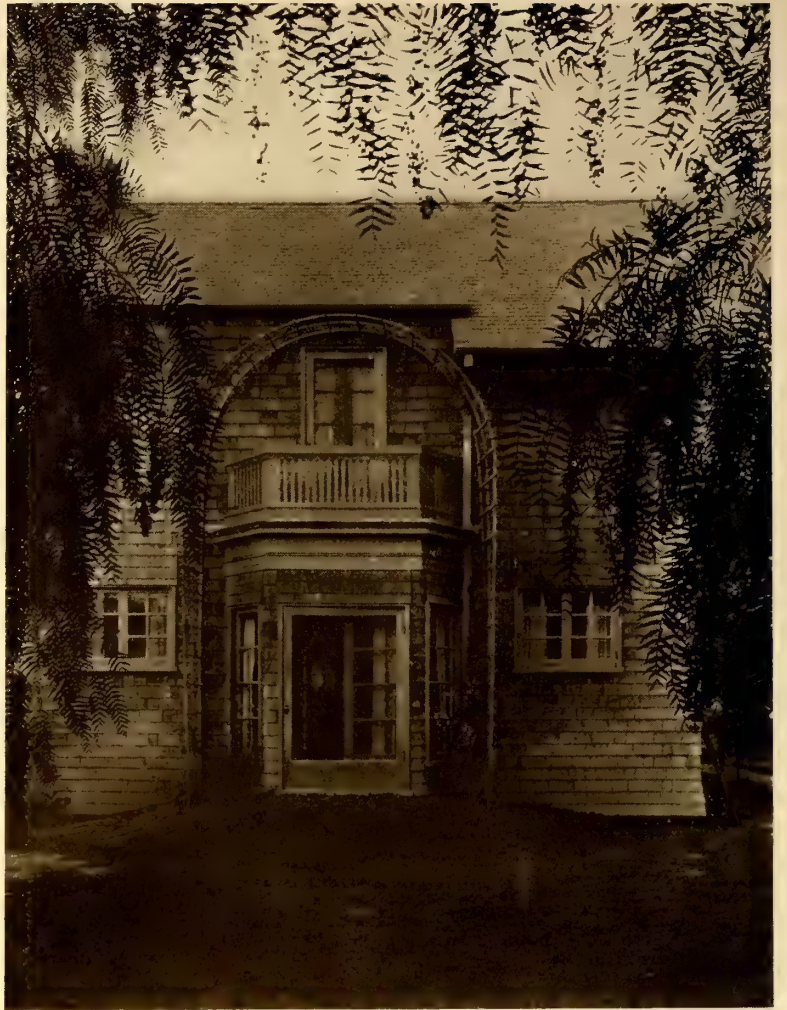
rooms on the second floor. It is the home of F. E. Naftzger, Esq., and the approximate cost of the house was \$4,500.

The house is of substantial construction throughout, as is attested by its general exterior appearance, and its structural lines are particularly harmonious and pleasing. The irregularity of the roof lines, and absence of gable projections, is very effective, giving the creation a distinctive individuality rarely found in a house of this kind. The shingle siding is well laid, and by giving the redwood shingles a heavy coat of oil, with just a trace of dark russet stain, a very striking color scheme is produced—into which the natural color of the brickwork blends harmoniously. The old-fashioned chimney, with its gracefully curved lines, is of well-considered proportions, and, aided by the brickwork of the front steps, does much toward completing an unusually artistic structure.

Among the illustrations are two detail views well worthy of especial mention. One shows the front entrance, the other the rear. In the former is illustrated an interesting combining of brickwork, of which the steps are formed, and concrete, which constitutes the pillars. The roof supported



View of the front entrance which shows the steps formed of brickwork and the pillars of concrete. The roof is supported by the pillars which shelter the front door, and above the latter are three small windows which provide light to the hall and the stairway



The rear entrance, distinguished by its novel plan, which comprises a very effective arrangement of French doors and windows opening into the rear, above which is a small Juliet balcony. The trellised arch is intended as a support for climbing roses.



The living-room, showing the fireplace with its broad hearth, a mantel of simple design, and built-in bookcases arranged on each side of the fireplace and to the right of the French doors

by these pillars, which shelter the front door, is gracefully curved, and above it are three small windows which furnish light to the hall and the stairway. The latter view shows a very pretty arrangement of French doors and windows opening into the rear garden, above which is a small Juliet balcony. The whole arrangement is arched by a trellis for climbing roses, and when the vines shall have grown sufficiently a very pretty picture will be produced.

The windows throughout are comparatively small and plain; but the number makes up for what they lack in size, and their plainness constitutes but a well-considered part of the happy *en semble* of simplicity. The windows, for the main part, are given no protection of projecting eaves, an uncommon precedent, and therefore have necessitated extra precaution on the part of the builder that they be well fitted, so as to withstand beating rains.

Although the general scheme of simplicity is maintained, the interior of the house possesses some very appreciable features in the way of built-in bookcases, window-seats, wardrobes, and so forth. One of the illustrations gives a view of the hall and the stairway from the living-room which shows an unusually ingeniously arranged bookcase, built into the side of the stairway. Although the house is provided



The dining-room, showing the fireplace



The hall and the stairway, as seen from the dining-room



The rear entrance, from the inside

with furnace heat, both the dining-room and living-room contain fireplaces. The one in the living-room is particularly interesting, possessing a broad hearth and a mantel of simple, effective design. Built-in bookcases are arranged on each side of the fireplace, as well as on each side of the French doors that lead into the rear garden.

The woodwork of the living-room, reception-room and hall is treated to resemble fumed oak, and the walls are tinted in colors varying from buff to light chocolate. The dining-room woodwork is enameled, like that of the sleeping-rooms, and the walls are papered. Hardwood floors are used throughout the first-floor rooms.

On a level with the best features devised for perfecting this interesting home is the one of grounds. The Southern Californian or semi-tropical characteristics shown somewhat profusely in the trees and plants about the place seem to draw out the flavor of the old Dutch Colonial style of the architecture.

All are harmoniously related in producing a house whose lines are amply reserved and a setting which is neatly appropriate without any imposing order of botany. The fine trees stand in well with the noble points of the design of this handsome and capacious exterior.

Refinishing Old Furniture

By Robert Searn



COLLECTING old furniture is not necessarily expensive, if one knows where to look for bargains. Many enthusiasts have joined in its search, and it is safe to say that almost every old attic in the country has been ransacked at least once by treasure-seekers—either dealers or collectors. As a result, many really fine pieces of old mahogany have been brought to light, and after refinishing, are occupying places of honor and distinction once more.

It is safe to assume that when you have found your old piece, it will be suffering from general instability. The first thing to do is to go over it very carefully, and reglue all the loose joints. Scrape off the old glue, put on fresh, and clamp the parts together tightly, with cabinet-maker's clamps, and leave them till the new glue is thoroughly dry. Scrape off the surplus glue that is forced out of the joint. It is well to put on new casters, and if the piece is heavy the new ball-bearing casters will be found much better than the ordinary kind. The old brasses, if you are fortunate enough to secure them, should be removed and repolished. If the piece has wooden knobs, as sometimes happens, they may be replaced with reproductions of the old-time brasses, that are to be found in some of the larger hardware stores. Glass knobs are worth while, and should be retained. If the piece is a bureau or a desk, the drawers will generally be loose, and the runs badly worn. The old runs should be removed, and new ones, of hard wood, put in their place.

The draw slides should be planed off, and thin strips of hard wood screwed on. The drawers will pull easier if the runs and drawer slides are rubbed with a piece of tallow, paraffin, or soap.

It may also be necessary to replace broken or missing parts. Practice is necessary to enable one to do this work neatly; the only suggestion that I have to offer in this connection is that in order to secure well-seasoned wood for this purpose I visited the yard of a firm that makes a business of tearing down old buildings, and, for almost nothing, secured several good mahogany panels.

After all repairs have been made, the next step is to remove the old finish. There is always varnish to scrape off, sometimes paint; one of the best tables I ever found was hiding under four thick coats of paint. Boiling water and washing-powder applied with a stiff brush may sometimes be used to remove old finish, but this method is not recommended, for the reason that the hot water may loosen the glue in the joints, and if used on a veneered piece, will cause the veneer to swell, and to separate from its base. There is always danger that the washing-powder will bleach the wood, turning mahogany, for instance, to a dirty yellow color. There are various brands of paint remover that may be used. These do very well, if used with care, though I have found them rather messy and unpleasant to use. The remover is brushed on, allowed to stand for a moment, and then the finish is scraped off with a putty knife. It is well to apply the remover a second time, and to wipe off the last vestige of the old finish with a cloth, or better still, with a handful of steel wool, such as the painters use. After using varnish remover, it is wise to wash the surface with turpentine, or benzine, and allow it to dry thoroughly, before applying new finish.

Though the process takes much longer, I have found the best way to remove old finish is to scrape it off with a well-sharpened putty knife. There is a knack in sharpening a

scraper properly. It is easy to describe, but not at all easy to do. The best way is to get a good-natured painter or cabinet-maker to give you a lesson. The idea is to file the edge of the scraper square across the end, in such a way that a burr edge is turned over. It is this burr edge that does the cutting, and when it is flattened back it is again turned to a cutting position with the point of a steel burr-nisher. Sometimes broken glass is used, but it is not as good as a steel scraper. The important thing to remember, is to take off every particle of finish, down to the bare wood.

After scraping, it will often be found that the wood of the different parts of the piece are of different shades. This is sure to be the case if repairs have been made. In order to darken mahogany, dissolve five cents' worth of permanganate of potash in boiling water. This will make a quart or more. Apply with a brush to the light portions of the wood. It is well, in order to avoid darkening the wood too much, to use the solution very dilute, and apply it several times, until the wood is the exact shade desired. The permanganate is not a stain. It seems to burn the wood, and must not be used too strong.

There are two methods of refinishing. A bureau or desk may have a shellac finish, rubbed down, while a table-top, which may have hot or wet dishes placed upon it, should be rubbed to a hard oil finish, which will show no marks. To get the hard oil finish, brush on a mixture of raw linseed oil and turpentine, mixed in the proportion of two parts of the oil to one part of the turpentine. Allow this to stand for a few minutes, then rub off the surplus oil with a clean cloth. Repeat this process several times, at intervals, being careful not to get too much oil on any particular part of the table, or that part will sweat, as it is called, and must be rescraped. After several coats of the oil have been applied, and they have had a chance to dry in slightly, go over the table-top with an iron weight, wrapped in a soft cloth, and rub to a polish. This will not come immediately, but patient work, and an occasional rub with an oily cloth, after the table has been put in use, will eventually give the desired result. Table-legs, and pieces of furniture not exposed to heat and moisture, may be finished in shellac. First apply a coat of oil, as described for the hard oil finish. Then go over the piece with a thin coat of white shellac. When the shellac is dry, sandpaper lightly with fine sandpaper. This will, of course, remove most of the shellac, except what has gone into the inequalities of the wood. Then put on another coat of shellac, rubbing down as before, until four or five coats have been put on, and rubbed down. For the last rub-down, use powdered rotten-stone and oil, applying it with a piece of haircloth. Rub only hard enough to kill the gloss of the shellac, and to secure the dull satiny finish that is so pleasing. Rub off the surplus oil and rotten-stone with a soft cloth. Some of the paint companies sell lacquers that give a dull finish without rubbing, but as I have had no experience in their use, I cannot say how they would work out.

The directions given apply to refinishing old mahogany. I prefer to finish each piece in the color of its natural wood. It is sometimes necessary to finish a piece of light-colored wood to represent mahogany. To do this, apply a wood dye or a penetrating oil stain. Do not use varnish stain. This does not go into the grain of the wood, but merely forms a colored coat on the surface. After applying oil stain, wait a few minutes for it to strike into the wood, and then wipe off any surplus that remains on the surface.

An Experiment Station for Bird Culture

By Omar H. Sample



OUR first census of birds, taken a few years ago by the Director of the New York Botanical Garden, showed an average decrease in the number of birds of forty-six per cent. in fifteen years. And the percentage loss will naturally grow as our forests decrease. Our ordinary operations

of forestry and agriculture are bringing with them a steady decrease in the number of permanent, non-migrating birds. Our noblest song-birds, the majority of them insect-eaters, are rendered homeless on the farm because they make their nests in shrubs, bushes and hedges, and the modern farmer must clear away the undergrowth. Even the titmouse is on the decrease, for he houses in the trunks of hollow trees, and modern forestry and gardening cannot tolerate hollow or dying tree-trunks. The unpaid and faithful guardians of the crops are thus ostracized from their natural occupations.

The wanton slaughter of certain of our birds for profit or alleged "sport" is gradually being checked by a strong public sentiment and some legislation. The League of American Sportsmen and the Audubon societies are slowly

enlisting the aid of all good citizens in putting legal barriers against such useless destruction of bird life as the killing of song-birds for food, or the slaughtering of the egret to plume milady's hat, but we have yet to learn that we must restore to the birds by artificial means what our modern systems of cultivation are taking away.

In Germany a five-hundred-acre experiment station for the study and preservation of bird life has been established to show the people how to restore to the feathered citizens of the forests the comforts and conveniences of which modern civilization is gradually robbing them. The federal states of Germany are not only protecting 152 species of birds by law, but are growing nesting-hedges for them; cultivating, pruning, and grafting nesting-bushes; hollowing out natural nesting-holes; building nesting-boxes in the trees; fashioning natural and convenient

winter feeding-houses; and protecting the birds from their carnivorous enemies. Baron von Berlepsch, who has turned his great ancestral estate at Seebach into an experiment station for bird culture, is the father of the modern science of bird protection, and we may learn much from a study of the methods employed for encouraging bird life at Seebach.



Display-room of nesting-box factory



"The Hessian Food House"—the standard outdoor dining-room for birds used at Seebach



The Old Castle of the Seebach Estate, now used by the Experiment Station for Bird Protection



A maple bearing six inhabited nesting-boxes for birds



Hawthorn bush grown and pruned as a nesting-tree. Three nests on one bush



An old linden with limbs cut into whorls for nest-sites

On this unique bird farm the convenience and comfort of the feathered tenants have everywhere been considered in developing the grounds. Nineteen acres of the estate in the neighborhood of the castle are laid out as a park; sixty acres are planted with thickets of shrubbery, chiefly of poplar and willow, for nesting-places for the birds. The bushes are specially pruned or tied in clusters to accommodate the nesting habits of the bird. The rest of the estate is in forest. A lake near the castle furnishes an attractive residence for water-birds, and a little brook bordered with nest-filled shelter thickets winds through the grounds.

The most essential part of the work of bird protection is to provide nesting-places, and over two thousand nesting-boxes are maintained and fitted out in the style preferred by the various bird families. Baron von Berlepsch is the inventor of a most successful type of bird-box that he developed after a detailed study of several hundred woodpecker holes. He discovered that all of the woodpecker houses were built on the same plan, and conceived the idea of imitating their construction by the hand of man. He copied with infinite care the circular opening, always wisely inclining upward to keep out the rain, and always running down into the wood into a deep bottle-shaped cavity, and ending in the same pointed bowl. At first he fashioned the boxes laboriously by hand, but the demand for them grew so rapidly that a manufacturer was interested and elaborate machinery devised to manufacture the boxes in commercial quantities. There are now three or four factories making

them, and it was found necessary to trade-mark them to prevent spurious imitations from getting on the market and cheating the birds. For the feathered tenants are more particular than the city apartment-hunter, and if the box is not furnished exactly right, with just the right quantity of sawdust in the bottom, it will not be inhabited. It must be hung at just the right height from the ground, and inclined a little toward the opening, away from the wind. The Grand Duchy of Hesse, after investigating the Baron's work, has installed 9,300 nesting-boxes, and the Prussian Board of Agriculture has issued a guide for the protection of birds. The City of Hamburg has a keeper of birds, appointed by the state, and his services are at the call of citizens who may want advice or assistance.

The birds on the Seebach estate have on more than one occasion demonstrated their efficiency in protecting plant life. A wooded tract adjoining the von Berlepsch estate was one spring stripped bare of foliage by a moth pest, but the Baron's woods, with their 2,000 nesting-boxes, were untouched. While whole neighborhoods suffered from caterpillars in their orchards, trees with nesting-boxes were unmolested. Fruit-growers in the neighboring villages were quick to learn their lesson, and now nearly every garden and orchard in the surrounding country has its nesting-boxes.

Extensive shrubbery plantations have been made at Seebach solely for nesting-places for the birds that house in the open. The bushes that branch out strongly after pruning, that keep away vermin by their thorns, and thrive well



A clump of nesting-bushes containing eight nests, favorably placed for feathered tenants



A nesting-hedge of small bushes pruned into nest-holders, and nesting-box on a tree

in shady places, are especially favored by the feathered citizens of the forests. The whitethorn, hornbeam, common beech, gooseberry, honeysuckle, and red cedar are the most successfully used for nesting-copses. The ground for one of the nesting-hedges is carefully prepared, and the shrubs systematically and severely pruned at intervals. The new growth will form whorl-shaped ramifications that serve as sites for nests. These whorl-shaped sprouts are cut back annually, and made to ramify still more. Between these "stock bushes" the dense growth of the hedge rises, and soon forms a compact thicket. One of these shelter-hedges on the estate has an average of one nest for every yard and a half.

Winter feeding is second only to housing in making life sufferable to the birds in severe weather. After eleven years of study, the Baron developed three practical feeding devices—the food tree, the food house and the food "bell."

The food tree is made by simply sprinkling a carefully prepared mixture over the branches of one of the coniferous trees. This is man's imitation of a tree covered with a natural meal of insects' eggs and larvæ. The most popular menu for the food tree the Baron found to be a compound of meat and white bread, ground, hemp, maw, poppy flower, white millet, oats, dried elderberries, sunflower seeds and ants' eggs. To this is added about one and a half times as much beef or mutton suet. The mixture is poured on the tree hot.

A similar winter dining-room for birds is the Hessian

Food House, consisting essentially of two small tables placed beneath a roof mounted on four small posts. The lower table is merely to attract the feathered diners and induce them to notice the upper one, which contains most of the food. A strip of glass runs around the edge of the upper table, protecting it from the weather without hiding it from view. The table is spread with any kind of bird food or seed, of which hemp is always the most acceptable.

The "Food Bell" is an ingenious mechanical device that serves out food automatically. An inverted glass jar or bottle holds the supply of seed, which is fed through a tube to a bowl, or bell, below. The lower edge of the tube must extend just below the upper edge of the food dish. The apparatus works properly only when this construction is very carefully adjusted.

The Experiment Station at Seebach is maintained as an object lesson and a school of instruction to all who want to learn of the practical work of bird protection.

The Prussian government has directed its Forestry Commissions to protect as far as possible all plantations serving as bird-shelters and, where ground is allotted, to have new shelters planted and nesting-boxes hung. The Hungarian government sent a trained investigator to Seebach to study methods of bird culture, and is now supplying nesting-boxes to its state forests of five million acres. We may learn from the work of this new kind of experiment station that the protection of bird life goes hand in hand with forest conservation, and is only one degree less important.

The Wonderful Mechanism of the Watch



FEW pieces of machinery show more marvelous features than that of the watch. As a general proposition it may be stated that a watch is the smallest, most delicate instrument of the same number of parts that has ever been devised. About one hundred and seventy-five different pieces of

material enter into its construction, and upward of twenty-four hundred separate operations are comprised in its manufacture.

Certain of the facts connected with its performance are almost incredible, when considered as a whole. A blacksmith strikes several hundred blows on his anvil in a day and, as a matter of course, is glad when Sunday comes; but the roller jewel of a watch makes every day—and day after day—432,000 impacts against the fork, or 157,680,000 blows during the course of a year, without stop or rest—or some 3,153,600,000 blows during the space of twenty years, the period for which a watch is usually guaranteed to keep good time.

But the wonder of it does not cease here. It has been calculated that the power that moves the watch is equivalent to only four times the force used in a flea's jump. The watch-power is, therefore, what might be termed the equivalent of a four flea-power. One horse-power would suffice to operate 270,000,000 watches.

Furthermore, the balance-wheel of a watch is moved by this four flea-power one and forty-three one-hundredths inches with each vibration, or $3,558\frac{3}{4}$ miles continuously in one year.

Not much oil is required to lubricate the little machine on its 3,500-mile run. It takes only one-tenth of a drop of oil to oil the entire machinery of a year's service.

It may be news to many that the watch of the railroad man is as necessary in modern railroading as the air-brake.

Without accurate timekeeping there would probably be more accidents than if there were no air-brakes. The train-despatcher starts a train at a certain time; he halts it at certain stations at certain times; he sidetracks it for a period of varying length; the watch of the conductor on the sidetracked train must agree with the watch of the conductor on the express to which he had to give way; each station-master along the road checks the time of every train that stops or flies past.

On one great line about 5,000 watches, worth on an average \$25 apiece (a low estimate), are used. If we take into consideration the number of watches that are used on other roads throughout the country, it is evident that the value must run up into hundreds of thousands of dollars.

In order that the watch may be kept up to a regular standard, it must be inspected regularly. There is not only a general time inspector on most railroads, but a staff of local inspectors who are placed along the road at convenient points, and to whom the men may resort when they wish to compare their time with the standard time at that place. Once every two weeks the railroad man submits his watch to such an inspector (usually a jeweler or watchmaker by profession). The inspector gives his expert opinion on the condition of the timepiece. If it needs cleaning, he says so and does it; if it is fast or slow, he regulates it, and not until it is running with sufficient accuracy is it allowed to escape from his care. A watch's record is kept as if it were a thief. So far as repairing goes, the railroad man is under no compulsion. He need not hand over his watch to any particular watchmaker, or inspector, for repair, but he can give it to any watchmaker in whom he has confidence. It must, however, be submitted to the inspector before it can be used in actual service. That no favoritism is shown in the matter of watches is evident in the fact that no less than eight different manufacturers supply railroad watches.

The Value of Hedges to the Home Grounds

By Ida D. Bennett



HERE are few places—suburban, country or village, but what are benefited by a length of hedging in some part of the premises. The only exception which occurs to me is a town lot where the entire area is laid to sod and all division fences and lines are obliterated or marked by a high wall or fence. In the ordinary home grounds of a few rods in extent, or of as many acres, more or less space is devoted to a vegetable garden and to a flower garden of greater or less extent. It is always desirable to shut off the kitchen garden from the remainder of the grounds by a screen of some sort, and what is more satisfactory than a hedge of blooming plants or of evergreen shrubs? The flower garden, also, is far more satisfactory if shielded by a hedge of some sort, as privacy here is apt to be one of the chief charms.

The service part of the house, especially the clothes-yard and back kitchen steps should always be screened in some manner—either by hedge, shrubbery, high wall or lattice covered with vines.

A hedge of blooming plants is always fascinating in its season of bloom and is an exceedingly practical way of affording seclusion, as it grows in value and beauty year by year. If in addition to its flowers it possesses the added advantage of evergreen foliage, handsomely colored bark or ornamental fruit, its value is much increased.

We are all familiar with the common privet so much used for hedges, but there are several less well-known forms which are far finer. The Japanese Privet holds its foliage the greater part of the winter and the leaves are large and handsome, much resembling those of the lilac. The Chinese Privet also has broader foliage than the common privet and a lighter color; it is also of very free habit, standing much clipping.

But for early spring effect there is nothing which equals in gorgeous coloring the Japan Quince-Cydonia. The rose-colored form was much more common a few years ago than at the present time, few gardens being without at least one specimen. As a bush it is somewhat straggling and awkward in effect, but when covered with its wealth of lovely flowers in early May it is beautiful indeed and as a hedge-plant leaves little to be desired. Grown closely together in rows, all faults of growth are eliminated and one sees only its beauties.

An odd and unusual hedge may be achieved by the use of the dwarf Horse Chestnut, *Æsculus Paviflora*, which, in July, is covered by the characteristic upright spikes of white blossoms peculiar to the Horse Chestnut. Anyone who is familiar with that tree when loaded with its magnificent spikes of flowers can imagine the beauty of a hedge of this character.

But it is the shrubs which bloom in late summer and fall that give especial satisfaction when used as hedges. The spring has such a wealth of bloom, from shrub and hardy bulbs, that little is needed from the hedgerow, but as the season waxes towards fall the bravest of the show is over and we welcome these later flowers of the summer. One of the finest plants for the purpose is found in the hardy *Hydrangea*, *H. Paniculata Grandiflora*. Nothing excels it and few if any flowers equal it in display when loaded with its great heads of bloom. It is an easily grown plant and requires only to be planted in rich soil at a reasonable

distance apart—for it is of a spreading rather than an upright growth, and the annual pruning required intensifies this characteristic. It should be heavily mulched with coarse manure in the fall and well watered during the heat of summer when it is getting its flower buds, and late in winter or early spring it should be severely trimmed—cutting back about two-thirds of the last season's growth. This results in larger and more numerous blooms, and as the blooms come on the new growth is very necessary.

Another charming plant for fall blooming is found in the *Hibiscus Syriacus* or *Althea*. These are in every way charming hedge-plants, standing trimming well, and as it is the habit of the plant to make many branches from the ground up, it forms a close hedge as symmetrical almost as privet. Any one color of flower, white, blush pink, rose, crimson, purple or striped may be used, or two or more colors combined, as white with red, white with purple, pink and the striped variety, all are certain to afford satisfaction. The *Altheas* are not quite so hardy and rugged as the *hydrangeas*, but stand ordinary winters all right. It is only when an exceptionally severe or changeable winter occurs that they suffer. Ice about the plants in winter is harmful, and good drainage should be assured and the ground about the roots well protected with rough litter, and plenty of it will be needed.

There are few of the hardy, flowering shrubs but what may be utilized as hedge-plants on occasion. There are few plants but which look better grown in long rows than in clumps or as isolated specimens. The old-fashioned snowball, and the newer Japan snowball, are very fine when used to mask outbuildings and allowed to grow at will. The syringeas are beautiful at their period of bloom and the Tartarian Honeysuckle is one of the finest ornamental hedge-plants. These plants carry flowers of red, of pink and of white which are followed by red fruit, which with the foliage lasts well into the winter. Single colors may be used for planting or two or more may be combined, but the single color is more agreeable in effect.

For a dividing line between town lots the rugosa roses are very fine. The plants are sturdy and rugged, making fine upright bushes, clothed with heavy wax-like foliage, curiously wrinkled. The large single, double and semi-double flowers are followed by highly ornamental hips, or seed-pods, of orange-red and scarlet.

The plants will do well in situations where few other plants will thrive, standing hot sun and dry, sandy soil very well. The most desirable varieties are *Atropurpurea*—a vary dark variety, with nearly black buds opening to a crimson-maroon; *Blanche Double de Coubert*, a double white, large and showy; *Conrad F. Meyer*, a clear silvery rose in color and a very large flower with a bud resembling the *LaFrance* rose; *Madam George Bruant*, a hybrid of a large, double form blooming in clusters—a new departure in this class of roses; *Mrs. F. Waterer*, a semi-double, deep carmine and *Madam Charles Worth*, another semi-double, rosy carmine flower. All are well worth cultivating, especially in the line of hedges or massed plantings to decorate a waste corner or rough place unfitted for the more exacting class of plants. As a general thing roses are not especially ornamental when out of bloom, but the *Rugosa* Roses are handsome in any stage, and the hybrid forms show much improvement over the original forms, but one will always enjoy the artistic qualities of the single white.

GARDEN NOTES

This department is conducted by an experienced and practical landscape architect, who extends an invitation to the readers of AMERICAN HOMES AND GARDENS to send to the Garden Editor inquiries on any matter pertaining to the developing of the garden and the home grounds. Letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this department.

Peony Planting for September

By NORMAN L. CHESTER

SEPTEMBER is the month for Peony planting. Although some successful gardeners prefer to plant in the spring, it is generally conceded that fall planting is better. In selecting varieties, one will find the single, double and the Japanese types valuable for effects. Of the single varieties, the Fiancée (white), the Clio (pink) and the Monsieur Marsaux (red) are excellent for a choice. The Japanese varieties, Gwyn-Lewis (white) and Riene Potard (red) will be found very satisfactory, while the double white Virgo Maria, which blossoms late, the pink Triomphe du Nord and the fine red *Duchesse de Nemours* will be welcome additions to any garden.

In addition to these sorts, there are the semi-double varieties—*couronne d'Or* (white), *Marguerite Gérard* (pink) and *Armandine Mechin* (red); the Crown varieties—pink *Octave Demay*; the rose varieties—*Avalanche* (white), *Stewart's America* (pink) and *Constant Devried* (red). One will have a choice between the ordinary herbaceous Peonies and the tree Peony. The latter are woody shrubs, often reaching a height of three feet; but it is a more difficult plant to cultivate, as it requires careful watching and protection in the early spring, being an early-budding plant. The tree varieties are also of much slower growth than the herbaceous varieties, and for this reason have never become so popular in the garden, though their beautiful full blossoms should lead them to be less neglected. In planting, one should remember that Peonies require much moisture and some shade, though they should never be planted either in wet places or under heavy tree foliage. In fact, Peonies should be given a position quite away from close proximity to trees, as tree roots will sap their energy.

The middle of September is the best Peony planting time. Set out the roots so the crowns will be four inches below the soil surface, and four feet apart. Remember that Peonies blossom but a month every season, and plan their ultimate effect with this in mind. Of course, their foliage is green from early spring to late fall, and forms an attractive adjunct to the shrubbery. Peonies require a rich soil; in fact, one can hardly find too rich a position for them in the garden.

BULB PLANTING

As September is the bulb-planting month, the garden-maker will do well to make his selections immediately, and send to his nurseryman without delay for the bulbs that are to bring a wealth of gorgeous color to his garden in the springtime. The experienced gardener will already have consulted the floral catalogues and will have his list already before him; but there is still time enough, for bulbs may go into the ground the fifteenth of the month. In planting, bear in mind the fact that large, fine bulbs should be chosen if proportionate blossoms are to be expected the first season.

As a general rule, bulbs are apt to be planted too near the surface. A good rule to follow in this connection is to place the bulb twice its own height below the soil level. Fertilizers should never come in direct contact with the bulb, and it is well to rest the rooting end of the bulb on a thin sprinkling of sand.

In answer to a reader in Ohio, the following bulbs are recommended for a succession of bloom: *Crocus Scilla* and *Galanthus*, for February, March and early April; *Jonquils* and *Daffodils*, for April; *Tulip* and *Narcissus*, for May; *Allium aureum* and *Lilium Canadense*, for June.

MATURITY OF FRUIT TREES

A reader in Connecticut, who is planning a small orchard for her garden next year, writes to ask how long after the setting out of fruit trees the various species come to maturity and become valuable as fruit-bearers. Apples bear in three years, but ten must be allowed for a good crop. Two years' growth will produce fruit from peach trees, and five years bring them to a profitable state. Twice this time should be allowed for pear trees, two years for the quince, with four to bring it to a valuable crop, while plum trees produce fruit in three years and yield an abundance of fruit in six.

PERENNIALS NOT TO MOVE

The amateur gardener must exercise great care in thinning hardy perennials this month, not to attempt to remove such plants as the *Yucca*, *Chrysanthemum*, Japanese *Anemone*, *Tritoma*, and if young plants of the *Sweet William*, *Foxglove* and *Hollyhock* have not been transferred to other locations by the middle of the month they must not, on any account, be disturbed later.

SELECTING DAHLIAS

September's advent brings with it the culmination of the Dahlia season, and if one has neglected this lovely flower it will be an excellent thing for him to peep into his neighbor's garden while these plants are in their most perfect blossoming, and to make note of the varieties he sees there that please him most, in order that he may select those of his choice for his own garden another season. Indeed, everyone interested in gardening, no matter to what extent, should keep by him a notebook in which he may jot down from month to month observations of just this sort, which will prove of great value to him ultimately.

WATERING LAWNS DURING DROUGHT

The blazing sun of these September days brings havoc to many of our lawns. Recourse to the hose is not in itself sufficient if one does not know how a lawn during a drought should be watered. At sundown or at sunrise the lawn should be soaked by dropping water; nothing rips up the sod so completely as pointing a nozzle-stream directly at it. As for a mere sprinkling, the

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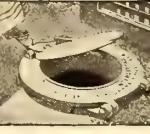
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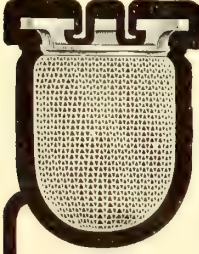
writer considers that worse than no water at all, because the hot sun-rays beating down upon a sprinkled lawn are more harmful to it than they are to the dry grass. Of course, with a lawn that is thoroughly wetted this does not apply. In this connection, it is well to remember that much may be done to alleviate the effects of drought in the garden by mulching the earth around the shrubs and plants with cut grass and like litter. A covering of this sort placed around the plants acts as a moisture-holder, much in the manner of a bell-glass. In consequence, the ground under the mulch is not baked out and the roots of the plant are therefore less parched.

SELECT TREES AND SHRUBS NOW

Inasmuch as October is the best month of the year for planting ornamental trees and shrubs, one should consult the catalogues of nurserymen and select the sorts best suited to their planting plans. The selection of trees and shrubs is a matter of too much importance to be left until the very last moment, and not half enough care is ordinarily given to the matter. It is not enough to say, "I like an elm, so I'll order one." Instead, one must be sure the tree or shrub selected is right for the position and exposure, and that the soil conditions can be maintained to bring it to healthful growth. If you have not already planted evergreens, no time should be lost in getting them into the ground the first week in September, so they may become firmly started before the setting in of winter.

THE CULTIVATION OF COTTON IN EGYPT

DURING the last few years there has been carried out important hydraulic work in Egypt, in order to provide a remedy for the great dryness of the climate and to give a greater fertility to the soil by irrigation. In this way the level of the Nile is now raised considerably and irrigation canals could be run at greater heights than before. However, this influenced the height of the underground water, and in Lower Egypt this now comes very near the surface of the ground. At the same time there was observed a lessening in the yield of cotton. In the Delta this is especially remarked, and the crop for 1909 was almost a failure. Accordingly, the state administration took measures to find out the cause of the trouble. As the only change appeared to be due to the carrying out of the hydraulic work, it was thought that the rise in the level of the water-soaked part of the soil was the direct cause of the falling off of the cotton production, and to verify this the commission made a series of tests by growing cotton plants under conditions which were the same as usual except that artificial means were provided for keeping certain soils at ranges of two to ten feet depth for the water-soaked layer. For each portion the depth was kept constant. The results of the tests clearly showed the great influence which the water depth had upon the cotton crop. The yield of cotton in each piece of ground is constantly proportional to the depth of the underground water and is better as the water-soaked layer lies farther below the surface. At present the commission is engaged on tests in order to show what are the best conditions for cultivating cotton as well as other Egyptian plants. These results will be of value in many other cotton-producing countries.



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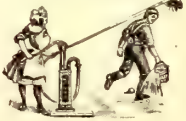
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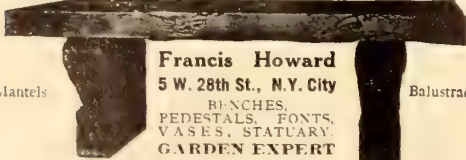
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HELPS FOR THE HOUSEWIFE

If the readers of AMERICAN HOMES AND GARDENS desire any information concerning the subjects treated under this department, write to the Household Editor and receive such assistance as may be desired. All letters accompanied by return postage will be answered by mail. Replies that are of general benefit will be published in this department.

Breads

By MARGARET SEXTON

IN the gentle art of cooking there is perhaps no line of it that is harder to reach perfection in than that of making all kinds of breads. The average cook thinks this very simple and so, because it is supposed to be the most ordinary form of cooking, makes failures of her efforts. Instead of appetizing, light, digestible bread, there comes on the table heavy, sodden stuff, sometimes looking well, but alas, belying itself. The whole secret, in order to be a successful bread-maker in all its branches, is to be very painstaking, following minutely rules, and also to have an intelligent knowledge of the proper heat of your oven. This last is most important. The following recipes, if carefully carried out, should produce most delectable bread; many of them have been gleaned from very fine cooks who have proven them exceptionally good recipes.

The first of the recipes is "Every day" bread. "Home made bread" is not often found on the table in homes nowadays simply because it is supposed to be too hard to bake. As a matter of fact, there is nothing easier.

To make fine, soft, delicious bread, which will remain moist, use three-quarters of a compressed yeast cake, dissolved in a cup of lukewarm water, one quart of milk scalded, one quart of water; combine the milk and water and use only when tepid; one tablespoonful of butter, one of lard, one of salt, one of granulated sugar. Dissolve all these ingredients in the warm milk and water, then add the yeast, lastly stir in the flour, sifting it thoroughly. The amount of flour to be used depends largely upon the brand of flour, as flour varies in its thickening qualities. Sometimes to this quantity of water two and a half to three quarts of flour will be necessary. At any rate the dough should not be thicker than you can stir with a spoon. When the bread is thoroughly mixed, cover closely and set away where it is not too warm and where there is no chance of the dough being chilled. In the morning the bread should be light and bubbling all over it. Flour the molding board well, turn the dough out on it and knead for fifteen minutes, keeping the dough as soft as you possibly can. At the end of that time divide the dough into four loaves (they will not be large); put into medium-sized bread tins and set away to rise again where the temperature is neither hot nor cold. When the bread has risen to three-quarters of the pan, it is time to bake it. With a soft little paint brush, kept for the purpose, brush each loaf of bread over with a combination of melted lard and butter. This makes a pretty, brown crust and a tender one when the bread is baked. The oven should be moderate at first. Put the bread on the bottom of the oven; this gives the opportunity for rising. On the upper rack put a large meat pan; fill this half full of boiling water. Allow this

pan of water to remain over the bread for fifteen minutes. The boiling water causes a steam in the oven, which makes the bread rise and prevents a hard crust from forming on it at once. To bake bread thoroughly, an hour should be given it in the oven. At the end of that time it should be done and a fine golden brown all over it. If accurately followed out this recipe should make delicious bread.

Coffee cake is extremely nice to serve for breakfast or for luncheon; it is very simple, and easy to make, besides being economical. One pint of flour (again it depends on the thickening qualities of the flour whether you need a pint or a cup and a half), one egg, two tablespoonfuls of sugar, two teaspoonfuls of baking powder and a pinch of salt. Stir into the flour sufficient cold water and milk (equal parts) to make a stiff batter; lastly add the beaten egg. Pour the batter into a long, flat tin pan. Before putting the coffee cake into the oven, pour over it a heaping tablespoonful of melted butter. Then sprinkle one and a half tablespoonfuls of granulated sugar over the batter and lastly sprinkle a little cinnamon over it. The oven should be hot, as the cake, to be light and tender, must bake quickly. Serve very hot.

Potato Pockets are rather an unusual form of "hot bread," but are none the less good, and make a nice addition to either luncheon or breakfast. The ingredients for Potato Pockets are five large potatoes, one quart and a pint of flour, one half cup of milk, one large tablespoonful of lard and butter combined, two teaspoonfuls of baking powder, and salt. Boil potatoes until soft, mash fine and rub through a fine sieve. Don't throw away the water in which the potatoes are boiled. After the potatoes are strained, mix the water with the potatoes. Stir into the flour the milk (the baking powder having previously been sifted into the flour) and melted butter and lard, also the salt. Use a sufficient amount of the potato water to make a stiff dough that may be rolled out. Roll the dough out very thick, cut into large biscuits with biscuit cutter, spread each pocket with melted butter and lard and fold over as risen rolls; bake in a moderately hot oven, and serve very hot.

There could be no better accompaniment to a breakfast of daintily fried bacon and eggs than light, delicate corn bread. The following is a particularly good rule: Two eggs, one pint of milk, one half pint of wheat flour, one pint of corn meal, butter the size of large egg, one cup of sugar, two teaspoonfuls of baking powder. Cream all the butter and half of the sugar together; beat the eggs light, adding the remainder of the sugar with the eggs. Sift the baking powder and wheat flour with the corn meal. Put the eggs into the milk, add both to the creamed butter and sugar, add salt, stir slowly into this the corn meal and flour until it is well mixed. Bake the corn bread either in gem pans or in a sheet in

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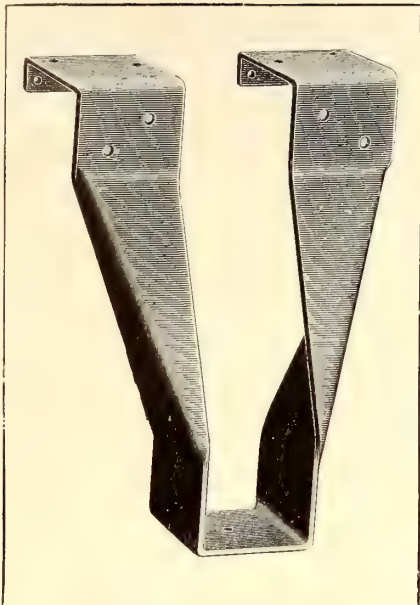
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New York Association for Improving the Condition of the Poor

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a flat pan. Bake in a moderate oven so as to allow the corn meal to swell, then gradually increase the heat of the oven so as to cook the corn bread through, and bake it a good brown.

The following is not a recipe, but a very valuable suggestion along the line of bread, which any housekeeper will appreciate, telling how to have steaming hot rolls for Sunday night supper without setting the bread to rise Saturday night or Sunday. When you are making bread, divide it, make half up in rolls or bread and the other half put into an airtight, clean tin can, or pail, having first floured the pail. Then put a clean, white linen or muslin cloth over the pail and the tin cover over that and put the pail either on the ice in your refrigerator or else bury it away in the yard in a snow-drift. You are convinced this will ruin your dough. Not at all. If, by the end of the week, or the middle, you would like to have a pan of rolls, or a nice, fresh loaf of bread, seek the pail and with your hands mold up into shape either biscuits or rolls. Put into a pan, set away to rise, and you will find in what surprisingly quick time the dough will rise and how light and beautiful the rolls or bread will be, being none the worse for being chilled, yes, even frozen stiff. If you have any dough left put it in the pail and return to the cold again. Dough will keep two weeks fully, if not allowed to become heated and then put away again. It is such a handy thing to have this dough all ready at a moment's notice if unexpected company comes in, as you will find if you will try it.

Old-fashioned raised muffins, and what could be nicer? and yet, how seldom one sees or eats them in these days of quick meals. Use one cake of compressed yeast, three eggs, one pint of milk, one of water, salt, or all milk. Sufficient flour to make a thick but not stiff batter. Beat the eggs light, dissolve the yeast in the milk, add milk and eggs together, then sift in salt and flour. Beat the batter up well, so that all the flour is well blended. Set away in moderately warm place to rise. In the morning if the batter is at all sour, add a saltspoonful of baking soda dissolved in a little warm water. Use old-fashioned muffin rings to bake the muffins in, using a griddle on which to place the rings. Have the griddle hot, pour the batter into the rings and let the muffins rise and bake a nice brown and then turn them with the aid of a pancake turner and allow them to brown on the other side. Serve hot.

THE HOOF OF THE HORSE

THERE are toes on a horse's hoof just as there are on the foot of a human being or on the foot of any animal that resembles the human foot. Furthermore, a horse has "toe-nails." The horn of the hoof grows in pretty much the same way that a toe-nail does.

The growth of the hoof is more rapid in unshod horses than in the case of those wearing shoes. It grows still more rapidly in the case of horses that are well groomed and well fed. Generally speaking, however, the horn grows about one-third of an inch each month.

Hind hoofs grow faster than fore hoofs. The toe of the hoof being the longest part, it takes longer for the horn to grow there than at the heel. For example, the toe will grow entirely down in from eleven to thirteen months, while the heel will grow down in from three to five months.

CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Color Schemes for a Bungalow

By HARRY YEOMANS

A WESTERN reader is perplexed regarding color schemes for a bungalow which is being built in a country where there are six months of sunshine, with no rain to speak of during that period. "It is very hot a good part of the time, and I want my house to be as much like a cool summer cottage as possible.

"What is troubling me now is, what colors to use in the different rooms. I thought of making the dining-room a deep cream, the living-room green, the hall a deep cream, perhaps; then comes my bedroom and the den opening into each other. I will have two leather chairs in the den; all the rest will be summer cottage furniture. Will get new furniture for the dining-room. I already have furniture for the other rooms. I am not going to have dark woodwork. My guest-room is upstairs; I do not know what color to have that. Another thing that troubles me is, what kind of curtains to have for the different rooms. The rooms will be nine feet high. Should the side color go clear up to the ceiling, or the ceiling color come down to the picture molding?"

The description which you give us of your bungalow is very interesting, and the cool colors, which you suggest for the various rooms, would make your home most attractive and livable if changed but slightly.

For the dining-room we would suggest a gray and white landscape paper, with cream woodwork. There are several gray and white landscape papers, copies of Colonial designs, which can now be obtained, and any one of them will impart to your dining-room just the cool atmosphere which you desire. It would be best not to hang any pictures on this paper.

The furniture should be in mahogany, after the designs of Heppelwhite or Sheraton, as the cool gray walls will make an excellent background for furniture of this character.

The living-room would be attractive with a gray-green paper and deep cream woodwork, as you suggest, and have the ceiling tinted just a trifle lighter than the woodwork.

A good color scheme for the hall would be to use a striped two-toned gray paper, with the same woodwork and ceiling as in the living-room, and the bedroom could be done in a striped two-toned blue paper, not too light.

If the den were covered with a plain paper of old Italian blue it would be attractive and would be an excellent background for pictures and whatever other ornaments you may care to use. In addition to your two leather chairs, we would suggest that you have furniture of the "cottage" type for this room. These models are built on simple straight lines; they are not so heavy as the Mission furniture, and the manufacturers will finish them in any stain desired, so that they will blend well with the general tone of the room.

Either a light-yellow, rose, or light apple-

green paper would look well in your guest-room.

For all of the windows we would suggest your having all the curtains of a coarse écru net, hung on small brass rods, and coming two inches below the sill. By having the woodwork, ceilings, and curtains the same all through the house you will obtain a certain amount of uniformity which will be very pleasing.

The colors on the walls should go up to the ceiling, where the picture molding should be placed.

A GRAY GUEST ROOM

A southern reader desires some information relative to the refurnishing of a guest-room. "I would like to have this room done in gray, but do not know exactly how to go about it. All of the furnishings are to be new, with the exception of the brass bed and the matting on the floor."

People are awaking to the fact that gray is one of the most soothing and satisfying of colors to use in home decoration, and as it is the most neutral color we have, it combines well with almost any other color.

For your guestroom we would suggest a gray and yellow color scheme, using a gray and white landscape paper or a two-toned gray striped paper, with stripes about two inches wide. If pictures are to be hung on the wall, the striped paper would be the best, as the landscape papers are so decorative in themselves that they do not make good backgrounds for pictures. The woodwork should be a deep cream and the ceiling tinted a light écru.

Simple furniture with straight lines would be most appropriate for this room. Choose a model having legs that taper slightly as they reach the floor. Have the furniture painted in a soft gray, with a dull finish.

A gray rug with a border design in yellow would look well on the floor, or if this is not obtainable, a gray rag rug with yellow stripes across the ends would be an excellent floor covering. These rugs are made in exactly the same manner as the old-fashioned rag carpets.

At the windows should be hung curtains of coarse écru net, coming just to the sill.

By introducing a beautiful golden yellow into this room you will bring in just the right color note to keep the scheme from becoming monotonous. Over-curtains of this yellow could be hung in straight folds at the windows, and, if you so desire, a valance could be added. A yellow spread, pillow-covers, and valance for the bed, as well as small pads for the seats of the chairs, and a cover for the dresser, would enhance the beauty of this room. A heavy fabric with considerable body to it should be used, such as rep or brocade. It would add to the bedspread and window-curtains if they were decorated with a band of plain gold galloon, placed about six inches from the edge.

This color scheme can be varied by substituting rose-pink or mulberry for the yellow fabric.

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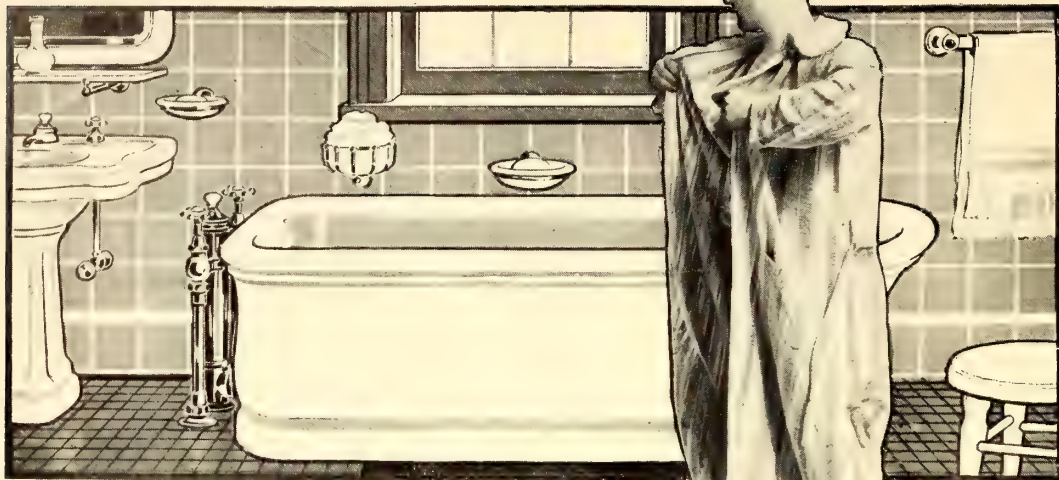
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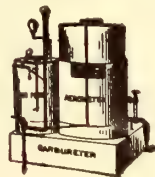
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FOR A COLONIAL HOUSE

A New England correspondent writes: "We have just purchased a Colonial farmhouse, and would like to have some suggestions as to color schemes for the dining-room and the living-room, opening into each other. We have some old mahogany furniture for both rooms and will add to it from time to time."

Your old farmhouse presents a very interesting problem, and by endeavoring to present its old-time dignity and simplicity you will get results so delightful that you will feel well repaid for all the time you have expended on it.

In both the living-room and the dining-room, we would have the woodwork painted a cream white, and tint the ceilings the same tone. The floors should be stained a dark brown and waxed, or, if the floors are not in good condition, they could be painted a dark brown. It would be well to use dark rugs, in which blues, browns and greens predominate, in both rooms, or rag-carpet rugs could be used instead.

We would suggest your using a Colonial yellow paper in the dining-room, either plain or a two-toned stripe. This will make an excellent setting for your old Colonial furniture, and as you add other pieces, it would be advisable to purchase models that will harmonize with those which you already have. The furniture designed by Heppelwhite and Sheraton are excellent models. They would be especially fitting for your house, and inexpensive ones can be obtained almost anywhere.

Old New England houses, such as yours, frequently had corner closets built in the two corners of the dining-room, on the same side as the mantelpiece. The doors should have diamond-shaped panes in the upper half, so that one can obtain a view of the old china within.

Have the living-room papered with a plain sage-green paper, or one with a basket weave. The furniture should consist of a large table, to hold a lamp, magazines and books, chairs to match the old mahogany ones which you now have, a slant-top desk, and a winged chair by the fireside.

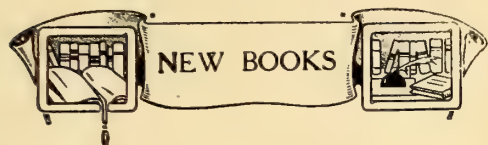
An old mirror over the mantel, some candlesticks, a clock and andirons should furnish this part of the room in a dignified and appropriate manner.

A BRICK TERRACE

A correspondent writes relative to a brick house which she is planning: "We are undecided whether to have the usual covered piazza or to substitute a brick terrace, which we want to use as an outdoor living-room during the Summer months."

By all means have a terrace instead of a covered piazza, as the former has many advantages over the latter. Owing to the fact that the terrace has no permanent covering, it can be made wider and more commodious than a piazza, the roof of which excludes the light from the rooms opening off of it during the winter months.

The terrace should be constructed of bricks, laid in Flemish bond, with a gray stone balustrade, or the balustrade can be made of the bricks, with solid brick piers at regular intervals and at the corners. The piers should be capped by spheres of gray stone or cement, or large stone vases could be used at the corners if you care to go to that expense. The pavement of the terrace should be of bricks, laid in a herringbone pattern, or the square red Dutch tiles could be used.



A TEXT-BOOK OF GENERAL BACTERIOLOGY.
By Edwin O. Jordan, Ph.D. Second revised edition, 8vo.; 594 pp.; illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$3 net.

The book is profusely and well illustrated, and, since externals strike the eye first, it is perhaps not out of place in reviewing the book to praise at the outset its general arrangement and technical excellence. The care which has been bestowed on these matters is but the outward symbol of an inner worth which is evidenced both in the manner of treatment and in the material presented.

After an introductory chapter the author considers in order the technique of bacteriology, the structure, development and composition of bacteria, the effect of physical and chemical agents upon them, and conversely, the effects produced by bacterial growths upon their environment. A short chapter on the classification of bacteria may be said to conclude the first part of the book, dealing with the general facts of bacteriology. The chapters which follow, VII to XXX, deal specifically with bacteria and protozoa pathogenic in man. The remaining chapters deal with those aspects of bacteriology which are of economical rather than medical interest. They include a consideration of the bacteria of milk; the bacteriology of the "nitrogen cycle" in agriculture, and in the economy of the living world; arts and industries depending on the action or exclusion of bacterial agents, such as the manufacture of leather, the curing of tobacco, the preservation of food, etc. There is a chapter on the bacteria of air, soil and water, and, finally, one on bacterial diseases of plants. An appendix is devoted to the consideration of infectious diseases of unknown causation.

The statement on page 60 that Brownian movement is due to surface tension is hardly in keeping with recent developments of physics and of the Kinetic theory, in which this peculiar phenomenon has found a most interesting place. To the bacteriologist this may not be a point of much importance, yet in view of the very considerable physical significance attached to the matter, and in the interest of scientific accuracy, the statement should be modified in later editions of this very excellent work.

PRINCIPLES AND DESIGN OF AEROPLANES.
By Herbert Chatley. New York: D. Van Nostrand Company, 1911. Pocket Size. Price, 50 cents.

Prof. Herbert Chatley's latest work, "Principles and Design of Aeroplanes," might have passed as fair ten years ago, but in the light of the increase in knowledge of aviation during the past few years, it is very inadequate. At present there are several Farman types, the H. Farman, M. Farman, etc., but in this book "Mr. Farman's machine," referred to at great length, is none other than the old 1907 Voisin, and Prof. Chatley states that the majority of successful machines of to-day are of this type. The warping of the planes on the Wright machines is described as "twisting one of the planes so that the forward edge goes upward on one side of the center and downward on the other," whereas the manner in which the front of a Wright machine remains perfectly rigid and the rear ends of the two planes are moved is now common



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knowledge. The frontispiece, entitled "General Principles of the Aeroplane," represents a flat-planed affair with two revolvable planes at the front serving, evidently, as a rudder; between them is seated the "aeronaut." A steering plane is at the extreme front, and a queer-looking propeller at the rear, just in back of the two rear surfaces that are labeled "usually immovable." What "general principle" this is supposed to represent is certainly an enigma. In the discussion of theoretical matter no explanations of the action of cambered surfaces or of the movement of the center of pressure are given. A typical example of the absurdity of the entire book is the following: "The system introduced by Mr. Chanute of a longitudinal girder crossed by two transverse frames supporting the planes is rather fragile when the weight is limited as at present, and Langley's frame is but little stronger. In fact, the late professor's man-carrying machine came to grief (owing to collapse of guide-rails) before flight." Confusing statements of this sort are worse than worthless. Another choice specimen is this: "If a plane touches any obstacle during the flight, there is almost certain destruction of the whole machine. For this reason it seems desirable to reduce the speed." No doubt we shall soon have "narrow-gage" aeroplanes designed to fly through tight places! A refreshingly amusing paragraph is the following: "The plane has to carry, in addition to its own weight, that of the prime mover and the propeller, together with other small items, such as aeronauts."

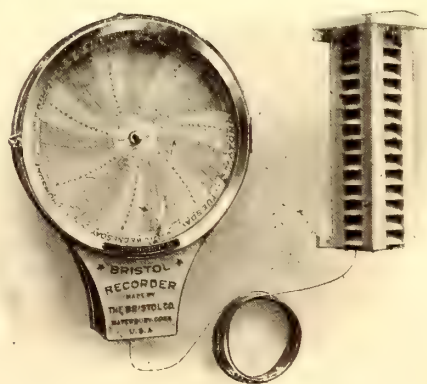
The continual use of the word "aeronaut" instead of the more usual "aviator" is to be condemned.

THE BIG GAME OF AFRICA. By Richard Tjadler. New York: D. Appleton & Company, 1910. 8vo.; 364 pp. Price, \$3 net.

Good books on hunting trips and adventures in the "Dark Continent" are plentiful. The author's apology for offering to the public "The Big Game of Africa" is a desire to comply with the wishes of his many friends who have heard his lectures on Africa, and have repeatedly asked him to issue them in book form. The volume is not only a narrative of his own wanderings and experiences in that continent, but is also intended to be a guide-book for those who are thinking of hunting in Africa, and also for those who are expecting to stalk game with camera or gun. The book is made up of the experiences of three expeditions in British East Africa, and contains the most reliable information that it is possible to obtain from others who have hunted in that wonderful game country, and from the natives, who themselves spend most of their time wandering among the big game of Africa. The book is beautifully bound and is an addition to any library.

THE YOUNG ELECTRICIAN. By Hammond Hall. New York: The Macmillan Company, 1910. 8vo.; 289 pp.; illustrated. Price, \$1.50 net.

The author's aim is to afford "instructive amusement to intelligent boys." Starting with the early discoveries and the first principles of electrical science, he leads the reader on through the simple experiments of attraction and repulsion, of the electroscope and the Leyden jar, to such processes as electrotyping and electroplating, and to such devices as the telegraph, the dynamo, and the necessary equipment for wireless telegraphy.



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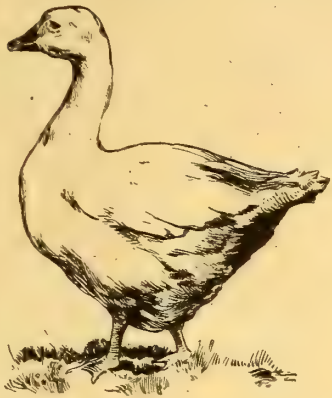
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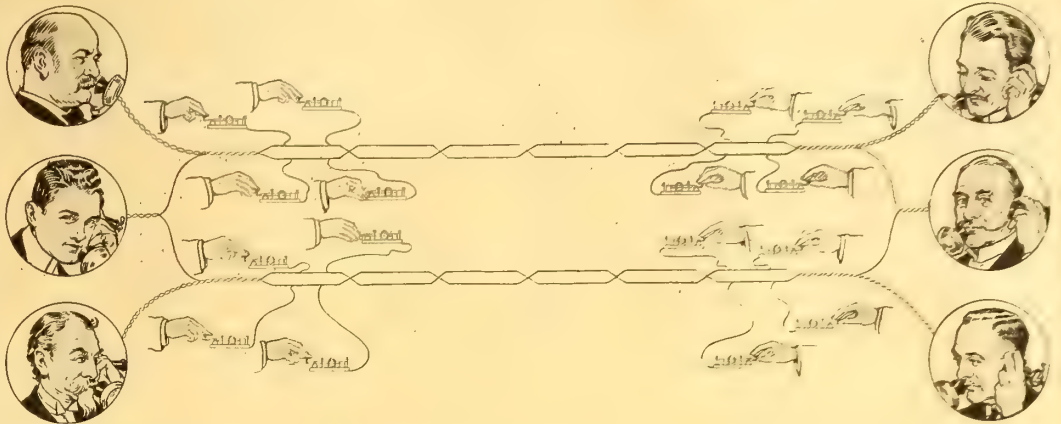
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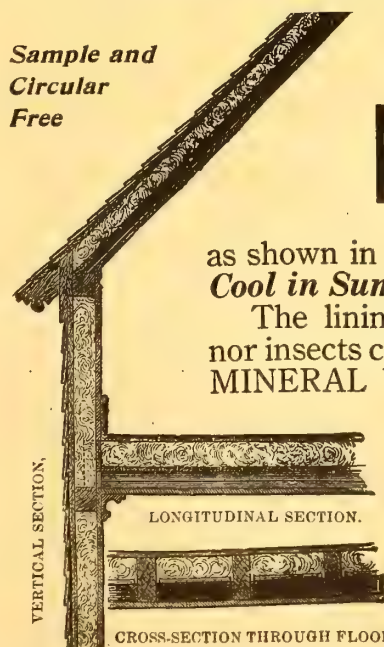
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Vol. VIII, No. 10

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About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

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TWO ALL-ROUND DOGS FOR THE FARM OR COUNTRY PLACE

By T. C. TURNER

EVERYONE who has lived on a farm—I mean by this a real farm, where the owner or occupant is making his living from its products—is familiar with the havoc that rats and many other vermin play in the poultry yard, the stable and the barnyard. They rob the henhouses, kill the young chicks, destroy the cattle feed, and house themselves in the winter in the corncrib. Indeed, they are a menace in so many ways that the farmer is continually striving to get rid of them. The safest and best method of keeping away such pests is the introduction on the farm of a dog of the right sort. Most every farmer keeps one or more dogs, either for protection or, if he can spare the time, for a little shooting in the fall and winter, a dog such as the pointer, setter, or spaniel, one that can accompany him and be of service when he sets forth for recreation with a gun. But none of these dogs has the instinct or ability to hunt vermin. For such a purpose nothing will do but the terrier, and of his various types, the best I know of is the bull-terrier, for in him we have the master of rat-catchers. He has been bred for generations for this work, and his lines betoken a dog keen to the scent as edge to the razor, and a dog combining with his small size unusual strength. To be of good type, the bull-terrier should have a long head, strong level jaws, black eyes and nose, his skull should be wide between the ears, which should be small, a long neck, straight fore legs, moderately small feet, close toes, somewhat narrow chest, long body, powerful loins, and muscular thighs, a tail not too long and well tapered, and a fine coat. His color should be white, but a small splash of yellow or black on the head will indicate no detriment to his general utility, and would only count against him on the show bench. Such a dog could be purchased at a lower price from many breeders and would be none the less active for his work on the farm or country place with such markings. He should be left to roam at large among the stables, barns and outhouses, and when he has cleared them of their undesirable tenants, the few that escape his powerful jaw will warn the rest that it is no good district to visit. In addition to his special ability as a rat and vermin killer, the bull-terrier is an excellent watch dog, but in the country where areas are nearly unlimited, a larger dog may be kept to fill this particular requirement—a setter or pointer, for instance. The watch dog question is an important one where a farm or country place is in an outlying district, as many of them are, perhaps two or three miles from a neighbor, and five or six from a village, which must, from time to time, be visited, and in consequence the farm be left, often entirely alone. I know of a farm in the foothills of the Catskills where a half-bred collie has been trained to be one of the most perfect watch dogs I ever saw. When his master and mistress are at home he takes his leisure, but so soon as the horses are harnessed and the carriage leaves the place he goes directly to the house, takes up his position on the porch, and never leaves that spot until the horses drive up the home road; then he is half-way down the drive to meet them before you hardly notice him, for he knows their footsteps as distinguished from any strange horses. This same dog, with the true instinct of his collie parent, will fetch in the cows when they are wanted; all that is necessary is for him to receive orders from headquarters, and the cows are soon at home.

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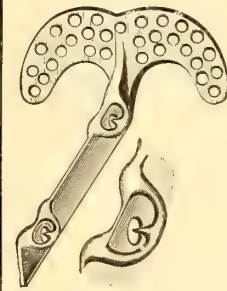
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FURNISHING THE POULTRY HOUSE

By E. I. FARRINGTON

IN the houses of the most successful poultry keepers the furnishings are very simple. Nestboxes and perches, as well as utensils for feeding and watering the birds, are essentials. In many cases dropping-boards are included, especially in houses owned by amateurs. Sometimes it is convenient to have a coop for breaking up broody hens, and when open-front houses are used it is often well to have a muslin-covered frame so arranged that it may be dropped in front of the perches on very cold nights.

It is important that all the furnishings be made detachable, so that they may be taken out of the house occasionally and thoroughly cleaned. Only in this way can the house be kept free of insect pests. The warfare on lice must needs be an incessant one. The house should be whitewashed twice a year, or else sprayed with kerosene or one of the patent lice exterminators. The best plan is to use a spray pump, which will force the liquid into every hole and corner. The perches should be taken out frequently and washed off with kerosene. The perches should be made of two-inch stuff and slightly rounded at the upper corners. If several are used, they should be on the same level. The old-time plan of placing them ladder-fashion was wrong, for it is the tendency of a hen to roost on the highest elevation she can find, so that all the fowls try to crowd upon the highest perch and are not comfortable. The perches should be about three feet above the floor of the house and rest in a slotted board at each end, in which case it is not necessary that they should be nailed in place. It is always best to have them at the rear of the house, so that they will be farthest away from the windows.

If there are dropping-boards they should be about a foot below the perches. They are a little easier to clean if they slant somewhat toward the front. The purpose of dropping-boards is to promote cleanliness, but this purpose is not attained unless they are cleaned frequently. Coal ashes or a little earth is sometimes sprinkled on the boards to help keep down any odor which may arise. Dropping-boards are necessary if it is desired to save the unmixed droppings for the garden, or to sell to tanneries, as is the practice in some sections.

Many practical poultry keepers, however, prefer not to use boards, but see to it that the droppings are thoroughly incorporated with the earth under the perches. In this way the amount of labor is lessened, and the results are not unsatisfactory in houses where earth floors are used. An upright board is sometimes used to prevent the droppings from becoming mixed with the litter in which the fowls scratch. If peat can be obtained and placed under the perches there is absolutely no need of using boards, but under ordinary conditions the average amateur thinks it somewhat neater to use them. Still, they have no place in some of the ready-made houses now being so widely adopted.

The nestboxes may be placed on the side of the house or under the dropping boards, if the latter are used. Each nest ought to be about twelve inches square at the bottom and ten inches high. It is the general belief that the hens prefer darkened nests—a sort of hereditary tendency, dating from the period when they were obliged to hide their nests—and so nestboxes are usually so arranged that they must be entered from the rear. In practice, however, it is found that hens lay equally well



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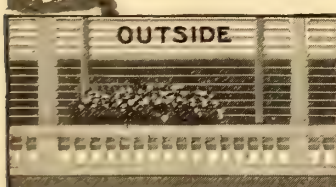
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in ordinary boxes attached to the wall. A common orange crate makes a good double nest. Screw-eyes may be inserted so that it can be hung to hooks on the wall and removed in a moment. The nests should not be over two and a half feet above the floor, or the hens may be injured when they jump down.

Some people laugh at nest eggs, and yet they do a real service in inducing the hens to use all the nests, as well as persuading pullets to deposit their eggs in the place designed to receive them, instead of some spot of their own selection—perhaps a corner on the floor. Medicated eggs are sometimes used to keep the nests free of vermin.

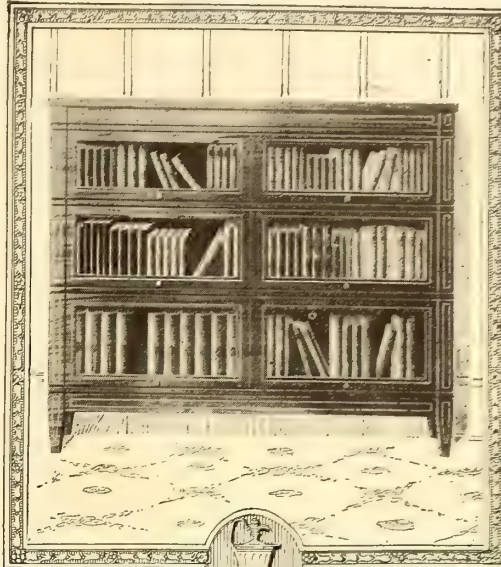
The coop for breaking up broody hens is built with slats on three sides and the bottom. It should be large enough for a hen to move about in comfortably, and may be fastened to the wall high enough to be out of the way. Confined in such a pen and given plenty to eat and drink, a hen soon loses her desire to sit. A slatted floor is not adapted to incubation, as she no doubt quickly perceives. There is no need of starving a hen which is broody, or of dipping her in a bucket of water, or of following any of the cruel practices formerly in favor. It is needless to say that when the Mediterranean breeds are kept, a breaking-up pen is not necessary, as the hens of those breeds seldom become broody.

A muslin curtain to drop in front of the perches at night is not required except in very cold climates. Where the temperature runs low it is desirable, especially when the hens have long combs, as the combs are easily frosted. The usual plan is to have a light frame hinged to the top of the house, so that it can be dropped in front of the roosts, resting against the dropping-board platform. The frame is covered with plain muslin and fastened up out of the way during the day. Indeed, it should not be lowered at night except when the weather is very cold—fifteen degrees or more below freezing. When this device is used, the dropping-boards should extend to the rear wall of the house, making a tight roosting closet. It is well to bore a number of holes in the top of the curtain frame for ventilation.

Many poultrymen use simply a curtain of burlap strung on a wire, and, as a matter of fact, such a curtain is protection enough in most sections of the country, even when open-front houses are used.

When it comes to the matter of feeding and watering devices, there is wide diversity of opinion. Here again, however, simplicity is undoubtedly best. Tin watering dishes should be ruled out, because they become rusty. Earthenware is most desirable for summer, because water stays cool for a long time in dishes of this material. Probably galvanized iron is best for winter. Much work is saved by using self-feeding water fountains. They cost from fifteen cents to half a dollar if purchased at the stores, but a good one can be made by inverting a tomato can in a flower pot saucer, first punching a small hole near the top of the can, so that it will be just below the surface when the saucer is full of water. Then the water will run into the saucer as fast as it is required by the fowls. The tomato can is tin, to be sure, but such cans are so plentiful that they may be replaced as often as they become rusty.

Self-feeding hoppers for grain, beef scraps, and grit have been in common use for several years. They operate on the same plan as the drinking device just described, but may be made large enough to contain all the grain and other feeding material which may be needed for a week. Some poultrymen rely almost entirely on



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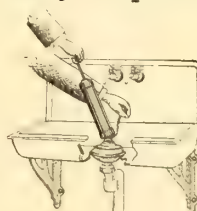
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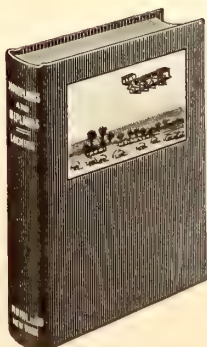
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these feeders, giving grain by hand only once a day or less frequently. It is worth while for the amateur who has but little time to devote to his fowls to study the question of hopper feeding, although, on general principles, it is better to use a method which compels the poultry keeper to spend more time in the company of his fowls, so that the birds will become tame and friendly.

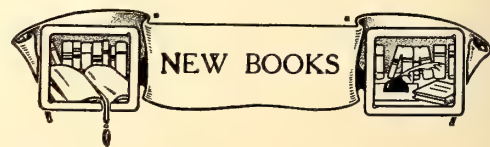
It is an easy matter to make a self-feeding hopper from a soapbox. An examination of such a feeder at one of the stores will be enough to make the principle plain. Whether hoppers are used for feeding grain or not, they are convenient receptacles for grit, oyster shells and beef scraps, which it is desirable to keep before the fowls at all times. Small hoppers with three compartments may be bought at small cost.

Sometimes there is loss of grain from the thievery of rats. In such cases it is well to use a kind of feeder which has a wire frame on top, the mesh being large enough so that the hens can get their bills through it without trouble.

A simple but very satisfactory feeder may be made of an ordinary box, having a square of one-inch poultry netting cut to slide easily up and down inside the box. This square of poultry netting is placed on the grain, and follows it down to the bottom of the box as it is consumed. The fowls are able to eat freely, but cannot scratch the grain out of the box and so waste it.

In order to provide as much floor space as possible, most of the furnishings of the poultry house should be out of the way. The water pan, for instance, may be set on a shelf about a foot above the floor. The dishes containing oyster shell, grit and charcoal, if the last is given, may be set on shelves, also. The hens will jump up on the shelves to get what they need. It is best, however, to have the hoppers or boxes in which the grain is fed on the floor of the house, where they will be easily accessible.

Altogether, the furnishings of the poultry house should receive their full share of attention, when a new house is being planned or equipped, but complicated devices of all kinds should be shunned, and nothing employed which will interfere with the easy performance of the attendant's duties and the frequent cleaning of the house in a most thorough way.



CONCRETE WALL FORMS. By A. A. Houghton. New York: The Norman W. Henley Publishing Company, 1910. 62 pp.; illustrated. Price, 50 cents.

This is No. 1 of a series of concrete workers' reference books, and explains the construction of the various types of wall forms, clamps, separators, and spacers for reinforcement, treating also of foundations, retaining walls, the placing of floor joints, molding water tables and window ledges, and the molding of fireproof walls. The automatic wall clamp, which is clearly described and illustrated, permits of building without difficulty monolithic walls with a continuous air chamber. As the general interest in concrete construction is increasing steadily any literature on the subject will be welcomed by the homemaker.

THE ARCHITECTS SERVICES

By CHARLES K. FARRINGTON

NO matter how small an amount of work you may wish to have done, it is always the best policy to employ a competent architect to draw up plans and specifications for it, and to supervise its construction. The cost of an architect's services is very small, and the benefit derived from them is great. A certain Mr. A., as an example, decided to make a small extension off his laundry, which was on the first floor just back of the kitchen, and it was to be no larger than was necessary to serve as a servants' bathroom. The construction cost was \$200. At ten per cent. the architect's fee would have amounted to \$20 for planning and supervising. But Mr. A. thought he would effect a saving by drawing up his own plans and specifications, and decided not to employ the services of an architect. Having completed his plans to his great satisfaction, he received a number of estimates on them from carpenters, masons, plumbers and painters. He selected the lowest, and in due time the extension was completed, and he congratulated himself on what he considered his success. A few months later, however, cold weather set in, and one frosty morning the water in the supply pipes in the extension froze, and later on the pipes burst, causing a good deal of damage. Mr. A.'s plumber was sent for (let me here mention that he had not been the lowest bidder on the extension and so had not obtained the contract), and he made an examination, after repairing the damaged pipes, quickly discovering the cause of the water's freezing. He found that a large amount of cold air constantly entered between the foundation and the beams resting upon it, and told Mr. A. that it would be necessary for him to have the matter attended to to prevent a repetition of the trouble. But Mr. A. was not satisfied with the plumber's reasoning, and after making an attempt to investigate himself, sent for an architect acquaintance, to whom he divulged his misgivings. He frankly told the architect how he had endeavored to make a saving by dispensing with his services, and asked him to make a thorough examination of the whole trouble, for all that the plumber had told him while making the repairs to the pipes had rather shaken his confidence in the entire work. The architect did so, and then desired him to show him the "specifications" he had drawn up. After reading them, he requested the owner to go with him and view the work, outside and in.

"We will start with the tin roof," said the architect. "I notice you simply mentioned in your specifications that the roof was to be a tin one. You have a tin roof, but it is constructed of the cheapest kind of tin, and it is doubtful how long it will last, even though you keep it well painted. You stated that your extension was to contain a two-foot-six by four-foot-six window, but you did not specify the thickness of the sash, and I find that an inch and one-quarter sash has been given you instead of inch and one-half. Inch and one-quarter ones are too light to use for a window of this size, which is in constant use; and I also note that the lights of glass are divided, which, of course, spoils the appearance of the entire window, both from the outside and from within. You called for the extension to be ceiled with 'North Carolina pine,' but you did not specify the width nor the grade, and I find that a poor lot of material has been given you. Had you only mentioned that the material was to be



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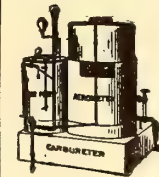
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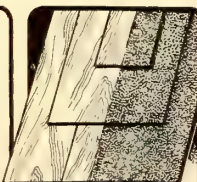
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'clear,' you would have had a wood which would have presented a fine appearance when it was varnished. As it is, the general effect is very poor. The bathtub is not first-class; you simply said 'a white enameled tub,' but did not mention the type or the quality of grade you required. The faucets are also poor. Again you did not specify quality or type. There are many high grades of bathtubs and fixtures on the market, any of which would have given you good satisfaction. In regard to the freezing of the water in the supply pipes and traps, your plumber was nearly right in his theory as to the cause. The cold air does enter between the beams and the foundation, where it should not. Cement, or some other material, should have been used to make the joints tight. Your foundation does not run under the entire extension. This method of construction should never have been followed in this case, as the room above was required to be kept at a moderate degree of temperature at all times to prevent the water in the pipes from freezing. A double floor, with insulating material between, should also have been used to make the room warmer. It will cost a great deal of money to make the changes and improvements I have mentioned, but it is absolutely necessary for you to make some of them in order to prevent further damage to your pipes. The cost of making them in the first place would have been small, but now so much time and additional material are required that it cannot fail to be considerable. You paid enough to have received a perfectly satisfactory job all the way through, and I very much regret that you did not get it."

Mr. A. thanked the architect and made the extension as near cold-proof as possible. He spent many times the amount he saved on the architect's fee in so doing. He employs an architect now, no matter what new work he desires done about the house, and gladly pays the bill for his services. His architect explained to him later that it was the architect's business to keep informed about all the improvements that are being made continually in all materials used for building purposes, and also in methods of construction. He told Mr. A. of the new devices for making houses fire-proof; the latest types of steam, hot water and hot air furnaces, all of which, of course, save coal and give better heat with far less attention; the new devices in plumbing fixtures and methods of installing, and many other details of house furnishing and construction, too numerous to mention here.

It should be remembered in this connection that the average owner is too busy with his business affairs to keep informed about such matters, and also that he cannot know whether it is best to use certain of the improvements appearing from time to time or not. The prospective home builder should obtain the disinterested advice which any competent and reliable architect can always give. Money spent for the architect's fee is always well spent. In conclusion, the reader's attention may be called to the fact that an architect can always settle any dispute which may arise between the owner and the contractors concerning any work which is being done more easily than can the owner himself. The architect, from long experience, possesses much knowledge about such matters. The owner does not; consequently he is at a disadvantage when attempting to carry his point. An owner acting as an architect often finds this out to his cost, and so one must reach the inevitable conclusion that advice is worth its cost.



THE EDITOR'S NOTEBOOK

THANKSGIVING NUMBER

THE November number of AMERICAN HOMES AND GARDENS will present an unusually attractive table of contents. The country dweller and the automobile will be the subject of an article out of the ordinary, one of as much interest to those who do not own motor cars, as it will surely prove to be to those who do. Greenhouse construction will be presented by a practical writer and an authority on the subject of the small greenhouse for the man of moderate means. A finely illustrated article on the choice of a dog for the country home will be appropriate to the season when country dwellers give especial thought to such matters. How a woman artist planned her home and built for herself a delightful studio nook in the Catskills forms an entertaining article full of helpful suggestions to those who contemplate co-operating with their architects in the evolution of the house plan, or think of becoming their own architects. A Thanksgiving dinner and the dishes that compose it will be described and illustrated in the new "Helps to the Housewife" department, along with other articles of practical and helpful interest. In the November issue the architectural articles will be especially attractive—a valuable aid to every home builder and home-maker. This issue and subsequent issues will be rich in illustrations of excellence.

THE GARDEN

WITH the November issue the Garden Department of AMERICAN HOMES AND GARDENS will be enlarged and more emphasis placed upon the value of gardening in making the grounds more homelike. Although there is little outdoor garden work to be done on the home grounds during the winter months the matter of indoor gardening is one that will receive attention. There will be timely articles on indoor gardening, paragraphic matter full of helpful hints to the grower of houseplants and in future numbers of the magazine greater attention will be given to the subject of landscape gardening for everyone.

KENNEL AND POULTRY DEPARTMENT

THIS magazine will continue to devote careful attention to subjects connected with poultry-raising, the kennel, etc., and writers who are authorities on these subjects have prepared articles of great value to the large number of our readers who are interested in such matters.

ARTICLES OF QUALITY

IT is the aim of the editor of AMERICAN HOMES AND GARDENS to make this periodical a magazine of good taste in everything pertaining to the home. The merely ingenious contrivances that have nothing beyond their ingenuity to commend them need hardly to expect to find place in the pages of this magazine. Moreover, AMERICAN HOMES AND GARDENS will strive to present articles that

have a literary quality, notwithstanding the fact that they may be thoroughly practical at the same time. The Editor believes that the attention of writers who have style at command, as well as subject matter before them, are the writers AMERICAN HOMES AND GARDENS should seek to introduce to the public, and a hearty invitation is therefore extended to writers who have something to say and those who have something to say and can write it in a thoroughly pleasing and refreshing way, to co-operate with the Editor in advancing this principle. AMERICAN HOMES AND GARDENS wishes articles on all subjects pertaining to home-making by those whose experience lends authority to their contributions. The Editor does not wish articles that are merely compilations from time-worn sources. There may be nothing new under the sun, but when a thing, new or old, is known to a man or woman through experience, that man or woman, if gifted with the facility to wield a pen, should be able to endow the subject with a new interest, that is to say, present it in a forceful way by saying what is worth saying on the subject.

ILLUSTRATING THE MAGAZINE

THE illustrations in AMERICAN HOMES AND GARDENS involve great care in planning and selection, and the Editor believes this magazine will come to be unsurpassed in the interest of its pictorial features. AMERICAN HOMES AND GARDENS has its own photographic staff of skilled professionals, but by no means will the Editor limit its illustration resources to the work of its own photographers. The Editor is glad to consider good photographs of every sort suitable for inclusion within the field of this magazine, and such photographs, whether by amateurs or professionals, will be paid for promptly upon acceptance.

AN INVITATION TO AMATEUR PHOTOGRAPHERS

AMATEUR photographers are especially invited to submit clear prints which they think may prove available for publication in this magazine, and the Editor will give the same prompt consideration and, where desired, frank criticism. Has the homemaker who is a reader of AMERICAN HOMES AND GARDENS a camera? If so, let him stop to consider the possibility of some nook or corner of his home, indoors or out, an attractive interior or a bit of garden or lawn, which may be worthy a place in the magazine; the Editor believes the readers of AMERICAN HOMES AND GARDENS would welcome an interchange of such material as the publication of it in the pages of this magazine would make possible. All photographs submitted must be clearly labeled upon the backs of the prints and accompanied by the names and addresses of the senders and by postage sufficient for return of such prints as are not found available. Some of the best photographs we have published in the past were taken by amateurs, and it is worth one's while to bear this in mind.

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New Books

The Editor's Note Book

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NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.



The garden approach to the entrance front of Judah Rock, the residence of Mr. William P. Eno, at Saugatuck, Connecticut, converted from a Colonial farmhouse into a mansion of fine proportions.

AMERICAN HOMES AND GARDENS



Volume VIII

October, 1911

Number 10

The Old House or a New One

By Electus D. Litchfield

Photographs by Julian Buckley, Frank Cousins and Lloyd Baker



THE maintenance of independent dwellings in our greater cities ceased, several years ago, to be within the means of most inhabitants. In this predicament the alternative of taking an apartment in town or of settling somewhere in the suburbs offered itself. Many adopted the latter and sought homes in the country; but the thought of suburbanism did not

appeal to the majority. Instead, the city dwellers of moderate means rented apartments in the winter, and with the coming of summer hied themselves to hotels in the mountains or to Europe, the return of fall finding them again in the city—more often than not in new apartments, which offered relief from one or another of the disadvantages of the domiciles of the previous winter.

It was not long, however, before these city folk began



The extensive and delightful verandas with floors of wood on the garden front of Judah Rock are connected by a terrace floor at the lawn-level



The old hall at Judah Rock is low ceiled and has a paneled stairway, and its walls are covered with gray paper of a Georgian medallion pattern

to find that they had lost that prime requisite of life—the enjoyment of a real home. Even their former neighbors who had gone into the suburbs to live had them at a disadvantage. Those who clung to the city were tenants, more often than not, at the pleasure of a more or less inconsiderate landlord, in a more or less garish caravansary, with even the comforting presence of cat, dog, chick, and often child,

denied them. In the emergency a master-mind evolved the co-operative apartment with its individual ownership and built with that great advantage—a staircase between living- and sleeping-rooms. But at its best living in apartments never could thoroughly satisfy the craving for a home.

During the ten or fifteen years in which the private dwelling has been fading from the New Yorker's pro-



The new entrance hall or domed vestibule, a much more formal type than the old hall, but is one of the most striking features of the interior

gramme, railway transportation has been making wondrous strides. Country places, truly rural, and once far beyond reach, have come within easy distance of the city. The result, while perhaps obvious, is none the less radical and revolutionary. The whole scheme of living of the New Yorker is changed, or rapidly changing. The country life movement has become as important to him as to the

farmer of the Far West. He no longer has his home in town, from which wife and children flee at the beginning of the summer and leave him to keep lone bachelor's hall in the deserted house or steal away to the more congenial atmosphere of the club, while they disport themselves on distant beach or mountain. With the coming of the first warm days of spring, the key is turned in the apartment and the whole family move to the country home, which has more than likely been open all winter for house parties at week-ends and celebrations of the holidays. His home is in the country, and his city residence—be it house, apartment, or hotel—now takes second place in his thoughts. His business, it is true, is in the city, and there, too, the opera, the theatre, and the more truly social functions have their claim on his time, but in the country the hearth has regained the place that was usurped by the radiator,

and there the New Yorker has acquired something of that atmosphere which made the living-room of New England a power in the nation. A home in the country all the year round with work in the city, is found infinitely better, thanks to electricity and the automobile, than work in the city all the year round with a short holiday in the country. So, many men, and particularly young men with their fortunes

to make, have discarded the city apartment and are making for themselves all the year round country homes. Thus it is, that with a large element of society the country house has taken on an importance that it never had before. It is no longer desired that it should be a shooting-box or a country villa, or even a seashore cottage. It must be primarily a home—and must look it. Design of such a building is one of the newer problems with the present generation of architects. The earlier men were in the habit of designing country estates or seashore villas for the nabob whose real home remained in the city. No necessity lay upon these earlier architects of making watering places or mountain lodges appear home-like. Sometimes they were almost home-like, but never truly like home, and naturally enough, because they were not homes, but show places. The younger men, too, have exhibited remarkable facility in



A view of the exterior of Dr. Fahnestock's house before it came to be remodeled



The remodeled house of Dr. Fahnestock, and the newly graded lawn with all the striking difference from the old form, required very slight changes

the design of villas and chateaux, as in certain beautiful white "cottages" at Newport and elsewhere there is convincing evidence; but there are not so many of them perhaps who have yet learned to design a real home-like country house. There is a certain "beauty of homeliness" that is absolutely wanting in altogether too many of the houses we meet with, but there has been a great stride toward better things, and our present day architects of standing are learning to endow their houses with that comfortable sense of home feeling so dear to the heart of everyone. Although we now have examples of home architecture which stand in comparison with the work of the colonists of New England, Pennsylvania, and Virginia, there is a certain charm about the old-time house

which lends to it endearing qualities. Indeed, the old house conscientiously remodeled, one may safely say, has infinitely more charm than its new-born neighbor. Naturally much of this is due to its landscape environment, such as the planting around the house. However, in these days of landscape gardening even a new house need not appear barren of trees and shrubbery.

It is often asked (and more often wondered) whether it is wiser to search out a site with a house upon it and to add to or remodel it, or to start entirely afresh. The answer cannot be given in a few words. It depends upon a great number of considerations. In the first place, it all depends upon one's architect, as it often happens that an architect will be successful in remodeling an old house which will retain its home feeling, and unsuccessful

in planning a new house that will give to its owner a sense of home feeling. If one is not sure he will come to enjoy living in the new house as well as he does in the old, and yet feels that the old house could be made more livable, to remodel the house is the problem. On the other hand, if one feels confident about a new house the old one may be torn down and its site occupied by the new one. Then one should save the old trees and shrubbery and the old flower garden if there is one. One must remember, however, that the landscape was a very different one when the old house was built from what may be to-day. Then the big trees in front of the house and across the road were only saplings; and you may have to remove farther back

and up the hill if you would save the trees and still have the view that the old house originally had from its verandas. To revert to the advantages of retaining an interesting old house, there are certain qualities about it which will go far toward helping the final result. For example, in a common type of old house the story heights are invariably low—much lower than seems right on paper—without being uncomfortably low for habitation. Again the old detail is more delicate than is usual to-day, and with good examples of colonial door and window trim before him, your architect, if he is at all the right sort, will not make his moldings as vigorous and heavy as in the French style, with which he may be more familiar, and he will avoid making his columns

and railings in the classic proportions, seen sometime in the uninteresting work of the Greek Revival of the period just after our war of 1812, but inappropriate to domestic wood architecture.

Do not expect to save money by starting with the old house. It is a curious paradox that while you can sometimes buy an old house for much less than it cost to build it—and while it would cost twice over that, today, to duplicate it—yet, in nine cases out of ten, you will have spent just about as much as if you had started anew by the time you have installed electric light and modern plumbing, repaired the floors and the plaster, repainted and repapered, and done the hundred and one other things that you will not think of at all while your work is under way, but which you will find absolutely necessary before your house is completed.

Of course, this does not apply so truly if the old house is a fine old structure and has handsome woodwork both without and within. Such a house is of necessity historic and should be retained not only because it is so, but because fine old-fashioned woodwork can only be duplicated at excessive cost and even then only under the direction of the most skillful designer and mill man.

My advice would be first, get the right architect and with him select a site. If there is a fine old house upon it, so much the better; if there is not, be content to be guided by the architect's judgment as to whether you can well use the old house, such as it is (if it is at all). Further—lay as few definite architectural requirements upon him as you may, but



The Col. St. John Palmer house, New Canaan, Connecticut, owned by Mr. Neilson Olcott



A corner of the dining-room of Mr. Olcott's house



Old woodwork in the living-room of Mr. Olcott's house

work with him, not against him, nor for him—the latter is fatal—but with him, in producing what he promises will be the ideal result. Remember that a house which is an architectural success is as much a matter of study of detail as a beautiful picture, and that a wrong color here, or an ugly detail there, may go far to spoil the entire effect. If you

keep the old house, beware that you do not destroy those elements which emphasize its domesticity. Remember that you are making a home—not a clubhouse. If it has one or two very large old fireplaces with, perhaps, a Dutch oven at the side, keep them by all means, if you are willing to keep them just as simple as such fireplaces always were—plain common brick and mortar, more often than not with the brick covered with cement and painted—and the mantel the simplest things possible, just a few moldings forming a frame with a primitive shelf, if any at all. Most of the fireplaces will be better small and can be treated with more formality. There, marble facings or old Dutch tile are appropriate, though not necessary. Eschew pressed brick facings and linings and do

not overlook the satisfactory effect that was obtained by our great grandfathers by plastering the brick faces and giving them a coat of paint. Do not forget that there are many delightful and appropriate details that you can have in your mantels and other woodwork without additional cost, if you will keep in touch with the architect while he is detailing your house. There is

nothing more appreciated by an architect than intelligent co-operation, and there are few architects who do not welcome suggestions from their clients; but remember that if he is clever enough and experienced enough, for you to employ him to design your house, he must know infinitely more about the appropriateness and practicability of all the details than the owner. So give him the veto power and you will find that he will use it reluctantly and with discrimination.

Another word—if you wish your house to be an excellent success, set aside five per cent. of your appropriation to be used in carrying out refinements and improvements which will always develop as possibilities in the course of any architectural work, if it has the love of those



The fine garden of Mr. Olcott's house, with its shrubbery, suggests delightful seclusion



The house of Mr. Carrington, at Greenwich, Connecticut, viewed in the light of an interesting transformation

creating it. It would be impossible to give in this article all the names of even the most successful architects who have solved the problem of designing the home-like house and remodeling the old houses of our great-grandfathers in the most delightful way. However, it is a satisfaction to be able to point out such a house as that in Plainfield, N. J., designed a few years ago by Messrs. Tracy & Swartwout, architects. This house, I think, has much of the old-time feeling of charm, as has the delightful old house built at New Canaan, Conn., in revolutionary times by Col. St. John Palmer, which in its remodeled form is now the property of Mr. Neilson Olcott.

"Judah Rock," at Saugatuck, Conn., the country house of Mr. William P. Eno, the entrance front of which is shown in the frontispiece of the present number of *AMERICAN HOMES AND GARDENS*, is an example of the development of a fair-sized Colonial farmhouse into a mansion appropriate to the estate of a modern gentleman of leisure. Of the original entrance front very little is now visible, the entire façade of the main building having been built from my partner's designs at the time that they added the wing to the left. The details of the wing to the right show the work of other architects at the time of some earlier, but still modern, alteration of the house. In the earlier alteration the details are "near Colonial," rather than the real thing, and strike a

somewhat discordant note, and with the rather spotty planting of the approach detract from the general effectiveness of the entrance façade. On the garden front the details of the change have been kept in perfect harmony with the old design, and the result is correspondingly satisfactory. How delightful are these porches close to the level of the turf; and how seldom we see them nowadays. It is interesting to note that the floors of the porches—close to the ground as they are—are of wood, and not of brick or tile or cement, as is so much more usual in modern work. The wood, of course, is less permanent and has to be painted from time to time and renewed, but it is more comfortable than the more permanent material, and for this type of house equally pleasing in effect. Two interiors are shown—one the old hall, and the other the new entrance hall or vestibule. The wall paper in the old hall is of an interesting pattern, and was made by a well-known wall-paper manufacturer in exact copy of an old paper of which Mr. Eno found a fragment in New Orleans. So taken were the manufacturers with the paper that they have had for themselves new blocks prepared for a paper as nearly similar in effect as possible, without reproducing Mr. Eno's design. There is an indefinable charm in this low-ceiling room, with its paneled stairway, and it is in its way, perhaps, of equal interest with the new and more



Mr. Carrington's house has, at its rear, a grounds area that is a garden-like improvement on the original



An architect often meets with an "ugly" house to be remodeled.



An unattractive old house can be made into a pleasing structure

formal vestibule shown in the accompanying photograph. Mr. Olcott's house, at New Canaan, Connecticut, is an old house that is of artistic interest from the beauty of its woodwork, both on the exterior and within. It stands at the corner of two old roads, and has a porch facing on each one of these. The porches are similar in treatment, and are, I believe, among the most perfect specimens of the Connecticut Colonial porch in existence. Of particular interest is the leading in the fan and sidelights. By the way, do you know that the glass at the side of the doors of these old houses is not leaded at all, in the modern acceptance of the term? The mullions, or divisions, which go through the glass are of wood, not lead, and the circles and other plain pieces are of bent wood, and the molded ornament only is of lead—the buttons, leaves, rosettes, etc. — and they are fastened with nails to the wooden members beneath. It is a curious thing how characteristic of Connecticut this type of porch is. I have never found it fully developed in old work anywhere else, while there are many variations of it within the limits of the State.

In the interior of this delightful New Canaan house, notice the interesting illustrated details of the doors, trims

and mantels. This old house was reclaimed with soap and water and white paint from its use by the previous owner as a negro tenement. I suppose that even with its splendid woodwork and its impressive old box bushes, it required a keen imagination on the part of its new owner to realize at all what it would look like to-day.

Messrs. Albro and Lindeberg have made something charming out of the commonplace old house that served

in its altered state as Dr. Fahnestock's farm cottage.

In Mr. Carrington's house, the same architects have produced a result delightfully home-like. The old house was as unhappy looking as the pictures of the unnamed structure altered by them as shown in the illustrations and the results are equally successful.

Somewhat different is the house of Mr. McWilliams, which enjoys the distinction of preserving old-fashioned characteristics even in its remodeling.

It is a far cry from an English Gothic cathedral to an American Colonial farmhouse, but in each the variations in symmetry, which are due to the work of different hands and different designers at varying periods of their existence, add much to their charm, as here the variations make no break in continuity.



House of Mr. Howard McWilliams of Plainfield, New Jersey, along old-time lines



The garden side of Mr. Howard McWilliams' house is picturesquely treated



Transforming Garden Landmarks

By Phebe Westcott Humphreys



THE picturesque transformation of garden buildings "too good to tear down," or treasured for their associations, is a subject of exceeding interest to-day. The owners of ancestral estates that have become beautiful modern country seats, as well as the founders of attractive little homes in suburban and village sections, are eagerly consulting garden architects for suggestions in remodeling quaint and dilapidated landmarks. It is now considered little less than sacrilege to destroy a genuinely historic homestead, no matter how modern and beautiful may be the mansion of the country seat surrounding it. Various uses are being found, in these days of homestead veneration, not only for the old-home structure itself, but also for quaint old-time smoke-houses, dilapidated spring-houses, and other buildings that have withstood the elements of one or more centuries.

In transforming these old buildings for modern usefulness and picturesque value, the homestead studio, or other artistic workshop, is the latest fad. When there is a real artist in the family, the little historic building makes an ideal workshop. When music is the delight of the talented member, a decidedly quaint music-room (or musical studio) may be designed within the ancient structure. When literature, science, or other "artistic industry" occupies the time or serves as a hobby of someone living on the country estate, the

homestead workshop is always a very desirable addition.

The interior "fitting up" of the studio, and the exterior transformation of the ancient building, will depend largely upon the use to which it is to be put when reconstructed. In some instances the little one-story buildings which formed the original homes of the settlers have been turned into "billiard cabins," when the ancient farm homes were altered into modern country seats. An author's workshop and a studio for artistic bookbinding may be found in other remodeled buildings that are an attractive feature of an estate. But it has remained for Mrs. Walter Hering, of Abington, Pa., to display the most quaint and beautiful, as well as practical form of utilizing a picturesque homestead.

When the extensive Lindanwalt country seat first attracted the attention of the entire section of Abington, Pa., because of the pleasing architecture of its mansion and surrounding buildings, and the splendid scale on which the grounds were developed, there remained untouched one sacred spot—a little old, tumble-down structure, partially hidden in a clump of trees, on the lower slope of the grounds, below the mansion. This dilapidated structure was never considered an eyesore, because of its picturesque situation and its quaint surroundings; but wonder has frequently been expressed during the gradual development of the fine estate as to the probable use of the old building.

All curiosity has of late been satisfied in a most novel



Interior of Mrs. Walter Hering's studio, at Lindanwalt



The chimney end of Mrs. Hering's studio, at Lindanwalt



The old homestead at Lindanwalt turned into a garden studio



The old homestead before transforming into a garden studio

manner. At the same time an ideal thought for studio building has been carried out that has set all this section of beautiful country seats longing for artistic talents and an ancient homestead for a studio.

Seemingly ready to tumble into sudden decay, the front of the old structure presented only a doorless entranceway, a sagging roof full of holes, and a broad expanse of crumbling stonework, before its transformation. The back of the building likewise presented a doorway, also a dilapidated single window, and an outside cellar door. The upper floor of the old structure was a mere garret loft, with a narrow window at each end. The first step in transformation was the removing of the old roof, which was replaced by the most modern and quaint of thatched roofs; thatching made picturesque and durable by the use of soaked shingles laid on by a peculiar modern method. The stanch old stone walls were then pointed, the doorway somewhat enlarged in the front, and entirely closed up at the back to allow room for transforming the old window into a light and airy bay window. Then the front doorway was rendered most artistically "ancient" by the use of long iron hinges and knocker; relics of remoter days. Sheltering the doorway, a novel portico has been built, combining the architecture of old-time, high-back settles, latticed sides, and hooded roof quaintly thatched.

The windows have been removed from the loft and the plastered stonework extends from ground to roof; this gives an opportunity to utilize the loft in a most artistic manner within. The ceiling and the floor have been removed from between the lower floor and the loft, and a narrow gallery extends entirely around the building, lighted from below,

thus making the entire studio one big room, with all old partitions removed, reaching from floor to roof, and the kitchen fireplace forming a part of the original big living-room. Along the entire gallery, reaching on all sides of the room, historic relics, mementos of foreign travels, and family heirlooms are displayed in most enticing form, tempting visitors to spend hours in this fascinating place.

But the most alluring spot is the main floor of the studio, where the artistic hostess of Lindanwalt spends her most delightful hours, and where the most beautiful of china painting is executed. Mrs. Hering is widely known as one of the most renowned artists of the day in china painting; and her home hobby has resulted in work that has attracted the attention of experts throughout the country. But while her beautiful productions are known to the multitude, only a favored few of her personal friends have any knowledge of the delightful workshop in which this decoration is accomplished, or the effect of her artistic talents on the ancient building and its surroundings.

One of the special wonders of the Hering studio is the well-equipped and well-managed furnace, standing within the studio building and ever ready for the firing of the choice bits of decorated china when they come from the hands of the artist. Even in the most up-to-date of modern home studios, it is usually necessary for the artist to send the finished paintings to some special china-firing furnace, under the care of an expert. But the resourceful Mrs. Hering is an adept in this form of the work, as well as in the actual painting; and is saved much anxiety in being assured that her decorated treasures are free from the dangers attending transportation to outside furnaces.



Back of the old homestead structure before it became a studio



The new studio window was added to the remodeled homestead



The women who sell all the edible varieties preparing for trade in a corner of a gourd, melon and squash market in a French town

Gourds and Melons of Unusual Growth

By Jacques Boyer



OURDS have been cultivated from very remote times, and many varieties are now found in European and American gardens. Some of their fruits attain imposing dimensions. A few years since a giant squash was exhibited at London, which was raised on the plains of Colorado. It measured nearly five feet in length and weighed 385 pounds. Other members of the gourd family assume strange forms, resembling turbans, serpents, bottles, domes, etc., some of which are represented in the accompanying photographs.

According to Naudin, the gourds are derived from three distinct species: *Cucurbita maxima*, the parent of the French *potiron*, which is characterized by the great size of its fruit, and of some squashes; the African species (*Cucurbita moschata*), which is distinguished by the peculiarity that the five-sided peduncle becomes expanded at its insertion in the fruit; and *Cucurbita popo*, the parent of the *citronille* of Touraine, the American pumpkin, some squashes, and the various ornamental gourds.

French gardeners sow pumpkins and squashes in April in hotbeds, transplant the seedlings to other hotbeds, and finally to the open ground in May. This operation necessitates some preliminary work. Several days before the plants are set out, the holes are dug at distances of one to two yards, according to the variety. These holes are then filled with thoroughly rotted manure, mixed with a little potash fertilizer, and covered with good soil. In the middle

of the bed thus formed the seedling is planted so deeply that the lower leaves are covered. The young plants are watered frequently and are covered with a little straw if the sun is very hot. In frosty or cold weather, which occurs frequently in France in spring, a bell glass is placed over each plant, and in very warm weather the plants are watered more frequently. When the stems have attained a length of about five feet, they are layered, or covered with earth at a few points of their length, where they take root. This process promotes rapid growth. As soon as a fruit is formed, the end of the branch which bears it is pinched off just above the next leaf. If the fruit is misshapen it is removed. The market gardeners of the suburbs of Paris have learned the art of producing very fine pumpkins and squashes by allowing only one fruit to ripen on each vine. They cultivate all the edible varieties and even the ornamental gourds.

There are many varieties of the *potiron*, all of which have the shape of a more or less flattened sphere. The most highly valued varieties are: the mammoth, which often weighs more than 100 pounds; the large yellow Dutch, the flesh of which is two or three inches thick, solid, slightly sweet, and of a fine orange-yellow color; the Etampes red and the Boulogne gray, which are seen very frequently in the market gardens of southern France, and which differ from the preceding varieties by the greenish-gray color of the rind. The Monthlery bronze variety has a dark greenish-brown rind and yellow flesh of

excellent quality. It ripens late and can be kept a long time.

Among the squashes derived from *Cucurbita maxima*, the rough-netted squash is a very strong growing variety, the stems of which attain a length of from thirteen to sixteen feet. The fruit has the form of a flattened spheroid and is covered with characteristic excrescences. The flesh is thick, orange-yellow, and very sweet. The Thoumain netted squash differs from the preceding only by its form, which resembles that of a club. The chestnut squash produces on each vine three or four medium or small fruits, with smooth rind of brick-red color and thick, dark yellow, mealy flesh, which is very sweet and keeps well. The very early prolific squash resembles the chestnut squash in color and the Hubbard squash in form. Its trailing stem ceases to grow after having attained a length of from six to ten feet and produced three or four fruits, which seldom weigh more than seven pounds, but which ripen earlier than any other squashes. The Hubbard squash, which is better appreciated in America than in France, is a vigorous grower, with a branched, creeping stem from sixteen to twenty feet long, and round leaves with slightly wavy and indented edges. The fruit, which keeps well, has a very hard, dark green rind, sometimes veined with brick-red, and deep yellow flesh, which is very mealy, but dry and not very sweet. The Ohio squash, which is cultivated extensively in the United States, bears some resemblance to a huge, elongated lemon, but the rind is almost smooth and of a salmon-pink color. The olive squash resembles an enormous olive.

The Portuguese squash is recommended by the abundance of its sweet, dark yellow flesh. The rind is marked with orange-red stripes. The whale squash is the largest of the varieties derived from *Cucurbita maxima*. The fruit

often measures more than three feet in length, and weighs from ninety to one hundred and thirty pounds. The rind is greenish-gray, the flesh orange-yellow and of excellent quality. The turban squash is so named from its resemblance to an Oriental turban. It weighs from six to nine pounds and is marked in a variable and irregular manner. Sometimes dark green, yellow, and red appear on the rind, sometimes one of these colors is lacking, and occasionally the entire fruit is dark green.

The gourds derived from *Cucurbita moschata* have long, creeping stems, which root easily and which, together with the leaves and leaf stalks, are thickly covered with hairs. The peculiar characteristic presented by the five-sided peduncle, expanding at its insertion in the fruit, has been already mentioned. The leaves are not incised, but are sharply polygonal. They are dark green in color, but usually bear silvery white spots, caused by air bubbles distributed through the epidermis, which rises between the principal ribs. The seeds, which are of variable size, but always of a dirty-white color, with a distinct margin and a downy appearance, preserve their power of germination for six years. The flesh of the fruit has a musky flavor, from which the name of the species is derived. In the first rank of these varieties stands the large Naples squash. The fruit of this very productive variety has a smooth, dark green rind, which becomes yellowish at maturity, and attains a length of 20 to 24 inches, and a maximum diameter of 6 to 8 inches. The part nearest the stem is cylindrical in form, while the lower part is more or less swollen. The seeds occupy the center of the spherical portion, while the neck is entirely filled with sweet, fragrant, orange-yellow flesh. The portmanteau squash differs from the foregoing



The French manner of raising vegetables under bell glasses, popular with French market gardeners during frosty or cold weather in the spring.



A very extensive and prolific field wherein the French market gardeners are gathering and removing pumpkins of unusual size

only in the form and the smaller size of its fruit, and in its earlier ripening. We will conclude the enumeration of the principal descendants of *Cucurbita moschata* by mentioning the Yokohama squash. This rather late variety, a native of Japan, has a very long stem and a flattened fruit of a blackish-green color, rough and irregularly ribbed, and resembling a Prescott cantaloupe.

We now reach those cultivated varieties which show the botanical characters of *Cucurbita popo*. In particular, the leaves are always lobed, and often deeply incised and covered with hairs, which in places become spiny. The

fruit stalk is five-sided, but does not expand at its insertion in the fruit, and is exceedingly hard when fully matured. The seeds are smaller than those of *Cucurbita maxima*. Among these varieties, the sugar squash of Brazil is distinguished by earliness and the abundance and good quality of its small, oblong fruits, which have yellow flesh and a green, rough rind, which becomes orange on ripening.

The white bush squashes form a group distinguished by their mode of growth. The stems, instead of creeping over the ground, are short, erect, and stocky. The leaves are dark green, with a few gray spots, deeply incised, and with indented edges. The fruit is elongated and has five ribs. These white squashes are usually eaten before they are completely ripe.

The Italian squashes, which are elongated and of green or yellowish color, are also non-running varieties, derived from *Cucurbita popo*. The stems are very short and thick, the leaves are large, dark green, and deeply incised into five or seven lobes, with somewhat indented edges. The fruit has a smooth, dark-green rind, marbled with yellow or pale green. The early crook-neck squash, which is bright yellow in color, curved near the stem, and entirely covered with rounded excrescences, is valued especially as an ornamental plant. The Touraine *citronille*, on the other hand, is cultivated chiefly as a field crop for the feeding of cattle. The rind is smooth and dark green, the flesh is yellowish-white and of inferior quality. The seeds, which are very oily, are used in France in the manufacture of certain medicinal lozenges.

The squashes which are called electors' caps, or Spanish artichokes, although they probably originated in Mexico, are not the least interesting of the descendants of *Cucurbita popo*. The fruits are conical and fluted at the base, re-



Some rather curious gourd forms selected from French gardens

sembling fantastic caps. The flesh is pale and stringy, but not without a certain delicacy of flavor. Some of these squashes have a uniform yellow, green, or orange color, some are striped with white and green, and some are cream-colored and covered with elongated warts. All of these varieties are common in the fruit shops and restaurants of France. The skin of these squashes is very tender; hence they are packed carefully in baskets for transportation, as is shown in one of our illustrations. A yellow variety of elongated conical form is cultivated in the United States under the name of the pineapple squash.

In Europe squashes and pumpkins are used almost exclusively in the fresh state, in making soups and for other purposes. The peasants of the south of France make excellent pies and jams of some varieties, and also stew them like potatoes. In ancient times, pumpkins were cleaned of their seeds, dried, and prepared in various ways in winter. They formed an important article in the food of Roman slaves, and this custom of drying pumpkins was continued to a late period in the vicinity of Genoa, Italy.

The market gardeners of Paris preserve the purity of race of their gourds by collecting the seeds themselves. In Anjou an oil which is edible, but quickly becomes rancid, is extracted from the seeds.

The melons, however, are probably more widely cultivated throughout the world than any other representatives of the *Cucurbitaceae*. Specialists divide the numerous types of this class, into the description of which we cannot here enter, into two great groups. The first group, that of the netted melons, comprises the pineapple melon of America, the green climbing melon, the sugar melon of Tours, the American muscadine melon, the Malta winter melon, the



Several specimens of American squashes raised in French gardens

common French melon, etc. The second group, that of the warty melons or cantaloupes, distinguished by characteristic excrescences, includes the Paris cantaloupe, the apple cantaloupe, the Prescott cantaloupe, etc.

In general, melons do not grow well in the open air in France, except in the south. In colder districts, near Paris, for example, the seeds are sown in hotbeds in February. As soon as the two seed leaves have expanded, the seedlings are transplanted to other hotbeds. A mean temperature of



The skin of these squashes is so very tender that they must be handled and packed carefully in baskets for transport to shops and restaurants of France

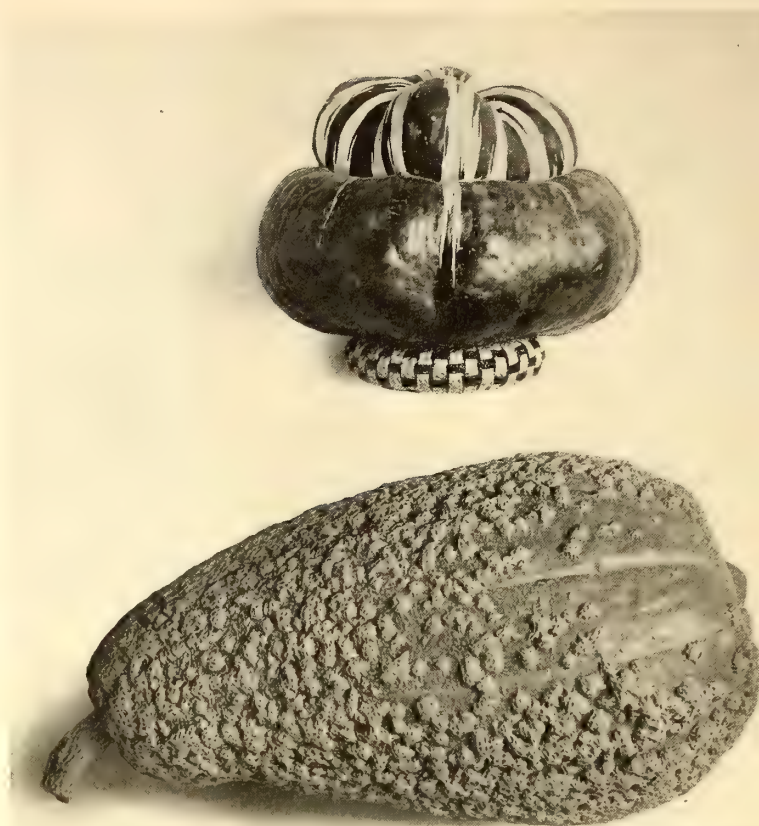
at least 12 deg. C. (53.6 deg. F.) is maintained, but the sashes are opened whenever the weather permits and the plants are lightly watered, care being taken to avoid excess of moisture. In April, when the danger of severe frost is past, the seedlings are again transplanted to new beds. At this time the tops are pinched off above the second leaf. Two lateral branches develop, which are allowed to grow until each has eight or ten leaves and are then checked. The secondary branches, which are subsequently produced, are checked beyond the third leaf and arranged horizontally, in herring-bone fashion, under the hotbed sash.

Sometimes the seed is sown later and the seedlings are transplanted in May to hotbeds, the frames of which are removed as soon as the temperature of the atmosphere permits, so that the subsequent growth takes place in the open air. In this case the pruning is the same as that described above,

except that the branches are allowed to grow a little longer. When the first fruit has acquired its full size the branch that bears it is checked, so that the sap is thrown into the next fruit, and so on.

Let us now note briefly the peculiarities of the most remarkable of these plants, which originated in the warm countries of Asia and have been known from time immemorial. The American pineapple melon is easily cultivated. There are two varieties, one with green and the other with red flesh. The latter is juicy and very fragrant, but usually of inferior quality to the preceding. The green climbing melons are vigorous, much-branched vines. In consequence of the smallness of their green, sweet, and succulent fruits, which

weigh from one to two pounds each, the long, slender stems can be supported by a light trellis. The muscadine melon is pointed at the stem end and globular at the other. The dark green, almost black, rind is marked with white lines.



Two extremely curious forms of Belgian-grown American squashes



A field of edible gourds grown for the Paris market, showing the fruit tangled with a mass of creeping stems, leaves and stalks all over the ground

The Story of Two Remodeled Farmhouses

By Howard V. Bowen



UNLESS one has remodeled an old farmhouse he has no idea of the charm and interest it involves. It often includes even the joy of discovery. The country around many American cities, particularly the older cities of the Eastern States, abounds in old-fashioned farmhouses. As agricul-

ture has waned these old homes have fallen into decay, but the automobile and the trolley car have brought many of them into what might be called commuting distance, and some of these quaint old homes have been redeemed and made into the country homes of city men.

Not far from Reading, Massachusetts, is an old farmhouse built more than one hundred and fifty years ago, embodying many of the New England characteristics which builders of that period seem to have expressed even in their farmhouse architecture. Here are broad, unbroken roof surfaces—eaves cropped closely to the body of the house—windows placed with quaint but often with mathematical precision, and the “stack” chimneys, located usually in the center of the building, so that each room might have a fireplace of its own, with the usual accompanying brick hearth.

This particular feature seems to have been inspired by thrift and economy—why build many chimneys where one would suffice—why waste the heat of the chimney instead of utilizing it by placing the chimney near the center of the house?

In the alterations to the Adden house much of the house's history

was made plain. It became apparent from different methods of building that the house had been built at different times, or, rather, that much of it had evidently been rebuilt. The framing throughout is of rough-hewn oak, but some of the walls were found to be filled in between the studding with brick and mortar, with the inside wall plastered over with newspaper and wallpaper until the walls were almost ten inches thick. Here is a “stack” chimney

of unusual size—almost 16x8—its huge foundations take up most of the cellar, since it was built of sufficient size to furnish support even for the wide brick hearths in front of numerous fireplaces. The chimney itself is of brick laid in clay, with meadow hay used as a binder.

This fine old place has entered upon a new phase of its career—it has come into its own, and answers every demand of modern convenience and sanitation

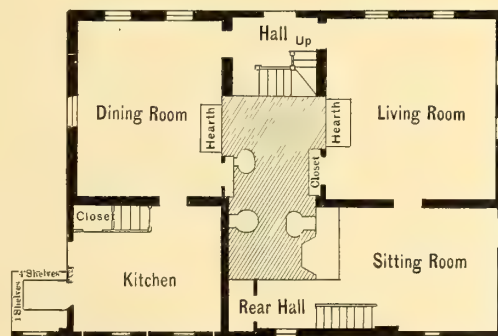
without sacrificing a single jot of the severity which constitutes its chief charm.

The house is not far from the road, for the farmers in 1760 saw but little of the world, and wanted to see that little passing at close range. The grounds are enclosed, as New England grounds should be, by a low wall of field stones—these same stones from the field no doubt made possible the tilling of the soil. The house's exterior required but little altering, and the additions required have been planned upon the old simple and correct lines.

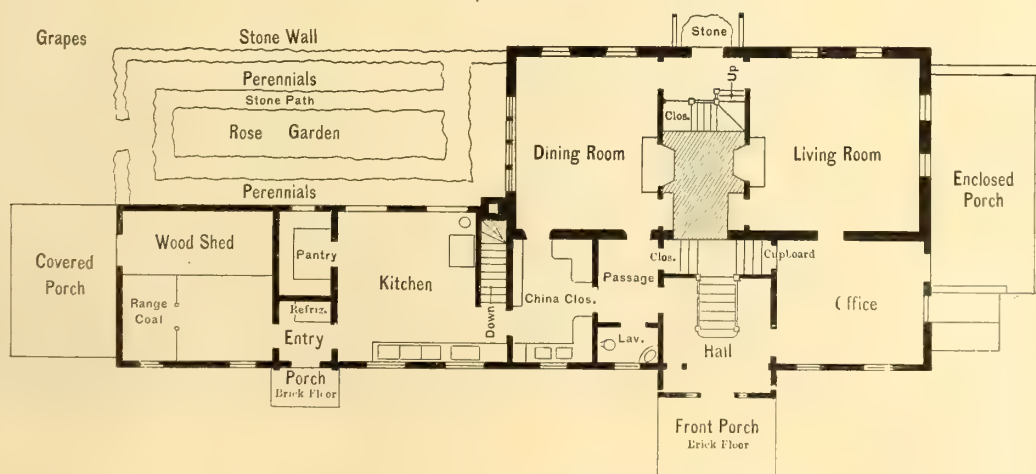
The chief entrance has been emphasized by a porch which contributes just the touch of formality



Mr. W. P. Adden's house, remodeled from a 150-year-old farmhouse



Original ground plan of Adden house



Ground plan of Adden house as remodeled

which its use demands. Another entrance of minor dignity is approached by a flagging of rough stones quarried near by, and still another porch, enclosed and screened, is convenient and practical without being unduly obtrusive. The angle formed by the main building and a newly built service wing provides space for a tiny rose garden surrounded by broad paths laid with stone, and these are surrounded by wide borders where grow the old-time perennials beloved of generations of New England garden makers. The house was originally built with kitchen and sitting-room facing the road—did not the inhabitants want to see the world on



The living-room, Adden house

closely connected, are really completely separated—an arrangement which doubtless adds greatly to the comfort of the entire family.

An architect may plan a new home or alteration to an old house with the utmost care and ever so wisely, and yet the entire effect may be ruined by careless furnishings or wall decorations. In this old house the original woodwork in its charming simplicity still remains—in fact, what little had been spoiled has been completely restored. All is white, and the handrails of the stairways are of mahogany of the simplest design; the fireplaces and hearths are of dark red brick with surfaces of some texture, and laid with white or gray mortar.



Old entrance-hall, Adden house

parade?—and altering this arrangement and removing a part of the “stack” chimney constitute the chief structural changes demanded by new conditions. The space thus gained affords a dignified and spacious entrance-hall. The old sitting-room now known as the “office” probably performs its old-time functions, and the living-room and the dining-room with the little hall between are almost unchanged.

The bedroom floor has been adapted to the needs of the family whose home the old house has become. One-half of the space is devoted to the nursery, with its wide, old-fashioned fireplace, ample closet space, bath and nurse's room.

The rest of the floor provides a large bedroom, with a bath and dressing-room of its own, and these two parts of the floor, while



The chimney-room fireplace, Adden house

The wall coverings are in keeping with the character of the house itself—the halls are covered with paper divided into alter-



The dining-room, Adden house

nate square and oblong panels, with little scenes repeated at intervals, after the manner of the eighteenth century. The walls of most of the other rooms are covered with a striped paper without a frieze, but with a narrow molding next the white ceiling, which has been allowed to remain slightly roughened and uneven. In many of the rooms are the heavy beams which cross the ceiling in unexpected places—these beams seem to have been considered necessary for the proper construction of the house.

Much of the beauty and interest of the Adden house is added by the furnishings, which are in perfect accord with the old home which they

makers understood so well. Some of the chairs are of the rush-bottomed variety, with the painted decorations so popular then, as now, in New England, and the lighting fixtures, china, glass, and other details are in perfect agreement with the simple and direct character of the house itself.

The dining-room is large and low ceiled; it has a fireplace wide and deep and a little cupboard over in the chimney, where plates could be warmed. The woodwork is white, the walls covered with a charming old-fashioned striped paper, the furniture old mahogany polished to a dull and beautiful surface. At one end are four windows placed closely



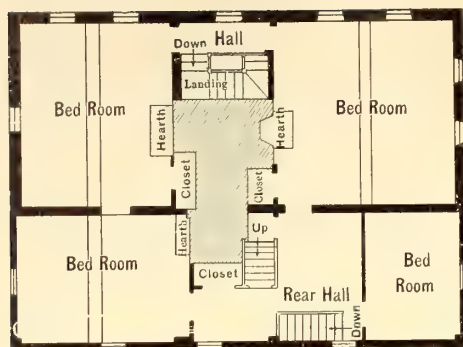
New entrance-hall, Adden house



The living-room fireplace, Adden house

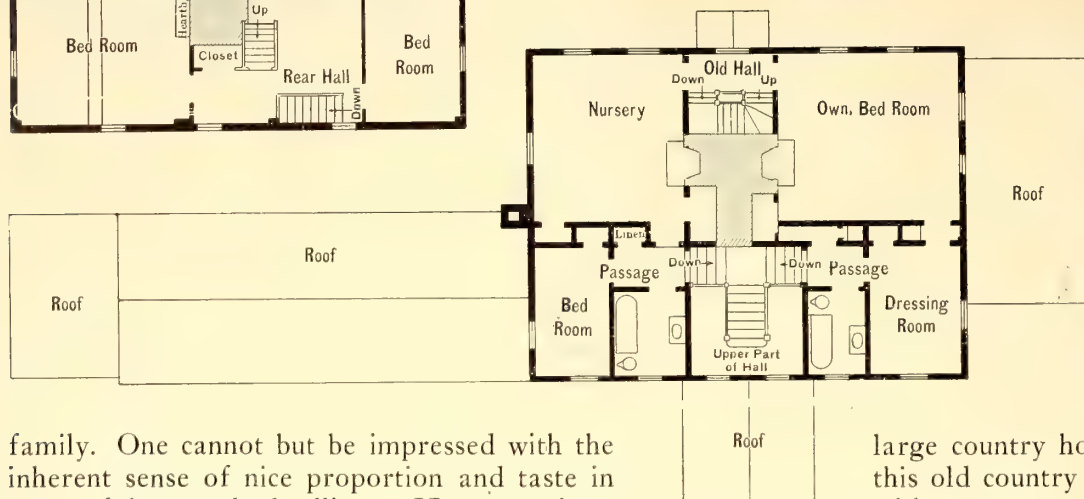
adorn. Most of the furniture is of old mahogany, with the grace of line and the touch of decoration which the old furniture-

together, and through their small panes appears the flower garden, with its tangle of roses and its borders where grow tall hollyhocks, larkspur, phlox, and Canterbury bells. A problem of particular interest awaits every architect who is given the commission of adapting a New England farmhouse to the requirements of modern life and the demands the dweller of to-day makes in the matter of those conveniences which shall add to his comfort in the home. In the early days of the Colonial period, and even later, in the middle of the nineteenth century, it was customary in these old homesteads for the owner to begin his building operations in a limited way, later adding rooms to the house as the family increased, more often than providing in advance for the housing of a large



Bedroom floor plan of Mr. Hopkins' house before remodeling.

Bedroom floor plan of Mr. Hopkins' house after remodeling.



family. One cannot but be impressed with the inherent sense of nice proportion and taste in many of these early dwellings. However, those old New England farmhouses, to which additions came to be made from time to time, rather exhibit the owner's first

thought, which was one of comfort and convenience, rather than one of architectural beauty. Distances between the dwellings were then nearly always great, roads poor, and transportation facilities meagre, dependent upon the stage-coach or the riding-horse in the earlier period of the country's growth. Again, the few settlers in the lonely country had bleak winters and all the discomforts incident thereto to face, by reason of which it sometimes happened that one of these early-day New Eng-

land farmhouses would be constructed with a view to housing two families instead of one, each section of the house being separate and distinct in essentials, but under connecting roofs. Examples of such houses are often met with in the villages scattered throughout Cape Cod, the old Winslow house, in North Brewster, being one of the most interesting examples that has come to the writer's attention.

One of these old New England farmhouses, in Reading, Massachusetts, built a hundred and twenty-five years ago, with some later additions, chanced to attract the attention of Mr. Walter Scott Hopkins, its present owner, for Mr. Hopkins saw in it possibilities for transforming it into a delightful modern home—a home that would yet retain some of the charm of the home-feeling of yesterday. Mr. Hopkins found here an old countryside dwell-

ing, designed originally to accommodate two families, and the problem awaiting him was one of reconstructing a single house out of this old double one.

The architects very wisely decided to pursue the extremely simple and severe exterior lines which gave the house individuality and character and have merely accented certain features of the building which were necessary in making the house into a home for one family. The interior required much altering, much tearing down of partitions to make broad and spacious rooms of the tiny spaces which sufficed a century or more ago, much installing of plumbing and of lighting and heating apparatus to answer the demands of modern life, and the making over of an old New England attic into a servant's quarters sufficiently ample for a

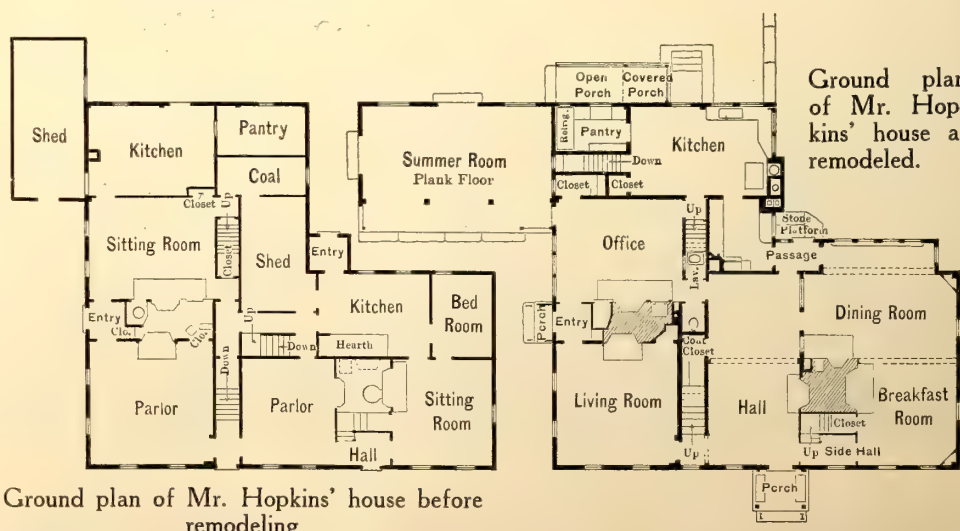
large country house. The altering and furnishing of this old country house has been planned and executed with rare taste and discrimination, and the Hopkins home is a place of singular beauty and charm. The exterior is low, broad, and generous in effect, but as plain and severe

in detail as the character of its original builders. A row of rough, flat, irregular flagging stones embedded in the ground leads to an entrance-porch of simple but unusually pleasing design. There are benches at either side of this of the sort that appear to have been as popular in New England as in New Amsterdam, where they were always to be found either side of the doorways of the old Dutch farmhouses. This entrance-porch leads into a broad, low-ceiled hall, entered through a leaded-

glass door, with fanlight above, at the end of which is a deep-set fireplace, and a heavy beam lies across the ceiling.



Mr. Walter Scott Hopkins' house, at Reading, Mass., after the alterations



Ground plan of Mr. Hopkins' house before remodeling

Ground plan of Mr. Hopkins' house as remodeled.

The space which was once three rooms has been utilized as a dining-room of beautiful proportions, and a breakfast-room which is really part of the dining-room itself. The other rooms upon the main floor are almost unaltered, but the service portion of the house was entirely replanned and is almost completely new.

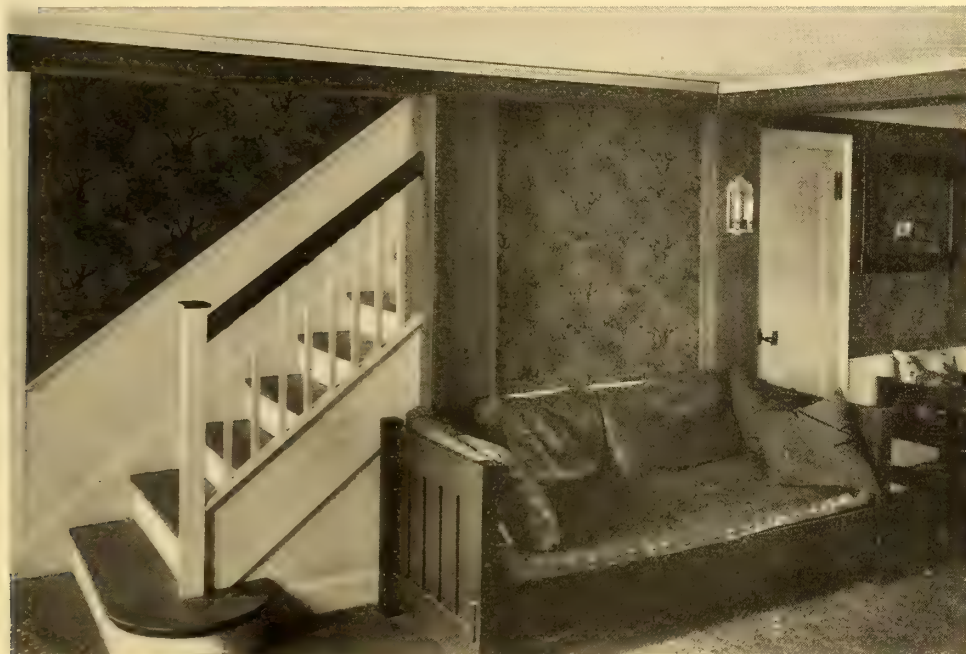
Many beautiful old houses are spoiled by the unwise and indiscriminate adding of a porch where a porch should not be. Here, in the Hopkins house, some kind of a living-room had to be provided. This was finally built from what appears to have been an old open woodshed, broad and low. The sides not already open have large doors and shutters which are open in summer, the entire arrangement possessing every feature of a modern piazza without its ugliness.

The upper story of the Hopkins house as rearranged has five large bedrooms and a bath. Most of these rooms have deep fireplaces, and the stairways have been so planned and placed



The dining-room, Hopkins house

constituting the ensemble, dating back to a century ago.



The entrance-hall, Hopkins house

that every room opens directly upon its hallway. One of the bedrooms has been greatly enlarged and really remodeled from a low and insufferably warm garret by adding a row of windows in the roof, which arrangement extends the ceiling space without breaking the beauty of the house's broad horizontal roof-lines.

In preserving the old-time character of the Hopkins house every detail of old-fashioned beauty has been retained and "amplified." The woodwork is plain and almost without ornament, but beautifully simple and correct. The old hand-made hardware is still used, old cupboards have been discovered or added where they seem to fit in, and the old oven is still as much a part of the fireplace as the andirons or the crane.

The wall coverings everywhere throughout the house have been chosen with taste and care, and much the same patterns must have been originally used. The house forms the setting for a collection of old furniture, mirrors, lamps, and other household furnishings

This old house without and within possesses many points which might well be studied by the builder of country homes to-day. The front, which faces the road, has eighteen windows, arranged in horizontal rows which might easily become monotonous if not skillfully handled. The appearance, on the contrary, is delightfully direct and tasteful; the windows are not of undue size and seem to have been placed with "informal formality," and the small panes give them a certain character of their own, particularly as a few panes have that very slightly iridescent effect which is so fascinating to the student of an old New England building. In making the alterations the architects have given the little entrance-porch just the note of simple dignity required to complete the homelike character of this side of the house.

The opposite side of the old building, while more difficult of arrangement, is fully as satisfying. Imagine the appearance, in un-

trained, unskillful hands, of a house which has three

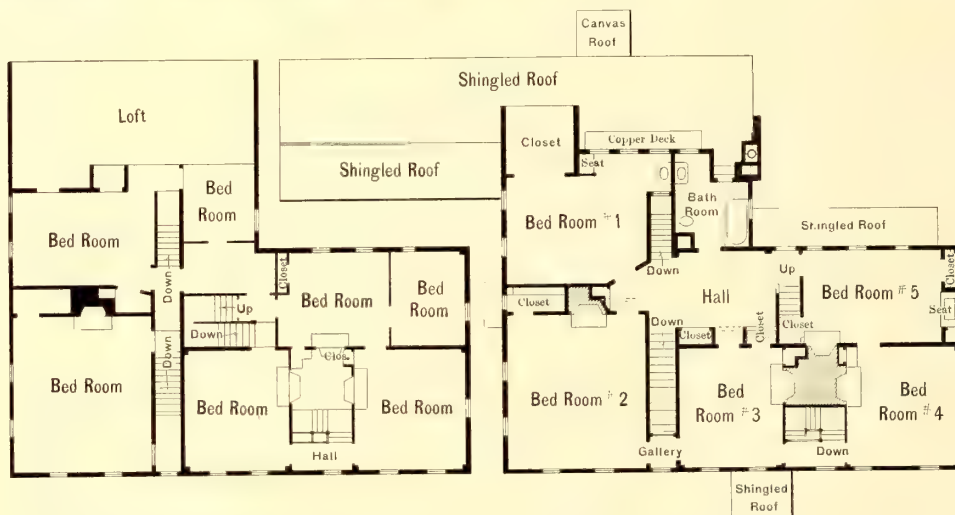


The morning-room, Hopkins house



Old oven-hearth in the den, Hopkins house

chimneys of different sizes and shapes, and so great a variety of dormer windows, porches, and additions of different kinds. Here the result is quiet and useful—the long, sweeping roof reaching almost to the ground has been preserved, but so arranged that retaining this truly New England feature has not resulted in



Original plan of bedroom floor of Hopkins house

Plan of bedroom floor of remodeled Hopkins house

the hot, stuffy bedrooms which we so often associate with picturesque old country homes.

The interior woodwork seems to have been studied with particular care—one can hardly tell what is old and what is new. How many architects are willing to forego a mantel in one of the important rooms of a country house and to use instead the plain paneling, entirely without ornament, which we find in the sitting-room of the Hopkins home? The lighting fixtures also seem to have been chosen with unusual care, and are hardly too decorative for their surroundings, since even the most primitive of early New England homes possessed lamps or candlesticks of a character surprisingly luxurious.

This house, after all that remodeling has done for it and after all that has been told to describe its shift into modernity, gives the impression that it still retains something of the spirit of its former self.

The changes made have been serious, cosy, spacious, beautiful and radical enough, but one may yet feel for a moment that in a dawn or a twilight gloom the old farmhouse is there; that a semblance of the brand of its old virtue is bound to linger a long time. Even some sound might again issue and be like an echo from its old halls, and none will begrudge it these ancestral hints.



Garden side of Mr. Walter Scott Hopkins' house, showing the long, sweeping roof reaching almost to the ground, as in the old house



The Small Motor on the Farm

What It Has Contributed to the Farmer's Comfort

By L. W. Ellis



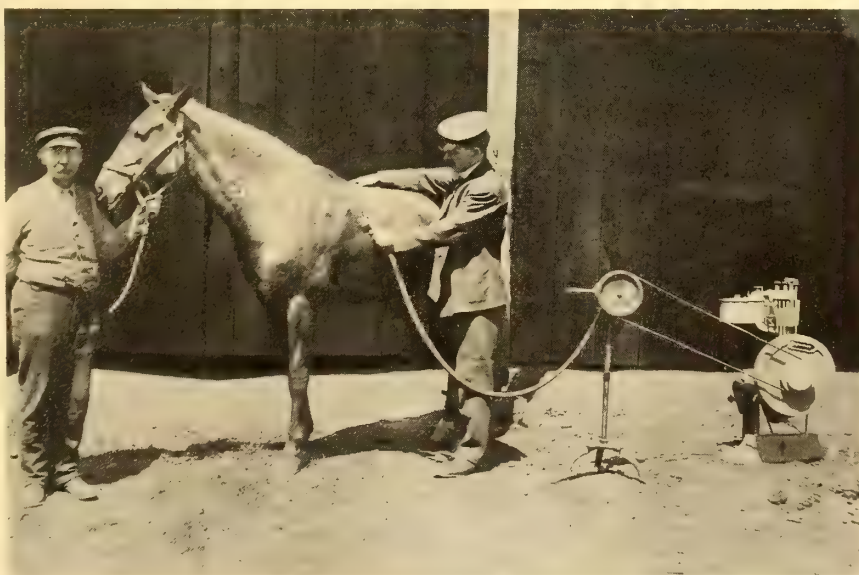
HUNDRED years ago the production of the necessities of life kept four families out of five on the farm, and those four barely supported the fifth by their surplus products. Choice of occupations was necessarily limited. Since the invention of the steam engine, the manufacture of countless necessities has been transferred from farm to factory. The steam engine has made possible the wonderful development of our land and water transportation system. It has fostered the growth of our great centers of population, increasing the opportunities for employment away from the farm. The transfer of manufacturing to the city and the development of wonderfully efficient horse-drawn field machinery for crop production released millions of workers from the isolated life of the country. In consequence we have had for a generation the problem of making farm life more attractive.

It has remained for the engineer to accomplish what the agriculturist failed to do, and, naturally enough, by the same methods by which he made life away from the farm attractive. He is establishing easy means of communication and transport, devising conveniences for the farm home, and, most, of all, he is introducing mechanical power to take from human shoulders the monotonous daily tasks that cannot be shifted to those of the animal. The agricultural world is awakening to the stunning fact that, after all, the farm is an engineering proposition. Production, to be efficient, must be organized on

the same lines as in other great industries. The small motor is only the beginning of a wonderful development in agricultural engineering, and has greater significance than the importance of present installations would indicate. It is significant of the tendency to intensify agriculture by applying more power to each acre and carrying processes farther on the farm. It means the elimination of drudgery, the saving of unnecessary human labor, which is conservation of the highest type. It means the opportunity for exercise of mental rather than physical strength, the development of broader intelligence on the part of our farmers, with direct benefit to those who must depend upon the farmer's efficiency for their daily bread.

Electrical machinery has gone through wonderful devel-

opment, and competition in commercial fields has at last brought the farm to the manufacturer's attention as an unworked source of trade. One of the papers at a recent meeting of the American Society of Agricultural Engineers was read by the representative of a large electrical company, the title being, "The Promise of an Electrical Agriculture." The resulting discussion developed the fact that both engine and electrical manufacturers are looking to the farm for their



View of mechanical horse-clipper in use, whose work eliminates unnecessary labor

greatest volume of business in the near future.

Without dwelling further on the economic phases of the question, we may pass to a consideration of some of the many adaptations of internal combustion engines and electrical motors to farm purposes. The discussion will be confined to those operations involving the saving of hand

labor, the use of mechanical power in field work being a vast subject in itself.

The uses of the gasoline or kerosene engine on the farm are almost without number, but only the exceptional farmer has established a complete power plant. Pumping water by hand has long been regarded as impracticable, and in regions of unbroken topography the windmill has been generally unreliable. The latter's frequent failure in the summer, the time of greatest consumption, has led to a surprising shift to the small engine for pumping purposes.

In general the needs for water are for fire protection, sanitation, irrigation and consumption by household and stock. By the aid of the engine the farmer may have a better water supply than his city relatives. For instance, an elevated storage tank will give gravity pressure for

from a depth of twenty feet. Even in the favored Cornbelt and the East, the engine is being called on to keep crops forging ahead through the customary summer drought.

Too often the only use of the small engine is for pumping water, or grinding feed, or some other one task. In contrast the writer has in mind a two-story power house on a side hill, visited over three years ago. The engine and the pump are in the basement. Overhead is a line shaft, to

projects are not possible or have been delayed. As a rule the engines used are of larger size than those used for general farm purposes, but in numberless instances the engines of from three to ten horsepower have proved the salvation of the farmer by supplying water for at least a small field.

Water can often be found at a shallow depth in dry runs or by boring. A five horsepower engine will raise 500 gallons per minute



A gasoline engine for "bucking wood" is now an indispensable apparatus



Farm pump engine here takes the place of a blown-down windmill



Internal combustion engine successfully fighting the codling moth

faucets or hydrants all over the farmstead, and the newer pneumatic tank, under ground, gives both pressure and insurance against freezing. In the latter the engine may be used to pump either air or water into the tank up to a pressure of from 15 to 75 pounds per square inch. It is now possible, by means of an engine, a compressed air tank and a submerged pump, to have abundant water direct from the well by simply turning a cock in the kitchen. The pump, located at least six feet under the water, may be started by turning the faucet, the air supplying power for operating the pump. A surprisingly large percentage of farmhouses are being equipped with modern sanitary conveniences which contribute to the health and comfort of the family.

The engine has solved the problem of irrigation in many square miles of semi-arid territory where large

which are attached at will the cream separator and churn, the washing machine (the boys do the washing and like it, because there is some inspiration in the chug and fuss of the engine), the corn sheller, fanning mill, feed grinder and grindstone. To all intents and purposes the building is a small industrial plant. There the farm office is located, the farm business transacted, the bulk of the farm stores kept, and many of the important processes of the farm carried on. All is system like that of the factory. There is activity without drudgery, the condition in any occupation which begets enthusiastic service.

Out in the dairy barn one clean, well-paid, trained dairy assistant now does the work of two slovenly farm hands openly rebellious at the tiresome job of milking. All that the farmer saves in money, perhaps, is the keep of one man, but in freedom from labor



Gasoline engine employed in irrigation is an aid in droughty times

troubles and in general improvement of dairy conditions he gains in reputation and satisfaction of mind. The vacuum milking machine is responsible, with a gasoline engine off at the dairy house energetically minding its business of running the vacuum pump and the cream separator. Ten to fifteen cows per man per hour is the new standard of capacity, with far less work and dirt. The vacuum cleaning principle is applied to the cows by a slight addition to the equipment. All the dirt, loose hair and other foreign matter can be drawn off into a dust collector and removed. By the ordinary process of currying and brushing, these sources of contamination are stirred up to fly about the stable and settle upon the utensils. In dairies of fifty cows or less an engine of one and one half horse-power is sufficiently powerful to run the four to six milkers usually attached and to handle other dairy machinery besides.

The livestock is rid of its surplus of old hair neatly and rapidly through the agency of a power clipping machine and a very small engine. The engine may assist in spraying the cattle for parasites, whitewashing and spraying the interior of the barn as a preventive measure. Spraying now extends to the orchard also, where insect and fungus enemies are successfully combated.

Filling the silo has rather grown beyond the limits of hand work, though it started in the same class with the work of chopping roots, corn, grasses, etc., by hand. All this work, heavy or light, may now be done by the gasoline engine, and the number of silos has increased in thirty years from less than one hundred to many thousands. This engine, to be of the most approved type, should be of about twelve or fifteen brake horse-power and handle close to seventy-five tons of corn fodder per day on ten to twelve gallons of gasoline.

The internal combustion engine for such work must have an excess over the average power requirements, as the load is irregular and the speed must be kept up in order to obtain efficient results from the ensilage cutter. On this account a heavy fly-wheel is added to equalize the motion of the engine. Again, some manufacturers, following the lead of the builders of large gas engines for heavy duty, are adopting the volume, or throttling, governor in place of the hit-and-miss type. In the latter the explosions are occasionally "cut out" by automatic action of the governor when the speed increases above the normal, to be resumed again when the absence of power impulses causes the speed to drop below normal. The throttling governor admits a charge for each cycle, proportioning it each time to the needs of the load. It is, therefore, slightly less economical on light loads than the hit-and-miss type, but for the heavy, irregular work of shredding corn, filling the silo, sawing wood, etc., it can be depended on to furnish steadier power.

"Bucking wood" no longer has its terrors for the farm boy. If the farm cannot afford the investment in a saw to go with the gasoline engine, there is very apt to be a neighborhood saw. Wood is not a perishable product, however, and farmers are often content to wait until the owner of a large outfit puts in an appearance and does the work on a custom basis.

One of the most exhausting chores in connection with the harvesting of the corn crop is shoveling off the load after a day of ten or twelve hours in the field. Now a two horse-power gasoline engine, attached to a portable elevator, will empty a thirty-bushel load of ear corn into a car, corn crib or granary in from three to six minutes. The same is true to some extent of the small grain crops. Very often both elevator and engine are mounted on the same truck, and in connection with the large threshing outfits this combination saves labor that is hard to get just at that time. The wagon

is driven into position, the front wheels elevated and the rear end gate removed. The grain falls into the hopper, is elevated by an endless conveyor and delivered by a flexible spout at heights practically impossible by hand. The engine has therefore made it possible to build granaries and corn cribs higher, at a considerable saving in initial expense per unit of storage space.

On farms where heavy machinery, portable buildings, etc., have to be moved fre-

quently from place to place, the portable gasoline engine equipped with a winch and cable is often indispensable. A five horse-power engine may occasionally be seen putting a fifteen-ton tractor into a space on a storage floor which would not withstand the combination of weight and vibration produced by running the tractor under its own power.

It has been conclusively demonstrated that the horse is a more flexible traction power unit than the gasoline engine. He may be coupled up in teams of varying size, and in a pinch can pull to many times his normal capacity. At the same time, for driving rotary mechanism of fairly constant resistance, the engine has a great advantage over the horse in endurance. This is further emphasized by the loss entailed in transforming the linear motion of the animal's forward progress into the rotary motion of the machine. While a school of engineers in France has been arguing that the ideal farm machine should use horses for propelling it and the engine for performing its effective work, Yankee ingenuity has perfected the combination. From mounting a small stationary engine upon the frame of a grain binder, which was done repeatedly by inventive farmers before manufacturers grasped the possibility, we have now come to an engine mounted on wheels and connected by a shaft and universal joint to the driving shaft of the harvester. This outfit goes merrily up hill and down dale with two horses where four or five were formerly employed. It is especially adaptable to cutting rice or grain on soft ground where the traction wheel of the binder could not grip the surface firmly enough to transmit the required power.

To the average farmer electricity is a mysterious agent, to be gingerly dealt with. Up to date the widest use of electricity on the farm is for lighting and for the light tasks about the house. Current for general power uses has usually proved more costly than power derived from the gasoline engine, and the kerosene engine has even further increased the handicap. Moreover, the engine, as a self-contained and easily portable unit, is much more convenient for use at different points. In isolated cases, however, a



The milking of ten to fifteen cows an hour with hydraulic apparatus

small stream has been harnessed, and even at a considerable cost for electrical equipment, been made to furnish cheaper and more convenient power than the engine.

Improvement in the storage battery has widened the use of gasoline-electric systems. A two horse-power engine will furnish a horse-power hour for 0.15 gallon of gasoline on full load and on 0.2 gallon at half load. As many tasks require less than full load, the storage battery has been made to economize by taking up the surplus power. On the average farm it is seldom necessary to run the engine simply to charge the battery, hence the lights may be said to cost little or nothing outside of the cost of installation and the periodical restoration of the battery electrodes. The storage battery is a great convenience. It is a necessity with the hit-and-miss governed engine if a clear, steady light is to be had. Some types of engines with throttling governor control have proved very satisfactory when coupled direct to generators. This connection requires, of course, that the engine be run as long as lights are required, and unless some such work as pumping necessitates running the engine at night, the outfit would probably be useful only on large farms where a number of buildings are to be lighted.

Low voltage systems are commonly offered to the farmer on account of safety, simplicity and low operating cost. The improvement of the low voltage tungsten lamps, consuming about one-third the current required to operate the ordinary carbon filament lamp, has made it possible to reduce the size and cost of installation, especially in the matter of storage batteries. The fifteen-light plant is probably the most popular, as more than that number are seldom burned at one time. With this outfit it is possible to wire for twenty or thirty lights, and burn the entire number by running the engine and dynamos and taking current from the battery at the same time. The fifteen-light outfit requires about one-third horse-power and the thirty-light about three-fourths horse-power, but less than a two horse-power engine is seldom installed. The total cost of engine, generator, storage battery, switchboard, wiring, fixtures and lamps, for a fifteen-light, thirteen-volt outfit is around \$400. The light will cost in the neighborhood of one one-hundredth of a cent per candle-power hour. For installations covering considerable area it is advisable to use a higher voltage, i. e., twenty-five or thirty.

With the development of interurban railways and long-distance transmission lines it is frequently possible to obtain current from the central station at lower cost than from individual plants. Communities are to be found where the use of electricity for light and power is practically universal, and community central stations are developing in the same manner as did farmers' telephone lines a decade ago. The installation of low voltage apparatus for individual plants requires radical change in equipment when central station power is finally obtained.

The small electric motor is especially convenient about

the farmhouse, attached to a fan, a flat iron, a churn or a washing machine, for the housewife has but to turn a switch to secure relief from heat and weariness. The electric range and chafing dish can hardly be said to be in general use, but the vacuum cleaner is coming into its own. For \$100 the mistress of the household is equipped to clean carpets, floors, upholstery, drapery, etc., by suction at a cost of three cents per hour. The blowing attachment chases dust from inaccessible places. The outfit may be used even for the lady's massage and drying her hair. A motor of one-sixth horse-power furnishes power for all.

A supply of soft water under pressure, independent of the farm supply, can readily be obtained from a cistern, a pneumatic tank, a rotary pump and a motor of one-fourth horse-power. Convenience rather than cheapness has been the means of popularizing the electric motor, and it is only natural that it should appear oftener in the home than in the producing end of the farm.

A friend of the writer's even applied electricity to the farm fence. He drove 2-inch x 2-inch sticks about four rods apart surrounding a pasture field and strung two No. 15 wires thereon, properly insulated. As a starter he connected up a tiny dynamo, driven by water power, with his fence wires. By carefully introducing the various animals to the fence before turning them into the pasture, he educated several to give it a wide berth. The others, however, showed a supreme disregard for the fence, and after the most carefully educated mule, in a panic, took out several panels the inventor quit in disgust.

This discussion has hardly covered all the farm uses of the small internal combustion engine and the electric motor. Enough has been said, however, to justify the statement that one of the greatest present needs of the farm is a comprehensive inquiry into the subject of power installations. These motors are working revolutionary changes in the social and economic status of the farm laborer. But there are no state or national publications on farm power questions to compare with the concise, scientific, helpful series on every other topic.

The writer has long advocated the need of a branch devoted to agricultural engineering in the United States Department of Agriculture. On account of the breadth of the subject the State colleges do not as a rule have the necessary resources to investigate all phases of agricultural engineering, and under the present organization the subject of farm power can receive but little attention. The interests of manufacturer and purchaser are identical. It is gratifying to note that the National Gas and Gasoline Engine Trades Association, representing the makers of internal combustion engines and accessories, has joined hands with the American Society of Agricultural Engineers, representing the college men and farm machinery manufacturers, to urge upon Congress the organization of a Bureau of Agricultural Engineering at Washington to cope with the situation which is so rapidly assuming great importance.



An Old Farmhouse That Became New

By Warren H. Miller



THE old farmhouse lay in a hollow of the rocks overlooking a little valley in the heart of an ultra-fashionable, exclusive, country-residential section. Nobody wanted it. It had neither furnace, nor gas, nor city water, nor electric lights. To get into one whole section of the house you had to

go through a bathroom, cobbled up by some misguided designer out of the most important corner of the big upstairs chamber—the one at the head of the stairs.

To arrive in the kitchen you made a detour out of the front door into some occasionally very wet ground and around the corner to the kitchen door. This had to be done about three times a day, because there was nowhere else but the living-room in which to spread the paraphernalia which generally accompanies one's efforts to prepare nourishment. In fact, you never appreciated how

vital a matter the lowly kitchen can be until you found it sequestered in an almost inaccessible wing and had to visit it scores of times a day.

As an architectural entity,—the Verplank farmhouse just grew. The original Verplank evidently built and lived in

but he preferred to have his kitchen separate, being doubtless deterred by the thickness of the wall from inserting a door.

Finally in the '70's the crowning glory of the house was added, a tower, that looked like a Pilgrim's hat. After that the Verplanks rested from their labors.

People from the twenty-thousand-dollar Elizabethan, Mexican and Georgian "villas" scattered promiscuously about, wondered when the unsightly shack that occupied the

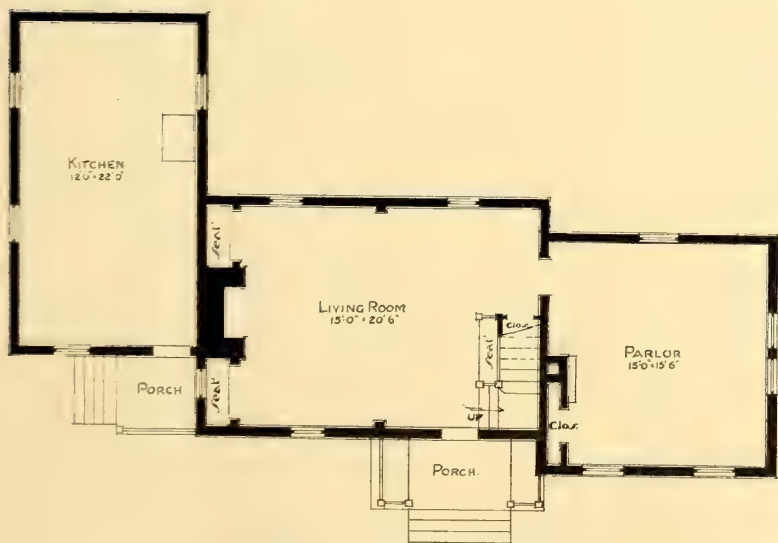
finest site of all would tumble into the maw of some house-wrecking company. Prospective renters and buyers came to investigate. They admired the noble oaks, the view, and the neighboring mansions; but were easily routed on viewing either the kitchen or the bathroom.

And so it remained untenanted until, one afternoon, with the valley bathed in peace and shade, a man chanced to come

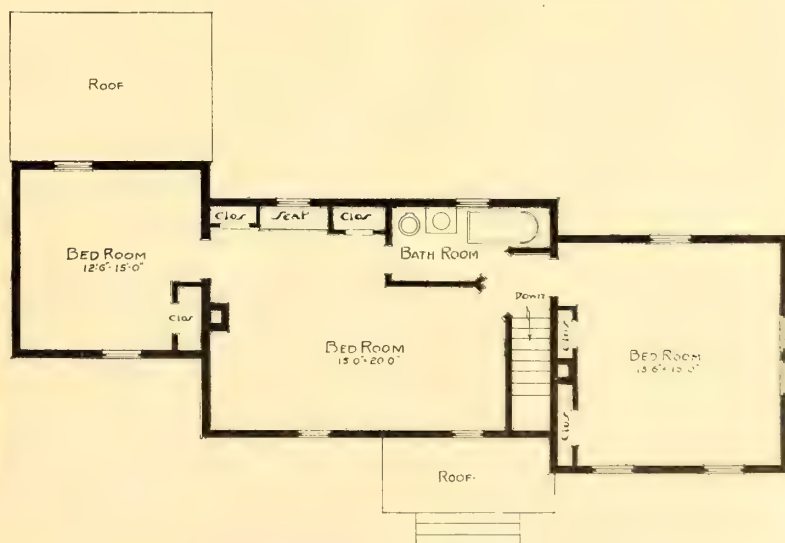
upon it. He was gifted with an intimate acquaintance with many impracticabilities, but happened, at the same time, to be in full possession of five thousand dollars. He had no other ideas about a house except that it must be on the side of a lot, and, he argued: "What is the use of owning five



The old farmhouse before alterations seems unlikely to carry possibilities realized



Ground floor plan of the old farmhouse

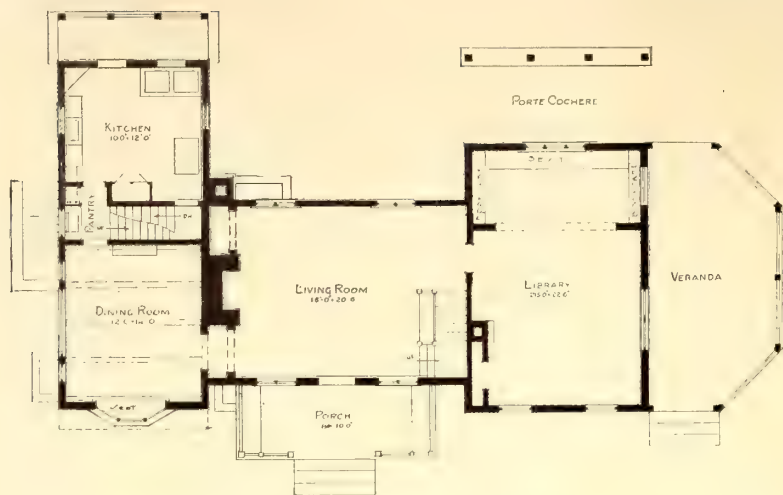


Bedroom floor plan of the old farmhouse

the kitchen, as it had stone walls two feet thick, where he could exchange compliments by means of a blunderbuss with hostile Mohawks and Iroquois. Then some descendant built the middle section somewhere in the '20's, when the coolness and protection of a porch could be enjoyed;

thousand dollars' worth of land and putting most of it behind the house where you cannot see it?"

He examined the grounds, the view, and the surrounding mansions, and at once was delighted with the tall oaks and tulip trees on the place, as well as with the very small



Ground floor plan of remodeled farmhouse

brook, on the banks of which grew wild garden thyme. He glanced into the house, much as a huge Newfoundland might look into a kennel, and then went about to study the surroundings. The house was on the side of the lot, therefore it suited.

There was no driveway, but that could be arranged with a little macadam; and Virginia creeper could soon extinguish the architectural glories of the tower; so before nightfall a sale was made at \$4,500.

The new owner brought his wife to see the great purchase.

Immediately she exclaimed: "Coal stoves and pumps! I never lived in such a place in my life. The servant will leave! We will have to eat in the kitchen! Could you not have seen that no one could get from the kitchen to the rest of the house without great trouble, and that the bathroom blocks up the whole house! That agent must give you back our money."

But they moved in, and soon an opening was made in the two-foot wall which connected the kitchen and the living-room. Part of the five hundred dollars left over bought and installed a hot-air furnace and connected the house piping to the city water mains, and so they passed the autumn and the winter.

An architect who took an interest in the owner and his house ran out occasionally to see the trees, the view, and to watch a real wood fire at the hearth. He examined the house carefully, and declared that with an expenditure of about two thousand dollars a profitable and pleasing result could be obtained.

He drew a plan of the original house and then advanced his ideas of a radical remodeling of the building.

"To begin with," he said, "you want your dining-room placed to the southeast. That is an essential point in house designing, as here one gets the morning sun.

"Now, we will pull out the front of the kitchen so as to make it line up with the house, and then cut it in half to make a kitchen and a dining-room." But on further con-

sideration he decided that this would not do, as he had to provide space for a pantry and a back stairs for the second floor. So he planned to push it out to line up with the tower front.

He sketched it carefully enough, and at last announced that the old farmhouse had the elements of an H-plan manor-house.

"My purpose in the design here made," said the architect, "is to pull off the roof, run up this story over the rear kitchen, carry the second story of the tower back to match, leaving a porte-cochère underneath, and put on a porch across the middle section. The present roof is one of flat tin. Put a new one on over it, and it can all be accomplished inside of the two thousand dollars' estimate."

The designer finally presented an Elizabethan structure that looked to be on architectural terms with any of the villas in the neighborhood.

It was now the owner's turn to be interested in the architect, and he asked what could be done with all the clapboarding on the walls of the farmhouse. He was informed that it could be covered with hair-felt paper, furred with

one-inch-by-two-inch hemlock, lathed, and then a silestone slap-dashed stucco put on.

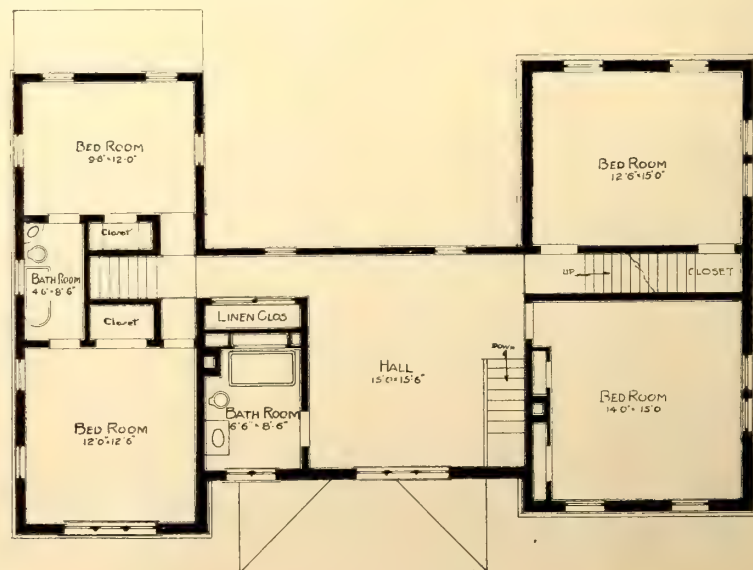
To carry out the scheme of remodeling it was found that it would be necessary to remove the peak roof of the tower after finishing the work on the middle section and the kitchen wing, the parts of the house chosen for the winter occupancy.

The architect next drew a plan of the original second floor. From a study of this he found that the middle chamber was too large, so he planned for a bathroom in one corner. The former was very poorly lighted, so a couple of small windows at the front were taken out and put in the back of the house, and two big diamond-pane



The new house, remodeled from the old, compares favorably with its surrounding neighbors

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Bedroom floor plan of remodeled farmhouse



A corner of the library, showing the newly constructed fireplace

English windows substituted. The owner's chamber was then designed to include another large diamond-pane, and this bedroom was placed directly over the dining-room. A child's room was put in the rear, and a brace of closets and the master's bathroom arranged in between over the back stair well. Plans were then made for placing a guest-room and a study upstairs in the tower wing, with a stairway to the servant-room in the attic.

With the first thaws of spring, laborers began to dig a cellar under the kitchen and to run a field-stone foundation under it and its extension out to the front-face line of the tower. The carpenters began work one morning, and by nightfall the owner was carrying on his literary labors in a furniture-crowded tower, while outside was a kitchen without any front wall; a main section without any porch, windows, or doors—just gaping holes through which the zephyrs played—and a back yard littered with the remains of the bathroom.

By the second day the neighbors were sure the house-wreckers had come at last, but by the third they became aware that the house began to take on a decidedly patchy appearance. A thick layer of red hair-felt paper spread itself all over the clapboards, rough, ragged furring and lath began to show in spots, and above and around the kitchen tall, slender studding was in sight.

Then they knocked all the plaster off the kitchen ceiling, exposing the ancient solid beams. Then the roof cornices came off, giving the house an indescribably bald aspect; wagon-loads of lumber spread over the grounds, and the entire place became abandoned to the carpenters. With a man digging an arched doorway through the two-foot wall of the kitchen, a continuous rattle-tattle of small hammers going on all over the outside of the clapboards, and blows resounding from the kitchen, where they were pushing second-story beams into place, the owner retreated aloft, where he could get a little relief from the intolerable noise.

Then the tall gable rafters began to loom up over the middle section and kitchen; plasterers started coating the house all over with fresh white stucco, and the neighbors began to realize that there was something here slowly taking

on the aspect and proportions of their own. So by the end of summer the shingles were on, the stucco done, the half-beams and exterior trim stained, and the house roughed out somewhat as in the illustrations.

At least it was presentable—though at sixes and at sevens, since the tower still remained in its original state. The carpenters closed in the hip roof to fit the future gable of the tower wing with roofing-felt, making it weather-tight, and the owner closed out all their contracts, for the cash was running low and little was left for the tower, while the problem of finishing the trim was staring him in the face.

The next stage of this remodeling was the hiring of an Italian laborer who could do a little of everything at \$9 a week. He could paint, hang wall-paper, do rough carpentry, lay floors, beat carpets, and make roads. He was indispensable all that winter. As for the owner, he had added the trade of joiner to that of his profession, and for his exercise would take, for example, a doorsill, two jambs, and a couple of stiles, and arrange them until they would fit a given opening. The mistress of the house returned from the shore to find the October gales whistling through a windowless and a doorless abode, with all the furniture still in the tower and no place to put up a bed or put down a rug. It was necessary to get into the upstairs new wing and make it habitable forthwith, so all its windows were fitted and nailed into place for the time, and the old front door was stuffed into the opening for the new front door, while callers climbed in through the kitchen window. The mid-section was still a runway filled with lumber and shavings, but each successive fortnight saw one more room done in the wing, with all the trim on, doors hung, and walls papered. Whereupon it would be decorated and blessed as finished, and the procession moved on to the next room. In this way the owner's chamber, nursery, and both bathrooms were finished in turn, and even the large living-rooms in the middle section soon began to show a readiness for occupancy.

It is just two years since the farmhouse was bought. It cost originally, with its ground, \$4,500, and to improve it took between two and three thousand dollars. To-day the house, under present values, is worth about \$12,000.



A bit of the hallway, showing the opening into the library



How To Make Bayberry-Dips

By William T. Allen



“**T**AKE these two ‘bayberry-dips’ home to your little daughter,” said a lady in Pawtucket to me early last autumn, “and tell her to keep them till Christmas and to put them in a hanging holder on her Christmas tree.”

“I saw an advertisement the other day in a magazine—‘old-fashioned bayberry-dips, pretty and fragrant’—what are they, anyhow?”

“Why, grandmother made them many a time when I was a boy. But that was years ago, and many things familiar to the young folk at that time seem strange to the young folk of the present day. Bayberry-dips, or candles, most fragrant and delightful, seem to be completely forgotten, as are certain flowers of our grandmothers’ garden. But some of the good old customs and things are coming into use again. Bayberry-dips are the candles that grow on bushes. The berries are on the twigs, and the wax is on the berries, until we take it from these dry “drupes” and use the material for the mild and beautiful light, and the delightful fragrance of the smoke from the smoldering wick. When these bayberry candles were in common use, in the time long ago, it was a frequent custom of even the sedate and courteous young ladies of the company to run unexpectedly to the “light stand,” and with a laugh and a quick puff of the breath, to blow out the flame, so that their friends might enjoy the fragrant incense that curled to the ceiling in the smoke of the dying wick. Pretty young ladies, a pretty flame flickering at the tip of the candle, a ripple of laughter, a quick puff, a wave of perfume through the room—doesn’t it suggest a beautiful picture?”

Of the shrubs that bear these berries, Robert Beverly says, in his “History of Virginia”; “At the mouths of the

rivers, and all along upon the sea, and near many of their creeks and swamps, the myrtle grows, bearing a berry of which they make a hard, brittle wax of a curious green color, which by refining becomes almost transparent. Of this they make candles, which are never greasy to the touch and do not melt with lying in the hottest weather; neither does the snuff of these ever offend the sense like that of a tallow candle, but instead of being disagreeable if an accident puffs out the candle, it yields a pleasant fragrance to all who are in the room, insomuch that nice people often put them out on purpose to have the incense of the expiring snuff.”

What is more delightful in a room warmed by the logs of the old-time fireplace than to have it lighted by bayberry candles? If we could only manage the young people, and keep them quiet long enough for us older “young people” to look at the bayberry flame and to dream a little! But the extinguishing puff is easily made; the young are active and quick in their movements; the bayberry smoke is delightful; to blow out the candle is to be regaled with a pleasant odor.

“Why can’t we young folk make some of these candles?” inquired one of the girls.

“You can,” she was informed. And we so greatly enjoyed the work and the play that I want to tell other young folk how we did it, and to give them some facts of interest in regard to the shrub that supplies the berries.

The bayberry shrub, or bush, is found in abundance in the sandy soil along the Atlantic coast, from Nova Scotia to Florida, and also on the shores of Lake Erie. It usually attains a height of from three to eight feet, and it is reported to grow, at times, in favorite localities, as high as thirty-five feet. The small nuts are grayish in color and



Picking the sweet-scented bayberries in the late fall after the frost has touched them

so thickly coated with a fragrant wax that they are sure to attract the attention of anyone, especially if he has come from a place where the plants are not found. He will without fail say: "What are these things? I have never seen berries like them."

Two of their interesting habits are that they may continue to cling to the branches for two or three years, and are in their best condition for candle-making in October, especially after a few frosts have touched them.

On a hillside the young folk, on a brilliant afternoon, found a beautiful cluster of the bushes. To gather the berries in the golden sunshine was the very poetry of berry-picking, in those waves of exquisite odor from the crushed fruit and the bruised and broken leaves and twigs. What better outdoor music could we have had than the tinkling of the harvest on the sides of our tin pails?

At home we found that the contents of all the vessels filled two large ones. Water was poured on the berries and set on a stove to boil. As we stirred them into the hot water, the perfumed steam made the room fragrant, and the myrtle wax floated to the surface in a layer of delicate green. This was skimmed off, put into another pail, and brought to the boiling point and finally strained. A little ordinary tallow was added so that the candles should not be too hard. Ordinary candle-wicking was twisted around some old-fashioned candle-rods, and then the wicks were dipped in the pails of water, warm enough to melt the wax which forms a layer varying in thickness from a half inch to two inches. The water and melted wax must not be too hot. Much depends on this, for a temperature a little too high melts the wax from the wick as fast as it is added. We found that it was best to keep the heat as low as possible, and yet hold the wax liquid. Candles, whether of bayberry or the ordinary tallow, or of any kind of wax, thus hand-made by repeated dippings, are known as "dips," and are regarded as the most desirable form. "These don't look like the candles we buy at the store," said another girl, as she examined them with a critical eye.

Then I explained that we had gone back to almost the primitive form of light-giving medium, or just the next step ahead of a wick in oil, or in melted wax or tallow in a dish. It is probable that our ancestors regarded dipping as a marvelous step in advance of the original floating wick. Then what an age of progress it must have seemed when some one invented a mold in which to form them! What



A set of Bayberry candle-molds and dipper

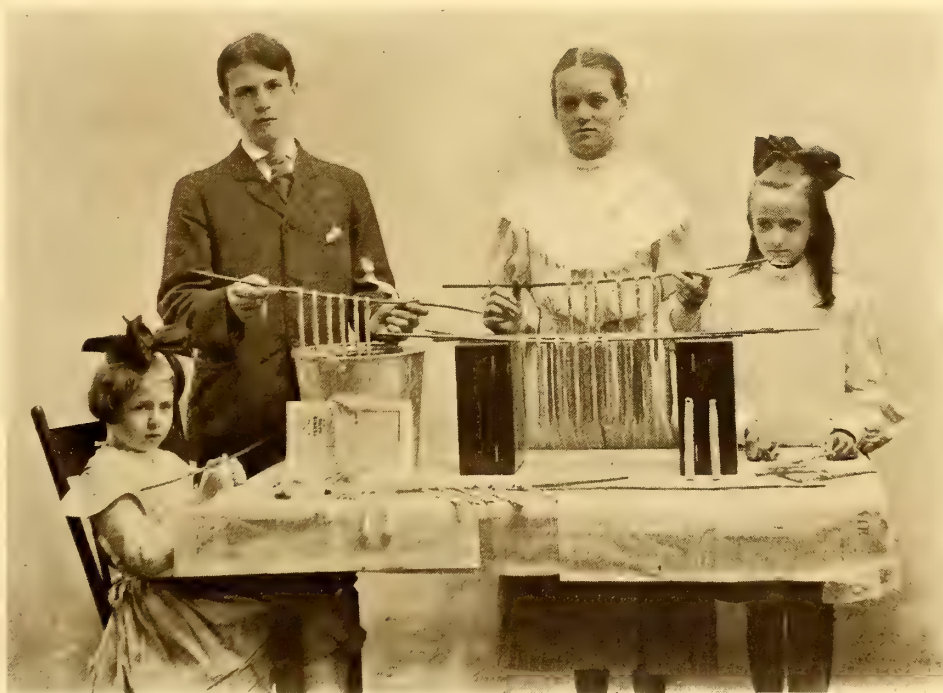
a labor-saving invention! What a brilliant mind it must have been to think of that!

"Can't we make molded candles?" was the chorus, as I explained how the melted wax was poured into metal tubes. Of course we could, because Mr. A. E. Arnold, who has a museum of old-fashioned things and who loaned me these dipping-rods, said: "You will want to try the molds, too, I am sure." So I brought along a set. Here they are. We will fasten the wicks at the pointed bottom of the tube (really the top of the candle), make it taut through the center, and fasten it again to rods at the top across the molds. Now pour in the hot wax and allow it to cool. When it is firmly hardened the candles may be drawn out, when you know how. These molds are of various sizes, some for making two candles, others for four, or eight, or a dozen, at a single pouring. In many an old garret, especially in New England, will

be found some of these discarded vessels in various sizes, and usually in more or less battered condition.

The young folk found that the most difficult part of candle-making by pouring was to get the liquid to just the right temperature, to pull the candles out of the molds, and to wait just long enough to let the candles harden, but not to get so hard as to crack. The secret of the last is to immerse the mold for only a second in boiling water, and instantly to pull out the candles. The interior of these old-time tubes is not always perfectly smooth, so that molded

candles are apt to be rough and uneven on the surface. Dipped candles are smooth, but their outlines are often wavy. "Dips" are rightly the favorite form, as they take us a little nearer to nature, and have no fancy features added by art. A little experimenting showed us how best to do all these things, and it then became an easy matter to produce candles in large quantities by either method. The dipping has the advantage, because the candles may be made of any size, varying from mere tapers to



Dipping the cotton wicks into the bayberry wax may be carried on by the family

almost any reasonable dimensions. The wax is known to druggists as "myrtle wax," and is bought to be used (except by those who are reviving this old-fashioned custom of candle-making) chiefly for casting, and by furniture-makers for rubbing on heavy desk-drawers and on other moveable parts of furniture.

The shrub is a member of a fragrant botanical order known to students as the "Myricaceæ," or the sweet gale family, and includes bayberry or wax-myrtle, sweet fern, and sweet gale, thriving best by the seashore.



Garden side of the house of Mr. J. E. Thomas, at Hasbrouck Heights, New Jersey. The well-trimmed surroundings shared in the improvements

Making an Old House New

By George F. Merritt



It does not always happen that the architect has a foundation to work upon of much interest other than that to be found in the working out through taste and ingenuity of such a problem as that of making a charming modern house out of the remains of an ugly old one. Just

this seems to have been accomplished in the old farmhouse at Hasbrouck Heights, New Jersey, which came into the possession of Mr. J. E. Thomas and was remodeled after the plans of Mr. O. J. Gette.

The oldest portion of this building was the low wing, which tradition assigns to a date of a century or more ago, while the main, "upright" portion of the old house was put up by some builder of fifty years or so back. Mr. Thomas saw possibilities in the old structure, however, and succeeded in confirming his optimism in the new house that was evolved from the old. There were those who shook their heads and ventured to say that nothing could be made of the old place. Of course, the wiseacres conceded that an attractive old

house could be made into an attractive new one, but they had not come to have so much faith, in the Hasbrouck neighborhood, in the Alladin-like accomplishments of the modern architect as they now have, with the Thomas house in view, a veritable monument to the ingenuity of the architectural profession. One need only turn to the old structure to see how forlorn and unhomelike it was—at least, so

far as its exterior was concerned. Even in the days when the blinds in the front part of the house were not kept sealed like a tomb, the old farmhouse could not just be called cheerful; and yet its location was delightful, its neighborhood desirable; all that was needed was an owner of taste to transform it into a charming house that would become a delightful home. Of course the old farm and its buildings had been woefully neglected before coming into Mr. Thomas's possession, and except for the old wing, which dated back to the Dutch period in New Jersey's history, they had no interest whatsoever to the casual observer.

The remodeling has resulted in a delightful rambling type of house, as one may see from the floor plans, though the porch, terraces, and piazza give it a sense of more



Porch to the main entrance to the Thomas house

compactness than it had originally. Such good points as the old building held have been retained by the architect in the remodeled structure, with much correcting of faulty line, plan, and detail, and much tearing down and rebuilding. This suggests that there is a certain pleasure in remodeling an old building that is as distinct as in watching the building of a new dwelling. That, perhaps, is because there is always a certain satisfaction

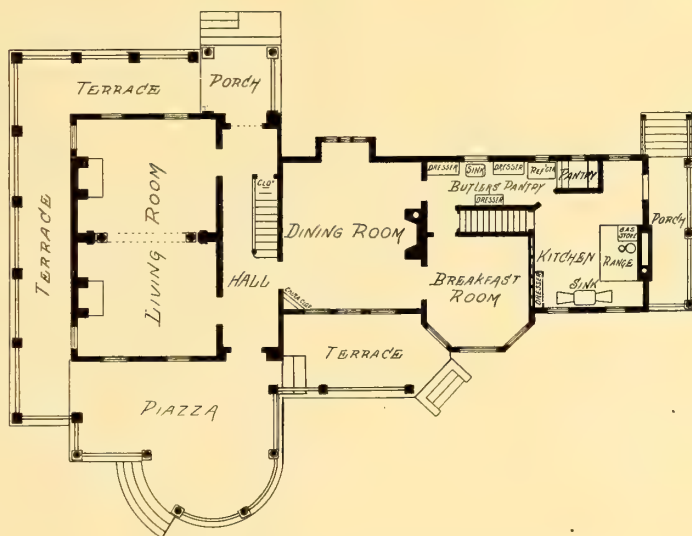
in making even the inanimate bend to our dictation, a sense which is essentially distinct from that of creating.

The Thomas house could hardly have a lovelier setting than that which surrounds it today—poplars, apple trees, cherry trees, shrubbery, vines, and a beautiful, trim garden, walled with sweet-flowering shrubs and perennials, a broad path leading around its parallelogram center of sod, set with beds of petunias and other old-fashioned plants, with here and there an evergreen lending rich color to the lighter green of the foliage surrounding it.

A porch upheld by two Doric columns serves as the carriage entrance to the north, and connecting with the south side is a broad balustraded wooden terrace, latticed below to admit air and light to the cellar. The double doors of this porch are filled with leaded glass, simple and elegant in design, with an appropriate Colonial fan-light transom above. To the right of this entrance (which leads directly through the gray-papered hallway to the piazza entrance on the south side) is a living-room that has been made out of two smaller rooms thrown together. This is divided midway by fluted columns and pilasters, and contains the unusual luxury of two fire-



House of Mr. J. E. Thomas before remodeling. Its wild and unattractive grounds



Ground plan of the remodeled Thomas house

This often neglected part is here especially well arranged. The bedroom floor is well planned, and the problem

places. On either side of the fireplace of the northern half are built-in bookcases, designed to accord with the style of the adjoining woodwork. The doors and windows of the living-room were retained from the old house and remain unchanged. The woodwork of this room is white, while its wall-covering is buff brown.

In remodeling the old house the location of the old dining-room was retained, and its windows face

both north and south. The room has been entirely refitted, however, and a brick fireplace added to the east wall between the doors leading into the breakfast-room and into the butler's pantry. The dining-room is mainly lighted by the three French windows to the south, opening upon the terrace that leads into the garden, just below the breakfast-room. Green and white is the color scheme that has been chosen for the dining-room. A bay window overlooks the north approach to the house. Some lovely bits of old china are to be found in the china closet occupying the southwest corner of the room. The breakfast-room gives access to the service end of the house.

here required much thought on the part of the architect. All bedrooms have windows either upon facing walls or so placed that they ensure a proper current of air passing through the rooms.

There are four bedrooms and two bathrooms for the family use on the second floor, and the additional rooms for the servants are over the service part of the ground floor. While the bedrooms and bathrooms for the servants are large and light, it seems



House of Mr. J. E. Thomas after remodeling is encircled with vines and bushes



A superb stairway in remodeled Thomas house



Library and living-room of remodeled Thomas house, contains two fireplaces

unfortunate that no closet room could be found here, an omission too often occurring in rooms planned for the use of servants, though in the case of a remodeled house of this sort it would, perhaps, have been difficult to arrange it otherwise.

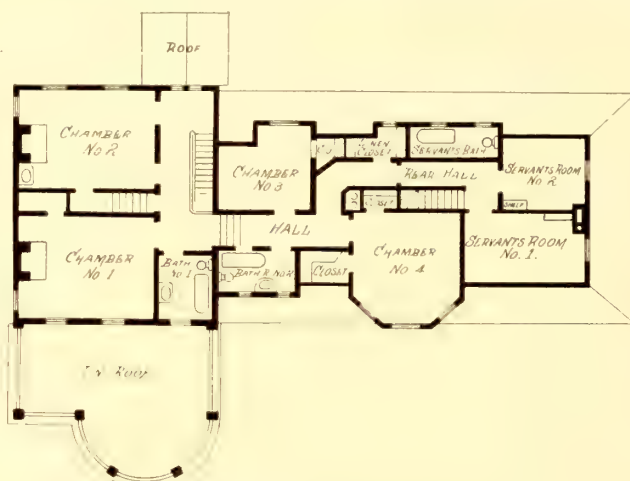
All the floors in the Thomas house were newly constructed and covered with polished hardwood strips. Although no period is carried out in the furniture of the various rooms, these accessories to the house are in accord with its non-period exterior, and there is a sense of home feeling about the entire place that more than compensates for lack of more precise selection in the matter of the furnishings.

The piazza of the Thomas house is decidedly well arranged, although it may seem to intrude upon the general lines of the house directly attached to it. The rectangular base of this piazza is broken by a circular outward swing, the

whole being roofed over with a tin roof supported by four fluted columns. Low-hanging awnings keep out the mid-day sun rays, and a cool bank of miniature evergreens behind a silver birch suggests seclusion, as does the vine-covered pergola terrace adjoining the house on the west side. The chimneys on this remodeled house are well placed, and the two chimneys on the west side have been retained but made attractive by being cemented and finished off with a darker band top.

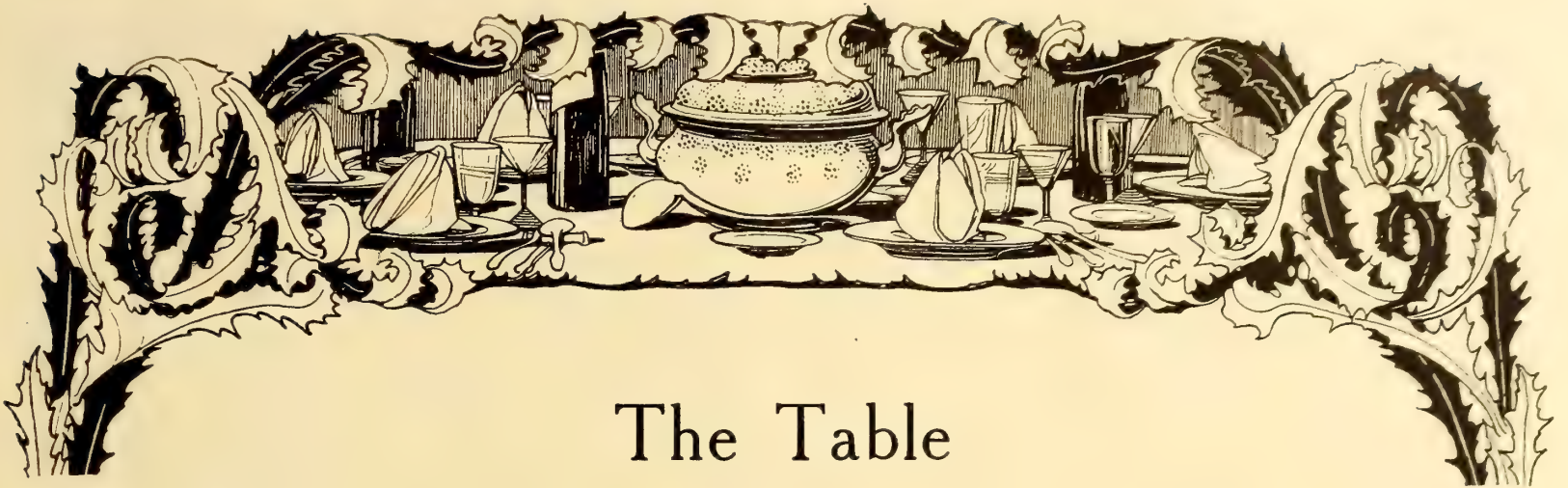
Altogether the Thomas house is one of the thoroughly successful examples of the remodeled farmhouses of the sort, an example of careful planning, resulting in a dignified country home

having the aspect of comfort and refinement and individual charm, a hint of the courageous element in architecture that opens a breadth of suggestion to the home-builder of to-day.



Bed-room floor of remodeled Thomas house





The Table

Some Novel and Appetizing Salads

By Lydia M. Westcott

Photographs by Mary H. Northend

I KNOW a model hostess who never makes "trouble" of company, but who delights in giving novel little unexpected entertainments. Her porch teas and lawn luncheons of the past summer were the delight and wonder of the neighborhood. And yet her impromptu little affairs never appear to require the least exertion or expense. She seldom gives a "big" affair; there is never any attempt at display. But husbands are frequently phoned for to "run right up from business without going home," and meet their wives for a porch tea. Or a little informal luncheon forms a mid-day entertainment for a few congenial housewives. And there is never a gathering in which that ingenious hostess does not have at least one novel dish, in the appetizing bill of fare, that is new and quaint as well as delicious.

Strange desserts of fascinating flavors; manipulations of meat, fowl, and fish to delight the most fastidious epicure; vegetables most temptingly Frenchified, and novel forms of brown breads and hot biscuit; all have their share of well-deserved praise. But in all her original and novel recipes, this hostess particularly excels in her salads.

VARIETY SALAD: It is not an original idea, of course, to utilize all sorts of vegetable left-overs from yesterday's dinner for to-day's salad. All practical housewives who delight in French methods of table economy know how to take a few well-cooked string beans, bits of boiled cauliflower and asparagus tips, with probably a few green peas and a little sweet corn shaved from the cob, and make a delicious salad by

mixing all together, piling on lettuce leaves, and covering with mayonnaise dressing. But few have ever thought of serving this same sort of variety salad in individual flavors, as this hostess did at a recent luncheon. It took but a few extra minutes to arrange the salad on individual dishes. In this instance there were only five guests to serve, making six with herself. Each green lettuce leaf in the individual dishes was dotted with four tiny white leaves of curled lettuce; on one was piled a teaspoonful of string beans chopped fine, on another bits of thinly sliced cauliflower, on another a teaspoonful of peas, and on the fourth was a pile of tender asparagus tips. Each separate vegetable was covered with mayonnaise dressing to hide its identity, and the distinctive flavors was a surprise; being much more pleasing than the usual mixture. A thick slice of hard-boiled egg surrounded by a ring of finely chopped onion in the center of the dish, separated the vegetables and decorated the festive salad.

FRUIT SALADS daintily arranged on curly lettuce leaves, and coated with the particular dressing suited to their flavors, frequently excite wonderment as to the ingredients used. A novel combination is formed of thin slices of tart raw apples and equally thin slices of mild Bermuda onions, covered with egg dressing.

Sour canned cherries chopped fine, and mixed with bananas cut in tiny cubes, form a rich salad with mayonnaise dressing.

Sliced bananas serve in another combination. The rind of a lemon is grated over the bananas, and after removing



Simple salad garnished with parsley



Green pepper filled with peanut salad



Mixed salad



Molded salad

the white inner rind, the lemon is sliced very thin, removing the tough center and the seeds. Banana and lemon slices are carefully mixed and served with plain egg dressing.

Oranges thinly sliced may be mixed with the bananas for a change; and the lemon slices, chopped very fine, form a delicious combination with shredded pineapple covered with cream dressing. The presence of a sweet fruit with the acid of the lemon or the orange may be made to form several novel combinations.

CAULIFLOWER SALAD: The cauliflower may be used by itself, or mixed with finely chopped green peppers. Boil a fresh, firm head of cauliflower until it is tender. Immediately after removing it from the boiling water squeeze the juice of a lemon over it, and set it aside to cool. Then break the head into small flowerets, place them on crisp lettuce leaves, season with salt and pepper, dot with the chopped green peppers, and cover with mayonnaise dressing.

NUT SALADS: Nuts form a nutritious and appetizing salad, and may be used in a variety of combinations. Peanuts are frequently used alone; peanuts and English walnuts are still more desirable; the walnuts chopped with blanched almonds form a dainty combination. Remove all the brown inner skin from the peanuts after shelling, and place the different nuts in a wooden bowl, and chop very fine with the meat-chopper. Marinate well with thin French dressing and serve on curly lettuce leaves with mayonnaise dressing. Nuts chopped with crisp celery are especially appetizing, and for a change may be served with egg dressing.

APPLE SALAD: Polish tart, red-cheeked apples to form attractive salad cups, then proceed to utilize the centers as well as the apple shells. Remove and discard the cores, then remove the apple in "chunks" until well hollowed out; but do

not break the skin. Chop the pieces of apple into cubes, mix with an equal quantity of finely chopped celery. The flavor will also be improved by adding a few walnut or hickory nut meats, chopped fine. Mix with cream dressing. Fill the apple shells, set each apple on an individual salad dish, and surround the apple with a ruffle of parsley, dotted with dressing.

TURKISH SALAD: Various salad combinations are known as Turkish salads, but the genuine Turkish is claimed to be a blending of cold baked beans or cold soup beans, well cooked and drained, with chopped onions and either cream or mayonnaise dressing. When the onions are grated over the beans, instead of being chopped, the effect is more pleasing; mix with a little thick dressing to hold the beans together, pile on thick slices of ripe red tomatoes, and pour the dressing over the whole.

FRENCH BEAN SALAD: To be really Frenchified, this salad must not only be formed of the so-called French beans—also known as red kidney beans—but it must be very daintily decorated with "riced" eggs. This garnish is made by boiling the eggs until hard and then mashing and pressing through a vegetable sieve, forming a flaky rice of egg. In this instance press the whites and the yolks of the eggs separately through the fine sieve. Pile the tender, well-boiled and drained kidney beans in the center of the salad dishes, pour French dressing over the beans, surround the beans with a ring of riced white of egg and then with a ring of riced yolks, and decorate the center of the salad with a mayonnaise star made by pressing the thick yellow dressing through a star pastry tube. Entire beans increase the attractiveness.

PINEAPPLE SALAD IN TOMATO CUPS: Select large, ripe tomatoes, scoop out the centers to form thin-shelled cups. Chop slices of pineapple into tiny cubes or tiny shreds, and marinate with French dressing made with lemon juice.



Apple and onion salad



French bean salad

Then chop together one hard-boiled egg with the tomato removed from the cups. Place in each tomato cup a layer of the pineapple, then a layer of the tomato and egg, and continue until the cups are nearly full, finishing with mayonnaise dressing. Garnish with parsley.

ATTRACTIVE BEET SALADS: Boiled red beets can be formed into many delicious salads and attractive garnishes. Cold boiled beets sliced and piled on the salad dish, with rings of hard-boiled eggs piled on lettuce leaves, and dressed with mayonnaise, form a tasty salad without extra garnish.

Large beets cut in sticks and latticed to form baskets or nests make a salad novelty; especially when the contents of nests or baskets are of novel combination. Olives cut in quarters and mixed with finely chopped celery and French dressing may fill some of the nests. Beets and hard-boiled eggs chopped and heaped together may be surrounded with beet sticks arranged in log-cabin form. After filling the top with mayonnaise dressing, dot it with quartered or sliced olives.

THE FAVORITE SALAD DRESSING: The housewife and hostess who understands the quick preparation of a variety of salad dressings possesses an invaluable aid to summer catering. There are a variety of egg dressings, and also of cream dressings, all easily prepared and indispensable for variety in salads. Then the reliable French dressing used for binding together and flavoring various salad materials, and the always-necessary mayonnaise, may be made in quantity, and will keep for several days.

CREAM DRESSINGS: For a delicious cooked cream dressing, beat two eggs thoroughly, add to them one gill of cream and a gill of vinegar, heat gradually in a double boiler, and when hot and ready to blend and cook, add a teaspoonful each of prepared mustard and salt and a pinch of cayenne pepper. Cook all together for about five minutes, until thoroughly blended and creamy. The dressing should be of the consistency of soft custard. If it fails to thicken sufficiently, add a teaspoonful of flour mixed smooth with a very little milk.

Cold cream dressing, to be served immediately, may be made with either sweet or sour cream. Whip the cream with a little lemon juice or vinegar, and season with pepper and salt. When light and foamy, pour over the salad just before serving.

FRENCH SALAD DRESSING: Vinegar and olive oil, with a little pepper and salt and prepared mustard, form the favorite French dressing for binding salad ingredients together. Two tablespoonfuls of vinegar, with five of olive oil, half a teaspoonful of salt and a generous pinch of cayenne pepper, should be thoroughly beaten together, and it is ready for use. It may be made in quantity and kept for use, being beaten fresh when poured over the salads.

MAYONNAISE DRESSING: This has long been the indispensable dressing for every form of salad, and it is frequently used in connection with other dressings. It may be made in quantity, using pint or quart bottles of olive oil, and the other ingredients in proportion, when there are numerous guests to be served, or when it is desirable to keep the dressing for several days for use on a variety of salads. For the pint of olive oil use the yolks of two raw eggs. One teaspoonful of prepared mustard, one-half teaspoonful of salt, one-fourth teaspoonful of cayenne pepper, half a cup of vinegar, and the juice of one lemon. Have the mixing bowl ice cold, or, better still, set it on a little chopped ice. Mix the mustard, pepper and salt together, add the yolks of eggs, and beat until thick and creamy; then add, drop

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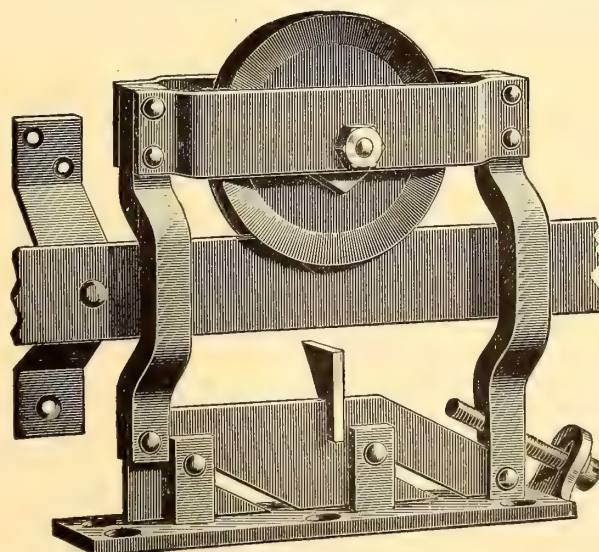
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by drop, about two tablespoonfuls of the olive oil, stirring constantly to the thick paste, formed slowly, beat in a tablespoonful of the vinegar or lemon juice, and continue beating in first the oil and then the vinegar until the entire quantity is used and the dressing is rich and very thick and creamy. When put in a jar, covered closely, and placed in the ice-box, it will keep for several days, and should not be mixed with the salads until just before serving.

EGG DRESSINGS: Hard-boiled eggs, mashed and creamed together, with a little butter or olive oil seasoned with pepper and salt, and thinned with vinegar, form a quickly prepared salad dressing that is always tasty. The hard-boiled eggs, both the whites and the yolks, should be mashed and creamed with the butter while hot.

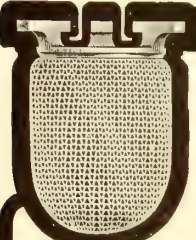
For a creamy egg dressing, beat two eggs with a tablespoonful of flour thinned and smoothed in a little cold milk, add a teaspoonful of butter and half a cupful of vinegar; beat thoroughly together and cook in a double boiler, beating when hot until creamy and thick.

SPANISH DRESSING: A rich salad dressing, with a distinct flavor of onion and celery and green peppers, may be made to keep several days when carefully prepared in quantity. Mix in the proportion of one cupful of vinegar and one of water to two eggs. Place the water and vinegar in a saucepan with a tablespoonful each of butter and sugar, a teaspoonful each of salt and prepared mustard, and a pinch of cayenne pepper. Slice one large or two small onions with one green pepper and two stalks of celery. Then chop the onion, pepper and celery together until very fine and smooth and well mixed. Beat the two eggs to a froth, stir into the warm liquid in the saucepan, and bring to a quick boil, beating thoroughly to keep the eggs from curdling; then add the chopped dressing, and cream all together.

This dressing is especially fine for serving with the chicken salad and various meat salads, as well as for cold slaw and potato salad. It may also be used to give pleasing variety to the various fruit and vegetable salads here enumerated. If the Spanish flavor of onions and green peppers should not be desirable, these may be omitted without altering the texture or quality of the dressing. When fresh celery cannot be readily obtained, celery seed will give additional flavor.

DELICIOUS CITRON.

The green melon known as preserving citron is at its best in the October fields and markets; but it is seldom appreciated because of its tendency to toughen when put up in the usual manner by placing immediately in the sugar syrup to cook. The first secret of its success is to steam the citron cubes until tender, before adding to the syrup. After cutting the big citron into quarters, remove the seeds and pulp, and pare off a rather thick rind. Then slice the quarters into long strips, and cut the strips into half inch cubes. Place the cubes in a steamer where they will cook until tender without breaking or mashing; and while steaming make a syrup of sufficient quantity to cover the citron, by placing in the preserving kettle sugar and water in the proportion of one cup of water to each pound of sugar. For each cup of boiled syrup allow one small lemon, sliced and boiled in the syrup until tender. Then add the steamed cubes of citron, and cook down until the citron is transparent, and the syrup thick and rich. Seal in air-tight jars. A few pieces of ginger root cooked with the lemon gives additional flavor; but the simple lemon flavoring is usually preferred.



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GARDEN NOTES

This department is conducted by an experienced and practical landscape architect, who extends an invitation to the readers of AMERICAN HOMES AND GARDENS to send to the Garden Editor inquiries on any matter pertaining to the developing of the garden and the home grounds. Letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this department.

More About Bulbs

By NORMAN L. CHESTER

THIS is the season for potting bulbs, for house flowering, and for completing outside planting, which may be done up to the middle of the month unless untoward local conditions and frosts prevail. The amateur gardener will learn from experience that bulbs planted sparsely never produce pleasing effects. Instead, one should plan beds or borders so the spring blossoming may produce a pattern of rich color, and not a thin, spotted appearance, for one must take into account the fact that the flowers will have little green other than their own to offset them. As the frosts come on the bulb garden should be covered with a protecting mulch. Old leaves saved from the fall rakings are excellent for this purpose. Indeed, the garden-maker should always have a "leaf bin" for storing up such leaves, thus giving him a good supply of mulching material. It is a common error among those who lack experience to mulch skimpily—that is to say, to run the mulch just over the surface covered by the planting—whereas it should extend a couple of feet over and beyond the borders of a bed where possible. This is explained by the fact that the mulch may be regarded as a blanket on top of the bed to keep the plants warm, and to do this it must "hang" over them. With the approach of warm days in early spring, part of the mulch may be removed, of course, but it is much better not to remove it all at once. Bulbs need moving around to obtain the best results, and although Tulips and Crocuses may have come up well enough for several seasons, moving them will greatly benefit their next season.

Although September is the best time for planting Tulips, as it is for planting Crocus, Narcissus, Daffodils, Jonquils, Winter Aconite, it often happens that the beds or borders in which these bulbs have already been set in past seasons, or where they are to be started anew, are occupied by later flowering perennials, which makes it impossible to plant bulbs therein until October, when these perennials will be out of the way. In selecting Tulips, the single varieties are recommended for early flowering and garden appearance. Of course, the double flowered varieties have their loyal admirers also. Such varieties remain in bloom longer than single Tulips, but to the writer's mind nothing quite takes the place of the loveliness of the single flowers. In planting late Tulips the amateur gardener must bear in mind the fact that in order to give these time to reach that full development of the gorgeous bloom that is their glory, the planting beds cannot be utilized for other things sufficiently early on their account to make it practicable at all times to introduce late Tulips into the smaller of our gardens.

The Crocus ought to have been in the ground in September, and no time should be lost in setting out its bulbs, choosing a sunny situation and a soil that assures good drainage. Crocus bulbs are enterprising and grow on even though they are not put in the soil; that is the reason late planting is never to be encouraged.

Narcissus bulbs may still be planted. As the Narcissus, Daffodil and Jonquil are perfectly hardy, there are few flowering bulbs which give the garden-maker such thorough satisfaction. In planting Narcissus, remember that they are far more effective in clumps, although if hundreds of them are available they form an exquisite adjunct when scattered, naturalized, through the tall-growing grasses of a light grove. Set the Narcissus bulbs about six inches apart and about four inches deep.

It is a pity that the lovely Snowdrop (*Galanthus nivalis*) does not receive more encouragement in the home garden. Hardly is the snow gone before its dear little flowers appear, and after they are once set out under proper conditions the bulbs of the Snowdrop remain fruitful and blossom from one year to another with great constancy. Snowdrops should always be planted as thickly as possible—naturalized by scattering them about the lawn will always amply reward one's effort in the experiment.

Two other dainty flowers, Chionodoxa, with its deep-blue blossoms, and the blue-flowered stars of the Scilla (*Scilla Sibirica*) may be planted like the Snowdrop, and to these bulbs may be added the Winter Aconite, whose yellow blossoms deserve much more attention than they receive at present.

Potting bulbs for indoor winter flowering should not be delayed, for they must be given plenty of time in which to root well before they will start the growth that leads to mature blossoming. Perhaps the most satisfactory method of indoor bulb gardening is to start the bulbs in six-inch pots, each pot containing several. Only bulbs of the same variety should be planted in the same pots. Before putting in the soil, soak the pots in hot water and then in cold. This ensures their keeping the potting soil moist in the beginning. Next put in a few pieces of broken pot to facilitate drainage at the bottom. Cover this with a thin layer of sphagnum moss or cocoanut fibre, such as one may obtain from any florist or seedsman. Having partially filled the pot with soil, until the tops of the bulbs set upon it come nearly to the top of the rim of the pot, fill in the rest of the pot, allowing, of course, sufficiently for watering space and leaving the necks of the bulbs just peeping above the soil level.

After potting the bulbs, they must undergo a process known as plunging. That is, they should be set outside in some protected part of the garden in their pots, on a layer of ashes and filled in with a mulch of ashes, tanbark or some other protecting material of the sort. Another method is to stand the pots on the floor of a cool cellar, which gives access to plenty of air. Plunging facilitates the growth of the roots which are to bring to the bulb the nourishment that will sustain the flowering period. Three months after potting the bulbs should become firmly rooted. When one wishes to force the bulbs into bloom after that, the pots may be lifted from the "plunge" as required and brought into the heat of the house. They will then produce flowers in four or five weeks.

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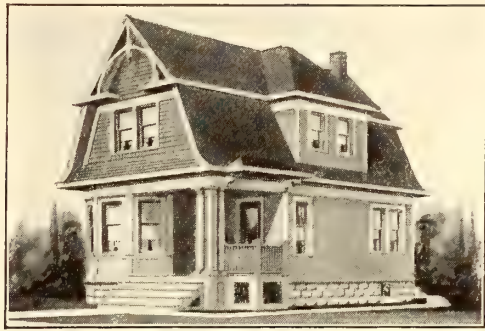
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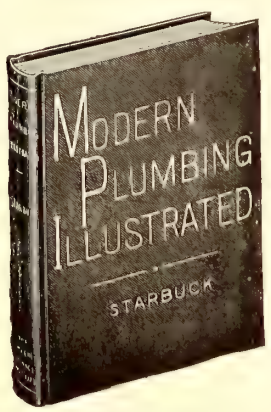
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CHIMNEYS AND VENTILATION

GOOD chimneys in private houses have received less attention from house-builders than almost any other single feature, and in a great measure we owe the coldness of our homes in winter to faulty chimney construction more than to poor furnaces and ranges. Mills, factories and general manufacturing plants are better equipped in this respect than the private home, for the good-working chimney is vital to the whole success of the former structures. The manufacturer of steam or hot water plants, or of good coal furnaces, is fearfully handicapped when he comes to figuring on the warming of a house with an inferior chimney. He will perhaps name a relatively high figure for the installation, so he can put in a larger heating plant than should be necessary for the space to be heated, or he may make the specifications to fit the case and trust that the fault will be attached to the chimney and not to his heating plant.

The most common fault of chimneys is that the flues are too small, and the second fault lies in sharp bends and rough work. A thin chimney is generally bad, for the air inside is then easily cooled from outside contact, and this interferes with the draught. For ornamental purposes, many houses are built with the chimney on the outside of the walls. This is bad policy unless the walls are unusually thick, and even then there will be a certain waste of heat. Common sense and science should dictate the placing of the chimney as near the center of the house as possible, and then all the heat will be retained inside of the house, and not be allowed to escape out-doors by radiation.

Before steam plants and modern furnaces were invented, the old Colonial builders put their huge chimneys in the center of the buildings. The chimney was large, with thick walls, ample flues, and with scarcely a bend in it. The result was a fine draught in all kinds of weather. They were built for comfort, and not for ornament.

We must, to some extent, go back to these early principles to get good working chimneys. So far as possible, the chimney should consist of a stack of flues, and it should be ample of size, and rear its head straight up through the center of the house. Architects are beginning to build in this way in many parts of the country, and they are not afraid of showing their chimneys. A number of years ago there seemed to come into fashion an idea that the chimney was something to be ashamed of, and therefore it was hidden from view as much as possible. It was given such a low head and such narrow proportions that often it was scarcely visible to any except the rear side. The result of this was smoky houses and cold living-rooms.

Latterly the chimney, both as a useful and ornamental article, has come into favor. It is being made an integral part of the building, so that its presence enhances rather than detracts from the general effect. Built in this way, there is no reason why it should not be designed to produce excellent results.

No sharp bends should be allowed in the chimney, and smooth tile flues should be used. Rough flues favor deposits of soot, especially if the coal is of a bituminous nature, and this means frequent cleaning or poor draught. A chimney that does not draw well burns out in about half the time that one with a good draught does. The reason for this is that the soot which collects in it is laden with creosote from wood

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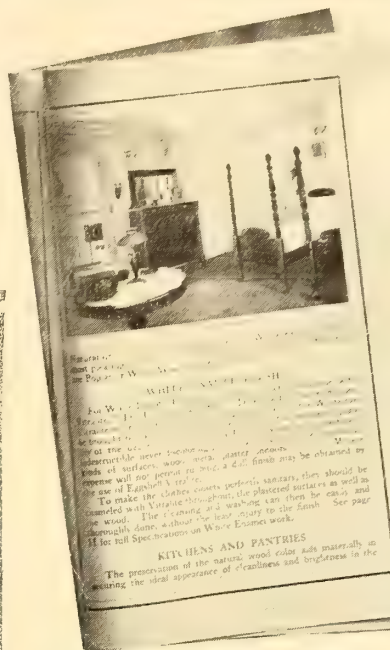
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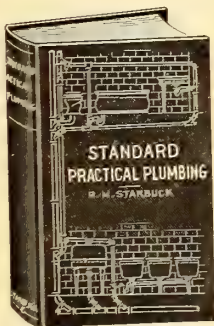
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of slow fires, or the soot and gases from the bituminous coals may cause a fire inside. The creosote soon attacks the mortar. This is so noticeable that in districts where wood is used chiefly for fuel the mortar of the chimneys becomes badly corroded in a few years. In chimneys for kitchen ranges, where wood is used chiefly, the corrosion is so great that the flues soon become leaky, and fire in time may escape through the holes and reach the roof.

The remedy for this is ample size flues, smooth inside work, and few bends in the chimney. This will reduce the soot collection to a minimum, and the chimney will last nearly twice as long. In the end, a chimney that has been built for cheapness will prove more expensive than one where size and efficiency are first considered.

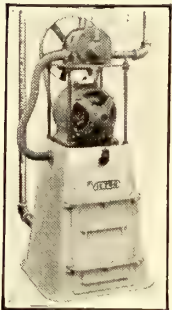
In the old-fashioned houses of fifty or a hundred years ago the chimney was built straight up from the center of the house, and it pierced the house at its highest point. There were no ridges or obstructions to interfere with the free action of the wind and draught. Each room on the lower floor that had a fireplace had a flue to itself, and frequently those on the upper floors were similarly provided. The draught of these old-fashioned chimneys was so great that a roaring fire could be obtained at any time, and smoke inside was an unheard-of thing. It was only later that smoky fireplaces came into vogue, as a result of a change in the size, location and shape of the chimneys.

In a well-planned house there should be an opening into a chimney flue in every sleeping-room. This is for ventilation purposes. This opening, if not more than two feet from the floor, will keep a bedroom well ventilated. An open grate fire, of course, answers the purpose. In the absence of this, there should be an opening artificially made. By this simple device we can secure almost perfect ventilation of a sleeping-room, even if there is no fire in it. In the winter time the warmth of the chimney stack will cause the air to move up the open flue continually.

In using a flue in the chimney for ventilation purposes, care should be observed in keeping it separate from those used for taking up the smoke. Otherwise a back draught may cause a flood of smoke to enter the room. There are many devices recommended to-day for bringing outside air into the house to secure ventilation. They may have their use in houses with imperfect chimneys, but they are entirely unnecessary in a place where there is a flue opening in every room, either for a fire or for ventilation.

The chimney is, therefore, one of the most vital parts of the house. It not only carries away smoke and the gases of combustion, but it ventilates the house as well. Let it be generously designed and have as many flues in it as there are rooms in the house. Flues four by eight inches are too small and they rarely give satisfaction. They should never be crooked. They can be made straight, unless faulty designs are made at the beginning. They must be smooth inside and all joints carefully closed, so that there are no obstructions to hold the creosote-laden soot.

By getting a good design of a chimney at first and seeing that it is built accordingly, the smoky-chimney problem will be solved for all time. But an imperfect chimney is a nuisance, to bother one for all time. It may be repaired, changed and equipped with devices for helping the draught, but it can never be made perfect.



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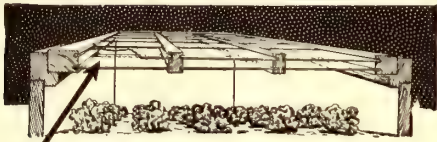
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CORRESPONDENCE

The Editor of AMERICAN HOMES AND GARDENS desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Repainting and Repapering Color Scheme for a Dining-Room— Made-Over Bedrooms

By MABEL TUKE PRIESTMAN

A CORRESPONDENT asks advice as to the best way of doing over her house. "It is an old-fashioned six-roomed house and needs repapering and painting, the floors being old will have to be painted; must the old paint be removed? The kitchen and sitting-room are 16x14. I use the kitchen as a dining-room, doing the work in a large buttery, all the rooms are very dark, as we live in a grove. The walls of the kitchen are wainscoted and the furniture is mission. The sitting-room is very dark, the furniture is mahogany and mission, curtains écru, rug in shades of tan with touches of pink. There is a small room opening into the sitting-room which we must use as a bedroom. Upstairs we have one large bedroom; the other two are very small. The woodwork of the large bedroom is pale blue, and this will not be changed."

The entire color scheme of your house must be influenced by the lack of light and the walls and paint must be as light as possible so as to offset the gloomy surroundings. If the trees come too close to the house it would be wiser to have some cut down, as air is essential to health, and trees too near are apt to make a house damp and dismal. In getting a contract for painting it would be wise to spend a little more now and include the burning off of all the old paint, for nothing will change the whole atmosphere as much as plenty of white paint, it is not extravagant in the long run, as one new coat may be added from time to time and it can be kept tidy much longer than pale colors, which are apt to fade, and when a room is repapered demand a new coat of paint to successfully go with a fresh paper. If your rugs and carpets are not out of date and dingy, I would suggest that all the floors have the paint burned off and be repainted white, it gives such a sweet dainty appearance and will aid in giving a light effect to the whole house; if the bedrooms have carpets all over the floor they would not require painted floors. The shade of white chosen is important; a dead white does not go well with the average wall paper. It is best to have a creamy white; get a book of ceiling papers and choose a very pale cream white and give a sample to the painter, and thus avoid any chance of a mistake being made in the shade, also allowing you to have a definite choice for the tint of your ceilings. These papers being made to go with wall papers are harmonious to any scheme. Not knowing the aspect of your rooms, or how many windows each room is lighted by, I can only give a general scheme, with the chief thought in mind of cheerfulness and light. The combined kitchen and sitting-room should be treated as one in color scheme, as there is a wainscot in the kitchen that must be painted white. If there is space for paper above the wainscot have a quaint small patterned paper; one I have in mind

has the pattern of a tub with a tree in it on a white ground; it is popular for dining-rooms and small sitting-rooms, it comes with a copper-colored orange with green, it comes in delft blue, also in blue and green. I would suggest the various colorings of this paper being tried with your rug, the pink is the only shade that could conflict. If the paper is suited to the room in other respects the pink touches in the rug could be changed by dabbing dye on the pink bits; orange to match the paper would seem a better color for a sitting-room that is used also as a kitchen. A coat of varnish after the paper is on the wall would make it more sanitary for such a combination room and give it a warmer tone than the white ground. The paper costs only fifteen cents a piece and can be ordered if your paper hanger has not got it in stock. If you have a great many pictures and bric-a-brac, I would advise a very pale tan felt paper that would blend with the tan rug rather than the figured paper, the small bedroom opening out of the sitting-room might have a ceiling paper with a tiny dainty pattern. There is one with just a rosebud tossed irregularly on the cream ground that is ideal for small rooms; it seems to make them appear larger than they really are. The same suggestion can be made use of for the upstairs bedrooms, choosing another pattern but one intended for a ceiling. The large bedroom upstairs with the old blue paint might have one of the English papers in green and blue; a new blue and white paper might make the blue paint look shabby, but the green would tend to obviate this. If the paint does not harmonize with papers you select, try a contrast—yellow with blue is beautiful and yellow brings sunlight into a cheerless room.

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A reader who writes that she is about to do up the sitting-rooms and bedrooms of her house in cretonne, taffeta, and any other suitable cotton material, asks to be told at some length what she can do in order to have these very artistic, yet not too expensive.

For a sitting-room there are several linens with tan grounds that are suited to rooms furnished in Mission style, and yet look well if the furniture happens to be mahogany. One I have in mind can be used for cushions in brown wicker chairs, or for sofa pillows and for hangings is very charming. The linen colored ground is partly covered with a strong design of brown Nasturtium leaves and copper flowers and is bold enough to go with neutral tan schemes or in a room that would be improved by strong touches of copper and browns. There are a good many stiff designs small in size with green leaves and the flower or fruit motif in one color. These are scattered on a linen ground and

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may be used in a library even. They are not very much in evidence at the shops but your upholsterer could always procure samples to try in your rooms. For dining-rooms there are fruit tapestries in linen taffeta specially designed to go with the newest tapestries in wall papers. Some of these papers have a mottled ground which melts into a Dutch frieze of flowers and fruit; the rather voyant taffetas go with the quiet wall effect and repeat the strong note of the frieze, making most successful dining-rooms. In a Colonial dining-room with mahogany furniture a rich flowered effect in cretonne or taffeta may be used, but they are not inexpensive and if purchased I would suggest having the curtains lined, as this makes them last much longer. Very pretty cotton edges are sold for sewing at the edge of the curtains and this trimming must not be overlooked. The parlor, if it is not just a reception room, can be transformed by covering an upholstered chair all over with a slip cover with a box pleated frill all round it; the chairs that show some woodwork must not have the all-over slip cover but may have the seat and back covered and the arms left free. This tends to relieve the eye and is correct. There are several all-over garden effects that lend themselves to this treatment and really rich wall schemes are not out of keeping with cretonne furniture covers, although the hangings would be more appropriate in a rich material. A glazed chintz can be used with excellent results and although the ground is usually a dead white or cream the glazed surface protects the material from catching the dirt and they keep clean for several years. For bedrooms there are endless varieties of good things to choose from in all colorings and suited to any style of furnishing. The domestic cretonnes may be used for the less important rooms but the colors are not as permanent as the imported ones, so it is often cheaper in the long run to spend more on the material, as the making is the same. Imported cretonnes can be purchased from forty-five cents to seventy-five cents a yard, thirty-two inches wide. The linen taffetas are usually fifty inches wide and are a little more costly, two dollars and a quarter not being out of the way for a good design; they can, however, be bought for less. Some of the new cretonnes are a bower of color and when used with the very popular Jasper stripes make really successful rooms; the walls are the atmosphere and the curtains and hangings made of these cottons give the necessary decoration. Some of these materials are partly covered with birds and butterflies, or trees yielding roses, peonies, or fruit on the same branch. A brave array of color can be introduced by the use of these cretonnes and they are of interest, as they show to what perfection the conventionalizing of flower motifs has attained. Pastoral effects are seen among the new cretonnes and are much used for bedrooms and nurseries. A shepherdess on a medallion and beaux revealing themselves from among abundant flower motifs is one of the quaintest of these pastoral effects. There are a goodly number of roses with green leaves and ribbon; the ribbon varies in the different colorings so that they can be used with almost any color scheme.

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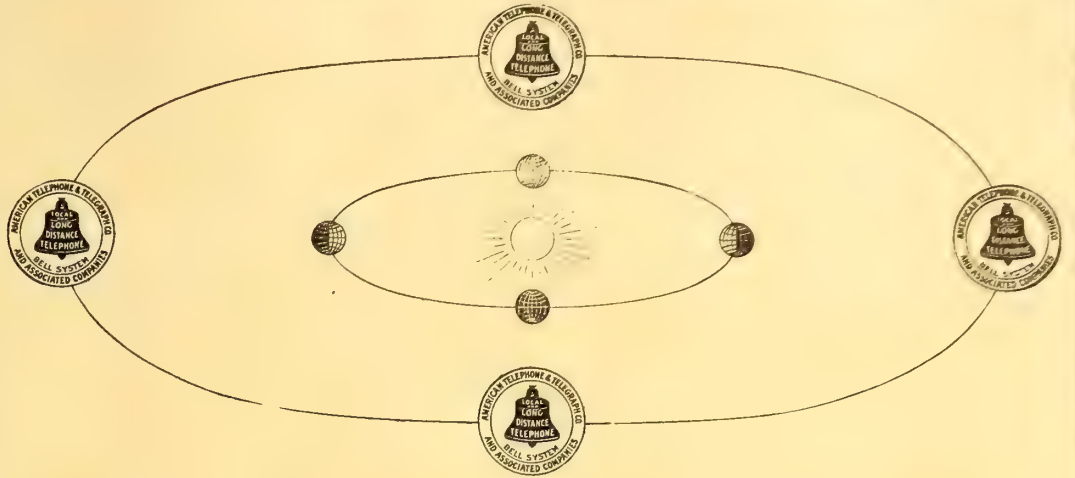
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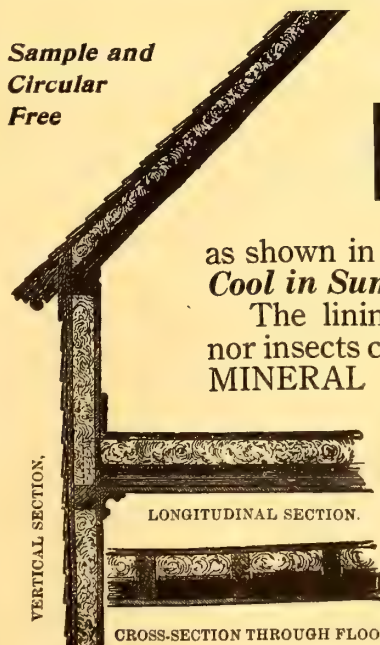
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POULTRY

HOW TO SELECT HENS THAT LAY

By E. I. FARRINGTON

ACCORDING to Prof. Rice of Cornell University, the hens that lay are the ones which have the shortest claws. Of course, this is only an epigrammatic way of saying that those hens which are the most industrious and scratch most persistently for what they can find to feed upon are generally the ones which produce the most eggs. Therefore it is a fairly safe rule to select the hens that are first off the perch in the morning and the last on at night when trying to ascertain which are the hens that pay their way. These are the hens which will be found busily kicking up a dust all day, and cheerfully singing. The poultry-keeper can identify the busy hens quickly by passing along in front of the perch at night, feeling of each crop. The properly energetic hen will have its crop packed to its capacity; the negligent and probably non-laying hen will have a flabby crop.

The laying hen usually has a bright red comb. Likewise she has a full, bright eye, and a general air of alertness. It was once believed that a fat hen would not lay, but this has been disproved, although some poultry keepers continue to make the statement. It is quite probable that a fat hen which is advanced in years will not lay, but it is not easy to get a pullet so fat as to interfere with her productivity.

The hen with a small, well-formed head and a wedge-shaped body is commonly considered to represent the egg type, but this theory does not always work out in practice. A plan much in use involves an examination of the bones at the oviduct. If three fingers, held side by side, can be placed between these bones, the hen is in all probability a prolific layer. At least, she is laying well at that particular time. If only two fingers find room, the hen probably is laying only fairly well, and if there is space for only a single finger, she may be set down as not laying at all. It is an easy matter to make this examination quickly at night, after the fowls have gone to roost, picking up each bird gently and holding it under the arm. If it is well along in the season and after the hens have reached full maturity, all drones should be sent to the block at once; they are worth more to eat than to keep.

A simple and successful plan is to note the pullets which mature quickest and lay first in the fall. Such pullets, if thrifty and well-marked, are good ones to choose for breeders. They may be put in a pen by themselves for the winter, and not forced for eggs. Let it be said right here, that it is a poor plan to use as breeding stock the hens which have laid heavily all winter. Their labors will have largely exhausted their vitality, and there will be a distressingly large number of infertile eggs among those which they lay, no matter how good a male bird may be used with them. It is much better to make up a breeding pen of the hardy, early-laying pullets, as suggested above.

After all, however, all these methods are to be relied upon only partially. They will serve for the average amateur, and for that matter, answer the purposes of most professional poultry-keepers, but the only way to really determine which hens lay and which do not is to use trapnests. This practice requires considerable work, as a careful



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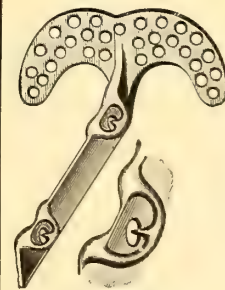
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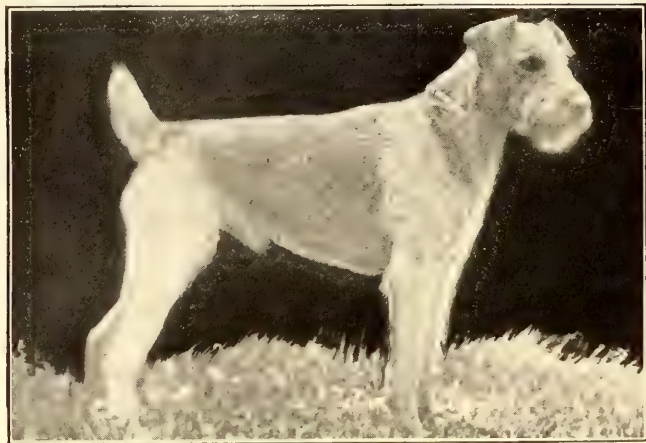


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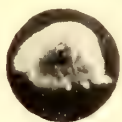
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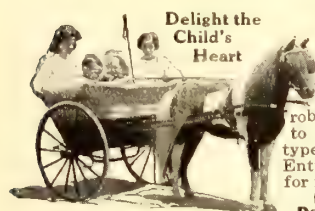


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set of records must be kept, and the hens must be liberated after they have deposited their eggs in the nests. A trapnest is so arranged that a hen may enter it with ease, but is unable to get out again until released. At the same time, no other hens are able to enter after the trap door has dropped. Such a nest can be built at home, if the poultry-keeper is at all ingenious. The Kansas Experiment Station issues a bulletin telling how to make a trapnest of a common soapbox with but little labor. A slatted trap door drops into place when a wire fastener is released, which occurs when the body of the hen presses against a wire loop as she enters the box. The nest itself is at the back of the box, so that the hen may step out of it after she has laid her egg, to wait until liberated.

When trapnests are used, each hen must be marked, either by an aluminum band on her leg or by having the skin between her toes punched with a marker for that purpose. Such a device is easily used on young chickens and a complete record of their careers kept, a box or card index being used, with a page or card for each bird.

Trapnests involve too much labor for use with a large flock. The best plan is to exclude all hens which obviously are not candidates for the breeding pen, using the nests in a house containing the pick of the flock.

There are variations of the trapnest plan which decreases the amount of labor required. For instance, two adjoining yards may be used, with a number of nests set into the partition between them. The hens may be placed in one pen in the morning and traps set on that side of each nest, the other sides being open. Then, after the hens have laid, they will pass into pen Number Two, where their numbers may be taken after they have gone to roost at night. The hens remaining in the first pen obviously will not have laid that day. After this procedure has been followed for several days, it becomes an easy matter to spot the hens which have been derelict in their duty. It is quite possible for the amateur to follow this plan with a small flock, even when the birds are not banded or otherwise marked, for he will be able to tell by observation which birds have failed to make a frequent transition from one pen to another.

It is altogether worth while for the poultry-keeper to make some effort to distinguish between those hens that are good layers and those that lay few eggs or none at all. It will pay him to do this, if he must count the pennies, for he will find that some hens are being kept at a real loss. Such hens not only fail to pay for their keep, but they occupy the space which might be filled by more profitable fowls. If the matter of money doesn't count, still there is no satisfaction in housing hens that lay no eggs. Culling is an important part of successful poultry-keeping, and it can only be done when one is able to decide, with a certain degree of accuracy, which are the laying hens.

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THE use of the gas furnace for forging, tempering and hardening steel is spreading among the workshops where cutlery and tools are made. The old "hearths" are disappearing, replaced by small, clean gas furnaces, which are not only economical in space and cost of running, and comparatively clean and neat, but furnish a uniform temperature of any desired degree, thus avoiding damage to the steel through "burning" or irregularity of temperature.

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WATERPROOFING FABRICS

THE French army is interested in a new method for waterproofing fabrics which is claimed to be superior to the usual processes. English manufacturers have been in the lead in bringing out waterproof fabrics for many years past. Besides rubber, for fabrics, we have the use of insoluble gelatine, boiled linseed oil, shellac, metallic soaps and others, which have had more or less success. It appears that the best product for waterproofing is acetate of aluminum, and when applied to the fabric it can be made to form alumina in a gelatinous state and volatile acetic acid. When such fabric is dried it is waterproof, but has not the objectionable feature of rubber and other material, as it allows the air to circulate through it. The fabric is also quite supple, and this is especially necessary so that clothing can be made of it. As the French army department is looking for the best method of waterproofing which can be used for military cloaks as well as for tents, some experiments were made, and it was found that the above process is the best, according to the opinion of the best authorities. This is especially true now that acetate of alumina solution can be found on the market and does not need to be prepared specially. M. Balland recommends a bath of one part acetate (7 deg. B.) and forty parts water. Fabrics are soaked in it for twenty-four hours, and are then dried in the air. This method is being used in the army headquarters at present.

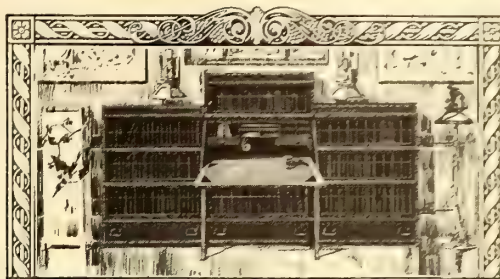
RAILWAY GARDENS

IT is a matter of interest to note the formation of the Railway Gardeners' Association, which held a convention in Chicago a short time ago for the discussion of technical phases of gardening as applied to the improvement of the appearance of railway station grounds and right-of-way lands. The membership of the association is represented by 150 delegates from thirty-five railways. Its progress is entirely due to the efforts of individual employees, who have taken a pride in the improvement of the premises where their working days are spent. It has been said that the movement has received less encouragement from railway managers than from the employees in question, for it seems that the expenditure required for planting flowers and sodding turf not always results in as definite an increase in gross earnings as a like expenditure might for other operations, so the matter has not seemed of such great importance to officials in general. Therefore, it is with great satisfaction that one notes the change of heart on the part of these officials, which has been brought about by the example of the unselfish efforts of various station employees, in consequence of which the movement of railway gardening is gaining steadily many adherents in the executive circles of American railways.

HELPFUL HINTS FOR THE HOUSE-BUILDER

By CHARLES K. FARRINGTON

EACH month brings forth new appliances and devices which add much to the comfort of the home. There are also many new methods of constructing the different parts of the house. The writer went through a building recently which had been planned with an unusual amount of care, and which was very satisfactory in all respects. He intends to mention in this article what he



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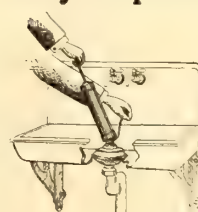
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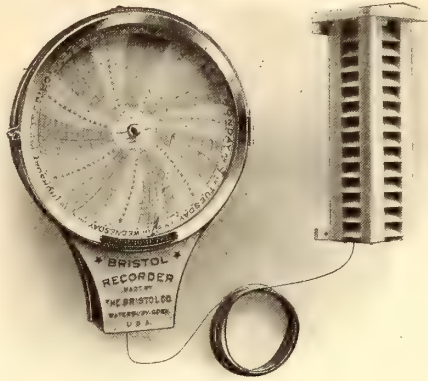
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He hasn't been wearing any during vacation because the pair he wore to school last year are now soleless. Teacher won't allow him inside the school barefooted. Father earns hardly enough, after paying the rent for a few rooms, to buy the bare necessities of life for Jimmie's brothers and sisters. This distressing combination of circumstances threatens Jimmie's education. How would you like to have your children go to school or work in Jimmie's shoes? The A. I. C. P. knows of thousands of needy and deserving boys and girls who must have shoes for school. Last year it spent for shoes alone nearly \$7,000.

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noticed that was out of the usual every-day practice.

One very good method of preventing the hearth in front of the kitchen range from settling was noted. Strong iron "hooks" had been made by a local blacksmith. One was used at each corner of the hearth. The floor beam was notched so as to allow the "hook" to rest upon it, and yet not to interfere with the flooring. Then, as the "hooks" were twisted so that the bottom ends would support the side beams of the hearth supports, a very strong method of preventing the settling of the hearth was secured. The usual method is to simply mortise the side pieces into the floor beams, but the "hooks" make an additional protection. They are made of wide flat iron, which can easily be bent to shape while hot, and the cost of them is small. It is well to use these hooks in connection with every hearth. I am now superintending the repairs that are being made to the tiles of two very handsome mantelpieces. The tiles are loose, and many will have to be relaid, simply because the hearth under them sank. If the iron supports mentioned had been used much trouble and expense would have been avoided.

THE FIRST FLOOR.

The vestibule was neatly tiled. This is a good plan, for in wet weather a large amount of dirt must necessarily collect in any vestibule, and if the floor is tiled it can easily be removed. The tiles are practically indestructible, and if differently colored ones are used some very handsome effects can be obtained. The vestibule mentioned was of the ordinary size, and the cost of tiling it was only \$18.

The hall electric light was fitted with a four-candle-power bulb, surrounded by an outside colored glass globe in a handsome fixture. This small lamp was found to be of sufficient power to light the hall for all practical purposes, and, of course, made a decided saving in the monthly lighting bill. Of course, a bulb of larger candle-power could be substituted at any time if more light were required.

The baseboard used was higher than that which is customary. It looked very well, and should prevent injury to the plaster above it. The trim in the kitchen and butler's pantry was oiled, but in the living-room it was stained "Mission" wood. The rest of the rooms upstairs and downstairs were enameled white, with the exception of the window-sashes, which were stained oak in order to prevent soiling when handled. The doors were stained mahogany where the white enameled trim was used, and glass knobs were employed. The stair-rail was also stained mahogany, and the balusters were enameled white. The general effect was very pleasing.

A lavatory, containing a water-closet in addition to the washbasin, was placed underneath the front stairs. This is a common arrangement, but a novel feature was the type of closet used. As it is always difficult to ventilate so small a room, a make of closet was selected that allowed perfect ventilation to be obtained. Underneath the seat air could pass, and a vent in the side of the bowl was connected by a pipe to the house chimney in the attic. A constant draft was thus obtained at all times and good results followed. The cost was small.

In the butler's pantry was placed a small closet just large enough to contain the extra table-boards, which are always used in an extension dining-room table, and which are invariably in the way in the average home. The closet takes up little room, and may be placed in some corner of the pantry in most houses.

In the dining-room the electric light fix-

ture was suspended over the center and close to the table. This, of course, allowed the light to fall directly where it was most needed. But a good addition was a number of extra lights which were located near the ceiling at the top of the fixture. These could be lighted independently of the lower ones, and well illuminated the whole of the room when necessary.

THE SECOND STORY

In a small wall-closet in the hall of the second story were placed the fuses and switches for the different electric lighting circuits of the entire house. This closet should have a lock and key so as to prevent its being opened by children and unauthorized persons. It is a great convenience to have it in such a location.

The closet tank in the bathroom, instead of being made of wood, metal lined, was of china. It is an excellent material for a tank. The outside can be easily cleaned, and the tank itself never warps as do the metal lined wooden ones. I had a tank, metal lined, with a wooden outside, which in damp weather warped out of shape and damaged the ball-cock attachments inside, causing the water to run for hours to waste. With a china or "porcelain enameled metal tank" this should not occur. The appearance is excellent.

The bathroom floor was of hard wood (rug in the center), so the closet was set in the center of a tiled space. This is an excellent idea where one cannot have the entire floor tiled, as the tiles can be easily washed.

Directly under the plate-glass shelf over the washbasin was placed a towel-rack of a new pattern. It had a round glass rod with metal ends to fasten it up by, and thus allowed *wet* washrags, etc., to be hung upon it without injury. A metal rack would of course be tarnished if this were done.

The hot and cold water valves in the washbasin turned on or off with a single movement. This is good practice, as it is always difficult to turn off an ordinary faucet when the hands are wet.

THE THIRD STORY

A skylight in the attic allowed ventilation to be easily obtained in hot weather by simply opening it and the windows. This, of course, made a draft and kept the attic cool, and incidentally the rooms next to it, and also those on the second floor.

As the house was heated by hot water, there was a good arrangement in the third story for supplying the heating system with water when it was needed. The supply pipe was connected with a small tank which had the usual "ball-cock," which of course automatically kept the water always at a certain level in the tank, and as the tank was connected with the piping of the heating system, sufficient water was always obtained without the trouble of putting it in by hand, which is necessary in some cases. The cost of installing was small, and the benefits derived were great.

OUT OF DOORS

The house was heated by hot water, there was a good arrangement in the third story for supplying the heating system with water when it was needed. The supply pipe was connected with a small tank which had the usual "ball-cock," which of course automatically kept the water always at a certain level in the tank, and as the tank was connected with the piping of the heating system, sufficient water was always obtained without the trouble of putting it in by hand, which is necessary in some cases. The cost of installing was small, and the benefits derived were great.

The clothes posts were made of iron, but each was set inside of a length of old iron soil pipe, the intervening space being filled in with concrete. Such an arrangement insured the posts remaining in an upright position for a long time. At the top of the iron



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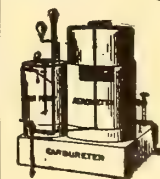
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pipe which composed the post was an iron cap which prevented the rain water from pressing inside the pipe, and an iron hook was placed through this cap at right angles to the post. This hook made a capital fastening for the clothes line. The whole post was well painted, and if kept so should last indefinitely.

Fence posts, whether made of iron or of wood, can also be set in concrete, and will last for years if so placed. Much future expense can thus be avoided.

There is a small automobile house on the grounds. There is usually no cellar under such a building, but of course supports are needed at the four corners. A very substantial and inexpensive arrangement was easily made by cutting two old galvanized iron kitchen hot-water boilers in half. The ends were left on, and each half was placed at a corner of the building to serve as a pier. Then each was filled with concrete. Even if the outer iron shell rusted away as years passed on, the concrete should remain indefinitely. The old boilers are practically worthless; in fact, the plumbers are often puzzled to know how to get rid of them, as they are of little or no value for old iron. Therefore it will be a simple matter to obtain them at a very small cost. Any kind of a small outside building which requires no cellar can be supported in a similar manner.

NOVEL CLEANING METHODS

By S. LEONARD BASTIN

THE problem of maintaining things in a clean condition is one which is ever present with those who keep house. Soap and water is an excellent agent for the dispelling of dirt, but there are certain occasions when the homely remedy does not quite fit the case. In the present article a few very effective cleaning methods have been collected in the hope that some of them, at any rate, may prove of service to those whose business it is to keep things clean, if they have not immediate access to the very convenient cleaning preparations on the market.

From time immemorial, the housewife, in common with a good many people, has found it a difficult matter to cleanse bottles, especially if these have contained something of an oily nature. Here is a very simple recipe for dealing with the trouble: Take two heaping tablespoonfuls of sawdust or bran and pour this into each bottle; shake up well, so that the interior of the bottle is quite covered with the grains. Now fill the bottle to about half its capacity with cold water, and then, holding in a horizontal position, rotate slowly. In quite a few minutes the bottle will be found to be clean, although now and again, if the deposit of oil is very thick, it may be necessary to repeat the operation once more. Water decanters are the most difficult things in the world to keep brilliant, and no ordinary washing will cleanse the glass inside thoroughly. This may be accomplished by a very simple expedient, however, which consists of chopping up some raw potato into small lumps, putting these into the decanter with a little water and then rinsing the whole thing around with a rapid movement. After doing this for awhile the glass becomes bright and glistening in appearance.

Stains, scratches and dents upon furniture are often very difficult to deal with, but there is a method by which they can be effectually charmed away. This has been tried with great success. The treatment applies to marks of many kinds and is excel-

(Continued on page viii.)



THE DECEMBER NUMBER

THE reader of AMERICAN HOMES AND GARDENS will find many important articles in the next issue of the magazine. This December number will contain a beautifully illustrated article on one of America's loveliest gardens, a garden which, though planned and planted by one of our foremost landscape architects, is, nevertheless, full of suggestion and ideas that might be applied to the laying-out and making of even a very small garden by the amateur himself. The article will be accompanied by ground diagrams, and gives an indication of what AMERICAN HOMES AND GARDENS will present this coming year to the consideration of its readers. To this number one of the foremost authorities on the subject of textiles will contribute a most entertaining and helpful article on Oriental rugs. Much has been written in the past on this subject, but nothing before of just this sort, and there has long been needed exactly such an article which would clearly define for the reader the various sorts of Oriental rugs, their differences, their values, their comparative wearing qualities, and other matters that at once will remove the confusion that is entertained by the majority of homemakers on the subject. Indeed, many persons imagine that genuine Oriental rugs must necessarily be beyond their purse, in consequence of which they have passed by the subject. They will, perhaps, be surprised to find that rugs of good pattern, texture and durability can be had to fit almost any purse, the prices of the various rugs being given in this article. One of the most attractive houses in the vicinity of Philadelphia will be described by a well-known architectural authority, and fully illustrated with reproductions of both exteriors and interiors. It is a house so skillfully planned that, despite its ample proportions, it still creates an atmosphere of home-feeling and inspires one with commendation for this sort of domestic architecture, which never can be too generally employed. Edward I. Farrington, the poultry expert and a writer of accepted authority, will contribute an illustrated article on the subject of "Keeping Twenty-five Hens." This and future articles on kindred subjects will assure the standard that has been set by AMERICAN HOMES AND GARDENS for its Poultry Department. The same number will include another article on "Making Hens Lay in Winter," and a helpful kennel article. If the reader of this present issue has found pleasure in the various photographic reproductions of "friendly dooryards," which the editor hopes will serve as a little primer for stimulating home-building efforts in such directions, it is hoped that he will also find much of interest in a similar feature that will occupy the middle pages of the magazine for December, a feature especially appropriate to the holiday season, as will be several other articles, including an essay by a New England writer of note on nature subjects. There will be other articles dealing with homes and gardens of distinction, and the issue will be fully as interesting as the present one. "Good Taste in Decoration" will head the department established in the present issue called "Within the House,"

and the Garden Department will cover a variety of hints and suggestions useful to the homebuilder and the garden-maker, while some new, original and delicious Christmas dishes will be described in the "Helps to the Housewife" Department. The December number will be richly illustrated throughout with a large number of half-tones.

INADVERTENTLY the names of the architects who remodeled the houses described in the article on the "Story of Two Remodeled Farmhouses," page 365 of the October number of AMERICAN HOMES AND GARDENS, were omitted. The houses in question were remodeled by Messrs. Adden & Parker, 12 Bosworth Street, Boston, Mass. We are glad to rectify the oversight.

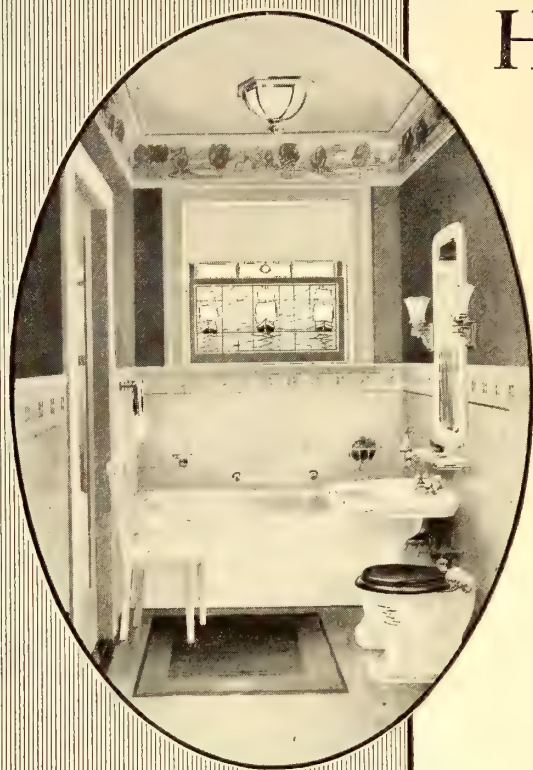
THE PURE FOOD EXHIBITION

THE Annual Pure Food Exhibition, recently held in New York city, brought to the attention of visitors several exhibits of unusual importance. One of these, the tenement food exhibit of the New York Association for Improving the Condition of the Poor, brought forcibly home to one the immediate necessity of extended action in bringing about a transformation in the conditions of the quality of food consumed by the tenement dwellers of our cities. The poorer classes have always rested under the mistaken impression that foods purchased at delicatessen stores were much less expensive than foods prepared at home, and therefore trading at these shops was an economy. The A. I. C. P. exhibit proves conclusively the opposite to be the case, and among the articles shown were various actual food samples collected from tenement tables—breakfasts, luncheons and suppers such as are the rule and not the exception. One wonders that public interest can remain deaf to the appeal this visual exhibit of the terrible consequences of such feeding must bring to our community. It seems one more reason for advocating a National Department of Public Sanitation. The Department of Agriculture of the United States had displayed a collection of contaminated meats, and it is doubtful if any visitor inspecting this exhibit could come away without a feeling of the deepest indignation that producers and dealers could descend so low in the moral scale as to participate in the criminal act of offering to the consumer foods so terrible in nature. At the Pennsylvania booth a chair was shown whose parts were welded together with a glue extracted from ice cream, and also specimens of catsup made of pumpkin pulp instead of tomatoes.

PHOTOGRAPHS FROM AMATEURS

IN response to the invitation of the editor to amateur photographers, AMERICAN HOMES AND GARDENS has received a number of interesting photographs, one or two of which are included in the present issue, and others will appear in the magazine from time to time. The editor wishes to take this opportunity of expressing appreciation for the interest taken in the matter of photographs by amateurs, and will be glad to consider other contributions of this sort.

MOTT'S PLUMBING



A Bath Room
with
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HERE is an example of the modern built-in bath, which lightens housework.

It is one piece of snowy Imperial Solid Porcelain, glazed inside and out—built permanently into the tiled floor and walls.

No awkward, hard-to-keep-clean spaces beneath or behind it.

A damp sponge keeps it spotless.

May be built in across end of small room, adapted to a recess, or placed in a corner.

MODERN
PLUMBING

Write for "Modern Plumbing," an 80-page booklet which gives information about every form of modern bathroom equipment. It shows 24 model bathroom interiors ranging in cost from \$73 to \$3000. Sent on request with 4 cents for postage.

THE J. L. MOTT IRON WORKS

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NOVEL CLEANING METHODS

(Continued from page vi.)

lent for dealing with the stains which come about with the standing of hot plates and jugs on a polished surface. Place an ordinary iron to heat on the fire. Next take a piece of blotting paper and fold this into four, finally saturating it with water. Now place the blotting paper over the mark, and then, the iron being quite hot, use it to press the damp sheet on to the offending scratch, or whatever the mark may be. Hold the iron in its place until the blotting paper is quite dry, and then examine the wood. If the trouble is not deep-seated it will have entirely disappeared, but in the case of a bad dent the operation described may have to be repeated. Eventually even the most refractory mark will yield to the treatment, and the wood has only to be repolished to complete the restoration.

In most houses the paper covering the walls is very apt to collect the dirt. This gives to it a very dull appearance, and even if the colors have not actually faded they lose a good deal of their brightness. Of course, everything in the way of washing is out of the question, but by a simple expedient it is possible to restore the paper to something like its original condition. Naturally, where the coloring is actually faded, no treatment will bring it back, but most people will be surprised to find the extent to which wall-paper suffers from the effects of dirt. The method of procedure is as follows: Take a flat sponge in a dry condition and onto this heap clean bran; now rub the paper briskly for a few moments. If it is considered to be necessary, the operation may be repeated, but it is essential that clean bran should be used each time. After one or more applications the wall-paper will be found to be quite fresh and bright in appearance.

On all articles of iron or steel rust is very likely to accumulate. On knives and similar small utensils this will at times appear in the form of small spots, which are not always very easy to get rid of in the ordinary way. The ink and typewriting eraser, now so commonly used in offices, will be found to be the best agent for dispersing the rust. A certain amount of grit is mixed with the rubber, and this is just sufficient to scratch away the spots of rust without scoring the metal, as so often happens in the case of emery paper. There is yet another advantage, for if the rust is situated in awkward corners the eraser may be cut with a knife to a point in such a way that the sharpened end can be twisted into any position.

Unless one has a definite knowledge of clock work, it is natural to think that the cleaning of a clock is quite beyond one's abilities. This is very far from being the case, seeing that by a very simple plan it is quite easy to rid the clock of all its dust without in any way displacing the machinery. Take a piece of cotton-wool the size of a hen's egg, dip it in kerosene and then place it on the floor of the clock, after having taken out the pendulum. Now shut up the door of the clock and leave it for four or five days. At the end of this time the case may be opened, when a wonderful change will be observed to have taken place; the cotton-wool will have become simply black with dust, whilst all the parts of the clock will be as clean as if they were new. The fumes of the oil have simply loosened the particles of dirt, and these have fallen down, leaving the machinery quite free from any incumbrance. After this, the bearing parts of the clock should be lightly touched with a non-clogging oil to act as a lubricant.

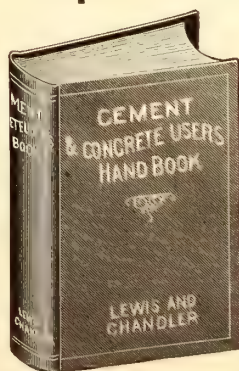
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THIS is a concise treatise on the principles and methods employed in the manufacture and use of concrete in all classes of modern work. The author has brought together in this work, all the salient matter of interest to the users of concrete and its many diversified products. The matter is presented in logical and systematic order, clearly written, fully illustrated and free from involved systematics. Everything of value to the concrete user is given. It is a standard work of reference covering the various uses of concrete, both plain and reinforced. Following is a list of the chapters, which will give an idea of the scope of the book and its thorough treatment of the subject:

I. Historical Development of the Uses of Cement and Concrete. II. Glossary of Terms Employed in Cement and Concrete Work. III. Kinds of Cement Employed in Construction. IV. Limes, Ordinary and Hydraulic. V. Lime Plasters. VI. Natural Cements. VII. Portland Cement. VIII. Inspection and Testing. IX. Adulteration; or Foreign Substances in Cement. X. Sand, Gravel, and Broken Stone. XI. Mortar. XII. Grout. XIII. Concrete (Plain). XIV. Concrete (Reinforced). XV. Methods and Kinds of Reinforcements. XVI. Forms for Plain and Reinforced Concrete. XVII. Concrete Blocks. XVIII. Artificial Stone. XIX. Concrete Tiles. XX. Concrete Pipes and Conduits. XXI. Concrete Piles. XXII. Concrete Buildings. XXIII. Concrete in Water Works. XXIV. Concrete in Sewer Works. XXV. Concrete in Highway Construction. XXVI. Concrete Retaining Walls. XXVII. Concrete Arches and Abutments. XXVIII. Concrete in Subway and Tunnels. XXIX. Concrete in Bridge Work. XXX. Concrete in Docks and Wharves. XXXI. Concrete Construction Under Water. XXXII. Concrete on the Farm. XXXIII. Concrete Chimneys. XXXIV. Concrete for Ornamentation. XXXV. Concrete Mausoleums and Miscellaneous Uses. XXXVI. Inspection for Concrete Work. XXXVII. Waterproofing Concrete Work. XXXVIII. Coloring and Painting Concrete Work. XXXIX. Method for Finishing Concrete Surfaces. XL. Specifications and Estimates for Concrete Work.

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Here one finds a friendly dooryard invitingly attractive and indicative of the warmth of hospitality one feels sure will be found within the house. The American homemaker is coming to return to the thought that dominated the outdoor planning of his ancestors, wherefore the friendly dooryard is again coming into its own with us in our fuller enjoyment of each year's progress in the art of homemaking



AMERICAN HOMES AND GARDENS

Volume VIII

November, 1911

Number 11

The Country Dweller and the Automobile

By Howard Victor Bowen

Photographs by Jessie Tarbox Beals, T. C. Turner, and others



ALTHOUGH the automobile cannot be said to have created the interest in country living that has returned to take such a hold upon us, it has assisted to a marked degree with the development of this phase of our domestic progress. Fifteen years ago the countryside was being deserted, everyone who could, moving to the city; then came the reaction, and everywhere people began turning back to the restful environment of a proximity to the open country, with its green fields and blue skies. The automobile, with its facility for covering great distances in a remarkably short space of time, came to our generation at just the proper moment to become a potent factor in country living. It helped greatly to open up vast stretches of beautiful land not yet traversed by railroad or trolley, thus tempting the city dweller from the nervous strain of fretful town life. The automobile has made it practical for the city dweller to become a country dweller without the disadvantage of distance interfering with reaching his business, for even though he may choose to live fifty

miles from the city, the man with a place in the country can motor into town far more comfortably than he could take a three-mile ride in a street car; neither would he be dependent upon the arbitrary hours of a railway timetable.

The automobile is of particular value as an accessory to any country home. In the matter of driving horses, the up-keep of a stable, even one of moderate size, is a costly item compared with the expense of maintaining several well selected gasoline or electric vehicles for home use. However, the selection of the motor car must be made carefully, with direct reference to the requirements of the use to which it will be put, inasmuch as some families would need motor cars for purposes that other families would not find in the program of their daily life. For instance, a family which entertains but little would hardly select the same sort of car that might be chosen by one which did; and, as a further illustration, a country physician, who wishes to cover the ground quickly and must be his own chauffeur, has no use for a sixty horse-power touring car, whereas a man planning transcontinental endurance runs could not use a two-pas-



The automobile places the country dweller who lives in some secluded part of the countryside in immediate touch with his neighbor, and it is one of the principal factors in making access to modern country living both convenient and comfortable, as well as furnishing truly healthful recreation



The country dweller does not need a chauffeur; he may run his own car

senger runabout. Someone has said there is as much reason to use a fifty or sixty horse-power motor car to carry two passengers as there is to use a ten-ton hammer to drive a tack. It might seem that this were too obvious a matter to refer to, nevertheless so many mistakes are made in the choice of motor cars that a word here apropos of the subject may not come amiss.

Let us suppose that a family of moderate size plans to invest in an automobile of some sort. It is presupposed, of course, that the members of the family whose part it shall be to run the car are blessed with sufficient patience to learn the preliminary steps in the knowledge of motoring, and that being prepared to invest from \$500 and upward in an automobile, the conclusion should not be jumped at that this will be the only expense entailed in connection with motoring thereafter; one must plan for the up-keep of an automobile as he would plan for the up-keep of a horse and carriage. Before the country dweller decides upon a car, it is supposed that in all probability he will have visited various automobile shows and the selling offices along the motor car row of his nearest town, and that he will have supplied himself with the catalogues and literature issued by the various makers of such vehicles. Friends will probably have been solicitous and have confused the prospective purchaser with a variety of conflicting suggestions, and one may imagine that many evenings will have been spent studying intricate diagrams, learning the meaning of technical terms, and otherwise trying to gain a preliminary working knowledge of automobile mysteries, inasmuch as the enthusiasm of the motorist-in-embryo grows apace with every hour he spends contemplating the happy day to come when the car he wants will have become his.

A car which would answer every one of the demands

made upon it by the average country dweller might, perhaps, be found in a two-passenger, single-cylinder runabout of possibly twenty to twenty-four horse-power. This is the sort of car which can be operated by the women of the family easily. Being designed for light use and moderate speed, it could hardly be expected to carry a very great load, but a car of this sort can be depended upon to carry two or three people at a speed of thirty to forty miles an hour without taxing its mechanism unduly, which is a rate of speed that should be equal to almost any of the demands that even rough roads or hill-climbing might make upon it. Usually the mechanism of a small car is less complicated than that of a larger one, and therefore presents fewer difficulties in the beginning to the amateur country automobilist, who is apt, on coming into possession of an automobile, to be somewhat puzzled and dazed at the prospect of obstacles to be overcome, of which he has read and has been told, but which, fortunately, are, at least the most of them, wholly imaginary, ordinary intelligence and carefulness being the prime requisite to running one's own motor car successfully.

If a somewhat larger automobile is required by the country dweller, one would suggest a twenty-four or thirty horse-power touring car. One of this sort will accommodate four or more passengers, and its engines will be found a sufficient power to drive the car at a speed of from forty to sixty miles an hour, equal to hill-climbing and the rougher roads apt to be met with anywhere and any ground short of mountain and swamp. However, it must be remembered that the heavier the car the greater the expense of its maintenance, the wear on the tires being much heavier, and more power, whether electric or otherwise, is required to drive the machine forward. This is a matter for consideration with the country dweller of moderate means.

Every runabout or touring car should, of course, be provided with accessories as ample as one's circumstances will permit, and particularly with adjustable top covers if open cars are the ones that have been selected, the cover saving many a scorching or drenching from excess of summer heat or sudden shower. If all the motor car accessories one would wish to have cannot be purchased in the beginning, the country dweller who buys a car will find himself taking a certain pleasure in adding to his automobile equipment from time to time. Indeed, the advent of the automobile has helped to solve many of the "what-to-give-for-Christmas" problems that so often confront the family before the arrival of the festive day.

In selecting an automobile, the prospective owner should examine the workings of both electric and gasoline cars. Both motor cars have their warm supporters, and both their merits. When once the country dweller has made a preliminary study of the problem, he can then decide more intelligently the sort of automobile that will be best suited to his specific purposes.

As to the matter of tires, this is one which has puzzled automobilists from the beginning and may baffle ingenuity for some time to come, as no one has yet invented a pneumatic tire that can be said to be absolutely puncture proof. An automobile tire is made of numerous layers of rubber, canvas, and other materials welded and cemented together with wonderful skill, the idea being to produce a tire which shall be flexible enough to absorb the shocks caused by the motion of the car, and yet of sufficient power reasonably to be secure against puncture. There must be considerable space within the tire for the air which is forced into it by pumping, and as the tire itself is necessarily of considerable thickness, the wheel is apt to present the somewhat bulky or clumsy appearance to which so many have objected on purely aesthetic grounds. If one cannot obtain a tire that is absolutely puncture proof, at least a tire may be selected which is best adapted to the roads over which it is to travel, and it



The top-cover for the open automobile will be much appreciated when driving leisurely on sunny days, and also in using the car on days when one is obliged to travel great distances and to weather storms of rain, snow or sleet

is interesting to note that a tire will last much longer in the country than in the city. It is said that fully two hundred miles of travel may be had over country roads against one hundred over city streets, crossed as they are with a multiplicity of car tracks, enforcing long stops and sharp turns, and the skidding incident to the present methods of street sprinkling.

The lights which an automobile carries are a most important part of its equipment. One should select, if possible, electric headlights, with a battery-charging dynamo, for the increased cost will really prove to be an investment paying a dividend in convenience and increased efficiency upon the amount of the expenditure.

Many country dwellers would turn seriously to a consideration of investing in an automobile were they not frightened away from it by what they imagine to be the excessive cost of maintenance and repairing, not taking into consideration that the size of the bill for repairs is usually an index to the manner in which the motor car is operated and cared for. It is truly remarkable how little repairing is required with the automobile that is carefully handled, an ounce of prevention in the matter of driving being worth a ton of cure after reckless speeding. The makers of any reputable motor car construct their automobiles upon the "honor" plan, and therefore the machines may be depended upon to last, especially as the automobile has long since passed out of its experimental stage of being merely a noisy, rattling curiosity.

Highly important in the maintenance of a car is the manner in which it is housed. Architects and builders have exerted their ingenuity in evolving the best types of garages for country homes. In *AMERICAN HOMES AND GARDENS* many

of these have been pictured from time to time. The best arrangement in planning a garage is to place it where it will harmonize with the general architecture of the buildings to which it is adjacent, thus adding to the beauty and symmetry of the composition line of the assembled out-buildings. For this reason the garage, as a general thing, should be designed in the style of the house itself, and it should be placed with an idea of keeping it apart, as far as possible, from the dwelling. One particularly successful example of this grouping of buildings comes to mind. It was that found on a country place, the house being one of twenty rooms, the outer walls covered with rough handmade shingles which had been stained to a silver-gray. Numerous chimneys of stone were necessary to the house, and the whole dwelling was almost covered with Boston ivy, which had been permitted to grow directly upon the shingle walls—an arrangement which, though somewhat harmful to the life of a frame building, yet produced a homelike effect. The service buildings, garage and other out-buildings were placed away from the house, the space between being connected by a roof to form an arcade. This made, in effect, one building of the group of buildings, broad and low in appearance, and following the lines of the site. The whole place was carefully planned and had the environment of beautiful grounds, the result of generations of planting. Of course, this particular country estate is one of considerable cost, but it was a distinct and pleasing contrast to others I have seen, where the final appearance of the grouping of the out-buildings was not taken into account, and even in this instance the same principles apply to the plans for a country home for the man of moderate means. As insurance



An inexpensive type of an automobile shelter that may be supplanted at a later time by a more pretentious garage if required



The country dweller who does not wish to go to great expense, may well erect a little garage of this sort

companies have very definite rules regarding the location of gasoline tanks, their requirements, like the laws of the Medes and the Persians, must be respected. Generally the gasoline tank for the garage is built at a distance of not less than thirty feet from any building, and under ground, with

pipes below the gas line, in which portable lights are carried. Nevertheless, the gasoline tank need never be a blot upon the landscape, for it may be hidden by shrubbery or screened with a vine-covered lattice. Apropos of the garage, the country dweller should try to provide a shelter of some kind



This is an excellent type of the cement garage for a small country place, designed to harmonize with the architecture of the dwelling and with the landscape into which it fits. The matter of harmonizing the outbuildings is always one of importance, deserving more attention than it receives



The garage which has an architectural distinction is one of the most interesting features of a country place of any sort, and should always occupy a place in the plans of the premises when it is found possible to arrange for its being included

for the automobiles of chance visitors and guests, even though he has no garage proper as yet upon the premises. Of course, many families in the country keep their motor cars in old carriage stables. Indeed, the name "garage" so often suggests that of "chauffeur" that many persons have not become interested in owning motors from imagining they would have to hire chauffeurs to run them, despite the fact that an enormous number of automobiles are operated solely by their owners or members of their families. In this connection it is interesting to note the increasing popularity of the "visiting chauffeur" in country localities—a man undertaking the daily examination of automobiles for a number of families in a neighborhood, carefully "grooming" the cars and getting them ready for the day's travel. As public garages and automobile repair shops are now everywhere to be found, any road mishap need not necessarily require one's own chauffeur at hand when driving, and the "visiting chauffeur" plan has therefore been found to work out with great success, and it proves an economical way of adding to the pleasure of the country dweller's owning his own car.

It must not be thought that motoring is merely an idle pastime, at least not for the one driving the car. Indeed, it is one of the best forms of exercise for all-round development, calling, as it does, all the muscles of the upper part of the body, and many of the muscles of the lower limbs, constantly into play, and in such a manner that one becomes adept in their control. It has always been thought that driving an automobile was under no condition a woman's profession; however, this is a great mistake. Hundreds of women throughout the country drive their own cars and find great pleasure in the pastime, as well as the profit of its

exercise. It is, of course, more difficult for a woman to attempt anything like the repairs on a car, but where one leaves the garage with a machine in good condition, with careful driving one is reasonably safe from the interruptions and annoyances that might otherwise present themselves. As to the matter of safety, there should be no doubt that a carefully driven car is fully as safe as riding in a carriage after a horse. Unless one is content to plod along the road after what is called a "plug," there must always be more or less danger in driving from a shying or unused horse. There is, of course, pleasure in horses that nothing else can supplant, and one does not pretend that an automobile presents attractions synonymous to those found in driving. Driving and motoring each have their particular fascinations, and each must be considered separately. However, the objection to the motor car as being unsafe is hardly tenable.

We have not, perhaps, paid enough attention to the educational value of the automobile in the matter of bringing through its means to the attention of our children a better idea of historical localities. It is a pity that in the eastern countryside, almost every mile of which has some definite connection with our history, the children in the house are not taken on little home excursions to points of historical interest. This, perhaps, is because we so often overlook those things that are most near at home. Apropos of this it may not be out of place to mention here the plan whereby a man and his wife added actual profit to the pleasure of their summer's motoring. They lived near one of the historic towns of the Hudson River Valley, a neighborhood much frequented by summer visitors, and by mapping out an excursion route to a number of places of interest in the



The old way and the new

vicinity, they quietly let it be known that little picnic basket tours would be conducted by them. Of course, the number of persons was limited to two or three, and the initiators of this interesting plan would drive their car, with their guests, out before luncheon to some woodland spot where the out-

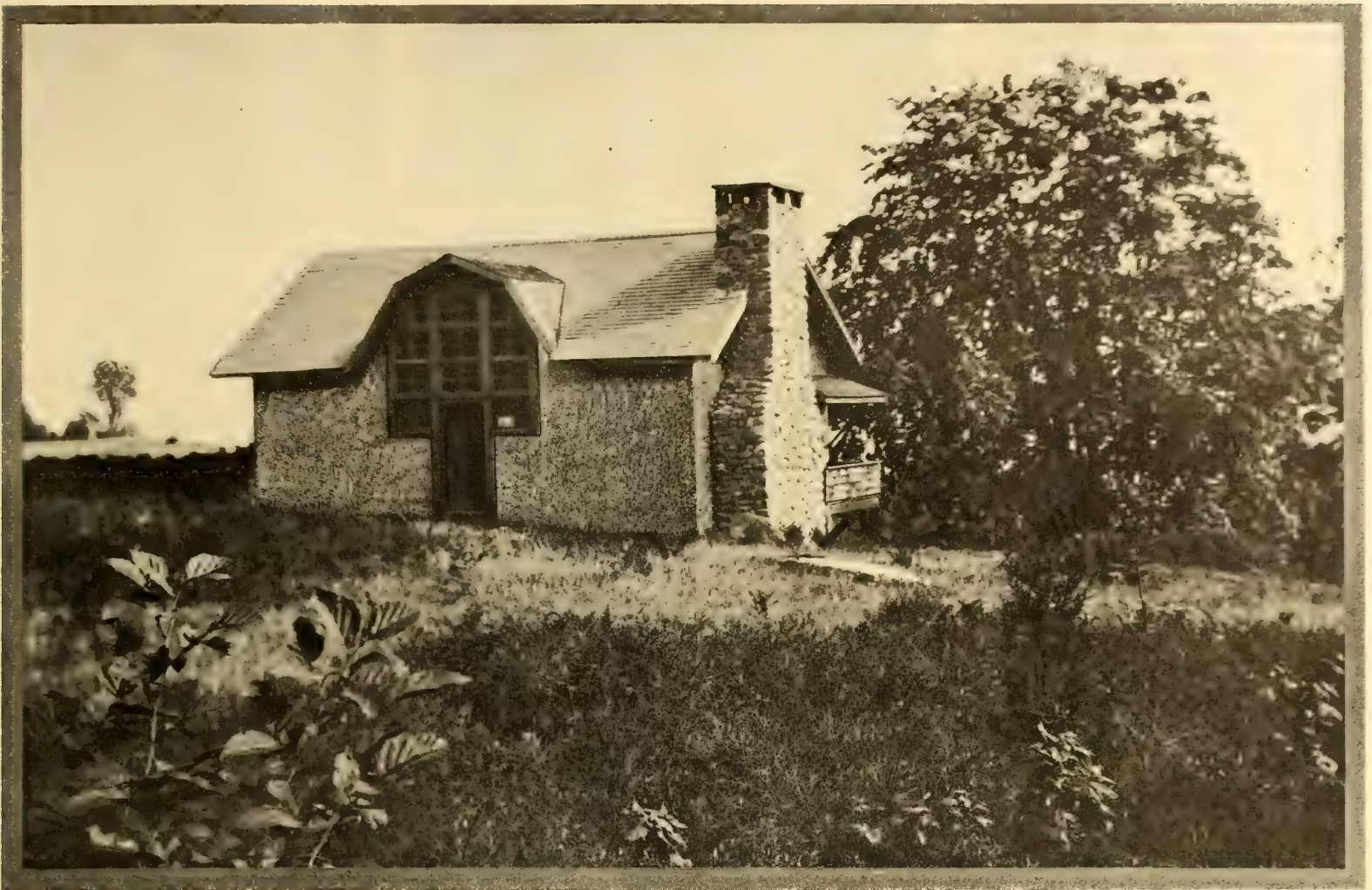
door feast would be unpacked from the hamper, and after the repast the car would be driven from place to place, returning at half-past four o'clock to the starting point for tea. This "seeing the countryside" plan was such a success that it will probably be repeated another season.

One must not overlook the motor-truck type of automobile, which is meeting great favor everywhere. It is almost indispensable to the large country place and is put to a variety of uses, some of which are the transportation of various articles from one part of an estate to another, carrying trunks to and from distant railway stations, and often serving as accompaniments to picnic parties. Indeed, the automobile has made modern picnicking a thorough delight, for it has enabled one to enjoy the coming and going as well as the woodland spread itself.

A discerning writer who has gone deeply into psychology claims that one is kept youthful in appearance as well as in spirit by a variety of interests; that the wear and drain which modern life creates is repaired or remedied and overcome by the pleasure which may come from external attractions—which is only another way of saying that a hobby is a tremendous help to a busy man and that its due gratification will help him in many ways. The dictionary defines a hobby as "a favorite pastime," not necessarily either a folly or merely a pastime. What would become of childhood were there no hobbies to ride, and, translated to later years and other scenes, our hobbies are the interests which keep us young and interested when plans go wrong and cares come toppling down about our ears. Nothing, perhaps, adds more to the pleasure of country living than the careful cultivation and diligent riding of a hobby, and I often wonder if one could find a hobby more fascinating and yet more practical than the use of the automobile. Its services minister to the entire family, it responds alike to the call of business or pleasure, it closely unites city work with country living, and one rural community with another. The automobile can, of course, be abused like anything else, but its wise and intelligent use is practical and economical, and it is doing more than any other one factor to-day to promote enjoyable country life, to make it practicable and possible.



The half-timber type of garage architecture always suggests country living and is an admirable feature in the home setting of the country landscape



"Laurel Lodge," the studio cottage of Miss Ida J. Burgess, Woodstock, New York, nestles on the crest of one of the lovely Catskill foothills

A Mountain Lodge

The Story of a Delightful Little House in the Catskills and of How Its Owner Came to Build It

By Josephine Burleigh

Photographs by the Author

THE first thought that comes to an artist who contemplates building a studio home in the country is that of the choice of its location. Of course, this would seem to be true in the matter of any selection, but to the artist the surroundings of his house and his environment count above almost all the other considerations, even above those of comfort and accessibility, which cannot be said in connection with those whose vocations and avocations throw them into different fields of endeavor. The little house which forms the subject of this article is the home of an artist, and one notes that for a long time it was a question as to whether or not its owner should choose a spot on the seashore or in the mountain country for its placing. Finally, after much thought, the highlands were chosen, and the charm of the Catskills with all their Rip Van Winklish

associations prevailed. Near one of the many small villages of Ulster County (so remote from main roads of travel that one must drive some five or six miles to reach a railroad and where modernity has not found it accessible enough to spoil the quaintness of the place by anything like an invasion), "Laurel Lodge," for so its mistress has named the house, came to be built. Other artists also have

found this quaint corner of the countryside a haven for their inspirations, and a delightful colony of congenial neighbors has sprung up in these lovely hills. That also presented itself as a further inducement to this home-builder for choosing the mountain land, though in doing so a deep love for the sea seemed, for a while, to fight for the place of a final choice. Perhaps in no other nook in the whole Catskill country is more delightful scenery to be found. Here are wonderful trees, mysterious ravines, and velvety fields and the quaint



The kitchen approach to "Laurel Lodge" is partly up these steps, that have been made of stones hewn from the little quarry at their side

people, native to the soil of this district, serve unconsciously to lend to its picturesqueness in the artist's eye.

In the earliest years of their arrival in this particular valley, many of the natives looked upon the coming of the painter-folk with considerable distrust, but since it has been mutually agreed that the invaders shall not leave paint-rags in the cow pastures nor let down the bars of the grain fields, peace has been established, and if the masters or mistresses of the brush choose to wander out on moonlit nights in search of "motifs," they may do so until the dawn of day, quite peacefully, with no fear that the farmer will fire a shotgun at them under the innocent guise of pretending to have thought them robbers or tramps. Apropos of either fraternity, one may say with happy heart that both shun the valley completely.

The owner of "Laurel Lodge" did not have long to look before finding a bit of pasture land, well supplied with natural springs and large trees, on the rising slope toward the Overlook Mountain, which was bought for a small sum. To eyes accustomed to the shut-in vistas of city streets the price paid may have seemed "fair," but to the new owner of these few acres it seemed ridiculously low for the wide prospect of the hills enfolding this happy valley, affording never-ending sources of pleasure.

The second thought in the mind of the builder of this studio lodge, once the location had been decided on, was the size and proportion which a good working studio with the necessary living quarters attached should have, especially taking into consideration its summer accommodations, for that was the season in which it was to be most in use.

As the idea of having a large studio for summer work dominated the mind of the owner (who made her own plans, by the way), as little else as possible was included in the scheme of space allotment.

Having placed the house (in imagination) just where the



The studio-room is large, light and homelike

view of the valley toward the west was finest, and where it would be sheltered from the main high road by some large maple trees, the next consideration was the taking advantage of the peculiarities of the site, planning the house to fit the site chosen. This hillside spot was on a steep slope near the top of a small ledge of rock where a quarryman had recently been excavating stone, which suggested to the home-builder the plan of erecting a house having a lower story opening on a level below that of the studio above. This plan worked out very well, as it kept the living-room entirely distinct from the studio above and yet covered them both with one roof.

The studio floor extends some feet beyond the stone wall of the foundation, which forms the north side of the living-room below, making the studio floor considerably wider. The floor space is

21x30 feet; the height 17 feet to the peak of the roof. In appearance it is a two-story house viewed from the south side, while from the north side it looks like a one-story bungalow, whose striking features are a big dormer window at the north side and a massive stone chimney on the western end.

In immediate surroundings, whose greatest crop till then seemed to be stone, it was not difficult to obtain from the banks of the creek and from the old stonewall fences enough "cobbles" to make this chimney almost wholly from big and little boulders. The pride of the Scotch mason in his work while building it, and his canny remarks on the special lore required to produce a work of art of the sort of which he considered himself alone capable, was worth enduring his trying obstinacy at times. A brick chimney, perhaps, would have been far less expensive, but not half so delightful.

Who ever knew an artist to hesitate to spend on the things that please the eye?

Far rather would the artist who made this homelike little



These two views of the studio-room chimney corner at "Laurel Lodge" show the possibilities of rough cobbles used for interior building purposes

house spend her money for the stone chimney of her dreams and economize on—well, on something else! So this chimney with its big studio fireplace was built of stone rather than of brick, just to fill the owner's sense of fitness for its place. The studio fireplace is big enough to take logs as they come from the woods, and both fireplaces are supplied with the old-fashioned cranes and hangers which the village blacksmith was found clever enough to make. The attic of a farmhouse supplied a fine pair of andirons, discarded along with fireplaces many years ago; also a big iron kettle. A small corner fireplace was also constructed in the living-room below, the flue being carried up in one side of the big chimney. This small open fire adds its cheer during the cool days of spring and autumn, besides being of great practical utility on the culinary side of things, which is something even the most impractical artist does not always overlook!

The studio-room of "Laurel Lodge" was found to be still quite large enough for any ordinary work, even though a bedroom was later partitioned off in the corner near the winding, well-lighted stairway descending to the lower floor. The corner opposite this bedroom contained a somewhat larger space, about which movable screen partitions were placed, together with curtains which may be drawn aside when the added space is desired in the studio, or closed for a little workroom, or even utilized as a bedroom when demanded by an occasional guest.

The problem of lighting the studio from the big dormer window received particular attention on the part of the artist when drawing the plans. A good, steady, north light, high enough to light the whole studio, with no bothersome cross lights from other windows, was, of course, a studio necessity to the owner. The smaller windows were placed low in the wall, the vistas from which disclosed a never tiresome panorama of Nature's ever-changing delights. These window openings were made wide rather than high, with the old-time sliding sash of our Dutch forbears. Instead of the regulation upright window having pulleys



The plate-rack in the living-room. The stairway leads to the studio-room, just above it

and weights to raise the sash, these were built to slide back into the wall at either side. When open, these windows frame in bits of landscape that are veritable pictures in themselves. The small windows in the gable ends of the house were designed for the purpose of ventilation during the hot months of the year. The walls of the studio-room were covered with golden brown grasscloth as far as the rafters overhead, which rafters were left unfinished like the gable ends, except for a coat of gray stain added to subdue the disagreeable yellow of new pine. The floor also received a tone of gray stain

before it was finished in hard varnish, and the shelves and studio fittings were all made gray as far as possible.

The possibility of monotony in such a color scheme was avoided by the selection of rugs of skins and rag carpet on the floor and the numerous copper and Japanese pottery jars lending definite contrasting color notes, while the various bits of bric-a-brac and *objets d'art*, dear to the artist soul, found ample space for the display of their individual charms against the plain walls and gray stone chimney.

The door opening in the central space below the north dormer window was made in two sections like the old-fashioned Dutch door, and it was arranged to furnish a window space when its upper section is thrown back.

From this studio-room, one may look out toward the mountains. The "Minister's Face" of bare rock showing above the trees on the right, just over the old stone quarry, where workmen still obtain stone for local building and road-making purposes. Below this old quarry a road crosses the wide stretches of pasture land, leading the eye gently down from the steep wilderness above. Not a house is visible in this direction to break the perfect picture of primitive nature, where the Wild Fern, the Mountain Laurel, and the Azalea bloom among the rocks.

The balcony added to the western end of "Laurel Lodge" opens from the studio, and serves as an outdoor sleeping-room. Doors lead from this into the studio, swinging back. This balcony has a pent roof and is enclosed high enough to conceal the couch bench. The window-sash, the doors



The dining table corner of the living-room



Lower fireplace across the living-room corner

and casings within the house are stained green, as also they are on the outside, except in the corner closed off with curtains, where all the woodwork was stained gray, including the built-in seat and drop-leaf work-table.

The long seat with shelf above near the fireplace is also stained gray to harmonize with the color of the chimney cobbles, and this seat is brightened and made comfortable with many cushions of large flowered chintz. Window curtains of small-patterned cotton print (the India prints of black on white) serve both to ornament the small windows and as shades when drawn together. Naturally, from early spring to late fall one may decorate such a studio with masses of wild flowers in profusion. The large white blossoms of the Dogwood, which bloom with the pink Azalea in season, are always looked forward to with joy by the artist-owner. With the succeeding Laurel, Wild Roses, and brilliant autumn foliage it is possible to have their added grace at all seasons in decorating various corners of the little lodge. As for the furnishings of the lower floor of the house, some old hickory chairs and a table with drop-leaves were acquired from neighboring houses, whose owners were only too glad to supply their places with more modern furniture. The walls of the living-room on this floor and the small bathroom opening from it were ceiled with pine and the whole finished with a green stain, variously modified by the natural color of the wood. The rafters of rough wood also took the stain very well, and on a hot summer day this cool color is very pleasing. Built into the living-room walls were seats beneath the wide, low windows which fill two sides of the room. The door, again, was of the Dutch

sort, opening above and below. The dishes on the living-room shelves were chosen from blue and white, and not to be too conspicuous against their setting of green above the white enameled sink. A small bedroom is tucked away in the southeast corner of the living-room floor. This is also finished entirely in green stain, and a cold closet, having the natural rock for a shelf, is beneath the stairway. In the planning of "Laurel Lodge" every effort was made to utilize such conveniences of modern comfort as may be had in the country. Spring water was piped to the house for household use and the supply of the bath.

The stone-paved space on the south side of the house offers possibilities for a vine-covered pergola. Here are the stone steps descending to the level of the great maple tree, whose shade invites a hammock lounger on all summer days. The slope of the hillside, with its sparsely covered rocks, demanded the wild-flower garden wherein all kinds of Perennials, Pinks, Sweet-William, Phlox and Canterbury Bells bloom with little care. To keep all that was possible of the original wilderness of the place unspoiled, its natural growth of Azalea, Laurel, and Wild Roses has not been disturbed. A few benches and garden seats were made for the shady places beneath the large trees, for the outdoor life of the place lends it great charm at all seasons of the year, and even winter, with its blanketing of snow, finds the open fires defying its cold winds, while looking forth from the security of the cosy interior the frosty prospect outside is like a fairyland of glittering crystal, full of interest in the unceasing changes of color wrought upon the landscape by the frequent shifting of the sun and the moon.

"Sunshine"

A House of Distinction at Great Neck, Long Island

By Ralph de Martin



BUILT on the summit of a cliff above the waters of Long Island Sound known as Little Neck Bay, a great white stucco house, designed by Messrs. Little & O'Connor, architects, of New York, but actually a rebuilding of an older structure, is a dwelling of distinct originality. It is ample and generous in size, broadly planned and built—a house of strong lines and firm character. There is a massiveness and strength in every portion of its exterior, due partly to its considerable size, but more generally to the absence of external features. Thus the windows everywhere are sunk in the deep thickness of the walls and are without external frames; the cornice is reserved for the main building, and in the subsidiary parts its place is taken by the projection of the tiled roof. The stepped and curved gables, and the turret-like treatment of the corners are the most characteristic features of the exterior, these and the great roofs of brilliant red Spanish tiles. The last give the character-note to the exterior, but the delicate pea-green of the door and window frames and of the blinds is an essential part of the outer color scheme.

The entrance front is an eminently massive composition of quiet dignity. The body of the house is a vast rectangular structure, to which wings are applied on either side. The larger of these, on the right, is devoted to the kitchen and the service-rooms; the smaller, on the left, has been chiefly erected to provide space for the great smoking- or billiard-room located within it. In the center is a massive porte cochère, with a great arch on either end, and a slightly smaller one in the axis of the doorway. The house wall on either side is long enough to provide room for three windows—actually four on the right—spaced in ample wall.

The roof contains four dormers, two on each side, with a small stucco gable in the center.

The glazed entrance doors are provided with handsome bronze grilles, and immediately within is the vestibule. Its area is considerable for a space devoted to this use, and at once sets the scale for the ample dimensions observable everywhere in this large house. Its floor is laid with small green tiles, largely covered with a rug, whose predominating shade is red. The walls are paneled in wood, painted white, and the ceiling is gilded. Immediately beyond is a small passage or recess, with two pairs of columns, front and back, and separated from the vestibule by curtains of rich red velvet. On each side of this space is a semi-circular domed recess, containing a tall electrolier standing on a circular base.

It is but a step into the hall, which is a splendid room with windows giving on the open court on the water front. The stairs rise on either side in graceful curves to a balcony immediately above the point of entrance. They have mahogany treads, newels and handrails, with balusters painted white, and are covered with a rich crimson carpet. Both balcony and upper hallways are entirely open, and their white walls, paneled ceilings and red panels present a picturesque appearance as viewed from below.

The lower hall is treated in ivory white, the walls, for the most part, being faced with great panels of tapestry. The ceiling is beamed, with closely placed girders with white plaster panels between them. A fine old lantern of gilded wood hangs from the upper ceiling. The floor is of hard wood, with many rugs. The window curtains are of pink satin with borders richly embroidered in white, hung over white lace curtains. The central opening is a door to the court and, like the other door openings, is provided with



The piazza on the water front suggests a Pompeian court

red silk portières. The furniture is gilded and has covers of pink and red.

The hall being the center of the house the location of the other rooms are best determined by their relationship to it. On the right, entered from the vestibule as well as from the hall, is the reception-room. Further on is the dining-room, and then the breakfast-room, the kitchen and its dependencies occupying a wing that comes forward on the entrance front. On the left are the library and billiard-rooms, and a series of small apartments especially planned for the owner's personal use.

The reception-room is a small apartment very delicately treated in pink and white. The walls are lined with pink satin in two tones; the woodwork is painted white, the ceiling is white, and pink and white are the prevailing colors of the rug. The window curtains are of pink satin hung over white lace curtains. The furniture is exclusively old French and is pink

and white. The room contains an elaborate bronze centertable, with porcelain portraits let into the top.

The dining-room, which is separated from the hall by an alcove, is sumptuously furnished and decorated. The walls are lined with tapestry, and the same material is used for the portières at the doors. The plastered ceiling is decorated with a star-like geometrical pattern, and is supported by a strong cornice. The woodwork, which is quite subordinated, is painted white, and the hardwood floor is covered with a green rug with a two-tone border. The curtains are of green velvet over outer-curtains of white silk. The furniture is mahogany, with metal ornaments

and mounts, and tapestry seats. In the center of one wall is a great sculptured mantelpiece, the shelf being upheld by figures almost life size; the facings and linings are of brown brick. The room is illuminated at night by four richly clustered crystal electroliers, which depend from the



The water front is one of the most attractive sides of this house



Wall fountain at "Sunshine"

four corners of the ceiling. On the water front this room opens onto a covered porch, arched without, with narrow rims of wood painted pea green. It is floored with Welsh tile, partly covered with a vast rug.

The breakfast-room is beyond, and is a delightful apartment of very real charm. It is of goodly size, too, and is lighted by windows opening on three sides. The plastered walls are, throughout, lined with wooden trellis work painted green, and the ceiling is treated in the same manner. There is a plentiful decoration of artificial flowers and leaves in the ceiling, but natural plants in great variety are stood around the room and grouped in the corners, all tending to help in the conservatory effect to which the structural decorations obviously lend themselves. The floor is of cement, painted in two tones of green. A large grape-basket light depends from the center of the ceiling, and half baskets of similar design are used for the side lights. The furniture is mahogany with rush seats. The whole of one wall panel is filled with a fountain of vigorous sculpture.

The rooms on the left of the hall are connected with it by means of passages and hence do not open directly from it. The first, on the water front, is the library. It is finished in dark oak with a high paneled wainscot, above which the walls are faced with dark green cloth. The woodwork of the furniture is identical with that of the walls and is softly harmonious with the mouse-colored velvet with which the chairs and divans are covered. The rug is of the same color, and has a border in two tones. So also are the curtains, which are arranged at the tops with a lambrequin design. The ceiling is beamed, with small panels. A large bronze electrolier depends from the center, while the side lights are provided with globes of brilliant incandescent glass. An inglenook is arranged in one corner and has a delightfully informal character. The walls and pavement are lined with red brick, those of the latter being disposed in herring-bone fashion, and the fireplace is provided with a great copper hood. All of these parts are arranged

under a projecting roof, which is provided with an outer vase shelf. Beyond, at the end of the passage, is the billiard-room. One comes upon it with surprise. It is unexpected in its size, unexpected in its style, unexpected in its charm. It is a charming apartment in every way, the largest in the house and the most striking in its treatment. For its walls, from floor to ceiling, are lined with exposed logs, shorn of their bark, but otherwise left in their natural state. It is L shaped in plan, with an extension immediately before you as you come into it through the passage from the hall. Here the roof rafters are upheld by the stout trunks of trees which retain their bark and whose branched tops have the value of capitals to columns. The floor is of hard wood, covered with many rugs, skins and Navajo blankets. The chief light, over the billiard table, consists of four old-time lanterns hung on crossed wood branches, while many single lanterns encase the electric lights on the walls.

The room is immense in size, extending from front to front, and with windows on three sides. These are of casement form, with diamond panes. There are no curtains, but deep blue shades. At the far end, and actually on the entrance front of the house, is the fireplace, an immense structure built up of great field stones, and with a cavern-like opening in which the most generous of fires may burn. The hearth is also huge in size, and is formed of field stones sunk in cement. The stones of the fireplace disappear behind the ceiling of barkless logs; above the opening is a shelf formed by an immense hewn log. The furniture, including the great table, is rustic work, and is supplied with red cushions or skins. The room has, in fact, all the character, and the very true character, of the living-room of a genuine huntsman's lodge, a circumstance that is heightened, in large measure, by the magnificent collection of moose and other animal heads with which the walls are decorated.

The remaining rooms on the entrance front are of quite subordinate character. A toilet-room is provided on each side of the vestibule, and on the left, as you enter the



The main staircase and hall

house, is, beyond, a large coatroom, and then an office-room, which is finished in red and white.

The marked simplicity of the entrance front is somewhat modified in the development of the water front. There is still, it is true, the same absence of ornamentation and the same vigorous massing of the parts, but the latter show greater variety, and the whole effect is distinctly more festal in character. Each end of the main portion of the house is here projected forward in two wings, two stories in height, with great projecting roofs, broken in the center with small gable ends. The first story of each wing contains a loggia, with three round arches, above which a balcony is projected below the triple window of the second story. The most interesting feature here is unquestionably

old locust trees stand guard around it. The slope to the water's edge is but a short distance away, and is so precipitous as to be almost vertical. Very beautiful it is here, the white house rising in massive grandeur in the background, the warm green of the grass, gently shaded by the fine old trees, and down below the glistening waters of Little Neck Bay. It is a rare and lovely site, of real and penetrating beauty.

Withal, as one approaches the house at "Sunshine," there is not at any turn a sense of that forbidding formality which is one of the crying faults of much of the American country home architecture in the past—happily the past, for the architects of the present appreciate the fact that dignity is ever inseparable from true home-feeling as expressed by



The tapestry-walled dining-room of "Sunshine" is one of the finest and most spacious rooms in the house

the colonnade which connects these wings, and which is carried along the outer margin of the intervening space, thus creating an open court behind it. The roof of the porch, which is covered with red tiles and is within lined with wood supported on beams, is carried on massive columns of cement. The woodwork is all exposed here and is painted pea green, the whole arrangement affording a brilliant color-note exactly where it is most effective. A broad flight of steps leads directly to the lawn, the piers at either end being decorated with reclining lions. There are open terraces beyond the loggias, one at each end of the house, and the steps, which descend to the right and left, have rearing lions on either side supporting shields.

All the outer space here is beautifully grassed, while just beyond the house a double and triple row of slender

the house and grounds. Even the great châteaux of France, the pretentious villas of Italy, the castles of Germany, the palaces of Spain, and the manors of England teach us that the quality of livableness can be expressed in the dwelling of great proportions as truly as it can in the cottage. Indeed, we are striving to remove from even those of our country places which have had the misfortune just to miss the sense of being homes as well as show places, that forbidding coldness of aspect that characterizes our worst period, not of mere architectural construction, perhaps, but of endowing the dwelling, great or small, with a sense of permanency, as though it had been and would continue to be lived in for many more generations. Therefore houses of this sort can hardly fail to command our respect in the light of the budding ideal of American home-making.



Of all bulb flowers of early springtime, none are more beautiful than the lovely fragrant Hyacinth

The Hyacinth

By Gardner Teall

Photographs by Nathan R. Graves

EVER since the lovely Hyacinth was introduced by seedlings and hybrids from the Oriental Hyacinth (*Hyacinthus orientalis*) of the Levant, as long ago as the year 1590, it has held a warm spot in the hearts of all garden lovers, not alone in the affections of the Dutch florists, who have brought it to such perfection, but quite as much in those of American amateurs, who have found it a flower of surpassing beauty, color and fragrance in the early spring garden. Likewise, the Hyacinth has come to be one of the favorite bulb plants for indoor bloom—probably the most popular one of all.

Of Hyacinths there are many varieties, from the exquisite little Amethyst Hyacinth of Europe, with its brilliant azure of pellucid hue and its exquisite fragrance, to the great, fat, wonderful ones that have helped to make the gardens of Holland famous and gorgeous. There is not a more beautiful flowering bulb to be found for the purpose of planting for naturalistic effects for lawn, field, meadow, wood, hill-side or rockery. The traveler in Europe finds joyous delight in coming upon the Hyacinth in its native haunts. One will find it in Greece and in Sicily, and sometimes in Capri, wild upon the mountain-top. The flower takes its name from Hyacinthus, son of the Spartan king, Amyclos, who was killed when playing quoits with the god, Zephyrus, through the treachery of the jealous Apollo. The old Greek legend has it that from the blood of Hyacinthus there sprang up a flower to bear his name, on the leaves of

which appeared the exclamation of woe, AI, AI. There is no reason why we should feel that we live in so practical an age that while we busy ourselves with the prose of flowers we have not time for the poetry of their love. Indeed, it is hard to understand how anyone who loves a garden and the plants therein can fail to take an interest in everything, legendary or otherwise, pertaining to each of them. I know one possessor of a perfect garden who has placed hither and thither among his beloved plants little quotations from the poets, classic and modern, as well as labels to mark them. When his brilliant Hyacinth beds are in bloom they are marked, as one might guess, with this quotation from old Omar Kháyyám:

I sometimes think that never blows so red
The rose as when some buried Cæsar bled;
That every Hyacinth the Garden wears
Dropt in her lap from some once lovely head.

It happens that this friend's Hyacinths are planted around and among his choicest roses, and, of course, with the passing of the fragrant flowers of spring the quatrain remains appropriate to the charms of the roses that unfold their wonderful buds throughout their season.

Single Hyacinths invariably succeed better, although many amateurs are just as successful in raising double ones. Whites, blues, pinks, reds, purples and creamy yellows are the colors of the Hyacinth, but of them all the white is the most beautiful, though amateur gardeners are apt to make the mistake of passing it up for the more showy varieties.



The single-flowered Oriental Hyacinth

One recommends fresh bulbs each year, but that is not absolutely necessary, though they must, in any event, be "lifted" in May, after they cease flowering. The finer bulbs send up flowered spikes from ten to fifteen inches in height. Hyacinths should be planted eight inches apart and about five inches deep. Directions were given in the October issue of AMERICAN HOMES AND GARDENS for bulb planting, and one need only repeat here that, in common with other bulbs, Hyacinths should be placed in the earth upon a little thin bed of sand below the bulbs, and after being covered with earth, should have the further protection of a mulch, of either manurial dressing or leaves. Evergreen boughs (cedars and balsams) make a good covering throughout a severe winter. When spring arrives the mulch should be removed, not all at once, but gradually, so the earth below, which comes in contact with the bulbs, will not be chilled too suddenly.

Hyacinths for indoors may be started in deep pots in November. The best potting soil I have experimented with has been composed of a compost prepared of one part of rich loam, one part of thoroughly decomposed barnyard manure, and one half part clean, coarse sand. The bulb crowns should be left about half an inch above the surface of the soil, and the root end should rest upon a base of charcoal-covered potsherds.

This is a great mistake, for there never yet existed a bed, or border, or grouping of colored Hyacinths that could afford to be without the snowy purity of the white flowers, lending just that note of contrast that one needs to find in every bulb garden. If one looks for mere color effect in massing, the dumpy, short-stalked, "thick," double varieties of Hyacinths may be employed. Their colors are varied and lovely, and their fragrance permeating; but they quite lack the exquisite beauty of the single varieties.

Fortunately, Hyacinths may be planted late, even into November.

Press down the soil firmly around the bulb and wet it thoroughly. Either "plunge" the pots or set them safely away in a dark, warm place, where the soil may be kept fairly damp.

When the bulbs are firmly rooted (one may tell by turning out a sample pot for examination) bring them to the light. The whitish-green shoot, an inch or so in height, will soon darken in color and will grow with great rapidity, a few weeks' time bringing forth the flower spike. Hyacinths require liberal watering when brought forth from their seclusion. It is possible to grow

Hyacinths in pure sand, if this has been washed to free it from salt. The Hyacinth glasses, to be found at every nurseryman's or at every florist's, are devised for the purpose of growing Hyacinths in water. In experimenting I have found it a most satisfactory method to keep the bulbs in dampened moss for a preliminary period of two weeks, placing the bulbs then on top of the water-filled Hyacinth glasses. This can be done in a succession of weeks in



The blue and the white Grape-Hyacinth

November, and will produce a succession of bloom. Remember, that the water should just touch the lower part of the Hyacinth bulb, and rain-water should be used for the purpose when it is possible to obtain it, changing it every ten days, and carefully supplying any deficiency caused by evaporation in the interval. The bulbs placed in Hyacinth glasses must be kept in some warm, dark place until the glass is half filled with roots. Great care must also be taken that the water in changing be the same temperature as that of which it takes the place. The water must never be too cold.

There is not much to be said about the matter of choosing Hyacinth bulbs, but the little that is to be said is of great importance. One should remember bulbs must be chosen not for size, but for hardness and solidity, and the bases must be thoroughly sound. Medium sized, firm, hard and heavy bulbs are always to be chosen for planting.



Hyacinths planted for naturalistic effects always reward the trouble taken with them

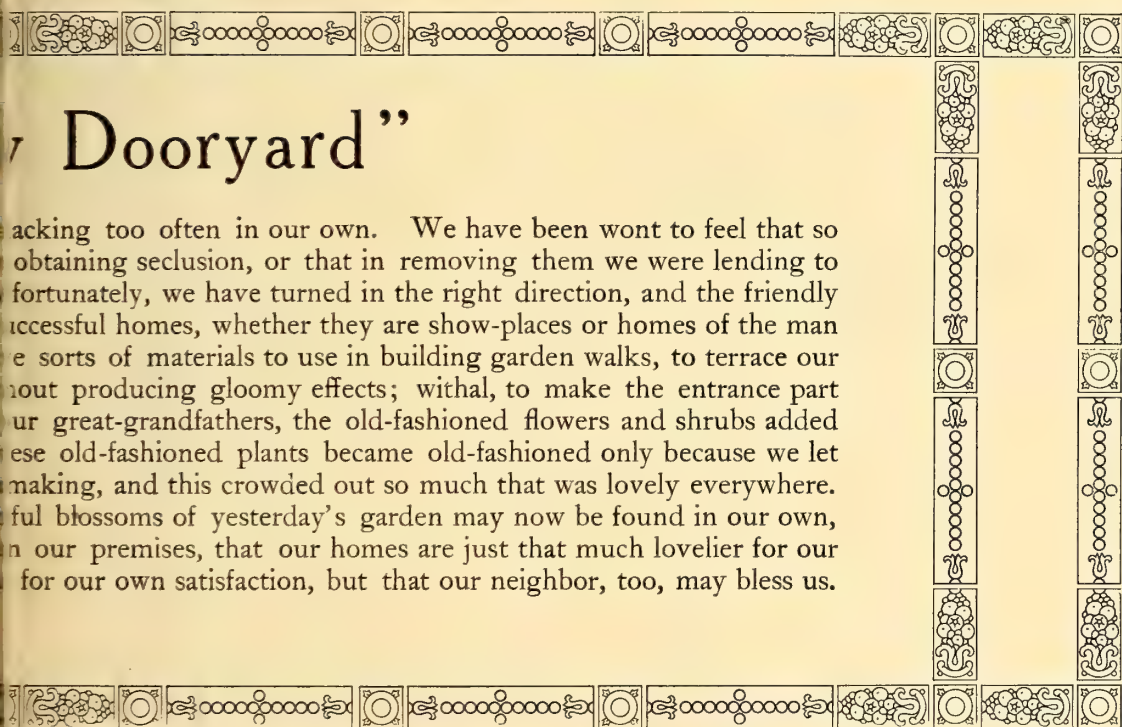
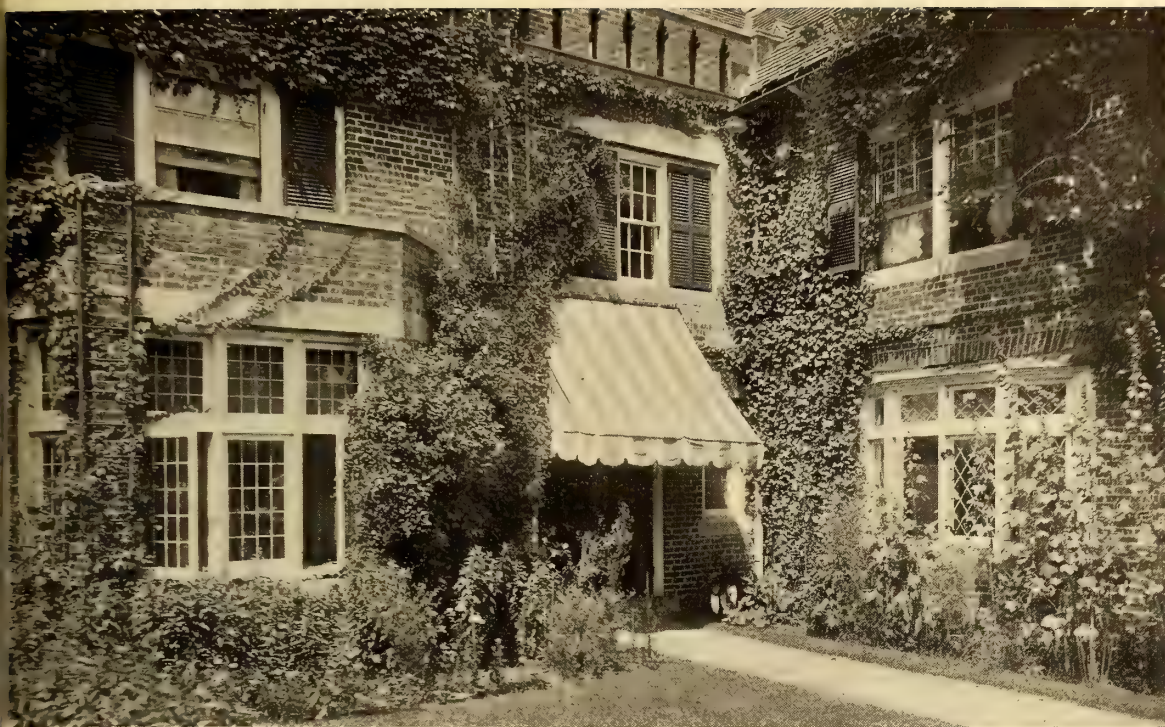


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“The Friend

HERE is a charm about the old-world dooryard that long as we barricaded our premises with fences we our lawns an appearance of inviting hospitality. No dooryard is coming to be one of the features of of moderate means. We are learning the most attractive dooryards when they need it, to screen our porches informal and inviting without sacrificing its dignity. In the days greatly to the attractive approach to the house. As a matter of fact bad taste—that is to say, the lack of it—creep into our efforts at home. But we have returned to happy paths once more, and again the beauty gracing our dooryards and making us feel, every time we set foot having given thought to the matter of the friendly dooryard, not





Dooryard"

acking too often in our own. We have been wont to feel that so obtaining seclusion, or that in removing them we were lending to fortunately, we have turned in the right direction, and the friendly successful homes, whether they are show-places or homes of the man e sorts of materials to use in building garden walks, to terrace our out producing gloomy effects; withal, to make the entrance part ur great-grandfathers, the old-fashioned flowers and shrubs added ese old-fashioned plants became old-fashioned only because we let making, and this crowded out so much that was lovely everywhere. ful blossoms of yesterday's garden may now be found in our own, n our premises, that our homes are just that much lovelier for our for our own satisfaction, but that our neighbor, too, may bless us.





"The Friendly Dooryard"



HERE is a charm about the old-world dooryard that is lacking too often in our own. We have been wont to feel that so long as we barricaded our premises with fences we were obtaining seclusion, or that in removing them we were lending to our lawns an appearance of inviting hospitality. Now, fortunately, we have turned in the right direction, and the friendly dooryard is coming to be one of the features of our successful homes, whether they are show-places or homes of the man of moderate means. We are learning the most attractive sorts of materials to use in building garden walks, to terrace our dooryards when they need it, to screen our porches without producing gloomy effects; withal, to make the entrance part informal and inviting without sacrificing its dignity. In the days of our great-grandfathers, the old-fashioned flowers and shrubs added greatly to the attractive approach to the house. As a matter of fact, these old-fashioned plants became old-fashioned only because we let bad taste—that is to say, the lack of it—creep into our efforts at home-making, and this crowded out so much that was lovely everywhere. But we have returned to happy paths once more, and again the beautiful blossoms of yesterday's garden may now be found in our own, gracing our dooryards and making us feel, every time we set foot upon our premises, that our homes are just that much lovelier for our having given thought to the matter of the friendly dooryard, not only for our own satisfaction, but that our neighbor, too, may bless us.





English table-tray



Wicker-framed porch-tray

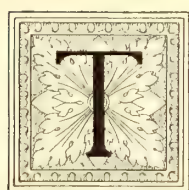


English muffin-tray

Trays Worth Having

Something About the Different Sorts of Trays and
Their Cost, and the Various Uses to
Which They May be Put

By Lydia Le Baron Westcott



THE tray is no longer merely an incidental accessory in the household, but has again ascended its pedestal of utility and once more has come to occupy the same commendable niche that it did in the estimation of our forefathers, before the "Victorian" period discouraged good taste with a surfeit of ugly servers. Indeed, there has come to be a lively interest in the old-fashioned models of Colonial and earlier trays, and the patterns of these earlier specimens are being copied by modern tray designers with unusual success. Such trays form a welcome adjunct to things of service in our houses to-day.

Among the many patterns of trays now to be had are those imitating or following the lines of the old English muffin servers. They are suggested by the old Colonial dumbwaiters, and stand about three feet high, being small enough to be passed easily. Various viands are placed on the shelves. Since everything is passed at one time, these novelties are very convenient, and they are in high favor for use in afternoon teas. Just now there is a fashion for having them made of wood to match bedroom furniture. When my lady of leisure has her meals in her boudoir, they may be brought to her on the server. Muffin servers are *chic*, whether used in the boudoir, dining-room, parlor or on the veranda. They are inexpensive enough to fit the average purse. Wicker ones may be had as low as three dollars, and those of mahogany range from seven dollars up. There are several styles in these servers, some of them being of basket shape.

Another idea in trays also comes to us from our English cousins. It takes the form of a teawagon—rather a curious name for a waiter. However, it really is a tray on wheels. It serves the use also of a teatable. In the summer season, teawagons are in especial demand. They are particularly appropriate for veranda teas and garden parties. They simplify serving refreshments on the lawn, and with the aid of one of them an entire supper may easily be taken out under the trees. They are inex-

pensive enough to be generally adopted. A very good one costs eleven dollars. It is capable of being fitted up most temptingly. Utility is the striking characteristic of still another salver, known as a revolving tray, or "Lazy Susan." Such a waiter recalls the revolving table in use years ago. These dining tables had stationary rims wide enough for service plates and accessories. The center revolved. Sometimes our enterprising forbears had this portion of the table run by water-power. Helping one's self was an easy matter then. All one had to do was to turn the table—a most unceremonious proceeding. In these modern times of exacting formalities this idea is being resorted to, especially for breakfast and tête-à-tête luncheons. The waitress may be dispensed with, which makes the meal more easy.

While these "Lazy Susans" are enjoying a revival, they are not a fad. They always have a certain conservative demand. Their convenience deserves to make them popular. Such salvers, twenty inches in diameter and eight inches high, may be had for twelve dollars. They make excellent wedding gifts, and are ideal for wooden wedding presents. There is also the small two-tiered tray, one of the latest contrivances. It is a compromise between an English muffin server and a "Lazy Susan," and is intended for use at afternoon teas as well as on the dining table.

One must also take into account the interesting Oriental trays of Persia, India, China and Japan. Japanese trays are, perhaps, the most popular sort we have, and are things of great beauty. The Chinese trays are more curious and more "vigorous" in color and pattern, lacking the softer hues and more restrained design that mark the Japanese tray apart from all others; however, they are not the less interesting.

The Chinese curry tray is one of the most typical examples of the Chinese taste. It is composed of a number of separate sections of porcelain, little dishes all fitting together like a puzzle. A set of these, forming the curry holders, is set on a tray made to fit it. One form of server—a western idea utilizing eastern materials—is made of Chinese embroidery covered with clear plate glass and framed in

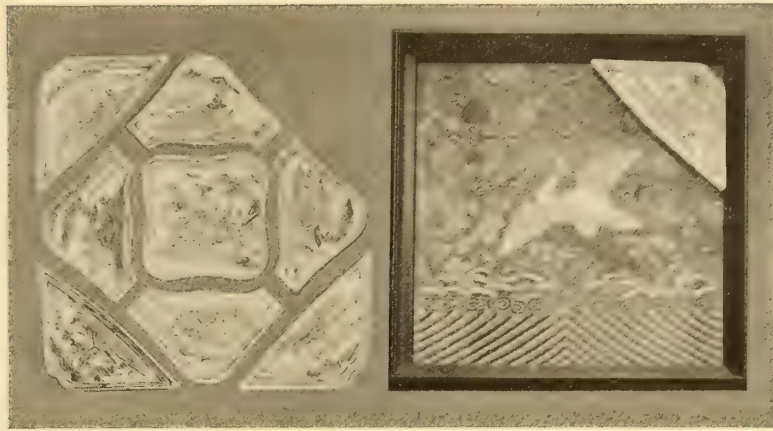


The Lazy Susan

mahogany. It is like a handsome picture wrought with the needle instead of with the brush. The colors of servers of this sort are rich and brilliant. The whole thing smacks so decidedly of the Orient that it carries one in imagination to the Celestial empire. There such a tray is placed in the midst of the circle of diners. Each dish is filled with savory curried rice. Everyone helps himself. This is sociable and friendly. Moreover, it conveys the desired impression of all supping from one dish. Sometimes a servant passes the tray. This is customary at the close of even elaborate and formal banquets. It is as if the host deprecatingly said, "My frugal meal may have been unsatisfactory. Lest you depart hungry, without proper nourishment, take a portion of rice, I beseech you." It is needless to say that the satiated guests are equal to the emergency. They promptly refuse to partake, thus assuring their host that his fears are unwarranted.

In this country, while curried rice is a favorite dish with many people, the tray is not confined to the original purpose. It is used also to serve bonbons, compotes, salted nuts, salads, entrees, etc. Portions are arranged in the dishes, which are then fitted on the salver. An entire course may be made ready in advance. Housewives will readily appreciate the latent possibilities that lurk in such trays. When hand embroideries are used in the salver, the sets cost \$17.50. If an ornate Chinese fabric is employed, the price is only about five dollars. Trays of Chinese embroidery may be had in nearly every city, and they are to be seen in all shapes and sizes, from round to oblong, and even triangular. The needlework on trays of this sort is usually from the embroidered mandarin coats or from skirts such as are worn by Chinese women of the upper classes. Therefore, the quality of the needlework will dictate the price of the tray it has been selected to be part of.

These waiters may be made at home at smaller cost. Embroidered motifs from garments come in the form of mats. Good sized round ones cost about \$1.50, and are ready to be adjusted under the glass of a tray, which may be bought for the purpose, made to order or adapted from an old picture frame. Not only are Chinese embroideries used under the glass, but also fabrics such as brocades and cretonnes or embroidered linens and filmy,



A Chinese curry tray of porcelain, and server

trays may be of silver, wood or wicker, the last being especially appropriate for summer and porch use. Wicker trays are also to be found employing cretonne for the fabric background. Such trays in the shops cost about five dollars for the large sizes. Flat trays also come now in ornamental pottery with brass or nickel rims. They are pretty, serviceable and inexpensive. Besides being used for serving, these waiters are again in style for old-fashioned teatrays. At breakfast and often at luncheon they are fitted with tea or coffee services, cups and saucers and placed on the table before the housewife. After the beverage has been poured, the tray is removed.

One must not neglect some mention of the very interesting Oriental trays in brass and bronze which are imported from Persia, Turkey, Egypt, India, Ceylon, and other parts of the Orient. The great round trays from Benares are too heavy to be carried, and therefore are seldom used as servers. However, they are especially appropriate for the tea service when other brass articles—the samovar, etc.—are accessory to the service.

These trays may also be used set upon low-standing legs, after the manner of tabourets. Such tabouret trays may quickly be lifted and the supporting stand constructed so it will fold easily to be placed out of the way when not in use. It often happens that one desires to place an attractive tray under a kerosene lamp. For such uses nothing could be more appropriate than one of the Benares trays enameled in green or red.

From the score of trays deserving special mention, these few examples have been described as serving to suggest the interest of the subject. While utility is the fundamental idea that should be considered in selecting trays, their decorative features are also important. The salvers one may obtain to-day combine both elements in a marked degree, and good trays carefully selected will grace any dining-room, whether they are always in use or not.



Chinese embroideries may be inserted in serving-trays



Fig. 1—The lean-to greenhouse



Fig. 2—The even-span greenhouse



Fig. 3—Three quarter-span greenhouse

Building a Small Greenhouse

Practical Instructions and Plans for Erecting Greenhouses of Moderate Size for Small Country Places and Estates

By Philip S. Sweetser



IT IS doubtful if there exists a more interesting or more enjoyable occupation, or one that gives more complete satisfaction in its success, than that of growing plants and flowers under glass. The amateur, however, often hesitates to take up such an occupation on account of the expense involved in the construction of a greenhouse.

If the work is done by a contractor or a professional greenhouse builder, it is true that glass house construction is more or less expensive. But since the cost of labor is one of the largest items entering into the total cost of such a house, the amateur who can do his own construction work will find that a greenhouse is by no means an "expensive luxury."

The task of constructing a greenhouse is not a difficult one, but it does require some knowledge of greenhouse design and construction. A house in which plants and flowers can be successfully grown at a minimum cost should be so constructed that the framework will cast the least possible amount of shadow; that the area under the glass can be utilized to the best advantage; that it can be properly heated; and that it can be properly ventilated. The amateur with a little mechanical ability can easily construct such a house, however, if he can obtain the necessary information and data.

At the present time literature on the subject is very meager. What little exists is somewhat out of date and not at all comprehensive. In order to obtain information and data it is necessary to make an investigation of the subject by visiting greenhouses and by consulting florists and experienced greenhouse carpenters; which task consumes a large amount of time and requires more or less skill in judging the relative merits of the various types of construction, the various methods of framing and the

various opinions of the florists and greenhouse carpenters.

It is therefore the purpose of this article to give, in as concise a manner as possible, such information and data as are necessary in order to enable the amateur to properly design and construct a greenhouse. The article is the result not only of an investigation made by the writer, but also of his experience in recently constructing a house for his own use. The details of construction discussed apply to an all-wood structure and in general to the small greenhouse built for private use. The suggestions, however, apply equally well to the large house built for profitable operation, for the dimensions of the framing timbers given and the methods of framing described are exactly the same as those used on a number of the best houses operated by successful florists. A discussion of the purlines, or supports for the roof sash bars, which are necessary on wide roof spans, is the only detail which has been omitted.

The construction of a greenhouse involves a consideration of types of houses—location, foundation, framework, glass, benches, and heating system.

TYPES OF HOUSES

There are three general types of greenhouses, namely, the lean-to, the even-span, and the three quarter-span house. There are other types, such as side-hill, ridge and furrow, and curvilinear houses, but these are simply modifications or combinations of the three general types. The details of construction are practically the same in all three types. They differ only in the form of construction.

THE LEAN-TO

The simplest type is the lean-to, an example of which is shown in Figure 1. From the nature of its construction this type of house can be built at a comparatively low cost. As its name indicates, it is built against some structure and therefore requires but three sides and a one-slope roof. It is usually a small house and when heated is generally con-



Fig. 4—Corner framing

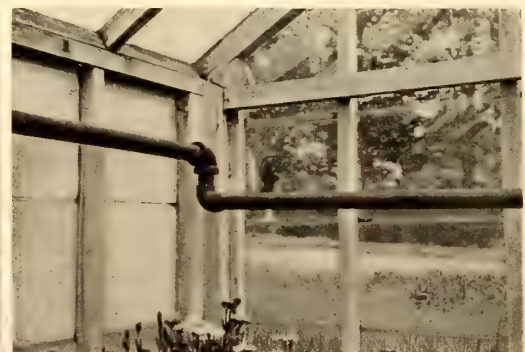


Fig. 5—Corner framing



Fig. 6—Ventilator framing

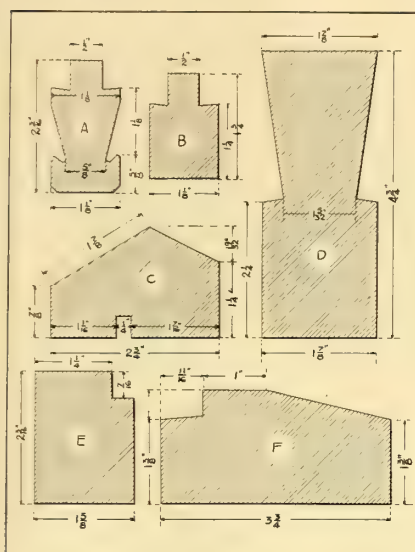


Fig. 7—Dimensions of bars

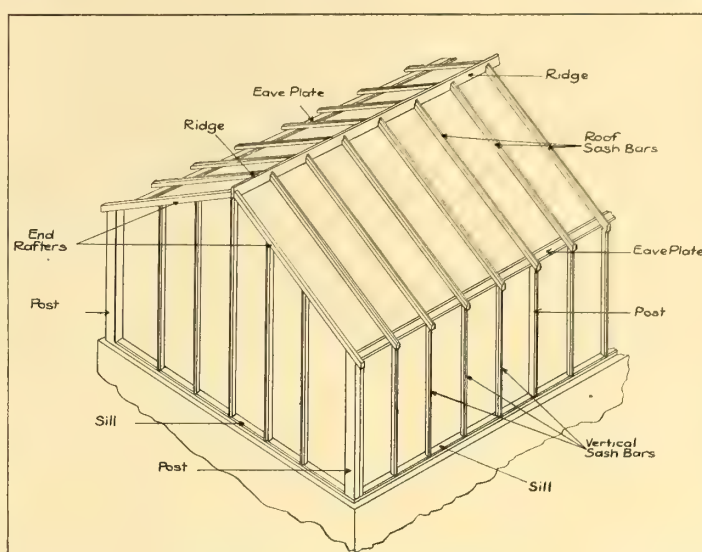


Fig. 8—Framework of timbers

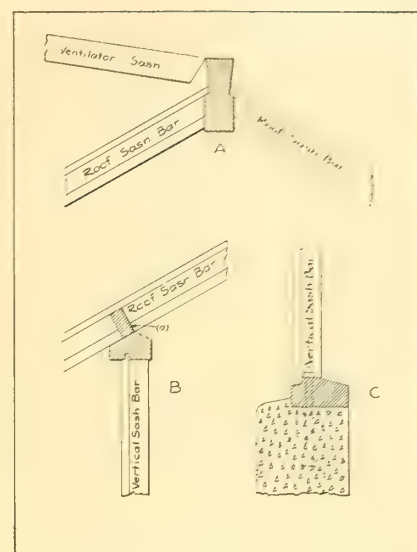


Fig. 9—Details of framing

connected with the heating apparatus in the building to which it is attached. It should, when possible, face the south and, due to its peculiar construction, receives no reflected light whatever from the north. The plants grown in this type of house are, therefore, inclined to be more or less one-sided in their habit of growth.

The lean-to is used for forcing various kinds of vegetables and for raising such cool crops as lettuce, violets, etc.

THE EVEN-SPAN HOUSE

The even-span house is the type most commonly used by florists. It can be built at a cost of \$8.00 to \$25.00 per running foot, depending on its width and the amount of labor figured in. As shown in Figure 2, it is a perfectly symmetrical house, the ridge being in the center of the roof span, the roof slopes being the same, and the sides being of the same height. It is an all-glass house and is constructed of widths varying from 8 to 42 feet. The width of the average commercial house is about 24 feet. This type of house usually faces the south—that is, its ridge runs east and west. Some florists consider that the light is more evenly distributed around the plants if the house faces the east, but the majority, however, prefer the southern exposure, for in this case, during the winter months, when the sun falls toward the southern horizon, the shade cast by the ridge and corners of the house is to a large extent eliminated. With either exposure the plants receive light from all directions, and this is, therefore, one of the types best adapted for general greenhouse work.

The even-span house is used extensively for growing carnations, roses, violets, chrysanthemums, potted plants, and in fact all kinds of flowers and vegetables.

THE THREE QUARTER-SPAN HOUSE

The three quarter-span house, two thirds, or uneven-span, as it is sometimes called, is shown in Figure 3. This type of house costs about the same as the even-span. It is designed for a more even distribution of light over the benches than it is possible to secure with the even-span and it differs from it in the construction of the roof and the north wall, and frequently in the arrangement of the benches. The ridge, instead of being placed in the center of the roof span, as in the even-span house, is placed near enough to the north wall so that its shadow does not fall on the benches. The north wall is constructed two or three feet higher, in this type, than the south wall and is generally built of wood or concrete up to within one or two feet of the eaves. The benches, in order to receive the maximum amount of light, are then arranged in tiers.

This type of house, of course, must face the south, and, due to the fact that the plants receive the maximum amount of light evenly distributed, a structure of this sort is often spoken of as a "forcing house."

The two thirds-span house is especially adapted to the growing of roses, and is used most frequently for that purpose. It is, however, an excellent house for all kinds of plants and flowers such as the amateur usually begins with.

SELECTION OF TYPE

The individual requirements in each case will, of course, determine which of these three types should be selected. Unless extreme low cost is the prime consideration, the amateur should seldom select the lean-to, for the results obtained with the other types will more than justify their greater cost.

Between the even-span and the two thirds-span house it is often difficult to choose. Due to the better distribution of light in the latter, somewhat better results can be obtained than in the even-span, although the difference



Fig. 10—Framing method

is slight. Since the even-span house is symmetrical, however, the amount of labor involved in its construction is undoubtedly less than in the three quarter-span house.

In selecting the type which he shall use, the amateur should take into consideration (1) the kinds of plants that are to be grown in the house, (2) the cost of the house, and (3) the amount of labor involved in its construction.

LOCATION

The house should be located on ground which is well drained and far enough from trees or buildings so that no shadows will be cast upon it. If it is located on low ground which receives the drainage from the surroundings, it will be continually damp, and the plants will be liable to have diseases. If possible, it should be so located that it will be more or less protected from the north and west winds.

FOUNDATION.

The foundation should be made of concrete. The properties of concrete are so well known that it is hardly necessary to state why this is the most satisfactory and in the end the cheapest foundation. It should be at least six inches wide and, depending on the kind of soil in which it is located, from twelve to thirty inches deep.

A good concrete will be obtained by mixing one part cement with two parts sand and given parts of gravel or broken stone. After the mixture is saturated with water, it should be placed in forms, built of seven eighths inch or one-inch boards, rammed, and allowed to set at least 24 hours. Square-headed bolts, six or eight inches long, should be embedded about six feet apart in the concrete

before it has set, for the purpose of holding the sills firmly in place, as shown in Figure 8. After the concrete has set and the sills have been put in place the foundation may then be capped with a thin mixture of cement mortar, made of one part cement and two parts sand. The cost of materials varies from \$2.50 to \$4.00 per cubic yard of concrete, depending on the kind and prices of the ingredients used. A cubic yard of concrete made of the proportions given above will contain 1.29 barrels of cement, 0.45 cubic yards of sand and 0.91 cubic yards of gravel or broken stone. By obtaining the local price of cement, sand and gravel, the cost of the foundation can easily be estimated.

FRAMEWORK

The framework, as shown in Figure 8, is simply a skeleton composed of timbers called sills, posts, vertical sash bars, eave-plates, roof sash bars, rafters and ridge. These timbers should be made of cypress, for, on account of its straight grain, strength and durability, this has been found to be the wood best adapted for greenhouse construction. They should be made of such shapes and sizes and put together in such a manner that they will properly hold the glass, support their required weights and yet cast the least possible amount of shade. Figure 7 shows the proper

a method entails more work and the header, if very long, is invariably apt to sag and to prove unsatisfactory.

GLASS

The glass used should be "double thick" and of the second or third quality. Third quality glass, which contains a few more imperfections than second quality, costs a little less and is frequently very satisfactory. The panes may be 16x20 inches or 20x24 inches, for these have been found to be the economical sizes, and they should be set so that the sash bars are spaced 16½ inches on centers. The cost of this size glass at the present time is \$2.28 per box (of 23 panes) for third quality and \$2.50 for second quality.

BENCHES.

The construction of the benches is comparatively simple. They should be at least two feet in height and from two to five feet in width, depending on where and how they are located. The supports should be made of 2x3 inch or 2x4 inch timber, and the bench proper of ¾ or 1-inch boards. They should be deep enough to contain five inches of earth.

The arrangement of the benches should be such that the plants will at all times be readily accessible. Benches which are placed next to the sides of the house should not be over 3 feet 3 inches wide. When there is a walk on each side



An even-span greenhouse may be attractively arranged as an extension to a country dwelling even of moderate proportions

shapes and minimum dimensions (A, roof sash bar; B, vertical sash bar; C, eave plate; D, ridge; E, end rafter; F, sill), which have been determined by greenhouse carpenters after years of experience, and Figures 4, 5, 6, and 9 show the best methods of framing.

No further comment is necessary on the shape and dimensions, but some of the methods of framing shown require a little explanation.

The method of framing the eaves is shown in Figure 10 and in detail at B, Figure 9. The sash bars simply rest on the wide face of the eave plate and the space between the eave plate and the glass is filled in with a piece of seven eighths inch board as shown at A, and in the photograph.

Two methods of framing at the corner posts are shown in Figures 4 and 5. Figure 4 shows the corner of a house about 24 feet wide, the post being 4 inches square, reinforced by two pieces of timber 2 inches square. The photograph, Figure 5, shows the corner of a small house about 10 feet wide, where the corner post consists simply of two pieces of 2x4 inch timber, one of them supporting the end rafter and the other the eave plate.

The method of framing at the ventilator opening is indicated in Figure 6. The header is simply a piece of seven eighths inch board two or three inches wide, notched to fit over the sash bars (which also are notched) and rabbeted to receive the glass. Some carpenters prefer to put in a heavy header and end the sash bars at the header, but such

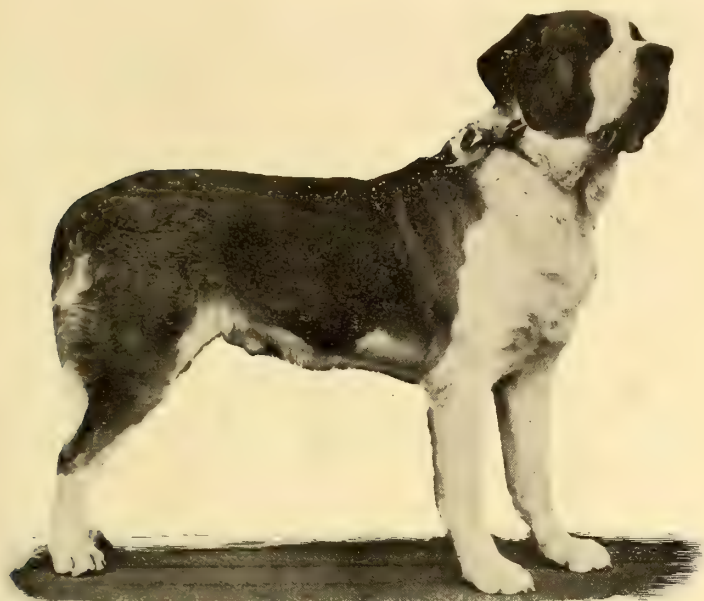
they may be as wide as 5 feet. The walks should be at least 18 inches in width.

Many florists prefer not to place any benches next to the sides of the house, claiming that the plants are more liable to have diseases and more apt to be affected by outside temperature on cold nights. Space can be economized in the small house and very satisfactory results can be obtained if the benches are, however, so arranged.

HEATING SYSTEM.

Although it costs about 20 per cent. more to install, the hot-water system should be used for heating the house in preference to the steam-heating system, for two reasons: First, because, particularly in the small house, it is more economical to operate, and, second, because, on account of the lower temperature of the heat radiated and the greater amount of radiation required, it produces a milder and more uniform heat.

The size and arrangement of the pipes and the amount of radiating surface required for the heating system are matters which the amateur should look into before installing his apparatus; but, as they require considerable study and as the installation of the apparatus is difficult work and requires special tools, skill and experience, he will do well to employ a plumber or heating engineer, who will figure the amount of radiation and install the system properly. The extra expense of help from the experts just mentioned will be somewhat offset in the non-purchase of the special tools.



The St. Bernard will always remain a great favorite



HE country home can hardly be said to be complete without a dog around the place, but one must not make the mistake of thinking that any sort of a dog will do, for an animal should fit his surroundings just as everything else should, and it is not an absurdity to say that many a country place has had an ill-chosen dog that no more belonged to it than an Empire dressing table belongs to a Louis Quinze drawing-room. In the choice of a dog for filling the various needs and requirements of the country home, one has before him what might at first appear to be a somewhat difficult problem, as there are fully fifty established and recognized breeds to-day, varying in size from the noble St. Bernard to the diminutive and frivolous Chihuahua. One's choice should be governed more or less by the size of the premises of the country home. Any of the smaller varieties of dogs can be kept in the house, but the large dogs must have romping space and ample freedom or they cannot be kept in condition. On a country place where the owner possesses horses, no matter how well equipped stable, stalls, loose boxes, coach houses, and stable yard may be, there is lacking the "finishing touch" if one does not find there the old-time Coach dog, the black and white Dalmatian. His natural place is in the stable yard, his favorite home is among the horses, and his greatest pleasure is in following between the rear wheels of the carriage. He is equipped for this by generations of training, being deep of chest, sound of lungs, sturdy-legged, and

Choosing a Dog for the Country Home

By T. C. Turner

Photographs by the Author

like his tribesman, the Pointer, is burdened with so little fur that the mud or dust give him no trouble.

What could be more fitting to the setting of a half-timbered house, or a house of the Elizabethan type than one of the picturesque breeds of the Bloodhound? He fits into his surroundings aesthetically as surely as heavy paneling fits into a dining-room of the period. Again, one always associates with the thought of terraces around a country house the lithe form of the Greyhound or of the Borzoi, or of the Deerhound. They lend just that note of color which adds to the harmony of the prospect. It is well to impress one thing upon the prospective owner, that is, whatever variety of dog he sets his mind upon, let it be a well-bred specimen, not necessarily a dog fit for the show bench, but one whose ancestors can be traced as having been well bred. A good dog costs no more to keep, or pay license for, than a half-bred nondescript.

For the outdoor dog of a large or moderately large country place, the St. Bernard, the Mastiff, or the Great Dane would be a happy choice, as these dogs are all powerful, alert, and excellent as watchers. When they scent invaders the whole neighborhood is warned that something unusual is happening. They seem, almost, to sleep with one eye open and with ear to the ground. A general characteristic of the well-bred St. Bernard is that of gentleness



The Dalmatian Breed, Coach Dog



The parti-color Cocker Spaniel is one of the smallest field dogs



The Beagle is one of the most useful all-around dogs for its size



The Great Dane, a noble appearing hound



The Borzoi, also known as the Russian Wolfhound

to his friends. He makes a good companion for children, is faithful, majestic, and handsome, but his handsome appearance is not all outside show, nor does not make him the less formidable to mischief-makers as occasion arises for his alertness. The Mastiff, although not as popular in these days as he should be, is a dog built for war, a dog that is courageous, powerful, a bad enemy, but, contrary to general appearance, a good friend. Of the trio the Great Dane is the writer's choice, for added to the good qualities one finds in the other two dogs, the Great Dane has in his make-up the valued attribute of great activity. For a heavy dog he certainly excels in this virtue, and in the chase he can give his two brother watchdogs a long start and then bring down his quarry with equal skill.

Next in gradation among the large dogs for outside comes the Collie. More beautiful in real life than any artist has yet been able to paint him, he is, in addition to this as alert on watch around the house as instinct and generations of training have made him among the sheepfolds. Nothing escapes his notice, or his attention where it is needed. His tribesman, the old English Sheep Dog, is his equal in these qualities, with the exception of that of speed, and for some surroundings nothing could be more pleasing to the eye than this shaggy looking gray bear of the canine race. The Pointer and the Setter are both equally good outside watchdogs, in addition to which they have other uses;

for where the owner of the house is fond of a day with the gun he has at hand one of the most necessary adjuncts to his pleasure, a real field dog, with centuries of gun instinct behind him.

Of the medium-sized dogs, such as would be well suited for the porch or indoors, the writer's choice would be an Airedale. Here is a dog of great energy. He is not large, yet nothing appears to him to be too large to tackle. He possesses the tenacity of the Bulldog, the fierceness of the Bull Terrier, and the activity of the Fox Terrier. Gentle among children, a fine companion, a friend of his master's friend, when he is convinced that all is well, he is, nevertheless, always ready to fight "at the drop of a hat," and fight to a finish when necessary—that is his instinct. He is hardy and better equipped for rough climatic conditions than most of the breeds.

For those who would look for an indoor dog of fair weight and strength, the English white Bull Terrier will fill all requirements. He, too, is gentle enough among his own folk, but he looks a fighter and is, every ounce of him. The uninvited visitor around the house will do well to steer clear of him, or he will carry away unpleasant memories.

The Irish Terrier and the Fox Terrier are too well known for their various good qualities as companion and house dogs to need extended description. To these one may well add the Scotch Terrier and the Welsh Terrier,



The English Setter has long been a favorite dog for the country



The Greyhound will always remain the most picturesque of dogs



The old-time English bobtail Sheep Dog



A rough-coated favorite, the Scotch Collie

although they are not quite as widely known. However, they possess equal merit.

As one goes down the scale he must not forget that vivacious little fellow, the Boston Terrier. He is full of energy, full of fun, always alert, and always "game." Yet he is not so much occupied with amusement but that he can be very attentive to serious business as a house dog, when occasion arises. His very activity makes him useful, and he is a fine type of a clean, smooth-coated dog suited to indoors.

There is yet another dog of medium weight that must not be overlooked. He is what one might call a general utility dog for the house—the Cocker Spaniel. He is a favorite among women-folk and the pet among children, for they seem to be his special friends. He is a good watchdog, and one of the best little all-round sporting dogs. Beyond all these good qualities he takes up so little room that he can be kept in even a small house without ever being in the way. He and the Beagle (especially the smaller Beagles), are two of the most useful dogs imaginable where area is limited and something approaching the "toy dog" variety is desired. As for the "toy dogs," their list may be headed (so far as the choice of a watchdog goes) by the sprightly little Pomeranian. His shrill bark can be heard the house over, from cellar to garret, and nothing but the appearance of his owner can stop him. His five pounds are made up of pluck, noise and agility, for he is

quick as a flash in all his actions, and tireless in zeal. When one starts out to find a good dog for the country house he must remember that there are allowances that will have to be made under new ownership until the new dog becomes used to his new master and his new surroundings. In buying a grown dog one must remember that it will be some time before you get the same satisfaction out of him that you would have had if you had raised him yourself from a puppy. You must learn to know him, and he must learn to know you. His early love has gone out to his first owner, and dogs are very like those human beings who do not forget early attachments. The grown *Nero* will know it was not *you* who cared for him in those early days of his various canine troubles, who helped him along through his sicknesses, brought dog dainties to him when he was too weak to stand up and wag his tail in thankful response; it was not you who were patient with him in his convalescence, when he was not strong or clever enough to do always the right thing at the right time. You have got him full-fledged with his ideas set. They can be remodeled to a certain extent by care and patience, but the greatest impressions are made in the early training, for you then have your dog doing the thing you wish him to do, and in the way you want it done, and you have trained him into the habit of loyal obedience. To be successful with dogs, as with all animals, one must possess patience and firmness to a great degree, as well as a love for animals.



Of the medium-sized dogs, the Bull Terrier is one of the favorites



The Airedale, a breed of terrier, is an excellent country-house watchdog



SOME FURNISHING PROBLEMS

By Mabel Tuke Priestman

THE problem of furnishing the dining-room confronts one of the readers of this department, who requests suggestions, which are here given as being of interest to readers in general. It is of immense importance to have a cheerful dining-room. A gloomy, forbidding room will have a depressing effect even after one has grown accustomed to it. Few things make such a difference as a successful window treatment. Dainty frilled white sash curtains, linen taffetas or chintz all do their part to make a cheerful looking room. If the curtains are to give the decorative note, it would be well to have the walls plain or covered with a striped paper. These striped papers come in soft shaded effects, so a light tone could be chosen to give a light effect to your dining-room and yet will harmonize with the color scheme of the curtains and rugs. If the

house has not been wisely planned and the dining-room has a north aspect, or has not enough windows, such defects may be mitigated by striving to give it a cheerful feeling by a strong, vigorous treatment—a stunning frieze above as pale a wall surface as the frieze can stand, or a yellow paper with an ivory-white ceiling with white woodwork will bring sunshine out of gloom. A striking paper, if of excellent design, may be used, and plain curtains; but as the room will then depend on its wall-paper for all its decorative value a good design must be selected and in suitable coloring to offset a dark room. When it is possible, it is most important that a good deal of attention is given to having good structural features, such as window seats, built-in closets and even built-in sideboards, for all these help to make a room individual in character. The low, wide window seat, with a wide window or two, if practical, are important factors in helping to make a pleasing dining-room. The plate-rail, if there is anything worth while to put on it and if it is not allowed to be the dumphill for the rest of the house, may be an opportunity for a glowing amount of color and good decoration. A round table makes for friendliness and congeniality, and cannot be too highly recommended on this account. A center light should always be used in a dining-room and hung low over the dining-room table. For extra occasions candles and shades give a decorative value to the appearance of the table that is very charming and homelike. Of course, there must be a center dish of growing flowers or ferns.

AN ATTIC BEDROOM

SUGGESTIONS for making an attic bedroom for the young daughter of the family attractive have been asked for by one of our readers. As the room is large and well proportioned, there is no reason why an attic bedroom should not be made as beautiful as one on the second floor. The wall would be pretty and serve as a background for photographs of school friends if covered with a soft shade of green felt paper. A good quality of felt or fibre must be chosen, as the color fades in a cheap quality in a green with any depth of tone. Above this a frieze could be run if the walls do not slope, and choose a frieze that is beautiful—an old English garden effect; there are plenty of good ones to select from on the market. If there are casement windows, they may be filled with leaded glass diamond panes; beneath them a window seat, and have a hinged lid, so that it will be a convenient place for shoes to be kept out of the dust. If there are a pair of windows so much the better; the other seat may be deeper, for stowing away papers and magazines. If there is a space between the two windows, this may be filled with bookshelves and desk combined. Copper hinges and escutcheons, made at home from sheets of brass, may be used effectively on the small green-stained doors or slanting front of the desk, whichever the shape calls for. A wicker chair might be stained green



Dainty curtains do much toward making a living-room cheerful

so as to have another piece of furniture in this color. The chair for sitting at the desk should also be green, unless a wicker stool is preferred, the advantage of the stool being that it can be pushed underneath the desk when not in use. A decorative chintz to go with the frieze can be used on a threefold screen. It would be useful in screening the bed or washstand from the rest of the room that is to be used as a sitting-room. A small cushion should be covered for the stool or the seat of the chairs in the room. The wicker chair should have cushions covered with the same chintz or cretonne, if that material is preferred. The windows could have one pair of curtains and a valance of the same. The effect of two windows curtained as one is sometimes very quaint, but the shape and size of the room would determine that. The one pair would leave more space for the desk and enable there being enough room to have the closet for stationery built above the writing part. The bedspread would be best white, as there would be enough color in the room without having a decorated quilt. Dainty hand-made rugs on a stained floor or over matting would be in good taste.

SHADES FOR TABLE LIGHTS

A READER asks advice about the best shades to use on oil lamps and candles for the dining-room table. The first consideration when choosing shades for dining-room tables is the color. It must be soft, so that it is not aggressive when unlighted on the mantelpiece or sideboard. It must be tender in tone, so as to shed a soft haze on the faces of those who sit around the board. It must harmonize with the decoration of the room. Some of the most becoming shades are made of China silk of very good quality, in the four shades that are best for use in dining-rooms—ivory-white, corn-color, red, and green. When made by experts it will be noticed that in addition to the top color there is an intermediate silk lining of another color. A corn-colored silk shade will have a lining of corn-colored silk, over this an interlining of bright pink China silk, which, when concealed by the top silk of corn-color stretched tightly over the linings or soft-pleated, will look charmingly soft and dainty. When lighted a tender haze of pinkish tone will be suffused. The effect is further enhanced by a heavy silken fringe or passementerie fringe. Sometimes a golden lace is chosen with the corn-color scheme to go beneath a light fringe of silk. There is also a wide choice in the selection of shapes. Empire, with its almost straight sides, the wide flare which means shorter silk covers and a greater depth of fringe, and the usual angle is after all the most satisfactory shape to have the shades. It is most harmonious to have the lamp shade match the candle whenever possible. When visiting in a country house in England the writer was impressed by the charming color



Valenced window curtains of chintz for an attic bedroom

scheme of flowers, candle shades and table center. If red candle shades were used a large piece of red felt was laid over the white tablecloth, extending to about eighteen inches from the edges of the table. An immense silver piece was filled with flowers and there were many silver dishes of candy, also two dishes of fruit on either side of the flower bowl. The red set off the silver and made a charming mass of red with the candle shades.

For use in the simple dining-room there are effective shades to be found in cretonne, glazed chintz, and gingham, the last having small pattern blocks in red and white, yellow and white, and green and white. They are decidedly quaint, but could only be used for seashore or bungalow cottages. There are the usual fancy shades of painted cardboard, stenciled effects and pierced copper, as well as a good variety of French shades, but a visit to the shops that carry such things must be taken to see the newest designs.



There are many sorts of shades for table candles, and these are to be had in the shops of nearly every town. Well-chosen designs enhance beautiful table effects



A fanciful group, whose figures form the beehives



Bees are hived in the howdah on this elephant

A Curious Bee-Garden

Wherein the Owner Has Carried Out an Idea Unique in Bee-Culture

By George A. Avery

IF THOSE who have heard the saying "bees in his head" could know the origin of the accompanying pictures, a new phrase, "bees in his heart," might be put in circulation. Kindness certainly directs the motif carried out by the tender hands of the bee-master, a simple German teacher who may be seen sitting at the side of a lion, and who in the task of domiciliation of his colonies, wrought what he thought, when they were made comfortable and safe, would be an ornament to the neighborhood. The forms and exterior features are wholly to his own taste, as the inner details are to the taste of the bees, so what does he care. The designer is seen to be decidedly prone to putting into shape something taken from widely divergent lands, and to a degree far in excess of even the Teutonic leaning toward the ornate. From the Indies he uses the caparisoned elephant mounted by a beehive of houdah pattern; from Nubia the desert lion; from sacred lands insects coming out of the bodies of human beings; from fairyland he shows the idea of a dwarf with bees issuing from the nostrils; while from the land of the familiar, the proclivity of the bear for honey. The last stands like a sentinel at one end of the garden, which boasts a collection of huts of Hottentot simplicity, facing a minaretted and columned palace of the Orient. The dwarf stands in the entrance-way of his bastioned stronghold. The elaborate ornamental biblical scene, flanked by hangings

of modern burlap, depicts the dove of peace hovering; and under it a group of bible characters reclining at ease within the portal of an edifice, where the opening and the interior court are unstintingly overrun with floral decorations and pastoral scenes from the Holy Land. Holland contributes its windmill, and there are numerous maisonettes of a sort of Swiss chalet effect. Baywindows project, roofs slant, peaks are ornamented with finials, lace curtains hang at windows, a thicket separates the largest animals, and across the garden lie several cultivated plots of ground separated from one another and from the rows of bee-holders by broad and level paths, all just like a compact and miniature village. A quaint illustration is that of a frame holding a square of tapestry on which is pictured some dream from the fabled past, woven about a tablet and in which appear archaic German verses on the art of gathering honey. Before entering the enclosure one reads the sign "Bienen Garten" over a doorway whose Grecian pretension does not prevent the obtrusion of some crude lattice work. When one has passed the entrance he may look in vain for the oldest form of beehive, made familiar in primers and on the covers of savings-bank books, and those of normal modern types, for the constructor never swerved from his purpose of making his beehives completely original in every way. Yet even after these specimens of the bee-master's ambitious work, it is not one's fault that a general view of the garden looked at over the fence appears something like



The dwarf is the hive, and the bees issue from his nostrils



This fierce-visaged lion shelters a swarm of honey-makers



A peep over the fence of this curious bee-garden discloses a multitude of fantastic hives



One might think this a gentle menagerie instead of a collection of beehives

the animal cemetery, both plain-slabbed and monumental, which now may be seen in Paris, on a rather large scale.

On the whole the garden is cryingly at odds with good taste; a fusion of architecture, upholstery and zoölogy that is so extravagant as not to be excused on account of utility. The chief function of the process of handling bees is the accessibility of the hives to the bee-handler, which is here often a matter of laborious climbings and windings to go the rounds of caretaking. Ministering to the needs of a bee community does not call for a garden out of artistic focus. Beauty of design should be associated with fitness and the forms chosen here are not

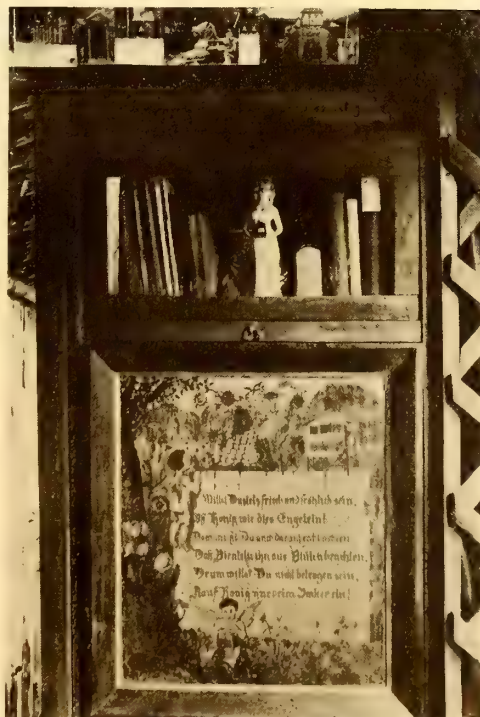


The houses in miniature hiving the bees at the end of the garden are of every style of architecture

germain to the bee-garden and are plainly whimsical. But the designer has cared for his busy pets with mechanical exactness and every part is perfect, so far as the bees secure protection and have the means of producing honey. The teacher's fondness for his bees makes one think of him as in sympathy with all the world except those who might neglect or otherwise maltreat these tiny producers of surpassing nectar. His family partakes of his zeal; the wife, the girl and the tots are hand-in-hand with one another in making the garden fascinating and interesting. They help the darting bees give life to much that is passive in the mingled characteristics of the place.



Door to the curious bee-garden



A poetic panel praising bees



Turning the tables on the bear



THE MONTH OF NOVEMBER IN THE GARDEN

THIS is the month when Nature, the dear old nurse, sings her cradle-song to all the growing things of outdoors, as they snuggle down in the coverings Jack Frost will pull over them at the approach of their long winter's sleep. This, too, is a time when one looks forth from window and doorway, out on the gray tree trunks, some of them still clinging to their orange and golden brown foliage, or, farther north, find themselves bereft of the last trace of summery vesture, standing out against the blue fall skies in silhouette, like lacework of intricate pattern. Little gusts of keen winds that whisper of winter's coming will blow the careless leaves that have fallen to the ground hither and thither, and we shall find ourselves sighing that the lovely days wherein the Goddess Flora and her merry train made earth a paradise of growing, blossoming things for us to feast our eyes upon, unheeding though we were, are gone.

And yet there is something in the keen bracing air that keeps us from deserting our gardens. We shall find ourselves walking in and out among its paths, tenderly regret-

ful that the broken things of yesterday which proudly lifted their countless stems of clustered flowers to the sun have fallen to the earth. We shall still find plenty of garden work for idle hands if they itch to be doing things. There will be the final planting of bulbs for the spring garden, the lovely Hyacinths, and perhaps other belated species; at least we will try to atone for our procrastination if we have not been sufficiently mindful of fleeting time, and we shall hasten to put within the earth the things of next season's garden that should be there by now, ere the earth freezes deeply.

Over there, perhaps, we shall find the evergreen leaves of our Rhododendrons bright upon the landscape, and we shall fall to wondering how they will survive the storms of winter. We shall go into our woodlots and cut hemlock boughs to strew over these shrubs and when spring again awakens all sleeping garden things we can hope to find that our Rhododendrons have not suffered, that the care we have chosen to take of them will have brought to them their vigorous growth.

Nor must we forget that little patch of strawberries yonder, that gave us such delight, and the very excellent fruit we proudly shared with our neighbors (not, also, so much from the charity within our hearts as from a sense of the perfection of the things we could raise and our pride in them which our vanity has wished our neighbors to witness). Never mind, it may be that this has been the very first garden we have ever had and we may find ourselves thankful that old John, who helped us with it, happened to tell us long ago to look out for November days and to see that our berry patch—a heritage from our garden's former owner—must be properly mulched this month. The very name of "mulch" frightened us, for we imagined, at first, perhaps, that it must be some intricate process, but we were immensely relieved to find that a mulching meant a covering for the ground of leaves or of any rakings from the lawn. So now we know we must mulch our strawberry vines to a depth of two or three inches. We remember, however, that John said to do it with hay or straw, and we decided upon straw as not carrying with it the possibility of so many uninvited seeds of disagreeable weeds, feeling somewhat important in having thought this out for ourselves. This leaves us with our pile of raked up leaves for our other beds when the time comes, for we have also been told that we should not mulch such beds as those of our bulbs until there is an inch of frost in the ground.

All the old vegetable matter cluttering the ground may be burned, as November is the month in which we should busy ourselves with "housecleaning" in our gardens. At any rate, it gives us an excuse for ever so many harmless bonfires. Our children love them and so we let them roast potatoes in them, and have a merry time of it after all.



There is no lovelier tree upon the fall and winter landscape than the birch, which lends cheer to the bleak things of the late season around

And we are proud of our hedges. As the winter winds will be biting and the winter sun at noontimes full of ill will, we will protect the hedgerow by boards along the north and west sides, that the grateful boughs may send forth an abundance of verdant foliage in the spring in gratitude for all our pains. The garden pests, insect and fungous nuisances that may have threatened to devastate our few little fruit trees, can now meet some measure of our revenge, for we shall investigate all probable breeding places and destroy the things that have threatened our garden by spraying and otherwise.

There may be some of us who would like to try our hand at mushrooms. November is just the sort of a month to begin a mushroom bed. Of course, American-grown spawn is the thing for us to try out, and if we buy it of reliable nurserymen and honest seedsmen we may hope to be able to regale ourselves with palatable table morsels throughout the winter.

Before the month is over we shall be putting up all of our garden tools regretfully, but, let us hope, with a sense of satisfaction in all the delights a love for our gardens has yielded us during the season that has just passed. And as the sun goes down and dusk finds us turning our tired but happy steps toward the house and its cozy fireside, we shall remember that the memory of our gardens may still remain with us throughout every day of the winter months to come. We may even bring within doors a vivid reminder of summer's fragrant season by filling our windows with lovely growing things—Geraniums, Ferns, Ivy, Begonias, Smilax, Fuschias, and all the delightful proxies for the summer garden.

HYACINTH VARIETIES.

THE following varieties of Hyacinths may be recommended to the home garden-maker who is interested in the article on Hyacinths appearing on page 400 of this issue: WHITE: Alba superbissima, Mme. Vanderhoop, La Grandesse, Prince of Waterloo (double), and Baroness Van Thuyl; PINK: Fabriola and Norma; REDS: Robert Stieger, Gertrude, Roi des Belges and Lord Wellington (double); BLUE: Leonidas, La Peyrouse, King of the Blues, Czar Peter, Grand Lilac, Baron Van Thuyl and Charles Dickens (double). La Peyrouse is a very light blue, and the Baron Van Thuyl very dark. Of the yellow varieties, the King of the Yellows and the Ida are among the most satisfactory. The Hyacinths known as Roman Hyacinths are usually sold by color and not by name at the florists, for these Roman Hyacinths are not distinct varieties, but miniature species of some of the above. The Cape Hyacinth, with its bell-shaped flowers an inch long, is also fragrant and attractive, and the Grape Hyacinth (*Muscari botryoides*), blossoming in April, finds its best variety in the Heavenly Blue, though it is also to be found in white varieties, as is



This is a type of thatched pigeon-house built in an English cottage garden for white fan-tails, and containing a suggestion for anyone contemplating the building of such a little bird-house in our own country

the Wood Hyacinth (*Scilla festales*), which last is excellent for naturalizing and closely resembles the more prominent Hyacinth of the bulb beds, though its spikes are more loose and have not so many flowers.

HOUSES FOR THE BIRDS.

A READER of AMERICAN HOMES AND GARDENS has written the editor of this department a letter from which the following interesting paragraph is quoted, in the belief that it will furnish a suggestion worth while to anyone interested in making the garden and grounds of his home more attractive. "I have found by experience," writes this correspondent, "that November is an excellent month for setting up bird-houses. The birds, I find, seem to take to a winter-weathered house when they return in the springtime far more readily than they do to a house newly built for them. As I have acres of garden and lawn and am very fond of birds, I celebrate the arrival of November every year by building a little bird-house with which to surprise my feathered friends when they return the following season. When I place these little bird dwellings high upon their poles I do not forget the proclivities

of Miss Pussy-Cat, and so I drive sharpened spikes into the pole all around at a height of eight feet from the ground. She can climb that high if she wishes to, but one look at the spikes will convince her wise self of the futility of a raid.

A BAMBOO FENCE

ANOTHER of our readers sends us an interesting note about an unusually ingenious and inexpensive bamboo fence. "I have made excellent and attractive fences for my garden of pieces of bamboo fishpole, cut to a uniform length and thonged in place by means of tarred cord, which holds the bamboo 'pickets' in slight notches which I cut in the horizontal poles that run from post to post as a skeleton frame for the bamboo lattice. The idea is one I obtained from seeing a similar fence in a very attractive Japanese garden in the vicinity of Rochester, N. Y., and I adapted the scheme there carried out to suit my more slender resources and my having to do all the work for myself. Perhaps some of your readers would



This shows a novel use of bamboo in the construction of a garden fence

like to try similar fences for their own gardens. They make admirable backgrounds and supports for sweet peas, etc."

USES FOR DEAD TREES.

WHEN one finds a tree gone beyond recovery, leaving a bare trunk or leafless branches amidst the foliage of summertime, the first thought is naturally the one of getting it out of the way, of considering its utility at an end with its life. However, if it happens to be properly situated in the home landscape nothing can be lovelier than an old dead tree around which Rambler Roses have been planted and over which they have been allowed to grow much of their own will and undirected by pruning.



HELPS TO THE HOUSEWIFE

TABLE AND HOUSEHOLD SUGGESTIONS OF INTER-
EST TO EVERY HOUSEKEEPER AND HOUSEWIFE

THE THANKSGIVING DINNER

By Mary W. Mount

Photographs by Jessie Tarbox Beals



THANKSGIVING DAY enters the kalendar of our homes like some modern Ceres bearing sheaves, crowned with purple clustered grapes, the hem of her cere gown powdered over with gleaming dust of golden-rod and glowing with scarlet of drifted leaves.

The Harvest Spirit, in our country, is the embodiment of a land of plenty and symbolizes the culmination of autumn's largesse in some vital expression of its bounty at the moment when Nature pauses, divested of her brodered vesture of gold, to prepare for her white slumber robe of winter. To every mental vision Thanksgiving day presents the Spirit of Plenty in such wise that the most careless pause in awe at the realization of how abundant have been the blessings of seedtime and harvest; the most thankless are moved to gratitude for benefits acknowledged at no other time. Nature's overflowing bounty stirs us to like generous impulses; not one is too mean in spirit to share with his brother that portion of cheer which has fallen to his lot. Never since our Puritan forefathers dreamed of a national existence have we failed to celebrate a festival the underlying principle of which has been gratitude to the Giver of all good for the fruits of husbandry. The keynote of such a festival is an expression of outward bounty and inward unselfishness, and so Thanksgiving has been a season for the reuniting of families; the gathering of friends about a laden board; the feasting of the poor, and dispensing of provisions to needy tenantry against the coming of winter. A Thanksgiving festival is essentially a table celebration; not greediness, but gratitude, prompts a board piled high with savory dishes and a dining-room where one seems to glimpse the Spirit of Plenty smiling through foliage and flower; to hear the rustle of her skirt in some bank of golden grain glowing from fireplace and mantel. It behooves every housewife to make her table express the true feeling of the day; earth's bounty, human thankfulness, and a pervading sense of friendliness and good-cheer. The Thanksgiving table,

therefore, should never be formal in either decoration or service. Both should bring us face to face with Nature in her season of bestowal and link every guest in friendly fashion, one with the other. Sheaves from the field, glowing branches from the forest, and fruit from the vineyard should replace orchids and hothouse roses in the dining-room. Nothing more beautiful can be effected than a room and table adorned in this wise, with yellow chrysanthemums, dahlias, golden-rod or dwarf oranges among the decorations.

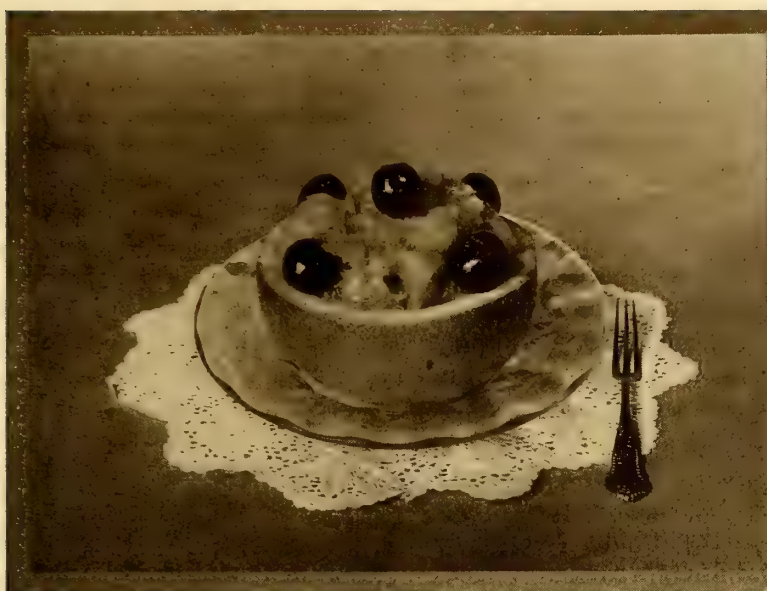
NO housewife, however remote from a city's shops, need be at a loss for table ornaments for Thanksgiving day. Does not every tree and vine offer bright-hued foliage to arrange in centerpiece, garland and wreath, and to paste upon paper-fashioned cups and baskets in which desserts, nuts and confections may be served? May not gleanings be saved from the field, corn gathered from the bin, and quaint golden pumpkins and squash be brought from the garden to lend both beauty and suggestion to the festival? On the far northern rim of our land Thanksgiving decorations must be gathered in betimes, but everywhere else one has only to step outside the door to find Nature stretching out willing hands filled with tokens of Thanksgiving. By way of centerpiece, half of a yellow pumpkin makes a charming bowl for fruit, for golden-rod or autumn golden-glow, and small repetitions of the pumpkin bowl may be purchased or manufactured out of crêpe paper or halves of oranges, to hold jellies, charlotte russe, oysters and crab patties, nuts or confections. Any of the field grains make a charming centerpiece ac-



A Thanksgiving table suggestion, showing pineapple centerpiece

companied by a fringe of grain heads garlanded around the edge of a table, and with purple and white grapes used in connection with the central ornament. Autumn leaves at the head of the grain fringe and around the centerpiece add much to the color effect of such a table.

WILD turkeys furnished the piece de resistance of early American Thanksgivings, and turkey is as closely associated in our minds with Thanksgiving as cranberry sauce is with turkey. Gourmets admit that guava and current jelly are better complements of roast turkey than cranberry sauce, and these are to be had where the New England sauce cannot be obtained. It is well to know that turkey



Cherries make very attractive grapefruit decorations



Individual pumpkin and mince pies served together

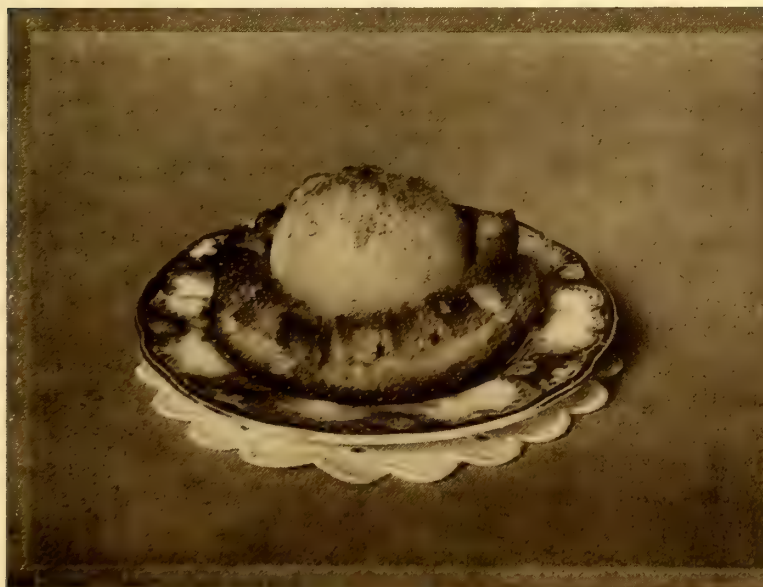
meat acquires a delicious flavor of the bird if penned up for a few weeks before Thanksgiving and fed plentifully on nuts—especially walnuts and pecans. The Creoles impart this flavor to a turkey by means of a nut stuffing, and no stuffing of nuts equals one made from pecans. Next to pecans English walnuts serve the purpose, but they do not melt as much in cooking nor give so rich a flavor. To make this stuffing enough nuts should be shelled to fill a soup plate full of kernels. These should be chopped and set beside a bowl containing three or four dozen oysters and another filled with the juice from which the oysters have been strained and in which crumbled bread is soaking. One large onion should be minced fine and dropped into a deep pot, in which a teacup even full of lard has been melted. The liver and giblets of the turkey should be cut small and laid on a plate with minced parsley, a tiny sprig of thyme, bayleaf, a bit of minced red pepper, chopped tomatoes, and a single pod of garlic. This bit of garlic is no larger than a pea, and should be chopped fine and dropped in the pot with the onion. It may be omitted by those who do not like high seasoning. When the onion turns golden-brown the plate of giblets should be emptied into the pot and cooked till almost done, when the bowl of nuts and of salted soaked bread should follow and the stiff mass stirred until light brown, when the oysters may be added and stirred in. The dressing is then ready to empty on a flat dish to cool sufficiently to be handled, when the turkey is seasoned, stuffed, larded and placed in a roasting pan with a little cold water in the bottom. If a rich gravy is wanted, some of the same in-

gredients that went into the stuffing must be prepared, omitting oysters, garlic, thyme and bread and using very little onion. The gravy ingredients will brown themselves in the roasting pan. Rub flour all over the turkey to keep in the juice and make a thick gravy, and as the bird cooks add boiling water, a little at a time, and baste it.

WITH this style of turkey rice is always served to eat with the soft dressing and gravy. To cook rice, one must wash a cupful and pour in the pot with it three cups of water, and salt to taste. When it begins to boil place a stove plate beneath the pot and let it alone. In fifteen or twenty minutes all the water will be absorbed, when the pot should be set on the back of the stove or over a low gas-burner to steam dry. Never stir rice nor cook it in a double boiler. If an increase in quantity is desired, observe the proportions of three portions of water to one of rice.

A DISH that is procurable for every Thanksgiving table is potatoes, and an attractive way to prepare them is to peel sweet potatoes, cut them in halves, and lay them in a well-buttered baking dish. Unless the potatoes are a very sweet variety, sugar may be sprinkled over the top before the dish is baked. When served, steamed or boiled white potatoes may be put through a "ricer" machine and heaped on a platter around the dish of sweet potatoes. This makes a pretty dish and allows one to choose the kind of potatoes he likes or to help himself to both.

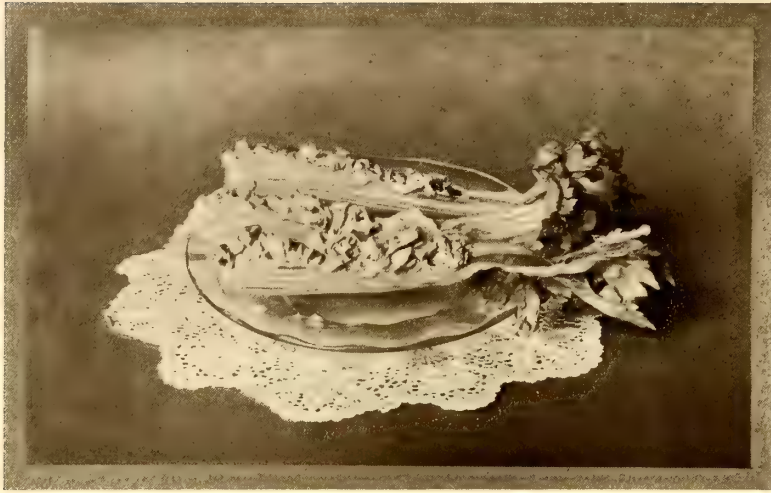
ANOTHER attractive vegetable dish consists of onions, baked on rounds of bread and served on individual dishes surrounded by croutonnes. Good substitutes for



A new way of serving baked whole onions



A delicious dish of sweet and of white potatoes



Celery may be served filled with cream cheese

these vegetables are cauliflower, pumpkin, carrots or turnips, all of which are easy to procure in November.

BY way of an appetizer to the feast and, if one likes, in place of soup as a prelude to so heavy a dinner, halves of grapefruit may be served in new long-stemmed grapefruit cups, with the fruit in its central receptacle reposing in a nest of cracked ice, adorned with a circle of cherries. One cherry rests in the center of the fruit, where sugar replaces seed.

AFTER turkey and vegetables have been removed a light salad should follow, and this may be of lettuce, romaine or fruit, with a preference for Thanksgiving salad made of seedless or seeded grapes, with mayonnaise sauce. The following smooth salad dressing can be made in three minutes: Mash the yolks of hard-boiled eggs with pepper, salt and a pinch of mustard; stir in oil until the mixture thins, when a raw egg should be beaten in and a little vinegar slowly added, followed by the chopped whites of eggs.

CELERY, of course, accompanies every Thanksgiving turkey, just as pumpkin and mince pies or tarts, with fruit, nuts and raisins precede the café noir that closes the feast. A delicious way to serve the celery is to stuff the groove in each stem with cream cheese mixed with finely chopped nuts and olives. Treated in this manner, it is arranged on flat celery dishes and adds piquancy to the meal.

IN the event that a relish, followed by soup, is preferred to grapefruit as a first course to the dinner, consommé, vegetable, cream-of-celery or cream-of-tomato soups are all suitable to Thanksgiving, as all are light in character. It will be found that an appetizing element is introduced into cream-of-tomato soup by mashing a can of corn through the strainer (which retains the pulp) into the tomato soup and boiling it a few minutes with some chopped parsley and a lump of butter before milk is added, as the milk will curdle if allowed to boil in the tomatoes. With these soups bread sticks give an attractive touch to the table.

MAKING THE MOST OF THE TURKEY

By Phebe Westcott Humphreys

WHETHER it is the national Thanksgiving bird, the occasional holiday treats in the form of wild fowl, or the ordinary domestic ducks and chickens that are to be prepared for the holiday feasts, this is the season when the inexperienced housewife is eager for the best advice in preparations for roasting, dressing and garnishing. Even the experienced housewife, familiar with delicious changes in chestnut, oyster, and plain bread "stuffings," will find pleasure in testing additional flavorings and the merits of steaming and plumping in addition to the roasting, while the possibilities of utilizing left-overs from the holiday feasting will form a decidedly interesting source of information among

the hostess-caterers who are eagerly anticipating holiday guests and "homecomings."

TO prepare the fowl for roasting (we will call it turkey in this instance, although the process is practically the same for other fowls), carefully remove all pin-feathers and singe by holding it over an alcohol flame or the lighted burner of the gas stove. Or, if these are not convenient, simply light some loosely crumpled paper on top of the range and hold and turn the turkey over this until every portion is free from hairs, leaving the skin smooth and clean. Next lay the turkey on its back on the kitchen table, with plenty of room on every side for working to advantage. A paper spread on the table will keep the board clean and save time in disposing of the refuse. Make an incision beneath the breast bone as small as possible, allowing only sufficient room for "drawing," as the stuffing will be retained to better advantage and the finished product will be much neater, without a gaping, ragged opening, after roasting. Pull the skin back from the neck, after the head has been removed, and cut off two or three inches of the neck without removing the skin, leaving this to turn back and tie in place to retain the stuffing in the crop cavity. To remove the crop, do not make a slit in the skin above the breast, in the usual manner, but pull out the entire crop, bag and contents, without breaking, through the neck opening. Remove the windpipe and glands from the inner skin of the neck, and there will be a smooth, clean cavity to retain a goodly portion of the tasty stuffing in this section of the turkey. Do not forget to remove the oil bag on the upper side of the tail. Then on inserting the fingers to "draw" the turkey, loosen the insides carefully, reaching up near the breastbone and working down, loosening from both sides without breaking the intestines, and the entire entrails will be drawn out intact, with the big cavity clean. Then reach in again with the fingers and separate the "lights" or lungs, with all the little red particles, from the ribs. The turkey can then be thoroughly washed inside and out, and wiped dry; and it is ready for the stuffing.

APPETIZING DRESSINGS.

IN preparing the dressing or the stuffing for the turkey, a knowledge of good flavoring will be the main point; whether it is filled with chestnut, oyster or bread stuffing, this portion of the roast should be rich and delicious, and serve as an appetizer, and of sufficient quantity to serve



The festive bird, our national table joy

plentifully with each "helping" of the roast, and not, as is too often the case, be a tasteless, soggy mixture.

There are various ways of preparing these fillings. For the chestnut mixture the nuts may be creamed or left in halves without mashing. For the creamed dressing, boil a quart or more of chestnuts with a little salt water. When done remove the shells, mash the nuts with a wooden potato masher, or press through a vegetable sieve; add a table-

spoonful of butter and two tablespoonfuls of cream; season with pepper and salt and a pinch of nutmeg, and beat up thoroughly with a pint of finely powdered cracker crumbs. Or, for a chestnut stuffing with the nuts comparatively whole, chop half a cup of white celery stalks very fine and mix with the nuts in halves or quarters; mix with sifted bread or cracker crumbs in the proportion of one pint of crumbs to each quart of chestnuts. Dot bits of butter through the dressing, slightly moistened with cream, and add a little powdered thyme or sweet marjoram to the celery flavoring.

FOR the oyster stuffing, drain the juice from the oysters and add an equal quantity of bread or cracker crumbs rolled fine and sifted, to give a good body to the dressing, instead of a watery mass of oysters too frequently served by the inexperienced. When well seasoned with butter, pepper and salt, this dressing will have the firm texture and the delicious flavor of scalloped oysters when the turkey is carved.

BUT the good old-fashioned bread dressing, carefully prepared and thoroughly seasoned, is after all the dependable and satisfying stuffing, leaving the oysters and the nuts to be served separately, thus not only proving less expensive in reserving the other ingredients for two separate courses, but also serving to "plump" the fowl and providing a delicious accompaniment to the roast. Two small loaves of bread will be required for a large turkey, stale bread being best. Odds and ends of stale loaves saved up for the purpose are as good as the whole loaves. Break the bread in pieces and soak in water; then squeeze the bread firmly when soft to free it from moisture. For this quantity of bread four or five onions chopped very fine will not give too strong a flavor, but will blend deliciously with other flavors. Chop two or three stalks of celery very fine, add a pinch of sage and thyme; put the moistened, crumbly bread in a mixing bowl; add the chopped onions and celery and half a cup of butter. Mix thoroughly but lightly with the finger tips, and season to taste with pepper and salt.

STUFFING THE TURKEY

IT should be remembered that while the cavities may be filled rather full when the chestnut and oyster dressings are used, the bread preparation should be allowed extra room for swelling. The main portion, more than two-thirds of the dressing, should be filled in the large cavity, pressing it with the fingers well up into the ribs and filling in only a small portion of the bread at a time, until evenly and compactly placed in the main body of the bird, but allowing space for the swelling near the opening; otherwise the opening will be forced apart in the roasting and the dressing will escape, with unsightly results. Then take the remainder of the stuffing and insert it through the neck cavity, entirely filling the space made by removing the crop. The entire bird should be rubbed with salt on the inside before stuffing. With a large needle and coarse thread carefully sew up the openings made for drawing and stuffing; and, as a further precaution to keep them from bursting out, wrap these portions with the clean heavy twine that is used to bind the wings and legs close to the body, wrapping round and round the fowl to keep it compact while in the roasting pan.

THE BAKING PAN

IN these days of "inventions" in roasters and braisers, the inexperienced housewife may consider it necessary to purchase some patent roaster. On the other hand, she may consider the old-fashioned, open

pan, requiring frequent basting, entirely satisfactory. The older method entails more work in the matter of watching, turning, and basting. Neither of these extremes are necessary, however, for the happy medium is to be found in the plain "double-baking pan," with a rack that will hold the fowl half an inch or more above the bottom of the pan. A patent double-baking pan is preferred, of course; one with the little steam gage in the top to open when it is time to brown the turkey. But this is not really necessary. The cheaper pan is simply two pans of the proper size to fit snugly together, with the turkey resting on the rack in the bottom pan and the other turned over it. Rub a little butter lightly over the fowl, and then rub with salt. Put a little water in the pan beneath the rack and fit on the upper cover; let it steam for a few moments on top of the range for extra plumping force before it goes into the hot oven. No basting will be necessary as long as the cover remains on the pan and the steam is retained; but when removed for final browning, baste frequently with the butter and rich juices in the bottom of the pan, to keep every portion of the fowl moist and tender and deliciously flavored during the browning process.

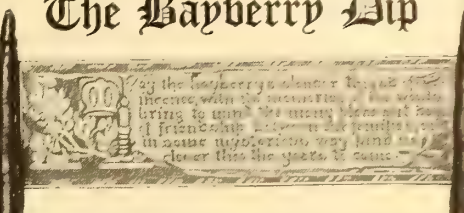
PREPARING THE GIBLETS

THE liver, heart and gizzard are sometimes chopped and put into the roasting pan with the turkey, and then added to the gravy. It is far better, however, to cook them separately. Slices of fat pork or thin bacon are laid on the rack when the giblets are thus cooked, but the usual preference is for the rich flavor of the turkey without the additional flavor. The young housewife too frequently makes the mistake of overdoing the bacon flavoring, especially when this is recommended to provide the juices without using water in a double baking pan. The small particle of water to catch and hold the juices for baking without scorching is much better than the bacon or salt-pork flavor, whether the giblets are cooked in the pan or separately. A separate stew of the giblets is the best way of preparing them. Remove the gravel bag from the gizzard carefully, without breaking, and wash thoroughly. Remove the hard membranes from the upper part of the heart, and work very carefully with the liver to remove every particle of the gall bag without breaking. A tiny particle of the gall allowed to touch either the giblets or the turkey will produce a bitter flavor. After washing the giblets, put them on to stew in a little water on top of the range, adding to them the neck, the small joints of the wing, or, if preferred, the two upper joints of the wing. And the drumsticks may be cut from the turkey in preparing it for the roasting pan, as these exposed portions are more tender when stewed and the fowl is quite as neat in appearance when simply the first joint or meaty portion of the wing and the thigh joint of the legs are bound down to the body with the twine. With the neck, the drumsticks, and the wing portions boiled with the giblets, a delicious turkey stew is possible aside from the roast, or if quantities of gravy are desired these may be chopped after stewing and mixed with the drippings from the roast.

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VARIOUS garnishes and richly flavored sauces are frequently served with the roast turkey, including the rich Chipolata garnish and spicy Spanish sauce. But the good, rich, old-fashioned turkey gravy is hard to beat when properly made, although the high-sounding name of some special sauce may seem to impart additional flavor.

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Lemon juice, grated lemon zest, grated Parmesan and tomato sauce are the usual relishes when a spicy sauce is to be served with a fancy name. For "just gravy," good and rich, with only the turkey flavor, remove the roast when thoroughly tender all through and well browned, and make the gravy in the pan with the rich drippings and the particles of dressing that have escaped in the roasting. Pour off the surplus grease, add a little water to the thick drippings, wet a little flour thickening, smooth and free from lumps, and add to the drippings until smooth and creamy in texture. The gizzard, heart and liver may then be chopped and added to the gravy; or the giblet stew may be thickened to form a separate gravy of its own, with the meat from the bony pieces. Garnish the turkey with crisp sprigs of parsley when served.

THE SOLDIER'S GARDEN

By GEORGE A. AVERY

THE main accomplishment of a soldier's career in times of peace may not be in learning to fight the best or to lounge the easiest, if a promising experiment in gardening goes on and bears fruit at the rate shown by this year's demonstration at Caterham Barracks, England. The soldiers at this point recently gave their annual vegetable, flower and industrial show, and in spite of a long drought the exhibits were very successful and the best of the series. There are cases of cultivating the soil within a military station or reservation grounds by enlisted men in garden work, but the literature of these is scant and the data are few. The more recent information comes from this Barracks, which has the distinction of giving an annual affair for prizes, and which in military circles is considered one of the social features of the year. It is a characteristic of the soldier on a peace footing to go bluntly about his duties, and after this to enliven his spirit on a pass or to enjoy games and other diversions. But the prize show referred to throws new light on the range of a barracks' life. That the dull routine may be improved upon is shown by this scheme, which rewards the men with a healthful occupation and other benefits. The officers, from the commandant down, take a leading interest in the exhibition, and this support has helped to make gardening there a feature of a soldier's work. The champion vegetable grower in the English army is Corporal Holt, of the Coldstream Guards. He was again this year the leading competitor at the "Barracks" show, and was awarded nine firsts for his vegetables.

Corporal Holt is the famous tallest man in the army, and pictures of him doing his service at the most notable military pageants have appeared in the English illustrated papers. He also received the first prizes for the best kept garden and for the one the best cropped. In this latter competition, the legend goes that the giant guard, knowing that no award would be given to him if his exhibit showed to the judges of cropping a single specimen of rank overgrowth of the weed (*Britannicus grenadieræ*), kept himself for the time hid inside the Caterham Barracks.

While there is no movement in the United States toward organizing an annual prize garden exhibition, there are instances where soldiers at posts take advantage of grounds and leisure to raise small crops for their own consumption, the over-production being shared by other soldiers of his company and even by his officers. One very successful garden was handled by a sergeant at Fort Hamilton, N. Y., and it may be hoped that

in raising his produce what went to seed was for use in planting the garden habit in his company, as well as for use in his next season's vegetable yield. Many of this soldier's products of the sturdy sort might have stood well in comparison with those of Corporal Holt and his military gardeners, but he was far behind them, since he made no attempt at herbaceous borderings, at floral achievements, or at socializing the work. He lived well as a result of his toil; he exchanged his produce for certain favors, and pleased his superiors with a small basket of fresh edibles when the commissary was low or when the market complained of droughty conditions. Our acquaintance with this soldier's garden, and the one at Fort Snelling, and that at the Navy Yard at Charlestown, Mass., makes one feel that these posts are a nuclei of an annual exhibition, if only for vegetables. Let the soldier get interested in the idea that the enlisted man's private garden plan is a volunteer matter and is not open to hard regulation strictures; that the one who follows it ought to be free from the drudgery of the mess, and even if he cannot escape guard duty, at least, while on that tiresome sentinel beat of "plowing the lonely furrow," he can make it lighter by contemplating the pleasure of plowing a multitude of furrows among his vegetables the next morning; or by musing on peace having her victories, as well as those of war, for there are invasions of armies of pests to be rolled back that overrun the potato patch, scale the garden walls and mine and sap roots under the surface.

The garden ventures described are crisp instances of the providence of man. Both are bits of rational experimentation. One truly English, as it is socialized, a family affair, with a wise and tolerant commandant, Major G. D. Jeffreys, strongly interested; while ours is based on the individual or American type of development. A writer who seems to know has just said that "The loveliest thing in the world is an English house garden." It will be interesting to see whether the most practical garden in the world can come from the English soldiers' exhibit scheme. It does not look as if there will be "rival camps" to menace the supremacy of John Bull's guardians in this field, as, outside of the United States, the soldier, through lengthened drills and excessive exercises, is too tired to work when off duty. The ingenious and exact percision of cultivation in France, the superiority of high fertilizing agents in Germany, the intensive method in Japan, would be the means that would enable the French conscript, the enrolled Prussian, or the Japanese regular to take the measure of the Anglo-Saxon recruit and to show him the art of the complete gardener; but the rank and file of the Orient and on the Continent will be found at the café, the beer garden, or the tea garden, until bugle call.

Are the ventures outlined apt to start an interest in trucking and farming and to help the movement of "back to the land" by the soldier when he goes out of service? If they do, Tommy Atkins will then be credited on garden form with a more lasting influence on raising food-stuffs of the soil than those more pretentious examples among warriors; for instance, the return to the plow of Cincinnatus; of Diocletian to his cabbages; of Washington to his plantation. The moral of the soldier's garden may be in the idea that: Often, he is considered the most likely soldier of a mobile army who by the use of his legs is the greatest forager. If so, he of inactive service at a post may be the most useful that rakes in the good things by the labor of his hands.

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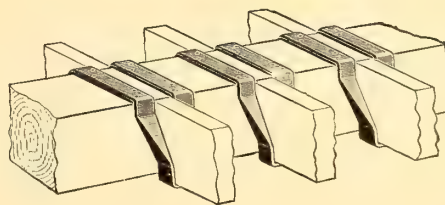
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HINTS ON PAINTING

Some Suggestions and Recipes of Value to the Homemaker

By EDGAR C. HOPSON

A FEW hints regarding the use of paints may prove of interest to the readers of *AMERICAN HOMES AND GARDENS*, inasmuch as the Editor continually receives requests from readers for paint recipes and suggestions regarding the painting of materials.

PAINTING METALS

Very frequently, when metal is exposed to the weather it will be found that the paint peels off. If the metal is slightly corroded by a solution of copper sulphate slightly acidulated with nitric acid, the paint will better adhere to the metal surface. After standing an hour or so, this surface should be washed, dried, and then painted. To make it proof against hot water, clean the metal with turpentine or benzine; then apply two coats, consisting of a mixture of white lead, spirits of turpentine and carriage varnish, which should be followed immediately with a coating of carriage varnish and white lead.

An excellent white paint for metallic surfaces which are exposed to heat that frequently turns them yellow, consists in the introduction of oil sodium silicate, when no change of color will result. Zinc white mixed with soluble glass of from 40 to 50 degrees B., to the consistency of ordinary paint, makes another excellent coating for metal surfaces.

MIXING PAINTS

In mixing paints one should observe that for outdoor work the oils should be principally boiled oils. For the decorative parts of the house—interiors, furniture, etc.—they may be mixed as usual. For such indoor work linseed oil, turpentine, and a little drier should be employed, bearing in mind that the less oil used the less will be the gloss, and that for flatted white effects (inasmuch as the color is ground in oil) the paint will scarcely require any further addition of oil.

OBTAINING DESIRED COLORS

The amateur painter often finds himself at a loss to know just how to mix two colors to produce the third one desired. The following list, therefore, will serve as a first step in the subject: Buff may be obtained by mixing white, yellow ochre, red; chestnut, from red, black and yellow; chocolate, from raw umber, red and black; claret, from red, umber and black; copper, from red, yellow and black; dove, from white, vermilion, blue and yellow; drab, from white, yellow ochre, red and black; fawn, from white, yellow and red; flesh tint, from white, yellow ochre and vermilion; freestone, from red, black, yellow ochre and white; French gray, from white, Prussian blue and lake; gray, from white lead and black; gold, from white, stone ochre and red; green bronze, from chrome green, black and yellow; pea green, from white, chrome green; lemon, from white and chrome yellow; limestone, from white, yellow ochre, black and red; olive, from yellow, blue, black and white; orange, from yellow and red; peach, from white and vermilion; pearl color, from white, black and blue; pink, from white, vermilion and lake; purple, from violet, deepened by more red and white; rose, from white and madder lake; sandstone color, from white, yellow ochre, black and red; snuff, from yellow and Vandyke brown; violet, from red, blue and white.

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within reach of small children will be found valuable: Add to six parts of white fine chalk three parts of thoroughly calcined magnesia, and to this add a few drops of indigo solution.

WINDOW PAINT

The following is a useful recipe for window paint: Mix with white lead, boiled oil or varnish, and a small quantity of driers (no turps, which hardens for the time, being a volatile oil, and therefore objectionable in this case); paint this over the glass thinly, and stipple it. If you have not a proper brush, make a large pledget of cotton-wool or tow, cover it with a clean bit of linen rag, and quickly dab it over the paint.

PAINTING BIRD CAGES

Parrot cages, or in fact any kind of bird cages, may be painted with zinc, but lead must not be used. Zinc may be given any desired tint, and after it is applied it may be coated with a light volatile copal varnish, after which it should be subjected to a heat of from 100 to 150 degrees F. The varnish known as "extra light polishing varnish" is that used by several of the most prominent bird-cage makers.

CLEANING PAINT BRUSHES

New paint brushes should be thoroughly brushed back and forth on the hand until the dust and loose hairs of the brush are removed. New brushes require special attention the first few days. All brushes should be washed in benzine or turpentine and shaken dry before changing from one tint of paint to another. Those brushes which have become clogged by paint should be freed by turpentine before they are used again. Varnish brushes should always be kept for use in the same varnish in which they are first used, or in turpentine; however, the latter treatment will make the brushes rough up in time, and the varnish is a much better preservative of their pliability.

PRESERVING THE COLOR OF PRESSED FLOWERS

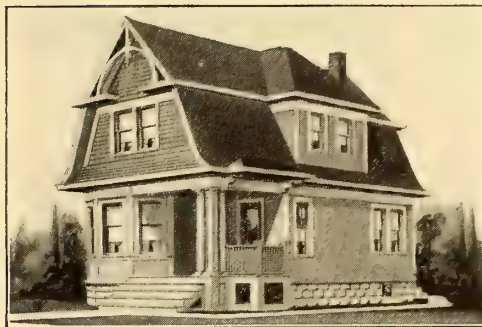
A GERMAN scientist suggests an interesting method of preserving the natural colors of flowers. This consists in dusting them with salicylic acid as they dry in a press, removing the acid again with a brush when the flowers are dried. Red colors in particular are especially well preserved by this agent. Another method of applying the same preservative is to use a solution of one part of salicylic acid in fourteen parts of alcohol, by means of blotting paper or cotton-wool soaked in it and placed above and below the flowers. Powdered boracic acid yields nearly as good results. Another authority recommends as an improvement in the method of using sulphuric acid for preserving the colors, that in the case of delicate flowers they be placed loosely between sheets of vegetable parchment before immersion in the liquid, so they may preserve their natural forms. This accounts for the bright natural coloring retained by many pressed flowers which one finds attached to souvenir cards and elsewhere.

BUREAU OF ENTOMOLOGY

MUCH space is given in discussing the work of the Bureau of Entomology to the important work that bureau has done during the past year in its effort to control or eradicate the gipsy moth and the brown-tail moth. The infested territory covers all the New England States except Vermont, and the department, working in co-operation with the authorities of those States, has met with gratifying success. Conditions there are largely improved.

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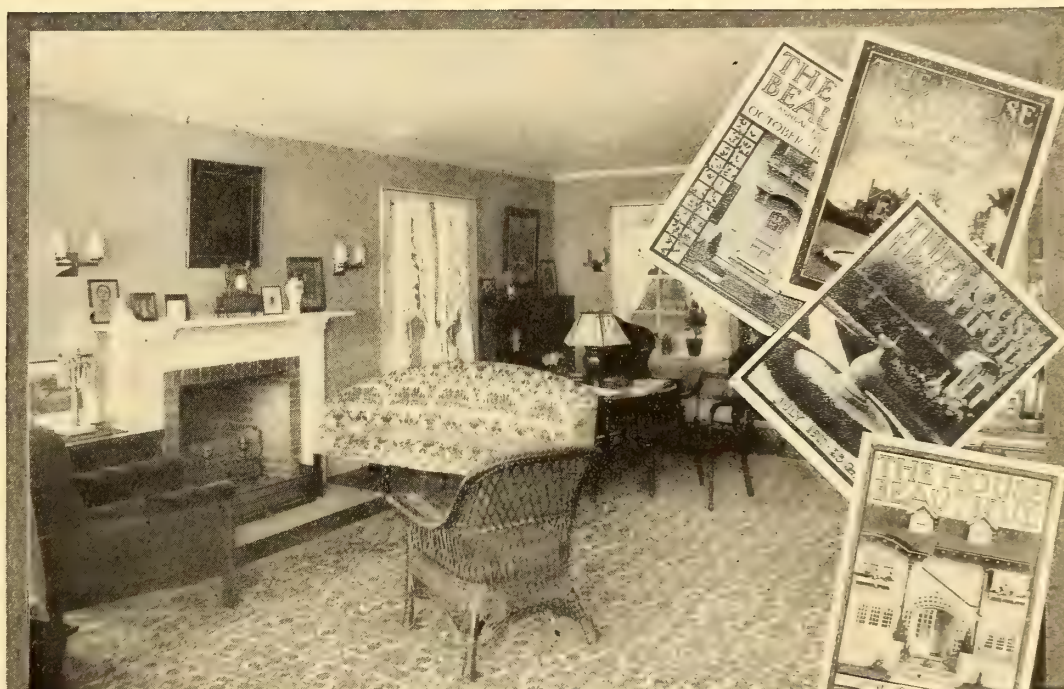
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A STRANGE EXPERIMENT

THE Oregon Agricultural College has been experimenting in the matter of dyeing eggs and chicks. In a recent poultry exhibition of the Oregon State Fair, bright pink chicks and eggs with red yolks and pink whites, both perfectly sound and wholesome, were one of the novelties shown as the result of feeding dyes of coaltar products to the birds one day, causing them the next to exhibit this gay difference. These experiments were undertaken to furnish a vivid illustration of the effect quality of food has upon eggs, and even upon the flesh and feathers of the fowls.

SOIL SURVEYS

DURING the year soil surveys were carried on in fifty-nine different areas in twenty-six different States, and as a result 22,762 square miles were covered in detailed work and 79,108 square miles of reconnaissance surveys, mainly in the Great Plains region. A total area of 359,564 square miles, or 230,120,960 acres, has been surveyed and mapped since active field work was begun in 1899.

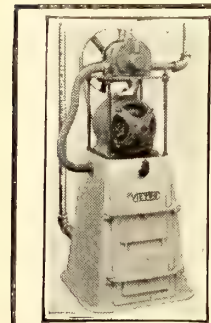
It is now clear that the pioneer methods of agriculture are inadequate for the increasing needs of our growing population. There is also abundant evidence that with a thorough knowledge of the soils and the intelligent application of modern intensive methods the yields per acre of our staple crops can be increased many times.

The soil surveys are showing the vast opportunities for crop specialization in the various soils in different sections of the country. Reconnaissance surveys of the Great Plains region thus far made have furnished a large amount of valuable and accurate information, not only to prospective settlers, but also to those farmers who are already in the areas.

ARTIFICIAL FUR

A NEW French process of making artificial fur, which has been patented by its inventor, M. Marche, merits description on account of its originality and ingenuity, if not because of its practical importance. Small pelts are sewn together, stretched, with the fur side up, on the flat bottom of a large pan, and covered with water, which is then frozen. The cake of ice is removed from the pan, and a slice, of the exact thickness of the skin, is sawed off the bottom of the cake. By melting this thin slice of ice the skins, destitute of hair, are recovered for use in the leather industry. The upper part of the cake of ice, containing the hairs, is placed with its base near a hot surface until a thin uniform layer of ice is melted and the lower ends of the hairs are exposed. The base of the cake is then varnished with a solution of India rubber, and after the varnish has become hard the ice is melted. In this way is produced a large, seamless artificial pelt, composed of the natural hair of a number of small pelts or pieces, attached to a sheet of India rubber. These artificial furs are cheap, as the natural skins are saved for other uses, and they are moth-proof, owing to the substitution of India rubber for animal tissues.

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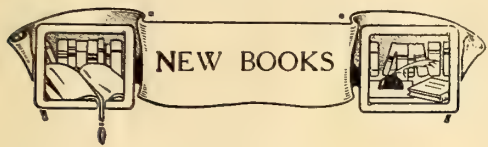
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ADVENTURES IN HOME-MAKING, by Robert and Elizabeth Shackleton. New York: John Lane Company, 1910. Cloth, 12mo. Illustrated, 350 pages. Price, \$1.75 net.

The authors of this volume are well-known writers on the subjects connected with the home and its decoration, and a perusal of its pages will prove a delight to every homemaker. The arrangement of the well illustrated chapters is excellent, beginning with the one on the Finding of a Home, and continuing through the Planning, the Library, the Fireplace, the Parlor, Dining-Room, Halls, Bedrooms, Guest-room, From Kitchen to Garret, Porch and Formal Garden, the Lawn, Spring-House and Pool, and taking up the subject of the Self-Supporting Features of a Country Home, the Picturesque Possibilities of the Barnyard, the Alterations of the Side of the House, Making a Terraced Front with White Columns, in separate chapters. All the illustrations are full-page plates in half-tone reproductions from photographs, the keynote of all the forms being that of good taste.

THE CONTRACTORS' AND BUILDERS' HANDBOOK, by William Arthur. New York: David Williams Company, 1911. Flexible cloth, 16mo. 378 pages. Price, \$1.50 net.

This very useful handbook is divided into three sections, the first containing nineteen chapters discussing the Contractor as a Business Man, dealing with Reading Plans and Specifications, the Preparation of Estimates, Nature of Contracts, Buying Material, Builders' Law, etc.; the Contractor as a Constructor—eight chapters on Weights, Measures and Their Use; Foundations; Superstructures; Concrete Forms and Work, etc.; and the Contractor as a Taxpayer—seven chapters on Fire Loss; Where to Locate; The Ideal Education for the General Contractor; A Little Library; Big Contracts, etc.

HOME VEGETABLE GARDENING, by F. F. Rockwell. Philadelphia: The John C. Winston Company, 1911. Cloth, 16mo. Illustrated, 262 pages. Price, \$1.00.

This little book will be of interest to anyone with whom the home vegetable garden is a hobby. It contains many helpful suggestions, well arranged and clearly presented. One is glad to note that this volume is the result of personal experience upon the part of the writer, and not merely a compilation from generally known facts. If it is not quite a complete guide, it is surely a very useful one, and may be recommended to the home library.

SOILS AND FERTILIZERS, by Harry Snyder. New York: The Macmillan Company, 1911. Cloth, 12mo. 350 pages. Price, \$1.25 net.

This is the third edition of Prof. Snyder's book. The author is Professor of Agricultural Chemistry and Soils in the University of Minnesota. It has been his aim to present in condensed form the principles of the various sciences, particularly chemistry, which have a bearing upon the economic production of crops and the conservation of the soil's fertility. The work as here presented includes all the topics and the laboratory experiments relating to soils, as outlined by the Committee on Methods of Teaching Agriculture, of the Association of Agricultural Colleges and Experiment Stations.

THE PRUNING BOOK, by L. H. Bailey. New York: The Macmillan Company, 1911. Cloth, 12mo. Profusely illustrated, 545 pages. Price, \$1.50 net.

One welcomes Prof. Bailey's Pruning Book in its twelfth edition to the garden library. The first part of the book concerns itself with the fundamentals of pruning, philosophy of pruning, the fruit bud, the healing of wounds and the principles of pruning. The second part is concerned with the incidentals, such as specific advice, methods of training, sketch of American grape training, the various modes of American grape training, vinifera grape training (California practice). There is not a better handbook to be had on the subject of the pruning and training of plants as applied to American conditions, and every grower, large and small, should possess himself of a copy of this work.

PAPER-BAG COOKERY, by Nicholas Soyer. New York: Sturgis and Walton Company, 1911. Cloth, 12mo. 130 pages. Price, \$1.00 net.

Paper-bag cookery has made so great a furor since its introduction by Mr. Soyer's system into this country that this handbook well supplies the extended demand. Its author, late chef of Brooks's Club, London, does not claim for the paper-bag system of cookery that it can cook everything. He makes it plain that tea must still be made in a teapot, and the difficulties in respect to soups have not yet been overcome. In fact, he honestly opens his little book with a list of other dishes to be avoided: omelets, scrambled eggs, jam, Scotch kale, beans, cabbage, cauliflower, broccoli, artichokes, macaroni, or kindred Italian pastes. Virginia Terhune Van de Water, Marion Harland's daughter, has written an introduction to Mr. Soyer's book, in which she says: "When this method is once understood it will be eagerly adopted by housewives and cooks all over the country. It is, moreover, so simple that it can be easily learned by the veriest tyro in the culinary art."

FARM POULTRY, by George C. Watson. New York: The Macmillan Company, 1910. Cloth, 8vo. Illustrated, 341 pages. Price, \$1.25 net.

The author of this popular sketch of domestic fowls for the farmer and the amateur is Professor of Agriculture in the Pennsylvania State College, and knows his subject thoroughly. It will be found of interest not only to the professional poultry-raiser, but likewise to the amateur. Its sixteen chapters go thoroughly into the various breeds—egg breeds, meat breeds, and fancy breeds—of various fowls. The sixth and seventh chapters concern themselves with a résumé of the most scientific ideas in building construction for poultry yards. There is also a chapter on various diseases and enemies in the poultry-yard, and an especially valuable chapter on preparing and marketing poultry products, with full directions for dressing, packing and shipping, shipping the live poultry, handling, shipping and preserving eggs. This is one of the most important volumes in the Rural Science Series, edited by Prof. L. H. Bailey, of Cornell.

BUSH-FRUIT, by Fred W. Card. New York: The Macmillan Company, 1911. Cloth, 12mo. 537 pages. Price, \$1.50 net.

The volume under review is the fifth edition by an author who is Professor of Horticulture in the Rhode Island College of Agriculture and Mechanic Arts, and Horticulturist to the Experiment Station, and was formerly Professor of Horticulture in the University of Nebraska, has had a wide

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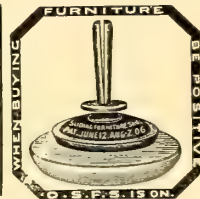
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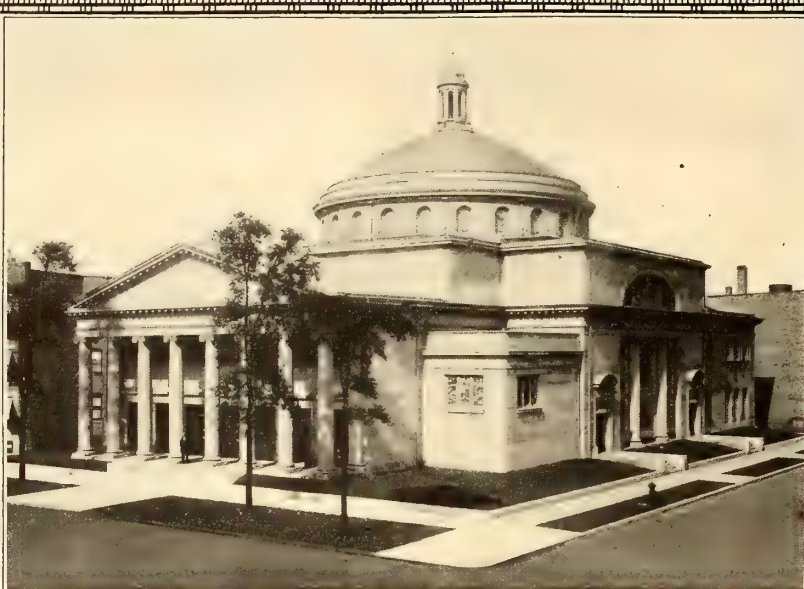
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and valuable experience and is an authority on the subject of which he writes. In this volume it has been the author's plan to treat rather of general truths and principles than mere details of practice. As its title would lead one to expect, such fruits as the strawberry and the cranberry have been omitted. The domestication of the bush-fruits being one of the more recent developments of American horticulture, the subject is of especial interest to all who concern themselves with fruit raising. The opening chapter is taken up with general considerations and the succeeding chapters are divided into sections, the raspberry, blackberry, dewberry, miscellaneous brambles and insects, and diseases affecting all these fruits, together with their botany, come under a section entitled "The Brambles." In the third part, The Groselles, we find a discussion of currants, gooseberries, their varieties, insects, and diseases injurious to them, and the botany of groselles. In the fourth part of Professor Card's book other species of bush-fruits are considered, while the appendix is taken up with a valuable bibliography of American works on the subject.

MOTHER CAREY'S CHICKENS, by Kate Douglas Wiggin. Boston and New York: Houghton-Mifflin Company, 1911. Cloth, 12mo. Illustrated, 355 pages. Price, \$1.25 net.

This delightful story by Mrs. Wiggin takes its name from Charles Kingsley's "Water Babies," wherein one finds written: "By and by there came along a flock of petrels, who are Mother Carey's own chickens. . . . They flitted along like a flock of swallows, hopping and skipping from wave to wave, lifting their little feet behind them so daintily that Tom fell in love with them at once." Mrs. Wiggin is one of our writers so well-beloved, and has such a mastery in her particular field of fiction that one does not wish to spoil the reader's delight in the present volume by giving him an inkling of the pleasure he is sure to find in reading it.

HOW TO GROW VEGETABLES AND GARDEN HERBS, by Allen French. New York: The Macmillan Company, 1911. Cloth, 12mo. Profusely illustrated, 312 pages. Price, \$1.75 net.

This book gives complete directions for growing of vegetables cultivatable in the climate of the northern United States, besides a description of each plant, its habit, value and use. The book also contains detailed agricultural directions, covering soils, planting distance, times for sowing, thinning and transplanting and picking, winter productions, storage and management of diseases and pests. Mr. French's book is intended to be a supplement to the more complete treatises upon the general subject of vegetable gardening, giving much that they omit, and purposely omitting much that they include. For the home gardener the book is invaluable as one of reference in all matters pertaining to vegetable gardens.

THE HORSE, by Isaac Phillips Roberts. New York: The Macmillan Company, 1910. Cloth, 12mo. Illustrated, 401 pages. Price, \$1.50 net.

This volume is one in the Rural Science Series, and its author is one of our best-known writers on agricultural subjects. His volume on "Fertility of the Land" and his work on "The Farmstead" being well known and authoritative. Prof. Roberts is Emeritus Professor of Agriculture at Cornell University.

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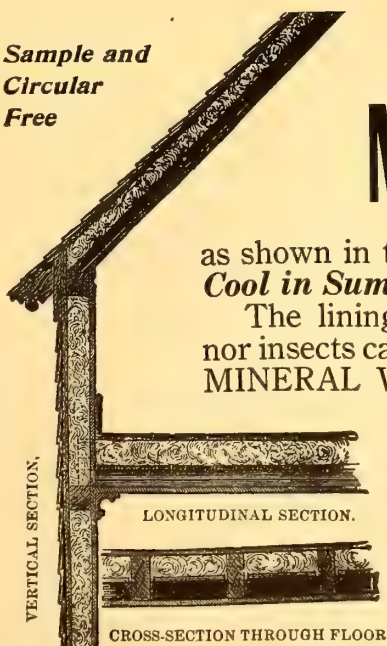
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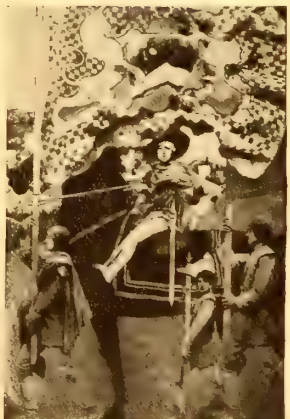
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THE WAY TO GET EGGS IN WINTER

By E. I. FARRINGTON

It used to be believed that the way to get eggs in winter was to simulate summer conditions by keeping the hens in heated houses, feeding them on hot mashes and pampering them in various other ways. After awhile, it was observed that such hens were out of condition much of the time, and laid few more eggs than those the average farmer kept in a corner of a windy barn and fed corn on the cob. Now the pendulum has swung far in the other direction. Many progressive poultrymen keep their hens in open-front houses the year around and feed them on dry grains only, with results which they claim to be entirely satisfactory. This plan certainly produces much hardier birds. Fewer eggs may be laid, perhaps, than when a little more attention is given the flock, but the difference is so small that it is more than compensated for, no doubt, by the great saving in labor.

There is a happy medium for the amateur. Very warm houses are unquestionably a mistake. Houses with muslin curtains at most of the windows are to be preferred to a large expanse of glass. An abundance of fresh air is imperative to preserve the vigor of the flock. Too much is better than too little.

The flock should consist of pullets ready to lay in October at the latest, or of hens in their second year. It is seldom profitable to keep hens over two years.

If the pullets do not begin laying before severe cold weather sets in, they may hold off until after the first of the year. Therefore, if the amateur is able to make a selection, he should choose only well-matured birds for his fall flock. The hens should be in the house which they are to occupy for the winter by the time the first eggs begin to appear; if they are moved later, they may stop laying for some time. There should be comfortable perches, enough nests so that there will be no crowding, and the floor of the house should be covered with a litter several inches deep composed of leaves, straw or coarse hay. This litter should be added to from time to time during the winter as it becomes packed down.

WHAT TO FEED.

With the housing conditions satisfactory, and a good strain of pure-bred fowls installed, the question of winter eggs will depend mostly upon the feeding. What to feed is a question about which there has been more varying opinions than almost any other pertaining to poultry-keeping. The experiment stations have carefully figured out the right grains for properly balanced rations, but when these rations are set before the hens, they have a way of unbalancing them which is characteristically perverse, as well as highly exasperating. One hen will carefully pick out all the corn, another all the oats, while a third will search for the kernels of wheat. And then what has become of the balanced ration, so far as each individual hen is concerned?

Many theorists continually inveigh against the feeding of a large proportion of corn. And yet practical poultrymen all over the country are making it half the ration throughout the winter.

There are two methods of feeding for the amateur to choose between. If his time is limited, he will do well to use hop-

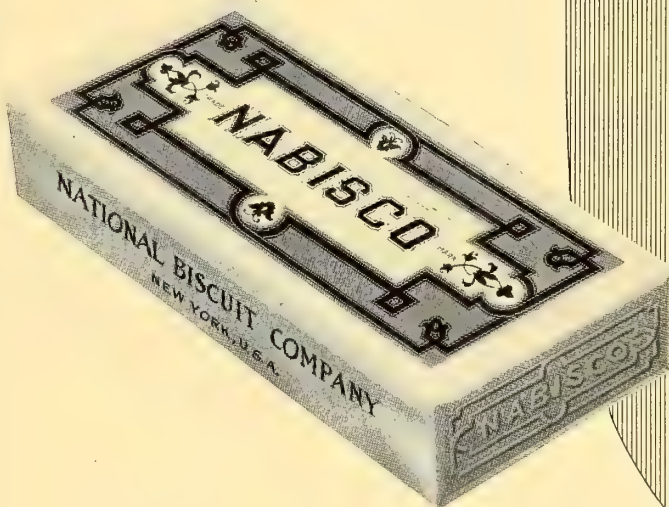
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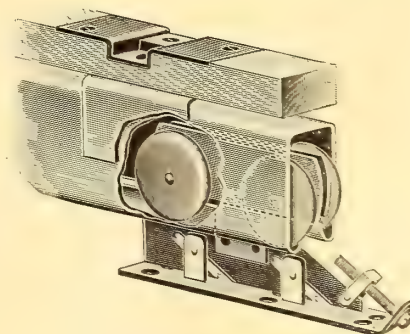
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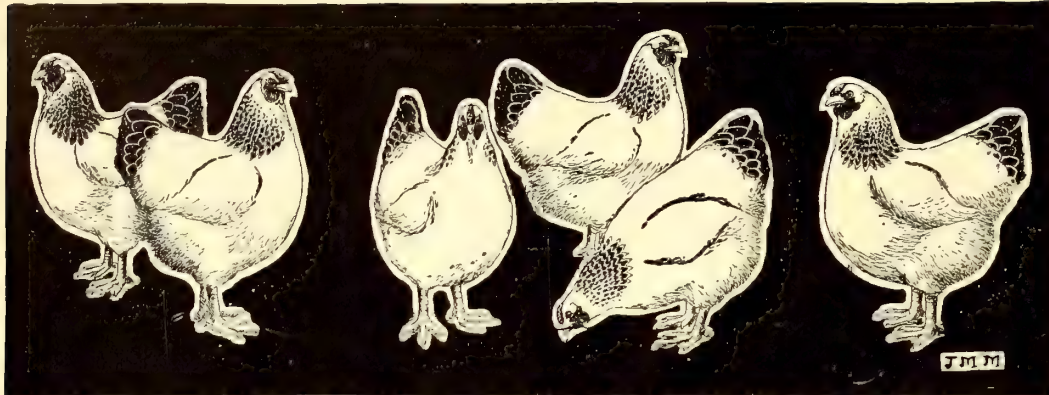
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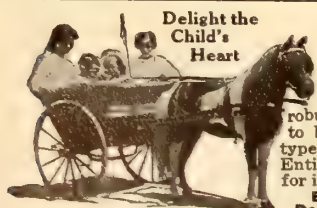
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pers and dry grains exclusively. He may make his work still easier by purchasing prepared mixtures, the use of which will relieve him of all speculation as to whether he ought to feed more of this grain and less of that. There are mixtures of ground grain to be used in hoppers, and mixtures of whole or cracked grain to be fed in the litter. They cost a little more than grains bought separately, but they offer advantages which may offset this slight extra cost in the mind of the poultry-keeper.

Hoppers may be relied upon entirely, in which case they need be filled only once or twice a week, but this plan is not one to be recommended. A far better method is to keep a mixture of ground grain in the hoppers and to scatter whole grain in the litter once a day. Then the birds are induced to scratch industriously for their living and will keep in much better condition as a result. That is the natural way for a hen to get her meals. When it can be done, it is even better to scatter grain in the litter very early in the morning and again about two hours before dark, for then the hens are certain to take sufficient exercise, besides going to roost with their crops packed with grain.

AMOUNT TO FEED.

The amount of whole grain fed must be decided upon by the poultry-keeper as he observes conditions. It may be as little as two ounces a day for each hen, and it may be more. The grain should always disappear in the litter and no more should be given than will keep the hens scratching all day. If a prepared mixture is not used, it is well to make the ration half cracked corn, with other grains making up the other half, using wheat, oats, barley and buckwheat. Little of the last should be used, however, while both wheat and oats should be fed liberally. Much will depend upon the prices of the various grains in the local market. If one kind becomes abnormally high in price, it should naturally be fed sparingly. The cost of producing the eggs is of as much importance as the number laid.

With grain fed in this manner once or twice a day, and a hopper of dry mash always before the fowls, amateur poultry-keeping is greatly simplified. If one wants to mix his own dry mash, let him use equal parts of wheat, bran and ground oats, with a very little middlings. In case the birds do not seem to scratch as energetically as they should, a handful of millet may be thrown into the litter. The hens will work hard for the seeds. If a little hemp seed is scattered about they will search for it as long as they can see, but it must not be fed freely, because of its extreme richness.

The second method of feeding involves the use of mash wetted with milk or water. Many poultry-keepers believe that the hens lay more eggs when given a warm mash once a day. Care must be taken, however, that too much is not fed; otherwise the birds will sit around in the cold and become thoroughly chilled. Even when a mash is fed, a little grain should be scattered in the litter once a day and only enough mash should be given to partly appease the hunger of the hens.

Bran, ground oats, corn meal and middlings in equal parts make a satisfactory mash, especially if mixed up with skim milk. If milk is not to be had, warm water should be used, and the mash should be dry enough so that it will crumble in the hand when squeezed. A soggy mash is an abomination, with all due respect to our grandmothers, who used to feed it ha-

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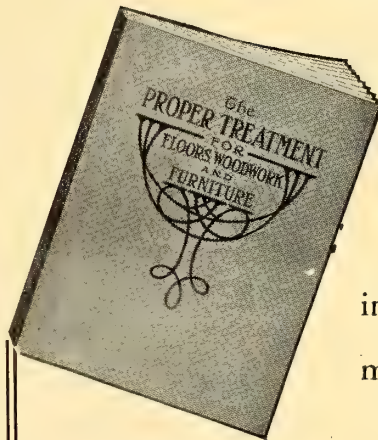
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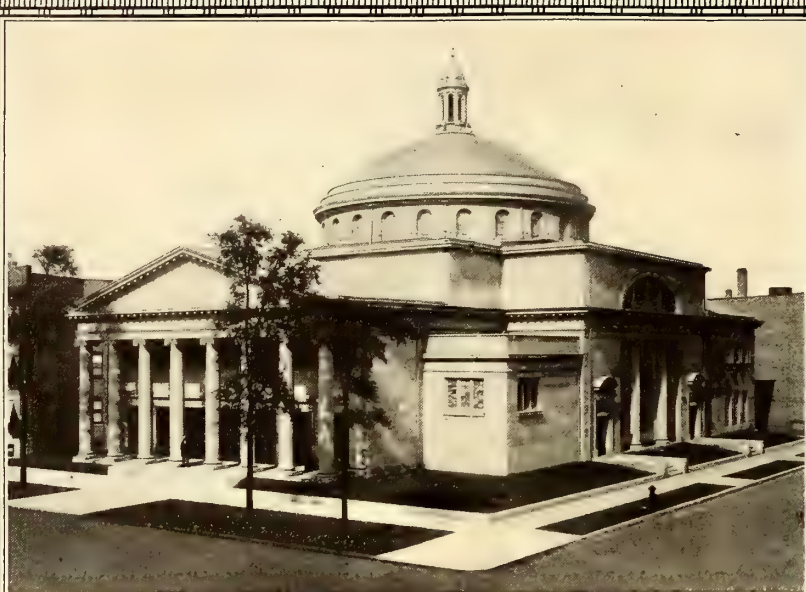
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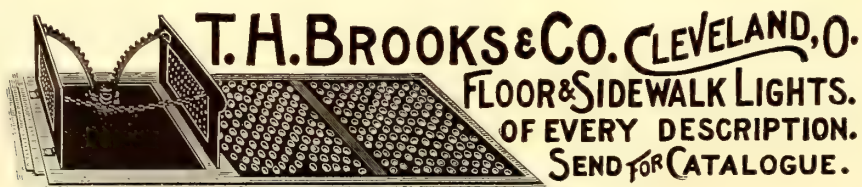
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bitually. Probably the best time to feed the mash is early in the morning. Then it helps to warm the hens and imparts a cheerful hue to their outlook on life. In that case, grain should be given before bed time. Some poultrymen who follow this practice throw into the pen just what whole corn the hens will clean up before they go to roost. It is well to have the crops filled with a ration which does not digest too rapidly, and it is very important that every hen should have a full crop at roosting time, for the nights are long in mid-winter, so that the feeding period is much shorter than in summer.

The plan of feeding mash in this way is well adapted to the family where there are many table scraps, for these scraps may be mixed with the mash to excellent advantage. A good plan is to have a pot on the back of the range all the time and to throw into it all the scraps that come to hand. If kept cooking, they may be fed as needed. When the dry feeding plan is followed, these scraps may be mixed into a mash with wheat bran and given as an extra feeding at noon two or three times a week. The hens will relish it greatly. When making a mash, it is well to put in a few pinches of salt, but red pepper and other condiments should be avoided.

MEAT AND GREEN RATIONS.

Whatever system of feeding is followed, it is very important that meat and green rations be supplied in addition to the grain. The meat may take the form of beef scraps, green cut bone or scraps of meat from the local butcher shop boiled to shreds. Plucks may often be obtained from the butcher for a few cents and answer the purpose very well.

Probably the best meat ration to force egg production is green cut bone, but that entails the necessity of owning and operating a bone-cutter. Most amateurs and the majority of professional poultry-keepers rely on beef scraps, which are sold at the poultry supply stores and which will keep a long time, as the water has been removed. Beef scraps are frequently mixed with a mash, but the better plan is to keep them before the birds in hoppers at all times. They will seldom over-eat. If there is considerable meat in the table scraps from the household day by day, it may not be necessary to buy meat in any form. Too much is the reverse of beneficial.

One of the best means to start pullets laying when they seem backward in the fall, is to feed them a little raw beef each day for a week or two—hardly more than half a dozen small pieces to a bird at each feeding.

The green ration may consist of alfalfa, clover, sprouted grains or vegetables. The vegetables are better used to supplement something else than fed to the exclusion of the other foods named. Cabbages and mangels are particularly good vegetables. Either may be spiked to a board so that the hens may feed on it as they like. Sometimes a cabbage is suspended from a string so that the birds have to jump for it, but this is a bad practice if a high jump is required, as such athletic performances are liable to result in a rupture. If potatoes are fed, they should be boiled, because of their starchy nature. Any other surplus vegetables may be fed freely.

Alfalfa and clover are very desirable. The best plan is to pour boiling water over them and let them stand in a pail for an hour or two to steam. They may be fed dry, however, if in very short lengths. In that case, it is best to have a hopper reserved for them. If a prepared dry mash

is used, it may contain both beef scraps and alfalfa, doing away with the separate purchase of these feeds. Alfalfa meal is sometimes mixed in a wet mash, but it is difficult for the amateur to determine how much to use.

Sprouted grain, especially wheat, has much to recommend it. It may be safely said, I think, that nothing is better to promote the early laying of pullets than fresh meat and sprouted wheat. The sprouts are produced by soaking the grain in water for a day and night, after which it is spread out in boxes having holes in the bottom for the water to drain off. The layer of grain should be only three or four inches deep. Each morning and evening the grain should be stirred to prevent matting together, and sprinkled with warm water. A blanket thrown over the box will conserve the warmth. If the box is kept in a warm room, only a few days will be required to produce sprouts several inches long, which will be eaten with the keenest relish. It will be understood that wheat or oats sprouted in this way will lose much of their feeding value as grain, but no other green ration will be required. This feeding plan is becoming so popular that boxes are being made for the purpose of sprouting grains. They are arranged in tiers in a frame, so that there will be a constant supply on hand. There is a pan at the bottom to catch the water; and the cost of the complete apparatus is low.

GRIT-FOOD.

Of course, the hens must be given all the grit and oyster shells they need. These things are best kept always before them. Oyster shells alone are not enough, as they are soluble. Sharp grit is necessary, as it is the poultry substitute for teeth. Charcoal is a corrective and it is well to keep it in a hopper where the birds can get it at any time.

Eggs are influenced by the rations of the hens. The flavor is affected by the food more than most people realize. At the Connecticut Experiment Station a number of hens were fed on limburger cheese. When the eggs were broken there was no question as to which hens laid them. Some of these eggs strayed to the president's table through an oversight, and—but that is another story.

KEEPING RUGS IN REPAIR

By MIRA EDSON

THAT there is a fairly large industry which has engaged in it numerous workers concerned with the mere mending of rugs alone, not everyone realizes. Yet nearly every large house which deals in rugs has a department for repairing them, and one, two or more persons who spend upon this work their entire time. This refers, of course, to the care given to Oriental rugs, which have sufficient beauty and worth to make this desirable. Careful and skillful mending can often recover a rug which otherwise would be beyond use. It is given back to its owner almost, if not quite, as good as when it was bought, and its continued life, to an indefinite length, becomes almost a matter of the care bestowed upon it.

In the menders a certain degree of skill is necessary, and a good color sense is important in order to select the exact tone of color in the new wool and to appreciate the position it is to occupy with other colors in the pattern. Some general knowledge of the rugs which come under their hands is also most important, and the work is usually done by men from the East, who possess this knowledge already, as if by inheritance.

Buy Oriental Rugs of Known Merit

Comparatively few Americans have an expert knowledge of Orientals. The materials used, the number of threads to the inch, the weave, the pattern, the dye, all enter into the question of quality.

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They must know the various kinds of rugs, that they may know the knots appropriate and be able to use them with intelligence and fitness. A rare deftness of handling is required, as the stitches or knots are set very closely together—in the original loom they were beaten into place. In the tightly enclosed space which is left when the spoiled part of the rug is removed, it seems wonderful that this can be filled in at all, and especially in the finer rugs, where there are sometimes as many as several hundred knots within a square inch. For this purpose the yarn is threaded through a needle, as is originally done in making the rug in the Eastern way upon the simple hand loom used. By means of pushing the needle through, without other aids, the stitch is accomplished, even when they come to the last one, for which there seems too little room to make it possible.

The men sit picturesquely and comfortably among the rugs and handle them and speak of them with a familiar and affectionate knowledge. Wools of every delightful color imaginable hang up within convenient reach, and these, it is claimed, are brought over from the Orient; dyed there with vegetable dyes, in the old accepted manner. Whether altogether and always so, the matter of the color of the wools is a very important one if the mending is to be of permanent value, and there must be great care taken, of necessity, to secure fine colors which will not fade out otherwise than as reckoned upon, and so spoil the work, however skillfully the rest of it may have been done. In the wools which hang in sight we perceive varieties of tones which may be the equivalents of those to be seen in the rugs which are waiting to be mended or are undergoing the process.

Here is one which has lain in a wrinkle until this became a habit and until a crease was made, so that the wools along that line are completely worn off down to the warp. The stitches or knots missing must each be patiently supplied, each in its own place, and with its own color tint, until the whole is once more covered and appears as good as new, the parts of the pattern matching perfectly. Another rug which lies near has been the victim of an accident and has a large ink spot upon it. They explain to you that from the back each stitch is picked out, one at a time. As you are on the point of wondering how they shall even keep the pattern intact, whether they can do it in their mind alone, whether they make a sketch of the forms and select the colors in advance, whether they make a water-color sketch (which you cannot believe they do, being too clever to waste time thus), they inform you that in order to save the form of the pattern they pull out only one knot at a time, replacing these as they go along. This comes as a veritable pleasure—this simple solution. First all the outline color is removed, probably black. When each of these minute knots has been restored and the outline is thus secured, one of the colors used is treated in the same way until all of this color is replaced; and so on with all of the tones, matching each carefully in turn. By this means the pattern is kept in an easy and sure way, and each tint and shade is given due consideration, so that, when complete, the design appears complete and apparently as perfect as when originally made.

Another rug—rather small, but a handsome one, having a fine luminous sheen—has been eaten by moths; a bit here, a few shreds there, until the whole would seem to ordinary view quite hopeless. Each tiny spot, however, has been cared for, carefully

(Continued on page viii)

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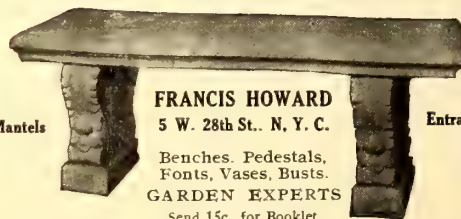
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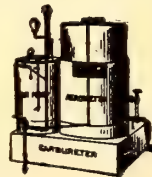
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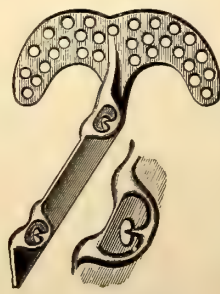
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THE JANUARY AMERICAN HOMES AND GARDENS

THE New Year's issue of this magazine will inaugurate its ninth volume, and will be as finely illustrated as any issue which has preceded it. This issue will include an article on a Colonial house of distinction, illustrated by plans and reproductions of photography, and Miss Esther Singleton's article, previously announced, on the subject of "Furnishing a House for \$1,000," together with photographs of the house and its furnishings. The subject of choosing the house hardware—metal fixtures—will be discussed by one of our foremost architects, and an authority on lighting fixtures will contribute an illustrated description of the best things in this line. Some new ideas in wall-papers will be illustrated and described by another writer. Mr. Harold V. Bowen will write upon antiques as house furnishings, and there will be a double-page illustrated feature of unusual interest and value in this number, which will include in its garden articles one on Evergreens for indoors, which will treat of a subject about which almost nothing has been written before, although Evergreens for indoor culture form one of the most important divisions of plant life adapted to indoor gardening. Mr. Robert M. Gow, Secretary of the American Jersey Cattle Club, will contribute an adequately illustrated article on the subject of "The Family Cow." The Editor believes this is the first time a practical article of just this sort will have been presented to readers interested in the problem of the home milk supply. In addition to the departments—Around the Garden, Within the House, and Helps to the Housewife (which last contains a discussion of one of the most interesting home matters, by Elizabeth Atwood)—the January issue of the magazine will present many features fully worth attention. This number will give especial attention to the whole field of the subject of house furnishings.

HELPING MR. SANTA CLAUS

THERE is always one consolation when the rush of the holiday season is on, and the ninety-ninth moment finds the distracted Christmas shopper wondering what on earth to give husband, wife, mother, father, sister, brother, or friend for Christmas—that consolation is the fact that a year's subscription to AMERICAN HOMES AND GARDENS ought to be a solution for any quandary of the sort where the recipient of the gift-to-be holds any interest in home-making. A word to the wise being sufficient, it is probable that AMERICAN HOMES AND GARDENS will come to find its way into as many Christmas stockings this year as it did last, and that will mean a pretty large increase in the number of readers that form its circle.

A COMPLIMENT

ONE of the citizens of Cooperstown, N. Y., has written the Editor an interesting letter containing the information that the committee of the Village Improvement Society of Cooperstown offered a prize for the ten best-kept lawns and premises for the summer of 1911. This

competition has just been brought to a close and the prizes awarded were yearly subscriptions to AMERICAN HOMES AND GARDENS. As this selection of prizes was entirely without suggestion upon the part of the magazine, the Editor cannot but feel that it is another mark of approval of the work which is being undertaken by this magazine. We are much obliged to the citizens of Cooperstown for their kindly interest, and we believe we have deserved it. We may say, without any conceit, we have every reason to believe we shall maintain the standard set by our endeavors in this field of homemaking journalism.

MODEL ROOMS IN MINIATURE

THE National Arts Club, of New York, recently held an exhibition of Color Schemes and Model Rooms in Miniature, designed as object lessons to children in demonstrating the possibility of good taste in home decoration at little expense. The exhibition consisted of abstract color arrangements, of color schemes for rooms, of water colors, and model rooms in miniature of different types and periods, prepared by the teachers of home economics in the public schools of New York as an exhibition of their work in relation to the use of color in household arts. The miniature rooms shown proved conclusively the great value of such teaching in our schools, and other cities should follow the example of the practical teaching of New York in this respect.

THE FURNITURE AND DECORATIVE ART EXPOSITION

THERE will be an interesting exhibition held in New York for ten days commencing on January 12. This is to be the initial Furniture and Decorative Art Exposition, a project supported by a committee consisting of John W. Alexander, President of the School Art League; Frank Aloah Parsons, Vice-President of the New York School of Applied Design; Le Mont A. Warner, Professor of Household Fine Arts at Columbia University; William Sloane Coffin, President of the Department of Architecture, Brooklyn Institute of Arts and Sciences; James Parton Haney, Vice-President of the School Art League; Edward P. Sperry, Director of the New York School of Applied Design for Women, and Eugene Pitou, Jr., Secretary of the Municipal Art Society. Industrial art as applied to interior decoration will form the groundwork of the exhibition, in connection with which arrangements are being made for loan exhibitions of various groups of furnishings, historical and otherwise. Aside from the Arts and Crafts Expositions which have been held in America, from time to time, we have not had anything planned of so comprehensive a nature, and this exposition will be sure to make a strong appeal to every homemaker.

THE Editor wishes to correct an error which crept into the attribution to an article in the November number and in the table of contents. "Trays Worth Having," by Lydia Le Baron Walker, was in both instances, through an oversight, credited to Lydia Le Baron Westcott.



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Write for descriptive matter

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(Continued from page vi)

shaken and picked out, and the place renewed by means of two or a dozen of the tiny knots, as the case may be, each having been patiently and carefully supplied. As a result there is the complete rug, magically made whole again, pattern and tone complete and sound—rescued from what seemed inevitable oblivion.

The most-used stitch is one which passes down between a double thread of the warp, around one side of it—to the left, say—then across to the other side and over the warp thread there. It is brought up again through the center, joining the other end. These two are pulled up tight and the wool cut off. The harder these ends may afterwards be pulled the tighter is made the knot, and the only way to remove it would be to pick it out from the back of the rug, as we have seen done in the case of those being mended. There are several stitches, a certain kind of rug having commonly a certain stitch as well as being distinguished by a recognizable pattern. Stitches vary in size, due to the thickness of the wool used, and also in kind. From four to six kinds comprise all which are likely to be encountered. This is a tapestry stitch and is the same used in tapestry making, except that this is larger and coarser because of the larger warp, which is needed for weight and durability, making it suited to use in a rug. The needle is passed over and under, back and forth, in a kind of darning. Each color space is filling in in this way, regularly and neatly. The parts between which there is too long a slit when the work is completed are then fastened together by means of stitches put in on the under side.

The knots are not at all hard to learn nor difficult to make, and one thinks that to make a rug in this way, using all these soft and rich colors of the wool which hangs in sight, would not be without a pleasure all its own; and then wonders that this is not done here and now. The process is certainly, one must think, vastly more pleasant than that of the factory where the worker but attends a machine; while the product is incomparably superior to that of rugs produced upon factory looms. The menders appear intelligent and interested in their work, and familiar with the quality of the rugs handled, seemingly greatly pleased to recognize any that might be unusually fine, or with a sheen due to wear in the East, instead of that which has been artificially produced.

The advantages of being able to have one's marred but cherished treasure thus renewed and made perfect, so far as can be discerned to any except perchance an expert, are too patent to need any special remark. That a valuable and beautiful thing may thus, as it were, defy time and the inroads of moth and rust and accident, can only delight us. It seems to make true in a very literal, as well as spiritual or poetic way, that a thing of beauty may be a joy forever. And the fear of peril removed to a great extent, the pleasure taken is pure and unmixed, since harms and injuries, should they happen, are deemed not entirely irreparable.

HOW TO POLISH PEWTER

THOUGH pewter ware is often left dull by those who think its appearance more artistic thus, it may be of interest to know how it can be kept bright, as our ancestors kept it. Remove finger-marks by benzoline and rub the surface of the ware with fine knife-powder. To give it a "satin" finish, use dentists' pumice powder, applied with a flannel cloth.



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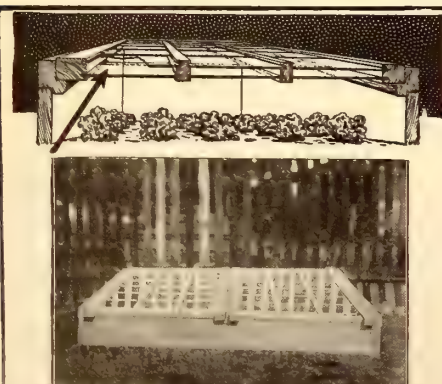
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AMERICAN HOMES AND GARDENS

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Photograph by Alman & Co.

THE GARDEN OF DUDLEY OLCOTT, ESQ., AT MORRISTOWN, NEW JERSEY

This lovely garden, some six acres in extent, of which one catches a glimpse from the pergola shown here, is one of the most perfect gardens in America, and pleasantly reminding one of the charm of a European garden, but with a distinction of its own



AMERICAN HOMES AND GARDENS

Volume VIII

December, 1911

Number 12

The Garden of Dudley Olcott, Esq., at Morristown, New Jersey

By Mira Edson

Photographs by Alman & Co.



THE life of mankind, beginning in a garden, has always been pictured as dwelling there in its happy moments. All imaginative ideals of life include a garden as their setting; all nations have embodied the dream of a garden in their literature and poetry, and in most minds the thought of the possession of a garden has been as the acme of all life's outer gifts—a symbol of plenty and of joy.

The love of gardens and the making of them, which we find increases always as conditions become more full of leisure, is not a fad or a fashion, but a very real human

desire; and, like everything else that is human and of any importance, has existed since the beginning of man's activity on earth—even earlier, if we are to accept Sir Thomas Browne's biblical inference. We remember Babylon first of all as the home of the wonderful "hanging gardens," even before the palaces and deeds of kings come to mind; Persia, China and all the East have known gardens which were not only beautiful in form and color, revelling in trees and flowers, as we understand it, but full beside of definite meanings as their art of whatever kind is—the garden itself being a symbol of the universe, and as such containing emblems of Life, Death, and Immortality. Of the English



As one wanders through the luxuriantly planted borders of this garden, by broad paths of attractively arranged bricks, there is felt the sense of pleasant seclusion that a private garden should always evoke. It is a notable example of what can be done in America



There is a spacious breadth in the design of this garden, free from the cramped feeling imposed by many other gardens less agreeably designed

gardens and the care given them in the sixteenth century, Sir Thomas More speaks. Of the gardens of Italy, with their formal beauty, which shows the blending of human plan with nature's wealth of material, give, perhaps, the nearest approach the West has to that peculiar beauty-born of mys-

ticism and symbol which belong invariably to the East.

And to the creative mind there is another joy attached to the garden, which lies in the very making of it, and is that which the artist in any department must feel. Here is created something new, which has brought, as one may say, something out of nothing, and which shows the beauty it is possible to obtain by arranging according to human plan such materials as nature abundantly furnishes. The materials of the artist or the amateur are in this case trees, flowers, spaces of lawn, or masses of shrubs. These are the materials of which gardens are made, and those who have planned even a small flower bed, in such a spirit, have felt in some degree the peculiar pleasure which can come to the artist in them. The greatest number and variety of materials and the widest range of problems are offered to the landscape architect to bring into harmony, for these are not limited to growing things alone, but include masonry, the making of roads and paths, the setting of *objets d'art*, and even the erection of pergolas and buildings and the making of pools. The illustrations accompanying this article show all of these, and are all from one enclosure. The planning of a large garden, indeed, calls into requisition a knowledge of many arts and sciences, and besides these a practical experience which can foretell growth and anticipate results which are not only to be immediate, but also for years in the future. For the peculiarity of this art is that we must wait long for the realization of plans, which necessitates hope and patience on the part of the owner as well as, in a high degree, in the one who made the plans and can see imaginatively what they represent. It is years after, as a rule, before the full beauty of a garden can be apprehended



The ground plan and key to the ingenious maze in the Olcott garden

by the eye of the casual visitor in the manner in which the architect saw it at the beginning, and toward which all development has been gradually led.

In the garden which our illustrations show the development has been made complete. They are taken from that of Mr. Dudley Olcott, and are to be found at Morristown, New Jersey. It occupies about six acres and consists of a central court in which is a pool and flower garden about which other parts are grouped, the whole designed by Mr. Ferruccio Vitale, of New York. Here may be seen a combination of formal and informal elements which is most pleasing. The sense of plan is evident; the relation of parts of the garden and grounds to each other and to the whole admirably carried out. These parts, with each detail complete in itself, yet leading one on in a delightful way, should be noted, and the relation of the house to the central flower garden. The arrangement and setting of the whole can be seen in the plan of the entire estate. It presents the idea well that these parts constitute a harmonious entity and that they produce a dwelling-place and not, after all, either a mere show-place nor yet the product of unaided nature. With this there is a freedom of detail which can give the suggestion, here and there, of being in another and a fairy world, yet with all adapted primarily to pleasant and comfortable living.

The house, as an important part of this, more or less dominates the layout. Opposite, at the farther end of the pool which lies before it, stands a tea-house. From this one may pass beyond, out of the central garden, and find one's-self before the entrance of a maze. The place of this maze can be seen in the complete plan. A plan of



Plan of the estate of Dudley Olcott, Esq., showing location of garden

the maze itself is shown on page 424, and a copy of this might safely be kept in the pocket of anyone who would essay the entrance. On either side of the tea-house are curving pergolas leading to lychgates on either side of the enclosure, through which one may pass to other parts of the



From the broad terrace at the side of this attractive house one descends by a very imposing flight of steps into the garden to the fountain-pool



The architectural features of the Olcott garden are one of its principal charms, always appropriate in design and never in the least obtrusive

grounds. The interest of the whole is focused, as we have seen, in the central flower garden with its pool, and for this the choicest details are reserved.

As one passes outward the intensely human interest decreases until, at the outer portions of the whole, we find masses of trees and shrubs guarding the parts within. The house is most attractive and homelike in its suggestion and graces well the position it occupies. In the illustration on page 425 we see it from the lower end of the flower garden, a little to one side of the middle and looking up the left-hand path which borders the pool. This walk is bordered by a luxuriance of plant life. At the farther end of the path this wealth of floral growth becomes more restrained and formal as it approaches the house with its steps and walls and accompanying vases. The frontispiece presents another view of the house and its placement and shows even more plainly the delightful freedom in the planting of the borders. The pool, shown in the illustration on page 425, forms a strong contrast to the formality of the other end near the house, and serves to emphasize the charm of each by this contrast. The playing fountain and the lychgates and pergolas of this garden keep before one the fact that it is intentionally planned for use and enjoyment.

The tea-house is shown on this page at a nearer range, and the view of distant foliage which is caught through the pillars increases the effect of a happy seclusion. We are made but the more content with the quiet of the spot because of this view of the distance beyond, a glimpse of which can be caught between the columns, while the curving form given to the pergolas increases still further the effect of safety and repose. The contrast with the woody distance is emphasized, too, by the introduction of formal

ornament, which takes the form of a large central marble bird-bath, set upon a circle of green, and by two large garden vases which stand at the top of the small flight of steps leading into the flower garden at a slightly lower level. These examples of man's art, beside their direct decorative value, give one a fuller sense of the garden's seclusion and of its having had all prepared carefully in advance. In this spot one could dream on indefinitely. Even the contemplation of a black and white representation of such a garden can touch the imagination, although color and air and sunshine must be supplied mentally to the plan. How dear such a garden would become to those privileged to frequent it one may easily guess, and one feels assured that all pettinesses, of whatever sort, must here, of necessity, fold their tent and depart silently, unable to remain in the atmosphere of such harmony.

The garden-spirit belongs to no one land or time and the interest in gardens but grows instead of lessening as man becomes more intelligent and culture advances. They are in some sort a proof of widening mentality. The greatest infliction of loss and pain to the human race has been typified to mankind in the losing of its Eden, its paradise, its garden. The ideal of all blessedness, on the other hand, has been presented, whether in religious figure or in poet's dream, as in a marvelously beautiful garden. It has always been, and always must remain one of the brightest realities of life, and an appropriate setting to every poet's dream. Innocent gaiety pictures itself to us in a garden; youthful love finds its fitting surroundings there, and for a peaceful era of contemplative happiness and the growing reticence of old age, we can think of no more suitable and lovely a setting to the home we should love, than its garden.



The house at St. Martins, the home of Mr. Paul Crompton, faces away from the roadway in order that the front may command the lovely view of the surrounding country, an arrangement that homebuilders having similar sites might do well to bear in mind

A House at St. Martins

An American House of Distinction in One of Philadelphia's Most Attractive Suburbs

By Harold Donaldson Eberlein

Photographs by Jessie Tarbox Beals and T. C. Turner



WITH a patron saint to keep watch and ward and drive away all evil sprites, the house before us ought to be a place good to live in, even if its material charms were less than they are. St. Martin, the patron saint of the neighborhood, instead of lingering about the church hard by that bears his name, has favored this house and taken up his permanent and visible abode on the eastern chimney, where the white background well sets off his coppery complexion. Approaching from the north, south or east, he is the very first thing to catch the eye and his presence confers upon the house a distinguished individuality. It was a pretty conceit, and appropriate, to fix him there, cut out of sheet copper, caught at the one supreme moment of his life, performing the act that entitled him to canonization, or rather, the act that evidenced his fitness for sainthood—dividing his military cloak with his sword to give away a half in charity. Some indiscriminating folk have mistaken him for an imp—perish the thought!—others have waxed facetiously in-

genious at times at good St. Martins expense, all of which, however, only shows how strikingly he marks the spot so that none may pass unheeding.

The site at the corner of St. Martins and Hartwell Lanes, near Philadelphia, would not have proved unusually attractive unless it had received the most careful treatment.

To begin with, the lot, 130 feet by 240, was not large, as suburban places go, and yet it was necessary to put thereon a house of goodly proportions, designed by Messrs.

Duhring, Okie and Ziegler, of Philadelphia—a house whose Long Island prototype stands in extensive grounds—and at the same time it had to be kept from looking out of scale to the premises. This result was gained by breaking the mass into three sections—the main portion of the house and the two wings, the eastern or kitchen wing of two stories and the western or living-room wing of three, there being enough difference between the roof levels to avoid the effect of extreme length. The dropping of the living-room windows agree-



One of the most inviting entrance doorways of the house at St. Martins



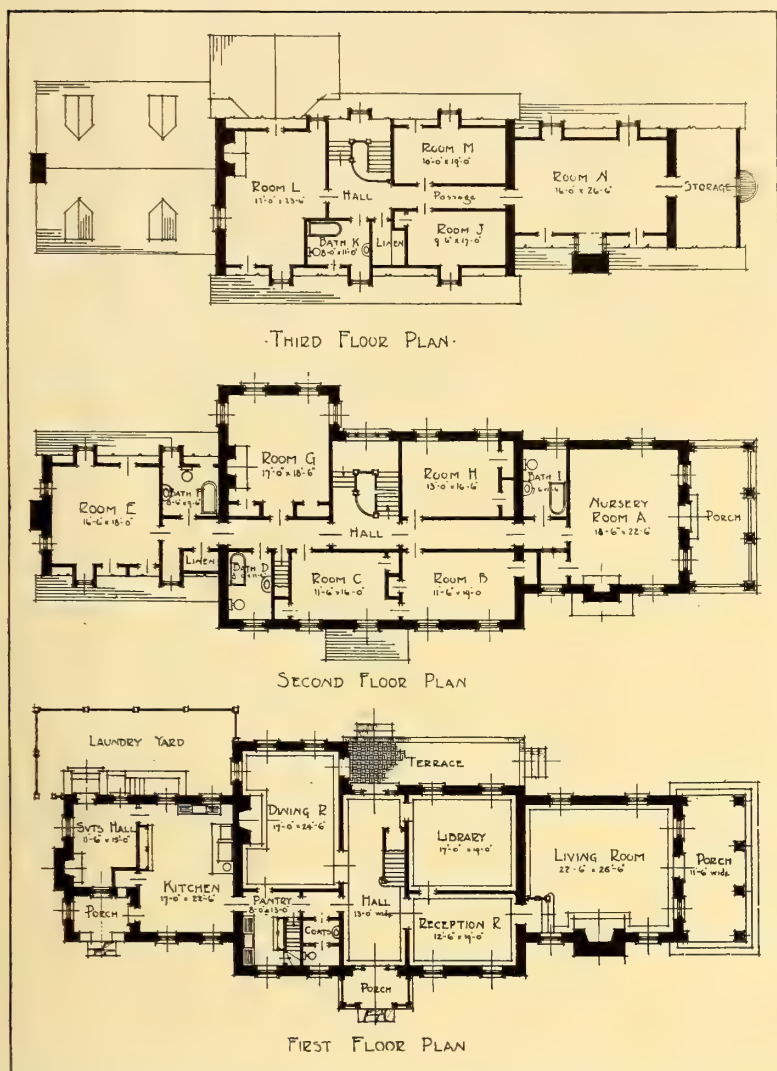
The broad garden side of the house at St. Martins is one of its most attractive features. A picturesque and well-placed garden-pool enhances the effect of the well-ordered planting that characterizes the good taste everywhere evident about the grounds that surround the house

ably diversifies the line of fenestration for the first floor, while the lowering of the wing to suit the lay of the land, which falls away toward the west, shows a rational compliance with the natural conformation of the ground and also gives the living-room a height proportionate to its size. Toward the rear of the lot, overlooking the golf links of the Philadelphia Cricket Club, is the most desirable view and it was therefore the logical thing to front the most used rooms where the windows would command the pleasantest outlook. It was doubly desirable, too, to have the chief living-rooms and the porch on this side because of the southwestern exposure with its winter sun and its prevailing summer breeze. Moreover, being away from the road, there is greater privacy.

Another feature we must not pass without notice is the hedge along the lane north of the house. It is worth mentioning, both for its own sake and also because its retention is so characteristic of the spirit that makes the most of the things ready at hand instead of seeking farther afield for things artificial. Before the house was built, a narrow strip of wild cherry and dogwood thicket, with a tangled mat of weeds and poison ivy intertwined, bordered the land. The weeds and poison vines were grubbed up, the leafy rubbish was cleared away, and lo, there was a hedge already grown, wild indeed, but full of compensating charm that proved how sensible it was to save it instead of setting out a new plantation all stiff and prim. We ought to have more wild hedges as an occasional refuge from the wearisome precision of shear-wrought exactitude. Well-clipped hedges have their very proper place, to be sure, but one does long for a bit of natural irregu-

larity now and then. Besides, a wild hedge has so much body to it and gives an appreciable degree of protection and privacy and doesn't look as though it had been borrowed from the children's Noah's Ark outfit and as though Mr. and Mrs. Noah, with very square shoulders and very round hats and perched on round bases, ought to be somewhere about, peering over the top at you with their fat, wooden smile. Then, too, what a joy is such a hedge in blossom time, with its riotous profusion of fleecy white! Again, in the fall, it puts on gay attire, the coppery red of the leaves pied with the scarlet flame of the Dogberries. Surely these recurring visitations of color are worth making some sacrifice for, particularly if the sacrifice means giving up only a bit of stiffness.

Reference has already been made to the harmonious distribution of the mass of the house to suit the fall of the ground and to avoid seeming too large for the lot. Chimneys built out beyond the wall line pleasingly break up the mural spaces, while the full-bodied stack from the living-room fireplace emphasizes the rightful position of the hearth as the true center of the family's life. The service end of the house may be said to have a conveniently disappearing quality; it does not obtrude itself at all, your attention would never be unpleasantly attracted thither, and yet there is plenty of it—it takes up the lower part of one whole wing—with ample accommodation for all purposes. Covering the entire western face of the living-room wing is a two-story porch, incorporated within the lines of the house, the gable end supported on four pillars. On the level of the third floor, within that part of the gable directly over the porch, is a commodious trunkroom. On the south or



Floor-plans of the three stories of the house at St. Martins

garden front a third wing juts out from the main portion of the house at right angles, making a part of the dining-room downstairs and a bedroom above.

The observer cannot help being struck by the unusual appearance of the wall texture and wondering how it was produced. At first glance the house seems to be roughcast and yet, on closer inspection, the underlying stones and mortar joints are easily discernible. This is the way it was done. Rubble walls of rough native stone were built with as little projection as possible on the exposed face of the individual stones. Then, instead of pointing, coarse mortar was slashed on broadly in a dashing manner and further roughened by drawing the edge of the trowel upward instead of sidewise or downward with a more smoothing stroke. As a result the walls present a nearly flat surface, the sides of the stones plainly showing through the surrounding flood of mortar. After the walls were dry a coat of whitewash was applied. This sounds complex, but is really simple and gives a remarkably pleasing, mellow texture. The roughness absorbs so much light that there is not the usual glare from a white wall. Dark green shutters and copper rain-water heads and pipes stand out in strong relief against this background, affording welcome variety and contrast.

Viewed from whatever point the roof line shows a decorous repose. From the north or south fronts we see three long ridges, that of the central portion of the house slightly higher than those of the wings. At the eastern and western ends the gables of the wings display the same pitch as the gable of the main roof and preserve the simple harmony of parallel lines. Although dormers break the slope of the roof, they are so disposed that the feeling of tranquillity is not lost while, at the same time, all of the third floor is rendered light and usable.

On all four sides the arrangement of the fenestration is singularly felicitous. It is not only full of life and pleasant to look upon, with its orderly spacing, but entirely adequate and satisfactory regarding interior lighting. The numerous small, square panes make the windows appear to cover a much larger space than they actually do and give the house a remarkably wide-awake countenance. The proportions of the windows are especially good and worthily reflect the grace of the early Colonial model they were fashioned after. In the middle of the south front the triple window that lights the stairway is set beneath a flattened arch whose countersunk tympanum is filled in with masonry. This bit of low relief is effective and, in the simplest way imaginable, satisfies the want of a scrap of adornment to break an expanse of wall surface that would otherwise seem harsh and bare. A trellis, whose slats stand out from the wall horizontally, rests on brackets beneath the triple window and makes a framework for a porchlike canopy of vines over the south door and the small-paned French casement, both of which open on the brick-paved terrace, while another larger trellis, flat against the wall between the living-room windows, runs from the ground to the eaves. The leaded half-length side lights and fanlight of the north door are contrastingly replaced at the south by full-length side lights of ample width, filled with small, square panes.

Entering the north door we find ourselves opposite a graceful staircase ascending to the second floor by two flights connected by a long landing under the triple window already mentioned. An old house, about to be torn



The effigy, in silhouette, of the neighborhood's patron saint in the act of dividing his military cloak with his sword in order to give half of it away in charity to a shivering soul, commemorates the legend by its place on the chimney and is one of the unique features of the place



The front of the house at St. Martins, with its commodious upper and lower pillared porch, suggests architecture of the Southern plantation type

down, supplied this part of the fabric. The practice of despoiling old houses of their woodwork, or of anything else they may contain, cannot be too heartily deprecated or too severely condemned but, when a building is actually in the hands of the wreckers, it is surely the part of wisdom to save the good things. To the right, a wide doorway opens into the reception-room—a business-like apartment, quite large enough for seeing such folk as one does not wish to urge to prolong their visits. From the reception-room a door admits to the library, whose big southern windows look out upon the garden. One commendable feature about the library is that it can be shut off entirely from the rest of the house and guarded against intrusion—likewise the onslaught of well-meaning, but misguided housemaids, in whose eyes books and papers are fair game for duster and besom rather than the things that really do need cleaning.

Passing on through the reception-room as an antechamber we go through a wide, generous doorway, down three low steps, into the living-room—the very heart and center of the family life and, as it should be, the pleasantest place in the house. The delicately spindled bannisters at the side of these steps make one of the most characteristic touches of an uncommonly interesting room. The mere act of descending into the atmosphere of genial cheer gives one the feeling of settling down into a comfortable family nest. Two windows on the north—one on each side of the fireplace—two on the south, giving on the garden, two on the west and between them a glass casement door opening on the porch, admit a flood of light all day long. Half-length white curtains, with inside draperies of figured cretonne,

deck the six windows and the porch door. The peacock and foliage design of the cretonne, carried as it is around three sides of the room, produces the illusion of being in a bower, particularly as there is no distracting note in the wall-paper, for here, as elsewhere throughout the house (save in the nursery, the maids' sitting-room and one or two of the bedrooms), the paper is of a modest, striped, pale buff, chosen with the intent that the walls, being all alike, should present merely an agreeable, inconspicuous background and not attract notice by a change of pattern from room to room. On the north side, equipped with a crane and of sufficient dimensions to do justice to a wide family circle, is the fireplace, set in a mantel of good Colonial type, with reeded pilasters and central panel. Several rare old English bookcases of carved oak diffuse an air of intellectual substantiality from their shelves and are the solid "right worshipful" of the commonwealth of furniture. Sofas, easy chairs, secretaries and all the rest tell a tale of thorough comfort and convenience, while the little tea-table near the lounge is an earnest of perennial hospitality.

Two children's chairs, side by side against the wall near the steps, call to mind Southey's remark that "a house is never perfectly furnished for enjoyment unless there is a child in it rising three years old and a kitten rising six weeks." The children, at least, of this household can be vouched for. As to the rest of the furnishings "for enjoyment" it may be confidently stated that everything about the establishment plainly proclaims it was meant for wholesome ease. Some people inhabit houses; others live in homes. This abode is everywhere instinct with the spirit of home. Every inch of the house is meant to be used and lived in, and is. There is, heaven be praised, neither parlor nor drawing-room but a *living-room*. Here is complete emancipation from the frightful domestic ideals of a period, now happily past, that prescribed a parlor, a region of starched gloom and perverted furniture, to be followed later by its lineal descendant, the oftentimes no less dreadful drawing-room, where one's coffee after dinner would be chilled by the marrow-piercing frigidity of the surroundings though the thermometer, if it were consulted, might register eighty.

Speaking of dinner and coffee brings us to the dining-room, which we enter from the hall through a pair of glass casement doors so placed as to balance the French window opening on the terrace at the other end of the room. Three excellent paintings form the only adornment of the walls and are the more effective for the absence of distracting objects. The design of the bricks on the hearth is worth notice—set in broad bands of cement, they are laid swastika-wise, each swastika revolving about a small, square tile at



The dining-room is simply, but very attractively and elegantly furnished



The note of simplicity is, perhaps, most emphasized in the large hallway

its center. From both hall and dining-room doors communicate with the kitchen penetralia, whose mysteries, along with the subterranean equipment of laundries, storerooms and the like, the reader had best explore for himself with the aid of the plans. Suffice it to say that everything is there to satisfy the most exacting housekeeper. One word, however, must be spoken in praise of the servants' sitting-room, a bright, sunny den just off the kitchen. If more houses had such spots there would be fewer domestic tempests.

Upstairs this house is just as sensibly arranged as you would expect it to be from knowing it downstairs—airy chambers and plenty of baths. Many of the bedrooms have fireplaces, so that it is plain to be seen their practical utility for both ventilation and heating has been recognized—a truly gratifying thing when one thinks how often they are looked upon, and by people who ought to know better, as a merely decorative feature for the downstairs rooms.

Having decorously come in at the north door and done the polite thing by all the parts of the house, let us now step out the south door into the garden. Descending the steps, at the end of the paved terrace, we find ourselves amid a gorgeous array of bloom in beds and borders separated, on the one side from the lawn and on the other from the tennis court, by low hedges of privet. In the center is a pool inhabited by goldfish and aquatic plants. Of course, the children often fall into this and scare the fish, but then, why shouldn't they? It is the inalienable right of childhood to fall into pools in one's best bib and tucker and get sopping, just as it is the inalienable right of childhood to make mud pies or get into the pantry and steal jam and, also, just as it is the inalienable right of grown-ups to inflict con-dign punishment therefor with the parental slipper, and will



The living-room is bright, cheery and thoroughly homelike, and is an example of good taste in interior decoration

be as long as good red blood runs in Anglo-Saxon veins. The space devoted to the formal garden is small, but it is remarkable how much has been got into it and how effective it is.

Completing the survey, one gladly admits that the problem of putting a roomy suburban home on a moderate sized lot has been successfully solved and that the architects, at the same time, have caught a dignity and repose that generally only a long tale of years can bestow on a house. The best thing about it all is that such a house can be built for a reasonable sum, and for a sum within the reach of families in ordinarily comfortable circumstances.



The lines of the generous proportions of the house at St. Martins suggest an air of hospitality that is not always to be found in houses of this size

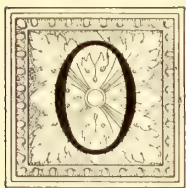


Courtesy of the Metropolitan Museum of Art

The Ardebil Mosque Rug, formerly in the Yerkes collection, is one of the three world-famous rugs from the mosque at Ardebil, in northern Persia

Oriental Rugs and How to Select Them

By George Leland Hunter

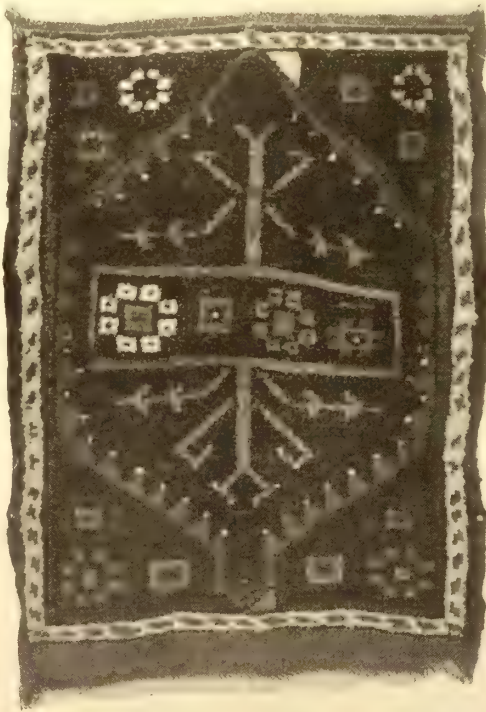


ORIENTAL rugs cost from three to ten times as much as domestic wiltons. And they are worth it. But not to persons who utterly lack artistic perception. It is true that the use value of Oriental rugs is great. They wear well, because every knot has been put in to stay. But if art value were to be entirely disregarded, and the palm awarded on the basis of use value alone, the domestic brussels would easily win out. Of course, in buying rugs or other furnishings for the home, few are so stupid as to seek durability without regard for looks or style, any more than a woman buys a hat because the milliner assures her it will outlast all other hats.

But inasmuch as the manager of an Oriental rug department in New York city has seen fit in his newspaper advertising to scoff at art value in Oriental rugs, and as his example has been followed to some extent in other cities, it seems important here to reiterate what every honest dealer knows and admits—that it is the art value of Oriental rugs which makes people willing to pay so much more for them, and that if all persons in the United States suddenly became art-blind, like the manager mentioned above, New York city would cease to be a great Oriental rug market.

A visit to the Metropolitan Museum of Art, New York city, is very instruc-

tive on the subject of art values in Oriental rugs. The examples shown there are from one hundred to four hundred years old and all of distinguished excellence as regards design and execution. One of the most remarkable is the Ardebil Mosque rug, formerly a part of the famous Yerkes collection, and the smallest of three rugs sold to a Sultanabad dealer thirty years ago, when repairs to the mosque at Ardebil, in northern Persia, made new floor coverings necessary. The largest of the three rugs was the famous one now in the Victoria and Albert Museum at South Kensington and often called the most important Oriental fabric in the world.



An Anatolian Mat of this sort, woven in Asia Minor, twenty by thirty inches, can be bought for less than a dollar. It is effective in rugged surroundings, but not durable nor to be recommended

The Ardebil rug at the Metropolitan Museum, here illustrated by courtesy of the Museum authorities, is marvelous for design and color and will repay long and careful study. It was woven in the Sixteenth Century, is ten feet and eleven inches long by five feet and ten inches wide, and has a woolen pile of 485 knots to the inch, tied into a silk web. The field shows ten groups of struggling animals (dogs and bears) in yellow and blue on wine-red ground. Boars and tigers and a wealth of flowers and foliage fill the rest of the spaces. The main border is in blue, with outer border in red and inner border in cream. But no description can even suggest the softness and delicacy of the color tones

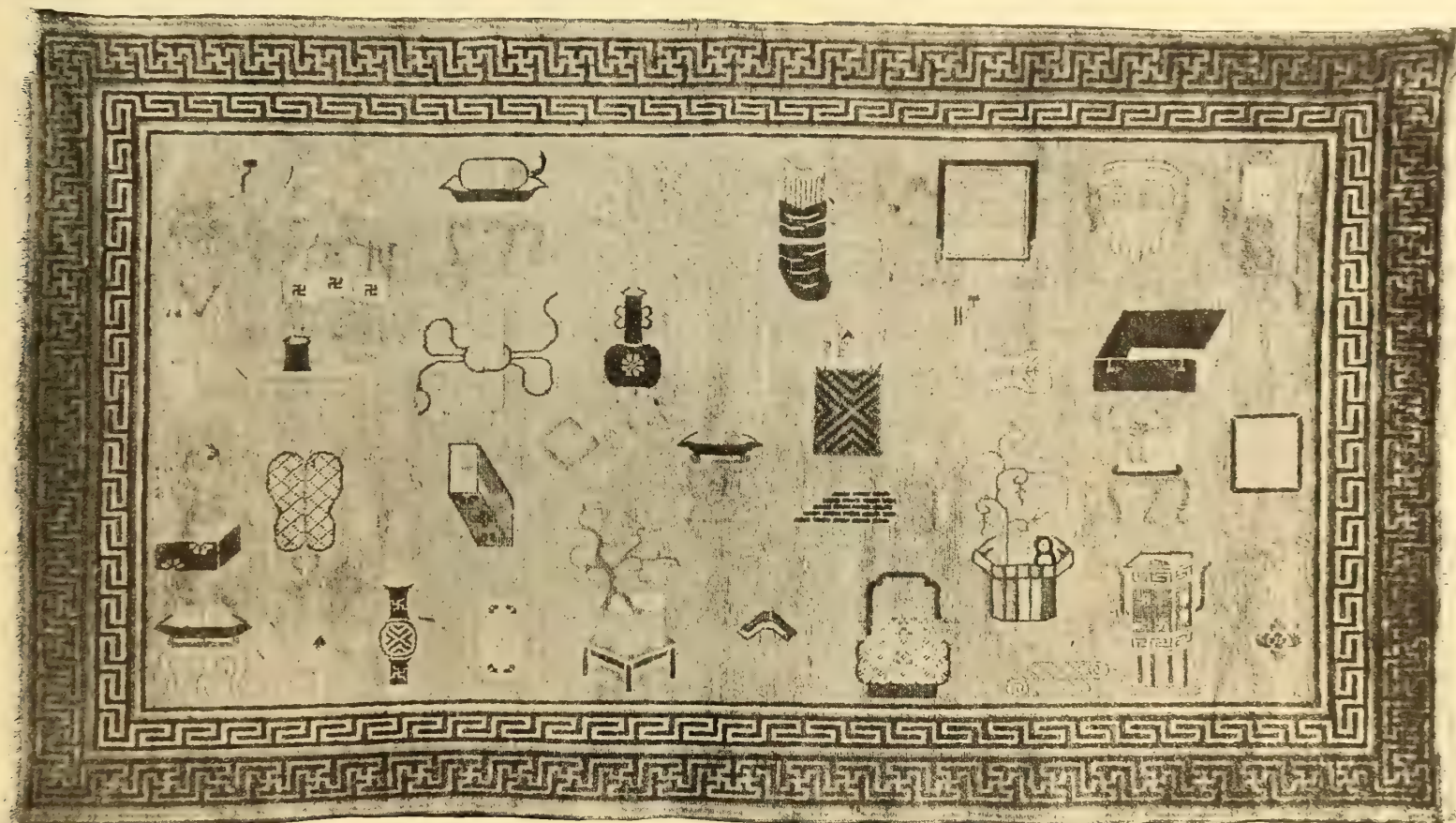
and contrasts, or make clear how perfect is the combination of pattern with animal figures. The only other weaves worthy to be compared with rugs like this are the Fifteenth Century Flemish tapestries. They, too, have grounds completely floriated in flat design, but vividly. An illustration of this is the Burgundian tapestries at the Metropolitan Museum.

Of course, antique rugs like those at the Metropolitan Museum are out of the question for the average home. They merely serve as an inspiration in the direction of good art and away from bad art. For the qualities that make them famous are the qualities that dis-



A beautiful Cashmere rug of moderate cost

tendency to large octagons, lozenges, stars and diamonds. The warp is of wool and long fringes of gray wool at top and bottom are common, with wide flat borders often figured in tapestry weave or broché. An Afghan Bokhara three feet and ten inches by two feet and nine inches may be purchased for about twenty dollars. Such rugs may be found in any of the large Oriental rug shops throughout the United States. Of the Bokharas as a class, the Afghans are the darkest and coarsest. Other types are the Khivas, Yomuds, Tekke Turkomans, Princess Bokharas, etc. The designs and colors of Yomuds approximate those of Dag-



A very rare specimen of the Chinese rug, valued at \$1,500. This rug has a salmon-pink ground, with symbolic figures in blue and lemon color

tinguish a very good rug from a bad one.

It is not age, but art, that enhances the value of an object. Anyone who pays a high price for a bad rug merely because it is old throws away his money. Whether a rug is antique or antiquated is not of the slightest importance to the average purchaser, except that those claimed to be antique are likely to be imperfect in design, color, texture or material.

The important thing is to select rugs that are in good condition and that in every way fit the apartment they are to adorn. Much depends upon the style of the rooms. Kermans are out of place in a Mission room, just as rugs of the Bokhara type are out of place in a Louis XVI room or in an Adam room.

Bokhara rugs have strong colors, particularly reds and browns, heavy conventional or geometrical designs with a



A Belouche, measuring 3x5 feet, costs \$12

hestan, west across the Caspian Sea from Bokhara. While Bokharas are not suitable for environments of delicate color and design, they take naturally to rooms wainscoted in dark oak and having beamed ceilings, which means that they are appropriate for use in Old English halls and living-rooms, and in most Mission, arts and crafts and simple modern rooms.

To the Bokhara group belong also the Belouches from Beloochistan, south of Afghanistan, that is, south of Bokhara. The example that is here illustrated is about three by five feet and sells for \$12. The tawny part of the pile is undyed camels hair, which is a distinguishing characteristic of Belouches.

Another type of rug suited to rugged surroundings is found in Anatolian mats, woven in Asia Minor (for which Anatolia is another name) coarsely of cheap coarse wool in crude colors,

and are the sort often used by dealers in this country as advertising attractions, being sold at cost, usually in such instances without taking freight or handling expense into consideration. The one illustrated is twenty by thirty-two inches and wholesales for ninety-eight cents. It is an Oriental rug, but that is its chief claim to virtue. I have often wondered what people do with rugs of this sort after they get them home, for they are certainly neither beautiful nor durable.

Cashmere rugs are a different story. Here we have an opportunity to become enthusiastic over a rug of moderate cost. I regard Cashmeres as the best value offered in Oriental rugs to-day. They are exceedingly durable, hold their shape and color, and harmonize with furnishings of the average everyday type. The Cashmere rug illustrated here is four by six feet and sells for \$25. It has not the lustrous velvety pile that characterizes such antiques as those to be seen at the Metropolitan Museum. Indeed, it has no pile at all, being woven by twisting the weft over successive pairs of warp threads in a characteristic way all its own that produces a surface resembling flat embroidery on canvas. But the texture is not uninteresting, especially when one understands what it is and does not regard it as a worn-down pile. Cashmeres are made in the Caucasus (in southern Russia), a territory formerly a part of Persia, and get their name from the resemblance of their shaggy backs to those of the once famous Cashmere shawls. In the accompanying illustration the upper end of the Cashmere rug has been turned over and down in order to show the texture of the back and the fringe. The loose threads are those left by the passage of the bobbin from block to block of the same color, as in real tapestry and in loom-figured Cashmere shawls, which are also real tapestry.

Kelims are another type of Oriental fabric with flat surface. In weave they are *not like Cashmere rugs but like real tapestry*, and where blocks of different colors meet parallel with the warp, there are open slits, as in the product of the Gobelins and of Aubusson. The loose threads on the back are usually clipped close. Kelims need to be lined with heavy canvas for use on the floor, and will then give good service. The texture is exceedingly interesting, being a pronounced rep. The designs are geometrical and very simple. The Shirvan Kelim illustrated is eight feet and four

inches by three feet and six inches, selling for \$25. It is not as heavy in style as the Bokharas, and can be used in rooms that are more or less Colonial in type. The Sehna Kelims are of finer weave and pattern and much more expressive. The Anatolian Kis Kelims are carelessly woven, and the larger sizes consist of two pieces sewed together lengthwise, but seldom coming out even at both ends. Kelims also make splendid table covers and portières, especially with Oriental rugs on the floor, and in rooms that have Oriental or simple walls and ceilings in woodwork and plaster.

Hamadan runners are excellent and among the most trustworthy types in the market of the rugs woven in western Persia. The pile of the wide outer border without pattern is entirely of camels hair. Camels hair also appears in the ground wherever the design calls for its pleasing tawny or light-coffee color. The size of the rug before us is three feet six inches by seventeen feet and three inches, so long that the photographer was able to get only part of it into the picture, and in order to show the pattern more clearly took it at an angle that exaggerates the perspective of the foreground. A rug like this sells for about one hundred dollars, but there are in the shops many Hamadans of somewhat less excellent quality for a smaller price.

A word here about runners from the decorative point of view. Runners—meaning rugs that are *very* narrow for their length—are less expensive than square rugs of the same quality and area, especially in the large sizes. Moreover, two small rugs and a runner often look much better on the floor of a room than a single large rug. And there are other rooms that look best with one small rug and two runners, and others with small rugs only. Not that I would decry the large Oriental rug of high quality. Far from it. There are Saruks and Kirmans and Mesheds woven to-day that in every respect equal the ancient rugs, and that are worthy to adorn the floors or

even the walls of the most magnificent palaces. But the tendency to equip interiors with room-size rugs that cover the floor except for an eighteen to thirty inch border, should be discouraged. It is quite as bad taste as entirely concealing the floor beneath a strong figured domestic sewed-together carpeting and it costs much more. Small rugs are better quality for the same price, are easier to take care of and last longer, and can be rearranged and transferred



The Kelim is a finely woven rug. The weave is much like that of real tapestry, presenting a flat surface. They need to be lined to render good service. The Shirvan Kelim here illustrated is 8 ft. 4 in. by 3 ft. 6 in., and costs only \$25



The Kirman comes in various sizes. Such an example as the one illustrated above, measuring 6 ft. 1 in. by 4 ft. 3 in., could be had for \$70

from room to room. Large rugs have necessarily a heavier structure that is more expensive to weave, and are more likely to crack and ravel at the ends and be injured by dust and moisture. I think that the largest rug in a room should not cover over one fourth of the actual floor space, although of course I recognize the fact that the general decorative plan often renders necessary the room-size rug. But for the small house and the limited purse it may be set down that large Oriental rugs are unattainable.

In a large rug strength is of vital importance. That is one reason for the popularity of Gorevan rugs. Good examples, about nine by twelve feet, sell for \$195. Both weave and pattern are coarse, but the structure is solid and the knotting firm. The woolen pile is high and soft beneath the foot. The warp and weft are of cotton and the fringes are consequently short, with hardly any of the flat web projecting. Resembling the Gorevans, but with designs of greater intricacy and more floral and naturalistic in treatment are the Serapis. The Kirman rug illustrated is six feet one inch by four feet three inches and sells for \$70. It is a fair specimen from a section of Persia that has for centuries been famous for the quality and designs and colorings of its rugs, and that still maintains its reputation. Kirmans come in all sizes from the smallest to the largest, and are noteworthy for the softness and excellent quality of the wool, as well as for the delicacy of the colorings and the exquisite vividness of the floriated grounds. Cer-

tainly the flowers woven into Kirman rugs have never been surpassed by those conventionalized on any other looms or in any other form of art. In some of the more pretentious Kirmans birds, animals, landscapes and human figures appear.

The Tabriz rug illustrated is four by five feet and sells for \$50. These are among the best of the modern Oriental rugs, in spite of a tendency to curl that in some of them needs frequent correction. The texture is exceedingly fine, as is the ground floriation that rightly suggests Kirman

influence, but the pile is harder to the touch than that of Kirmans, and in response to "modern demand" the field is occupied by a large medallion that leaves considerable of the surface unpatterned. Like all rugs with cotton warp, Tabrizes have a short fringe. A just reason for complaint against the Tabriz and some other large rugs was that lack of fringe and flat web border left the ends likely to ravel. Every visit to the cleaner made repairs necessary. A wide web border and shaggy fringe like that of Bokharas



A 4x5 ft. Tabriz rug costs \$50. It is one of the finest Oriental rugs

would be neither appropriate nor possible, but it seems as if more pains might be taken to insure the durability of such expensive works of art, and I caution the readers of AMERICAN HOMES AND GARDENS to decline to purchase rugs that are not satisfactorily finished at both ends. The sides are well finished in practically all rugs, either selvaged or overcast.

The Mir Serebend illustrated is an excellent specimen two feet and eight inches by nine feet and a half, of exquisite velvety texture and in soft grayed-down coloring.



This example of the Tekke Bokhara is very effective in paneled rooms. The field is in tones of rose on blue-black. The rug sells for \$100 and is well worth it. The field of Serebends is apt to consist of the so-called cone, or pear, or palm leaf motif often repeated, with stems of alternate rows pointing in opposite directions.

A much thinner rug than the Serebend, indeed the thinnest of all Oriental or domestic rugs, but none the less interesting for all that, is the Sehna. The weave is exceedingly fine, with sometimes as many as 400 knots to the inch, and the weft is not infrequently of silk that in combination with the fine cotton warp and the "Sehna" knot makes possible the fine texture. Sehna's pucker and curl most disagreeably and require constant care to keep them in good condition. But the genuine ones have a surface and silken sheen of extraordinary beauty and the designs are remarkable for their delicacy. They sometimes have a center medallion with figured corners on a plain field, but more often an all-over intricate repeat, always with several narrow borders.

Among rugs not illustrated for lack of space are Daghestans, Cabistans, Shirvans and Kazaks from the Russian Caucasus. The designs are straight-line and geometrical to a degree, especially in Daghestans, where the intricately patterned surface suggests a mosaic. Even the animal figures so common in Cabistans are in straight lines like the drawings of American Indians and primitive peoples generally. All of these rugs come in small sizes only,

Daghestans having a tendency toward square shapes and Cabistans often running very long for their width. Kazaks have a very deep, soft, loose pile and rich coloring. Shirvans are of coarser weave and pattern and duller coloring than Daghestans, in which white, grays and ivory and thin bright colors predominate. Shirvans have a long, rough, natural-gray fringe. Daghestans and Kazaks have a short woolen fringe, while the warp of Cabistans is often of cotton. These Caucasians were among the first Oriental rugs brought to America, and are very appropriate for use in the average American home that has more or less of a Colonial character.

The Chinese rug illustrated here is five feet by nine and sells for \$1,500. It resembles none of the rugs we have been talking about. Indeed, Chinese rugs are in a class by themselves, as regards design, and even more so as regards coloring.

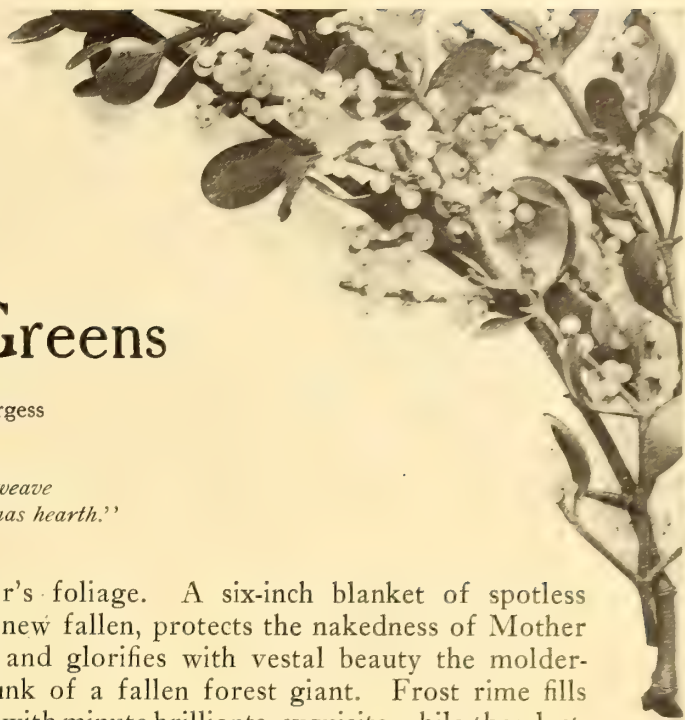
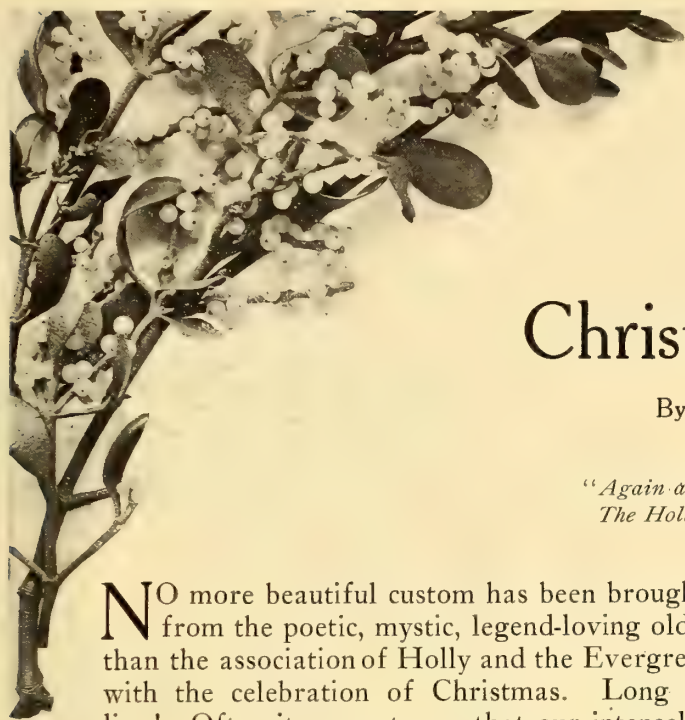
The two colors that the Chinese most affect are yellow and blue. By yellow I mean here the beautiful golden tones of yellow, and by blue the wonderful dark and light blues that the Chinese have such a knack for producing—the makers of porcelain as well as the weavers.

The rug before us has a cotton warp with woolen pile of average depth and fineness. But the ground is a salmon pink as soft as the down-covered tones of a ripe peach. Against it the figures are wonderfully set in blue and lemon. The borders are both in yellow on dark blue, the inner ones showing the simple fret design, the outer one the swastika fret.

Apparently the rug was woven for some Chinese potentate of high culture and scholastic attainments. The objects that lie in the field of the rug are symbolic of art, literature or religion. Music is suggested by the reed mouth organ, painting by the brush and cylinder, poetry by the writer's hand screen with book and scrolls, chess by the chess board. There are incense stands and stands for flowers and fruits. Also a temple banner, a spear, a wine pot, a fan of state, a sounding stone of jade, etc. But whoever the rug was woven for has long since passed on and yet it has come into the hands of those who, through an interest developed through a study of the art of Oriental rugs, perhaps prizes this one as much as the old-time Confucian for whom it must have been woven. This rug came from eastern China, from the country tributary to Peking. Rugs markedly Chinese in character also came from Russian central Asia, from the old city of Samarcand, on the trans-Caspian railway. Samarcand rugs are intermediate in weave between the Chinese and the Persian, being looser and softer than the latter, but decidedly firmer than the former.



The Mir Serebend runner here illustrated is 2 ft. 8 in. by 9 ft. 6 in., and is well worth its cost of \$100



Our Christmas Greens

By Thornton W. Burgess

*"Again at Christmas did we weave
The Holly round the Christmas hearth."*

NO more beautiful custom has been brought over from the poetic, mystic, legend-loving old world than the association of Holly and the Evergreen tree with the celebration of Christmas. Long may it live! Often it seems to me that our intensely practical American atmosphere is stifling much of the beauty of life. And so this increasing tendency to decorate with greens during the Yuletide is a sign to be hailed with joy, for in time it cannot but foster an interest in the love of the quaint, sweet legendary lore which the old world so intimately associates with the greens of ye merrie Christmas tyme.

*"Lo! now is come the joyful'st feast!
Let every man be jolly.
Each room with Ivy leaves is drest.
And every post with Holly."*

Embodying in its glossy green leaves and brilliant berries the very spirit of this joyous season, Holly has ever been the most sought Christmas green. Fortunately, no other season makes demands upon it, so that it is associated wholly and only with the Yuletide. But while it holds the ranking place it is by no means the most used of Christmas greens. Even in merry England, where it grows to perfection, it is supplemented by other greens, chiefly the Ivy.

Here in America several greens are used more extensively than the Holly, notably the Laurel and some of the Lycopodiums. Both cost less and for certain purposes are better adapted, such as roping and festooning, but neither alone carries the Christmas spirit. Red is needed, and where a little Holly to mix with them may not be had, recourse to the bright-berried Black Alder or Fever-bush is made. Indeed, these comparatively common and altogether beautiful berries, so closely resembling the true Holly berry, are often substituted for the latter, being used with barren Holly, especially in the making of wreathes.

We still import Holly from England, but far the greater part of that offered in our markets is from the south, much of it from Virginia and the Carolinas. In New England it grows in some few favored spots, but not in sufficient quantities to figure in the market. I have found it on Cape Cod growing to perfection.

Blessed be he who may himself gather the greens for his Christmas decorating and cut the tree of Christmas joy! I shall always feel that those who perforce must seek the market place for their Christmas greens are of the world's poor, though in furs and silks be they gowned. At best the bunches and wreathes of shining green and red mean but the crossing with silver of the palm of commerce.

Now that I am of the city's bondage I love to linger over the first crates of Holly appearing in the market place. I love to linger and to dream, for there a vision arises, an oaken woodland, the trees for the most part bare, though here and yon one still holds the red-brown mummies of the

summer's foliage. A six-inch blanket of spotless white, new fallen, protects the nakedness of Mother Earth and glorifies with vestal beauty the moldering trunk of a fallen forest giant. Frost rime fills the air with minute brilliants, exquisite while they last.

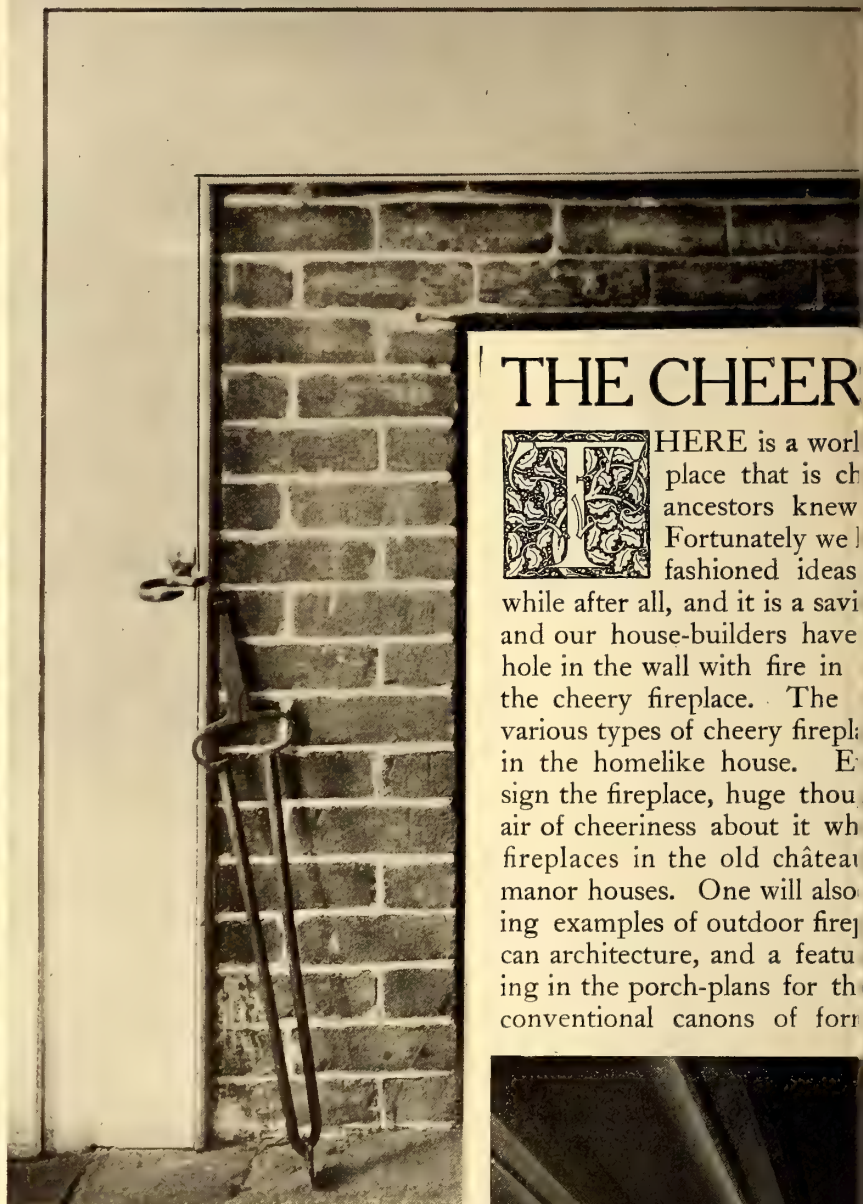
Threading the aisles of gray-white tree trunks the eager eye catches the blur of a distant green mass. Is it Pine or Spruce, Hemlock or—ah, the red against the green! the Christmas red! the jolly red! It is a Holly tree, full berried, glorious. And there beyond is another and still another. Some are mere shrubs, but as perfect in shape as if trained by the hand of a landscape gardener. Others are rough, scarred veterans of many a Christmas crusade. Not all give us berries. It is better so, for almost without exception those without have the handsomest foliage, it being a deeper, glossier green. Almost it seems a desecration of Nature's temple to strip these trees of their splendor. Indeed, it is this and nothing less to cut recklessly and wantonly. But, mindful ever of the years to come, I trim here a branch and there a spray until soon I have a back-load and no damage done my beautiful trees, for even the tree of the forest is the better for judicious pruning.

In recent years a few misinformed conservationists have raised a cry against the tax upon our forests annually levied by the Christmas demand. The alarm is needless, say the best informed foresters, for the annual cut is beneficial rather than otherwise, resulting in a thinning which a young forest growth always needs, and which it usually fails to receive. On the other hand there is some real danger that the Christmas fern (*Aspidium Acrotichoides*) will ultimately be practically exterminated in many places where it is common now. This fern is gathered by the million in the fall and put in cold storage for Christmas and later use.

There is less of romance and poetic appeal in the gathering of Laurel, for one cannot quite forget that the season of its glory is when it is crowned with the marvel of its bloom. Despite its persistent green, there is rather a pathetic downward hang or droop to the leaf in winter. It lacks that appearance of virile, aggressive strength which the armed and armored Holly leaf possesses. And there is no red cheer of berries. Nevertheless, a trip to the rugged mountain side, with the sharp tang of a December morning biting in till the red blood races gloriously, finds ample reward in the waxy green of the Laurel.

But while Holly and Laurel gathering may be for but a favored few, the Ground Pine or Lycopodium grows for the many. Few greens make up for decorative use to better effect. In swamps, in Pine woods, especially where at all boggy, the Ground Pine trails for the gatherer.

A Merry Christmas to all the world! Thrice merry would it be could each and all gather even a few of the greens selected here, wherein to brighten the holiday.



THE CHEER



HERE is a world place that is cheery. Our ancestors knew it. Fortunately we have inherited their fashioned ideas while after all, and it is a saving grace that our house-builders have not made a hole in the wall with fire in the cheery fireplace. The various types of cheery fireplaces are in the homelike house. Even the sign of the fireplace, huge though it is, has an air of cheeriness about it which is lacking in the old chateau manor houses. One will also find examples of outdoor fireplaces in the porch-plans for the conventional canons of form.



FIREPLACE

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THE CHEERY FIREPLACE

HERE is a world of difference between the fireplace that is cheery and one that is not. Our ancestors knew that and planned accordingly. Fortunately we have discovered that the good old-fashioned ideas about such matters are worth while after all, and it is a saving grace that our house-planners and our house-builders have come to understand that a mere hole in the wall with fire in it does not make for the idea of the cheery fireplace. The reader will find here illustrated various types of cheery fireplaces, the sort one wishes to find in the homelike house. Even in a house of pretentious design the fireplace, huge though it often may be, can have the air of cheeriness about it which one finds, for instance, in the fireplaces in the old châteaux of France, or in the English manor houses. One will also find here illustrated two interesting examples of outdoor fireplaces—something new in American architecture, and a feature that is well worth incorporating in the porch-plans for the house in the country, although conventional canons of form are hereby broken through.



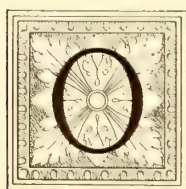


This picturesque cottage is one of the most successful examples in American small house architecture, both in its design and careful planning

A North Shore Cottage

By Mary H. Northend

Photographs by the Author

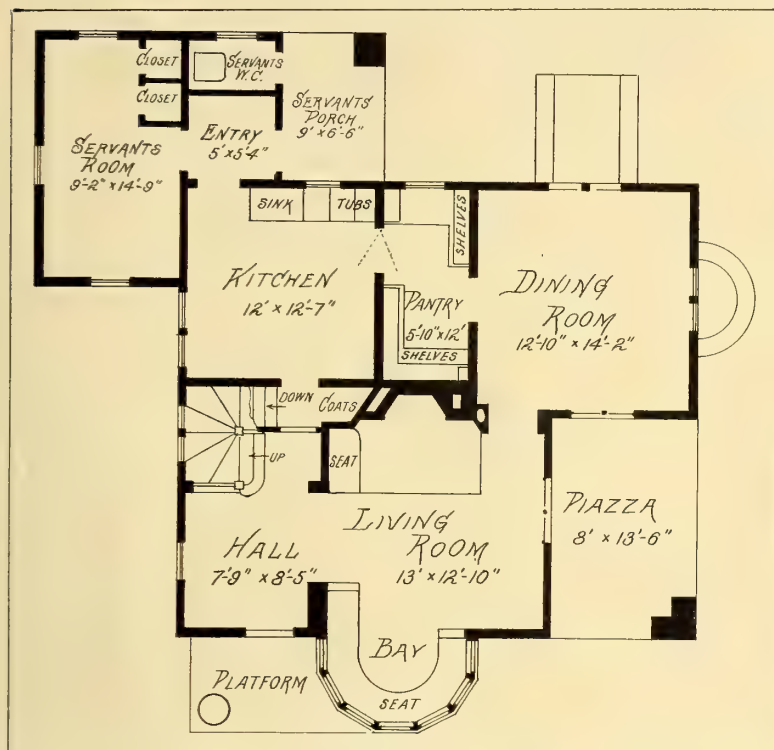


ON the crest of a peninsula which runs out into the bay, affording a magnificent view of both the ocean and harbor dotted with white sails, and opposite the shore whereon stands the silent port of quaint old Marblehead with its church spires and old roofs rising from the water like some old-world city, half amphibious, is situated one of the most picturesque cottages on the famous North Shore of the old Bay State, the house of Mr. Kirkland H. Gibson, designed by Thomas M. James, architect, of Boston. Toward the east the open ocean presents a view from this point that never palls upon one, changeful as it is in all its varied moods, yet changeless in its immensity. This town stands midway between the ocean and the harbor at Nanepashemet. A winding lane from the driveway leads up to the upper entrance at the rear of the house, while quaint English stepping-stones ascend directly upon the avenue by which it is approached at the front of the house. These steps wind pleasantly through the green-sward past clumps of Sumac and Cedar, and a great mass of rock juts from the ground in a most picturesque manner.

The view of the house is immediately pleasing. The exterior walls are covered with rough cast cement laid upon wire laths. The interior treatment is of cedar stained to a dark brown, forming a pleasant contrast to the gray walls. The casement windows, opening outward, have various arrangements of latticed panes with one window of leaded glass in the little hallway to the left. The shingle roof is low and widely projecting and is designed of the shingle pattern delightfully carried out, suggesting in a way both the tiled roof and the thatched roof, while the modified lines of the square chimney, somewhat like a section of the base of an obelisk, is one of the most striking features and most attractive points about the architecture. In the main body of the house, in order to afford outdoor living-rooms, appear most satisfactory loggias that may be entered by the opening of glass doors and low casement windows. The arrangement of the entrance porch is most pleasing, the canopy effect being obtained for the roofing by a projection of the roof of the bay supported, in effect, by massive chains bolted into a solid looking wall. The stairhall is sufficiently large to give approach to the spacious living-

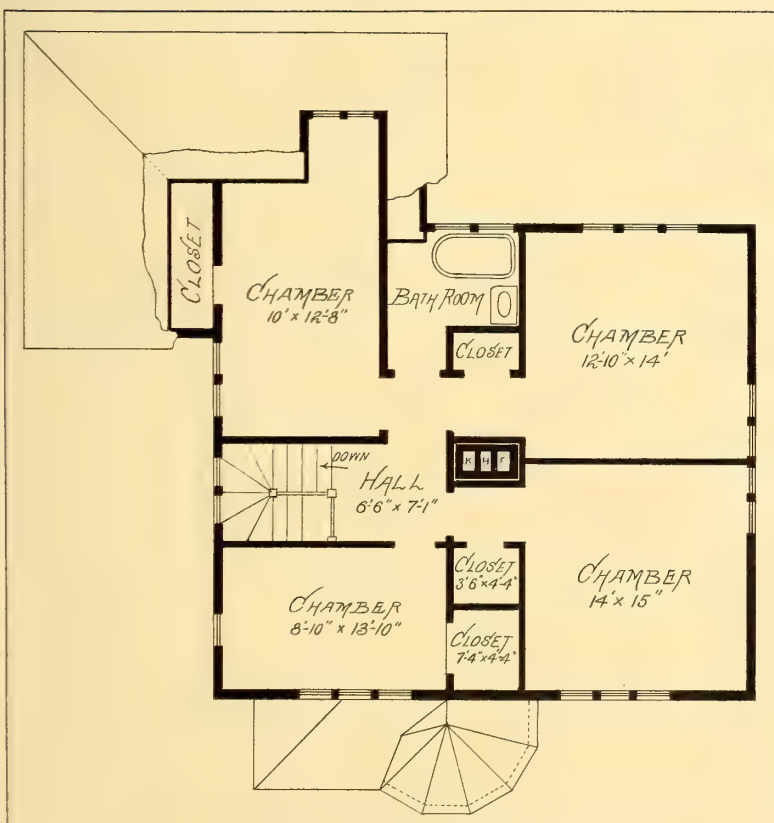
room, the central feature of the house, a room which opens directly to the right as one enters, as will be seen from the accompanying plan of the ground floor.

This living-room has a high wainscoting of cedar, both in the bay and in the inglenook beside the chimney. The



Plan of first floor

walls above it are finished in rough cast plaster, while the ceiling is beamed and stained; the floor is quartered oak, kept waxed and polished, with rugs in tones of brown and gray, with here and there a touch of deep orange and black, to assist in carrying out the harmony existing between the furnishings and those seen in the cedar trim and in the plaster. The bay is occupied by a wide semicircular seat, the



The plan of the upper story

outlook from which is on the harbor. The cushions of this delightful lounging place are in sort of tones of brown, matching the stain of the cedar and woodwork, whose moldings are in thorough accord with the prevailing notes of design in the furnishing. The inglenook, which is thor-

oughly cozy and homelike and also secluded in the sense that it does not interrupt passage through the room from hall to dining-room, is carried out in much the same manner as the fitting of the bay. This inglenook flanks a fireplace of generous proportions, faced with bricks which are brown in tint; the wide hearth is built of gray fieldstone, split into slabs of irregular shapes and fitted together with mortar for the joints. The surface of these slabs of fieldstone has been smoothed, but is not polished. The same material has been used for the floors of the verandas and porches of this house, with excellent effect. The brickwork of the chimney-breast extends practically to the beamed ceiling, with no suggestion of any mantel. Instead, a chimney-nook in the upper left-hand corner permits of the introduction of a square shelf, upon which is usually placed a tall vase of good design, filled with the flowers of the season.

The large and airy dining-room is entered by a doorway to the right of the chimney. This room occupies the whole



The stairway is lighted by attractive casement windows, which help to flood the hall with light

front corner of the house and commands an excellent view of the harbor and the beautiful sunsets for which this spot is famous. The furnishings of the dining-room are similar to those already noted, although somewhat more severe in design than those to be found in the living-room. The dining-room furniture is of the mission type. The room is well lighted, and has a beamed ceiling with rough plaster walls, and the floor of quartered oak is kept waxed and polished and covered with a large rug somewhat like the one in the living-room, both in color and design. The draperies at the casement are made of simple muslin and add a crisp freshness and the note of daintiness required to complete the homelike feeling of the room, which without them would be perhaps too severe. The walls of the dining-room are tinted a sort of gray, and long French windows lead out from it to its veranda. The doorway leading from the center of the hall to the left as you enter the dining-room passes through the pantry, which is five feet ten inches by twelve feet in size, and lined with conveniently placed



The inglenook seat by the fireplace is one of the most inviting features of the house. The electroliers above the seat afford an excellent reading light

shelves and cupboards. The service part of this house is especially well designed and worthy of study, it being separated from the front of the house, the rear part of the house being practically a service dwelling in itself, containing as it does the pantry and the well-appointed kitchen, the servant's-room and the servant's-porch. The house is equipped with electric lights and its fixtures are of iron and copper, especially designed to effect harmony with their environment. Perfect plumbing and an abundant supply of hot and cold water make living in a house of this sort a thing to contemplate with pleasure and satisfaction.

The second story, as will be seen by referring to the accompanying plan, contains the sleeping-rooms, which are designed and placed with the same care for detail that makes the lower story so excellent in its plan and in the utilization of the economies of space. The upper story

hall is nearly square, being six feet six inches by seven feet one inch. To the right, the large bed-chamber has four windows, three of which are upon the side directly looking out over the harbor. There is a comfortable hallseat in this story, a large bathroom and four sleeping apartments. One of these is called the tentroom and is an interesting and perfect representation of the interior of a tent. It is attractively furnished with old Colonial pieces, while the bed is canopied and bears old-fashioned chintz hangings. Both the house and furnishings show a careful regard for detail, which makes for its complete success, and there are few houses anywhere so completely in harmony with their picturesque surroundings as is this house at Nanepashemet.

A glance at the floor plans of Mr. Gibson's house, each floor taken in its entirety, presents what one may call compact spaciousness. There is nowhere a waste bit of space nor any makeshift devices that display an ingenuity unnecessary in a well-planned house. Turning to the first-floor plan, one notes that the arrangement of hall, living-room and dining-room, with a piazza accessory thereto, while allowing for a freedom of movement in passing from room to room, still holds the desirable elements of privacy in the arrangement of the hearth and of the bay. As for the upper story, it would be difficult to imagine a more carefully planned floor.

It is not always that a home-builder and an architect have co-operated so successfully in evolving a house of this size that truly conforms to the lay of the land, and one cannot refrain from an enthusiasm for a dwelling of this sort, or from commending the good taste exercised in retaining the natural feature of the surrounding ground. The premises of the yard area hold no suggestion of artificiality, but instead presents a bit of nature that has been tidied up as a fitting accompaniment to one's chosen abiding place. Too often we find attempts to preserve the original natural aspect of a place over-zealous in the matter of permitting plant growth and unkempt appearance to remain in the home landscape, for it must be remembered that Nature, after all, is as often to be counted a spoiled child as a stern parent.



A corner of the dining-room sun-lighted through the casement window



The pure white blossoms of the Christmas Rose are set amid a luxuriant foliage of very glossy dark-green leaves, forming an attractive pattern

The Christmas Rose

By Florence Beckwith

Photographs by Nathan R. Graves



THE Christmas Rose (*Helleborus niger*) is one of the most unique of flowering plants, for, though delicate in appearance, it withstands the cold blasts of winter and even blossoms under the snow. In Devonshire, England, this unusual plant is called the Winter Rose, and in many countries legends and traditions have been handed down from generation to generation pertaining to "the Rose that blooms in the snow." In one legend we are told that it bloomed in Eden and was there called the "Rose of Affection." In Alsatia, where it grows plentifully in the mountains, the peasants have a tradition that it first bloomed in the snow at the hour of the Nativity, and in one of Grimm's fairy tales this Rose is connected with the legend of the Christ Child. To Saint Agnes, the Christmas Rose, with its delicate white blossoms, has been very appropriately dedicated, and in some places it is called "the Flower of Saint Agnes." The numerous legends and traditions show that the Christmas Rose has been regarded for ages as an unusual plant and worthy of more than common regard. To us it is particularly interesting on account of its blooming in the winter, but we also recognize the fact that it has beauties of its own which would attract attention to a marked degree in any garden of lovely flowers.

The leaves of the Christmas Rose are dark green, thick, leathery, irregularly lobed, and practically evergreen. They grow to about one foot in height and their rich, dark color not only makes a pleasing contrast to the pure white flowers, but they render the plant ornamental even in summer, when the plant is out of bloom. The flower stems spring directly from the root encircled by the clustering leaves. The buds, when small, are delicately tinted with pink on the outside, but the full-bloom flowers are of the purest white. As they grow older they turn first a pretty pink, then a pale green, remaining in bloom a long time and not entirely losing their beauty even with their change of hue. The blossoms are from two to three inches across, with numerous yellow stamens clustered in the center. A well-established plant will send up a number of flower stalks in succession, thus prolonging the season of flowering, and a dainty pink bud often accompanies a fully expanded flower.

The blossoms are peculiar in structure, the parts which we would naturally call petals being really only sepals. The true petals are very small, tubular bodies in the form of a horn with an irregular opening. These lie so close to the base of the stamens that they are very apt to escape notice. There are numerous varieties of the Christmas Rose, some with white blossoms dotted with red and purple, others

rose color, crimson, scarlet, yellow, purple and green. Some of these have large blossoms and are showy and attractive, but *Helleborus niger* is the one most generally cultivated and most widely known. Most of the other varieties do not blossom until spring and would seem not to specially deserve the name of Christmas Rose.

In the northern part of New York State the Christmas Rose begins to blossom in October, continuing to bloom profusely all the fall and more or less all winter. The plant requires no protection there. It is not at all uncommon in this latitude to be able to go into the garden in mid-winter and brush the snow from these hardy flowers, sometimes to dig away several inches of their downy covering, and bring them forth covered with frost crystals, but fresh and bright. When carried into the house they show that they are none the worse for the chilling temperature to which they have been subjected, and, if kept in a cool room, or put out of doors at night, they will keep fresh for a week or two. If the water in the vase freezes, the blossoms will not be injured; let the ice melt and the flowers will be as fresh as ever. A very nice way to do is to set the dish containing them on the outside of a window sill; in this way they can be seen from within and will remain in perfection a longer time in the cooler atmosphere. If the stems are split up an inch or so, the cut flowers will keep fresh and beautiful for a greater length of time.

The plants usually blossom profusely during October and November; in December, frequently, the snow falls and covers them. If there are a few warm days at Christmas time, sufficiently mild to melt away the covering of snow, these hardy flowers are sure to display themselves and seem to smile as if they enjoyed blossoming in the dead of winter. In the fall, the blossom stems are rather tall, sometimes eight or ten inches in height. In winter they make but a low growth, sometimes only just appearing above the surface of the ground, the blossoms seeming to want to nestle down under the snow.

Last winter the writer observed how the snow had drifted heavily over a border of hardy perennials and shrubs in which were some plants of the Christmas Rose. Toward spring it was thought prudent to remove some of the snow, which was heavily weighing down the branches

of the shrubs. In doing this, the Christmas Roses were uncovered, and there, under about two feet of snow, they were found blooming in all their beauty, as fresh and spotless as they might have been on a bright October day.

The culture of the Christmas Rose is not at all difficult. The plants will thrive in common garden soil, though they do best in a rich loam mixed with coarse sand, with a top dressing of well-rotted manure. They grow luxuriantly under trees which furnish a partial shade. They should always have a plentiful supply of water, especially when making their growth after flowering, for on this depends the next season's blooming. A supply of weak liquid manure can be given occasionally with good results, and a mulch of good manure immediately after flowering is over will be very beneficial.

Propagation of the Christmas Rose is effected by root division. The roots separate readily, so it is no trouble to divide them. This should be done as early in the spring as it is possible to work in the garden. The plants increase very rapidly and it is generally advisable to separate the roots every third year.

On the border of Rochester, New York, just outside the city limits, is a bed of Christmas Roses which is undoubtedly the finest in the country and which has gained more than a local reputation. The fortunate possessor

takes pardonable pride in the size of the bed, the luxuriance of the plants, and the great number of blossoms produced. The plants begin blooming in October, and the latter part of that month and the first of November they are in their glory, showing great numbers of blossoms and innumerable stems of buds just peeping above the ground. Hundreds of blossoms are constantly being cut without impairing the beauty of the bed. Last Christmas two hundred stems of blossoms were cut for church adornment and for friends, yet the bed lost not all of its beauty. Many admirers of this rare flower never fail to pay an annual visit to this bed, and always feel more than repaid for their trouble.

Plants which afford so much pleasure and require so little care should be more generally cultivated. Their season of bloom and their beauty give them claim on all flower lovers. The large white blossoms are beautiful, and it is delightful to go out into the garden on Christmas day and gather fresh flowers from under the snow that bear no signs of blight.



There is a wonderful garden of Christmas Roses near Rochester, New York, where the lovely flowers of this extraordinary plant peep up through the snows of mid-winter, while underneath they bloom in all their beauty



A small flock of hens that lay, chosen from well-known breeds, is a source of profit and will more than repay one for the trouble of raising them

Keeping Twenty-Five Hens

By E. I. Farrington

Photographs by E. Hale



TWENTY-FIVE or thirty hens will supply all the eggs needed by an ordinary sized family the year round. The hens should not be mongrels, however, but chosen from among those breeds which are well known as prolific layers, as, for instance, the White and the Barred Plymouth Rocks, the Brown and the White Leghorns, the White and the Columbian Wyandottes, the Rhode Island Reds, the Black Minorcas and the Hamburgs. When a breed is being chosen, something will depend upon the

color of the eggs desired, if one has any preference in that respect. The Plymouth Rocks, Wyandottes and Rhode Island Reds lay brown eggs of large size. The Leghorns, Minorcas and Hamburgs lay white eggs, those of the Hamburgs being somewhat smaller than those of the other breeds, but produced freely. New York people will pay a premium for white eggs, while those from Boston prefer brown ones. As a matter of fact, there is no difference in the composition of the contents. Possibly the brown eggs may average a trifle larger than the white ones, but Minorca breeders probably

would quarrel with even that statement. It is a matter of greater importance to the amateur, perhaps, that some of the different breeders are inveterate "sitters," while others practically never become broody. The American breeds, that is to say, the Plymouth Rocks, the Wyandottes and the Rhode Island Reds—the breeds which lay brown eggs, it will be observed—frequently become broody and desire to sit on their eggs. The Mediterranean breeds—the Leghorns, Minorcas and Hamburgs, which lay white eggs—seldom become broody. This point must be considered, then. If the hens of the last named breeds are kept, incubators and brooders must be resorted to when raising chicks, or else a few hens of the sitting breeds must also be kept to hatch the chicks. On the other hand, hens of the American class often become broody when chicks are not wanted, and must be "broken up." There is still another practice, however, which many amateurs are now following—that is, the buying of day-old chicks in the spring. Professional poultrymen in many sections make a business of hatching chicks for amateurs. They are shipped as soon as hatched, and may be raised with but little



Barred Plymouth Rock Hen



Barred Plymouth Rock Rooster

difficulty in fireless brooders. This plan commends itself to the amateur who has but little time to give to raising his flock.

When selecting a breed, thought must be given to the place where the birds are to be kept. If the hens are to be allowed the run of the lawn, the choice may well be from among the white varieties, for they are highly ornamental. The plumage is easily soiled, however, and the white birds are shining marks for hawks. In the open country, where these depredatory birds abound, it is better to keep the darker colored varieties.

The Brown Leghorns, which are so famous as egg layers that they frequently are spoken of as "egg machines," are small and exceedingly active birds. They will wander long distances and fly over fences which will easily confine the larger breeds. It is sometimes necessary to stretch poultry wire across the top of the yards, or even to clip their wings. The larger the yards, however, the less likelihood that the hens of any breed will try to fly out. Moreover, if wire is used, and if there is no bar at the top, there will be less danger of the birds' escape, for they will not be able to distinguish the top of the fence, and can fly only at random. Shade of some kind should be provided in the yards. A good plan is to grow a climbing vine over the fence, or sunflowers may be planted just outside; but best of all are a few trees in the yards. Plum trees are particularly well adapted to this purpose, and will yield bountifully. If very small houses and yards must be used, it often is possible to let the hens have the run of the outside premises for an hour just before dark. They will do but little damage and will return to their house as daylight begins to fall. It is possible for them in this way to get all the grass and clover they need, thus lightening the work of the person in charge of the flock.

The house for a flock of twenty-five hens need not be large or expensive. Twenty-five dollars or a little more ought to cover its cost, unless architectural furbelows of some kind are desired. If the floor area is ten by twelve feet it will be large enough. A house which is nearly square is much better than one which is long and narrow, being warmer and giving the hens more apparent room to move about. The more the fowls are confined to the house, the more room they will need. If they can be outside or in a scratching-shed for much of the year, four square feet for each bird will be room enough. If confined to the house much of the time, six square feet should be allowed for each bird.

The shed-roof style of house is the simplest and the easiest to build. It should be four feet high on the inside at the rear, and six to eight feet in front, so that the attendant can walk about without stooping. Of course, a fair pitch of roof is required in order to carry off the water quickly. The poultry house may be constructed of matched boards, covered with shingles or with one of the prepared roofing papers, the latter being the cheaper. Paper should not be used on the interior, as it tends to make the house dark. The inside walls of the house may be whitewashed several times a year to advantage, both to make the house light and to keep down insect pests.

The house may be lighted by a long glass window at the front, or by the newer plan of combining glass and burlap. In any case it should face the south or southeast, so that it will receive the morning sun. Shed-roof houses with large openings in front are often used. It is customary to have

muslin or burlap curtains tacked to light wooden frames, so arranged that they can be dropped over the openings on extremely cold nights or in stormy weather. Additional protection is sometimes provided by another curtain, which may be dropped directly in front of the perches at night, thus forming what is called a roosting closet, where the fowls keep themselves warm by their own animal heat. A device of this sort is easily made, and is excellent in any kind of house in sections of the country where the temperature runs very low.

Probably the best house for the amateur with a few hens is one which has a single long opening without glass, but with a muslin curtain tacked to a frame and hinged above, and one glass window, somewhat smaller. They can be arranged in any way desired, keeping always in mind that the opening without glass should be high enough so that the wind will not blow directly on the birds; that the glass window should let the sun reach the floor of the house early in the morning, and that sunlight should reach every part of the house, so far as possible, some time during the day. Occasionally a small window built in the west side to admit the afternoon sun is desirable. Prof. Rice, of the agricultural college at Cornell University, has devised a house, using both glass and muslin, which is nearly ideal for the amateur with only a few hens, as well as for the professional poultryman with flocks of many hundreds.

Certain it is that the old-fashioned houses, built to be as warm as possible and sometimes even heated with stoves, were entirely wrong in principle. The natural temperature of poultry is much higher than that of human beings, and they do not need coddling. Fresh air is much more necessary than heat. The principal point to keep in mind is that the house must be dry and free from drafts. That means that the roof must be tight and that there should be no cracks in the walls. All the air must come from one direction. It is not well to expose the birds to biting winds or to let storms beat in on them. A fine rooster which was kept all night in an open-front house, with the temperature around the zero point, showed no ill effects, but when allowed in the yard about 10 o'clock in the morning his comb was

frosted within an hour. The combination of glass and muslin is advantageous for several reasons. On a bad day the muslin will keep out the elements, but the glass window will let in needed light, for muslin, although translucent, permits the passage of less light than glass. Even when closed, the muslin allows the entrance of sufficient outside air to maintain good ventilation. And one will be surprised to find the temperature only a degree or two colder than when glass alone is used.

Considerable expense is saved if a dirt floor is used in the amateur's poultry house, but if the location is a damp one, or if rats are numerous, a cement floor will be better. If earth is used, the floor should be built up several inches higher than the outside level, and the top layer of earth should be replaced at least once a year in order to maintain sanitary conditions. A deep litter of leaves, hay or straw should be placed on the floor whether dirt or cement be used, and when the hens are confined the grain should be fed in this litter in order to induce exercise. Every spring this litter should be removed, and it can be used to advantage in the garden as a mulch and a fertilizer.

The amateur will minimize his work by feeding only dry



White Plymouth Rock Hen
White Plymouth Rock Rooster



Rhode Island Red Hen



Prize White Leghorn Hen



Prize Black Minorca Hen

grains. The old-fashioned plan of making wet mashes has been abandoned to a large extent. Feeding twice a day will be sufficient. Wheat, oats and barley may be given in the morning, and whole or cracked corn at least two hours before sundown at night. Beef scraps and bran or shorts may be kept in hoppers, where the fowls may eat when they desire. Oyster shells and grit should always be before the birds, and, of course, an abundance of fresh, pure water is a necessity, winter and summer. The water vessels should be kept in a sheltered place in summer, so that the sun will not shine on the water to heat it. The drinking vessels should be washed frequently. Dishes which will not break when the water freezes should be used in winter. Galvanized iron pails are excellent; if ice forms, it can be quickly removed by pouring water on the outside of the pail and inverting it.

Green food is necessary the year through. In summer lawn clippings serve the purpose well, as does refuse from the garden. In winter clover or alfalfa hay is especially good if it is placed in a pail and boiling water poured on it, the hay being allowed to steam for several hours. Cabbage, carrots, mangles and other vegetables are eaten with relish. They may be spiked to a piece of wood or suspended by a string, but the hens should not be made to jump for them, at the risk of producing a rupture.

Many families can feed their poultry largely on table scraps, although a little additional labor is involved. It is not a good plan to throw the refuse from the table into the henyards, allowing the hens to pick out what they like, for insanitary conditions are almost sure to result. It is better to keep a kettle on the back

of the kitchen range and to throw into it whatever may be intended for the hens. All this may be cooked up together and enough bran added to make a mash which will crumble in the hand. Let this be given at noon, preferably; otherwise in the morning. It will stimulate the egg yield, and, of course, the amount of grain given should be reduced in proportion to the amount of mash fed. No more mash than will be eaten up clean should ever be given, and it is best that there should not be enough to satisfy the appetite of the fowls, or they will stand around for an hour or so, instead of scratching busily for grain. If there are enough bits of meat in the table scraps, it may not be necessary to purchase commercial beef scraps.

The feeding of red pepper and other condiments is not to be recommended. If the pullets are backward about beginning to lay, they often can be stimulated by feeding a little raw meat or green bone. If there is a bone-cutter at hand, the latter will prove a cheap and satisfactory ration. When there is no bone-cutter, cheap pieces of meat may be ground in an ordinary meat-grinder, giving the fowls a little uncooked Hamburg steak, if you please. For the most part, however, the less coddling the flock receives the better the results will be.

Unless one is raising his own chicks, it will not be necessary to keep a male bird. Indeed, more eggs probably will be produced when there is no rooster with the flock, and it is wasteful to feed a bird which gives no return. Certainly it is not neighborly to allow a loud-crowing chattering to break in on a peaceful community's slumbers at the appearance of the sun's first morning rays, when windows are open in the Summer time.



Portable poultry houses, two of which will accommodate twenty-five hens



The double house advocated by the Cornell University Agricultural College, is nearly ideal



An amateur's poultry "plant." The vines provide ample shade and the hot-bed green food



WITHIN THE HOUSE

SUGGESTIONS ON INTERIOR DECORATING
AND NOTES OF INTEREST TO ALL
WHO DESIRE TO MAKE THE HOUSE
MORE BEAUTIFUL AND MORE HOMELIKE

The Editor of this Department will be glad to answer all queries
from subscribers pertaining to Home Decoration. Stamps
should be enclosed when a direct personal reply is desired



ON GOOD TASTE IN INTERIOR DECORATION

By Harry Martin Yeomans



THE home-builder without architectural experience should hardly attempt to build his own house without the assistance of a competent architect. An article on this subject appeared in the October number of AMERICAN HOMES AND GARDENS and presented the matter in a light that served to enable the reader to draw his own conclusions definitely in accord with this statement. However, once the structure itself is finished, it oftens happens that the average homemaker does not feel that he either can or wishes to go to the expense of having the decoration of the house carried out all at one time under the supervision of any one professional decorator, even though he might wish to have one or two rooms done in this manner. And so, under the circumstances, he will probably decide to do the decorations himself, making his selections and carrying out his ideas in the matter of furnishings without other assistance than his own taste. Happily the average small house as a rule does not present to the decorator many of the technical difficulties that have to be overcome by the architect. Therefore the amateur decorator may approach his task with a reasonable degree of confidence.

THE various articles that appear from time to time in the pages of AMERICAN HOMES AND GARDENS strive to present to their readers individual problems whose solutions are accomplished through the medium of good taste in the selection and application. The illustrations chosen are such as give safe guidance in the matter of architecture and decorative designs, wherefore one undertaking for the

first time the decoration of his own home personally will, it is hoped, find both inspiration and instruction in the perusal of these pages.

IT is not enough alone that the house should be well designed and well built, or that it should be well furnished—it is just in this matter of furnishing that one finds the keynote of the house that is homelike in contradistinction to the house which is not. It oftens happens that the house undertaken by the professional decorator, especially the small house, though charming in its design as a thing of construction apart from its association with the life of those who are to inhabit its rooms, turns out to be alien in spirit to those living within the house. Indeed, the most successful houses are those which reflect the personalities of the dwellers therein and become appropriate settings for themselves and for their lares and penates, for which reason it invariably happens that the most successful homelike small house is that which is decorated personally by its owner if he only exercises restraint in selection and carries out his plans for beautifying the house within under the guidance of good taste.

AN aspiring playwright once asked a well-known dramatist how he constructed his plays, and was told in reply that he wrote all of his scenes and speeches at great length just as they occurred to him, but when he came to arrange the parts of his drama he commenced a process of elimination whereby he left out everything not necessary to the artistic evolution of his play and everything not absolutely requisite to its utility, the result being one of vigorous dramatic strength. This illustrates in a way the principle that might well be applied to the matter of interior decoration in a house of any sort. For good taste not only concerns itself with the question of what could be put



A dining-room, elegant in the simplicity of its well-chosen furnishings



A paneled dining-room, not overcrowded with inappropriate furnishings



An excellent example of good taste in decorating a stairhall

into a room, but quite as much with what should be left out. **S**IMPLICITY and elegance go hand in hand when we understand by simplicity crudity is never meant. If one has in mind the decoration of a small house, an attempt should never be made to crowd it in the certain expectation of getting elaborate effects out of a strictly limited area. Too often we find a house overcrowded not only with useless, but with unbeautiful things. As though any sentiment in the world could excuse the putting in a conspicuous place of an object that does not belong there. The most sacred things of the temple are the hidden ones. If one possesses one or many objects dear to the heart, but homely to the vision, they had best be tucked away in some sanctum sanctorum especially devised to hold such articles of sentimental value. Restraint in interior decoration, like restraint in anything else, is one of its chief virtues and one of the strongest stones in the foundation of good taste. The rule that everything should be useful as well as beautiful, and beautiful as well as useful when possible, contains fully half of the philosophy of just what constitutes good taste. The day has arrived when it is possible with a little thought to have every unit in the furnishings of the house fulfill the æsthetic rules one might lay down for selection. Turn to the over-crowded mantels which one unfortunately sees everywhere every day, holding, as these do, odds and ends of no artistic merit and which do not even possess the saving grace of being useful. A mantelshelf decorated with a clock of good design, vases of worth that will really hold flowers when required, and perhaps decorated in addition with a pair of well-chosen candlesticks, will have a character and distinction utterly lacking in a chenille-fringed draped shelf looking for all the world like the grabbag department of a village fair.

EVEN taking a single piece of furniture such as a desk, how often, leaving the element of untidiness quite out of the question, one sees a jumble of articles upon it that suggests confusion, and instead of making the object a part in the harmonious decorative scheme renders it completely at variance with any sense of proportion. The splendid mother-of-pearl pen holders, the small silver ink wells that do not hold ink, and like objects best truthfully described as "trifles," only serve to make a plaything of what should carry out the dignity of its selection; therefore the articles on such a desk when dictated by good taste will be those not overlooking utility in the first place, and beauty in the second.

THERE has often appeared to be a misconception in the matter of the useful and of the beautiful. In connection with which it is enough to say that an attempt to dis-

guise the useful by what is supposed to be the beautiful can never be more successful than the painting of a wooden snow-shovel with a mica be-powdered winter landscape. The Japanese understand the principle of simplicity as applied to the interior decoration of their home, which despite our familiarity with it seems somewhat difficult for the Occidental mind to grasp. A family in Nippon may have a hundred cherished possessions in the way of vases and other bric-a-brac, but instead of bringing them proudly forth all at a time they display a single object now and then and give thought and care to its arrangement so it truly becomes a distinguished object reverently to be regarded for the pleasure its contemplation can give to the family and their friends. Western nations have grown to feel that space and emptiness are synonymous and to wish to cover every square inch of wall-surface with a picture, a mirror, or some other object. The result is that our houses are more apt to be museums of mediocre objects than exhibitions of our good taste. There is no more reason, if we happen to possess a great many *objets d'art*, that we should display them all at one time if the decorative scheme does not require them, than that a person possessing numerous gems should wear them all at once upon the person. Even the Indian rajah, who comes to a Durbar a veritable blaze of jeweled ornaments, still leaves some at home hidden within the recesses of his palace treasure vault.

IN this matter of walls it too often happens, especially in decorating small rooms, that one is led into the error of employing elaborate gaudy papers quite out of keeping to tasteful decoration upon a small scale. It seems strange that we cannot all of us realize the value of plain neutral colored papers, or ones of simple and elegant patterns in proportion to the size of the room and completing the harmony of the decorative scheme. Wall coverings should never intrude themselves, but should take the place of the atmosphere around one out of doors, forming a pleasing background for such furniture, pictures, etc., as may be placed against it. In nine cases out of ten one will wish a room to appear larger than it is in reality, in which case it is well to choose the simple papers, as the large figured ones have the opposite effect of making a large room appear smaller. In the matter of furniture, we are more apt to err than in any other one. We go into a shop and decide that this chair or that is comfortable and buy it regardless of its appearance, or of its relation to the decorative treatment of the room into which it is to be put, or we may, on the other hand, take an especial fancy to a chair for æsthetic reasons only to find after we have brought it home that it is

(Continued on page x)



The living-room need not be filled with things to make it more homelike



Something New in Christmas Cakes

By Gunther von Helmuth



HERE is something as dear to the heart of every German, and as delectable to his palate, as ever the plum pudding has been to the Briton at Christmastide or the turkey to the American; this is the *Lebkuchen*, or Honey-Cakes, for which Munich and Nuremberg are especially famous, and which have also come to be part of the festal array of holiday time in our own country, being now extensively imported for such occasions. Nowhere else in the world will you find them making such wonderful Christmas cakes as they make in these old Teuton cities, quite putting to shame even the most ingenious caraway-seeded ones of our own, so extraordinary are they in their various forms. There in the quaint old bakers' shops these Honey-Cakes will always be found displayed throughout the holiday season; little ones, big ones, simple ones, elaborate ones, cheap ones and ones that cost almost a small boy's whole holiday fortune. You will find them decorated with colored sugar icings of every hue known to the solar spectrum. Moreover, some of Germany's greatest artists have not thought it beneath their dignity to turn their skill to the making of designs for the Honey-Cake bakers, thus aiding in bringing them to perfection. Jules Diez, for instance, who is one of the leading painters of Germany, Hans Glatz, Frau Kohrt, Hermann

Stockman, Max Leiber and Fritz Unger are among the notable German artists who have made designs for *Lebkuchen*, some of which find their

way into our own American confectioners' shops at Christmas time.

The history of Christmas cake-making in Germany is not without interest. As far back as 1694 the Bavarian Elector, Max Emanuel, promulgated laws applying to the making of these Honey-Cakes which a certain Guild, the Guild

of *Lebzetter*, were given the right to manufacture, though they were strictly forbidden to employ sugar in their wares, as that would encroach upon the prerogatives of the Guild of Confectioners.

The first Honey-Cakes were made by the monks and the nuns in the old monasteries and convents before Martin Luther's time, although tradition has it that the first recipes were given out from the nunneries and borrowed by the monks of that day, who taught the secrets of Honey-Cake making to the laymen.

Around the middle of the fourteenth century the various towns that were breaking away from feudalism derived a goodly income from their various *Lebzetter* Guilds. With the Renaissance the art of the *Lebzetter* reached its historic high-water mark, as those who may have visited the Germanic National Museum in Munich will see by examining the remarkable collection of Honey-Cakes displayed there, a collection which has been gathered by Herr Max Ebenbock, a noted antiquarian, who has searched the land for the old *Lebkuchen* molds, from which new impressions have been taken. There, also, one will find a remarkable collection of old Honey-Cake molds, and very important have they often proved to be in historical research, since every old-time German nobleman had his arms molded by his own *Lebzetter* on the occasion of every festival, having the cakes for his household table molded from them.

Thus these old molds have often served as missing links in tracing records of early heraldic bearings.

Christmas in Nuremberg always finds the shop windows of that medieval-looking old town bright with gaily colored *Lebkuchen*, and there one finds Honey-Cakes decorated with everything, from pictures in icing of Albrecht Durer's house to presentments of St. Nicholas and Kris Kringle, the favorites of German Christmas cards.



Honey-cake makers find inspiration even in homely subjects



A Honey-cake caricature of a Bavarian peasant

An Ingenious Kitchenette

The Clever Studio Device Designed to Conceal an Ugly Gas Range When Not in Use

By W. T. Phillips



THE ingenious devices to which the dweller in a small apartment must oftentimes resort occasionally produces something so commendable that it cannot fail to interest others who, themselves, may be looking for just the sort of thing to fit their own requirements. The owner of an attractive studio apartment and bath had but one room at her disposal, to be used for a living-room that should combine the conveniences of dining-room and kitchen as well. Now, it is always a difficult thing to make a kitchen look like a reception-room—it is even more difficult than to make the folding bed of the Victorian era pass for a grand piano. However, I think the reader will concede that the illustrations of the tidy kitchenette here reproduced indicate actual success on the part of the studio owner in disguising the little gas range upon which the studio meals are cooked, and delicious ones they are, too.

Instead of attempting to make the range appear in the suspicious guise of some improbability, the deviser of this ingenious contrivance had the carpenter around the corner make a four-sided box-like affair—bottom, sides, floor and back being stationary—and then a double folding door in front and a top that was divided in the center and arranged to swing back on each side by hinges, and finally a rest on the top edge of the opened front doors was added. The reader will notice that the gas range rests on the floor of this little cupboard, and not upon the floor of the room. The low casters make it possible to move the whole conveniently to permit cleaning operations, since the range receives its supply of gas through the long rubber hose at-

tached to the gas-jet just above it, to one side. The gas-hose is disconnected when the range is not in use, and coiled against the wall on a hook back of the range-cupboard and hidden by it. One might almost imagine, on seeing the doors closed, that the cupboard was a closet in miniature for downy linens, instead of a range that can roast a turkey on Thanksgiving day as well as any of its bigger neighbors. Kitchenette holders who feel a sense of household incompleteness without an electric stove, may not have to be told that a cupboard can cover it in the same effective manner. An exquisite Japanese print, by Utamaro, hangs just above the range-cupboard, and a cover of embroidered crash linen is thrown over the top of this ingenious bit of furniture. A bowl of dull green pottery resting upon it is always filled with sweet-scented flowers, that take their turn when the well-ventilated studio throws open its windows to let out the too tenacious fragrance of the savory feast passed by. In the right-hand illustration the corner of a stationary washstand is shown, but this and the wardrobe-closet to the left of the left-hand illustration are always hidden by attractive screens that seem perfectly to fit into the decorative scheme of the apartment. Of the ornamental articles in the living-room, not connected directly with the cupboard, the Oriental rug squarely in front seems the most necessary to complete the project of transformation. The hand that placed it there surely belonged to one conscious of giving the final touch in doubling the possibilities of the use of one room. It is readily seen that the shifts can be made easily where immediacy is involved, without exciting any intimation of household jugglery in the little "kitchen corner."



This shows kitchenette cupboard, open and ready for use

When closed the cupboard completely hides the gas range



Around the Garden

A MONTHLY KALENDAR OF TIMELY GARDEN OPERATIONS AND USEFUL HINTS AND SUGGESTIONS ABOUT THE HOME GARDEN AND GROUNDS

All queries will gladly be answered by the Editor. If a personal reply is desired by subscribers stamps should be enclosed therewith.

DECEMBER IN OUR GARDENS

THIS is the month whose very name suggests the cozy seclusion of indoors by the fireside, with a peep through the sheltering window panes at the landscape divested by Mother Nature of every semblance of summer attire save for the welcome relief of a bit of color, here and there, from the Evergreens that forethought of wisdom has led us to plant against the all too monotonous sombreness of the winter landscape. This will be the time for planning the gathering of Christmas greens. Those of us who are so fortunate as to live in the countryside will be spending our holiday hours, now and then, in walking over the hills and through the wooded lands with eyes alert for our Christmas greens, and best of all for the Christmas tree itself.

BUT there are things for us to do even nearer home. The trees are now foliage-bare and the dead leaves we may have neglected to rake up last month should be



The December landscape has a beauty all its own, if we but seek it

gathered together and used as a mulch for every growing thing that shows its withered stalk above ground.

THERE will be some of us who are blessed with the possession of grapevines. Perhaps we have planned to wait until March to prune them; we may even have done this last year, but this is the better season for such work and the vines will be far less liable to damage if we do not delay the pruning time. In some parts of the country winter is a time of freezing and thawing spells, and if we do not wish the things of our gardens to suffer great injury by these atmospheric extremes we should see that our shrubs and plants are banked up with a manurial mulch or with soil when needed.

ONE of our readers, in writing of his garden experiences throughout the past season complained of the sorrowful state of affairs brought about by a veritable havoc wrought by the miserable tent caterpillars that have proved themselves a blight to so many growing things. If this has been the experience of others it might be well for them to look around the garden, seeking to discover if there are any Wild Cherry trees about. If so, such trees should be destroyed without loss of time, for unhappily enough, they draw the tent caterpillars to their vicinity as surely as the moth is drawn to the flame. One must not forget that coldframes for Violets and other plants must be covered these cold nights. The inexperienced amateur is apt to forget this and to rue his carelessness.

TURNING our attention to the spot which marks the border of Hardy Perennials whose beautiful blossoms gave us such delight this past summer, we should busy ourselves in cutting off all their dead tops, giving the plants a light mulch, being careful that it is a light mulch and not a heavy manurial covering.

HOW one would welcome the invention of something to take the place of the old coverings we have to use for the protection of Roses and vines in winter time! But ugly as straw and matting and other forms of blanketing may render the things outdoors, there is ample consolation of everything to offset this visual annoyance in the garden's own season, which the months will bring back again. After all, we have had indoors and firesides given to us for winter, so let us try to be as thankful for that as we are for our gardens in summer, and when we stand in the room laden with Evergreen boughs, Holly and Mistletoe, wishing one another a Merry Christmas, we shall surely have within our hearts that garden of joyousness that makes us forget any of the bleak, drear things outside.

THE AMERICAN HOLLY

A NOTE apropos of the American Holly (*Ilex opaca*) is appropriate to the season. The mention of Holly is apt to call up to the mind's eye the vision of Christmas in England as we associate it especially with the land of our kinsmen across the sea, forgetting that in our own fair

country we, too, have a Holly of our own. This plant grows almost anywhere along the Atlantic coast and it would be difficult to find a more attractive hedge plant for sandy soils, although it has not yet been utilized to the extent it deserves to be by landscape architects. In Central Park, New York city, for instance, the writer recalls but one specimen of it, and that almost hidden from sight by being planted in a shrubbery near a wall. The accompanying illustration gives a fair idea of the general appearance of the American Holly when allowed to attain some height. The species should always be planted with staminate specimens among pistillate ones. This ensures the fertilization of the pollen of the tiny flowers and consequently the brilliant berries that form an attractive contrast of scarlet against the dull, deep green spiny leaves of this lovely plant. The Japanese Holly (*Ilex crenata*) is a little known species in America, but the writer has found that it will thrive in the vicinity of Greater New York, though it needs winter protection north of Baltimore. The old-time English Holly (*Ilex aquifolium*) is not often seen in American gardens, as it is not so hardy as the American species. Readers find in the literature of Latin countries, in travel books and in poetry, innumerable references to the *Ilex* tree, but they do not know perhaps that the *Ilex* and the Holly are the same—one the Latin name and one the common name.

AN ATTRACTIVE WEATHER-VANE

WHEN we look around our gardens as we stroll out on fair winter days for an inspection of the premises, it may occur to us that here and there an attractive weather-vane would be a welcome note in the winter landscape. The merry looking little wooden sailors carved by the old tars of Nantucket and Martha's Vineyard, with arms whirling in the winter winds, are well known to everyone who visits the country places of the Massachusetts coast. On old Cape Cod the country dwellers have shown much ingenuity in the matter of fashioning all sorts of attractive little devices for indicating the direction of the wind, one of which is shown in the accompanying illustration. It is made of wood, painted and varnished to represent a life-sized crow sitting upon a post. This post, by the way, was one to which the end of the clothes-line in the clothes-yard is attached on "blue Mondays," and carried with it a pleasing little suggestion of the old nursery rhyme, "along came a blackbird." The Germans are especially skillful in devices of this sort, and it suggests a pleasant workroom occupation for the winter months, for one may cut out these figures for wind-vanes from metal or wood, paint them up and have them thoroughly dried and seasoned for putting out in the springtime to enhance the interest of the home landscape.

HOUSE-PLANTS FOR SHADED WINDOWS

THE window-garden in January will be worth every bit of the care and pains it requires and all the trouble it has already cost. Shaded window locations often prove stumbling blocks to the beginners at window-gardening, for the problem of what to make grow therein is one which presents difficulties. Begonias, Primroses, Fuchias, and Ferns, Palms and other ornamental foliage plants will thrive where there is light, though no direct sunshine. It is a mistake to suppose a direct southern exposure the best location for

house-plants, although next to a southeast window, which is the best, a south window comes in order of selection.

FERNS FOR INDOORS

NUMEROUS requests have been received from readers for lists of Ferns for indoors, some desiring information as to the best varieties for potting and others wishing

to know what Ferns are especially to be recommended for hanging baskets. Where one intends to place the Ferns in an unheated conservatory, the following species are among the best to select: FOR POTTING—*Adiantum Pedatum*, *Asplenium cristatum*, *Polypodium vulgare cambricum*, *Pteris scaberula*, *Scolopendrium vulgare crispum*, *Woodwardia radicans* and *Woodsia ilvensis*. FOR BASKETS—*Polystichum angulare*, *P. angulare proliferum*, *Woodwardia radicans* and *Athyrium filix femina corybiferum*. FOR WALL GROWING—*Asplenium marinum*, *Polypodium fatcatum*, *Polystichum aculeatum* and *Scolopendrium*. Of course, there are many other varieties, but these few will be more than enough for the amateur indoor gardener. For ordinary room windows nearly all of the Ferns mentioned will prove successful, but the following are especially recommended for the indoor window garden: *Polypodium aureum*, *Asplenium bulbiferum*, *Nephrodium molle*, *Cyrtomium falcatum*, *Pteris cretica*, *Scolopendrium vulgare crispum*, *Pteris tremula*, *Polystichum angulare* and *Pteris cretica nobilis*. There are few plants for indoors that give as much pleasure to the amateur as do Ferns, and one is careful to see that they are cleanly potted and in well-drained pots.



A crow weather-vane from old Cape Cod. This was placed on a post in the clothes-yard, and formed an interesting silhouette against the gray winter sky



The American Holly (*Ilex opaca*) well deserves to be better known



SUBSTITUTES FOR THE PLUM PUDDING

By Mary W. Mount

Photographs by Jessie Tarbox Beals



WHEN Christmastide ushers in its joyous festival of childhood, not one of us is proof against its exhilarating influences, however many the years that have left their frosts upon our heads. We forget everything except our youth; we revel in experiencing again the sensations of a care-free child; our step is buoyant, our feeling one of joyous goodwill towards all men. In heart and mind we are young once more; only our digestion reminds us, at the Christmas feast, that many indulgences in plum pudding and fruit cake, with all the other good things that make up a Christmas dinner, have taxed it until it refuses to be put to such test again.

THIS condition in adults causes them to realize that it is not the part of wisdom to allow children to gorge themselves with heavy desserts after a Christmas dinner sufficiently heavy in itself. It is the natural propensity of children to over-indulge in sweets, and Christmas is a season when they are given greater—indeed, often unlimited—latitude in this respect.

COOKERY has become an art so fine that a great number of desserts of delicious and digestible qualities may be prepared with far less effort and expense than are demanded by plum pudding and fruit cake. Seldom at a modern Christmas feast is a boar's head, served in flaming spirits, borne to the table. If this formerly indispensable Christmas dish has given place to young roast pig with a red apple in its mouth upon a tastefully garnished platter, why, then, may not suet puddings find substitutes in more delicate and digestible, to say nothing of more decorative, dishes?

SOME of the most picturesque Christmas feasts of antiquity are associated in our minds with Viking revels and ceremonies. What more appropriate, then, for a modern Christmas table than Viking foam, which is blanc mange, with bananas cut up in it and served in boat-like red banana skins? These skins are stiffer and more boat-shaped than those of the yellow banana, and add a crimson holiday touch to the table, which is accentuated by a spray of holly in the

prow and by rings, cut from candied cherries, around the edge of the blanc mange. The Viking craft should be surrounded by holly leaves and berries, or it may be served in a billow of whipped cream.

JELLIES make attractive and suitable desserts at Christmastide, because they lend themselves so readily to decorative color schemes. Lemon jelly, for instance, made in a round mold, glows prettily in a wreath of holly leaves cut from green-tinted dried citron mingled with berries shaped from candied cherries. A similar decoration on the top of the jelly emphasizes its holiday appearance, and daintiness is added by a circle of whipped cream around it. This seasonable color plan finds another expression in snowy angel cake, adorned with a wreath of citron holly leaves, brightened by crimson gumdrops or candied cherries, each resting in the center of a marshmallow. The under part of the marshmallows should be warmed in order to make them

stick firmly to the cake. Mistletoe berries, cut out of marshmallows, contrast with the circle of cherries or gumdrops that rest upon the lace doily on the high cake dish.

ONE of the simplest and most easily made of Christmas desserts is apple float, the foundation of which consists of peeled stewed apples mashed through a wire strainer to free them of seed and core.

Sweetened gelatin is allowed to thicken and is then added to the stiffly-whipped whites of eggs. Whipped cream is beaten into the frothy mixture and then the apples are, in turn, beaten with it until the whole is like a whitish foam. Sometimes persons merely add whipped or plain cream when serving the dish. A very charming Christmas effect is produced by serving the float in hollowed-out red apples, or coloring the edge with cranberry juice and decorating

the service dish with scarlet berries. Another dainty dessert into which gelatin and whipped cream enter is formed of lady-fingers stuffed with whipped cream, stiffened with gelatin, into which finely chopped nuts have been stirred. This dessert is made additionally attractive by mixing grated cocoanut in the filling for some lady-fingers and chocolate in that for others.

MID-WINTER fruits are always appropriate on a Christmas table, and a very decorative dessert consists of orange ice or orange jelly served in the skin of an



Two delicious substitutes for the Plum-Pudding: A chocolate Floating Island served in dish of glass, and Lemon Jelly decorated with Holly leaves of preserved Citron and berries shaped from candied Cherries



This is an attractive way of serving a Charlotte Russe, the sprigs of Mistletoe (these may be artificial) giving it a holiday touch

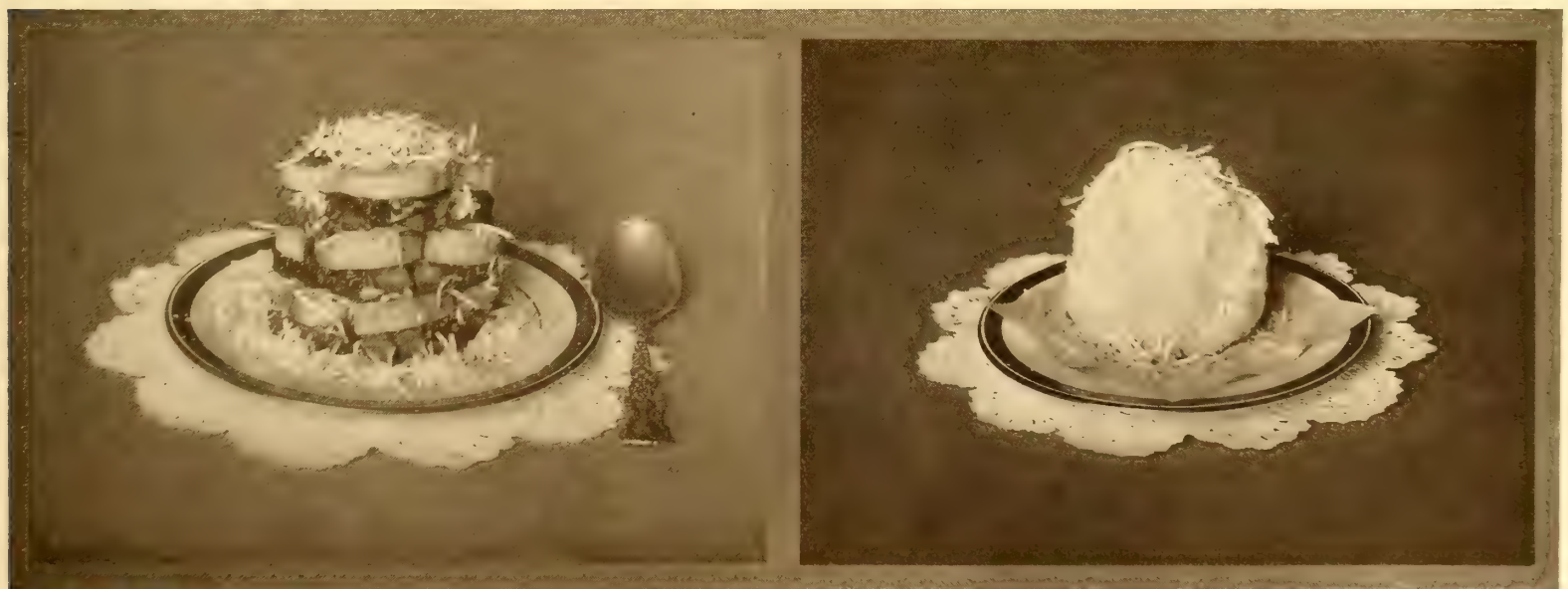
An ingenious Egg-on-Toast Dessert. The "toast" is a slice of cake, the "egg" the half of a preserved peach in whipped cream

orange. It is very easy to scoop out an orange and, with a pair of scissors, cut the open circle of the skin in points. All sorts of ices may be served in such a receptacle and the effect is heightened if the fruit is placed upon a fragrant orange leaf. Desserts made of shredded fruits are generally delicious, and one known as ambrosia may be given a rosy Christmas hue by using blood oranges in place of the ordinary amber-tinted variety. This dessert should be served in a glass bowl or high dish of a kind that will allow its variegated layers to show through, or it may be arranged in little glass baskets or individual dishes. In the bottom of the dish a layer of grated cocoanut looks like snow upon which rests a layer of sliced bananas and then one of shredded orange. This arrangement is repeated until the dish is filled, when cocoanut is grated over the top. Orange juice percolates through the powdered sugar between the fruit layers and soaks into banana and cocoanut. As a substitute for banana, shredded pineapple is often used, but the dessert does not fulfill the promise made by its name unless the fruit is fresh and ripe.

TO most of us our earliest recollections of Christmas are associated with snowballs, and the sight of a snowball revives memories of many a frolic in crisp wintry weather and, by mere suggestion, whets our appetites, as a lively game of snowballing was wont to sharpen them in childhood days. What, then, could be more appealing than a bowl of snowballs upon the Christmas table? The fact that snow has not entered into them but makes their appear-

ance more inviting. Snowballs of this sort may be made of cakes baked in jelly molds and with the round portion covered with frosty icing, or they may be formed of blanc mange, served in whipped cream. Whatever its ingredients may be, however, the ball of simulated snow makes a very decorative dessert and lends itself to all manner of ornamental methods of serving.

TWO most attractive and delicate desserts with which to conclude a Christmas dinner are birds'-nest custard and floating island. To make the former, peel enough sweet apples of equal size to afford each diner one, and then core, sugar and steam the apples until they are tender, but not soft. Place them in a baking dish and pour custard over them until the apples are almost entirely submerged, then add on the top of each apple a tablespoonful of stiffly-beaten white of egg. Birds'-nest custard only requires a few moments to bake and is delicious. A pretty way to serve the dish is in a nest of evergreen. Almost everyone knows how to make floating island, which is equally delectable chilled or warm, but those who have not attempted this dessert will find the following an excellent recipe and one which introduces the novelty of chocolate cream instead of boiled custard. To make the islands, beat the whites of three eggs until they are stiff and then take up a tablespoonful at a time and dip it into a saucepan that contains three cups of boiling milk. The islands cook quickly, when they are laid aside until wanted to lay over the cream. Stir half a tablet of grated chocolate in the milk and boil it for



Christmas Dessert of layers of fruit, arranged for color effect

"Snowball" is one of the most attractive Christmas Desserts



Here one finds an excellent suggestion for arranging the Christmas Supper table. The china is blue and white, the centerpiece and place-mats also blue and white, the same color scheme being carried out by use of the Chinese porcelain vase. This is filled with sprigs of Mistletoe

eight or ten minutes, when the saucepan should be removed while the well-beaten yolks of the eggs are added. The mixture is again placed on the fire, but not allowed to boil, while sugar and seasoning are stirred in. Floating island may be served in individual dishes or in a large shallow one. A very pretty effect is produced when the islands appear in beds of Christmas greens. For decorations of this sort, sprigs of Cedar, Crowfoot or Arbor-Vitæ make most effective wreathes, while the southern States afford for wreathing dishes the feathery Tamarisk.

AS for the table service, it is a pleasant custom which provides that the Christmas feast initiate those pieces of tableware that have been received as Christmas gifts by host and hostess, especially if a donor is one's guest.

NOT less important than the viands upon a Christmas table are those adornments which are intended to illustrate the Christmas spirit of gladness and good-cheer. Tradition and association have everything to do with these. In some of our states, garlands of English Ivy represent Christmas greenery, and Roses, Violets, Scarlet Upas berries, Hibiscus and Poinsettias, in their various localities, lent the essential vivid color touch to the whole. Other states adorn their tables with Spicy Fir, Balsam, Ground Pine and Holly, with crimson-berried Wintergreen and pearly Mistletoe, while certain localities use Laurel and Crowfoot for holiday garlands, and the Pacific coast indulges in a riot of bright semitropic berries and vines at Christmastide.

THE spirit of the season is always much more fitly expressed in native foliage and flowers; by bringing in boughs and garlands that Nature has placed in our door-yards, than in anything that hothouses can produce. Christmas is a festival when all that is forced or artificial seems out of place; when the simplicity of wreathes twined from the crimson-berried foliage that glows greeting to us any day from adjacent groves harmonizes with the simplicity that marked the coming of the Christ child. Poinsettias are appropriate because we know that they are flaming in many a forest in our land at Christmastide; they have come, of their own accord, in the vivid panoply of good-cheer to brighten the children's feast. And so whomsoever would successfully adorn a Christmas table will select the color scheme that centuries of custom and tradition have supplied—green and scarlet and white—and so preserve the associations of Christmas, and will gather the branches that lie nearest the home and that most nearly express the beauty that belongs to Christmas garlands and the fragrance most suggestive of all the joyous season's good-cheer.

HOW TO MANAGE THE KITCHEN STOVE

By Phebe Westcott Humphreys

WHETHER the kitchen range or cook stove shall be the housekeeper's best friend and strongest ally, or whether it shall stand before her grim, black and implacable, capable of providing daily exasperation and despair, depends entirely upon its management. No sensible housewife will be satisfied to acknowledge herself defeated in solving all the details of this kitchen problem, upon which so much of the happiness of the home depends. When temporarily or permanently without a cook, the housewife who understands the requirements of check drafts and oven damping, the making and (still more important) the *keeping*, and the intelligent using of her kitchen fire, can be reasonably sure of retaining the happiness of her entire household. A change of servants and a consequent change in culinary management has little terror for the homemaker who can instruct her help as to the best methods of building a fire; how to keep a coal fire without rekindling from day to day; having it comparatively dormant to avoid waste of coal between meals, yet ready to spring into brisk activity and steady heat when required for quick use; how to control the ashes and prevent waste in cinders and half-burned coal; how to bank the fire at night; how to secure good results in the management of the oven; to care for the firebrick; to prevent the formation of clinkers and avoid the danger of fire from over-heated chimney flues; and all the other details that enter into the problem of the proper management of the kitchen range.

BUILDING THE FIRE

WHEN a flood of blinding smoke pours out into the room on starting a fresh fire, and the dampers are open that provide direct draft for taking the smoke up the chimney, it will be important to have the chimney flue examined. A quantity of soot will sometimes be found to be lodged near the opening of the pipe damper, and this can be removed by the housewife from the little cleaning door set in the pipe or flue near the damper. When the difficulty is more serious, and the accumulation of soot is farther up the flue, out of reach from the kitchen side of the range, a thorough cleaning of the chimney will be important; and when this is done by a man who understands his business, one cleaning, at the time that the smoke nuisance first asserts itself, should suffice for the entire season; for after that the housewife will be able to keep the soot from accumulating while fires are in constant use during the winter. When good drafts are assured, so far as absence of soot-choked chimneys is concerned, the management of dampers must be understood. If it has been necessary to clean out the range before starting a new fire, the ash damper at the bottom of the range must be closed after having opened it to encourage the fine ashes to go up the chimney instead of out into the kitchen during the raking and grate-dumping process. Then see that the oven damper is also closed, as both the ash damper and the oven damper, when open, will prevent a direct draft up the chimney so essential for starting a fire. With only the pipe damper or the flue damper open, and the front door of the grate and the lower door below the grate (or the ash door) wide open, there will be a good draft through the grate to encourage a brisk fire from the start. With the problem of the dampers solved, and the grate free from cinders and ashes, the first layer of fire-starting material should be lightly crumpled paper; then several rolls of tightly twisted newspaper, and some shavings or fine kindling, before laying on the larger pieces of wood. This material should be loosely arranged,

jack-straw fashion, in order that the flame may draw through it quickly, and ignite the large sticks of wood if it is to be simply a temporary wood fire, or the coal if it is to start a permanent range fire.

IT is usually customary to allow the kindlings and the larger pieces of wood to become well burned to glowing red before putting on the coal. A better plan is to place a loose layer of coal on the wood, in such a manner as not to pack down the kindlings, that should be crossed and lodged so that the blaze from the paper can draw through with a quick strong draft. When carefully laid, close the upper covers of the range, open the necessary damper and under doors, light the paper from beneath, and when the kindlings have burned away and the heavier pieces of wood and the thin layer of coal are bright and glowing, add more coal, a little at a time, until the fire is well established and several inches thick.

GOOD HEAT, AND COAL ECONOMY.

WHEN well started, a good range fire should continue from day to day without rekindling, and with a certainty of good heat and little waste of coal. It is important that the fire should be evenly established over the entire grate, as a one-sided fire with a good depth of bright coals in the front of the grate, and a bank of dead ashes at the back, will be not only hard to manage, but unsatisfactory in the cooking and baking processes. A long-handled poker is an important accessory; one that will reach to the back of the grate when poked in at the front. This should be used "flat," when it is necessary to stir the fire gently into renewed activity. In other words, instead of inserting the poker point side up, into the mass of partially dormant coal and cinders, and giving a vigorous shaking, that will bring the coals down into the ash pan, simply use the poker sidewise, with point flat on the grate; push it back to the extreme end of the grate, and withdraw it once or twice to loosen and remove the fine ashes from beneath, without disturbing the coal. This will produce sufficient draft, with the door damper and the flue damper open, to start the tiny blue flames through the dormant fire that will result in a clear, bright fire over the entire grate in a few moments after opening the dampers. Thin layers of fresh coal over this glowing surface should be added as required, during the cooking and the baking. This is more satisfactory than a thick layer of coal at the start, that will require a long wait before the fire is bright enough to use. After this brisk burning, when it is again necessary to bank the fire for keeping it partially dormant, do not attempt to bank it with fresh coal on a well burned ash-covered surface. First put on a layer of coal to become thoroughly ignited, and while clear and bright, before it has had time to waste its heat, bank with another layer of coal, close all drafts and open the check draft, or partially remove one of the top covers of the range, to keep it dormant until another gentle stirring from the bottom and opening of dampers calls it into renewed vigor. The ashes should be removed and the ash pan emptied every morning to prevent burning out the grate, and to insure good drafts from beneath.

TO INSURE GOOD BAKING.

WHILE the broiling, stewing, boiling, and frying on the top of the range will present few difficulties to the housewife when the making and the economical keeping of the fire is understood, the management of the oven frequently presents many difficulties. The important point of

keeping the top of the oven free from ashes should not be overlooked. Remove the upper covers of the range at least twice a week and give the top of the oven a good brushing, with a broad flat brush kept for this purpose. Then (a point too frequently overlooked), clean the oven from beneath. A narrow opening will be found directly beneath the oven with a little hinged door, or a narrow cap to be removed, for inserting a long-handled cleaner or scraper that comes with the range for this purpose. Scrape away all the accumulation of soot and fine ashes, and the briskness of oven heat that results will well repay for the extra trouble. When the oven is clean within, as well as underneath and on top, the special oven damper must be opened to insure good heating, and even, dependable temperature throughout the baking. Then with a good clear fire in the grate, the oven heat may be regulated entirely from the damper. After finishing the baking and the roasting, close the oven damper; as the heat thus thrown into the oven checks the direct draft into the flue, there is an unnecessary waste of coal in forcing the fire to keep the oven hot when not in use.

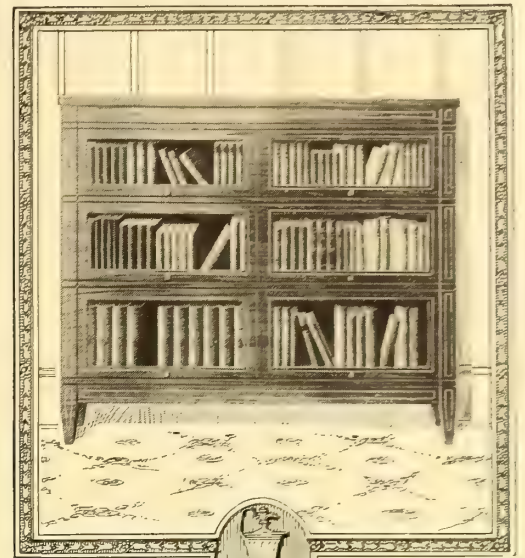
TO PREVENT CLINKERS.

WHEN clinkers are allowed to form and choke the fire, it becomes difficult to retain an even depth of bright coals. The fire becomes ash-clogged and "sulky," and it is necessary to clean out the entire grate and start a new fire, when this task might be readily avoided by a little care in preventing the formation of the mass of hardened coal and ash known as a clinker. Shaking down the fire unnecessarily will often form the clinkers, when a careful loosening of the ashes would keep the fire free and open. Some qualities of coal are more apt to "clinker" than others; but whether the fault lies in the coal or its management, one of the simplest devices for preventing the formation of the obstruction is to throw a few oyster shells into the fire while it is burning brightly. The lime in the shells dissolves the minerals in the coal which form the clinkers. It will not be necessary to keep a large quantity of shells on hand, or to use them often, but it is a wise economy to save the shells that accumulate during the Winter, when these bivalves appear frequently on the home bill of fare. One or two shells laid on the coals when the fire has been forced and the hot coals and ashes seem inclined to clinker in the bottom of the grate will prevent the difficulty. When the compact bed of coals and the bottom of the grate is kept free from the clinkers, they sometimes form on the sides of the firebox, and the firebrick will be injured if they are knocked off carelessly. The burning of the shells before attempting to remove them will soften them so that they can be rubbed off with the poker without breaking the lining of the firebox.

IMPORTANT DETAILS.

THE range should be so well managed that all the heat needed can be secured without having the top red hot, as this will warp the centers and covers. When the top of the stove becomes very hot on ironing day, or in the preparation of the meals, special care must be taken that no cold water is spilled upon it, or the water in contact with the intense heat may cause the iron to crack.

IT is important to have the range bright and clean at all times, but laborious daily polishing is not necessary. A handful of crumpled newspaper rubbed briskly over the entire surface after each meal, especially



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after the top of the range has been spattered by frying processes, will keep it evenly polished.

IT is a mistake to keep poking at the top of the fire when it refuses to come up quickly after being banked. It is also a mistake to shake down the fire briskly with the regular shaker at such times, as this will cause it to fall down into a solid mass through which the air cannot circulate and the draft will be poor; but after loosening the mass of ashes carefully from beneath with the poker, open the under drafts for quick results.

DO not close all the drafts as soon as the coal is put on for banking the fire at night, but let it burn for a short time; then on closing the drafts for the night there will be little danger of escaping coal gas.

EDELWEISS

AS everyone knows, the Swiss Government has been very active in promulgating a campaign against indiscriminate picking of the Edelweiss, the flower famous for its association with the Alpine country, in its poetry and in the hearts of every traveler. There is hardly a tourist in Switzerland who has not returned with a bit of Edelweiss. Unfortunately, visitors have ruthlessly torn the plant by its roots and so have almost exterminated it. However, it is worth knowing that a thriving industry in Edelweiss is carried on through the summer season at Fontenoy and Chantilly, villages just outside the gates of Paris, where Edelweiss grows even more freely under cultivation there than it does near the snowiest peaks of the Alps, so that even the Swiss shops of Geneva and elsewhere are enabled to supply the never-ceasing demand for this flower, which is thus obtained from France and often sold with mysterious secrecy over the Swiss counters to the unsuspecting tourist.

ON GOOD TASTE IN INTERIOR DECORATION

(Continued from page 449)

too uncomfortable to offer any one but unwelcome guests. Furniture should always be chosen with an eye to harmonious relationship of each piece to every other piece, not only in the matter of color, design and texture of wood, but also in the matter of upholstery, so the eye may not be arrested by a jarring note as it takes a survey of the room.

IT has been said that nothing is more difficult than the employment of a one-toned color scheme. However, I do not think this is true, but has probably crept into our belief by reason of the fact that one-toned effects are usually more pleasing and richer in appearance than almost any other sort and to the uninitiated suggest their being the result of much effort and expense. As a matter of fact there is no color scheme which better develops one's sense of harmony in color effects than experimenting with kindred-toned colors. While the use of the word "tone" should be confined to musical consideration, it is used here by reason of its common acceptance in connection with discussions of color. Of course, experimenting is a costly matter and one cannot always afford to do that in decoration. However, if the walls, woodwork, curtains, flooring, ceiling, rugs and pictures are right almost everything else, if there is not too much of it, will adjust itself to the whole scheme and as time goes on the elimination suggested in one of the preceding paragraphs may be

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commenced. If one feels that the scheme for walls, curtains, ceilings and woodwork, which may be chosen in accordance with the dictates of good taste, would seem to approach monotony, let it be remembered that the notes of color which will be introduced by bindings of books, surfaces of brass, the green of growing plants, silken cushions, or well chosen bric-a-brac, etc., will supply relief from anything approaching monotony, and the well chosen rugs will do much to introduce just the color note desired in the room.

FURNISHING PROBLEMS: LIVING-ROOM,
DEN, AND DINING-ROOM.

A READER of AMERICAN HOMES AND GARDENS requests suggestions for color schemes in the decoration of the space above wainscoting of living-room and den. These rooms are paneled to a height of four and one-half feet, and have beamed ceilings. The woodwork is North Carolina pine stained nut-brown, and the furniture selected for both rooms has the same finish. The reader had planned to use yellow above the paneling, which paneling extends four and one-half feet above the floor. Suggestions are also requested for dining-room decoration, in which room the paneling runs up to a height of five feet from the floor, finished with a plate-shelf, the furniture of the dining-room being quartered oak stained nut-brown like the room's woodwork.

YELLOW as a color scheme for the living-room and den would prove most satisfactory, but inasmuch as these two rooms have a southwestern exposure which furnishes good light at all hours, it would be the better plan to reserve the yellow for the dining-room, using a gray-green or an old Italian blue for the living-room and in the den. Either gray-green or the blue will harmonize with the nut-brown color of the woodwork and of the furniture. The decorations should be given the gray-green unless there are notes of color in the other furnishings of a nature that would provide a better harmony if the Italian blue were used. The space between the ceiling beams had best be tinted a slightly lighter shade than the woodwork itself. Tinting the space between the beams with color is often done but almost always brings into a room a sense of formal coldness and often an effect that is bizarre and not homelike.

OVER the living-room mantelpiece it would be well to insert a plaster bas-relief of some sort or size; Donatello's "Singing Boys" would be an excellent subject for this purpose. The bas-relief frieze in question can be obtained in plaster with old ivory finish in almost any large shop dealing in plaster casts, or it could be ordered directly from reliable manufacturers of such casts, whose addresses may always be obtained by application to various directors of art museums throughout the country, if the home-builder does not happen to know of them.

Instead of considering the room which is called a den as such, it would be well to plan to have it a library and to furnish it accordingly. All one's books and the desk could be placed in this room, just leaving the living-room free for a family sitting-room. Built-in book shelves should occupy the space between the window and the living-room door, with a desk opposite where light could be had from the window. These shelves should run up four and one-half feet so that the top may be in line with the wainscoting. Curtains of coarse ecru net or scrim, gathered on small brass rods both top and bottom, should be fastened to the windows themselves so the curtains will not



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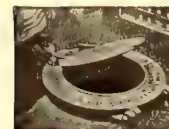
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blow to and fro or be in the way when the casement windows are open. The materials should be ecru Himalaya or Egyptian cloth hung to drop in straight folds that come just to the sill. They will be all the draperies that the room will require. These inside curtains can of course be all the same color as the wall above the wainscoting, which will be the best plan. Inasmuch as the wainscoting gives to the room a finished appearance and helps to furnish it, one will find when the furniture is placed in such a room very few ornaments will be required to complete the decoration. A few well-chosen prints after old masters framed in narrow brown molding will look well on the walls, preferably photographic prints that are brown in tone. The yellow of brass is also attractive against brown woodwork and it should be introduced into the living-room; a pair of Russian brass-branched candlesticks could be placed on the mantelpiece, brass andirons on the hearth, and a good lamp with a brass or opalescent shade for the table. Inasmuch as the reader desires a yellow room this color can be used to some extent in the dining-room in addition to the tinting of the walls. If the yellow chosen is a deep one running to the orange, care must be taken in selecting the tint to have it equivalent in value to the brown of the woodwork. The wainscoting should stop at the height of the fireplace to give an unbroken line around the room. Any really good old china should be placed on the plate-shelf, but just here one feels bound to protest against the introduction of plate shelves to contain ordinary and unattractive pieces of porcelain or pottery, which not only detract from the room but have no reason for so conspicuous a place. One sees no reason for introducing a window-seat into the bay of a dining-room, as there is not any too much wall space in an average room of this sort; it would be far better to have the bay reconstructed to accommodate a built-in sideboard with high windows overhead.

WHAT TO FEED DOGS IN WINTER

By T. C. TURNER

WHEN dogs are kept around the house, as is often the case, the greatest harm results, not so much from the quality of the food they get, but from their being fed too frequently. Scraps of food are given them at all times, with no thought as to its being the proper meal time or not, and this unfits a dog to receive a really good feeding at regular intervals. As a rule twice in twenty-four hours will be plenty to feed, that is to say, a light breakfast, and a good meal towards evening; a convenient hour (say 5 P. M., or at whatever regular time can be established) should be set. However, once the hour is set, great care must be taken to follow it with promptness. Table scraps make excellent dog food, but care must be taken to avoid anything approaching rich gravies, too much fat, or pastry. Of course, as with human beings, the dog requires more food in winter than in summer; more fatty substances, too, can be taken during the cold months, but in all matters of feeding the circumstances under which the dog lives, and its own peculiarities, should be watched and taken into consideration.

A variety of food is of the utmost importance. The less exercise a dog gets the greater the need of care with regard to his feeding. Meat should be regularly fed in moderation, and never entirely withheld. Vegetables also should be given, but can-

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not quite be considered as a basic food; they act rather as a means to keep the dog in good condition.

One of the most important facts to bear in mind, in preparing dog food, is that all foods given should be well cooked. Raw flesh should be given but very sparingly, not more than once a week, and then it should be well looked to that it is of good quality and absolutely fresh.

When dogs are not fed from the table, what is known as butcher's refuse can be procured at little cost, but all food of this sort requires to be well boiled and any excess of fat skimmed off. Never omit adding a little salt to the dog's food, as the saline particles are as important to him as to man.

Many of the patent foods on the market are excellent. The writer prefers to scald those in the form of biscuit until they are well soaked. Then all excess of water should be strained off and this food given when cool. Never feed a dog with really hot food; not that he will, as a rule, take it, except he is very hungry, but because it is not good for him. Foods just warm during the cold months are preferable to really cold food. One of the best methods of keeping a dog in good condition is to feed him boiled liver once a week, taking particular care that the meat is well cooked. Thicken the gravy in which it has been boiled, and add plenty of stale bread. Don't feed too freely on this, for dogs are very fond of it, and will eat an almost unlimited quantity, and it is a mistake to assume that a dog knows when he has had enough. This diet should also be prepared for the dog kept around the house, once a week, in place of table scraps.

Each dog should have his own special feeding dish; he should be fed from nothing else, either in house or kennel, and the dish should be kept clean with the same care that is exercised with the dish for the master's table. When table scraps are used, mix in among them a little stale bread and when possible a little gravy to moisten.

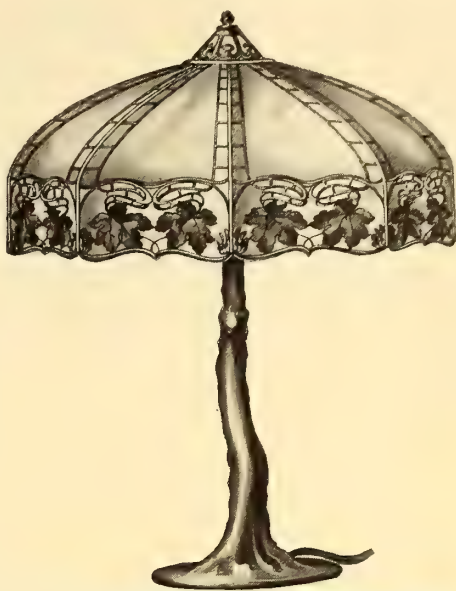
Do not attempt to feed with poultry or game; neither are good for dogs of any breed.

A water pan should be provided for the dog, kept well filled with fresh water, and kept always in the same spot.

Bones should be given about once a week, they furnishing him with never-ending entertainment, and are also very valuable in helping to develop the jaws and in keeping the teeth clean and in good order. However, care must be exercised that there are not any with broken or sharp edges in the bones fed to the dog, and that small bones are not given him, as these are particularly dangerous, catching in his throat and otherwise injuring him. The size of the bone must be considered in proportion to the size of the dog; anyway, one that he could not possibly get into his throat.

Never allow a dog violent exercise within at least one hour after his feeding. Such exercise as they themselves will take, which is usually little or none, will not injure them, but the worst possible results come from taking a dog from a hearty meal and over-walking him. I have known of a case where a dog died within a few hours from over-exertion after feeding.

In conclusion, I may say, that in order to have healthy dogs, one must watch them closely to become well acquainted with their special needs. Then will be found that there is little trouble in keeping them in good condition.



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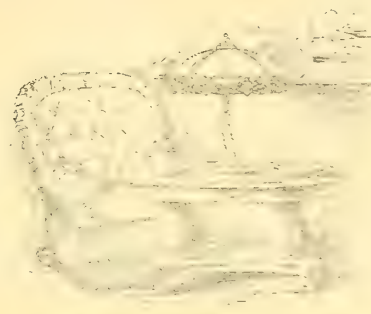
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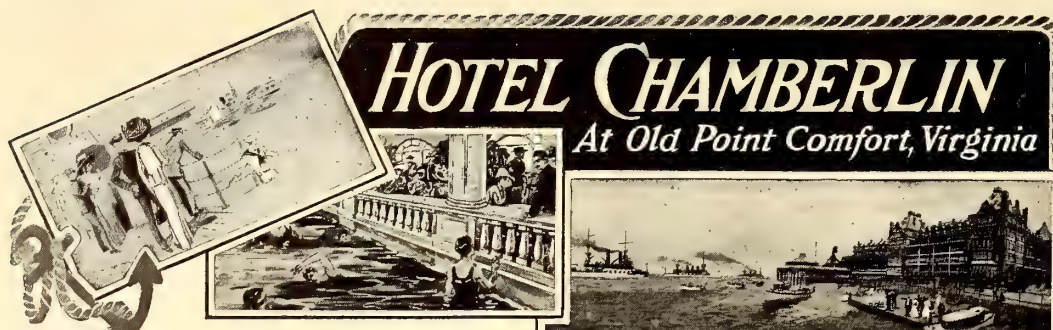
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POMANDER WALK, by Louis N. Parker. New York. John Lane Company. 1911. Cloth, 8vo. Illustrated. 267 pages. Price, \$1.30 net.

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THE PHOTOGRAPHIC ANNUAL FOR 1911-1912, edited by Arthur D. Goodole. New York. Tennant & Ward. 1911. Paper, 8vo. Illustrated. 293 pages. Price 50 cents.

Considerable alteration has been made in the arrangement of matter in this Photographic Annual, and many new features have been introduced which are of special service to all interested in photographic matters. A very interesting chapter is taken up with the subject of home-made papers and another with the preparation of lantern slides.

A SHORTER COURSE IN WOODWORKING. A Practical Manual for Home and School. By Charles G. Wheeler. New York: G. P. Putnam's Sons, 1911. 8vo.; 286 pages; 765 illustrations. Price, \$1.50.

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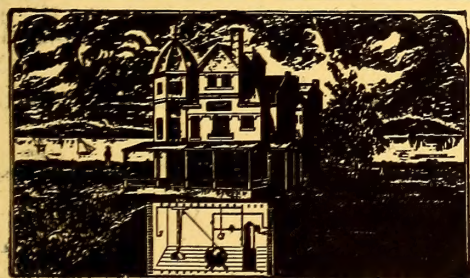
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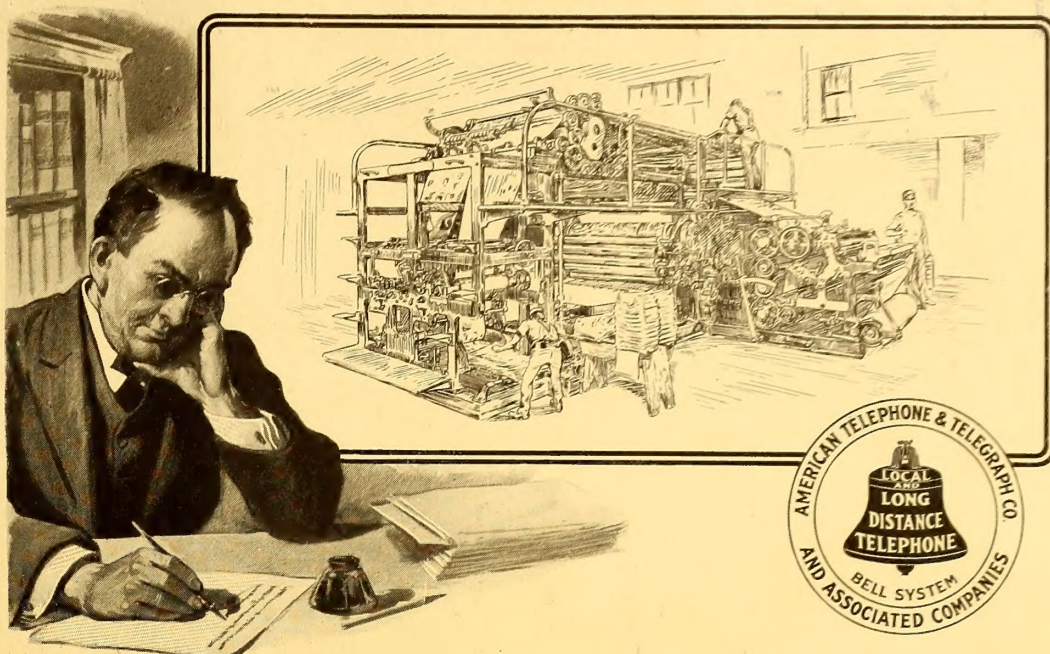
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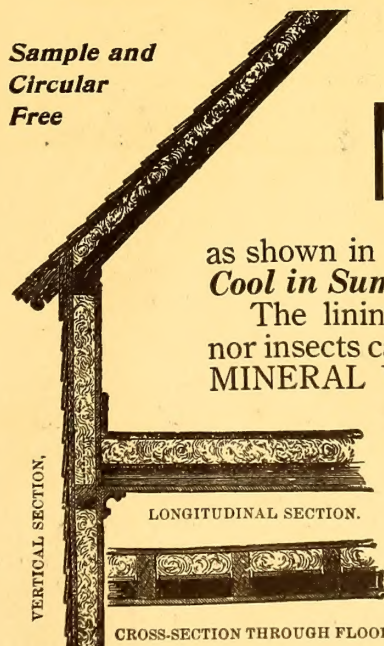
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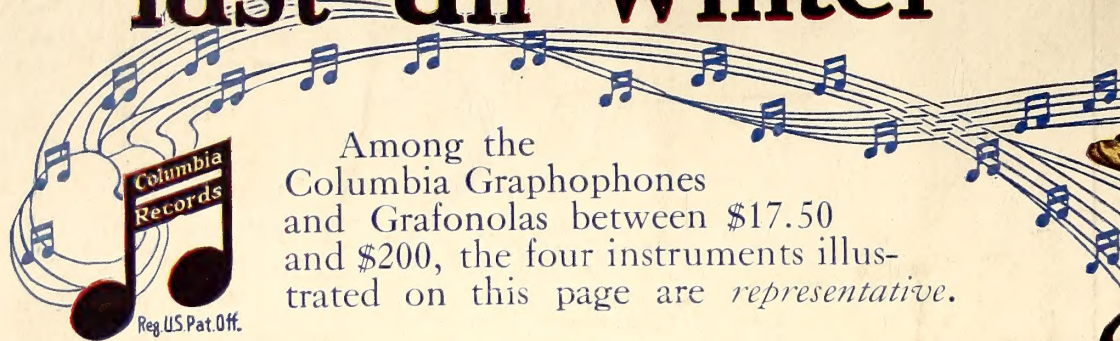
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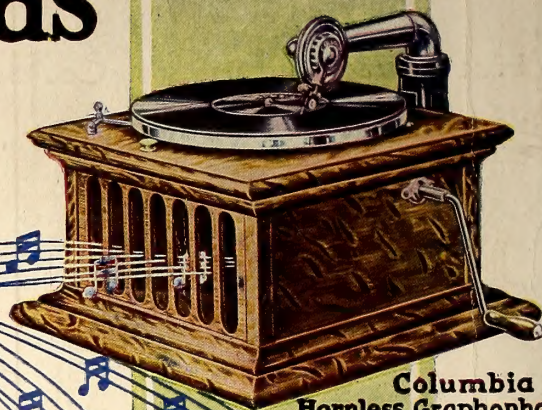
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