



# House & Garden

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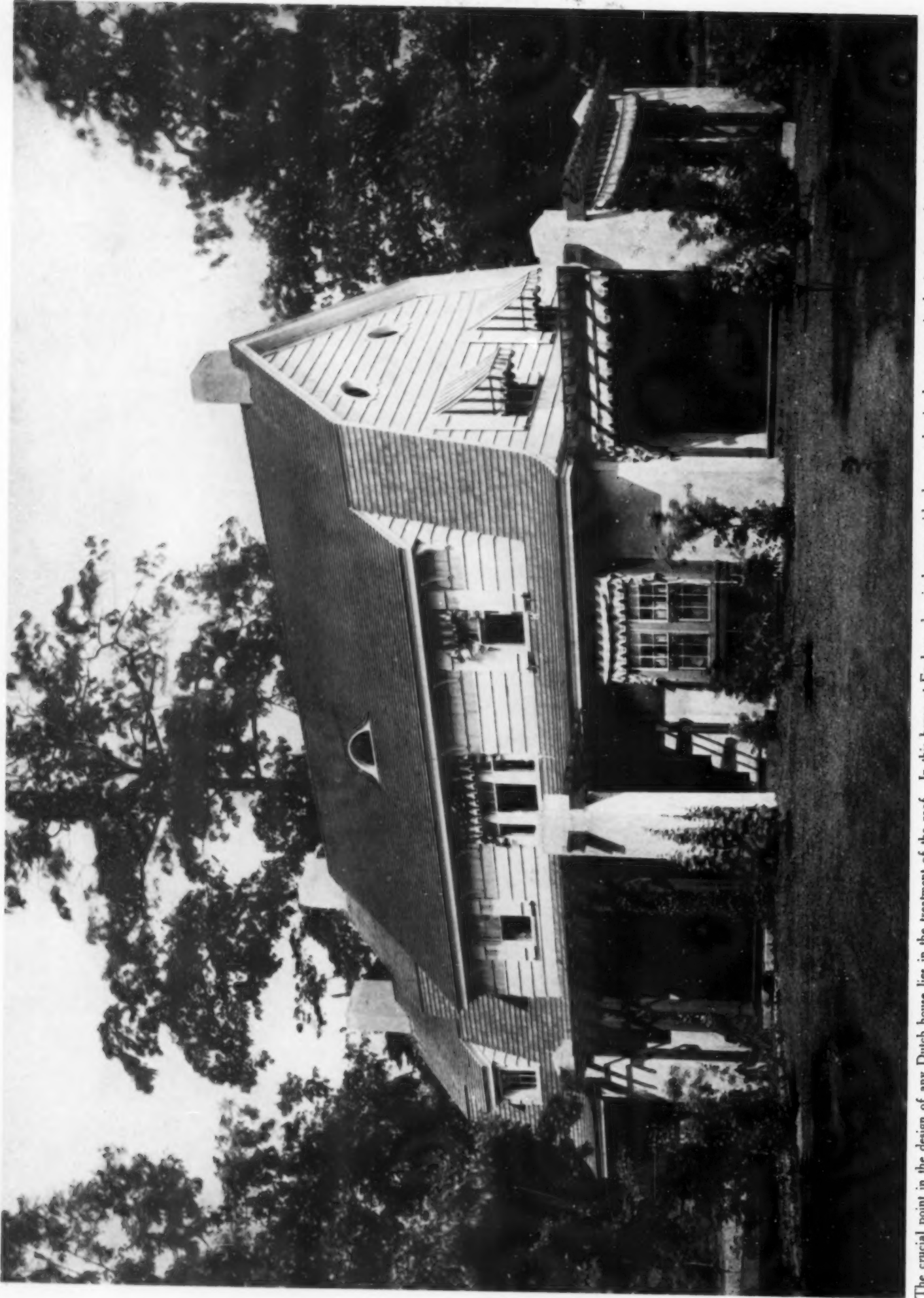
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RICHARDSON WRIGHT  
Managing Editor

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The crucial point in the design of any Dutch house lies in the treatment of the roof. In this house at Englewood a single very wide dormer takes in three rooms in the interior, and is roofed by a continuation of the upper slope, the edge being faced with a cornice relieved by small brackets placed each side of the window





# House & Garden



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No. 1.—An informal, balanced type, with a suggestion of the Colonial feeling in the detail of the eaves and windows. It is essentially a white house, having outside walls of stucco. The arrangement of generous-sized rooms makes it the type of house for a growing family

## Your Type of Country House

A VARIETY OF SUGGESTIONS BASED ON THE REQUIREMENTS OF THE TWO PERSONS CONCERNED: THE FAMILY, ITS NEEDS, INCLINATIONS AND PURSE; THE ARCHITECT, HIS RESTRICTIONS AND OPPORTUNITIES—THE PRICES RANGE FROM \$5,000 TO \$30,000

CALVIN KIESSLING

**S**INCE the more general diffusion, among the home-building public of moderate means, of such knowledge of architectural types as Colonial, Modern English, Half Timber, Italian and Spanish Mission, it resolves itself upon you and your architect of to-day, even more than heretofore, to give careful consideration to the following five determining factors:

Location and nature of site and environment.

Size of family and number of servants (if any) and social inclinations and demands, determining the size and number of rooms and baths.

Amount of proposed expenditure determining the type of construction, whether of brick, tile, wood, stucco or stone.

Inclination in furnishings determining nature of interior wood finish, whether painted or stained hardwood.

Types of windows, whether sliding or swinging, large or small lights of glass, or leaded glass in metal sash.

Only by assimilating all that is predominant in the above factors in your problem can a happy determination of your type of

house be made, for the design must harmonize to be a fitting type.

The site, regular or irregular, coupled with the often very positive inclination for either lighter painted or darker stained interior woodwork, are often the most determining factors.

It may even become evident that the distinct type of house favored does not prove to fit after the above analysis has been thoroughly sensed by you and your architect. This, however, should only go to show that, generally speaking, the enumerated specific types assert themselves only in the various modified forms of each so-called type, and then only become a house that is a home truly fitting for our American life and environment.

The plan here is simply to show types, giving their possible substitutes in building materials, so that the reader can visualize for himself the kind of country house best fitted to his needs, inclination and purse:

I. An informal, balanced type, with a suggestion of the Colonial feeling in the detail of the eaves and windows. It is essen-



No. 2.—A house on a hillside planned along Italian lines, a type permitting an irregular arrangement of rooms



No. 3.—An unbalanced formal type of white stucco. The interior arrangement shows rooms at different levels

tially a white house having outside walls of stucco, relieved by the application of trellis, as in this case, or of wide, coursed shingles painted white, with green blinds and green-purple, variegated slate or shingle roof as the dictates of initial cost might determine. A formal grass terrace and open lawns are requisite for its setting. Generous-sized living-rooms and enclosed porches on the ground floor obtain numerous bedrooms and sleeping porches on the second floor, affording all the requirements for the comforts of a growing family. White painted interior finish suiting the use of mahogany furniture would naturally be the necessary accompanying factor. Sliding sash divided into small lights are essential to this class.

2. An informal type, long and low on the

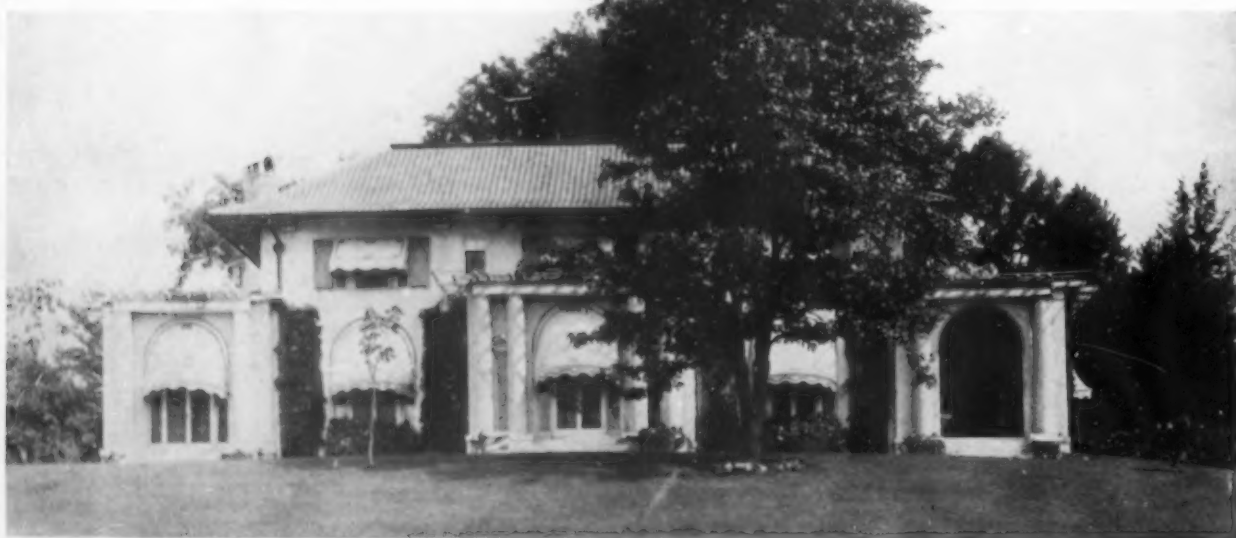


No. 4.—The general use of mullioned and transomed grouped windows suggests the rural English type. A house that could also have a brick and stucco exterior or half-timber and stucco

front and well set upon stone walls and terraces on the garden side, echoing the Italian country villa in its arched loggia, white stucco walls, overhanging eaves and red tile roof. A wooded and picturesquely irregular hillside slope affording an open level approach on the front, forms the site. This type permits of the irregular plan arrangement in the disposition of its principal rooms and the use of stained interior wood finish suiting the inclination of rich wall coverings and oak or walnut furniture. Either sliding or swinging sash divided into fairly large lights are in order.

3. An unbalanced, formal type of white stucco house with tobacco-brown blinds and shingle roof, which by its simple mass classical entrance and flanking arched loggia, is probably more reminiscent of the Italian than of any other style. All this is adjusted to an irregular, densely wooded hillside by a stepped terrace at entrance and a garden outside of the loggia. Here the design suggests that the principal rooms are at different levels, affording interest in their relation to one another. Stained-wood finish, together with painted finish, are equally possible and fitting.

4. An informal type,



No. 5.—Distinctly a house adapted for hospitality and social functions—formal, balanced, of magnificent proportions. The large arch window group in the first story intimates an arrangement of large rooms with high ceilings





No. 6.—In plan, the second story of this house affords maximum bedroom accommodations, well suited to the needs and comforts of a growing family. Instead of white stucco for the exterior, shingles, clapboard or red brick could be used with variations in the cost



No. 7.—A type adaptable to a level grass terrace. Modern English in design and commodious throughout



No. 8.—With equal effectiveness, this house could be built of white siding or shingles or all red brick

with white stucco exterior and green, stained chestnut wood trim and sash having a simple, unbroken roof covered with dull-glazed tile. The general use of mullioned and transomed grouped windows suggests the rural English type. A site practically level, interspersed with large trees, forms a happy setting for this type. This is one that could,



No. 9.—Another instance where a wood exterior would give the same general effect and yet preserve the formal Italian lines—a house that depends greatly upon its garden setting

on the same lines, have an exterior of brick and stucco or half timber and stucco, and fit this particular site. In any case, an interior of stained woodwork would be consistent for the principal rooms.

5. A formal, balanced type of magnificent proportions, a distinctly white stucco house, with a green  
(Cont. on page 50)

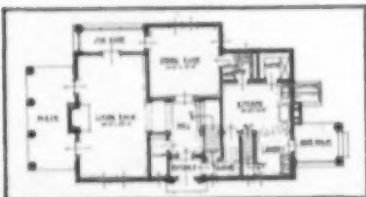
Possible Types for Smaller Suburban Houses on Open General Level Sites Having 100 to 150 Feet Frontage



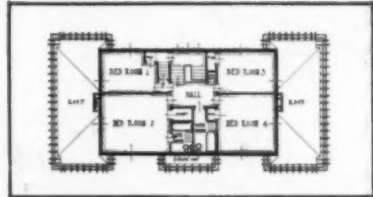
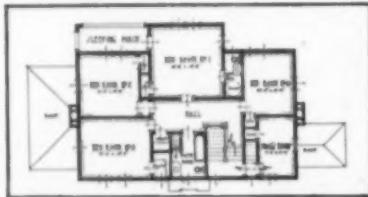
No. 10.—A simple, small stucco type, with tile roof and relieved by well-detailed entrance, flower boxes and balanced side porches



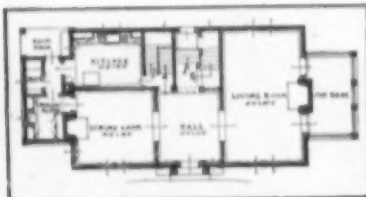
No. 11.—The arch motif lends an effect of height in the first story—the type permitting inexpensive development



(a) Possible types for smaller suburban houses on open level sites



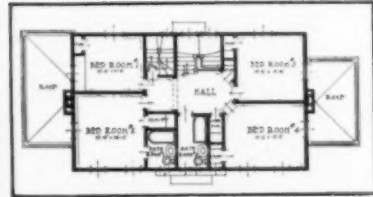
(b) A plan of extreme simplicity with effective room arrangement



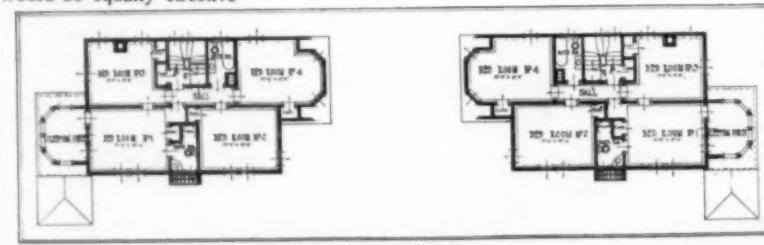
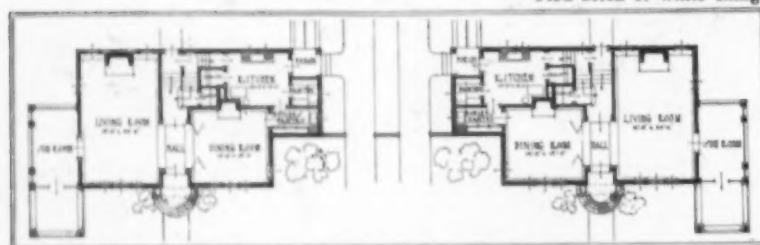
(c) The openness of this first floor plan of the Colonial house gives an idea of its roominess



No. 12.—Attic space in this Colonial type gives added bedroom accommodation. Red brick or white shingles would be equally effective



(d) Irregularity of the staircase hall proves attractive on this second floor arrangement



No. 13.—An irregular, simple, white shingle type, with green roof and blinds to match—see plans above



No. 14.—A reverse of the picture shows how service departments should be adjacent when houses are near together



# The Choice of Domestic Hardware

ITS DECORATIVE VALUE WHEN PROPERLY PLACED—SOME GUIDES TO CHOOSING THE RIGHT KINDS—HOW TO KEEP IT IN GOOD ORDER

JAMES P. THURSTON

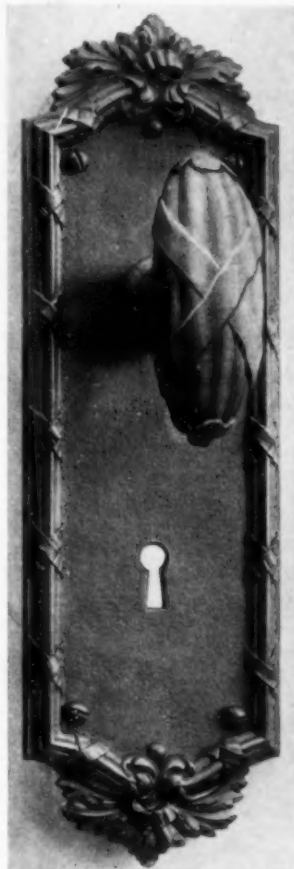
**H**ARDWARE is the jewelry of the house fabric. Under ordinary circumstances its pattern and choice are governed by the same principles that govern the jewelry of a gentleman: it must be simple, of excellent design and utilitarian. If the jewelry is other than that, the chances are that it is a little outward indication that the gentleman is but a "gent," and if the hardware departs from the foregoing standard we may generally expect either ostentation or meaningless eccentricity.

Hardware mounts or fittings are required for doors, shutters, casements, closets, cupboards, drawers and various other sorts of built-in furniture. Lighting fixtures are purposely excluded from this list, as they are dealt with elsewhere. The usual materials of which domestic hardware may be made are brass, bronze, iron and glass.

Brass hardware is finished plain, with lacquer or with a mat surface. Of these methods of finishing, only the first can be conscientiously recom-



A window lift of distinction for a French room



Suitable for a Louis XVI reception room or library

mend for universal use and permanent satisfaction. A true, require more attention, but its beauty, attested by the old brasses of Holland, fully compensates for the labor involved in keeping it in good condition.

Bronze ordinarily does not require polishing, and is almost always better looking when left to the action of the atmosphere and ordinary wear. Any finishing preparation applied is apt to spoil the color and destroy the lively quality of the metal. The scope for the appropriate use of bronze hardware of any kind is extremely limited, and it is apt to look out of place unless its accompaniments are of great elegance and exactly suited to it. As a substitute for brass under ordinary conditions it is not desirable.

Wrought iron hardware may be given either a black or a bright finish. There are several ways in which the black finish may be applied. The metal may be painted with a mixture of lampblack and banana oil. This is easy to apply, dries quickly and leaves a smooth, dull black surface of agreeable quality. Then again, black Japan paint may be used. This also



Old Dutch door hinges suitable in a Colonial house

dries quickly and is particularly satisfactory in taking a tight hold upon a metal surface. Another preparation is especially compounded by some of the finer iron workers, and is baked on the metal upon the forge. It is extremely durable and of such thin body that it does not clog up nor obscure any finely engraved lines of decoration on the surface of the ironwork. Finally, ordinary black paint may be used satisfactorily on some of the coarser hardware, though the previously mentioned preparations are preferable, and even cheap, cast iron fittings may be made fairly presentable by this means.

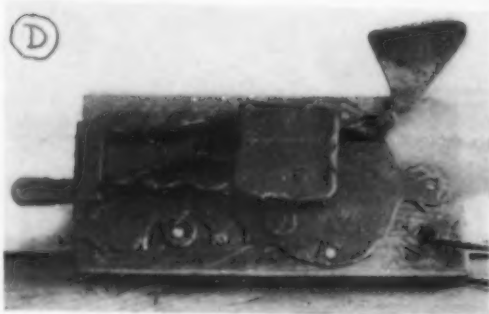


Four examples of modern hardware proving how hardware can be the jewelry of the house

The finer wrought iron hardware, such as keyplates, locks, keys, knockers, and decorative hinges may also be given a pleasing and durable bright finish which can be kept in perfectly good condition with a very little attention once in every three or four months. This applies to both exterior and interior hardware, for the metal is given a preservative treatment before leaving the shop of the craftsman, which ensures its brightness with a minimum of care. The only thing necessary is to apply a little of the mixture, which the craftsman can supply, at the intervals mentioned. In this way the wrought iron surface can be maintained with the lustre and gleam of burnished steel or old silver.

Glass knobs must be reckoned in the catalogue of available domestic hardware and find their appropriate place on doors and on various kinds of built-in furniture. They must be mounted in metal or fastened in place by pins or bars running through their center. It is preferable to have these metal mounts of nickel or some material that will not require frequent polishing, otherwise the polishing compound is apt to get in the crevices of the pressed or cut glass and necessitate troublesome washing.

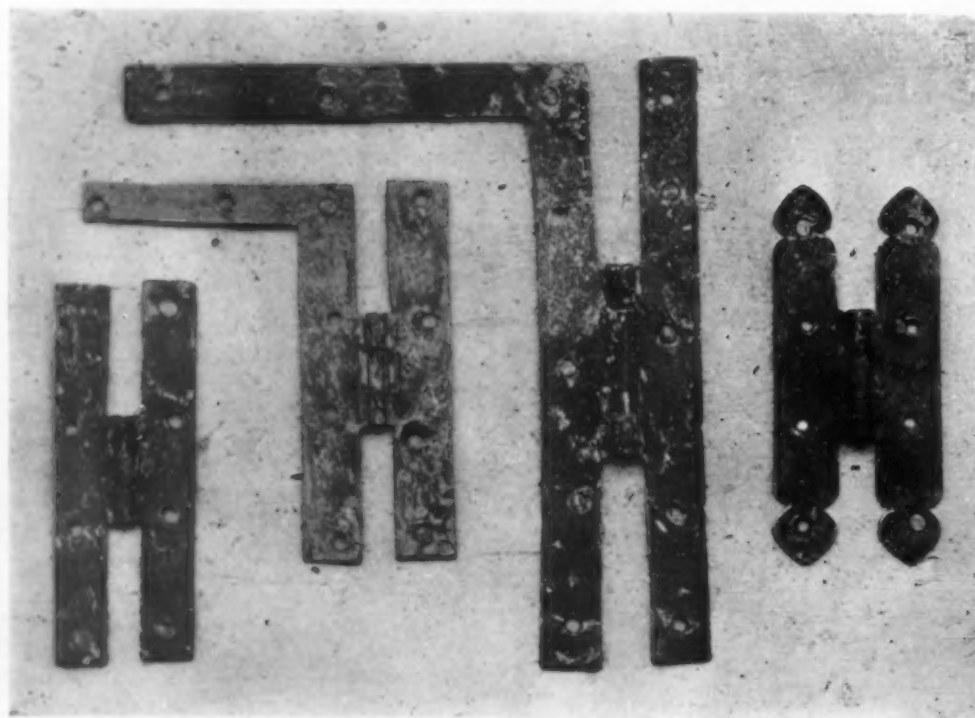
The choice of domestic hardware should be based on two prime considerations — first, practical utility, and second, beauty and fitness of design for the place and surroundings in which it is to be used. Other things being equal, it stands to reason that the preference ought to be given the hardware that combines both desirable qualities rather than to that which is merely utilitarian. The great



Though crude, the Colonial hardware was serviceable. (a) A Pennsylvania doorknocker; (b) a Dutch door latch with brass handle; (c) a Dutch thumb latch; (d) a Pennsylvania Dutch doorlatch

trouble is that most people do not pay enough heed to the selection of hardware. They are too apt to ignore it unless some individual piece is out of order and causes them inconvenience. It is one of the little niceties, one of the small refinements of architectural fittings, that the average mind, with its customary carelessness of minute detail and indifference to the valuable habit of close observation, passes by without concern. A piece of hardware should perform perfectly the function for which it is designed. A latch that does not latch tight; a lock that refuses to work without humoring, or a hinge that wobbles and lets a door sag, can only be condemned as bad. In the second place, the purpose of hardware should be obvious, and it should be of simple construction and easy to use. It seems as though this ought almost to go without saying, but the writer has occasionally encountered various devices that did not meet these requirements, some of baffling appearance until their method of working was explained, and others that were not easy to manipulate. Closely akin to this last-mentioned essential in good hardware is the reasonable demand that it be comfortable to handle. Knobs, handles, latches, bolts,

and all other pieces of hardware with which the hand must come in contact, should be so placed and of such dimensions that they are convenient and agreeable to use. Some knobs and door pulls, though satisfactory in appearance, are of shapes and dimensions that make them unpleasant to the hand, and they are now and then so set that they throw the hand or arm into an unnatural position. A



For certain types of houses, the sturdy lines and simplicity of early Dutch Colonial farmhouse hardware is unexcelled, as witness these examples of inside door hinges





The latch plate of Colonial days had genuine decorative value

fourth essential of good hardware is that it should not be obtrusive in shape or size with parts that stick out and are liable to hurt people or catch and tear their clothing. Lastly, all hardware should be well made and substantial and capable of withstanding usage.

Having established a standard by which to measure utility in choosing domestic hardware, it remains to say a few words about the decorative capacity, which ought to be considered concurrently. It is of the first importance to observe the principle of architectural congruity and see that the hardware fittings are in keeping with the style of the objects upon which they are to be used. Such observance leaves wide liberty with regard to either simplicity or elaboration. While elaboration is perfectly permissible for the sake of an occasional

spot of enrichment, anything fantastic or whimsical should be avoided, for it will soon lose its interest. In nine cases out of ten, rigid restraint and simplicity of design are preferable. Above all else, let every decorative piece of hardware have an obviously useful function as well. Do not, for example, have conspicuous strap hinges extending across the width of a door when in reality the door is hung on butt hinges which are practically invisible. In such a case the hingeless straps are merely a piece of meaningless, faddish and dishonest ostentation, their presence is a palpable deception and their use is indefensible from the points of view of ethics, common sense and architectural propriety. If there is an ornate key plate or escutcheon on a door, let it be there for a *bona fide* keyhole, and not for the embellishment of a dummy keyhole that is not used. If a chest has great strap hinges extending across the lid, let them be genuine and let the lid depend upon them. The use of sham hinges and other fittings is a detestable piece of material insincerity. So much for general principles.

For the sake of a concrete example in choosing hardware, let us take a door, for that is the most usual object of hardware fittings. If it is a Colonial door of either batten or panel type, both box-lock and bolts will be appropriate. A box-lock is one whose mechanism is enclosed in a flat box attached to the inner surface of the door. A mortise-lock, on the other hand, is entirely enclosed within a mortise or cavity cut in the stile—usually at the junction of the stile and middle rail—of the door. The black color of the box-lock and bolts forms an agreeable contrast to the white of

the door, so that such fittings, even though perfectly plain, are decorative as well as utilitarian. On such a door one will expect also to find stout strap hinges, which may be either quite plain or wrought with a degree of elaboration.

With the door of Georgian type, the box-lock and bolts are still in order, while large strap hinges, except sometimes for outside doors, are not so often found. Doors within the house in both the Colonial and Georgian styles not infrequently have angle hinges such as those shown in one of the illustrations. During the Georgian period, however, there is a growing tendency to hang doors on butt hinges which are practically invisible. About the beginning of the Nineteenth Century, doors, both outer and inner, were commonly made of sufficient thickness to admit of using mortise locks, and the use of box-locks was merely a matter of preference, and not a matter of necessity, as it had been when inside doors were usually too thin for a mortise to be cut in them. There is no practical objection to the box-locks other than the dislike some people have of any projection that can be avoided, however slight, from the surface of a door or door-frame. Where box-lock and latch are combined there is the additional decorative possibility of a bright brass knob. Along



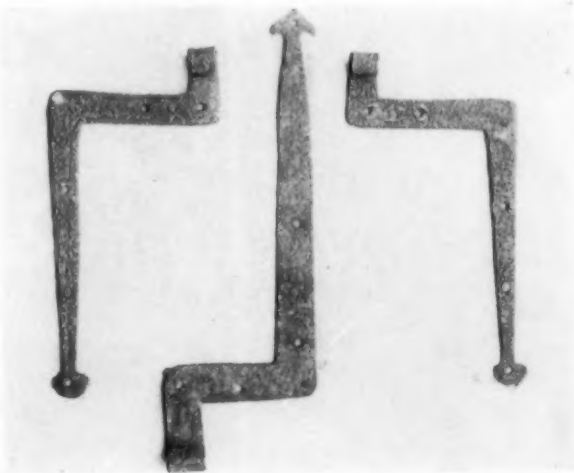
On the door-knocker was expended, and should be expended, much artistic work

with mortise locks came knobs, on the doors of the better kind, of metal-mounted glass or painted porcelain, as well as brass. Where box-lock and latch are separate, as they frequently are on early doors, the latch-grasp is susceptible of interesting treatment.

With the modern door, thanks to our eclecticism and cosmopolitan mixture of architectural types, almost any style of hardware may be appropriately used so long as it meets with the requirements previously noted and accords with the general surrounding treatment. The tendency towards concealing hardware that really began with the appearance of the butt hinge and

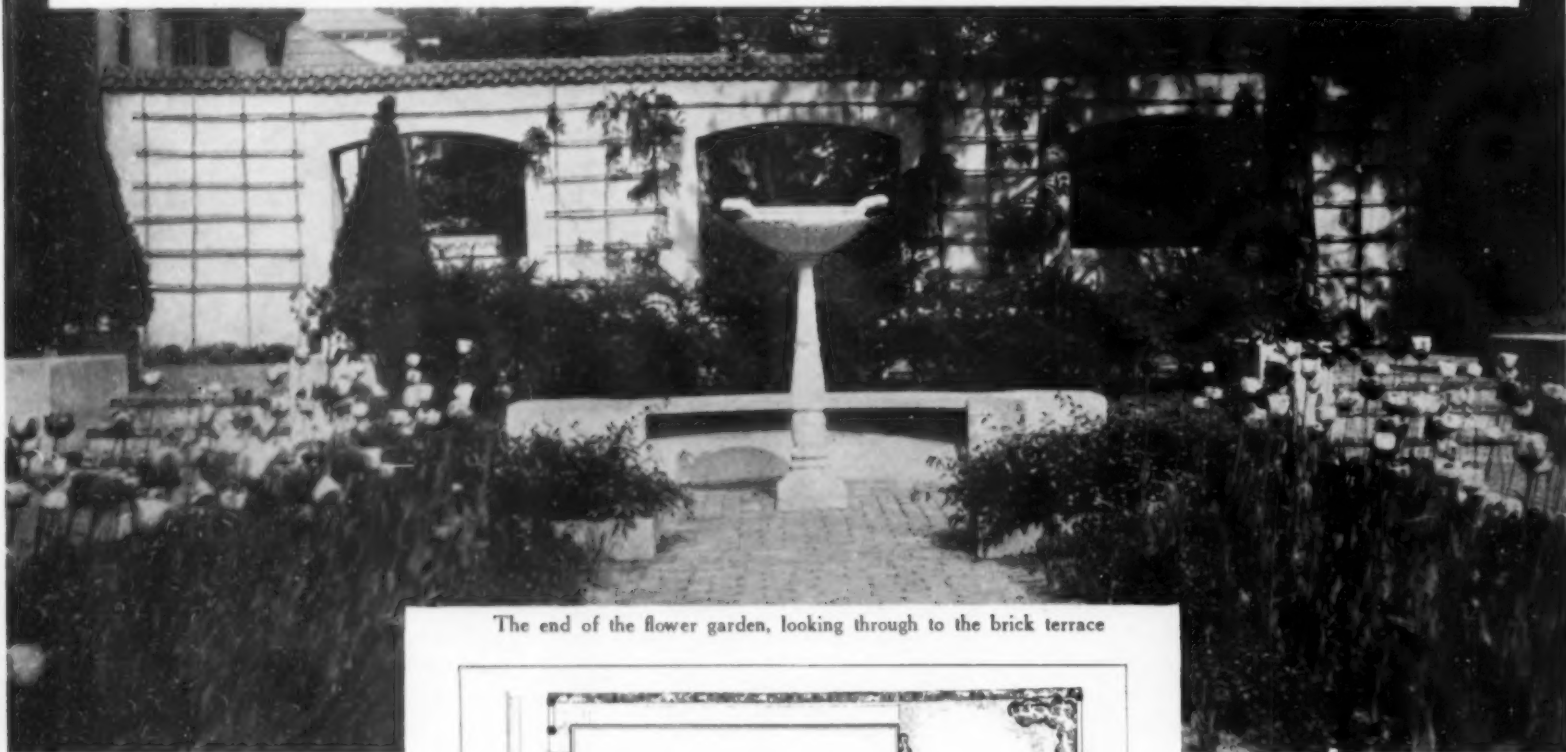
the mortise lock has reached its full development in the various invisible doorsprings, door checks, and the like, concealed in the floor and elsewhere. These fittings are excellent and eminently useful, but are practically incapable of any decorative treatment, and are therefore much better out of sight.

From the few instances noted in connection with the door one may gather the somewhat analytical way in which  
(Continued on page 59)



Modern shutter hinges can readily be designed after such models as these from an early Dutch house

## Landscape Gardening on a Small Place

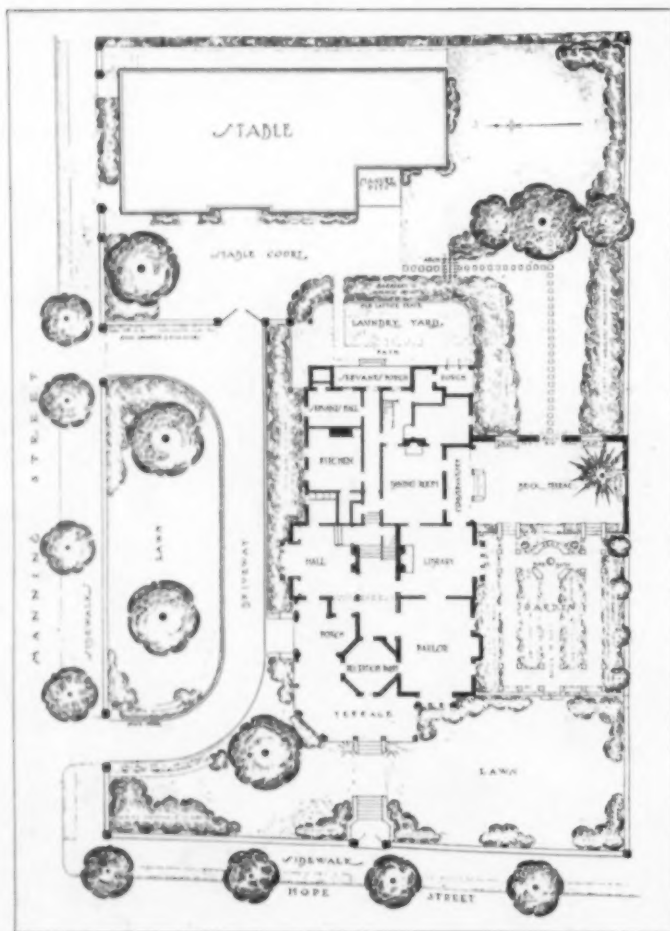


The end of the flower garden, looking through to the brick terrace

**T**HIS story about a city lot 140 by 209 feet, where the house is placed in the very center of the property, illustrates what comprehensive use can be made of a small piece of ground. There is a drive on the north side which passes by the entrance porch. On the east a shrubbery-bordered lawn makes a pleasant outlook for the living-room. On the south the conservatory leads to the terrace and to the flower garden. On the west, back of the house, is the laundry yard, and next to it is the stable court, which connects with the drive again. Privacy and seclusion were obtained in the very midst of the city by building a wall around the entire property.

The house is open only from September until June, and it is during this time that the grounds can be enjoyed by the family. For this reason the planting is so chosen and arranged that it will produce its best effects during the late fall, winter and early spring. There are late autumn flowers and shrubs with brilliant foliage. There are evergreens and shrubs with berries and gay-colored stems. There are bulbs and early flowering shrubs. These give abundant green and bright color to the city garden during the cold seasons of the year.

The drive was made as practical as possible. It runs parallel



Compactness and effective simplicity characterize this plan of Sibly C. Smith, the landscape architect

### A CITY PROPERTY IN PROVIDENCE, PLANTED MAINLY FOR WINTER EFFECTS

ELSA REHMANN

ivy with hemlocks, forsythias and dogwoods against the wall in back of them. Along the house the planting is principally of

to the house and turns abruptly with short curves to the two entrance gates. Its shape fits the ground, and the rising slope of the street and the two gateways make easy the entrance and departure of vehicles. The door of the stable, placed on the axis of the straight part of the drive, connects the stable, front door and street.

It is here that the initial impression of the grounds and house is received. The planting has been carefully considered in order to obtain at the very beginning a certain distinction characteristic of the entire place. An old beech tree with spreading branches dominates this part of the grounds. In its deep shade many woody plants like ferns, Solomon seal, *Uvularia* and violets make a ground cover where the grass will not grow. The driveway is bordered by planting strips. On the one side myrtle is planted near the entrance, then ivy, and near the exit a group of fragrant bush-honeysuckles. Along the wall in back of this strip are Regel's privets in scattered groups. On the other side of the drive, near the entrance, are euonymus, fragrant sumac, pachysandra and



rhododendrons. It is interesting that these rhododendrons which did poorly in their original position on the south side of the house flourish on the north side. They dislike excessive sunlight, but enjoy the more even temperature of the shade. Now they withstand every winter without any protection except a mulch around the roots. They look particularly well in contrast to all the neighboring rhododendron beds, which are tied up in their coverings of evergreen boughs at the first approach of cold weather. *Leucothæ*, *pachysandra*, ferns, ivy and yellow root make a foreground planting for the rhododendrons. Along the wall of the service court fragrant sumac and asters are planted, and *Ampelopsis engelmanni*, which has clinging suckers like the Boston ivy and a free-growing habit like the Virginia creeper, clings over wall and posts.

All the plants on the drive endure northern exposures and shady positions. It is a planting composed mainly of evergreens. To the exclusion of all stiff specimen conifers, broad-leaved varieties have been used. The decorative effectiveness of evergreen planting depends as much on the nicety with which the different varieties are combined as on the selection of the material. It is a planting chosen principally for its fine foliage effects. The lasting green of myrtle and ivy, hemlock, euonymus and pachysandra, the almost evergreen foliage of the fragrant honeysuckles, and the glossy leafage of the rhododendrons give a splendid winter effect. Against these are contrasted the *leucothæ*, when its fo-

liage turns a deep red in the autumn, and the brilliant fall color of the yellow root and fragrant sumac.

From the drive we can pass to the lawn, a little place, quite private and secluded, six feet above the sidewalk. The wall around it has done away with the original steep grass slope, which was never good to look at and very difficult to keep in order. By the building of this retaining wall several feet were added to the width of the lawn, a desirable economy of floor space for a small piece of ground.

The shrubbery planted along the front wall is not put in a continuous border. With economy of space in mind and with a feeling for a rather delicate effect, the familiar Van Houtte spiræas, Regel's privets and hemlocks are planted in groups at intervals, allowing the wall

to show between. Regel's privet and hemlock have a sweeping habit of branching, very desirable in the shrubbery for lawn enclosures. They provide a winter contrast of black berries against evergreen boughs. There are Japanese quinces planted near the house for early spring bloom and *Rosa multiflora* climbing over the wall has bright hips for autumn effect.

From the lawn we can enter the flower garden. It is quite a marvelous little place. In considering all that has been done in it, it is really worth while noticing that its size is only 35 by 45 feet. Its slightly raised position above the front lawn and its sunken position in relation to the terrace give it the change of level to which so many gardens owe a great part of their charm.



A brick-paved terrace with walls ivy-grown, the panels relieved by a fountain flanked with Della Robbia casts—a good background and a factor for winter effects



The drive was made as practical as possible. It runs parallel to the house, turning abruptly, with two short curves to the entrance gates. An old beech dominates this section, and all the plants have been chosen to endure a northern exposure, broad-leaf conifers showing well when the rhododendrons are in winter covering



The conservatory faces the end of the flower garden, where formal garden architecture harmonizes with the lines of the house



Here the termination of the crosswise view ends where the paneled wall and flower bank cut off the street

Part of the charm also of this garden comes from its enclosure, from the walls which frame the two sides of the terrace, and even from the street trees. It also gets the benefit of the large pine on the terrace and of the old spruce in the back lawn.

The flower effects have been confined entirely to the spring and autumn months. In the spring the central beds are aglow with the more delicately colored varieties of Darwin tulips under-planted with forget-me-nots.

The side borders are filled with creamy white narcissus and *Fritillaria meleagris*, with a ground cover of pale lavender blue phlox stellaria. Delicate pinkish white Japanese anemones, replacing the tulips, in the central beds, begin the fall flowering. A mass of pale lavender asters with white and yellow snapdragons in the foreground fill the wall border, while yellow and maroon chrysanthemums along the house continue the flowering season until after the frost.

In the planting of a small garden striking seasonal effects can be obtained only through large masses of a very limited variety of plants. This does not exclude, however, the use of many different kinds of plants, in small clumps. Many have been used in this garden, among them *Iris reticulata*, *Abelia rupestris*, *Lilium rubellum*, *Anemone blanda*, *Iris cristata*, *Crocus speciosus*, candytuft and Christmas rose. It is necessary, of course, to



Showing the three grades, the lawn itself six feet above the sidewalk, the flower garden and the bricked terrace beyond, each developed along a distinctive line for its seasonal effects

unity not to be overlooked, but strongly emphasized, in the small garden.

In the design of the garden every effort was made to make it attractive during the cold months of the year. The space saved through the elimination of all summer-blooming flowers has been used for a liberal planting of evergreens. Euonymus, kept closely clipped, forms borders around the central beds. *Andromeda*, laurel, *pachysandra* and the dainty *daphne* make a narrow shrubbery along the wall; Japanese yew, Japanese holly, azaleas and euonymus are planted along the house. This shrubbery gives a good color effect when in bloom. It makes a background for the flowers. It is especially valuable in giving a cheerful note to the garden in mid-winter.

A broad, brick-paved terrace adjoins the flower garden. In every detail of its planning is seen the desire to make it attractive during cold weather. It is warm and sunny and dry under foot. Its

(Continued on page 48)



Myrtle is planted near the entrance and a group of fragrant bush honeysuckle predominate the exit gate



# Architect and Client

A STRAIGHTFORWARD EXPOSITION OF WHAT THE HOUSE BUILDER HAS TO EXPECT OF HIS ARCHITECT, AND WHAT HIS ARCHITECT IS TO EXPECT OF HIM

A. RAYMOND ELLIS

VERY little progress can be made without a lot to build on—lot in this instance meaning land. Be sure that the site has no underlying ledges or springs. Then consider the natural drainage, compass points, prevailing winds, views and trees, width of the street and sidewalk. If an independent water and sewage system is necessary, they must be placed to avoid contamination, and the source of the water supply examined, and a chemical analysis made to determine its purity.

The house should be planned and located on the lot so that the houses that may be built on either side of it in the future cannot be set too close or cut off its light or view. The building restrictions in your deed should cover this.

The plan of your house is somewhat a matter of personal taste and habit. Eccentric plans are not advisable for small houses. You may outgrow them, and then it is hard to find a purchaser with the same requirements.

There are certain well-known and proven schemes that will always work out to the best advantage for the average family. One of these is the Colonial plan: the front entrance door and hallway in the center, with the dining-room and kitchen on one side, and living-room and reception room on the other. Such a plan is regular in shape, less expensive and more easily built than a house with winding passages and ell with complicated roof lines. There are certain rooms that should be located with regard to the compass points; the dining-room on the east or southeast, to obtain the morning sun; the living-room face the south, southeast or west, or run east and west; the kitchen on a corner to obtain cross ventilation, while the halls and less important rooms occupy the space remaining. In country residences located upon main highways it is sometimes advisable to place the living-rooms at the rear to obtain privacy and an opportunity to develop the grounds with gardens and lawns. On small lots the rear outlook is usually on your neighbor's back yard. This you can control to a certain extent by planting hedges and growing vines on trellis work, thus planting out any objectionable features and screening others within your own property lines.

Styles in architecture are many and varied. In different sections of the country we find them adapted to the climatic conditions, topography, and the natural building products. Some architects think the style of the house should be governed by the contour of the land and surroundings. Usually there is some determining feature that is very apparent to the trained architect. A house built in the country surrounded with large trees should have strong and vigorous detail and heavy horizontal lines to contradict the vertical effect given by the trees. Near the seashore houses of rambling character are usually the most effective, while in flat, rolling country, a house of almost any type can be adapted, as it is governed by nothing except its neighbors. A great deal depends upon the roof of a house. It should usually be assertive enough to contradict any vertical lines, but not enough to be top-heavy. In New England we find many fine Colonial houses, mansions and farm houses with a wonderful charm to their simple detail, and about them an air of thrift. In the South, low and rambling, one-story houses and two-storied porticoed mansions, some with double-decked piazzas, suggestive of the lessening of activities and comfortable refuge from the heat. In the extreme Southwest, the old Spanish missions have furnished the motif for many interesting types that awaken a feeling of romance

and border warfare. Sprinkled through the country we also find Swiss chalets, English cottages with stucco and half-timbered gables, Italian villas and houses of German adaptation, and many very attractive ones of purely American origin that are indicative of the vastness and youth of our country and its mixed population.

If the lot is large enough so that a screen of trees can be interposed between two houses to prevent comparison, any type of house may be built, for its particular beauty of style can then be exhibited properly without clashing with its neighbor.

An architect who has studied the history of architecture and is familiar with the various styles does not produce monstrosities. He is particular to keep his designs in the style they belong, without making a *faux pas* of it.

The architect's fee is usually six per cent. of the cost of the house, for the plans, drawn to a scale of one-quarter of an inch to the foot, the specifications, scale and full-size working details, supervision, plus traveling expenses to the work from his office and consultation fees for advice in connection with any unusual contingencies. It is not customary to charge more than the minimum rate of six per cent. on the total cost of residential work, except for special cabinet work, decorations, special features and furniture, which are charged for at the rate of ten per cent. Alterations to existing buildings are usually taken at the rate of ten per cent. of their cost; and in cases where new buildings require many detailed drawings, as in the English type or Swiss chalets the commission charged is frequently eight and ten per cent.

The architect's first sketches are on thin paper, in pencil, which are revised at the client's suggestion, until finally approved by him. Then the working drawings are made, from which blueprints are taken; these are furnished to the contractors to estimate upon, and later for the men to build from.

The extent to which the success of a house depends upon the architect is seldom realized by the client, who soon forgets, once the house is started, the tedious hours the architect spent working out the plans and revising them until the minutest detail was provided for. With the complete working plans, the builder is able to execute the work properly and expeditiously. If he is a careful man he will employ a careful foreman, and, as in any other business, he will oversee and direct the work in accordance with the plans, details and specifications furnished him for that purpose. The architect is not a foreman, but an advisor, and, to gain successful results, both the owner and builder must cooperate with him. Because you are the owner, do not attempt to boss the job, as the builder may be only too glad to have you assume the responsibility that goes with his authority, and consequently all the mistakes. It is disorganizing to any business and leads to conflict when there are too many bosses. The architect has learned, by experience in building, many things that are not known to the average layman.

The above conditions enter into the small house problem more than they do into the larger houses and more important work. Sometimes exasperating delays occur, caused by one sub-contractor being delayed finishing work elsewhere before he can move his men, or the material men are slow about delivery, or something happens at the mill, and the finish is delayed, which

(Continued on page 53)



By recessing the doorway a small hall was provided. See scheme D opposite



An entrance set inside a bay loggia with brick step and path giving approach. Here the lawns were also raised to conceal the height of the first floor above grade at the front



A simple porch adding character to an otherwise conventional Colonial type

THE busy American has rather a tendency to the "pose" of being proud of his over-occupation by business, at least to the exclusion of the development of his merely esthetic sensibilities. And that, too, despite the fact that he thereby often commits some of those very mistakes of taste he would scornfully regard in others as evidencing the taint of the *nouveau-riche*, while in many instances he appears even more short-sightedly to disregard modern appearances of mere business efficiency and success. It is probably this very defect that has caused him so long to ignore, for instance, the ugly approach to his cities from the railroad station—itsself generally located in some gloomy and tumble-down business section, and at which one arrives only after passing miles of suburban back-yards, dilapidated box-cars, rear tenement porches and grimy factory windows. It is perhaps his constant familiarity with this daily experience that has somewhat blunted his susceptibilities in the

## Doorways and Their Approach

THE EFFECTIVENESS OF INTIMATE ENTRANCES—HALL ARRANGEMENTS—THE DOORWAY THAT IS ADDED ON

FRANK CHOUTEAU BROWN

Illustrations by the Author

sense of civic responsibility which has already begun to better the modern "city gates" through which we now approach our more advanced business centers.

This front yard, the approach to the house, the entrance porch and steps, all perform their essential part toward that very important "first impression" we desire to be, at least, fairly favorable! It is true that this "first impression" survives from experiences extending further into the house. The front vestibule, the staircase, the hall, and such of the rooms as open from the hall, are equally as important as the doorway itself in continu-

past, even as to the benefits of seemly sightliness when approaching the entrance to his own home. It is now, however, as undoubtedly true that we are gradually developing a feeling of responsibility and pride in regard to our own grounds, and those of our immediately adjoining neighbors; just as we are also gradually developing a



An effective treatment for a suburban brick house—a hung front doorway hood



The side door can also be made distinctive if hooded in some such manner as this



A service entrance saved from banality by a hood, an extension of the roof

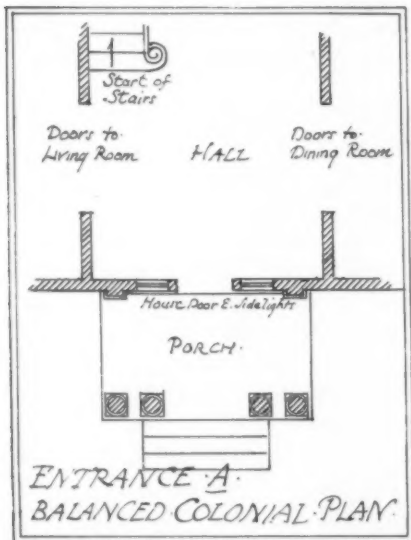




Privacy lent a doorway recessed within a protective vestibule. Here the horizontal lines of terrace and step also produce an approach that overcomes a heavy rising grade



Modesty of line and construction characterize the details of this cottage Colonial entrance. The hood seats and lattice are tied together in one congruous whole, to be further enhanced by vines



There is openness to the entrance of conventional Colonial design once the threshold is crossed

treatment of the street line of the lot with flowers, hedge, fence or merely with grass, the planting of shrubbery or a flower border along the path to the door; all these things need to be differently adjusted for each different and individual problem, and each requires an harmonious treatment from so many different hands that it is rarely indeed that the result is completely satisfying to an esthetic and impressionably trained observer.

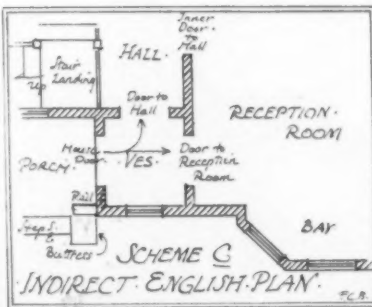
Inside the house the problem becomes still more complicated. Not only do the color texture of the floor, the walls and the ceiling, the paper that covers the walls, the rugs and pictures, the furniture, the color and material of the hangings, as well as the arrangement of the stairs, rooms and doorways, all enter into this impression, but there

ing and perfecting the impression first created.

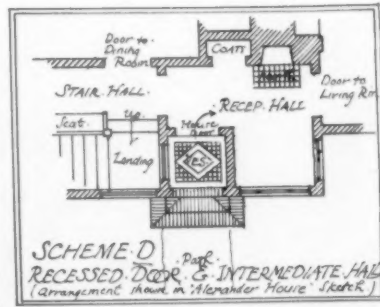
The extreme complexity of the problem now begins, perhaps, to be apparent! All these different elements, beginning with the very location of the house; its relation to the natural surroundings; the position of trees; the contour of surface grades; the paths, their materials, widths and location; the

should here also become evident those myriad and distinctive traces of harmonious occupancy and liveableness in the use that is being made of the house that, in a less evident form, can even be apparent upon its exterior.

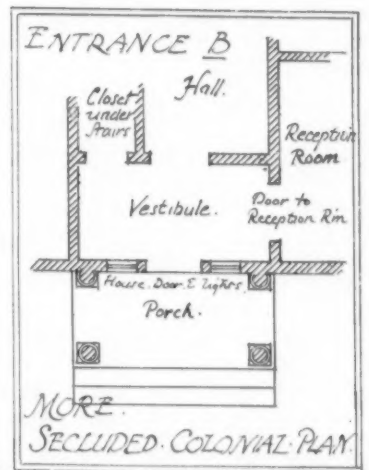
Some of these factors date back to the very beginning of the house, the arrangement of its plan. Is the front door to be so located that a stranger entering the home has at once laid bare to him the entire mechanism



In the indirect English plan, the reception room is advanced beyond the face of the staircase



The plan for entrance shown opposite, with doorway recessed providing a small hall



With a small vestibule, the secluded Colonial prevents callers from being precipitated upon the family.

and machinery of its working? This is always the result of entering a house built on the plan in fashion a generation ago—with a hall extending through the house from front to back, and large doorways opening into living-room and dining-room upon either side. Little privacy or seclusion

is possible in such a dwelling once the stranger has won his way past the outer door-sill.

Under more modern ways of thinking, the attractions of the open hall extending from the front to the back of the house are not deemed worth the sacrifices necessary to obtain them. It is true that in summer, in a house fronting north, it is very attractive to enter a hall with its opposite end open to the sunlight and the garden, but, as the American, particularly when of Puritan descent, seldom so far relents as to provide for and

(Continued on page 49)





Where the thickness of the partitions allows it, such a handy closet can be built in



The space at the end of the fireplace permits of various arrangements such as the two shown here



A clothes closet made over to hold china—an example of thoughtfulness exercised in shelf arrangement

## Useful Closets in Unusual Places

GETTING EFFICIENCY OUT OF THE WASTE SPACES OF THE HOUSE—INGENIOUS CLOSETS AND THEIR USES—PLACING CLOSETS TO SAVE STEPS

PHIL M. RILEY

Photographs by Mary H. Northend

CASUALLY treated, the subject of closets sounds prosaic indeed, but it becomes more absorbing upon further scrutiny. In building a house there is no more vital issue. Did you ever live in a house that had enough storage space? Probably not. Relatively few exist. One needs to have lived in a city apartment in order to appreciate its worth.

Too frequently closets are merely the left-over spaces after the room divisions of a floor plan have been made, with the result that they are either too small or incorrect in shape. Of what use is a closet one foot deep and seven feet wide, with a door toward one end? It is logical and right to utilize the so-called waste

spaces throughout a house for storage purposes, but an intelligent architect now plans the storage problem just as carefully as he does his principal rooms, so proportioning the whole house and dividing the floor area that virtually there are no waste spaces.

This is as it should be, and a general movement tending toward greater efficiency in the house is responsible for it, as well as many other good things. True, there are in many houses spaces, particularly in partition walls, under stairways and low eaves, and in the jogs of rooms, that could be used for no other purpose than storage, and which are neglected thoughtlessly or for the lack of a



In an old house that allows idiosyncrasies, these passage closets are permissible. Their shape detracts little from the width of the passage and makes no dangerous obstruction



good logical scheme to utilize them. Such instances are indeed unfortunate, and perhaps the following review of several interesting closets may furnish a few ideas of sufficient appeal to encourage you to avoid possible errors of omission and commission in the house you hope to build.

In an old Colonial house, remodeled by a young architect, are some especially clever schemes, indicating that even if your house is already built there is still an opportunity to increase its comfort and efficiency. Entering the front door, a vestibule had been added, provided by a new partition across the wide, old-fashioned hall about four feet back from the front wall of the house. This kept the hall warmer and provided a small room about four feet square each side of the vestibule and lighted by the side-lights of the Colonial doorway. One of these rooms opened off the vestibule and was equipped with hooks, hangers, umbrella-stand, mirror, etc., for the use of guests. The other served as a sound-proof telephone-booth opening off the hall for privacy of conversation when wanted.

The hall extended only part way through the house, and at the rear end the front stairway wound upward in three runs and two landings. Access to the cellar was had by a flight under the back stairs, leaving the space under the front stairs for other purposes. As the space under the third run was open to the hall, there was opportunity to locate a family clothes-closet for outer garments under the second landing, reached by a door opening from the hall. Often this space is used for a telephone-booth when no other is provided. The space under the first run and landing was used in connection with the den at the right of the hall, and that under the second run was used for the dining-room back of the hall and reached through a short side hall to the left.

Built into the wall of the den, its bulk under the first landing, and only its face showing, a fire-proof safe served to store papers of value. It was somewhat conspicuous, too, and might attract a chance burglar long enough to ring the electric alarm attached, the valuable silver, however, being kept elsewhere at night. A closet above the safe, the depth of the partition only, contained a rack of several thin board shelves set at an angle of twenty-three degrees, forming

pockets in which to thrust folded newspapers. To the left of the safe, a panel in the wainscot proved to be a small, almost imperceptible, door, giving access to the space under the first run of the stairway, which was used for files of magazines kept for reference. There had been an ingenious use made of the space under the second run. Pressing an invisible spring in the wainscot, and pushing aside one of its panels, a well-filled cellarette is displayed.

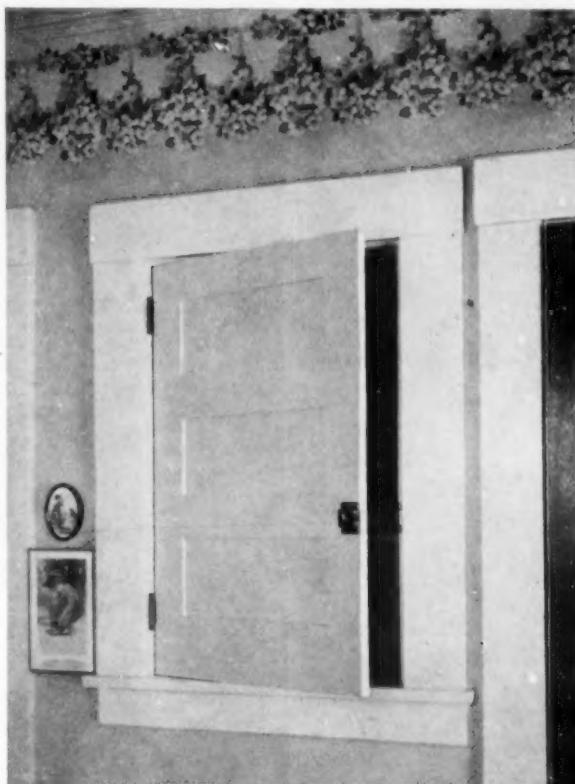
Pressing another invisible button and pushing aside the whole cellarette discloses beyond, in the space under the stairs, another fireproof safe, in which the valuable old family silver was kept.

The entire wall of this hall was paneled in white-painted wood, and on each side of a small English bay with casement sashes the corners of the room had been taken for triangular china-closets with round-top, double doors with leaded, clear glass in a simple, attractive pattern. An unnecessary clothes-closet in this room was utilized for a third china-closet by the introduction of white-painted shelves with hooks for hanging cups.

A door opposite this one the other side of the fireplace led into the kitchen through a butler's pantry with a broad serving-shelf and drawers on one side and a linen-chest with closets high up and drawers low down on the other. At one side of the linen-closet, in a closet the full height of the room and about two feet square, the brooms, mops, vacuum-cleaner and dusting-brushes were kept, each on its proper hook. A shelf above was reserved for floor-wax, wood and metal polish, while two drawers at the bottom contained cleaning- and dusting-cloths. This location has been chosen as being equally handy to kitchen or front rooms.

In remodeling the house, it was found that, as is usually the case, much space had been wasted each side of the great old chimney, and here was found ample room for a bookcase with attractive glass doors and two big drawers below. The most ingenious closet in this room was a tiny affair with a little leaded-glass door at one side of a window-seat built into a jog in the room. It had no definite purpose, but was filled with playing-cards, game-scores, a box of cigars and a sewing-

(Continued on page 62)



Every nursery should have at least one closet high enough up in the wall to be out of reach of small hands

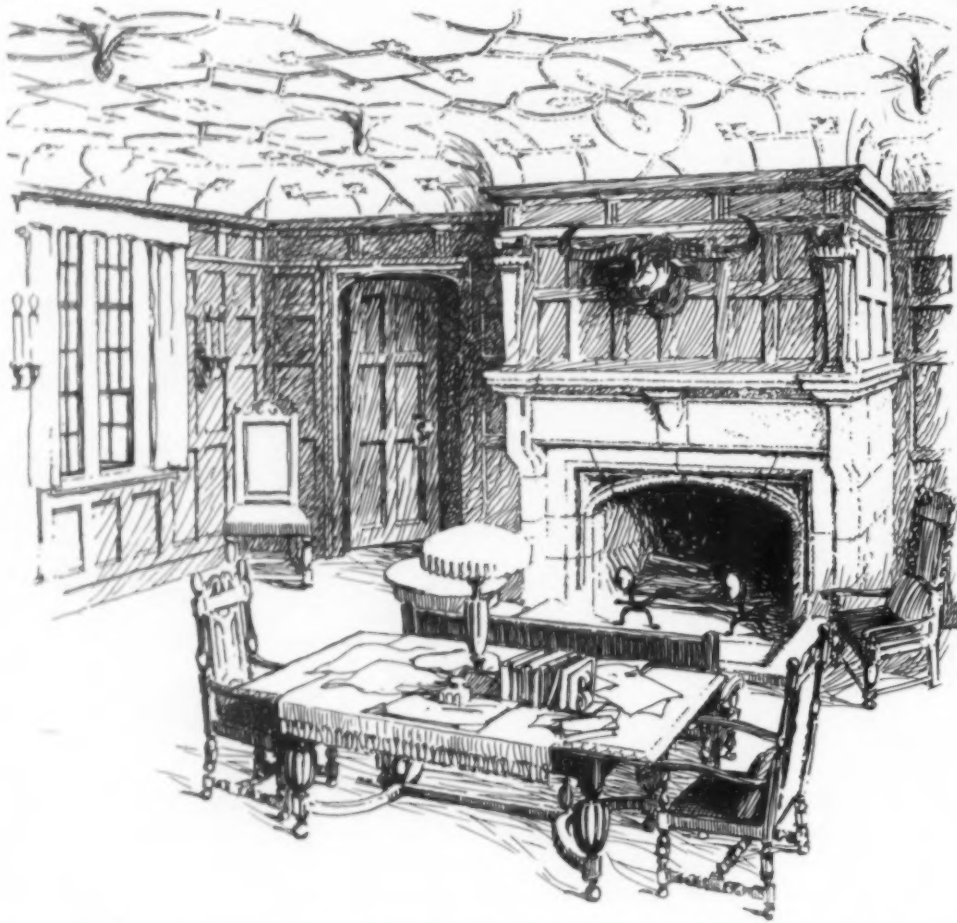


Experience has shown that shelves—not drawers—prove the most feasible arrangement for the linen closet. If placed on rollers, the shelves can be easily pulled forward, thus saving a reach to the back.

# The Uses of Woodwork in Interior Decoration

IN feudal England the fireplace, as we know it now, was a rarity. Instead a raised stone or brick hearth was built in the center of the great living-rooms or halls, and the smoke from the fire curled up among the high roof-trusses and found its way out through a ventilator at the ridge. The Donjon-Towers of the castles, however, with their several stories, presented a different problem; here a low niche was scooped in the side wall and a flue carried up several feet and out through a slit in the side of the tower. Under the Tudor kings this became a fireplace much as we have it to-day, a development that, on the Continent, had taken place years before; but the great overhanging hoods of France or Northern Italy were not copied by the English, whose fireplaces were generally cut into the wall instead of being built out from it, and decorated with flat tracery and cusping, sometimes surmounted with a moulding which became the mantel-shelf of later times. The Continental fireplace was tremendous, taking up in certain cases almost the entire end of a large room; but under the Renaissance it gradually lost its importance, until in Louis Fifteenth's time it had become little more than an incident in the panelling.

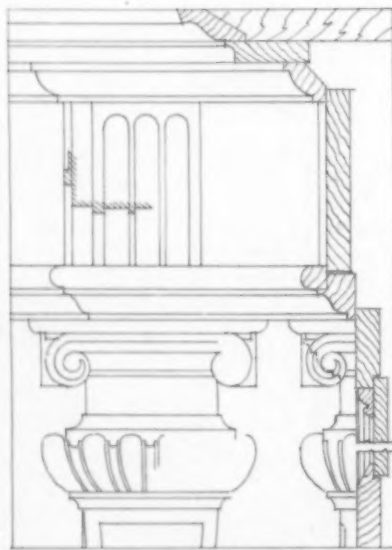
In England, however, its importance increased with the Renaissance; under Elizabeth and James First it was set in a projecting mass of masonry, highly ornamented at the sides and above the fireplace opening with pilasters, arches, niches, carved figures or strap-work, complex in the highest degree and absurd at times. Skilled labor was plentiful; religious persecution had driven into England great numbers of Flemings, Belgians and the Low Dutch, trained in the crude and distorted



An interior in the Jacobean manner. Characteristics are the small panels of the oak wainscot, the importance given the chimney breast and the delicate interlaced ceiling tracery

## THE JACOBEOAN—A TRANSITIONAL PERIOD IN WHICH WOODWORK FURNISHED THE MOTIF—FIREPLACES OF THE TIME AND THEIR MODERN REPRODUCTIONS

ALFRED MORTON GITHENS



A corner of overmantel in detail, characteristic of the period throughout and showing the peculiar Jacobean interpretation of classic forms

classic forms that were then the last word of architectural decoration.

In remote districts the English workman held his own; he used the new motives, ignorantly, it is true, but with reserve, and at the same time clung to the familiar forms of his tradition, forms which later were to be utterly cast off, considered relics of a barbarous age and contemptuously alluded to as "Gothic."

"Jacobean" is the name given this period of transition. Of course, the struggle between the old style and the new applies to all English decorative work of the period, though it is more easily detected in architecture than in other arts. The struggle waxed and waned; under Elizabeth the old forms had been almost entirely crowded out by a riot of debased classic, as fantastic in its way as the habit

her Court gentleman had of dyeing a lock of his hair scarlet and tying it with a ribbon. Under James First there seems to have been a return to the sanity and tranquil dignity of the old tradition.

Such is the type we have taken for this paper. Most characteristic is the pleasant monotony of the rectangular wood panelling. Many manor-houses have an "Oak Room" similarly wainscoted. This is an inheritance from earlier English work, and there is a suggestion of older forms, too, in the curved stone supports at the sides of the fireplace opening and in the Tudor arch spanning it. The little wooden pilasters above are Flemish in origin; the wooden cornice, of course, quite classic; the plaster tracery of the ceiling a development of a Tudor decoration. We make no apology for this erudition; a period style we have set ourselves to adopt, so we will do it consistently and turn a deaf ear to any sug-



gestion that we are trying to "resurrect dead bones." A mantel somewhat similar can be found at Plas Mawr, in Carnarvonshire, with its combination of the old tradition and the classic; the ceiling treatment, in the Long Gallery of Haddon Hall; the system of graduated rectangular panels and the plain, leaded windows in many rooms of the period.

The drawings show a double window; but it might be triple, quadruple or single. The frame and mullions should properly be stone; the glass and its leading set directly into it, or in slender iron casement frames that may open either in or out. We shall see many such windows in America during the coming years; in England they are used even in the smaller cottages, but here they are still expensive. An alternative, though not so true to type, would be the glazing of a wooden casement sash with the leaded glass; still another way would be the omission of lead altogether, with ordinary wooden muntins, slender as possible, dividing the sash into small panes. Of course, wooden mullions might replace the stone.

The wainscot in the old examples was nearly always oak, either rubbed with oil or just as the carpenter left it; varnishing, waxing and such finishes are modern. The English oak is darker than ours and is further darkened by extreme age to a delicious cool brown, which we try to imitate with our stains; and we succeed very well indeed. Long rubbing and polishing have smoothed the English oak, and the effect of this we get with our wax or our hard varnish rubbed down with pumice. The cost of best quartered white oak, set in place, stained and waxed, should be about \$.75 or \$.80 per square foot, with \$100.00 added for extra work at doors, cornice and corner pilasters above the mantel. Assuming a room 16 x 18 feet with wainscoting 7 feet 6 inches high, we have then:

16 + 16 + 18 + 2 + 2 (for chimney breast) = 72 feet long x 7½ high, or 540 square feet; less the area taken up by stone work of the fireplace, 4½ high x 11 long (including sides of breast), or 49½ square feet, we have:

540 - 49½ = 490½ at .75 = \$367.50 + \$100.00 = \$467.50 as the cost of the woodwork complete, done in the very best manner. This amount could be cut down by using a different wood, by omitting the moulding that outlines the panels, by simplifying generally.

The stone fireplace allows a choice of two entirely different materials, limestone or cast concrete stone. The old fireplaces were cut in a stone closely resembling our Kentucky or Tennessee limestone, and the design we have shown, cut in one of these, with the stone carried back to the wall at sides and with the stone edging at the hearth, would cost about \$250.00. The best concrete-stone would be much less, \$150.00 or thereabouts. If more than one fireplace were required, the succeeding ones would cost about \$75.00 apiece; for the greatest labor is in making the wooden moulds, which can be used over and over.

It is an interesting material this concrete-stone. Portland cement (almost all the cement in common use is Portland cement) is mixed dry with crushed rock of uneven fineness varying from that of sand to pieces as large as one's finger-nail; a red sand, or a powdered pigment, is sometimes added to give color, though to me the attempt

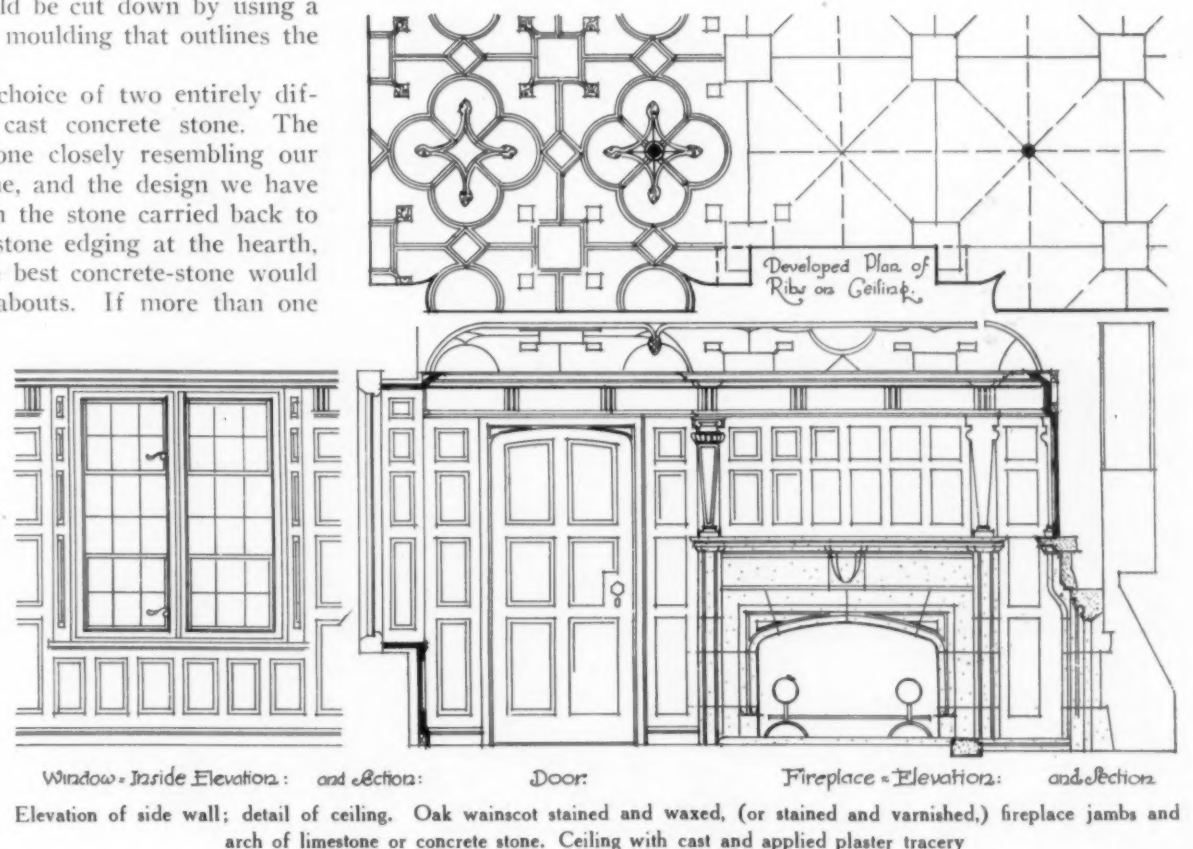
at any sort of coloring is unsatisfactory; then the material is dumped in a machine mixer and the wet mass poured in the moulds. These are of the best wood painted with crude oil inside to keep the concrete from sticking; but wet sand moulds are often used.

Ordinary concrete is composed of three parts: cement, sand, aggregate. The aggregate is either clean cinders or gravel, broken slag or broken rock; this forms the bulk of the concrete, and the sand merely fills in the cavities, with the cement glueing the mass together. The crushed rock used in concrete-stone, being in both fine and coarse fragments, no sand is necessary. The rock may be limestone, conglomerate, trap, quartz, or almost any other stone, but crushed granite is one of the best. In proportion of 1 of cement to 2½ of crushed granite, the product resembles limestone rather than granite, and, if properly finished, is clear and altogether free from that pasty, dull look which we have learned to associate with concrete.

The dullness is caused in part by free cement mixed with impurities settling against the mould. This is called the "skin," and is removed by either scrubbing with brush and water when the cement is "green;" that is, about a day old, or else washing with muriatic acid and water several days after casting, or rubbing with a wet piece of stone and so exposing the aggregate. Better than any of these to me, however, is a bush-hammered finish made before the concrete has reached its full hardness. A bush-hammer has its head formed of six or eight thin steel blades piled like a stack of playing cards and held together by an iron band at the end of the handle. With this the stone is chipped and the surface broken away until the granite sparkles through it and the texture is neither smooth nor sandy, but rough, like the tooled surface of natural stone; a very different affair from the concrete "rock-faced" blocks that we see built into small houses in the suburbs.

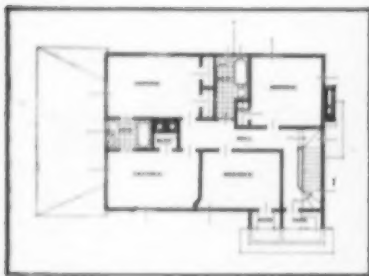
There is no reason why concrete should not be finished with the same tools that are used in finishing natural stone, for, after all,

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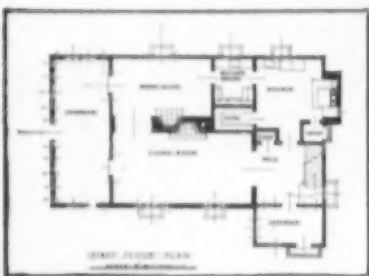


Window - Inside Elevation: and Section: Door: Fireplace - Elevation: and Section: Elevation of side wall; detail of ceiling. Oak wainscot stained and waxed, (or stained and varnished,) fireplace jambs and arch of limestone or concrete stone. Ceiling with cast and applied plaster tracery

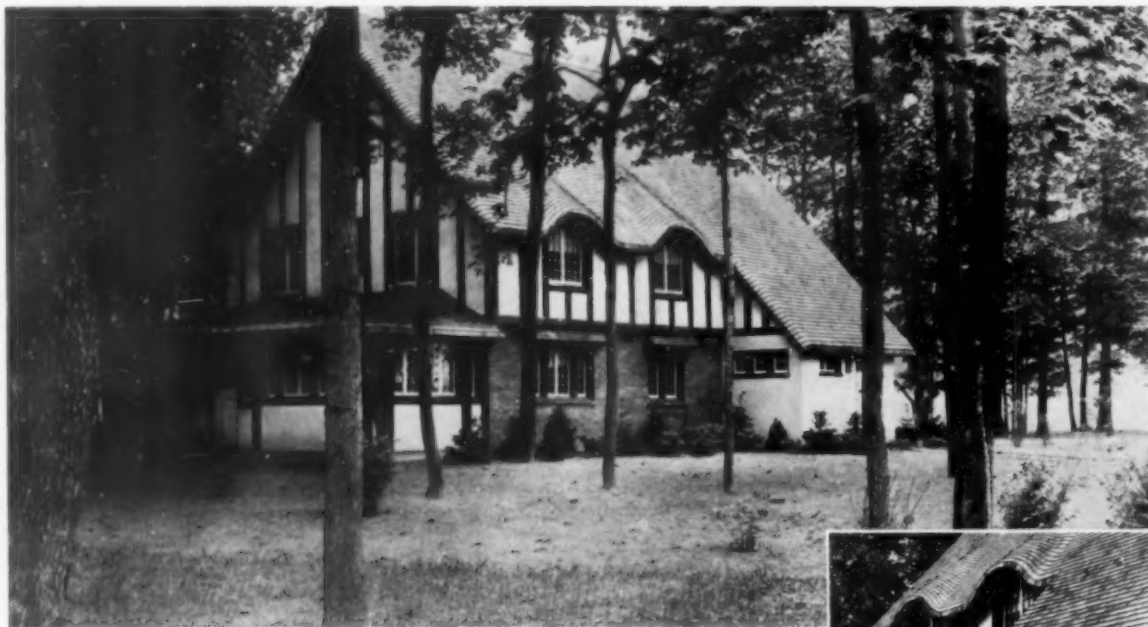
# Four Distinctive Houses of Moderate Cost



The second floor shows a simple arrangement of the chambers with the stairs to one side, giving a maximum of space



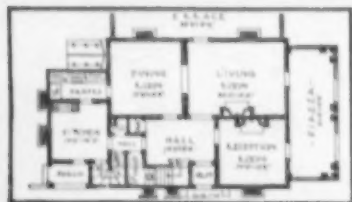
Openness characterizes the first floor. The arrangement of chimneys is interesting



A half-timbered stucco house at Great Neck, L. I., with roof-lines of individuality. The closed-in porch and the windows well fit this country cottage type. Caretto & Forster, architects



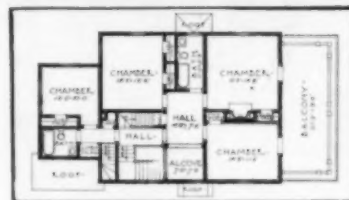
By continuing the roof, an effective entrance is produced



This hollow tile stucco house at Hartford, Conn., has distinctly livable possibilities—plenty of window light, plenty of porch room, and a walled garden enclosing the service department. A. Raymond Ellis, architect

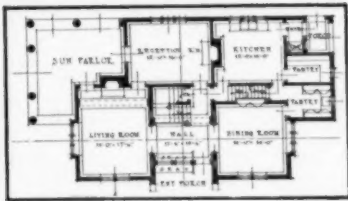
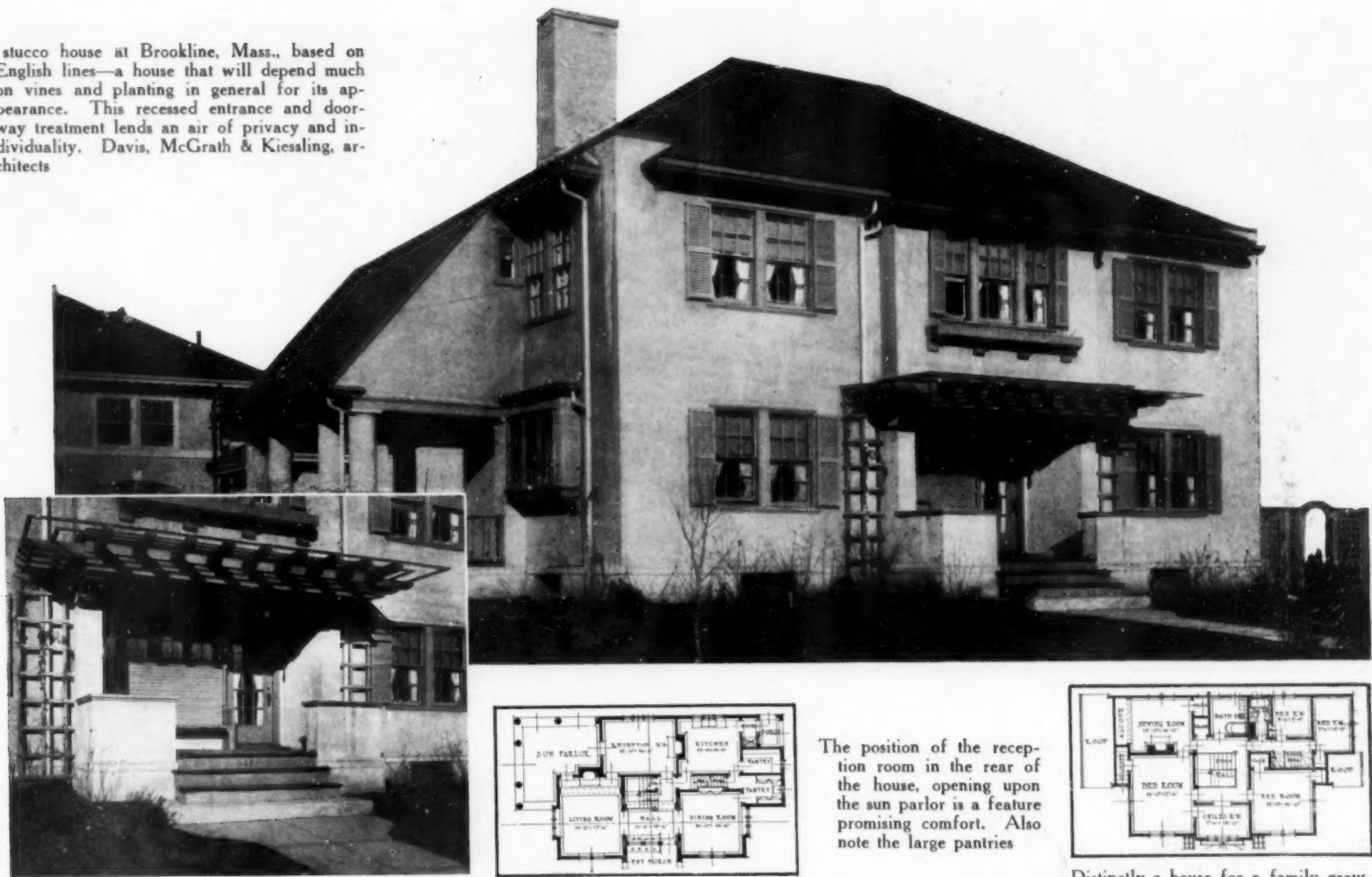
Indirect entrance is effected by the vestibule and the larger hall, thereby assuring privacy for the family. With a wing devoted to service quarters, that department is properly isolated

Chamber room enough for a small family; plenty of closets, and thorough ventilation are among the attractive points on the second floor plan

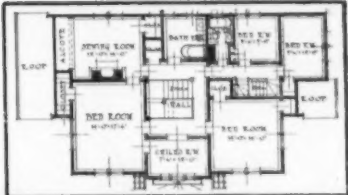




A stucco house at Brookline, Mass., based on English lines—a house that will depend much on vines and planting in general for its appearance. This recessed entrance and doorway treatment lends an air of privacy and individuality. Davis, McGrath & Kiessling, architects



The position of the reception room in the rear of the house, opening upon the sun parlor is a feature promising comfort. Also note the large pantries



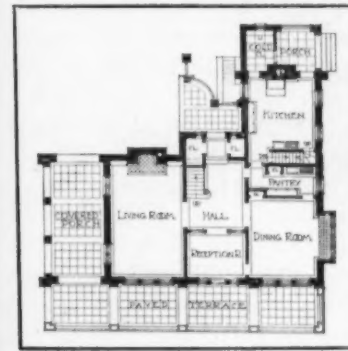
Distinctly a house for a family growing up, generous children's rooms off the master's bedroom, and sewing quarters



Although built along Colonial lines, this house at Bryn Mawr shows what can be done where liberties are taken within reason. The hillside problem has been solved by the terrace. Savery, Schetz & Savery, architects



Like the master's, the guest suite is a separate apartment, the large hall serving to isolate it and yet easily connecting all the chambers



Plenty of the house is outside! Besides their homey values, the covered porch and paved terrace serve also as a setting to the house proper



## The Saturday Afternoon Garden

WEEK-BY-WEEK WORK IN THE VEGETABLE PATCH FOR THE BUSY MAN OR WOMAN

D. R. EDSON

THE suburban garden, as a factor in reducing the annual family budget, has been under-, rather than over-estimated. In spite of the fact that new methods and varieties have mitigated against what might have been the natural result of this, and the consumer has to pay as dearly for vegetable products as ever before. The home garden must continue for many years to play an increasingly important part in helping to solve the national bread-and-butter problem. Vegetables and fruits are occupying a larger and larger place in our diet; and, the larger the place they occupy, the smaller the doctors' bills are likely to be. The home garden has been underestimated; not that there has not been enough written about it, but in much back-to-the-backyard literature, as in the back-to-the-land movement, the "inspirational" side of it has been overworked, and the perspirational side has been overlooked. If you are going to get results worth going after you have got to go after them with your collar off, and expect to get your hands dirty. If you are one of the thousands who would like to see the table expense item of the family budget cut down without knocking off on the table, secure a small plot of ground somewhere that you can cultivate. Half an acre will be ample, and more than that may prove too much.

If all the readers of this magazine had gardens of standard sizes and shapes it would be comparatively easy to tell them how to get out of the ground the maximum results with a minimum amount of work. But, of course, their gardens are of all sorts and conditions and sizes, and they lie in every climate, from the tropical of the Southern States to the short, cool summers of Northern New England and Canada. It is out of the question, then, to plan one garden for all conditions. On the other hand, the more general in character the information and suggestion one may give, the less use it is likely to be to the non-professional gardener. In this series of articles I have attempted to arrange the work which demands attention throughout the year, planning it so that

it may be taken up on successive Saturday afternoons so far as is feasible. In addition, as a guide rather than as a model, two sample gardens of different but average sizes, will be laid out, and the various tasks to be done in them, in connection with vegetables and small fruits, such as cultivating, spraying, succession planting, etc., will be explained as the season progresses. In this way the busy gardener may, with the least loss of time, utilize those things which will help him in solving his own problems.

However, throughout the entire season he will have to use his own judgment about following dates in connection with planting, early and late, and harvesting; about the amount of space to be devoted to each crop, and about a score of other things which it is impossible to prescribe for anyone else's garden.

While there is not much to be done this month in the way of actual garden operations, there are some preliminary things which should be attended to. The success of your summer's garden will depend to a very large extent upon the amount of time and thought you are willing to devote to it this month and next. Many persons fail to take any action until the perennial spring garden fever lures them to it. But the gardener who is content to wait for any such primitive impulse will have a primitive garden.

The average gardener usually thinks of making out the seed order as the first step to be taken. But before you undertake this absorbing task there are two other things which should be done.

The first good Saturday afternoon this month (and if there is no good Saturday afternoon, you can do it on Sunday without exciting the suspicion of the neighbors) select the spot or spots which you can devote to your vegetables and small fruits, and get accurate measurements of all dimensions. If the amount of ground at your disposal is very limited there will be no choice of location. But a good garden can be made on almost any soil, provided it can be well drained and is not too much shut out from the sun. I know of one successful garden made on ground so

### WHAT TO DO IN JANUARY

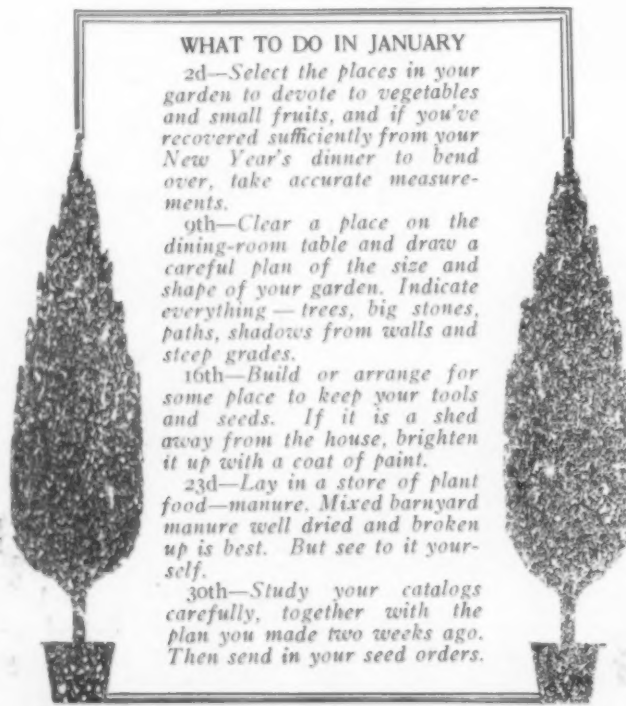
2d—Select the places in your garden to devote to vegetables and small fruits, and if you've recovered sufficiently from your New Year's dinner to bend over, take accurate measurements.

9th—Clear a place on the dining-room table and draw a careful plan of the size and shape of your garden. Indicate everything—trees, big stones, paths, shadows from walls and steep grades.

16th—Build or arrange for some place to keep your tools and seeds. If it is a shed away from the house, brighten it up with a coat of paint.

23d—Lay in a store of plant food—manure. Mixed barnyard manure well dried and broken up is best. But see to it yourself.

30th—Study your catalogs carefully, together with the plan you made two weeks ago. Then send in your seed orders.





low that its owner has had to build it all up into beds with sod edges, the surfaces of which are a foot to eighteen inches above the walks. No one living on the place before him had ever been able to grow anything. On another place, a friend of mine has overcome just the reverse conditions. He had nothing to build his garden on but what was practically a sand-bank. By the addition of wood ashes and an occasional dressing of dried muck, which he was able to get in a wheel-barrow from a near-by river, he has succeeded in growing almost every garden vegetable. Both of these gardeners are workmen who have had no resources for improving the adverse conditions except their own spare time and the determination to grow things.

But if there is an opportunity to select the garden site, pick out preferably a spot which faces the south or south-east. If it slopes gently and is protected on the north or north-west, there is a further advantage. Above all, must the garden spot be well drained. With modern methods of irrigation it is an easy matter to supply an abundance of water to the driest garden. But the wet garden is, in many respects,

foredoomed to failure. The garden's past history is also important. The well-managed garden spot becomes richer and better year after year. But a garden that has been neglected becomes so weedy that it is far better to change it if possible, on account of the extra amount of labor which weedy soil necessitates. On the other hand, it is much more work to break up and get into shape a new piece of ground, especially if it must be worked by hand. With heavy sod it is next to impossible to make the soil as finely pulverized as it should be the first year. Part old and part new ground, however, is a very good combination, and some crops do better where there is a great amount of humus in the soil, even if it is not so thoroughly pulverized.

Also get your garden as near the house as possible. A distance of even a short walk away will make a great difference in the pleasure and the work of taking care of it. If the garden must be at some distance from the house, then plan to fix some place to keep your tools, garden line, seeds, etc., near it. A miniature shed, such as may be readily constructed from an old piano-box or large dry-goods box, covered with roofing paper to keep out the weather, and painted for appearances, will save enough steps during the first month to pay for the time required in putting it up. You can disregard the old

idea that the garden must be out of sight. If you are going to take good care of it, it will be as attractive looking as a flower garden. If there is any possibility of your not taking such care of it, then you had better put it in sight, anyway, as that will be some incentive to your keeping it clean and cultivated.

When you have decided on the spot where your garden is to be located, make careful measurements, and jot them down. While it is more convenient to have the garden all in one spot, it is by no means necessary; and if the small fruits and such perennials as strawberries and asparagus and rhubarb are kept together, the

work will be lightened. After you have taken the measurements, take time some evening to make a careful plan, drawn to scale, of the size and shape of your garden. This should be large enough so that spaces of a foot can be readily shown. Any trees, stones, paths, shadows from walls, steep grades, or other similar characteristics, should also be indicated.

Such an outline is absolutely necessary before one can plan the year's work systematically. Even if there were but one planting of seed to be made, a carefully made

planting plan would be worth while. To make the best use of companion crops and succession crops, it is an absolute necessity.

On another Saturday afternoon some time this month, even though the ground be covered with snow, make arrangements for your spring supply of manure. An abundance of plant-food must form the basis of any successful garden, and where manure is to be had, part of it should be bought in this form. If at all practical to do so, you should personally investigate what you are buying before you get it. Some manure is hardly worth the hauling, but really good manure will be well worth several dollars a load, especially if your garden has not been abundantly supplied with it during the past year or two. The value of manure depends upon what has been fed the animals producing it, and upon how it has been kept, more than upon the kind it is. For

(Continued on page 62)



Arrange for a place to keep your tools and gardening impedimenta—and keep them there. This will save both your time and the tools. A coat of paint or a new tar-paper roof will help brighten up the shed





A study for the skyline of a house at Chestnut Hill, Pa., Edmund B. Gilchrist, architect

## Cost, Texture and Design in Roof Planning

A BRIEF RESUMÉ OF THE POSSIBLE ROOF TREATMENTS AND THEIR RELATION TO THE TYPES OF HOUSES—ARTISTRY IN THE SKYLINE OF THE HOUSE

HAROLD DONALDSON EBERLEIN

A CHAIN is no stronger than its weakest link, and a house no whit better than its roof. This is true both with respect to the actual material fabric and the worth of the architectural design involved. If the roof is unsound and leaky all the rest of the structure suffers serious impairment and begins to disintegrate. A leaking roof is held legally to invalidate the habitability of a house and, accordingly, in some places the payment of rent cannot be enforced unless the roof be weather-worthy. Regarded from the architectural point of view, the roof is the oldest and, in many ways, the most significant feature in the evolution of the house, without which, indeed, a structure can scarcely be called a house. A well-designed roof may do much to offset an exterior in other respects poor, but a bad roof will assuredly pull down the rest of the house to its own level of mediocrity or worse.

Since the roof is a feature of such vital importance, it behooves the prospective house builder or remodeler to weigh and study well all the possibilities open to him in the direction of roofing. For the sake of convenience and clearness it will be well to consider the subject under three principal heads—structure, which will include the character of the materials and their cost; texture and color; and, finally, architectural design, which covers the *tout ensemble*, including contour or skyline with the many legitimate opportunities afforded for creating points of interest and individuality. As a preliminary step to the threefold examination proposed it is necessary to make some classification of the most usual types of roofs. They are as follows: flat, lean-to, span or ridge (sometimes called "coupled rafter"), gambrel or curb, mansard, hipped, gabled and jerkinhead.

The physical form of the roof according to one or another of the types just mentioned will necessarily influence

the choice of material for covering. For example, it would be impossible to use slate, shingle or thatch on a flat roof. Some covering without joints or interstices that the water can penetrate must be used instead. Notwithstanding the fact that several fairly recent country houses with flat roofs have been designed by clever British architects, the type is not usual enough to require extended consideration further than to offer a few hints that may be put into effect in dealing with decks or any of the flat or virtually flat areas that occasionally occur in connection with a roofing scheme of different character. These approximately flat areas must, of course, be given a slight incline for the sake of drainage. For a satisfactory covering large tiles, like flooring quarries, laid in mastic cement may be recommended. This may be well done for about 35 cents per square foot. Heavy lead—five-pound lead is a good weight—may also be suggested. This will cost approximately 60 cents per square foot. It is expensive, but exceedingly durable and satisfactory. As a less expensive covering, deck canvas, well coated with shellac or waterproof paint, may be used. This covering, however, is only suggested for sleeping porches, where it is likely to be under constant inspection, for disaster will follow the least neglect or accident. In using canvas, the edges or gutters against the coping must be well flashed with lead or copper.

The lean-to roof needs no specific consideration here, since it may be regarded as the half of a span or ridge roof, the sort that next claims attention. The slope of the span or ridge roof, at

least the traditional slope which long experience has proved the most advisable in different countries, is governed to a great extent by climatic conditions, and, in a general way, it may be said that the pitch becomes steeper as the latitude becomes higher. The steep pitch is obviously



Slate is used effectively on the roof of this English country house, the roof lines of which, characteristically British, might serve as a model on this side



for shedding snow and preventing water from backing up and penetrating the cover at periods of rapid thaw.

The covering materials that naturally suggest themselves for ridge roofs are shingles, slate, tile, composition slabs or tiles of various sorts, tin, lead, copper and thatch—a wide variety and susceptible of almost endless forms of treatment. The distinction between "roof" and "roof covering" should be borne in mind. The former is the supporting frame of timber or steel, whereas the function of the latter is to cover the structure in and protect it from the weather. Of the metal coverings, copper is the most durable, the lightest and the strongest. With a copper roof, because of its heat-conducting properties, there ought to be a layer of felt or some non-conducting material laid between the metal covering and the wooden sheathing underneath. The green carbonate that forms on the surface exposed to the weather is both a desirable decorative feature and a protection to the metal against further decomposition. Copper, of course, is exceedingly expensive and must be regarded as a luxury, but a more satisfactory roof, from many points of view, it would be hard to find. Owing to the variations in the price of copper it would be unwise and probably misleading to make any attempt at quoting approximate cost.

Lead as a roof covering is not regarded with favor by roofers in America. They generally consider it impracticable in our climate, owing to its great expansion and failure to contract again to the same extent. There need be no such objection if the roofers would lay the sheets as they are customarily laid in England, where considerable play and movement is allowed for. A lead roof is both beautiful and durable, but must be regarded as a super-luxury, owing to its excessive cost, which presents the chief obstacle to its use. Tin, kept well painted, is fairly serviceable and light, though a radiator of intense heat both upward and downward in summer.



Thatch is often used on modern houses in England with excellent results. When well laid it is no more inflammable than shingles and is impervious to the weather

Various composition tiles of different grades of excellence and different prices may also be used for roof coverings. For a roof with a pitch of even ordinary inclination, slag is not advisable, as the asphaltum binder melts and runs in the heat of our summers. Slag roofing  $1\frac{1}{4}$ " thick costs 5 to 6 cents per square foot.

Tiles are to be had in a variety of colors and shapes by different concerns, and are generally broadly classified as "shingle" or "Spanish." Owing to the great diversity in their quality, the differences in their sources of manufacture, local labor conditions and sundry other factors, it is impossible to give more than a rough approximate cost estimate for ordinary guidance. Roughly speaking, it may be said that a "Spanish" tile roof covering will cost 30 to 35 cents per square foot, while a "shingle" tile covering will cost 18 to 22 cents. Asbestos tile costs about the same amount as shingle tile. A tile-covered roof ought to have a pitch steep enough to shed rain rapidly and keep snow from lying on it. While tiles are sometimes fastened to battens laid directly on the rafters, it is best to use board sheathing and cover it with a layer of felt paper. It is almost impossible to make the tiles lie close enough on one another to prevent snow from blowing underneath sometimes. The felt paper avoids leakage from this melted snow, which evaporates or runs off at the eaves.

The same manner of laying, using sheathing and felt paper,



An English house where the physical form of the roof line eliminated all but one type of material—heavy slates laid irregularly. As a study in the skyline the house it presents some interesting points, a logical outcome of the rest of the structure

should be observed with slate roofs, although, as with tiles, slates are sometimes fastened to battens on the rafters without using sheathing. Ample ventilation should always be provided in every kind of roof, but it is especially important that a slate roof should have ventilation to prevent decay, to which it is liable when left without ventilation. Although the different sorts of slate afford as great a variety of color as do tiles, the usual classification is "black," "red" or "green." Cost is governed by color, size and thickness. The sizes of slate are known by number in America, a convenient method of designation, if not as quaint as the old Welsh custom of naming them "large ladies," "duchesses," "countesses," and the like. "Red" slate is usually the most expensive; "green" comes next, and "black" is the cheapest. Under ordinary conditions, a "red" slate roof covering will cost from 18 to 22 cents per square foot; "green," 12 to 15 cents, and "black," from 10 to 12 cents.

For shingle roofs the two best woods are cypress and cedar. The shingles may be had either split or sawn, but the former are preferable, from considerations of texture, which will be mentioned in a subsequent paragraph, and are also apt to be more durable. They vary somewhat in price locally, but the best split cypress shingles can ordinarily be had for \$25.00 per thousand. They are 6 inches by 24, and are  $\frac{5}{8}$  of an inch thick. The number required for covering a given area of roof will depend upon how many inches are laid to the weather. Seven inches to the weather may be taken as a fair average in America, but a much finer effect can be obtained by exposing less.

Some unfavorable criticism will probably be made of the inclusion of thatch among roofing possibilities. The two objections usually urged against it are its inflammability and its permeability. Notwithstanding these objections it is often used on modern houses in England with excellent results from both the strictly material and architectural points of view. One of the foremost London architects, in speaking recently of such roofs, stated that properly laid thatch was no more inflammable than shingles, if as much so, and that it was absolutely impervious to the weather, under ordinary conditions, and was not even affected by melting snow lying upon it—surely a searching test of its powers of resistance. This architect has frequently used marsh reeds (not straw) tightly bound down with courses of sally rods or withes near together. Architecturally considered, few will dispute that the effect of a

thatch roof is excellent. The main difficulty about having one is that we have very few competent thatchers.

For gambrel, hipped, gabled, jerkinhead roofs and mansards, if anyone still wishes to have so graceless a covering to their house, what has been said before with reference to materials available has equal application.

Although the texture and color of the roof come under a separate head of consideration, they must be studied in connection with materials, and results must be arrived at by their aid. If a copper roof is laid over parallel vertical wooden "rolls" nailed to the sheathing, the agreeable effect may often be heightened and a distinct note of interest added to the roof. The same sort of wooden "rolls" ought to be used with a lead roof, as



The roof of "Glen Fern" is a sincere indication of plan through the medium of the skyline. A rustic simplicity and directness in the gradations characterizes both the roof lines and roof covering

this method of laying provides more play for expansion. Iron nails ought not to be used with lead, as they cause corrosion. Owing to its great ductility and the ease with which it may be dressed and bossed into corners and irregular-shaped places, lead usually presents a sympathetic effect. The color, too, is good after short exposure to the weather.

One distressing feature about so many of our tile roofs is their smug, close-cropped aspect, due partly to the selection of the material and partly to the manner in which it is put on. A great many of our "shingle" tiles have a slightly vitrified surface, which is an advantage in withstanding the action of the weather, but not essential. "Sand-finished" tiles, which are simply baked like brick, and have no vitrified surface, have been found to answer the purpose admirably, are more sympathetic and varied in color to begin with, and soon take on an agreeable diversity of hue that the other tiles never acquire. If it is expedient to use the smooth tile with vitreous surface, it is well to put in a great many "seconds" with their random discoloration, and occasional tiles may be laid upside down so that the light kiln marks of the stringers may help to break up the deadly monotony.

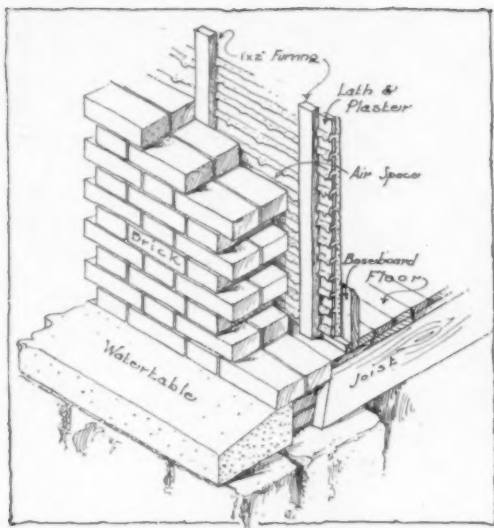
In laying shingles, it is an excellent plan for the improvement of texture to "butt" them at an angle of forty-five degrees. This can be done "on the job" with a pivot knife. It gives a more massive effect, makes the shingle appear thicker than it is in

reality, softens shadows and produces the agreeable matted texture that is so admired in English cottage roofs. Another device for producing agreeable texture is to lay the shingles with less exposure to the weather—about four inches—which, of

(Cont. on page 53)





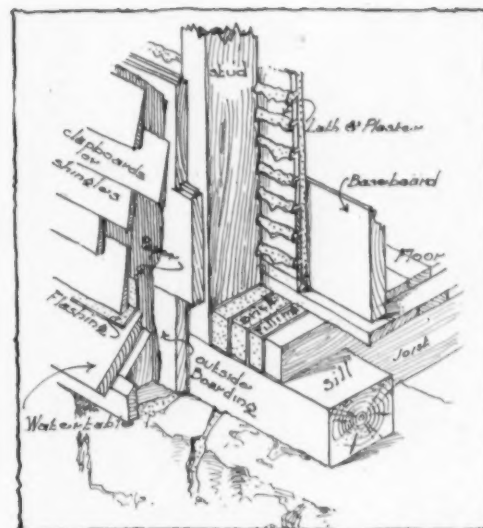


The average type of brick wall showing air space between brick shell and plaster lining

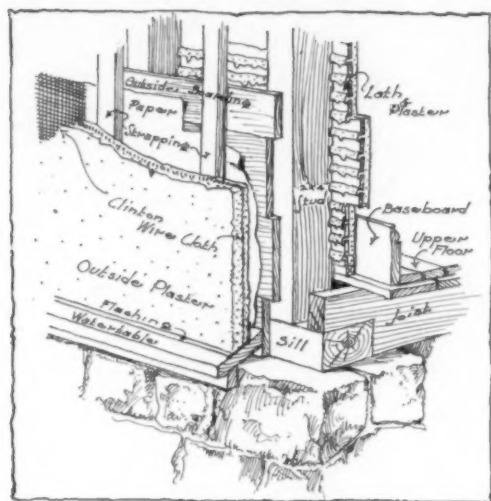
# WALLS FROM THE OUTSIDE IN

CONSIDER THE ADAPTABILITY AND NATURE OF EACH TYPE BEFORE PLANNING YOUR HOUSE

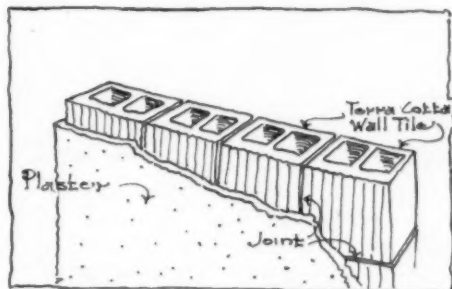
ALLEN W. JACKSON



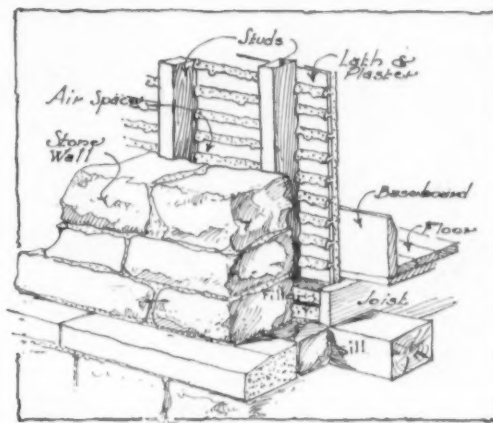
Clapboard, the commonest type of wall, showing use of outside boarding and building paper



A plaster wall requires many more constituents—if hollow-tile is not used in it



If hollow-tile is used, the construction of the concrete wall becomes fairly simple



Moisture seeping in through the stone wall requires a deep air space and well-constructed inner wall

OF what shall we have the walls of the new house? She likes white paint; you like brick, and your oldest daughter is just crazy about plaster covered with vines. It is hard to decide. The houses of white clapboards are certainly attractive, while brick and stone have a pleasant, substantial look, and plaster, even without the vines, has a charming texture and is most cheerful in its spotlessness.

They all have their advantages and their adherents, but, after all, it is a matter that will often settle itself. If any of the historic styles are to be used, the wall material will not usually allow of much latitude. For instance, the New England Colonial will usually call for clapboards and white paint, whereas this treatment would be a great solecism in any of the English styles. However, this is not quite so simple, for at the present time there is much excellent work being done that makes no attempt whatever to

copy slavishly any of the past architectural styles. It takes toll of them all in a greater or lesser degree, but the result refuses to be pigeon-holed under any of the old accepted labels. The shingled-all-over country houses done in the last twenty years in the East come under this head, as do these charming hybrid houses which are so elusively suggestive of Colonial, French and Italian work, but which are none of them, and almost form a style in themselves, except that they as yet refuse to be standardized.

It is then in this free house type of building that we may make our walls of what we choose, trusting to the restraint of a trained taste to keep the result congruous; which brings us to the conclusion that if one chooses to build in an historical style he must be prepared to accept the restrictions which such an acceptance imposes. However, let us examine a moment the most common walls



Two types of walls used successfully in a farm building—shingle with an end wall of field stone that "ties up" with the roadside and stableyard walls



Wall construction in this house at Marblehead was a deliberate effort to suit the setting—rough fieldstone laid in open bond tones in with the rocky foreground; vertical half-timber following lines of nearby trees; and the remainder stucco, a reproduction of the generally unobstructed atmosphere about the house. Charles M. Baker and Allen W. Jackson, associate architects

used in house-building, and not only their surface appearance, but also below the surface, and see how they are made.

The use of stone, perhaps the most substantial material, will depend upon the amount of money one wishes to spend. It is the most expensive of all the walls. The cost of stone will depend upon what the immediate locality of the building has to offer and whether or not we wish cut stone. Cut stone is the most expensive; then we have the split stones, and last, the field stones. The wall, in any case, is laid up in mortar, the stones being cushioned in place and the interstices filled with spatts and mortar, so that at the end of the wall, theoretically at least, is a perfectly solid mass of masonry with no air spaces. With a rubble or field stone wall, however, such perfection is too much to expect. As a matter of fact, our wall will probably let through enough moisture in a driving storm to make it advisable to take care of it on the inside. This is usually done by lining the inside wall with lath and plaster on vertical studs placed against the rough wall. This gives an air space which prevents any moisture from getting at the plaster or inside the house.

In the case of cut stone, only the facing stones are cut, and they are backed up for the remainder of the thickness by rougher stone or brick, the two banded securely together to make a solid wall. The inside plaster is then applied on lining studs, as before.

The use of brick for the walls of dwelling houses is daily becoming more common. This is largely due to the fact that while the cost of brick work shows a tendency to decrease, the growing scarcity of lumber in this country is causing the frame house to rise steadily in cost, so that from year to year there is a nearer and nearer approach between the two materials. At the present time there is a difference of from 10 to 15 per cent. When we weigh the two methods against each other we shall see that they really approach even nearer. The substantial character of the brick, its enduring qualities; its freedom from deterioration and expense for up-keep; the fact that it is fireproof, together with its superior esthetic possibilities, must be set off against the perishable nature of the wood, both from fire and decay, the necessary expense of up-keep, its vulnerability against change of temperature and general ephemeral, not to say flimsy, appearance. One is not apt to think of this latter phase of the matter until he chances to come from a prolonged stay in any of those countries where the frame house is unknown and suddenly finds himself surrounded by these large wooden boxes. They seem extraordinary and anaemic after the masonry walls of the rest of the world.

The pressed brick wall of the Victorian era, with its colored mortar, has departed. It was a smooth, characterless affair, of no texture or color, and has given place to the much more charming and sensible common brick. Of course, there is an infinite



Where clapboard and stone are effectively combined in a house of difficult position and unusual lines



All-over clapboard walls in a Dutch Colonial house where simplicity of wall treatment was most desired





Stucco and half-timber are almost invariably a successful combination, especially when, as in this instance, the walls are of differing angles giving a play of light and shade, and broken by windows of unusual lines

variety of kinds and a great many colors of common brick, and, to add to the variety of their wall surfaces, they may be laid in various bonds; the bond being the method of placing them in the wall. We may have each row of them laid showing first a side and then an end (the ends are often a different color from the sides), which is called Flemish bond; or we may lay several courses all sides, and then a course of nothing but ends. This is common bond. When the rows are laid alternately all headers and all stretchers it is called English bond. Then there is the more complicated English "cross bond," which makes an elaborate and beautiful pattern over the whole surface. Again, we may rake out the joints, and so by the

increased shadow accent these, or we may color the mortar—though it is seldom successful, if it match the brick. We have other more elaborate bricks, the so-called "Tapestry," "Hytex" and "Rug" being examples of a rough brick with which very rich color effects may be obtained.

So much for the appearance of the wall. Looking beneath the skin we may find a variety of structure. We may have the solid brick wall backed on the inside with vertical wood strips, over which is the lath and plaster. The strips serve to form an air space to keep the plaster away from the damp brickwork.

We may plaster directly on the brick inside if we make a hollow wall; i. e., a two-inch space inside  
(Cont. on page 63)



Uneven and rough as hand-split shingles may be, they weather well and lend an air of distinguishing artistry to a house



Where field stone and clapboard meet the connection can often be effected through the medium of a heavy, rough door

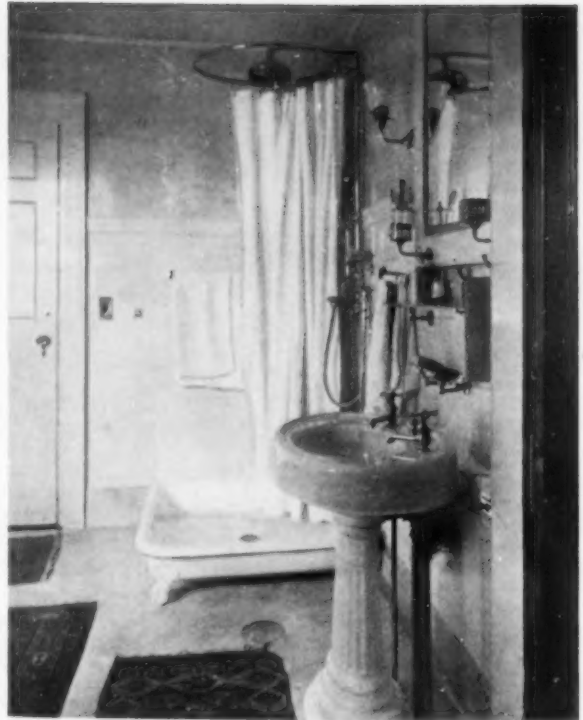


The bath tub should be set down solid on the floor without space beneath it where dust can collect

The same is true of any other fixture. In this instance the base of the shower bath would be a bother to the housekeeper



**O**F the many parts of the house, the bathroom may be said to be the one where modern efficiency has reached its highest point of development. Compact, sanitary fittings, easy to use and easy to keep clean, should



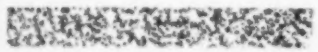
If the shape of the room will permit, why not build the shower as shown here

be installed, and their arrangement in the room should be determined with a view to the utilization of every inch of available space without giving the effect of stuffiness and overcrowding. Plenty of air and plenty of light are features that the competent architect will see to. Quite as important is the position of the various plumbing fixtures. They must be easy of access to both housewife and plumber. With no dark corners or awkward spaces to hinder, and with light and air to aid the housewife, the care of the bathroom can be reduced to the minimum. When one or the other is missing, the work entailed becomes a burden. You can generally



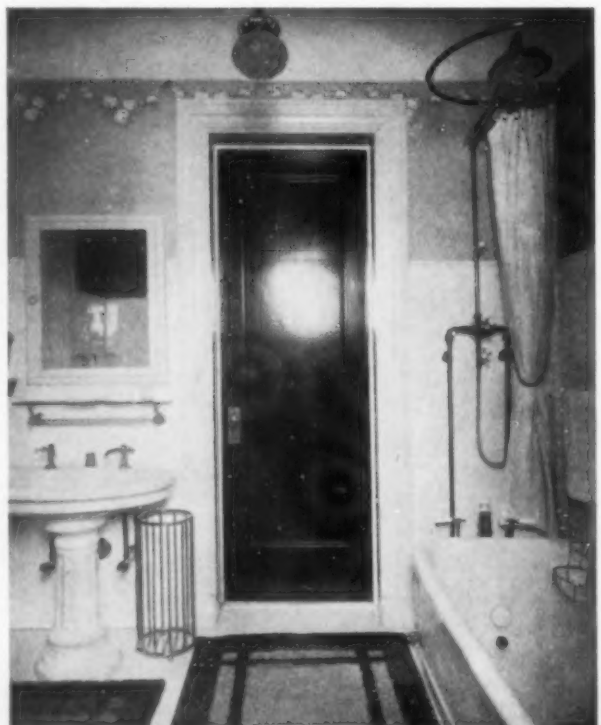
For flooring, tile is best, waterproof composition second, and wood third

measure a housewife by the appearance of her bathroom, just as you can measure the architect and the owner by its efficiency. A complete, efficient bathroom is an investment that pays interest in comfort and health. It is no idle saying that a house is known by its bathroom.



Complete and modern fittings, plenty of light and ventilation characterize the modern bathroom

Two-tone washable rugs are best for the floor, although they should not replace the bath mat







# Storage Battery Lighting for the Country House

A low-voltage plant for a small house capable of supplying twenty-four 16-candle power bulbs, showing the simplicity of the complete plant

SERVICE SUPPLIED FOR THE FULL TWENTY-FOUR HOURS WITH THE GENERATOR WORKING ONLY A FRACTION OF THAT TIME—HOW THE ELECTRICITY IS STORED UP—THE COSTS OF A PLANT

J. F. SPRINGER

**E**LECTRIC lighting can be provided nowadays at reasonable expense for moderate-sized houses, and that service may be supplied for the full twenty-four hours without requiring the operation of the generating apparatus for more than a fraction of that time. Perfection of service and economy of operation are now combined. Country and city are alike the beneficiaries of modern progress in lighting methods.

Electric lighting can hardly be said to be a cheap system; but, despite its cost, it is today the favorite. There are many instances where electric lighting is secured through the generation of current by private plants located on the premises of the consumer. Except, however, where the current is consumed in lighting a hotel, an apartment house or group of such houses, the inconvenience in operating the equipment has probably hindered the introduction of electric lighting. Now, it is possible to have an electric lighting system of such a character that it is not necessary to operate a dynamo simultaneously with the generation of the light. With the electric storage battery, the current may in effect be stored up to be used when the dynamo is quiet. The storage battery is the equivalent of a tank full of electricity, but it does not afford a perpetual supply without being itself re-supplied. During the day, at one's convenience, the storage battery is charged by operating a dynamo. The battery then becomes a source of electricity, which may be drawn upon at any time desired. With the best batteries no attention is required during the period when the current is being consumed. In the practical operation of a small electric

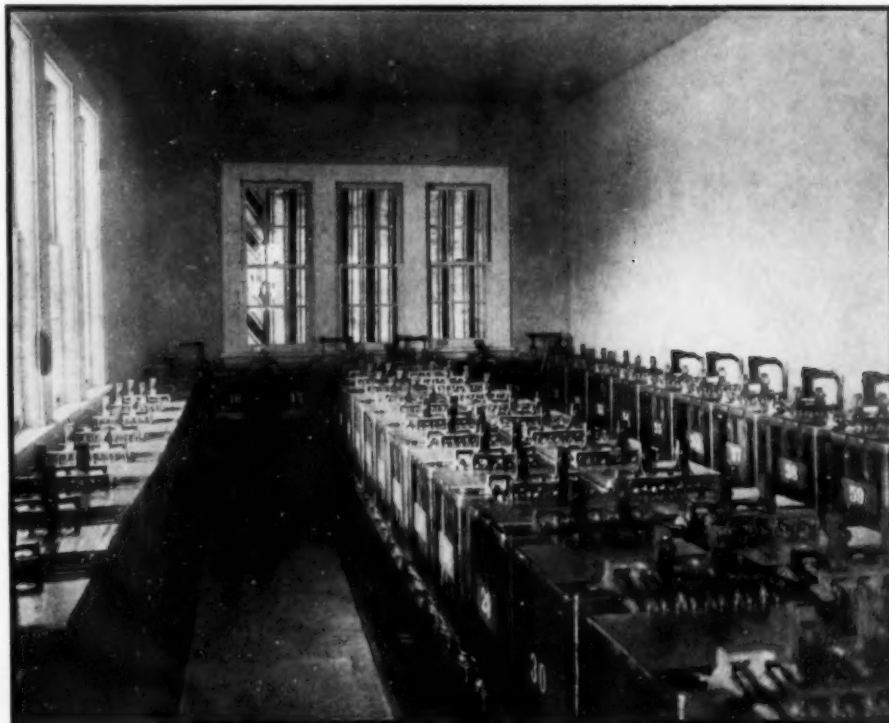
lighting system, this feature becomes of very great importance.

A storage-battery system consists—apart from the wiring and fixtures—of four elements: a gasoline engine, or other source of mechanical energy, which is employed to operate the second element—the dynamo. The function of the dynamo is to generate an electric current, which, in turn, is employed to charge a storage battery. Finally, the fourth element is a switchboard, whose function is to provide a means of controlling the electric operations.

With an equipment of this character we have not only a means of lighting the house, but also a source of power applicable to other uses. The gasoline engine may be disconnected and operated to run various mechanical devices. If the mechanical devices are too far away or too scattered to permit the use of the gasoline engine as a source of power, then we may operate them by an electric current. Thus, current may be obtained by operating the gasoline engine and the dynamo in conjunction. Indeed, we may connect up the electric light wires and operate the lights in the same way. Then, we may use the whole plant and "store up" elec-

tricity in the storage battery, which may be used to supply current for the lighting or the operation of mechanical devices. These several alternatives are not equally economical in respect to the cost of operation. For example, we can run a pump for less money by connecting it up to the gasoline engine than by using current from the dynamo or the storage battery. Again, we can operate it more economically by using current from the

(Continued on page 56)



The storage battery room on the Harry Payne Whitney estate on Long Island, showing batteries in position. This is the other extreme from the plant shown above



A simple, livable, stucco hollow-tile house developed on the central hall plan, with eight main rooms



The stair spindles were handwrought by a local blacksmith

A HOUSE AT MISHAWAKA,  
INDIANA

*Noel S. Dunbar, architect*



The veranda is arranged to be closed in and heated for winter



The end of the living-room was arched to accentuate its length. It is finished in fumed quartered oak with brown walls



At the rear of the room is a deep, cream-colored cast mantel, modeled after an Italian piece, with old gold tiles





Being two steps lower than the dining-room adds a note of interest to the living-room



Peacock blue and tan are the dominant decorative color notes in the dining-room. One of the wall panels is hung on invisible hinges and covers a china closet. A breakfast porch opens to one side



Light from the Palladian window located on the stair landing fills the front hallway, space being utilized by thus building the stairs over the entrance



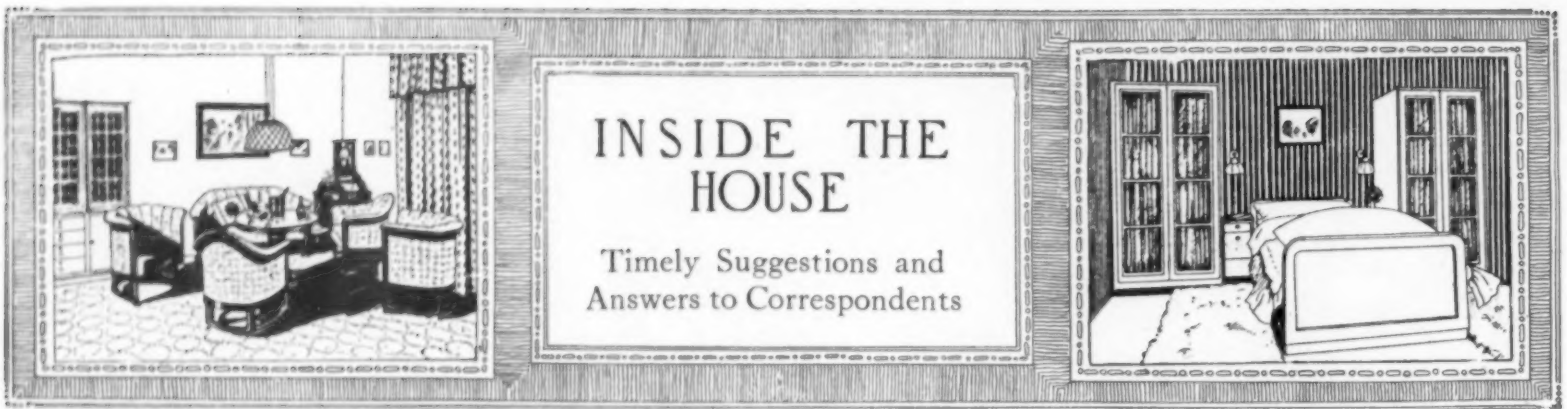
Arranged with a view to the saving of nerves and muscles, the kitchen is open, light, well ventilated and fitted throughout with all modern apparatus



Two large, built-in wardrobes provide ample closet room in the master's suite. A sleeping-porch, sitting room and bath adjoin



The woodwork and furniture of the guest room are finished in ivory, to which rose and dull green hangings give a touch of color



The editor will gladly answer queries pertaining to individual problems of interior decoration and furnishing. When an immediate reply is desired, a self-addressed stamped envelope should be enclosed. This department will also purchase any of the articles here described for subscribers living at a distance, or will furnish the names of the places where they may be obtained.

### Clean Air in Winter

**N**EVER allow the air in your living-rooms to become stale or foul. If the weather is too cold to have a window or two open a little all the time, a good plan is to open up the house several times a day for a few minutes or long enough to blow out all the bad, foul air and make everything sweet and clean. It will be found, however, that by keeping one window open just a little all the time the air may be kept pure and fresh without increasing the coal bills and without producing discomfort.

If your cellar has a damp or musty atmosphere, set chloride of lime in corners, using earthenware receptacles, as it rusts tin or iron. The lime will have an odor of its own, but it will be a clean and wholesome one, and will soon disappear if the windows are opened wide on a breezy day. A musty cellar is one of the greatest menaces to health either winter or summer; and when vegetables and other eatables are kept in it, the danger is doubled. If one has a positive repugnance to the odor of chloride of lime, there are numerous excellent odorless disinfectants on the market.

### Feasible Garbage Incineration

**O**NE of the most objectionable features of kitchen work is removed when modern methods of incineration are applied to the disposal of garbage. In addition, the menace to health is obviated. An incinerator that accomplishes its work thoroughly and without the nuisance of smoke and disagreeable odors must be efficient and thorough in its work. It must be durable and compact to be serviceable—simple in construction so as to be easily understood, economical to maintain and operate. It must control the heat so as to prevent radiation, and secure maximum efficiency. It must utilize its heat to eliminate offensive odor and smoke, and it must possess perfect combustion to consume entirely all waste in the shortest time, and prevent discharges of soot or unconsumed substances from the flue.

The general elements of construction of one that is giving favorable results are a perforated inner cast iron drum, enclosed by an outer cast iron casing. An air

chamber is formed between the two. The outer casing is surrounded by three insulated steel sheets, with spaces between each, forming three individual dead air chambers around the body of the apparatus, which prevent heat radiation.

A Bunsen gas burner is located in the lower portion of the inner drum. In connection with, and just below the burner, is an agitator grate, on which the refuse falls. Four perforated conical caps directly above the burners spread the flames so the refuse is simultaneously attacked at several points in its middle portion, and completely enveloped by the flames in its lower portion.

All parts are securely fitted within a solid cast iron top, base and front. The entire apparatus is properly insulated.

There are two types, portable and wall, each operated with gas.

The former is installed anywhere gas and flue connection is available. It can be placed in the kitchen, the draught connection being made with the range flue. If desired it can be installed in the refrigerator room or cellar. It does not radiate

heat nor scorch walls or woodwork. The wall type is installed in the wall or chimney brace, where a flue is accessible and gas connection can be made. It is recessed so its front is flush with the wall surface. This type is especially adapted for apartment use, and is recommended where floor space is limited. Complete details and blue-prints, giving size of necessary openings, furnished on request.

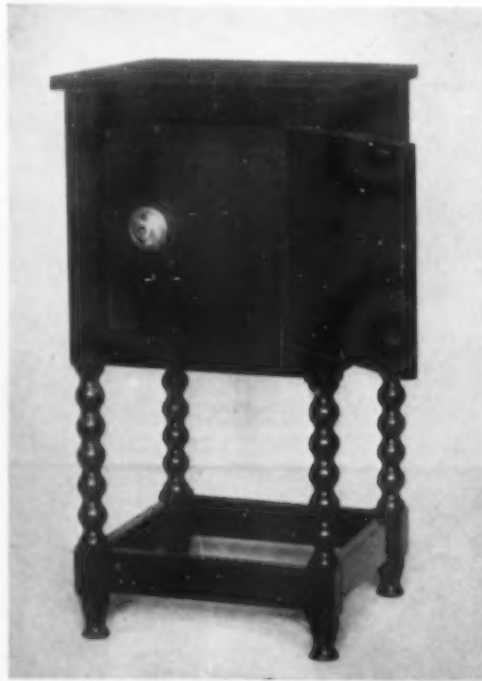
The method of incineration is perfectly simple. As soon as the burner is lighted the garbage is attacked from below by several flames. By means of the heat conductors connected with the burners the flame is first passed across the top of the refuse, drying and carbonizing it. The burning refuse produces a gaseous compound containing hydrogen and nitrogen. The oxygen, raised to a high temperature, is applied to this mixture, and a highly inflammable produce is developed and ignited. The combustion consumes odor, gases and smoke.

Time of incineration varies with the amount of moisture contained in the refuse.

If daily incinerations are desired, such accumulation of waste in the average household is consumed in about twenty-five minutes.

### The Household Safe

**S**AFETY first is a common-sense idea, even when applied to such matters as family valuables, for no house is entirely burglar-proof, nor is any room impregnable to untrustworthy servants. In all well-regulated households the nightly carrying upstairs of the silver basket is an honored institution, because eminently sane. But what do most of us do with the silver when we get it upstairs? It may be hidden away in a secret corner, but that corner may prove of easy access to the light-fingered. For that reason a small over-night safe should have a place in the house. The type shown in illustration weighs about forty pounds. It is encased in a solid mahogany cabinet, a decorative object in the bedroom. It is forty-eight inches high, the regulation table height. The safe itself has a double steel wall, locked with a three-point combination. Inside are a drawer and three pigeon-



In appearance a mahogany table of distinct attractiveness, this safe will prove a secure place for the family valuables



holes. For the safe-keeping of jewelry and trinkets and papers of value such a safe proves its worth of service in the house.

### A New Dishwasher

EVERY housewife knows what it is to prepare a nice dinner—to serve it tastefully—and to enjoy quietly the keen pleasure manifested by those who partake. She also knows that shortly after, the age-old problem of “washing the dishes” must be faced, and it is “back to the kitchen” again.

To make washing the dishes a quick job, to eliminate the use of the hands in greasy dishwater, to wash dishes rapidly and thoroughly with no danger of breakage—to put the whole problem of washing dishes on a safe, sanitary and really efficient basis—all this is the object of a dishwasher that is being shown in the shops. It consists, first, of a container, funnel-shaped at the bottom, resting on wall supports, or on a portable base, as preferred. It is made of a heavy metal, which more closely approaches a non-rustable material, with a free cleaning surface, than any other.

The container is entirely open within and perfectly free of any pockets, posts, perforations, valves, etc. Food particles cannot clog within it, or cause an unsanitary condition; they easily pass through the drainage outlet.

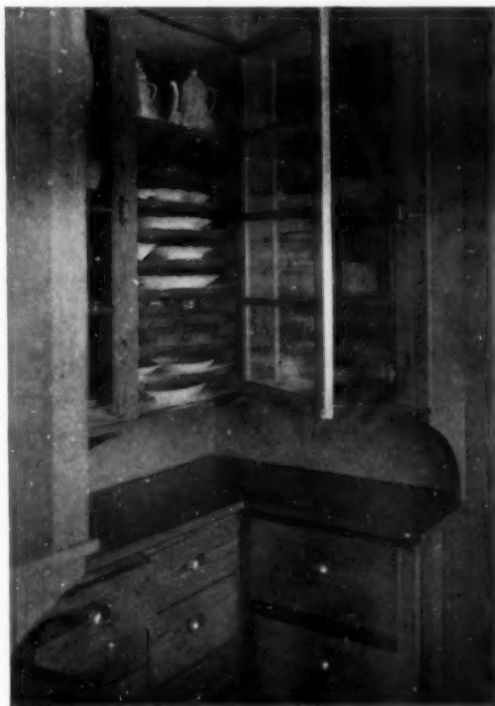
In the funnel-like bottom of the container rests the “dasher,” which turns continuously at the rate of three hundred and forty revolutions per minute. It makes nearly three complete revolutions with one movement of the lever, which permits fast operation. Operating the dasher results in the water being continually thrown from the bottom upwards, in a slanting direction, on all the dishes, actually washing off all food particles. The dasher forces the water up through and between all the dishes, none escaping its force. The dishes are not sprayed, or sprinkled, on

one side only, but are thoroughly washed on both sides.

The dasher is made of aluminum, which is so easily kept clean, cannot rust, and, being a strong, yet light, material, has no unnecessary weight to impede its action. To operate the dasher requires only a brisk motion of the lever.

Inside are arranged wire trays resting one above the other that hold the dishes. In the center is a compartment for knives, forks and spoons.

Simplicity characterizes the use of such a washer. Having placed the soiled dishes



The simple arrangement of shelves not only saves space but does much to lessen the possibility of breakage

in the trays, turn on the water—or pour the water into the container, drop in a small piece of soap or some washing powder, fasten down the lid and push the lever back and forth. This operates the dasher and pours the water over the dishes. Take out the trays when drained and dry. A few minutes' work will accomplish what used to take the greater part of an hour.

### A Place for Silver

IT is to none less than to Hepplewhite that home decorators owe a debt for a neat contrivance in which to place silver, a device that is being seen again in the shops. The silver urn of our grandmother's day is coming into favor once more, and its practicability more than ever is evident. As shown in the illustration, the case holds a set of knives or forks, each with its separate compartment. The lid sits down well and is secured with a lock. Some have hinged lids. Made of mahogany with high or dull finish, these urns have a singular decorative value on sideboards and buffets of the period of

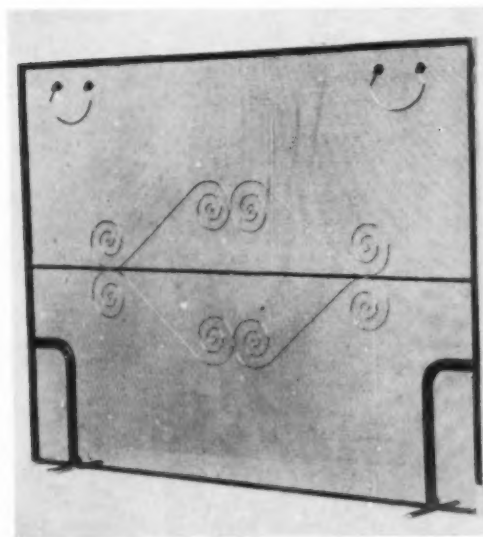
Hepplewhite or in any dining-room whose decorations are akin to that style.

### Save the Crockery

FREQUENTLY it is not more space that is required to increase the efficiency of a cupboard, but a more careful division of the space already possessed. In our accompanying illustration is shown a compartment in a butler's pantry recently built. It is devoted chiefly to platters. Instead of being piled on top of each other or set on end in the ordinary fashion, each platter has a shelf to itself. The shelves are no more than four inches apart and are adjustable. This simple arrangement not only saves much space, but prevents breakage, as dishes cannot be slammed together by a careless maid. A similar device could easily be introduced into any cupboard.

### House Plants

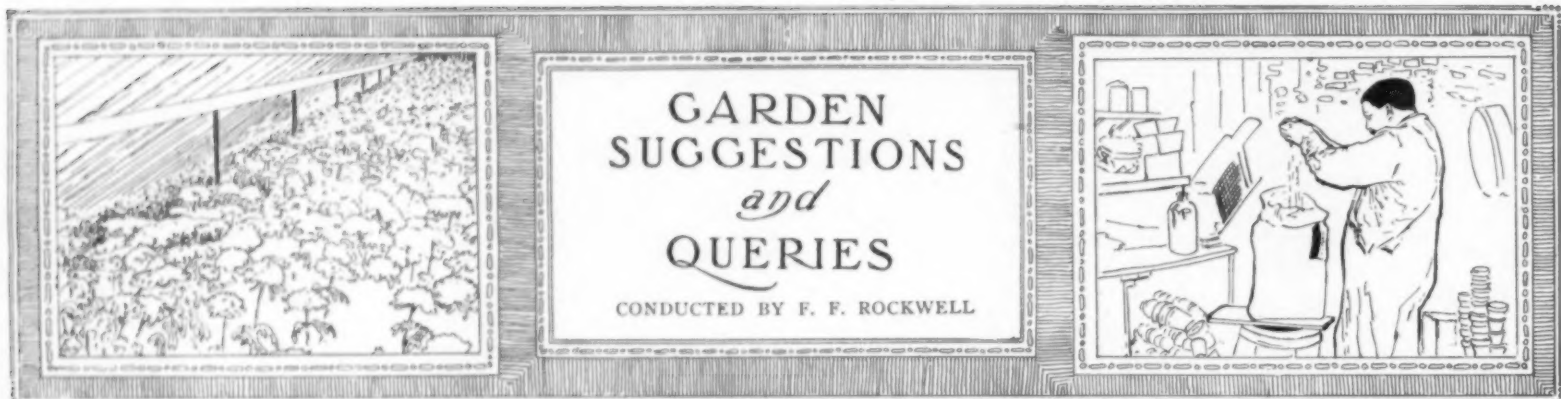
HOUSE plants need clean air, free from dust. This is also necessary for the household. A room in which sweeping is followed by a deposit of dust upon the leaves of the plants is too dusty a room to live in safely. The sanitary sweeping method should be followed. The floor should be sprinkled before sweeping, or a damp cloth be tied over the broom so that no dust will rise. Such a change in household methods will keep the plants clean and at the same time preserve the family from the contagion of colds and coughs, often caused by germs lurking in the dust. Besides this, the plants should be showered once a week in the sink or the bath tub, turned down on their sides so that the under parts of the leaves, too, are clean. When this is done and the plants restored to their places they will evaporate a deal of moisture into the air, freshening and improving it; and a vessel of water, always filled, on the stove or radiator will aid in keeping the atmosphere fit to breathe both by plants and people.



An unusually handsome fire screen for the hearth



A silverware container from a design by Hepplewhite



**W**ITH the beginning of the new year comes the usual flood of new resolutions so easy to make—so seldom kept. Those of us who are interested in gardening have the same temptation to plan, in a general indefinite way, far too much, only to find ourselves surprised again at the end of the year at how little we have actually accomplished. And yet there is something inspiring and stimulating about the fact that it is the beginning of a new year, of which we should take advantage. The trouble usually lies not so much in our "biting off more than we can chew" as in the fact that we are apt to cut off such a big slice that we don't even know where to take the first bite. So in regard to this coming year's garden resolutions I would make the following suggestions:

Plan but a few improvements.

Make those plans very definite and concrete.

Get them down on paper in black and white at once in as detailed shape as possible. Try that plan this year, now, and see if at the end of the twelve-month you

have not made more progress than in any other previous season.

#### BEGIN GARDENING NOW

Contrary to the general belief, January is the most important month, so far as the success of your vegetable and flower gardens is concerned. Next month, if you want early results from either vegetables or flowers, you will have to begin the work of starting plants. Before you do this you must, however, get your seed. And before you can order your seeds intelligently, and to accomplish just what you would like to accomplish for the following summer's gardening, you must have a definite knowledge of where each thing is going and of just the types and varieties you want. And before you can know these things accurately you must have thought out carefully a plan for the position, the amounts and the varieties of all the vegetables and flowers you expect to grow. That means work—diligent, painstaking work, without the exhilaration of spring smells and swelling buds around you. In making your plans for this summer's work, if you have had a few seasons of garden experience of your own, you will be able to judge from that to a large extent just what to put in and what to leave out. If you have kept any kind of a record or diary of your various garden operations to show dates of planting and harvesting, height and time of blooms of flowers, varieties that you have found especially attractive, and so forth, you will find this of the greatest use in planning your work ahead. In fact, without some such accurate basis to go by, it will be impossible for you to make your plans with any definite assurance that you have got things just right.

In case you have neither several years' experience nor a season's personal record of this kind to guide you, by all means secure at least one good book on flower-garden making and another on vegetables. No matter how many magazines you may be taking, you will find a book well worth while. Naturally the magazines have to

follow more or less closely the work of the month. But to plan your work ahead for the season you need information about the whole year's work ready for immediate reference. If you have kept, as most readers do, your copies of *HOUSE AND GARDEN* for the past year you will have a great deal to guide you which may be gleaned by looking through them again at this time. It is a good plan also to secure a generous supply of catalogues, as very many of them contain useful information put in a way that will be of material help to you.

#### PROPAGATE PLANTS NOW FOR BEDDING OUT NEXT MAY

Young plants in prime condition, that are just the right size for setting out in the spring, to bloom vigorously all summer, can be had by starting them from slips or cuttings. Even with a limited amount of room you can start quite a number of plants this way. Plants from such flowers as you may have in your house or green-



As soon as the small roots form, replant the slip in a pot of rich soil



Do not allow the new roots to reach this stage of maturity before transplanting

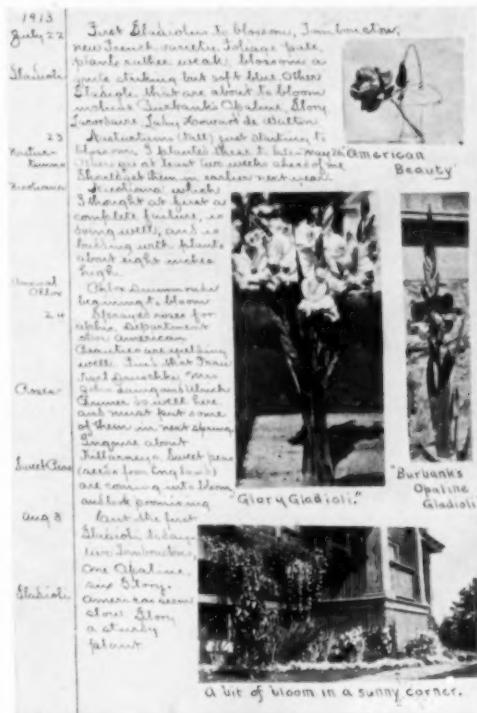


house capable of being propagated in this way have several advantages over those started from seed. They bloom practically from the start, often even while the new roots are forming; they are sure to come "true," as they are in reality the same plant, while many plants from seeds are apt to vary more or less from type, both in color and in freedom of bloom. Two things are essential to make it worth while for you to start your plants in this way—plants that are in a healthy, vigorous condition of growth, and some place where you can keep the slips or cuttings at a fairly even temperature of 50° to 55° while they are making their new roots. Old, neglected or spindling plants will not furnish the right field for good cuttings or slips; and if they must be handled in a room or frame that gets too cold they will either root very slowly or fail to root at all, while too high a temperature will cause them to run up and make weak, spindling plants. To root quickly, the slips must be in just the right condition of "ripeness" or hardness. If the wood is too new or soft or too old and tough it will not root satisfactorily. To determine whether the wood is in just the right condition, bend the branch at right angles; if it "snaps" without breaking clear off it should root readily; if it bends or doubles up without breaking, it is too soft or too tough. Cut the slip off clean at a slight angle; trim off the leaves close from the lower half of it, and if the remaining ones are large, cut them back about one-half. The cuttings may be from 2" to 4" or 5" in length. To root the cuttings, fill an ordinary flat full of clean, medium coarse sand, with a layer of drainage material at the bottom, and give it a thorough watering. After any surplus water has drained off, mark off rows about 3" apart, more or less, according to the size of the cutting, and insert the cuttings, one at a time, to about a third of their length, taking care to have the sand packed firmly about each one. They may be set as close together as they will go without crowding. Put the flat in any convenient warm place, and all the care that will be required during the next few weeks until they begin to root is to shade them for a few days from bright sunshine. After that, keep them watered often enough to prevent the sand from becoming dry at any time.

If only a few slips are to be rooted, a still simpler method is to fill a water-tight dish, preferably a flat, rather shallow one, with sand and water and place the cuttings in this. Keep the dish in a bright, sunny, warm window and add water frequently, so that the sand never gets dry even on the surface. Whichever method is used, as soon as the small, new roots form, the plants will be ready to be taken out of the sand and put into small pots or into one large pot of rich soil. This should be done when the new roots on the slips are still short. The sooner you can attend to them after they push out beyond the edge

of the callous which forms over the cutting, the better.

If old pots are to be used for the cuttings, give them a thorough scrubbing to clean out the pores before placing in the slips. If either room or pots are lacking, the rooted slips may be placed, for their first shift, in an ordinary "flat" of soil, putting them about two inches apart each way, shading them as before for a few days from the bright sunshine to prevent their wilting. Among the plants which may be propagated in this way are geraniums, heliotropes, begonias, fuchsias, lemon verbenas, patience plants, snapdragons, salvia, coleus, petunias, lobelias, tradescantias, and a number of others.



Such a garden diary as this, with its record of successes and failures, should be of material benefit next season

MATERIALS FOR STARTING SEEDS

The first seeds for the early garden should be started in February. Unless you have everything ready for this work you should give it your attention before the end of the month. If you neglected last fall to take in sand and soil for this purpose you may be able to get some now from some local florist; or, if you prefer an hour's good, stiff work, take a pickaxe and crowbar and wheelbarrow and go out into the garden and pry loose half a dozen good-sized chunks and put them down in the cellar near the furnace, where they will gradually thaw out. In the woods, even after the ground is frozen, it is usually possible to get leaf mould without very much trouble, and a little sand, if any is to be had, will be found very useful also. Then you will need some flats. A number of these may be made in a half hour's time

with saw and hammer from soap or cracker boxes; they should be from 2" to 3" deep, with cracks left in the bottom or holes bored in them, to assure good drainage. When you are ordering seeds include also a supply of tags or labels; 100 painted 5" wooden labels will cost you but twenty cents or thereabouts.

TAKE STOCK NOW

Before you get ready to send in your seed order it is also an excellent plan to look over your various garden tools and order anything which you need along with your seeds. The advantage of doing this is that the seed houses usually carry a good deal larger line of garden tools than any local hardware houses, especially tools of the best quality. With care and the amount of use they ordinarily receive on the home place, good tools of this character will last a lifetime—or at least until the children lose them. You can, for instance, probably get a trowel for ten or fifteen cents, while a good one will cost you fifty or seventy-five, but the former will probably not last you the first season through and will be pretty sure to give way some time just when you are very much in need of it, while the latter not only will outlast several of those of the cheaper grade, but will give you much greater satisfaction in its use during that time. With even a moderate-sized garden it will not pay to stint yourself in regard to hand implements. Mark your tools when you get them, and keep them all in one place, preferably a place that can be locked. One of the little garden necessities which may seem a luxury is a real garden "reel and line," but a reel and a hundred feet of braided line together will cost but one dollar, and, while it may be possible to make just as straight a row with "a piece of string," I doubt if you can invest a dollar in any other garden tool which will be more likely to help the appearance of your garden.

KEEP A GARDEN RECORD

Why not start a Garden Diary the first of the year? Keep a brief record of dates and items of interest, such as when you were able to plant your sweet peas; when the first rose bugs appeared; when you had the last frost; when you planted your various seeds for succession crops; which flowers proved to be the greatest successes as tall backgrounds, and what flowers pleased you as edging plants for borders or beds. Do not go too much into details, but simply jot down notes which will aid you in your next year's work. The diary should result in "A Line-a-Day Book," though it will not be necessary to write literally a line each day.

Snapshots of your flowers in various stages of growth will add considerably, both in interest and beauty, to the appearance of your pages, and will at the same time be of practical value in later years.



# EDITORIAL



## THE HOUSE NOT MADE WITH HANDS

IF thus far you have followed these pages, you have witnessed the idea of a house being crystalized into a material entity. You have had your choice of country houses and learned how you and your architect can best work together; you have seen to the gardens that can surround it, the hardware, the plumbing, the lighting, the closets for the wife, the sturdy walls and the roof; and you have planned the truck patch in the back of the yard where you will help Nature on Saturday afternoons give body blows to the high cost of living. It's an interesting process, this building a house from the idea up. To read of it brings stimulus; ambition is awakened. When you lay down the magazine you make a resolution that some day you will have a house, or if you have one, you will make it better.

Much the same materials are being used to-day as were used centuries ago. We have improved on them; we are making things more comfortable according to our concepts of comfort, and more sanitary and more lovely to look upon, but each generation brings its own improvement in the measure of its added wisdom over the generation that has gone. The bathroom that was a luxury of yesterday is a necessity of to-day. Yet back of all building and building improvement is a mightier force than that of steel and stone and concrete. The house to-day is the product of ages of improvement in customs. Customs make houses what they are to-day; they are the architects and masons and carpenters of the house not built with hands.

Houses, a recent author claims, were made primarily to shelter and protect the child. Was it the tree-house of the tropics or cave-house of the mountain dwellers or the hall of the sturdy folk of the north, for the child's sake a home was devised to protect it against the heat of summer and the cold of winter. Sociologists are only now awakening to the fact that the love of father and mother for child antedated the love of husband and wife.

From the cave dwelling developed the hall—or cave above ground—and from the hall came the modern house. Traces of the influence of the cave as a model may be seen in the construction of the hall. The hall stood east and west, with the door in the western end giving less access to cold winds. The roof was pitched high so that the smoke could arise above the eyes. The lines of the roof were irregular, so that a foe would mistake it for a grass-grown mound of earth. The entrance was through the western gable, whose lintel was so low and threshold so high that no enemy could enter without difficulty. There was a window, too, in the center of the roof, through which the smoke passed out, and where stood the guard in times of danger. It was one big room without partitions or stories, and all the furniture was what we call built-in. In those days the sign of a man's strength was that he could tear the furniture from its fastening! A table ranged down the middle of the room, with a bench on either side, the middle of which was raised above the level of the rest and reserved for the master of the hall and his wife, the distinguished guest sitting opposite. As this was situated near the fire, it was also a place of great comfort. Two sacred things were in this house—the high posts, usually decorated with carvings of the gods, that separated the master's seat, and the cord

that closed the roof window in hours of danger. It takes no great stretch of the imagination to build up from these rudimentary things our modern master's suite in the house, and the custom of locking up the house at night!

The desire for privacy—an acquired custom—brought about the division of the hall into rooms. The women's seat on the long bench marked the place where a partition was erected, and that space further subdivided into sleeping boxes or "lock-beds"—little more than closets into which the sleeper locked himself. Another partition or wall was erected parallel to the west gable, making a space that was divided into four rooms, two above and two below. One became an entry, one a storeroom, another a sleeping place. Thus the sleeping places went from the ground floor to their present positions upstairs.

When the life of the family became too complex for the rooms inside the house, other buildings were erected close by. Thus there was the guest house—still used to-day on some large estates; the seething-house for cooking, which can be seen on Southern plantations, an improvement on which is being advocated in a community kitchen and bakery of the town of to-morrow; bath houses, constructed near springs, to which water was conducted in stone pipes, barns, byres, stables, sheepfolds and pigsties.

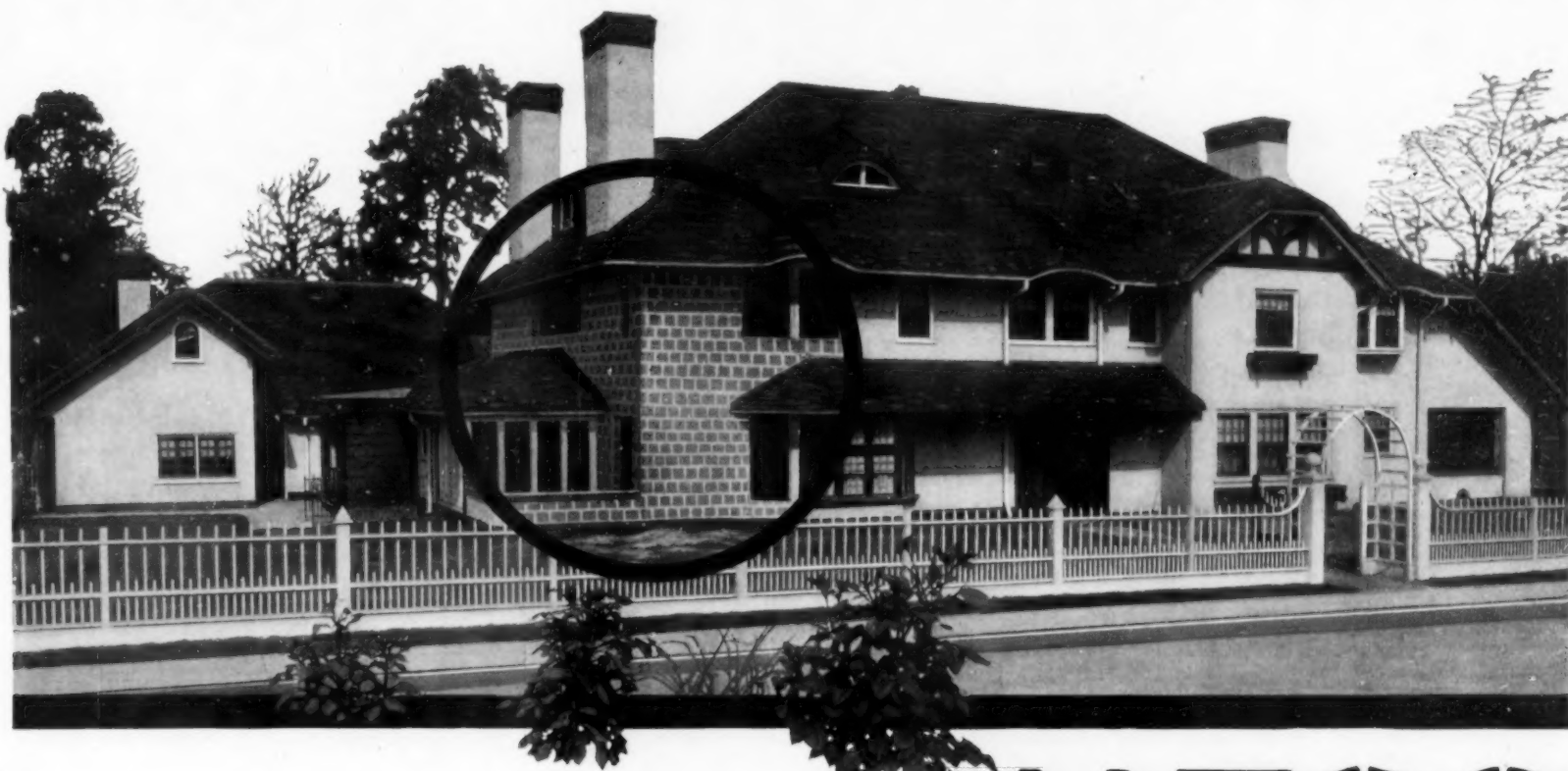
The fireplace was built to conserve the fire when wood began to grow scarce, one fire a day being built, and the hearth left to radiate heat the remainder of the time. From this grew the stove. Toward it was moved the seat of honor—for even as to-day, honor in the home spelled comfort.

With the subdivision of the one large room came the necessity for smaller movable furniture, the type of to-day. Ornaments grew from the bow and arrow and spear and the trophies of the chase to things of utility and decoration. Business customs required a knowledge of the time, and thus came into use the hour-glass, and then the clock.

Although in such limited space only a few of the simplest facts of the development of the house can be touched upon, it is evident what romance lies behind us and how custom has been fashioning through numberless centuries the house not made with hands. But the work has not ceased, and, as customs change, so will the house. One can only conjecture what the house of to-morrow will be. We have not yet completely solved the problem of dust, nor do many houses have elevators that eliminate the wearying climb of the stairs. Democratic customs becoming more widespread have made the servant question threaten the feasibility of a separate kitchen for each house. Heating facilities have also not reached the state of blissful perfection. The apartment house has done much to eradicate some inefficient and uneconomical evils, but it has lost, in the process, much of the old charm of the separate house. Nor can the time ever come when men will be content to have their home lives completely regulated by machinery or guided by community regulations.

The house not made with hands is not alone the product of people's customs, but of an owner's individuality. Each man builds his own house unseen, a house of sturdy walls not made of brick, roofed in with other things than slate or tin, windows fashioned of more than wood or metal and glass, and rooms made habitable with furniture no artist can create. For to each house made with hands is one made not with hands. You can see it—if you have the vision of the intangible.





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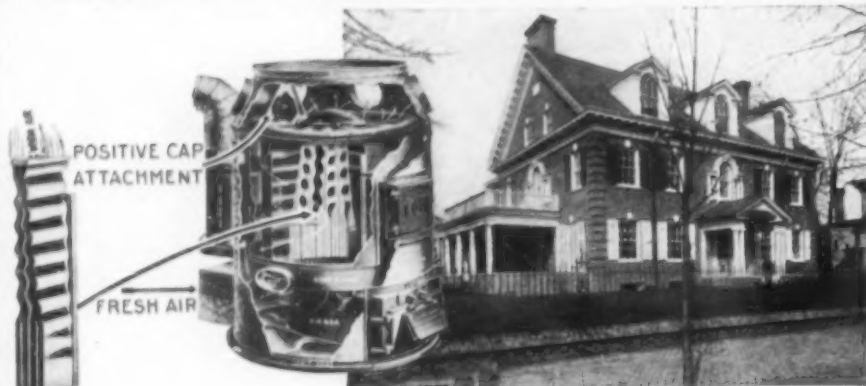
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### Landscape Gardening on a Small Lot

(Continued from page 20)

walls catch and hold the heat of the sun and make it comfortable to sit in even late in the fall, while the pine tree furnishes just enough shade to make it a pleasant afternoon lounging place even in the warm days of late spring.

The terrace is sheltered on the north by the house, from which it is approached through a small conservatory. The stucco pilasters and wooden beams of the conservatory make it a desirable winter substitute for a pergola. On the west the terrace overlooks the flower garden. The other two sides are enclosed by walls. Opposite the conservatory the wall is raised to give privacy from the carriage drive of the neighboring lot. The monotony of a solid wall is changed into a feature of much interest by an arrangement of three panels. Two are filled with Della Robbia singing boys, the center with a brick wall fountain. The fountain provides an architectural feature which is particularly good in its placing opposite the conservatory door and in its location near the pine tree which overshadows it. A wall fountain is an economy of space, but the smallest amount of water has value in a garden, and the tiniest trickle a lively effect. The three flat, arch openings in the other wall allow the green of the back shrubbery to enter into the composition. This wall gives the effect of seclusion, while the openings in it suggest something of interest beyond. It is a transition between the formal terrace and the informal back lawn.

*Jasminum nudiflorum* planted under the conservatory windows has bright, yellow flowers very early in the spring. Snowdrops, *Iris reticulata* and English primroses are planted in the sunny nooks at the foot of the wall, and white Chinese wistaria climbs over it. The annual vine, *Cobea scandens*, gives a delightful lavender bloom in the fall, and English ivy planted on the shady sides provides the winter interest.

The terrace is a pleasant out-of-door room. It is comparatively small, but the wide, open view of the flower garden and the broken glimpses of the back lawn make it quite big in feeling, if not in actual extent.

The central arch of the wall opens into the back lawn. On either side are informal shrubbery borders. The ground under the shrubs is planted with bloodroot, Solomon seal, trillium, crocuses, squills, violets and other spring flowers. It is a substitute for a rock garden which shows what charming simple effects can be developed on a small place if thought is given to the intensive use of every corner. In the shrubbery itself, the main masses are composed of lilacs, snowberries, *Euonymus alatus*, *Cornus alba* and *Kerria japonica*. The lilacs provide abundant spring bloom, the snowberries a

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charming autumn effect. The brilliant red branches of the Cornus and the vivid green stems of the *Kerria* give a very effective winter contrast.

At the farther end of the lawn the vista is terminated by a wonderful old spruce tree backed by a semi-circular lattice. A row of white stepping-stones leads from the terrace to the spruce and turns at right angles to enter the stable court. Even in this court the winter effect has been thought of; the bright red of barberries is contrasting with the black berries of Regel's privet.

Doorways and Their Approaches

(Continued from page 23)

consciously develop a family garden on the side of his house opposite the street, the full completeness of this attractive picture is seldom realized.

Even when the house of open plan has its entrance and hall thus arranged, modifications are possible, merely by interposing a vestibule, for instance—a needed element in northern latitudes—it is easy to break up the over-intimacy of such an entrance. The entire plan—including the south garden—can be realized and exclusively reserved for the use of the house occupants by arranging a reception (plan B) room, entered from this vestibule, to catch and hold the casual stranger. Or the vestibule can be enlarged to form a larger space, a small entrance hall, if you will; perhaps graced with a grate or fireplace. If entered, for instance, from the side instead of the front (plan C), such a hall would prove the cheeriest of welcomes to a desirable visitor in a way that is utterly impossible when he is at once thrown into the larger stretches of a "living" or "staircase" hall, with all its consequent drafts and the discomforts of passing necessary from the uses to which such a room is subjected.

In this later suggestion we more nearly approximate the English, rather than the American, ideal. But is not that, after all, the path that is already being discovered and traced by our American home-builders? This is being used instead of the door placed smack in the middle of the house, perhaps defended by a small porch with columns, side lights on either side and top light that was, twenty years ago, unavoidable in every house of Colonial aspect. Such a porch as this was always approached by a flight of steps at least three, more often four, frequently five, and occasionally six in number, thus elevating the house a considerable distance above the lawn and permitting that doubtless desirable—but seemingly inconsistent household companion—a "light and airy basement"!

But this advantage has also been found to be obtained at somewhat too great a cost. Stilts have never proved a sightly aid to locomotion. If we were living in prehistoric times, the tree-built dwelling

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might prove to be of considerable advantage for purposes of defense—just as today, in tropical climates, the elevated house is a necessity because of spring freshets and fall inundations—but in more civilized communities, neither necessity remains apparent, and there exists every æsthetic and personal reason for decreasing the distance separating the first floor of the dwelling from the ground without. Contrast, if you will, a house placed so low as to have but one step from porch floor to grass lawn, with a house with a higher approach; and try and analyze for yourself the reasons for its appearing so much the more attractive. Putting extenuating circumstances of all other sorts to one side, you will be surprised to find how



The modern German type of entrance adds character to this plaster house

overpowering and attractive an element is the close relationship established between these grade levels. It naturally follows that to-day every effort of ingenuity is used to relate the house first floor as nearly as possible to the grade of its site. If one step from grade to porch is possible, with another step from porch to door, nearly the ideal solution has been arrived at. Perhaps two steps from porch to grade are absolutely necessary; even so, it is sometimes possible to make these steps so broad, with a buttress at each end so flat that they are hardly more than obvious to the approaching visitor. Especially is it possible—since the "spindly Colonial" period has shown signs of passing by—to avoid those prim upright columns of glaring white that formerly defended the doorway and held the venturesome obtuder at good arm's length. Again, it is possible to so soften the house entrance; to recess it within the face of the dwelling rather than project it beyond that face; so blending it in color into the wall treatment that one feels still more successfully the near relation between dwelling within

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and without the house. By such means can be indicated the healthier outdoor life of our suburban communities, the near relation between Mother Earth and our living habitations, the greater dependence placed upon outdoor air and exercise rather than on indoor living.

Finally, as to the door itself! Gone, the inevitable white doorway of yesteryear, and gone along with it is the sounding brass, so difficult to keep clean, and the betraying smudge of Bertillion finger prints on the white paint around knob and key-hole. In their place we find more frequently a door of natural wood, stained, to the informal and somewhat more dashing vigor of cypress or the more polished and refined veneer of walnut. With such doorways have come the duller gleam of bronze or the attractive feel of wrought iron for hardware. Instead of the garish top and side lights, too often used as an excuse for more dinky and fussy ornamentation of interfoliated glass, we have a framework of sufficient strength to hold the door firmly and graciously within its setting. A sense of protection for those standing without the threshold may be provided by a simple hood, architecturally related to the frame of the door, or sometimes even more successfully tied to the down-sweeping lines of roof eaves of timber. Occasionally even a less formal shield for the doorway can be provided by secluding it between seats, thus seeming to provide shelter and proffer hospitality at one and the same time. Sometimes the still greater informality of lattice can be utilized to support a roof for protection and seclude the caller for the few awkward moments he is waiting for admission, a seclusion that can still further be increased by a judicious growth of vines; or the location of adjacent flower beds of tall, old-fashioned hollyhocks.

Sometimes the doorway is recessed actually inside the front wall of the building, allowing one to enter through an inviting archway of brick or plaster; sometimes a modest and unpretentious top light, or a light of glass glazed somehow within the design of the door itself, permits a glimpse of the interior, or provides those within the door an opportunity of scrutinizing the one waiting without. By breaking away from the old Colonial plan, with its inevitable center door and entrance, it becomes possible to nestle the main house doorway unostentatiously into the shelter of some projecting bay, or to tie it into the lee of an equally protecting chimney.

All this, too, serves to reflect our acceptance of the English idea of the entrance doorway being, after all, an inconspicuous and—on the street front, at least—a comparatively unimportant part of the dwelling. It permits one to enter or leave the house with the utmost of simplicity and the least amount of pretension. Rarely does the garish *port-cochère* become a part of the English home problem; certainly never in the way it flaunts

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itself on the face of our American dwellings. If carriages or automobiles are a real element in the life of the owner, he takes them more as a matter of course far more simply. His house is then of a sufficiently greater extent to make a carriage arch a possible solution, particularly if placed at the entrance to his stable yard; or a separate court and side door for this purpose is an element to be provided in the plan arrangement of his dwelling. It somewhat answers the same purpose as the old-fashioned side door of America. That door opening directly into the garden, the one most convenient of access to the neighborhood caller—full grown and running over, when no one had leisure or time to deviate by the unused routes of the formal "front door" when leaving home for school, for business or for pleasure. Formerly, no American home was complete without it, and in restricting ourselves—as we are now apparently willing to do—to two doors, one the "front" entrance, and one the "back," we are recognizing a distinct striving for a different sort of life, obtained by a loss of intimacy of family association which, at least, our English contemporaries have not yet recognized.

The English house, of even modest size, often provides this intimate doorway. There it opens perhaps from the back of the house (it must always be remembered that in the most English houses the living portion is on the opposite side from the street, and the service portion at one end, with a doorway that goes upon a service yard and towards the street as well) directly into a garden—or orchard, if the place be suburban and of sufficient extent. Around this door, never more than a step above the greensward beyond, hinges the real life of the English household. Such a door is of a different character altogether than the house necessarily presents upon the street. Oftentimes it is nothing more nor less than a French window, sometimes a pair of them, swinging wide open the house to the porch or closed to shelter the hall from the over-brusque outdoor air. Sometimes this doorway enters into the hall, sometimes directly into the study or living-room; and often it is supplemented by a similar entrance connecting dining-room and porch, permitting of tea or luncheon being served in the outer air when the weather warrants.

Why should we Americans voluntarily relinquish all our dearly derived prerogatives? If the side door is admittedly too informal a relic to remain in the American home life of to-day, why can we not at least substitute the garden doorway, which remains the distinctive element of the garden front of every English dwelling, no matter how lowly or small a cottage that dwelling may be? How many houses in America possess their garden frontage, even when of the more pretentious class; or, for that matter, how many American families possess even a pretense of that garden, which itself would pro-



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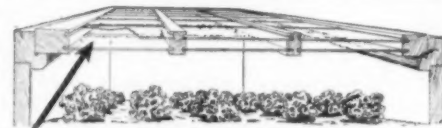
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Cost, Texture and Design in Roof Planning

(Continued from page 34)

course is more expensive, but worth the difference in the resulting mellowness and richness.

And now we are confronted with the subject of roof design in relation to material and texture. There is an inseparable and inviolable connection between the design of the roof and the design of the rest of the fabric, a connection and established fitness that none but a madman would dream of transgressing, even did structural conditions admit of such action. While conforming thoroughly to all architectural canons, there is, nevertheless, endless opportunity for originality in the treatment of roof design. Just because of this large liberty, one or two final cautions seem not amiss to ponder over. Do not set too much store by the pictorial aspect of the roof lines. Attractive skyline is an important feature and available asset, but it should be achieved as the logical outcome of well-proportioned plan. It is impossible to create a beautiful body upon a bad, misshapen skeleton. So, also, is it impossible to design a really well-massed house with a good and fitting skyline, that will stand the test of searching criticism from all points of view, unless sound and reasonable plan be the underlying basis governing all considerations.

Architect and Client

(Continued from page 21)

naturally causes the owner to worry; but it is so in every business to-day. The efficiency of the contractor is not under the architect's control; that is unfortunately determined by selecting the lowest bidder in some cases.

The contractor is employed by the owner to execute a contract through the architect, who acts as the owner's agent, but without any impartiality. The completed plans are usually given to five contractors for competitive bids, and usually the contract is given to the lowest bidder. If the five bidders are equally reliable, this is a safe method; but if two of the five are, perhaps, men who do a cheap class of work, their bid may be ridiculously low compared to the others. Sometimes the low bidder discovers after starting the work that he has figured too close to the cost to perform the work as required with any profit to himself. This mistake is likely to cost him several hundred dollars, and he will, of course, endeavor to save this amount wherever he can see an opportunity, unless the architect observes every deficiency and has it corrected. Therefore, it is customary to insert in the specifications this clause: "The owner reserves the right to reject any and all bids," so, if he wishes to, he can advise that the contract be awarded to the next lowest bidder, or to the man whose ability and reputation are the best.

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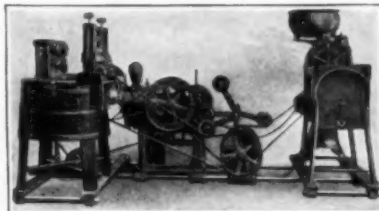


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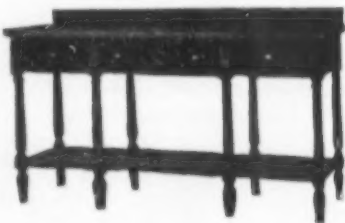
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Many houses are being built to-day on what is called the percentage plan. This is similar to the old method of building a house "by the day." I have developed a new way that has worked so far very well.

The contractor agrees to erect the building for from ten to five per cent of its cost—the percentage is smaller as the cost increases—and agrees that its cost will not exceed a fixed amount, which is determined by conservative estimate. This assures the builder a legitimate profit—which he deserves—and in return he is to give his attention to pushing the work, purchasing the material specified as cheaply as possible, taking all discounts and favorable terms, subject to the approval and directions of the architect. I check this system by having a printed form, which the foreman reports on each day, giving the number of men at work (not under a sub-contractor) and all material received at the job that day. The supervising architect or his assistant checks that list each day. At the end of the month the material bills come in and are checked against the daily reports. The lowest market rate for the material is checked and the bills paid when correct. Usually the sub-contracts for plumbing, heating and electric wiring are let, at a fixed price, with a schedule of unit prices for any extra work, while all the other items are put under a general contract on the above basis. The method insures a first-class job at the lowest cost, if the method is carried out and the work pushed, as the control is vested in the owner through his architect. I have tried this scheme even on a large steel and concrete commercial building, and had it work perfectly.

The business should be handled through the architect, the builder addressing the owner through the architect, or the owner the builder in the same manner. Monthly payments on the work should be made direct to the contractor upon the certificate of the architect to enable him to pay and discount all bids, as in any other business.

The superintendence is one of the most important duties of an architect. The plans and details may have been carefully prepared, but, through careless workmen, costly mistakes will occur in their execution unless their interpretation is carefully watched and continually explained by the architect. Such mistakes can only result in loss and annoyance to all the parties concerned; therefore, an extensive knowledge of the dozen or more trades, practices, materials and the cause and effect of mechanical forces are essential to the architect's training. He should also be a just and impartial referee between the owner and builder.

To a familiarity with details must be added quickness of perception and soundness of judgment that make it impossible for any faulty work to escape his notice, and to guard against any waste of effort or of time; and, having rendered a de-

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cision that is in accordance with the contract and specifications, he must adhere firmly to it. To trust too much to the generosity of the owner or to the liberal intentions of the builder is a mistake.

There must be a clear understanding as to what the owner is to receive from his builder, and also what is due him from his architect set forth in a written contract. The contractor should clearly understand that the work is to be done strictly in accordance with the drawings and specifications; that the materials are to be exactly as specified; the workmen are to be competent, and that the builder himself shall exercise care and watchfulness to prevent errors, as well as having a competent foreman in charge of the work at all times. Any material not in accordance with the specifications which is delivered at the work shall be rejected and removed at once, and any work not in accordance with the drawings and details or specifications shall be demolished or removed before crowded aside or covered up with other work; this is covered by contract and specifications.

With a good feeling of co-operation established between the contracting parties and the architect, the work should proceed smoothly. Decisions should be promptly and impartially made, and all such decisions, notices and orders issued in writing, and handled in a businesslike way from the office of the architect, who, if up to date, will keep proper accounts of the cost of the work—that is, the amounts contracted and the amounts paid to each contractor as the work progresses, rendering a statement of the same to the owner each month, so that he may at all times know its cost.

It will be advisable for the owner to take the time and trouble to visit the architect's office frequently and examine the drawings and details of the construction of the work, so that he may clearly understand what they are intended to represent; and, by comparing sizes of rooms, doors and stairs, he will not be disappointed as they assume shape and proportions during the erection of the building, or want to change them to conform to recently obtained ideas. This does not mean that the owner should spend daily in the architect's office two or three hours having him explain all the details that enter into his business, or into the general construction of a house. After the owner and his family decide that the plans are exactly what they want, they will be saved the cost of many extras from the changes due to their lack of comprehension in the first place, which are a menace to the work, as well as expensive and confusing.

After signing the contract, arrangements are usually made for the architect, owner and contractor with a surveyor to stake out the house in its proper position on the lot. When this is done the excavation is started, and the work may be said to be fully under way.



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THE HEART OF THE PLANT

SAFETY AND COMFORT

**Storage Battery Lighting for the Country House**

(Continued from page 39)

dynamo rather than from the battery. The fundamental reason underlying these facts is the consideration that every change of energy involves loss. We have a certain amount of energy locked up in the gasoline. When this is converted into mechanical energy by the engine we lose something. When this mechanical energy is converted into electric energy by the dynamo there is another loss. And, finally, when we "store" energy in the battery and use it as current later on, we lose once more. A good grasp of this principle will make for the most economical operation.

With regard to the first cost of a plant, much depends upon the service required. The gasoline engine may be an item already possessed. Or, there may be available some other source of mechanical energy capable of operating the dynamo. The following statement will give the costs of the various items for a plant capable of maintaining twenty-four 16-candle-power bulbs. The battery is one of the best on the market:

1 2½ horsepower gasoline engine...	\$72
1 30-32-volt dynamo .....	70
1 storage battery containing 24 cells..	192
1 switchboard. ....	50

Total..... \$384

A smaller plant, capable of maintaining half the number of bulbs, is estimated to cost, if we include a 2-horse-power engine at \$60, a total of \$308.

The storage battery does not, perhaps, actually store electricity; but it does the equivalent. To get this clearly fixed in the mind it will be well to consider what takes place in the battery while being charged and while being drawn upon. A battery consists of a number of cells electrically joined so that the whole is in effect one cell. It will be sufficient, therefore, to give an account of a single cell.

In one of the most prominent types the cell is encased in a water-tight container made from nickel-plated sheet steel. The principal joints are made by welding the edges of metal and allowing the material to intermingle. This is accomplished by the oxy-hydrogen or the oxy-acetylene torch, and the seams are accordingly very tight. Inside the container are two groups of plates interleaved with each other. One group is in effect a single positive plate; the other, a single negative plate. The two compound plates are immersed in an alkaline liquid. At no point of submergence are the plates in electrical contact with each other or with the container. The liquid consists of distilled water in which potassium hydrate has been dissolved. The positive and negative plates consist essentially of extensive total surfaces of nickel hydrate and iron oxide.

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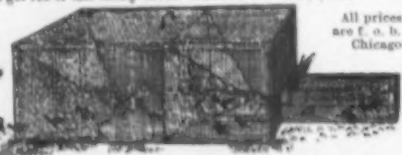
**The Dodson Wren House**—Flicker Houses, \$2.50 to \$5.00.

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When the two plates standing in the liquid are connected on the outside with the corresponding terminals of a source of direct-current electricity the iron oxide will begin to lose its oxygen, the tendency being to leave the iron in a pure state. In addition, the nickel hydrate will take up oxygen—I do not say the same oxygen as that let go by the iron oxide—but the result will be roughly equivalent to a transfer of oxygen from the negative to the positive plate. As the current of electricity is “pumped” in from the outside we will have at last pure iron in the negative plate and oxydized nickel hydrate in the positive. The work of charging will be completed upon this condition being thoroughly attained. The cell will now be disconnected from the external source of current. If the two poles of the cell or the two poles of the connected system of charged cells in the battery be now connected with the terminals of an electric circuit a current will begin to flow through the circuit. The oxydized nickel hydrate will begin to lose its oxygen and the iron will begin to suffer oxidation. The oxygen will now make the return trip. It is the flow of electric current now set up which maintains the lights and performs other functions allotted to the storage battery.

In this type of storage cell the individual leaves of the compound positive plate are perhaps the most interesting feature. These consist of a nickel-plated grill to which have been attached numerous perforated tubes, having a length of perhaps 4 or 5 inches, and of about the same thickness as a lead pencil. The tubes are formed by spirally twisting a ribbon of metal, the edges folded together in such a way as to make a mechanical seam. Around each tube are several little bands of metal. The tubes are made of steel ribbons which have been nickel-plated after perforation, and the little bands are also of steel. Thus strength is supplied in the character of the material. Considerable strength is needed because the nickel hydrate swells during the charging process, when it is receiving oxygen. The contents of the tubes include not only the nickel hydrate in the form of a green powder, but also flakes of metallic nickel. There is a layer of the one material, then a layer of the other, and so on. The layers are incredibly thin. There are, in fact, about 700 of them in a tube not more than 4 or 5 inches in length. The desirability of having thin layers of nickel hydrate proceeds from its poor electric conductivity. Everywhere the hydrate contacts with nothing else than nickel. The alternate layers are nickel, and the walls of the tube are made of a plating of nickel flakes. In a moderate-sized cell there will be 60 tubes, of which 15 each are attached to a grid, the whole forming the positive element. The leaves of the negative plate consist of grids to which packets of iron oxide have been secured. These packets have perforated covers.



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Imagine a manufacturing business having millions of customers scattered over the country, with millions of accounts on its books, most of them less than \$30 a year, and including a multitude of 5-cent charges.

Consider it as having shops and offices in thousands of cities, and reaching with its output 70,000 places, more than there are post offices in the United States. Think of the task of patrolling 16,000,000 miles of connecting highways constantly in use.

This gives you a faint idea of the business of managing the Bell System.

Not all the 8,500,000 telephones are in use at once, but the management must have facilities always adequate to any demands for instant, direct communication.

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Home of Architect James H. Ritchie, Newton Center, Mass.

This excellent illustration of the use of “Creo-Dipt” Shingles is especially gratifying since the Architect repeatedly specifies their use.

He remarks that his confidence in “Creo-Dipt” Shingles is especially strong since on his home 18-inch Perfection Shingles on the side walls were laid 8 inches to the weather and show no signs of curling, as is often noticed in other shingles.

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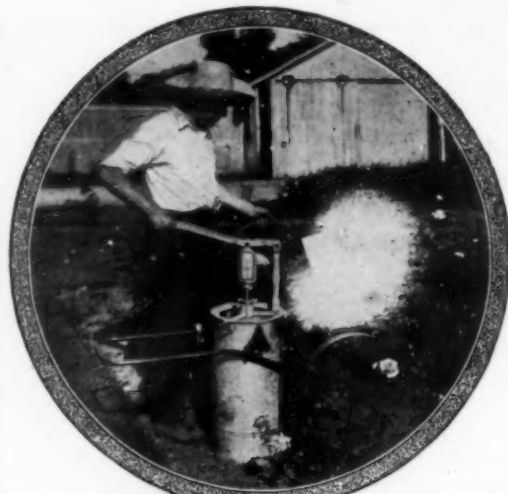
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The Flower City

The perforations in the walls of the receptacles belonging to both the positive and the negative plates are for the purpose of admitting the liquid of the cell, a solution of potassium hydrate.

The type of cell described in the foregoing is one of the best on the market, the manufacturers guarantee that it will be capable of developing full rated capacity, even at the end of four years. Such cells may be charged and used thousands of times. But there are other types of storage cell. In another prominent device, the liquid employed as an electrolyte is an acid or an acid solution. This is a notable difference. The positive material is lead, the plates being formed of chemically pure rolled lead by a swaging process. This mechanical method of forming the complicated shape required is deemed a great advance over the old procedure of coating or skinning or plowing. The negative plate is also formed by the swaging process. Swaging is an old system of forming metals while in the cold state. It is quite successful in many applications; and probably has not received the development of which it is capable. It proceeds by inflicting multitudes of light blows one after the other. These blows are delivered by mechanical means, and may number hundreds or thousands per minute. The effect is that the metal flows slowly and assumes the form desired. A gold-plated rod may be swaged to form a much smaller rod without damaging the integrity of the gold covering.

In using any type of storage battery, it will be well to employ tungsten lamps instead of the carbon filament bulbs. Electrical energy is estimated in watts; and when we pay a public service corporation our bill is figured on the basis of the number of watt-hours consumed. An ordinary carbon filament lamp will require about 3.5 watts of energy per candle-power. The tungsten lamp requires only about 1.25 watts per candle-power; that is, it consumes only about one-third the current used by the carbon filament lamp. A 16-candle-power tungsten lamp will accordingly require a current of 20 watts. Now, if we know the voltage of the individual cells in the storage battery, we may determine the voltage of the battery by simply multiplying by the number of the cells. It is assumed here that the cells are connected in series; that is, that the positive pole of one cell is connected to the negative pole of the next, and so on throughout the battery. The one positive pole and the one negative pole thus left unconnected at the ends of the battery will constitute the poles of the battery regarded as one cell. If each cell has the power of discharging a current at 2 volts, a 16-cell battery will discharge at 32 volts. Ordinarily, it will be desirable to operate at this voltage or at 110 volts. The lower voltage will enable lamps to be operated at a maximum distance of 300 feet from the battery. Where the distance is greater, it may be well to use the higher voltage.



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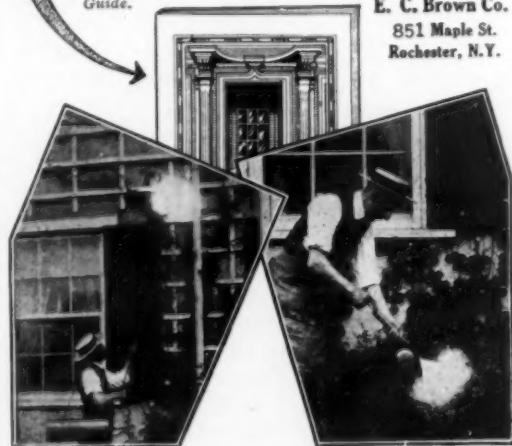
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Otherwise, heavier wire may be required; and this means greater expense. When the battery needs recharging, the current supplied must be of at least as high voltage as the battery. By using a current of considerably higher voltage it will be possible to cut down the time of charging.

If we know the total watts required for the entire group of lamps we will be in shape to select a proper battery. Suppose, for example, that there are 18 16-candle-power tungsten lamps and 12 8-candle-power lamps. The total candle-power required will be 384. As 1.25 watts are required per candle-power, the battery must discharge a current having the energy of 480 watts. If we make use of the fact that watts divided by volts give amperes, we readily find that the battery should have a capacity sufficient to enable it to discharge current at the rate of 15 amperes ( $480 \div 32$ ) for whatever number of hours it is proposed to operate the lights.

The Choice of Domestic Hardware

(Continued from page 17)

the choice of hardware ought to be made by studying its fitness for each individual place it is to appear. From numerous illustrations and reading anyone with a fairly observant eye and attentive mind may readily recognize the characteristics of the hardware belonging with the several architectural types, and will then be in a position to make a wise choice, keeping in mind the general principles previously set forth. It is manifestly impossible to say of one piece of hardware that it is bad or good without reference to the place it is meant for, unless its design or structure be uncompromisingly inferior.

In conclusion, a word must be said about the available sources from which to make a choice. We turn naturally to the architecture of the past for present inspiration, and so it is also in the case of hardware. It would be impossible, of course, to find any sufficient supply of old hardware, even were it desirable. A certain number of old pieces are just as good now as when they were made, but most pieces bear irreparable marks of wear. The old hardware, however, can be most valuable in supplying us with models and standards of design that may either be copied or judiciously adapted to present needs. For this new hardware we may either employ the labors of the craftsman—and there is no place in which a little of the craftsman's skill will show to better advantage—or we may make a selection from the stock of the manufacturer. Some of the latter, while structurally excellent, is purely commercial in appearance and of unmitigated Victorian banality of design. A great deal of it, however, is of excellent pattern, and by a little care in selection one may obtain, from a wide variety of possibilities, thoroughly satisfactory results at an extremely moderate outlay.

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## Your Type of Country House

(Continued from page 13)

tile roof and shutters to match in color. A long, gentle-rising lawn with a solid background of foliage forms an adequate and happy setting. The large arched window groups in first story intimate an arrangement of principal rooms of most generous proportions as to size, as well as height of ceiling—a house well adapted to social functions. Painted interior finish dictating furnishings and furniture of quality and richness are essentially fitting for this type. French windows for the ground floor and either swinging or sliding sash for the second floor are salient necessary features.

6. A balanced formal type with white stucco exterior walls, having red brick corners, white eaves and trim, shingle roof and green blinds further suggesting its Colonial antecedents by the disposition of windows and chimneys and the architectural embellishments of the eaves and entrances. An open level lawn between large engaging trees affords an ideal setting. In plan, the second story extends over the first-story porch, and obtains maximum bedroom accommodations well suited to the needs and comforts of a growing family. This type demands painted woodwork for its interior finish and sliding sash windows divided up into smaller lights. Instead of white stucco for the exterior, shingles laid 10" to the weather, or clapboards painted white or red brick laid up in white mortar are equally possible.

7. A formal type suggesting Colonial precedent, in this case with white stucco exterior, having painted white wood cornice balustrade, corner pilasters, entrance and porches with green blinds and painted green tin roof. Wide siding or shingles painted white in place of stucco, or all red brick laid up in Flemish bond in white mortar for exterior, with white shutters and wood trim, are alternative consistent mediums of external treatment, provided the element of cost so dictates. A terraced hillside shelf or level lawn contained by large trees affords a proper setting. The arrangement of principal rooms would be that of a central hall extending through house, with living-rooms on one side and dining-rooms and service on the other side. A decided leaning to Colonial mahogany furniture would be essential to harmonize with the mandatory white painted interior finish. Sliding sash windows with sashes divided into small lights are essential.

8. An unbalanced white stucco type of house suggesting the Modern English by its group of mullioned windows filled with all leaded glass swinging sash (no blinds), a graduated and variegated green and purple slate roof, brick chimney tops and stone entrance porch. The setting is fittingly upon a level grass terrace some distance back from the street on an open lawn, but

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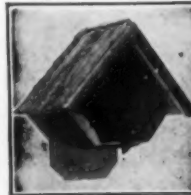
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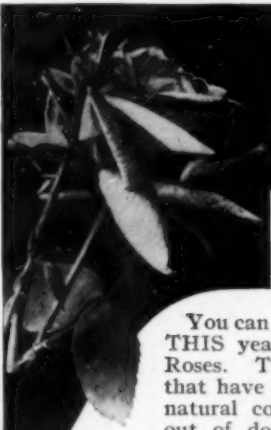
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one well sustained by luxurious foliage. The large groups of windows suggest and consistently demand wood paneled walls with a stained finish for the principal rooms and painted finish for bedrooms and service portions.

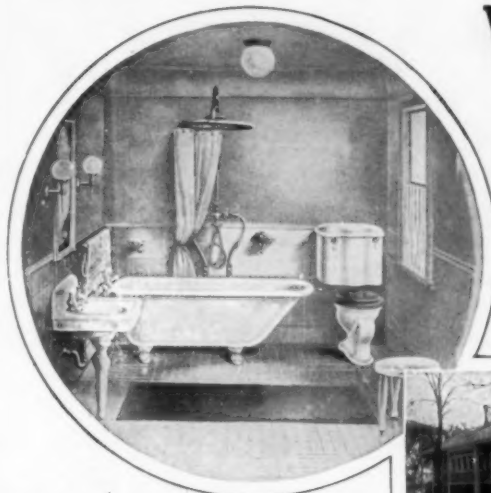
9. Here an open hillcrest frontage with a falling-off wooded hillside to the rear affords a setting for a low, long, formal mass, with the rear stepped down into a formal garden contained among the trees and overlooked by a loggia extending across the rear of house. Again, only a suggestion of the Italian type asserts itself by the white stucco exterior, tan-brown tile roof and blinds and entrance hood details. The exterior suggests by its first-story window grouping principal living-rooms of generous proportions. The use of both stained and painted wood interior finish is eminently fitting, and calls for rich and interesting furnishings and furniture.

10. A supremely simple small stucco type with tile roof relieved only by a well-detailed entrance, flower boxes and balanced side porches. Its exterior, which is frankly two stories, expresses modest home comforts, and would lend itself to either the light painted or dark stained interior woodwork. This type could be expressed in an all-wood exterior of wide-lapped siding or shingles painted white, or by the use of brick with white trimmings and shutters.

11. A more formal balanced type of white stucco house, with light-brown tile roof and shutters to match in color, savoring of an Italian feeling by its simple mass, plain, low roof and arch motive lending an effect of height in first story. This type admits of the stained interior woodwork and the more heavy, substantial hangings and furniture.

12. A small, balanced type of white stucco house, Colonial by suggestion in the detail of its entrance and side porch, and chimneys and form of roof and dormers. A type where adequate attic space lends itself to increased number of bedrooms. It is essentially a house calling for white painted interior woodwork and mahogany furniture and simple, quaint window hangings. This design would be equally consistent in red brick, laid Flemish bond in white mortar, with white shutters, eaves, porches and window trim, or by substituting white shingles laid 10" to the weather, and green blinds.

13. An irregular, simple, white shingle type, with green roof and blinds to match, designed in plan to be built in a group of two forming a balance by merely reversing same plan. The plan is such as to bring the ends of house containing service portions adjacent, thereby giving greater isolation to the living quarters. It is a distinctly two-story house, offering all the varied adjuncts to home life. Simple, painted or stained woodwork interior finish are consistent with this type.



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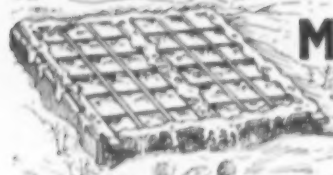
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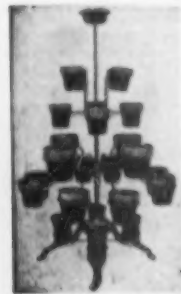


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### The Saturday Afternoon Garden

(Continued from page 31)

general purposes, mixed barnyard manure is the best. It should have been kept under cover and forked over until it has become fine and shortened and is thoroughly rotted, without any signs of burning or fire-fang, which will be indicated by a light, gray, ashy appearance. Wet manure is likely to be of less value than that which is fairly dry.

Another thing to do now is to address a half dozen postal cards to the leading seed houses, so that after your garden plan is definitely made up there will be no delay in getting of the order. To be on time, some of the early vegetables will have to be started the first part of next month.

This is the first of a series of articles which has been especially prepared for HOUSE AND GARDEN with the idea of creating a more widespread appreciation of the possibilities of developing small places. Everybody knows what landscape architecture has done for the large estates of this country, but its place in the creation of small places is but little understood. For that reason there will be presented a series of small places done by such landscape architects as Mr. Harold A. Caporn, Mr. Henry V. Hubbard, of the firm of Pray, Hubbard & White; Mr. Charles N. Louvie, Mr. Prentice Sanger, and Mr. Sibley C. Smith, to be followed by work of Miss Marian C. Coff, Miss Elizabeth Leonard, Olmsted Bros., Mr. Arthur A. Shurtleff, and others.—EDITOR.

### Useful Closets in Unusual Places

(Continued from page 25)

basket belonging to the mistress of the house. It was a welcome spot to place the little odds and ends always to be found in every home; moreover, being out of the ordinary, it lent an air of individuality and distinction to the room. The top of this window-seat, like all others in the house, was hinged to raise upward that the interior space might be used for storage.

Passing through the den again on our way upstairs, one is attracted by a shallow closet over the fireplace-mantel, with little, jig-sawed grills over the glass, through which can be seen dainty, hand-painted china within. This illustrates an often-neglected opportunity. As the smoke-chamber of a fireplace generally narrows at the rate of one foot to each two and one-half or three feet of height, there is usually space at the front and sides of the chimney breast that may be utilized. Often useful little closets at the sides hold dust-pan and brushes, so convenient to have nearby when the hearth needs cleaning. Another seat in this room had the usual provision for storage beneath it, and in the partition wall above it a shallow series of closets for books with jig-sawed grille doors like those over the fireplace-mantel.

Upstairs there were several other closets of interest. In the hall a big double linen-closet with drawers below contained all the extra bedding for the whole house, while in a small closet nearby were kept



all the brooms and cleaning implements, making it unnecessary to bring any up from downstairs.

The principal guest room and the master's room were much alike, both being cozy, with a fireplace, reading-table, built-in seat in a jog at one side of the fireplace, and book-shelves set into each side of the chimney breast. The principal guest-room connected with another, slightly smaller, through a large closet at one side of the fireplace. Such an arrangement is convenient for a visiting family, especially when there is a child, giving them a suite in which they may enjoy the privacy of their own home. This closet was provided with hooks and hangers on one side and with shelves and drawers on the other. When only one guest-room was in use this closet could be given to either room by locking the other door.

In this room were also two large wardrobe closets, one for the master and one for his wife, both electrically wired so that opening the door put on a light and closing the door extinguished it. In a corner at one side of the fireplace was a small medicine closet, the usual wall cabinet of the bathrom being reserved for toilet articles exclusively.

In all of the chambers the space under the low eaves, so often wasted, was sheathed inside, partitioned off and provided with doors so that nearly every room had its closet for trunks and traveling-bags. When they are so conveniently at hand, packing for a journey is robbed of half its terrors; there is no labor of getting them down from the attic, nor danger of their rusting or mildewing, as when in the cellar.

These eaves closets were of value, also, in the children's nursery for large play-things. One of them was even arranged as a miniature room, with tiny furnishings. The tops of the built-in seats between bookcases were all hinged for storage of games underneath, and a small wall-closet held the more precious small toys.

All things considered, this old, remodeled house has better closet provisions than most new ones. Everything seems to have been provided for, with the result that it is no task to keep every room in an orderly condition. Intelligent forethought in this matter, as in this instance, will do more than almost any other one thing to make housekeeping a pleasure and to ensure a lasting satisfaction in the home. The additional expense of providing such closets as have been described, and which you do not already have, is relatively inconsiderable by comparison with the comfort they give, and if included when building a new house they add virtually nothing to the total cost. Skimp not on closets is good advice; go the limit, and you will never regret it.

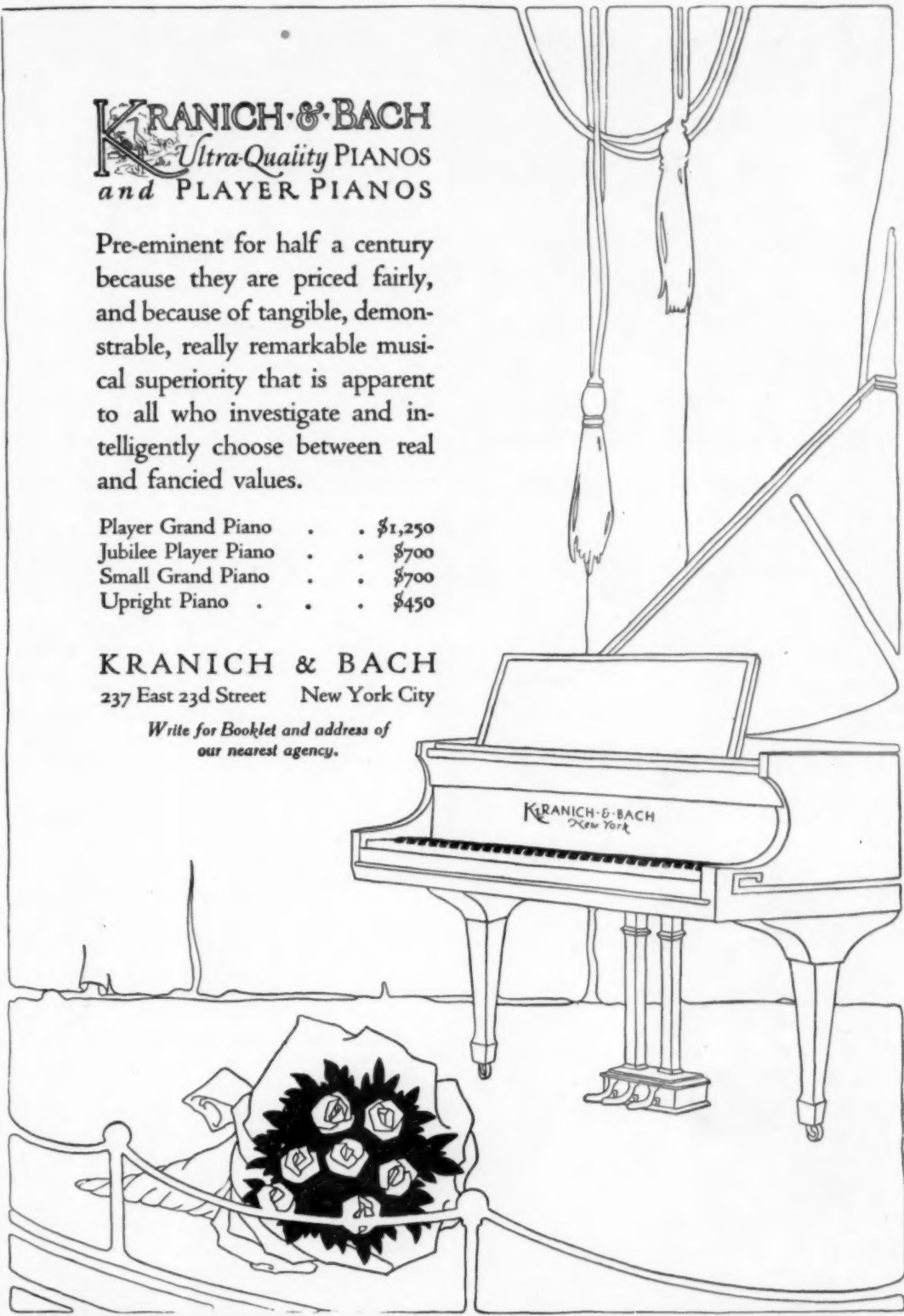
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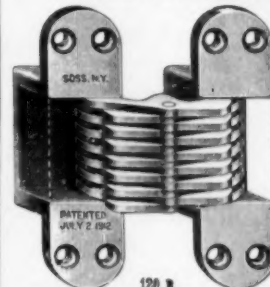


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## Walls From the Outside In

(Continued from page 37)

the wall itself between the inside and outside brick, which, hollow, serves to stop moisture from getting through to the brick on which we have placed our plaster.

We must tie our two walls together in the same way, either with a spanning brick at intervals, or better, iron ties built into the joints as the wall goes up. Of late years it has become a common practice in building a twelve-inch wall to make the outside eight inches any desired brick, and the inside four, a hollow terra cotta brick bonded to the other to make a solid wall.

A cheaper form of wall that is a compromise between the frame wall and that of masonry is the brick veneer wall. In this method the studs are erected and boarded as for a shingle or clapboarded wall, but against this outside boarding is built a four-inch brick wall secured to the boarding behind by metal ties built into the brick joints as the wall goes up, and fastened to the boarding.

The commonest type of wall is the wooden stud, wall lathed and plastered on the inside and on the outside covered with one-inch boarding, and either shingles, siding, clapboards or plaster.

Of these walls, the clapboards are the cheapest, unless we are to consider the future cost of keeping them painted. The siding is about the same, and we may stain this if we like. The shingles, which are slightly more expensive, should also be stained, unless we elect to save again, and allow the weather to lay on its own stain with its wind and rain. Cypress shingles and red cedar are the best in this case. The claim made by certain stain workers that their stains act as a wood preservative have foundation, although its importance may be easily exaggerated. In no case should shingles be painted with lead and oil paint, as decay sets in much earlier.

If we are a little tired of the shingle wall as we see it around us, we may get a much better effect if we use the hand-split cypress shingle of the South. While these shingles are more expensive by the thousand, they are very much bigger and thicker, and we may lay them more to the weather, the 7 or 8-inch covering more surface than with our ordinary 16-inch shingle. For this reason, the cost is only slightly greater. The butts are seldom cut at right angles to the sides, so that when laid we have them giving us a broken line of shadow which is much richer and softer than the thin mechanical look of the other.

The plaster wall or, as it is sometimes called, "cement," or "concrete," may be done either over a frame wall, which is the most common, or over terra-cotta blocks, which is the best.

First, the frame wall. We have the studs and boarding as for shingles or clapboards; over this we tack one, or better, two thicknesses of damp-proof paper well

(Continued on page 6)



—from contamination,  
ptomaine and the ice  
man's muddy tracks

Get a modern McCray Refrigerator. It will keep your foods from spoiling. It will protect your family's health. It can be arranged for icing from the rear porch so the ice man will not track up the kitchen or pantry floor with mud and dirt.

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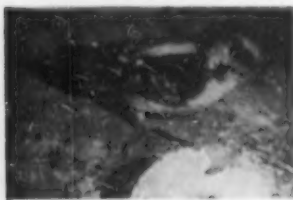
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**SOUTHERN GARDEN DEPARTMENT**

Conducted by JULIA LESTER DILLON

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

PLANNING THE ROSE GARDEN

**T**HERE are three essentials for successful rose-growing with us, as elsewhere: good soil, good drainage, plenty of sunshine, preferably of the morning sun, and, if the situation is sheltered without being shaded, so much the better. Deep digging, artificial drainage, if necessary, rich warm, loamy soil, with some sand, and always clay for the Hybrid Perpetuals, is the first step in the creation of the rose garden.

More and more garden-makers of the South are coming to realize that the planting of roses in number sufficient to furnish blossoms for the house from month to month does not necessarily make a rose-garden. To be a garden worthy of the name, it must be a beautiful picture, in season and out of season. Usually no artist would call that part of the grounds where the roses grow either beautiful or worthy of his brush and canvas at any season.

The first requisite of a rose garden or a rose border, then, is a background. It may be an evergreen hedge, an ivy-covered wall, a trellis, the lines of which are buried in the leaves of some evergreen climber. It may be a border of shrubbery planted along the lines of a city lot or the boundary of an estate, but, whatever it is, there must be no question about its abiding qualities. For the foreground, the soft greens of the evergreen turf of the South form a most worthy treatment. If the walks be brick or gravel, then the beds of roses should have an edging of turf at least a foot wide, and inside this edging dwarf boxwood or violets will make a dark-green ribbon to tie the harmonies of the roses to the velvet greens of the turf. If grass walks are possible, they are the most beautiful and satisfactory in every way, and the rose beds should then be edged with either the violets or the dwarf box, *Buxus sempervirens suffruticosa*.

For a formal garden with a bird bath or a sun dial as the central axis in the midst of grass walks and box-edged beds, as above outlined, the spaces for the roses may be filled with the silvery pinks of the Killarneys, or the exquisite Bridesmaid, of heavier texture than the Killarney, but equally desirable in both form and color. Carolina Testout is another pink bedding rose of prodigal wealth of blossoms, and beds of these varieties will give pleasure and satisfaction without end.

For the white roses that make the high lights in this garden canvas we will put the Kaiserin Augusta Victoria, the silvery White Maman Cochet, the magnifi-

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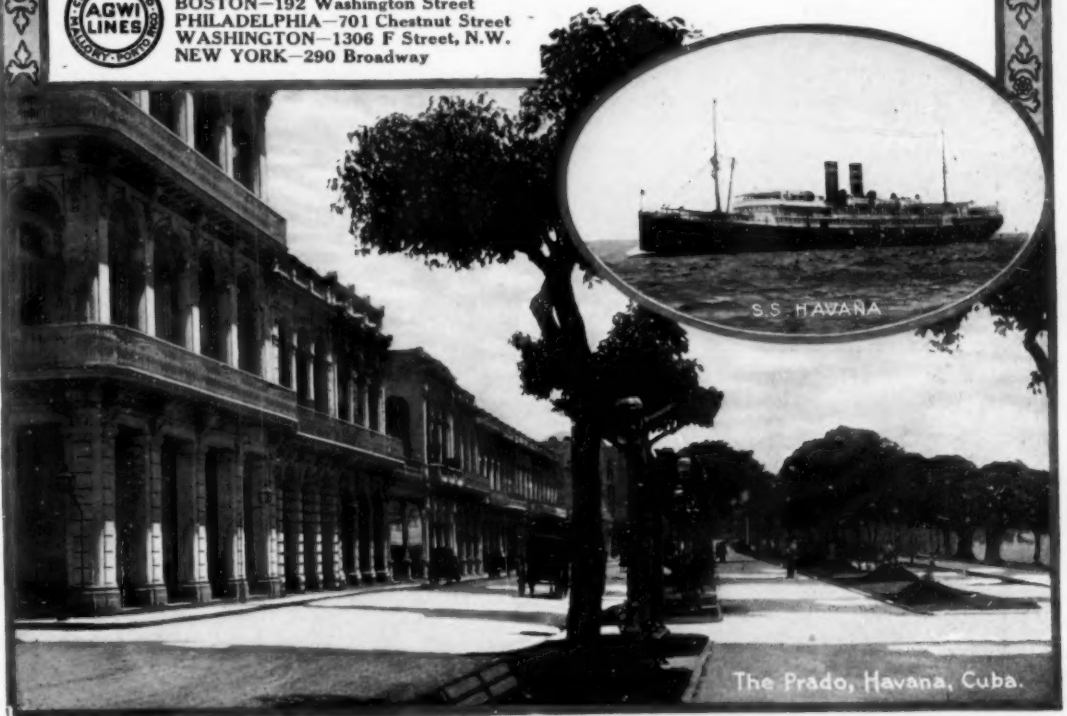
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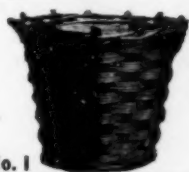


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cent Frau Karl Druschki and the delicately lovely Bride. For the sunlight of the garden, Etoile de Lyon, Mme. Blumenschmidt and Franz Deegan form yellow beds of unrivaled color. Blending into these shades of gold we have the orange lights to be found in the Sunburst, the coppery yellow Francesca Kruger, and the salmon yellow, Melanie Soupert, so that these varieties, with their tones of yellow-orange and salmon-pink, carry the color scale through the warm tones into the deeper pinks of Paul Neyron and George Arends, and these lead us naturally to the deeper crimson and reds of the Richmond, Ulrich Brunner, J. B. Clark and Meteor. All of these roses will not only give an abundance of bloom in the spring, but most of them are gorgeous from August until the late frosts of November and December bring winter to the garden.

Framing such a garden of formal beds there should be an enclosing wall formed of a hedge of Amoor privet or arbor vitæ. Against this background the more vigorous-growing plantings, like the Bourbons, Souvenir de Malmaison, Hermosa and the Burbank, with the teas, Duchesse de Brabant, Devoniensis, and others, may be made. Winter pruning of the roses in this situation should keep them either lower than or on a level with the wall. If space does not permit the garden of roses, a border or hedge against an ivy-covered wall or an evergreen planting of any kind is very artistic and always beautiful and satisfactory.

If one prefers the daintier growths of the *Polyantha* and Baby Ramblers, they are also very beautiful in this setting. These dainty little roses are also used for the large beds of the informal gardens, and the California rose, Cecil Brunner, is not only a favorite, but especially deserves its popularity. It is the perfection of rose form, a Killarney in miniature, of a creamy color with deeper saffron tones in the heart, and its clusters of blossoms are not only deliciously fragrant, but continuously present.

For the rose borders or the beds in the formal plantings, winter carpets of pansies and violets are charming and the roses seem to bloom more freely for having had the company.

The hardiness of the Tea and Noisette roses in the South enables us to plant these vigorous and rampant climbers on trellises, tea-houses, arbors and pergolas, and revel in their bounteous beauty and fragrance from year to year and almost from month to month. Long walks over which are arbors wreathed in the climbing forms of the Devoniensis, Malmaison, which are nearly evergreen, the Lamarque, Reve d'Or, Maréchal Niel and Cloth of Gold, the Kaiserin Augusta Victoria and La Reine Marie Henrietta are scenes of unexampled loveliness from month to month. All of these are vigorous and hardy climbers and make wonderful summer screens for the second-story sleeping

porches, as well as for the lower plantings.

For small arches and porch pillars it is better to plant the less vigorous varieties, like the Ramblers and Wichuriana Hybrids. Of the latter, the Dorothy Perkins is the best-known pink, while for the yellow tones there is the Gardenia, for the white, Alderic Barbier, and for the deeper color, the Ferdinand Roussel, which is wine-red. The single-flowered Jersey Beauty and the red Hiawatha, with its white center, are also very attractive. These roses may be trained to the desired height and then the branches, if allowed to droop, will form graceful festoons of lovely blossoms at the annual springtime harvest. These hybrids are almost evergreen and very free from insect pests, and, for this reason, perhaps, are more popular in the South than the ramblers, all of which are well known and vigorous here, as elsewhere.

For evergreen screens, for covering walls and terraces or wherever an evergreen effect is needed, the old wild rose of the South, *Rosa laevigata*, is recommended. The newer Pink Cherokee is also very lovely, and both of these, while rampant growers, may be kept in bounds by pruning. The Banksia roses, in snowy white and primrose yellow, with thornless stems and delicate, green leaves, are not nearly so well known as they deserve to be. Annually the violet-scented clusters of blossoms cover the long, gracefully drooping stems to the very tip.

### The Uses of Woodwork in Interior Decorations

(Continued from page 27)

it is a conglomerate stone produced artificially.

As to whether it is quite logical to use concrete so lavishly while pretending to work in a historical period totally ignorant of its existence, is another matter. We must draw the line somewhere, I suppose, between what we should not do and what we may. The beautiful qualities of the style are what we seek, and anything not out of harmony we may surely adopt.

Their chairs were usually of solid plank, too heavy to move easily, and of a stiff discomfort; but these are not valid reasons for making ours unpractical or uncomfortable. The chairs we call Jacobean are really more like those in Charles First's time than in his predecessor's. These reigns are commonly grouped together under the general name of Jacobean, a period of oak in contradistinction to the walnut period that followed. After the Walnut came the Mahogany, and then we are in the full sweep of the Georgian classic and our own Colonial.



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### Peat as a Stable Litter

THE chief requisite of a good litter is that it shall possess great absorbent power and that it add fertility to the manure is also desirable. Straw, the most common litter, is not well suited for the purpose in either of these respects, especially in the quantities and form in which it is ordinarily used. Because it is produced on every farm, and the fact that its use as a litter represents the best way of disposing of it, it will, of course, continue to be used in this way. Its value might be greatly increased, however, by using more of it and having it cut fine. The coarser it is, the lower the absorbing power.

In peat we find a material which is naturally well adapted for the purpose in question, its absorptive power for both liquids and gases being exceptionally high. By absorbing the liquid manure, the most valuable portion is saved, since it contains about 56% of the nitrogen and 80% of the potash of the total manure. Furthermore, the plant-food in the liquid form is immediately available for plant use, while the solid manure must first be decomposed in the soil before the elements can be taken up by the crop. Consequently, the preservation of the liquid manure is of much greater importance than the care of the solid. The most disagreeable feature of the manure, especially around dairy barns, is its odor. This is due to gases given off in the rotting process, which begin almost as soon as the manure is made. As was pointed out above in connection with composting, ammonia is also formed in this process, and is likely to escape into the air and be lost. The remarkably high absorptive power of peat for gases makes it a remedy for both these evils. Barns in which peat is used as a litter are notably free from the usual characteristic odor of manure. As in the case of composting, peat also adds considerable fertilizing value to the manure in the form of nitrogen compounds and organic matter.

The best way to use either peat or muck as a litter is to fill the trenches behind the animals, or in the case of box stalls, to place a layer over the floor and cover it with straw. Otherwise, unless it is of the "peat moss" type, it may cake on the animals as it becomes moist. If, however, it is quite fibrous and contains considerable quantities of moss, it may even be used directly as a bedding, a practice which is finding favor in the East, where peat moss is imported to some extent for the purpose.

In districts where manure is scarce, it is highly desirable to increase its quantity to the greatest possible extent without producing unfavorable results. The question



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naturally arises, how much peat can be mixed with a given quantity of manure to get maximum crop increase? In the use of peat for composting and as a litter, a minimum is set by the amount which will properly absorb all of the liquids and gases from the manure. If, however, this minimum could be exceeded it would mean a corresponding increase in the amount of manure. The answer to the question will probably vary with every different deposit, and no general statement can be made in regard to it. Each bed must be tested. Where manure is scarce and such muck is available it could be made quite a factor in the maintenance of soil fertility and in crop production.

**Flint Grit**

**M**ANY poultrymen are apt to forget that grit is absolutely essential to the health of the fowl—the lack of grit is in many cases the cause of hens not laying—it is essential in more ways than one; it is the hen's teeth, and the gizzard requires it, hence it is indispensable. If fowls do not have sufficient grit, a great amount of the food they consume will do them no good, for the reason that the gizzard must be supplied with grit in order that the fowl may extract all the nutriment there is in the food, and, further, the fowl that is not regularly supplied with grit will more readily contract disease. Thousands of fowls die annually for the want of grit. Good, sharp flint is the best, but if this is not easily obtained, broken crockery will do as a substitute.

Oyster shell does not serve the same purpose as grit; while oyster shell supplies the system with lime and carbonates, good flint grit serves as a good grinder and enables the fowl to get all the goodness from the food, and without grit of some kind the fowls will soon become victims of indigestion, sicken and fail to be a paying member of your flock.

While we believe in breeding up for heavy laying, at the same time we would rather have our hens average 165 eggs a year and remain in robust health than to have their systems drained of vitality in the race to pass the 200 mark. There is reason in all things. If we are to force our stock ahead to be champion layers, we are doing it at the sacrifice of something else.

What about the meat side of the question, if all the force is put to work up eggs? When we spend our food and attention on the fowl with a view to creating an ideal carcass, do we not make the egg yield suffer? Why not concentrate on both eggs and meat and have a limit? If we can gradually increase the powers of a hen so that she will average 200 eggs a year and still maintain health and meat qualifications, it is advisable to go ahead. But to build up the one at the expense of the other will eventually produce a delicate race. We want the 200-egg hen as much as anyone, if we can get her within reason and without injuring our foundation stock.



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### Washing the Dog

WHETHER your dog be a dachshund or a Dane, a Peke or a pointer, he should be regularly, conscientiously and properly washed. No matter how carefully you keep him his coat will accumulate dirt which only soap and water will adequately remove, and, though "dry scrubbing" with a good dog brush will do much toward keeping his skin in good condition, yet a bath once every three weeks is strongly to be advised.

The proper washing of a dog is not as simple a matter as the uninitiated might think, for the vast majority of canines are about as amenable to a good bath as a yearling colt to his first harness. There are a few exceptions, but the average dog considers the tub of water a most unnecessary evil, and, though he may stand quietly enough until sufficient lather has been worked up to cover several rooms full of Persian rugs, you may be reasonably sure that he is but awaiting a moment of relaxed vigilance to slip through your guard and spread consternation and soap over the landscape.

In cold weather, the best place for washing a dog is a tub, preferably supplied with running water, which is large enough to permit him to stand in it comfortably. If the bottom is of porcelain or other slippery substance, cover it with a strip of corrugated rubber or heavy cloth so that the dog will not lose his footing and suffer a disturbing, if not actually dangerous, fall.

The water should reach nearly to the dog's body and be comfortably warm. The room, too, ought to be at ordinary living temperature. Lift the dog in quietly (if he is too heavy to lift you will obviously have to teach him to step in himself or else resort to the decidedly wet procedure of washing him on a bare floor), and keep your hands on him to frustrate a break for liberty. Then take a sponge and soak him thoroughly first about the head and neck to cut off the retreat of scouting parties of fleas which in times of flood seek the highest parts of the country, and rub in a good lather with any standard dog soap. Thence work down the body, legs and tail, alternately wetting and soaping, and scrubbing vigorously with the tips of your fingers. Allow the lather to remain for several minutes, and then sponge it out *thoroughly* with clean warm water.

Drying comes next, and it is not a particularly easy process in the case of thick-coated dogs. The first step is to draw off the water from the tub and go over the dog thoroughly with the sponge, rubbing him well and soaking up as much of the water from his coat as possible. Then throw a big towel over him and rub vigorously with both hands. As soon as the first towel is wet take another, and keep it up until the entire coat is well dried. Then let the dog go, but do not allow him outdoors if the weather is chilly.

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Finally, take the dog into a sunny room or before an open fire, and give him a good brushing with a rather stiff brush. This will complete the drying process and leave his coat in excellent condition.

It is a good plan never to wash a dog soon after he has had a meal, for some individuals are so constituted that the shock of taking a forced bath brings on a sudden dislike for the food they have just swallowed, and the results are not pleasant. I fancy this is merely a nervous condition, for I have seen the same effect in a high-strung dog where the only cause seemed to be the excitement induced by the prospect of going for a walk with his master.—Robert S. Lemmon.

### Airedales, the All-Round Dog

(Continued from page 85)

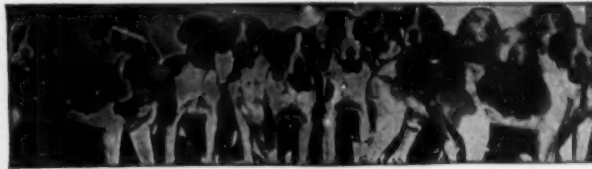
ming the dog, but all loose hair can readily be removed with the comb. See that the head and legs are as clean and smooth as possible.

In shipping the dog to out-of-town places, first-rate hampers are now procurable at the dealers', and your only consideration will be to see that the animal has sufficient water during his journey. At the show itself if possible, handle the dog in the ring yourself. A little preliminary training in making him stand still and "looking for the birdie" will help wonderfully.

This brings us to the general subject of the training of the dog. If you have the time and patience, it is better, and, of course, more economical, to buy young puppies, but it is correspondingly difficult to know just what you are getting. The family tree of your pup, however, is the safest guide, although the pups in a single litter vary to a surprising degree. A six-months' pup ought to be well house-broken and fairly obedient to any command, and that is the best age at which to buy. He is, besides, not too old to learn. Training the dog is a combination of harshness and kindness. Harshness in requiring implicit obedience to orders; kindness in rewarding good conduct and in recognizing an animal's necessary limitations. Many people make the mistake of judging a dog by human standards.

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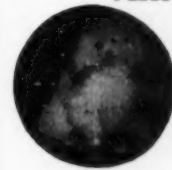
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## The Poultry Calendar

FEBRUARY is the month when the man or woman who takes a serious interest in his poultry yard and who plans to make his labor bring profitable returns will clean up preparatory to the introduction of new stock and new machinery.

Successful natural rearing of chickens requires convenient facilities, regular attention, and often tries one's patience, while artificial methods require a larger investment, close attention and more care, but are more commonly used where large numbers of chickens are raised. Many poultry keepers who are able to secure good egg yields and fair hatches make a failure of brooding chickens, either in raising only a small percentage of the chickens hatched or in failing to rear strong, vigorous birds which develop into good breeding stock. Brooding is still in the experimental stage, and no one system has given perfect satisfaction.

The beginning of the month is a good time to see that the litter on the floor is deep enough. This use of litter is most important. Straw, shredded corn stalks, hay or leaves serve the purpose. It should be two or three inches deep at the beginning of the season, and more should be thrown in as the first becomes broken into fine pieces. It is always good to keep hens at work seeking food. Scatter in a little millet or hemp seed to act as an extra inducement to scratch. If the hens do not seem prone to scratch, omit a meal, so they will be forced to seek for food. Also keep an eye on the way the dry mash is going. If it is not being eaten freely, cut down on the supply of grain.

Two other things outdoors should demand your attention: Eggs to be used for hatching should be gathered several times a day and kept in a temperature of between 40 and 60 degrees. Eggs over a fortnight old should not be used. If one is breeding fancy poultry, the first of this month is none too early to make up breeding pens. Although delivery may not be desired until March or April, orders for eggs to hatch should be put in now.

Whether your poultry yard is small or large, your ambitions, professional or amateur, you will not be able to go far without an incubator. And the purchase of an incubator should be given serious attention this month. Although the first of March is early enough for the amateur to start them, it is best to have your order in now. It pays to make a careful study of the incubator question before purchasing. A cheap machine is false economy.

When a man runs an incubator he puts all his eggs in one nest, as it were. Then he has one machine, instead of a number of hens to look after. Very little work is required, and that not of an arduous nature, but painstaking attention to details is imperative. Sitting hens will tolerate a certain amount of neglect because they are able to adjust themselves in some degree to circumstances. When using a machine,

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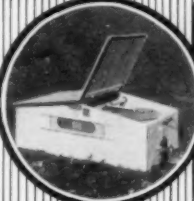
however, all the intelligence must be manifested by the operator.

It is not wise to buy any but a standard machine—such a machine as is generally used on large plants, which can afford to test the different makes. It may hold from fifty to about 300 eggs. Generally speaking, it is advisable to use an incubator holding at least 120 eggs, for it will require no more attention than a smaller one. It may be operated in a cellar, a room in the house or an outbuilding.

If the amateur decides to purchase an incubator and operate it in his home it is well for him first to consult his insurance agent; otherwise he may have serious difficulty in collecting his insurance money in case of fire from any cause. It is true that incubators sometimes get afire, although almost always for the reason that they have not been properly cared for, and insurance companies exact a small fee for the privilege of using them.


Chickens hatched during the winter should be brooded in a poultry house or shed while the outside weather conditions are unfavorable; after the weather becomes settled they should be reared in brood coops out of doors. Brood coops should be made so that they can be closed at night to keep out cats, rats and other animals, and enough ventilation should be allowed so that the hen and chickens will have plenty of fresh air.

The hen should be confined in the coop until the chickens are weaned, while the chickens are allowed free range after they are a few days old. When hens are allowed free range and have to forage for feed for themselves and chicks they often take them through wet grass, where the chicks may become chilled and die. Most of the feed the chicks secure in this manner goes to keep up the heat of the body, whereas feed eaten by those that are with a hen that is confined produces more rapid growth, as the chicks do not have so much exercise. Then, too, in most broods there are one or two chicks that are weaker than the others, and if the hen is allowed free range the weaker ones often get behind and out of hearing of the mother's cluck and call. In most cases this results in the loss and death of these chicks, due to becoming chilled. If the hen is confined, the weaklings can always find shelter and heat under her, and after a few days may develop into strong, healthy chicks.




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