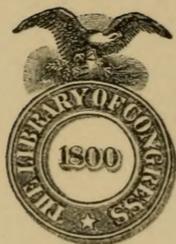


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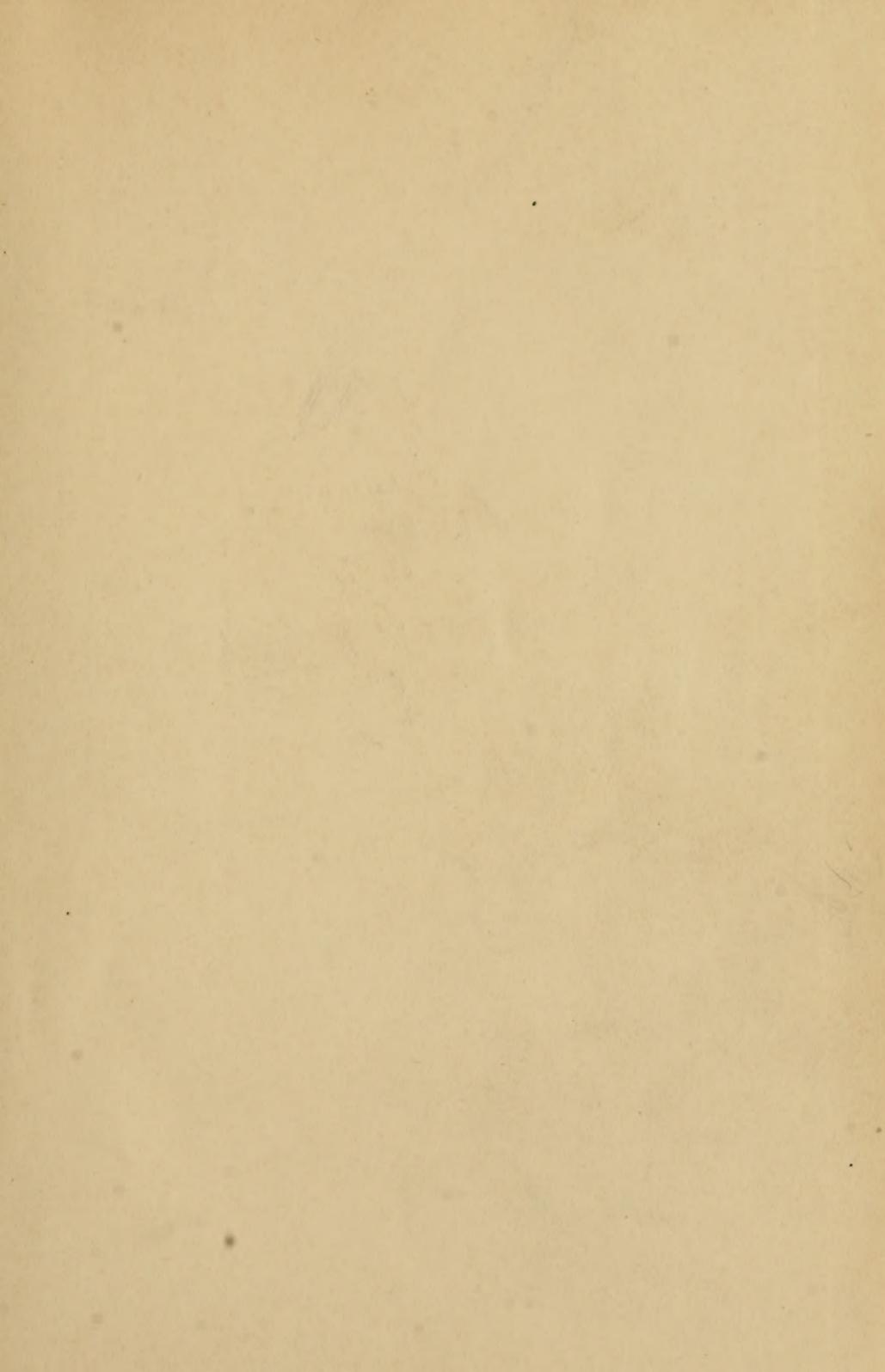


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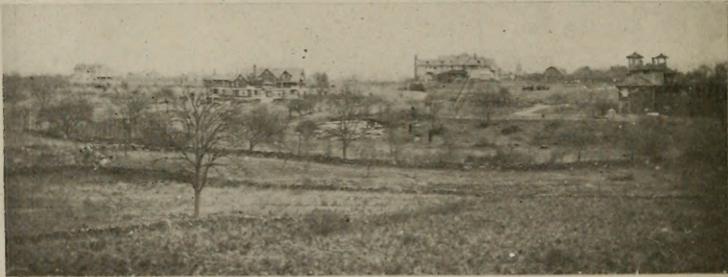
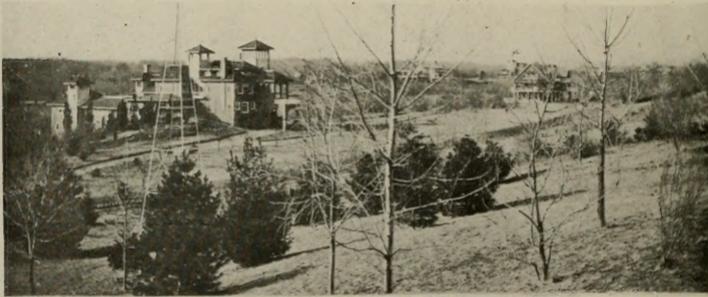
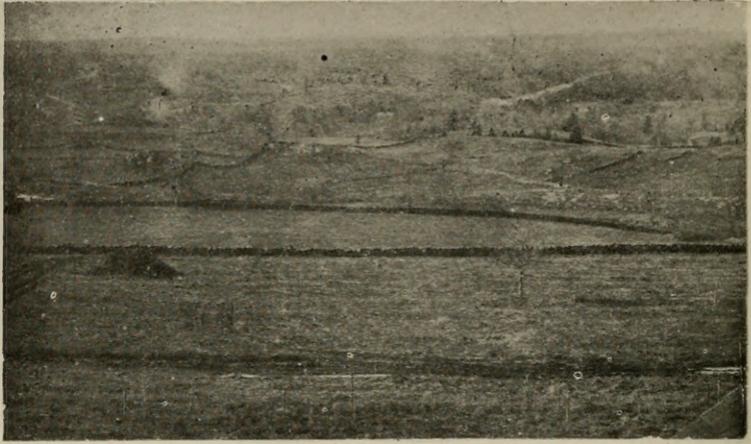
TO THE MEMORY OF
ANN MARIA DILLAWAY SAWYER
MY MOTHER
WHO FOSTERED IN ME A LOVE
OF THE COUNTRY

Dear Mr. Sawyer: I have watched
with interest, these past
fifteen years, your efforts
to reclaim the abandoned
hills and steep pastures
of Connecticut from that
first shack on the sound
to the hundred thousand
dollar mansion back in
the highlands. I have seen
the bogs and brambles
vanish at your approach.

I am confident
that any who are inter-
ested in housebuilding
or in laying out country
properties will gain knowl-
edge and pleasure from your
book which is a record of
your twenty-five years of
experience

yours sincerely
Livingston

Brushwood
Riverside Conn
Jan. 31 1911



AND HOW WE CHANGED ITS

FACE AND SKYLINE

THE FARM AS WE FOUND IT, AND HOW WE CHANGED ITS FACE AND SKYLINE.

How To Make a Country Place

An Account of the Successes and the Mistakes
of an Amateur in Thirty-five years of
Farming, Building, and Development:
Together with a Practical Plan for
Securing a Home and An Independent
Income, Starting with Small Capital

By

JOSEPH DILLAWAY SAWYER

Illustrated



NEW YORK

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FOREWORD

"Oh, . . . that mine adversary had written a book."

TO that man "whose heart within him burns" to build, as well as own, his own roof-tree, the following record may be of interest. It is composed, with not over a dozen exceptions, of features used by the author in his thirty-five years' experience in country living and building, including the transformation of a rough farm into a residential park at an expense aggregating over one million dollars.

An endeavor has been made to give concrete information in compact, *easily handled form*, needed by the layman, and to lead the reader from shack to mansion, through the intermediates of platform tented camp, bungalow, ordinary country house, and elaborate villa. Even many of the features used in Pinnacle, the "House Ideal," can be adapted to and made serviceable in less expensive houses.

The thousand and more original photographs include country living in many of its phases, different stages of building, and emphasize improvement in the year by year growth of tree and shrub.

A treatise on the making of a *real* country place *must be inclusive*. One member of a family may be interested in the building of a bungalow, another desires an elaborate villa and a knowledge of the construction of both. A third turns only to the pages that treat of the two mile arboretum strip of trees, shrubs, and flowers, while a fourth loves dogs, horses, and cattle, and another's realm of happiness is represented by birds and butterflies. The girls' and boys' Nirvana ranges from a real planned and pictured playhouse to pets—chipmunks and turtles; lambs and Shetlands—and from tobogganing and snow house building to stunts in boating and bathing, while the family as a whole are interested in a *safe and sane plan to gain a competence*.

The question asked by many seekers after country life, "Can I make my little farm pay, or what proportion of the expense will it carry," is answered from experience, and a way is shown for the city clerk with a comparatively modest income to become *independent within ten years*.

The indices of text and illustrations are intended to give a fairly complete synopsis in a *ten minute* perusal of the subject matter of "How to Make a Country Place", which includes hints on amateur farming, horticulture, villa and bungalow building, and general country development, as attempted by an amateur.

It is hoped that some who have never built will be sufficiently interested to join the ranks of those Progressives to whom certain solons (?) of the race quote with sardonic joy that proverb of the pessimist, "Fools build for the wise."



THE OLD FARM HOUSE THAT QUEENED
OUR ORIGINAL ACREAGE.



AFTER IT WAS MODERNIZED.

HOW TO MAKE A COUNTRY PLACE

CHAPTER I.

THE FARM—REMODELING THE FARM HOUSE—HYGIENE—
WATER SUPPLY—SEWAGE—FARM LAWN—ANIMALS—THE
DAIRY—POULTRY—BEES—STAR GAZING.

FROM cliff dwelling to tilling the soil was a long leap, but when made enabled me to give full sway to the building mania which asserted itself when I purchased "Our Farm," though we owned it several years before development was well under way.

When farming loomed as an Eldorado, I interviewed Dr. Hexamer of the *American Agriculturist* as to his opinion of the money-making possibilities for the amateur farmer, and he frankly gave his advice. Whether favorable or otherwise the reader shall judge, but I proceeded to farm, as Shakespeare puts it, "in my salad days when I was green."

Here is the old farm house that queened the seventy-two acres of my first purchase, afterward increased by buying adjacent farms to two hundred and fifty acres of undulating land, rocky knoll and wooded cliffside, bordering a swiftly coursing river. Here, too, are the modernized farm house, the hay, horse and cattle barns, silo, paddocks and gardens, the arboretum and the new entrance. In fact, the photographs show some things that happened to those modest, unassuming acres during the run of the building fever.

A red letter day was our first day of ownership of Hillcrest Farm. The deed had been recorded by the town clerk; I was a *landed proprietor*, and seemed to breathe more deeply as the vision of farm ownership became a reality.

The Fallacious Nightmare Mortgage.

After the recording of the first paper came the filing of the second, the mortgage, that nightmare of the average farmer, but which, after all, if rightly placed and the interest promptly met, is but a temporary bugbear, and can and should be made a stepping-stone to final independence. If your loan is a safe one the Savings Bank is generally as anxious to get it as you are to make it.

The farm house was picturesquely located, but not easily altered, though we spent upward of five thousand dollars in the attempt, only to find that the old house was an *old house still*.

For instance, when the wind blew, windows rattled distractingly until a wiseacre visitor suggested wooden wedges at the end of short chains fastened to the trim of each window.

Remodeling the Farm House.

Living in an old or remodeled house gives an opportunity for thinking up makeshifts and utilizing space. More room for books in the narrow library was obtained by extending bookshelves over the window tops, also into a chimney jog. Finding the old house difficult to heat, we discovered that a hinged wooden cover, tightly padded with felt at all edges, and balanced by window weights, closing-in the attic stairway, prevented heat from escaping to that unused quarter of the house—an unrailed attic stair opening, a lighted kerosene lamp, a heedless step, once presaged dire calamity. In a corner of the sitting room closet a trap door and ladder steps made a short cut to the furnace and cellar wood pile. Perhaps some of the devices were "skimble scamble," but they made for comfort.

Kitchen and Pantries.

The preference was for a small kitchen and large pantries, so we galleyed the range end of the big farm house kitchen and lessened the tramp across it to the dining room by building a ceiled-in butler's pantry which also aided in confining kitchen odors and clatter to that part of the house. In one corner of the room was hinged a drop shelf, and another along one side wall, while a cooking table fitted with convenient under shelf journeyed easily across the room on ball-bearing casters. Many a step to the housekeeping pantry was saved by a cupboard of translucent glass in the lower sash of a north window. Two windows placed on opposite sides of the food storage pantry quickly forced through it the ordinarily stagnant air of midsummer. That extra window owed us nothing, as it cheated the sour microbe out of many a meal. Shelves in this pantry were of slate.* Both pantry and kitchen sinks were broad and fairly deep, lessening breakage, and set five inches higher than usual, with draining boards extra wide and long. One defaced copper sink we put in fine condition, even for hot water use, by a coat of prepared aluminum paint. Walls and floor shone with linoleum in one pattern of light shade.

The range was inset with a metal flap twelve inches wide that crossed its upper front close to ceiling line and formed a hood and started heat and odors chimneyward. A fireless cooker was a helpful cog in the kitchen machinery.

*A domesticated toad for two years lived in a dark corner of the cellar pantry and made a "clean sweep" of roach, water bug, and fly and beat pussy at driving away the elusive mouse.

A kitchen settle not only settled, but tabled; it also stored coal and kindling. One broad settle, its cover seat securely hasped, was filled with cord wood through a hinged panel in the house wall.

A force pump in the kitchen connected with the well had a shut-off valve, enabling one to pump directly into the caraffe instead of the up-attic, planished copper-lined tank installed in case of accident to the ram. A water pipe over the range conveniently filled wash boiler and kettle.

Room of Comfort.

A practical makeshift, for not always did our out-of-a-rut innovations hit the bull's eye, was to place the range hot water boiler flatwise in a pokehole jog under the eaves adjoining a bathroom. This jog was asbestos-lined, and its whole front hinged with double doors that could be hooked back to the side wall, making the bathroom synonym of comfort.

Heating.

One experiment was a Baltimore heater, while another was to utilize the kitchen range by using an additional hot water back appliance connected by pipes and radiators with a small open safety expansion tank in the attic. A third was a perforated sleeve and radiator drum surrounding the galvanized smoke flue that, protected at the floors by soapstone collars, entered the chimney high under the attic ridge. An ell room was heated by the unhygienic oxygen eating oil stove, but placed within a specially built sheet iron cylinder stove, flue connected; another was heated and ventilated by an oil lamp treated in like manner.

Vandalizing the Revered Past.*

Substantial oak beam and girder construction made it possible to remove partitions, cut through doorways, inset bookshelves, and cupboards in plastered walls, change stair openings, etc., without regard to consequences, all radical improvements made at trifling cost—convincing proof that destruction is easier than construction. With bars once lowered for the entrance of minor improvements big ones speedily elbowed their way to the fore.

While the carpenters were ripping into the farm house fore and aft, we increased the area of the small dining room by still farther thefts from the kitchen. Sufficient of the wall was torn through to inset a sideboard and coal and wood cupboard, the latter serving also as a kitchen shelf, while a large bay window thrown out to the north revealed a cattle yard, but it had to be, as it facilitated "waitin' on table." Even Spot, the fox terrier, and Angora Aurea, the only cat, shared in the improvements, as a lower panel of

*The farm house was built along the lines of those old houses of the late 17th and early 18th centuries that sometimes required three years to build, when the 8 x 12 and 12 x 16 beams and girts were cut in the woods and sledded in winter to the site and at leisure adzed into shape. All spikes, nails, and pegs were hand wrought and later a neighborhood raising whipped the new house into line.



THE EAST TERRACE ENTRANCE

THE FARM HOUSE, OUTBUILDINGS, AND APPROACH

the dining room door was so adjusted that they could come and go at will.

The Keeping Room.

It had long been our ambition to have an old-fashioned keeping room, and we tried it in the farm house. It was equipped with the usual urn-crowned corner cupboards, in the main peopled with mementoes and reminders of Revolutionary days. The wainscoting came from an old Colonial house we had ruthlessly torn from its two hundred year old anchorage. That wainscot had never clashed with a paint brush, and frequent holy-stonings by gude dame and housemaid had effected a satin polish.

A double floor in two and one-half inch widths was laid on the first story for warmth. Less width, less shrinkage.

Inexpensive chair rails and picture moldings prevented injury to plastered walls and served as members in the dado and frieze scheme in dining room and library.

A low ceiling (high ceilings do not necessarily mean pure air, location of air inlet and outlet is the essential) made a short climb, but the crooked, cramped turn in the stairway forced ungainly furniture to travel through a window.

We planned a first floor bedroom for which convenience calls in most farm houses, and altered the conventional parlor into a studio-den.

A monastery sawbuck table with ebonized oak plank top harmonized with the long narrow dining room, and was easily dismantled when additional space was needed for dances or games.

Chimney breasts in several rooms we cemented, and while yet moist imprinted with a butter mold, perpetrating the same radicalism in the den, the effect rendered more startling by sprinkling the design while still wet with a mixture of gold, silver, and bronze powder. To balance the roof line and save a gable window on the second story a chimney was supported on trolley irons which crossed attic floor beams. A fireplace outside a chimney breast was thus carried.

Upstairs we again gleefully lapsed to the antique. The original wide floor boards, kiln dried by Father Time for full two centuries, were firmly nailed down, old tacks removed, cracks and nail holes either calked, white-leaded, or puttied, and the beautiful grain of wood brought out by sand-papering, filling, waxing and polishing. When that second floor was furnished with round and elliptical rugs (with rubber bands sewed on the under side to keep them from slipping), high posters with canopied testers, bed steps, lowboys, and eagle-crowned gilt mirrors, our ennuied city guest slept in another and far more restful world.

Box Greenery Window.

Plants were banished from all sleeping rooms, but a bay in the morning room made a bower of bloom, and in the south sewing room,



EXUBERANCE



LIGHTNING



A TEMPORARY VISITOR



A NEARBY HILL



COMMENCEMENT OF HOSTILITIES

THE WHEEL WHICH GRIND CORN FOR THE CONTINENTALS



WAITING AT THE GATE

WASH DAY AT THE COT



supported by heavy wooden brackets, a box-greenery-window projected about eighteen inches from the house line, imprisoning a bit of the June of garden, wood, and field the entire year.

In putting on a new roof, the garret was heightened two feet; extra expense light, but comfort greater in that "brain room of the world."

Pent eaves shaded one row of second story windows and broke the stiff high wall line, and carved barge or verge boards edged the gables.

The Outshot.

One old time and attractive external feature, the long toboggan roof of the "outshot," reached from the ridge to within six feet of the ground.

The wide verandas we built on the south, east and west added vastly to comfort, while the staircase hall tacked to the southeast corner and ceiled to the peak made a more suitable entrance, at the same time affording a fine background for pictures, Fiji Island spears, boarding pikes from a privateer of 1812, a sword fish, a pair of snow shoes, and other remnants of a collecting fever which at one time included stamps, coins, autographs and curios. Never again, however, will we *misuse* a glorious southern exposure for entrance and hall, or wood-ceil an interior instead of plastering it. We plead guilty to having installed lightning rods, finials, iron cresting, and a weather vane.

A couple of windows were unfortunately set diamond-wise in the staircase hall. Other transformations included three balconies, that meant sun and air-bathed bedding and raiment, as well as occasional naps in the open above the second story country dust line—just one-tenth of the twenty stories it generally takes in the city to banish the duster. One of these balconies served as an outdoor bedroom, another for a lookout close to the chimney top, (which, by the way, was flat stone-capped to make it draw better, instead of flaunting aloft that libel against good taste, a cowl-capped zinc-swiveled chimney pot) and the third as a sun parlor.

The old rule of the house painter of painting every third year the exterior and every seventh the interior we smithereened by giving the exterior trim a coat of oil between times. In this way the outside paint lasted five years, and as the interior, aside from rooms finished in white enamel, was treated with non-odorous stain, polished, and rubbed down, we needed no cast iron rule.

Miasmatic Cellars.

Many changes were made in the cellar. The milk storage excavation, directly at the foot of the stairs, we at once filled in, preventing a second tumble. A brick cistern holding at times stagnant unaerated rain water was demolished, when, whisper it lightly, no less than a half dozen rat skeletons, a defunct cat and some kittens



FIRST STEPS OF THE COLLEGE FULL BACK



THE TWO COLONELS



HOME FROM NOME



TRAINING FOR WILD WEST SHOW



SPOT- THE UNCOWABLE UNWHIPPABLE UNDRIVABLE YOUTHFUL PROWESS



THE CONSULTATION HAS HE GLANDERS?

were found. We built another cistern outside underground, dividing it unequally by a brick wall. Entering the smaller compartment, partially packed with charcoal, the water gradually percolated through the wall into the larger, giving us the best sort of filtered soft water, uncontaminated by soil impurities, roofs and cypress gutters being left unstained by creosote and kept scrupulously clean. Leader connections for convenient cleansing were placed close to an attic window, protected by wire leaf guards, the spout pipe for two feet flaring out four inches where it connected with the gutter. In order to thoroughly flush the roof before using the cistern, a two-foot spout section near the ground *swiveled* at will. In a downpour ten minutes of diverted roof washings gave us pure cistern water. A crimped spout prevented ice splitting but was not as easily cared for. The cellar was first underdrained from without and within, floor dug over, soil removed, and clean gravel substituted, then grouted and cemented and ceiling tarred and whitewashed to diminish fire risk, increased of course by the presence of tar. Side walls and floors were also tarred, the surface being roughened to hold a finishing coat of cement, outside walls and footing courses cemented and tarred, and tile laid at the base. Let everything go until that cellar is thoroughly revamped. You will naturally co-operate with vegetation to purify the grounds about the back door where the kitchen drain has been pouring out dish water and refuse for a hundred years and more, but five chances to one you will ignore the condition of the cellar, and agree with the sophistry of the forehanded farmer who sells you the property when he says that "the dirt floor is grand to keep vegetables, cider and milk in prime condition." If the money you have is a mere pittance, spend it on the cellar. In a word, drain and cement it inside and out, thus eliminating all foul, germ-laden air and matter; put in more and larger windows, double sashing for winter if need be, instead of boarding and banking up with sill-decaying leaves and barn-yard refuse, in warm days rapid breeders of vermin. Make the cellar as spick and span as the kitchen and you have won your first round in the battle against disease and ill health and outgeneraled, if only for the nonce, the white horse and his spectral rider. The cemetery fills rapidly enough without using as an additional feeder a miasma-breeding cellar.

Unfailing Water Supply.

One of the major requisites in country living is an ample water supply, especially where much stock is carried. Hand pumps, gasoline engines, compressed air tanks and windmills all have limitations, an electric pump, the ideal power, was out of the question, but the only alternative, the hydraulic ram, proved a complete success from the start. Water was pushed by the drive pipe through the delivery pipe a distance of one thousand feet and raised about one hundred



JOY UNCONFINED



THE MOOD ANTIPODAL

AND



THE MORNING CANTER



ONE SOURCE OF PIN MONEY



THE JOY OF THE MANSE



NOT AN EYELASH MOVED



RESPONSIBILITY



WELL?



A LITTLE MOTHER

JOYS OF FARMING.

feet, pipes protected from frost where they entered house, barn and outbuildings, and we had water in abundance both summer and winter at practically *no cost* after the expense of installation.

Nearest Approach to a Perpetual Motion Machine.

The ram, a small affair a few inches square and less than twenty-five pounds in weight, was sunk in a dry, frost-proof well only eight feet deep on a side hill, hence easily underdrained to get rid of surplus water, a greater fall, we found, exerted too much pressure on the mechanism. This and the little reservoir about a dozen feet square and three feet deep were covered with planks and heaped with straw or weeds for winter protection. Though we received at the buildings with our lay-out less than one-tenth of the water that passed through the pipes feeding the ram it proved more than sufficient and shared honors with the five per cent. mortgage on the farm, that worked day and night. House and barn tanks and cattle troughs were always full and the overflow formed a safe shallow skating rink for the children in winter and a duckling pond in summer, at one end of the roomy wire fence-enclosed poultry yard, and the shallow water eased a bit the flurry and worry of the foster mother hen. If the supply of water is small and the surplus has sufficient fall, parallel lines can be laid starting from lower levels. There's hardly a farm worthy the name that cannot have at moderate cost a continual water supply without help of the exhausting pump handle which should only be used to draw for drinking purposes delicious cold water from that rock-dug well that, like pure butter and milk, is the stock boast of the average farmer.* New valves every two years costing but a trifle were the only expense.

The water pipe connected with the refrigerator, and the ice rested on a coil of quarter-inch pipe, thus supplying hygienic ice water. Refrigerator drainage *dripped* into a dry well instead of a sewer gas-packed cesspool.

Sanitary Sewage System.

What to do with sewage at first puzzled us, as it does everyone in like surroundings. The solution was *sanitary cesspools*, made as follows.

A water-tight stone and cement tank five feet square and six feet deep had two compartments, with overflow pipe controlled by ball and cock and protected in a frost-proof mound. The valve opened automatically, and the *liquid* contents of the second compartment discharged into three blind drains each about one hundred feet long, placed two feet below the grass roots in an orchard which sloped toward the west, thus escaping many a nipping frost. The main compartment was cleaned each winter, and coppers or

*On one of our farms we installed a double action ram, using the muddy water of a running brook to force pure spring water to house and barns.



THE WINTER IGLOO



BOTH GENTLE



EXPECTING CALLERS

LIGHTNING
the
SPACE
CONQUEROR



THE CALLERS

A
TENDER
FOOT



THE SUMMER TENT

DODO
the
GLUTTON
only
BIT
FOOD



some other disinfectant thrown in lavishly, though it often seemed unnecessary, so well did the system work in connection with our house plumbing, which, as well as the cesspool, was thoroughly back-aired, and stood perfectly the peppermint medicine poured down the throated pipes to ascertain sewer gas conditions. This was done every six months, the day we paid the bank interest on the mortgage. The connecting pipe was iron instead of tile.

Years afterward in a Sound front cottage we installed the same style of cement tank with a two-inch overflow pipe extending well into the Sound, and controlled by a gate-valve. Once a week, at night on the outgoing tide, opening the valve for an hour emptied the water sewage tank, and the other compartment was cleaned in the winter, as on the hill. This system proved simple, safe, sane, sanitary and successful.

Conquest of Sewage Danger.

From the time when our English ancestors hibernated like bears in a round neolithic penpit, and later when king and churl alike dug open sewers in the floors of their dwellings, unto the dawn of modern conveniences when insanitary plumbing forced deadly sewer gas into the blood, men, like ripened grain, have fallen unnecessarily by the million before the steel of the "grim reaper." Yet through all these years of self destruction, at man's elbow, but *tongue tied*, stood the twin servitors, aerobic and anaerobic, minute organisms, anxious to purify his home, throttle burning fevers and lengthen his life. Harnessed for the first time in the nineteenth century, they are doing systematic yeoman service. As absolute darkness is an essential in the work of the anaerobic microbe, while he transmutes fetid matter into the gaseous state, cesspools must be about six feet deep, yet with suitable air vent. Preliminary disintegrating surface work is performed by the oxygenic aerobic, that floats on the surface and passes down to his partner for final disposal all refuse.

We put these twin servitors to work in the bacteria-septic-tanks afterward installed in one of our country places and they purified sewage in about twenty-four hours. The apparatus consisted of three siphon connected tanks—sewage tank, weir tank, and disinfecting tank. The air vent was a small well braced galvanized iron pipe flag pole open at the top, giving an exceptional draught.

The installation of two main line speaking tubes *ended* our list of changes. Years afterward we realized that "striving to better, oft we mar," and while sugar-loaf-tower and aggressive excrescence here and impudent protruberance there gave greater convenience, the rural restfulness of the old farm house had vanished. Better a bed of ashes and a Phoenix-risen new house. From destruction of the old generally springs a newer and better construction.



ALL WERE EAR LABELLED



ONE OF THE TWINS



TIME FOR MILKING
MY MAN!



THE OTHER

EAR LABELLED STILL

Stone Walls Versus Roads.

Within a year a development began which, when completed, changed the entire aspect of the farm. The first step was to make stone ballasted main roads, well underdrained, utilizing material taken from the three miles of stone walls that straggled irregularly across ravine and pasture, swamp and hillock, some broad enough to hold a coach and four on their ivy, woodbine, and blackberry vine-clad tops. These old walls were the hide-and-seek rendezvous and racing ground of the saucy fat chipmunk, and their deep, dank recesses at times nesting places for the black snake—the non-biting constrictor—that so realistically rounds out country life. Quite a number of these walls were formed of two distinct evenly faced ramparts, the intervening space filled with small stones, a good old-fashioned way of clearing land, and far less shiftless than the piling of stones on ledges that occasionally outcrop on the surface.

Strenuous agronomical efforts required the erection of more hay, storage, and cattle barns, also corn cribs, giving a comfortable and roomy group of buildings, taking the place of hay ricks, canvas-capped stacks, and rough-and-ready shelters. The recurring seasons of seed-time and harvest caused bulging silo and o'erflowing barns, when again came the lumber teams and carpenters to provide new buildings for increasing crops and stock.

D. L. Moody's White Farm

Dwight L. Moody, the Evangelist, once told me in most interesting detail of his white farm—no, not named for the fields of white daisies, but from the stock, all snow white, including horses, dogs, cats, turkeys, geese, ducks, pigeons—even mice and rabbits for the children. Our love for peerless black Topsy and the herd of Dutch belted cattle decided us to make the motif black and white, with an occasional exception in favor of some animal of rare merit. Much against my will, the scheme had to include white daisies, as well as wild carrot (Queen Ann's lace), the beautiful tracery of whose bloom belies its pernicious, destructive habit. These two horticultural vagabonds joined forces with the Canadian thistle, and, after several years' struggle, succeeded in depleting by half the one hundred ton hay crop, the financial back bone of our farm.

First on the list of income producers came the dairy. The foreman had purchased in Vermont two carloads of native cows, but these were gradually replaced by the herd of Dutch belted.

Dutch Belted Cattle.

How well I recollect when I first saw in one of the half dozen agricultural papers to which we subscribed the beautiful outlines of the Dutch belted (Lackenfeld) cattle, their jet black bodies completely encircled with pure white blankets. This led me to Orange County, New York, where I joined the Dutch Belted Association,



THE WESTERN SLOPE of HILLCREST MANOR.



TAURUS and HIS SAFE AND SAFE QUARTERS



OUR BIGGEST CORNFIELD

EVENING



ONE OUTDOOR PIGGERY



ONE OF THE HAY BARNs



THE ICE POND

HOME OF THE COMMONERS.



"BLACK PEARL," QUEEN OF THE HERD.

and purchased registered, ring-nosed Taurus, with a dozen or more other prize metal-ear-labeled animals. Within a few years we owned a herd of belted cattle whose poetic names exhausted the alphabet, for they were forty strong, and at the county fairs drew admiring comments as well as honorable mention from both professional and amateur for their beautiful markings and graceful forms.

To be sure, the Aberdeen-Angus Polled, and Red Polled dual purpose cattle have an element of greater safety where there are children; and among others there were Ayrshire, Guernsey, Devon and Jersey, Short-Horned and Holstein-Fresian, both beef and dairy types, from which to choose, but beauty, as well as milk yield, counted in favor of Dutch belted, many of which, ours among the number, were bred from P. T. Barnum's imported animals. At one time the live stock listed sixty cows, including yearlings, a dozen horses and colts (the raising of the latter interesting, but expensive), one hundred and fifty pigs and shotes, more or less, and poultry in goodly quantity.

Milk.

At this time the income from the dairy business averaged about \$450 per month—gross. Delivery wagons marked "Hillcrest Farm," pictured a Dutch belted cow—a sort of coat of arms and guarantee to our clientèle that we kept cows, and that the milk wasn't "boughten." Milk was weighed and recorded to the credit of each high bred milch cow on the score card hung beside her photograph. The stone spring house, built over a clear pebbly-bedded running



TOPSY THE FARM'S BLACK MARVEL



ACME OF CONTENTMENT



SHOULDER PET



OFF FOR SCHOOL



WAYSIDE



CHICKENS ARE SAFE



ONE INVOICE OF LIVE STOCK.

brook in which were submerged the cans, kept milk sweet in warmest weather. Later it was pasteurized, subduing the elusive coli.

We also pioneered the milk bottling plan in our section and lost some good farm hands because of the additional labor entailed. Careless help not only decreased the milk yield, but incurred bad debts, due to poor judgment in the matter of credit, so before the business proved a loss we sold out the herd, with the exception of a prize trio, to a fellow enthusiast in Worcester, Massachusetts. As the beautiful, white blanketed creatures started down the road for their new home, another of our pet hobbies was unseated.

With what enthusiasm I took up the theory of the late Donald G. Mitchell (Ike Marvel) in regard to keeping cows under open field sheds in summer and feeding them daily with freshly-cut fodder. But experience taught that it was more economical to make them work their own passage for six months at least, in which opinion later correspondence with Mr. Mitchell fortified me. Dobbin (i. e. Victor) harnessed to a tread mill ran the Ross cutter which inched corn for the silo. Later a gasoline engine not only cut up corn but sawed wood, whipped cream into butter, and ran the washing machine, until electricity flashed to the fore and banished many limitations.

Ox Versus Horse.

Among the animals was a prize yoke of steers, able to move a small house. But oxen were soon supplanted, as I fancied that their slow gait counteracted the enthusiasm of the most strenuous man I could hire. This theory of mine was somewhat shaken by a farmer who argued that a pair of steers cost \$125 to \$200, live on hay in winter and grass in summer, and do not necessarily require grain nor roots, while horses that cost in the beginning fully three times as much are far more expensive to keep. In ten years the steers will bring more than their cost for beef, while the horses are practically used up. The steer cultivates as many acres as the horse, and if trained to it can be used in a mowing machine, and will tire the most enthusiastic plodding ploughman in a day's work. Evidently the horse has his innings with the farmer because of the necessity of getting to market quickly and the pleasure and convenience of driving, but gauged by economics the ox is not the "has-been" the horse votary would make him out. Style is one main factor in his banishment. Losses from horse diseases often deplete the income of that farmer who neglects to insure his stock.*

The Farm Lawn Versus Hayfield.

No, my "would-be" farmer; cows on the lawn are not such a calamity as cows in the corn. This photograph was taken in June

*Indiscriminate salting causing immoderate thirst sponsored the death by colic of Alice our prize brood mare.



ONE MEMBER OF THE HAPPY FAMILY IS UNHAPPY

DOGS OF HIGH DEGREE



A LIVING PICTURE



CHUMS



DON'T



ONE TRIO



WELL - WHAT IS WANTED ?



A LIVE HOBBYHORSE



BUNGALOW CHIEN



SOON TO LEAVE HOME



THE FARM LAWN.

just after early haying. When the meadow grass had a setback through premature spring grazing, followed by a drought, we *always* hayed and occasionally grazed the lawn. Thorough work, including green soiling, application of nitrate of soda, spring and fall sprinkling of lawn seed on worn places and systematic rolling, did much toward making it quite a respectable farm lawn from mid-June until winter, spite of our stolen hay crop. We never raked off the grass cut by the lawn motor, but left it to enrich the soil. The stones that dulled it were buried to form deep draining ditches, and after thorough subsoil ploughing, manure was turned under, to mechanically, as well as chemically, benefit and enrich the soil. A neighbor spent more money in this process than we, going deeper, and in twenty years his lawn never browned during severe drought nor under closest clipping, the grass roots delving too deeply to be affected. Slightly curving lawn contours edged the farm house, but on the main farm lawn no attempt was made to fill abrupt depressions, smooth hillocks, or break up boulders and blast out ledges, having once had experience in that line to the tune of \$3,000 or more, with no pleasanter result than a yard whose stone boundary wall looked like that of a prison. Acres of adjoining land could have been bought for the money put into that unattractive wall. With this expensive warning, hollows in our farm lawn were padded with shrubbery, the most unsightly boulders screened with evergreens, and others partly hidden beneath asexual mosses, lichens and saphrophytic fungi plants. In the midst of rock-strewn corners were planted varicolored flowering plants, the shade and shelter afforded by the evergreens enabling us to transplant from the forest a wood carpet of rare and varied velvety beauty. In one particular cove nature

helped in working out that most difficult feature in landscape gardening, a natural rockery. Steep terraces were never sodded but held in place by trailing honeysuckle, transforming the usual gullied slope to banks of fragrant bloom and several ungainly stone heaps beautified by the creeping pine that licked their edges and ferns of varied size and lacy texture that grew in crevice and hollow. Islands of evergreen broke the surface of the lawn, and proved citadels of refuge for a dozen or more gray squirrels whom Spot the fox terrier delighted to hector and terrorize.

The Sleepless "Varmint."

Though our lawn was often ridged by that animal machine of indefatigable endeavor, the earth-worm-eating-blind ground-mole, who, according to the farmer, dies when without food for more than a few hours, a steel pin trap set over his runways made his shadow grow steadily less.

Candlemas Weather Prophet.

Speaking of shadows, the entrances of a dozen or more ground-hog burrows scattered through the pasture lots were faithfully watched at Candlemas, February second, for signs of an early spring, but Mr. Ground-hog generally saw his shadow, returned to his hole, and we stopped sorting seed until the voice of that more reliable prophet, "the turtle, was heard in the land."

Tennis Screen.*

The upstart mechanical wire tennis screen edging the lawn, braced to withstand extra strain, was transformed into a green wall of beauty by plentiful plantings of honeysuckle, Dutchman's pipe, trumpet vine and moon flower, while the hole-in-the-ground greenhouse grew enough plants to decorate a portion of the same lawn with new old-fashioned ribbon gardening, making attractive parterres of flowers and in the fall a wide variety of bulbs was set out for spring blossoming. One of the most pleasing beds showed a mass of yellow and white tulips.

Beautifying the Ugly Gravel Pit.

Shrubs that grew good dirt-holding roots surfaced the sides of a yawning gravel pit, before planting the steep incline being worked to a lesser grade with a horse scoop, and retopped from an adjacent pile of loam. Profuse evergreen and shrub planting changed a dismal, barren area into a really beautiful semi-ravine, one portion closely resembling a grass-grown volcanic crater. Steps of old railway ties, spaced with three foot rock and gravel treads prevented washouts and half covered with vines led to the bottom of the ravine. The spraddling prostrate cypress edged the rocks, among which grew the red beaded partridge berry, while near by, at its best in blue splendor,

*One of the two tennis courts was flooded in winter for a children's safe skating pond.

was the vinca or periwinkle, and through the underbrush that kept alive the spirit of the wild trailed the arbutus, which in its place and season has no rival.

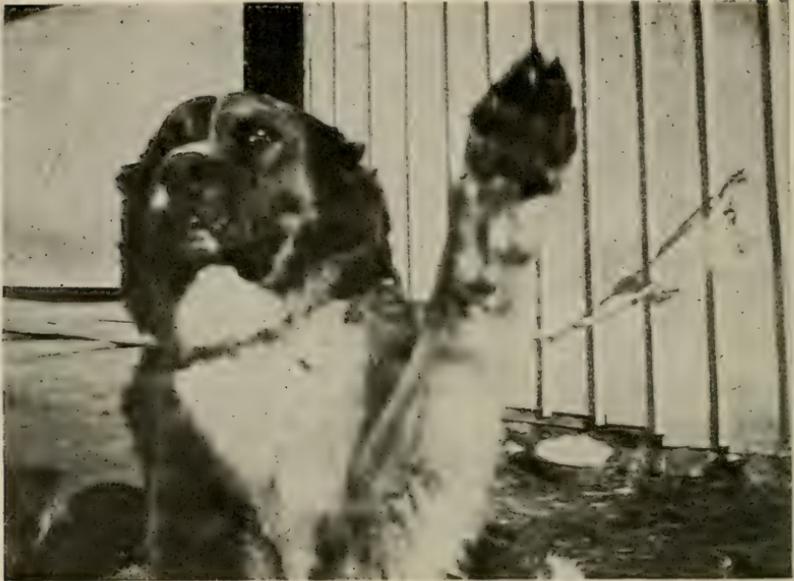


OUR HORSE HOME.

Four-Footed Friends.

It would be difficult to say which of the four-footed friends of Hillcrest was deepest in our affections. Topsy, that mare of mares, whose quick, spirited step night or day heralded her coming, was always under voice control with us, but a stranger could not curb her speed—indeed, she often seemed to the onlooker to be running away, and more than one well disposed person tried to stop her and save (?) the driver's life. Hills made no difference; for nine years she mounted them at top speed, and at one time in midnight darkness leaped a deep trench in the highway, overturning barriers of planks and barrels, and kept on, with writer, gig and its contents uninjured, emphasizing the fact that spirited and intelligent horses are often *safer drivers* than the type represented by stupid, plodding Peggoty who gave us a gig tumble we remembered for many a day.

In one field after a half night's searching we found our prize collie, Bobbie Burns, brought to us from Edinburgh. He had been deliberately murdered by some miscreant—neighborly gossip suspicioned the offender—who fed him with a piece of meat stuffed with pounded glass, as discovered by our veterinary at the autopsy.



"MUNYON," WHO HELD UP INTRUDERS.



HILARIUS ARTEMUS, WHO SAT UP AND
TOOK NOTICE WHEN IT HAPPENED.

Bobby was a very discriminating dog, gentle and harmless, and looked at us with almost human eyes. He traveled to and from town so close to the forefeet of Topsy that it seemed a miracle he was not



LEO, THE MAGNIFICENT, WATCHER AND WARDER
OF OUR FARM GATES.

crushed. We had two romances on the Hill; one Topsy and Bobbie, the other Frisky and Spot. Spot, a prize fox-terrier, uncowable, undrivable, unwhippable, for his young master would watch anything in any place for hours. His boon and inseparable companion, in paddock, pasture, or harness, was Frisky, the pony. Spot's realm was in the pony cart when in motion and under it when its owner left it by the roadside, watching both pony and packages, until one day a heedless vagabond struck the pony, Spot rushed to his defense, the wretch shot him, and a second farm tragedy was enacted.

Eliminating Gruesome Graves from the Farm.

Fortunately for our peace of mind, no old time family graveyard disfigured the farm, which, however secluded, is depressing, and



PRINCETON TIGER IN THE HOME CIRCLE.

if a funeral cortège crosses the lawn it emphasizes an unpleasant division of ownership. This problem was solved in one of our properties by purchasing a lot and monument in the town cemetery, removing the bodies thereto, obtaining possession of the land, and canceling all rights of way by quitclaim deeds from the heirs. The only graveyards on the farm were in Sleepy Hollow Valley, located not to contaminate the water supply. There was the last home of the horses that served us so faithfully, and of Bobbie and his successors in our affections. The willow we planted over the grave of Bobbie Burns is to-day a lofty tree.

The horses never had other masters, but each had pasturage in old age, a warm corner in barn and paddock, and a grass-grown grave in the valley at life's end. There were Don, Dan, Bess, Topsy, Victor, faithful Peggoty and snow-white, speed-crazed Lightning, Chester, Frisky, and a score of others, including Alice, the daughter of renowned Amy, that never-outdistanced road mare whom we brought from Boston only to die within the week. Tragedy and pathos were often boon companions.

Our Horse Boarders.

One source of income was horse boarders. In box stall, paddock or pasture we always had eight or ten both summer and winter, a big help in actual cash toward the farm expenses.

Dogs.

In twenty years' farming experience our dogs numbered legion, and were mostly of high degree—top notchers, and real companions, answering our slightest wish if they but understood.

Leo, the king of all our St. Bernards, never failed in honesty and fealty but once, and was even then immediately ashamed of his lapse. It happened as follows, and it must be confessed the provocation was great: It seems that a roasted chicken had been stolen by him from a neighbor's kitchen range. It was rescued from under the trap after an argument close to the fighting line at the end of a whip, and my friend told me the next day that, lacking a neck and wing, his Sunday dinner had lost nothing and tasted good*.

The bulldog, Princeton Tiger, college bred with one of the boys, was pure white, the farm color. The fighting spirit he developed kept him at the end of a chain when on the farm, and when thus in bondage everyone except his young master stayed at a respectful distance.

Angora Aurea, called for brevity Double "A," was one never-to-be-forgotten home greeter; the only cat who ever held a deep place in my affections. Having no vestige of the cat's occasional distrust of humans, he never zig-zagged, but came straight toward one with the frankness of a dog, and rarely failed after a greeting rub to crawl to my shoulder, remaining there for hours while I walked about the farm. The memory of those sharp claws as he traveled from shoulder to shoulder is still vivid. Brought up with dogs, he had no fear of them, but too great confidence in a treacherous cur belonging to a neighbor was his undoing, to the lasting grief of the household. His epitaph read: "Here lies a good cat who like the dog loved humans rather than locality."

Vega was the proud mother of Leo, and, to be exact, of forty-nine other glorious St. Bernards with which we either gladdened or saddened forty-nine friends from Philadelphia to Boston. Their histories, as far as we followed them, showed many of remarkable size but rather testy tempers, but Vega and her royal and loyal son Leo were ever models of what dogs should be. We found St. Bernards as a rule victims of wanderlust, but for ten years Vega watched, night and day, house, barnyard and stock until she joined the ranks of the dog majority.

Some of our dogs were especially gifted in sensorial acuteness and when tried out proved fit exponents of and worthy the well known tribute of Senator Vest of Missouri to the faithful dog. While attending court in a country town he was urged by the attorneys on a dog case to help them, being offered \$250 by the plaintiff. Volu-

*Puppyhood frequently poached in the chicken yard. When caught in the act instead of strapping the puppy we adopted the old-fashioned cure of strapping the dead chicken firmly under the murderer's neck. A couple of weeks of this mental and physical suasion engendered a dislike for stolen chicken for all time.



DOUBLE "A." THE HOME GREETER. MAKING A BEE-LINE FOR HIS OWNER'S SHOULDER.



VEGA.
A PICTURED TALE OF A TAIL THAT WAS A TAIL.

minous evidence was introduced to show that defendant had shot the dog in malice, while other evidence went to prove that the dog had attacked the defendant. Vest was not disposed to argue the case, but, being urged, he rose, scanned the faces of the jury for a moment, and said:

Eulogy on the Dog.

"Gentlemen of the jury: The best friend a man has in the world may turn against him and become his enemy; his son or daughter, reared with loving care, may prove ungrateful; those nearest and dearest, those we trust with our happiness and good name, may become traitors to our faith. The money that a man has he may lose—it flies away perhaps when he needs it most; a man's reputation may be sacrificed in a moment of ill considered action; those who are prone to fall upon their knees to do us honor when success is with us may be the first to throw the stone of malice when failure settles upon us, but the one absolutely unselfish friend a man can have in this world—one that never deserts him; never proves ungrateful or treacherous—is his dog. A man's dog stands by him in prosperity or poverty, in health or sickness; he will sleep on the cold ground where wintry winds blow, and the snow drives fiercely, if only he can be near his master's side; he will kiss the hand that has no food to offer, he will lick the wounds and sores that come in the encounter with the roughness of the world, and he guards the sleep of his pauper master as if he were a prince. When all others desert, he remains. When riches take wings and reputation falls to pieces, he is as constant in his love as the sun in its journey through the heavens. If fortune drives the master forth, an outcast in the world, friendless and homeless, the faithful dog asks no higher privilege than that of accompanying him to guard against danger; to fight against enemies. And when the last scene of all comes, and death takes his master, and his body is laid in the cold ground, there by the grave will the noble dog be found, his head between his paws; his eyes sad, but open in watchfulness; faithful and true even in death."

Vest sat down. He had spoken low and without gesture, and made no reference to the merits of the case. When he had finished, judge and jury were wiping their eyes. The jury returned a verdict for \$500. Plaintiff had sued for \$200.

When in Edinburgh, I saw that monument erected by the Baroness Burdett-Coutts to the faithful dog who for many years, summer and winter, in burning heat, bitter cold, drenching rain and driving snow lay on his master's grave, leaving it only for the food and drink furnished by the neighboring shopkeepers, then back to his lonely vigil until death ended his pathetic waiting.



CATTLE BARN



WAYSIDE

HORSE BARN



THE ABORETUM



WILL HE THROW HIM?



STONE BARRIERS



OUR HOT BED SASH GRAPEY



WAYSIDE



THE FARM WARDER



MUNYON



CATTLE YARD



Merino Sheep.

Sheep? Yes, at times quite a flock, which finally dwindled to a trio of pure registered Merinos brought from Vermont. Two of these were found dead one morning in a corn field back of the barn, their throats gashed and flesh torn, victims of a vicious dog.

We tried raising Angora goats as a business, and even had visions of adding to the county's wealth as well as our own bank account by their increase and yearly shearing, but after developing a fondness for our choicest shrubbery they too became memories.

Pigs.

The Green Mountain State furnished us with some chunky black Berkshire and white Yorkshire pigs, fat and solid parallelograms, with knobbed mouths, distended cheeks, and legs so short that they appeared almost to crawl, instead of walk. No, there were no razor-backs in the hog pens and no ringed pigs. Experience taught that if confined within small space they girdled and ruined the trees, so we gave them the run of several orchards, threw grain on the ground, partially burying it, and our animal plowshares did wonders in industriously uprooting sod and soil, resulting in far more productive trees.

The smokehouse, used as a roadway from the sty to the farm help table, served also at times as a miniature Libby Prison for one small boy in "knickers," whose obstreperous gaiety was thought to need occasional curbing. Here also we shut up Spot, the fox terrier, on gala nights when fire crackers and fireworks were in the air. Of these he had such hatred that he would dash angrily into their midst with utter disregard of life and limb.

Poultry Raising.

Of chicken farming we took deep draughts, as is usual with the amateur in this possibility-filled realm, breeding the wild squawking brown, also white, Leghorns—good layers, but poor setters or meat-producers; the phlegmatic, good-natured partridge, buff and white Cochins, feathered to their toe-nails; the barred and white Plymouth Rock, the strutting, tufted Poland; the silver penciled Wyandotte, the aristocratic white, buff and black Orpington, the jet black Minorca, the sprightly, trim Rhode Island Reds, the dignified Houdan, its illustrious descendants, the Faverolles, blue blooded Blue Andalusians, staring white faced Spanish, and the tiny, demure Bantams, who proved more intelligent than their pompous neighbors, notwithstanding the statement that a chicken's education ends when a day old. The antics of a clutch of one-day-old chicks gave unending diversion, lively in spite of their usual twenty-four hour starvation. Small chicken houses on skids used as a by-product, brought our best behaved and most aggressive insect gourmands to assist in the clean-up slaughter of garden pests in asparagus and strawberry beds and small fruit plantings when bloom



THE MOTOR THAT DID THE
JOB



UNDER FULL HEADWAY



LEAVING ITS CENTURY HOME



WAYSIDE



ITS FINAL RESTING PLACE



THE CELLAR OF PINNACLE

ONE HOUSE THAT STROLLED INLAND.

and fruitage were not in evidence. A mulch of weeds and straw outside the hennery walls allowed the use of a dirt ash-strewn dusting floor in winter. More than a dozen breeds, with separate yard for each, battled to convince us that there was money to be made from this branch of husbandry, but when the stock of hens numbered much over one hundred and the care devolved upon hired help, we found little if any profit. In spite of incubators and brooders, sunny and shaded chicken runs, close study of the dietetic value of different poultry foods, including a goodly batch of sunflower seeds grown in the hen yards, and seemingly the most devoted care, both infant and adult mortality ran high, and roup competed with hen-hawks, polecats and an occasional Sir Reynard, to fill the wrong side of the ledger. The profit in the sale of breeding stock was more than canceled by possible loss in egg and broiler.*

Forty Pound Turkey.

I recall with bucolic pride our forty pound prize bronze turkey gobbler. To be accurate, he tipped the scales at thirty-eight pounds eight ounces, but candor compels us to admit that he was "boughten, not riz." Our pride had a setback when we *read* of a sixty-pounder in the West.

In self defense, we had to trap the mink, weasel, rat, and sometimes a vagrant cat, who insisted upon joining issues with an occasional polecat to poach in the chicken yard.

Well, the chicken raising hobby serves the beneficent purpose of forcing pure country air into half expanded city lungs, and gives new zest to living, even if financial results are sometimes disappointing.

Among all the screechers on our farm, including quacking ducks and hissing geese, our guinea fowl and a royal peacock, who strutted proudly up and down the lawn, generally refusing to entertain guests by an exhibition of his spreading tail with its iridescent coloring, out-screached them all.

The white fantails superciliously ignored the carrier pigeons that dwelt in the dove-cote, nesting in the big barn cupola. Perched on ridges or strutting in the barn yard, they almost fell backward under pride of carriage, and added to the domestic atmosphere of our farm buildings.

Husking Bee.

The floor of the old barn was too uneven for dancing, but each fall we had a jolly husking bee, and the finding of a red ear generally prognosticated a reddened cheek.

*The way out for the amateur poultry keeper, whether a widow with children to support or a clerk seeking lost health, has been found. Let each municipality or, in lieu of a generous public, the liberal minded individual owner, establish poultry experiment stations in near-by suburbs, where up-to-date methods in sheltering, feeding, breeding, special care of poultry, buying of stock and feed, and marketing poultry and eggs in the most profitable manner, are taught. Plants of this character widely established would greatly shorten the distance between producer and consumer, and could supply incubator chicks and market the poultry.

Our Honey Bee Industry.

The boys who, as we shall see later, built "The Cot," had a strong liking for bees, snakes, turtles and all animal life. Under the tutelage of an apiarist who lived near, a swarm of bees was captured from the branch of an apple tree and installed in a novel hive made by removing the lower sash in one of the attic windows, fitting a neatly-made box tightly in the space, and boring holes in the window frame for ingress and egress of the bees. On the room side of the box they inset a broad sheet of glass darkened by a screen. Utilizing the plan of a friend, a sliding microscope was arranged against the glass, so that on lifting the curtain the bees could be microscopically seen in their home life.

No more pathetic insect life exists than that of the female bee, born a queen, but changed in a few days, through insufficient food, to a worker in a realm of abject servitude. She knows no rest, and after weeks of continuous toil there comes a morning, as she darts from the hive to her daily task, when the worn out wings fail, and she falls to the ground never to rise again.

One of our queen bees by actual count in twenty-four hours laid 2,000 eggs toward her life quota of from one and one-half to two and one-half million. The busy bee, Napoleon's emblem, led us deep into the mysteries of one phase of interesting insect life, and twenty hives in one orchard kept our friends and us honeyed all the year.

The window bee-hive, where there was no risk of being stung, was one of the farm sights, and interested all visitors, while the incentive given the children to study natural history formed methodical habits of research, close observation and that greatest of all factors in success—*concentration*.

Star Gazing.

From bee-keeping and its kindred attractions, they were drawn to the study of astronomy, and the five-inch lens telescope set up on the old farm-lookout was in constant use. Star gazing in the open was supplemented by indoor lessons.

CHAPTER II.

OUR BIRDS—FRUIT—INSECTS—FARM HELP—BOY'S CABIN—PETS
 —FORESTRY—GAME PRESERVE—HEDGES—ROADS—GUTTERS
 —ICE—PLAY SIDE OF FARMING—COUNTY FAIR—
 SYMPTOMS OF BUILDING MANIA.

IT adds new zest to living to be up and about with the meadow lark, and is rare joy occasionally, when the days are longest, to beat the birds at their game of early rising, and hear from copse and tree-top dawn twitters, swelling into orisons of greeting to the King of Day. An early to bed regime made possible an occasional summer stroll at four a. m., that *rare hour* of nature's awakening so seldom appreciated by the great mass of humanity because unseen.

Bird Annihilation Spells Famine.

Though but the merest fraction of the nine hundred or more North American bird species nested and lived among us, numerically they were legion.* The quantities of cherries, berries, seeds, grubs, worms and insects attracted them to our orchards by thousands and they were welcomed with open arms as man's best friends. A leading scientist, an extremist, has said, "Obliterate the birds, and you blot man from this planet within nine years." The "death chamber" of the bird we seldom found though a rocky cleft or a hole in a tree, sometimes serving as an ossuary, at rare intervals gave up the secret. Isolation in the death hour seems the choice of all animal life.

The birdling in a single day develops as far toward maturity as an infant in a year. This rapid growth requires an insect menu of wide scope and great quantity. For example, it is on record that a pair of house martins (swallows) fed their young over three hundred times in sixteen hours. We managed to accommodate the growing birds, and still have so many left-overs that additional slaughter of the innocents by fire, poison and force of arms alone prevented serious damage to our crops. To walk through field and pasture with opera glass, camera, pad and pencil and ever so feebly try to fathom bird lore was keen delight.

Bob White.

From "Round Meadow," the only nomenclature of the past that clung to the old farm, came the liquid notes of the brown thrasher

* Authorities claim that the climate of Connecticut not only allows a wider range in plant growth than any other state—but that a greater variety of birds lives within its borders.



AND HOW WE CHANGED IT



METAMORPHOSING THE FARM.

and the answering call to our mocking whistle of "Bob White," who seemed so close at hand, yet was never visible when whistling, but I once found a quail's nest at the base of a peach tree, in a thicket of raspberry vines within eight feet of the driveway and quite near the house. We enclosed it with a half-inch mesh wire fence about four feet high, making a circle ten feet in diameter, thinking to outwit the mother, and reach one of our goals, which was to own, with the State's permission, a domesticated covey of quail, a bird that, as it darts to and fro, is as close to perpetual motion as anything that breathes. An empty nest and cast-off shells proved that the mother bird had outwitted us. In bird as in man the house building instinct is bred-in-the-bone. One bird bungalow was in a deep hole in a cherry tree close to the porch. Here a pair of flute voiced English starlings had their home, taking most kindly even to our inclement winters, while in that rare seedling pound apple tree dwelt the happiest and sprightliest of birds, the robin red breast. When the tree died, and was felled, the robins moved to the veranda eaves under the goose-neck of the spout-head and set up house-keeping, until forced to seek the orchard by that belligerent little fellow, the English sparrow that, like worry, is always with us. †

"Rats of the Air."*

In 1872 or 1873 a Boston official presented us with one of the first pairs of English sparrows brought to this country—a gift, I believe, from some English municipality to the city of Boston. Unassuming birds contrasted with their pugnacious English cousins were the shy and gentle song sparrows whose three call notes and sweet toned conjugal warbles bespoke sunrise in February's warmest days.

We freed the English sparrows—bud, flower, grain-eating and nest-stealing vagrants—on our country place in the Newtons, near Boston, inadvertently assisting in starting the *sparrow scourge* but with far less innocence than that East Medford naturalist and astronomer, Prof. L. Trouvelot, who, while trying to breed a new silk worm, allowed an experimental importation of a dozen or so of the gypsy moth to escape in the open. †

Devastating Gypsy Moth.

Massachusetts has spent millions of dollars in the effort to exterminate this moth and lost other millions in damage to crops, the snow-ball of devastation increasing in size as it rolls westward. The gypsy moth caterpillar eats voraciously in the late afternoon and at night, shunning the sun and attacking everything in sight, including

*Experiment proved that these bird rats would enter; in their gluttonous search for food, some forms of rat traps, and merciless justice dealt to them what they had ruthlessly dealt to others.

ROAD
VIEW



WEST
VIEW



HILL
TOP



CHANGING THE FARM

NO 2

THREE OF THE CHANGES.



MURDER WILL OUT.
CAUGHT IN THE ACT OF ENTERING THE BIRD NURSERY.

coniferous trees, a second or third defoliation generally meaning the death of the tree. The foul excrement from a tree full of these noxious, disgusting pests sounds like pattering rain drops.

From the depths of hazel copse came the ubiquitous catbird's shrill notes. He called to us at times so naturally under varied aliases as to confuse an expert regarding his identity.

Close to the house was a colony of chattering, scolding wrens and a pair of gentle bluebirds, flashes of azure brightness as they darted by. Each species lived in bird-houses one of the boys nailed to a high pole where the lazy Angora could not depopulate the bird nursery, as he did when their home was in a get-at-able crotch of the apple tree.

Puss Saved from Being a Bird Assasin.

His punishment was to wear the insignia of the Society of Bell Ringers, which saved the lives of many of our sweetest songsters.

The goldfinch, the scarlet tanager, the Baltimore oriole, red winged blackbird and the rose-breasted grosbeak changed even a sombre landscape to one of tropical beauty.

The Bird Trolley Road.

The bird trolley road was unfranchised, and only extended from the sewing room window to the shaded depths of the big elm, its cargo crumbs, seeds, water and similar express matter. The tree terminal was well patronized, but the other end of the route only saw the tamest birds.

STONYCREST



WOODLAND
NOTICE



HILL TOP



WINDMILL
COTTAGE



HILLTOP HILL
COTTAGE



THAT SIREN IN THE APPLE ORCHARD



CHANGING THE FARM
No 3

HOW THE UNASSUMING ACRES CHANGED FRONT.

Farmer's Wasted Opportunity.

As the birds are God's messengers, so should the farmer be the custodian of nature's secrets and above the smirch of saint seducing gold. No man has a grander opportunity to appreciate the infinity of the Creator than he who rises with the lark. Drudgery and grinding care, I grant you, are often his lot, but snow-bound winter days and long winter evenings away from the lure of the town give hours for close converse with book and microscope. The jugglery and jingle of dollars, especially in the marts of trade, in this money grubbing age, at times dwarf, deaden, and almost destroy our love of nature. The farther we get from civilization, the closer seems man's head to the ground, and in potato patch or hay field he often *appears* unmindful of the uplift that comes through communion with that same nature.

"I laugh at the lore and pride of man,
At sophist's school, and the learned clan;
For what are they all in their high conceit
When man in the bush with God may meet?"

In that morning stroll, one of the earliest greeters was the bobolink, rising from the meadow and fairly bubbling over with his melodious song of joy, a song that stayed with me through distracting days.

More rarely, but at earlier and later hours, and in contradistinction to the glorious warble of the bobolink, (the reed bird of the south, or Bob-o-Linkon) came nocturnal "Poor Will's" bid for sympathy, and along the same line, but at more normal hours, the plaintive note of the Phoebe bird and in the twilight hour that wonder warble from one of the sweetest choristers of earth's oft invisible choir, the thrush, pouring forth its evening song.

Bird Temperaments.

We enjoyed studying bird temperaments, and tracing resemblances to the human. In spite of the hackneyed statement that in an animal we find but one quality accentuated; *e. g.*; faithfulness in the dog, ambition in the horse, selfishness in the hog, in birddom were found varied qualities. For instance, the kingfisher showed some distinctive old bachelor traits, fairly reveling in solitude, rarely consorting in numbers, methodical in habit; generally frequenting the same hunting ground, fishing in the same stream, and perching on the same watch tower tree times without number. The rasping, strident voiced blue jay is the best example of the jay-human who egotistically bores both friend and adjacent stranger in car and theatre with meaningless chatter, he who loudly rehearses his unimportant personal doings, gluttonously feeding on half-hearted exclamations forced by courtesy from ennuied listeners.



CROFTLEIGH

STONYCREST



STONYCREST



STORM KING



STORM KING



BREEZEMONT



GOODRICH HOUSE

BRIERCLIFF



GABLES



THE FARM HOUSE

SOME OF THE THINGS THAT HAPPENED TO THE UNASSUMING ACRES

EACH PLANNED TO FIT THE SITE.

The crow impressed one with his self-importance, strutting up and down our fields like a landed proprietor. Very sociable and interesting he proved, and when a young one was captured his antics were almost human. He is a type of the exasperating bombastic and self-sufficient man, the impressionist, life with whom is "caw" and "caw" again. He listens with supercilious and distracted mien, only to endeavor to outdo and overshadow with the account of his own or his friend's doings, in his anxiety to be heard cutting short the finale of your tale.

But for real bubbling-over cheerfulness, give me the chickadee. The snow might drift across the lane level with fence top, and trees and buildings be festooned therewith, yet the cheery "here I be" of this optimist brightened the most forlorn day.



BLIZZARD OF 1888.

Blizzard of 1888. Bird Callers.

I recall that in the blizzard of 1888, when we had to tunnel a snowdrift to reach the outer world as well as to feed stock, the chickadee was our first caller, forced to tap at a second story window-pane for his breakfast. Snow buntings, nuthatches, downy woodpeckers, and tree sparrows vigorously hunted for seeds and grubs in meadow and orchard and also patronized our suet lunch counter nailed to a near by apple tree. Winter seemed to make hopping sparrows and waddling starlings thoroughly dissatisfied with themselves and their surroundings; I fancy the gray skies grayed their lives, as gray skies affect some humans.



THE FARM HOUSE AND ITS NEXT DOOR NEIGHBOR.



HEARING THE WIRE



A SECTION OF THE TWO MILE ARBRETUM BORDER



BUENA VISTA



BEARING THE CROSS



MOON VERTICALLY



SWIRLING RAPID — LIMPID POOL



TORSY TURVING NAUSE



CHANGING THE FARM No. 4

THE FARM HOUSE AND ITS NEXT DOOR NEIGHBOR.

The woodpecker showed the traits of a bustling business man. With untiring energy he circled and re-circled the trunks of our apple trees, leaving them moth-eaten and battered as he bored with almost mathematical precision myriad holes in his search for insect life and sap. It is Munchausenly said by some reckless tarradiddler that the most beautiful markings glorifying the bird's-eye maple are directly traceable to an injury to the tree made by this industrious bird, who, if the statement were correct, might be called an arboreal pearl manufacturer. The scientist solves the enigma with the statement that they are wood imprisoned buds.

The shrill, imperious note of command of the flicker or golden woodpecker (next in size to the crow, and a leader among bird captains of industry) awakened early spring morning echoes.

The quarrelsome side of humanity divided honors among the birds. Pronounced examples were seen in the frowsy-headed, scolding wren, the noisy, pugnacious, bloodthirsty English sparrow and the fighting shriek or butcher bird who brained alike both sparrows and field-voles.

Kinglets of the evergreens were real kings in their province, near neighbors to the redstart, another of our sweetest warblers. The fitful, darting, uneven, swirling flight of the barn swallows graphically pictures the forceful yet purposeless man who takes long and roundabout journeys to go little distances in the realm of finance and barter, unable to see the shorter cuts.

The lilliputian, hawk-like, screaming, bow-winged chimney swifts were continually in flight, their only alighting spot seeming to be the chimney side. At times their progeny disturbed our slumbers with ghostly flutterings on the hearth at midnight's witching hour.

In the highest peak of the granary roof nested that awkward booby of the bird race, the barn owl, whose strangely weird screeching of "to whit! to whoo!" so different from all other bird language, broke the stillness of the summer nights, preceded often at dusk by the sharp eerie shriek of the night hawk, which came out of the ether like the cry of a lost soul as he circled aimlessly overhead.*

Bats.

Yes, there were plenty in one of our outbuildings; harmless creatures, in spite of their swift and startling comings and goings and occasionally hair-raising poachings in the tabu realms of porch and bedroom, in their search for mosquitoes and moths.

Pirating Birds.

Bird thievery was best exemplified in the nest-stealing cuckoo, less parasitical, however, than his European cousin, and the love of companionship in the polygamous cowbird who perched upon and fed near the cattle, and was another nest-appropriating vagrant.

*The night hawk is in the front rank of the list of crepuscular goatsuckers.



FIFTEEN SHEAVES FROM THE GRAIN FIELDS.

The cuckoo synonymed perfectly among his fellows of the avian tribe that type of man who, no matter how many or how close his relatives, seems always a stranger among them, sharing not an attribute of his forbears, furnishing to some additional proof of the theory of reincarnation.

The Songless Bird.

Interesting and fascinating because of its delicate tiny form and swift motion was the songless bird, the ruby-gorget-throated hummer, whose spitfire squeak oft betrayed his presence. He quaffed deep draughts of the honey hidden in the floret's deepest nectary, fit for a king, his favorite browsing field the Japanese Halliana honeysuckle that covered our side porch with its profuse continuous blooms and green-embowered the entrance to the dining room used by the stable help. The red-eyed vireo and the siskin haunted the orchard.

The red-headed sapsucker, who unwittingly shares his sap banquet with bee and humming bird, and the hermit thrush, were among our latest bird callers ere they took up their journey southward. As in mankind big crowds often mean jolly companionship, so enormous flocks of birds bubble over with the joy of living as they seek the air lanes through which they migrate at high altitudes for thousands of miles twice a year, instinct directing their course with unerring precision.

I soon learned that the singing birds of May and June, the *real* chorister months in birddom, were absolutely silent during the moulting season of July and August, though the robin and some others were again in voice ere wintry blasts drove them either into the deep woods or farther south. Birds, to whom is given the freedom of the skies, have but faint kinship with the beasts, apparently belonging to other realms, and man's efforts to fathom bird lore have ignominiously failed—indeed, seemingly few try to understand the fascinating chorister pages in nature's book.

Battle Royal in the Orchard.

Believing firmly in a generous fruit diet as a bulwark against disease, our plantings, in addition to the back log of apples and pears, were large and varied. The old saw: "Two apples a day keep the doctor away" was in our unwritten decalog.

Many were the discussions over the different fruits; whether one could tell by taste the red Cuthbert from the golden queen or the Brinkles orange raspberry; the best eating and keeping pears and apples, or pick out a seckle and a Bartlett pear tree when the orchard was leafless. Dwarf fruit trees, the playthings of the orchard, were soon uprooted and given to owners of town yards while we used sturdier, more prolific, and profitable plantings.



A CLOUD IN THE WEST



A FARM LEAK



THE PROFITLESS SCYTHE



THOSE AGGRAVATING FENCE ROWS



SPACED SO AS TO AVOID CONFLICT



A BIG CROP

HAYING.

Apples.

Success? That depends upon the point of view. At any rate, we had the keen joy of living close to nature, and were all in perfect health. The profit in dollars varied. One year I recollect we had over four hundred barrels of apples, but that year everyone had apples in profusion. There was only sufficient cash return to pay the commission merchant's charges, the freight, cost of barrels, and a few cents for the pickers.

Worthless fruit abounded, as in most old farm orchards, but grafting and re-grafting, coeval with our conquest of the San José estate, gave far better results.

Some of the thriftiest wild apple seedlings and occasionally the least desirable of nursery-grown trees were grafted with seek-no-furthers, northern spys, Baldwins and Roxbury russets, Rhode Island greenings, wine sap, king, and snow apples, and Newtown pippins.

False Economy in Tree Planting.

The trees had been planted for from twenty-five to fifty years and were a monument to the false economy of the farmer who, having broad acres, yet crowds his apple trees to twenty-five foot spaces, and in less than a score of years has a mass of interlocked branches, consequently undersized and mildewed fruit. With this lesson before us, all new settings were spaced from fifty to sixty feet, and trees planted opposite only in every other row, giving still more room for growth.

Dynamiting the Soil.

Before planting the orchards, every twenty-five feet and three feet underground were set dynamite cartridges. Electrically exploded as one battery, they thoroughly disintegrated the soil and freed plant food enslaved for centuries. In winter the trees were girdled with newspapers to balk the girdling rabbit.

Many a farmer is ignorant of the fact vouched for by some authorities that the cedar is the enemy of the apple tree, and that the crisp, tiny, brown, fragile, hollow cedar apple can propagate an apple blight; therefore he who hedges in his fruit trees by wind screens of protecting cedars harbors that which may blight and curtail his apple crop.

We scraped the rough, loose, scaly bark from the trunks of fruit trees, being careful not to dig into the quick, and gave them thorough scrubblings with greasy water, including dog washing suds. This disheartened and generally annihilated the most voracious bug, and helped to grow a fine, smooth, healthy bark.

Seedling Pound Apple.

New apple trees were set out for variety. The former owner's plantings had been russets, Baldwins, one sweet apple, half a



WOODS



THE METAMORPHOSED FARM HOUSE



THE HALL IN BUENA VISTA



MUD COSSIES



PLACIDITY



SHACKS THAT EDGE THE APPROACH TO BREAKNECK HILL



WHEN GOLF IN AMERICA WAS YOUNG

FROM SHACK TO MANSION.

dozen northern spys and three crab apples. In the front yard, close to the house, was a seedling apple tree at least twenty-five years old that deserves an epitaph, especially as by encroaching on its roots in enlarging the farm house we unintentionally killed it. For several seasons it bore bountifully apples weighing a pound or more each. They had bright reddish skins streaked with green, were deliciously tart, and fine keepers. The rare combination keenly interested and completely phased every pomologist to whom I submitted specimens, including my old friend Dr. Hexamer who credited me with owning *the apple of the future*, and I had just completed arrangements for its propagation in a large way when it died. *A second Concord grape success* was lost to the world when that nameless seedling pound apple tree died unscioned, and failure number ten, a most humiliating one, went into the record book.

Pear Tree of 1632.

We sent a special agent to the Governor Thomas Prence homestead at Eastham, on Cape Cod (the Thomas Prence who came over in the good ship *Fortune*, and was later one of the early Governors of Plymouth Colony) and obtained scions of that *oldest pear tree in the United States*, as on three former occasions. Affidavits from "that oldest inhabitant" assured us that they were taken from the tree brought from England in or about 1632. They grew and thrived, and though the fruit was small and gnarly, the charm of history and romance surrounded it, for undoubtedly from the same stock ate John Alden and Priscilla Mullens, that doughty warrior, Myles Standish, and many others of the little company who paid that first memorable visit to New England, December 22, 1620. We christened this pear the *Mayflower*, as eating it carried us back to the days of cone-shaped hats, wide collars and knickerbockers; to the time when little things were mighty things, in sharp contrast with these latter days when mighty things are to us little things. Newly awakened forces advance, vanguarded by electricity and radium, unknown, sleeping giants then, but today though barely awakened more than equal to the enormous burdens that man in the arrogance of his divine right to rule matter is heaping upon them.

The Site Makes or Ruins.

The same farmer who plants his apple trees close together often opens both house and barn gates across the highway and builds his home unpleasantly near it, barns and outbuildings sometimes really edging the dusty road, all false economies, forgetting that if the house is set well back and on rising ground, if only in a rough pasture lot, his property is lifted beyond ordinary farm competition, and can be made extremely attractive and more valuable at small expense. I have in mind two ordinary houses that I moved back from the highway a couple of hundred feet into the centre of a rugged hillside at a cost



READY FOR THE CURTAINS

AUSABLE CHASM JR.



DEATH THROES



CHAS. CHASM JR.

STONYCREST INGLE



THE BUILDER FOREMAN

ANIMATES AND INANIMATES.

of \$300 each, and thereby increased the value of land and buildings one hundred per cent. Even the widening of a road in front of a property enhances its value and desirability. As simple a thing as setting back a wall two feet I found not only broadened the sidewalk but added materially to the appearance and value of a house.

The vital and expensive error of building a house in the wrong location is frequently made. A house built on low land is generally sheltered, often hot, and *always* damp.

Fruit Crop.

The fruit crop on the old farm began and ended with apples, save for a couple of crooked pear trees which yielded a half crop of discolored, nubbed, gnarly fruit; half a dozen fine peach trees—never have eaten as good peaches since—and a small patch of raspberries.

Peaches.

The peach crop from the new plantings averaged for several years about fifteen hundred baskets of highly colored luscious fruit.

A long, tight board fence facing south inveigled us to distort and mutilate with knife and pruning-saw peach, nectarine, and pear tree along espalier lines, and cordon and fan-grown trees fastened against this fence matured their fruit ahead of time, boosted into ripening by old 3x6 hot-bed sash, braced lengthwise aslant the fence top.

The short-lived peach trees were set between the long-lived pears, which outlive their planters for generations unless neglected or overtaken by disease; indeed, even the stalwart apple tree crumbles to dust years before this seemingly weaker sister, the pear, ceases to yield. Our pear gamut extended from Clapp's Favorite, that rotted at the heart if left on the tree, to the late ripening Kieffer, and between times the Buerres, including the luscious Bosc, also the winter Nelis, sell at a high price. In apples we prolonged the season from Summer Red Astrachans to wine saps and Winter Spitzenbergs.

Plums.

Plum trees were planted in the poultry yard to gain the aid of the industrious hen in the struggle with that mightiest of monopolistic trusts, the insect world. We fought at five a. m. or earlier the curculio, nicknamed the little Turk, because in depositing her eggs she stamps her mark of ownership, a Turkish crescent, on every plum within reach. A sheet was spread each side the trunks, and often before sun-up, while the night chill is still in the air so that she could neither cling to the tree nor fly away, we tapped with mallet on a screw or spike driven into the tree trunk, and, lo, Mrs. Curculio was soon food for an extraordinarily hungry hen or the fire. Infective monilia and shot-hole fungi were fought valiantly with poison-charged squirt guns. Quinces thrived when we checked the bombardment of quince curculio, borer, and bag-worm.

SNAP SHOTS OF LIFE ON THE FARM



HILLCREST FARM

OUR HOT BED SASH GREENHOUSE



THE DOORYARD



THAT RESTFUL VIEW

SEEDLING POUND APPLE TREE



HEDGE ROWS



CHERRY LANE

THE ARBORETUM'S SECOND YEAR

SITE OF BUENA VISTA



ARBORETUM



THE FARM LANE



THE QUADRANGLE



ONE SECTION OF OUR TWO-MILE FLORAL BORDER

The farmer finds no exception to that law confronting mankind, the survival of the fittest, briers vs. flowers, tares vs. grain, insects and fungi vs. vegetables and fruit. Much to our surprise we found that the long yellow papaw and plum-like astringent persimmon thrived.

Cherries.

Cherry Lane which led to the pastures was lined each side with black eagles, black Tartarians, Governor Woods and yellow Spanish.

Wild cherry trees were left in the hedge-rows (unless they shaded other planting) as a spread net to segregate the tent caterpillars for our kerosene torches of destruction. We asked for yellows, tried successfully the alliteration "potash paints the peach," cut the blighted branches of the pear trees and sprayed Bordeaux mixture and other solutions from a horse-barrel-cart and pump to the very topmost twigs of our fruit trees to destroy fruit and leaf blight.*

Grapes.

Grape settings numbered hundreds, possibly thousands, of varied kinds, and judicious winter pruning before the sap started gave a prolific yield of Niagaras and Concords which with us rarely mildewed, although the former under conditions is a mildewer, but the Rogers seedlings in our climate were far from immune. Roses no longer satisfied the rose bug. The grapevine was to his special liking, and his inroads, as well as that of black rot, the active grape-leaf-hopper and the spotted pelidnot kept us destructively busy among the vines. Paper bags protected, and thinning grapes in cluster and bunch vastly improved the fruit.

Rough, grape-vine-embowered and crude-angled cedar, walnut, and chestnut pergolas lasted longer than those planed and painted, curved and jig-sawed, arched arbors made and set by the carpenter, and were far more appropriate and picturesque. The first cost was less and the repair bill nil. They made fine dog-trots, while the grassy space between centred with a bird font answered for a crow-walk and bird rendezvous.

Small Fruits.

After investigation, the Wachusett was decided upon as the semi-thornless blackberry best suited to our needs. Some gooseberries were large as damson plums; the red, white, and black currants grew fairly well in the shade, and made rare preserves, but the wild barberry, when in flower or fruit a most ornamental shrub, gave the best jam. There were dewberries, or running blackberries, whortleberries and strawberries of varying degrees of sweetness, but few of the latter as good flavor as the wild strawberry, also a wealth of

*Copper sulphate, six pounds, lime, four pounds, to thirty five or forty gallons of water was the formula.

ROBIN'S NEST



ARBORETUM AND BARNYARD



OUR FLOWERS



THE BARS ARE UP



ONE CATTLE YARD



THE HORSE OF COURAGE

RAIN COMING



VIBURNUM Plicatum
SILO AND CATTLE BARN



TOPSY



HILL TOP

ROBIN'S NEST ON THE MOWING KNIVES.

elderberries, red, yellow and black raspberries, or black caps, and bayberries, from which we make the Christmas "bayberrie dyppe." Our only bog was planted to cranberries from stock sent us from Cape Cod.

Tie and Pole Forestry.

We found the care and propagation of trees as outlined by the United States Government interesting, and the farm library was added to by forestry papers and booklets as well as Governmental maps showing the topography and boundaries of our State and country. As a business project, in view of the dearth and high price of the wood of black walnut and cherry, we planted hundreds of small trees of each in the pasture land, roughly railing them from cattle. Someone, sometime, should reap bountifully where we sowed.

An acquaintance owning an extensive estate edging one of our railroad lines has set out twenty thousand or more locusts and chestnuts close to the track, a pole and tie proposition, but unless disease in the chestnut is conquered, that end of the project is wrecked, though the locust must in time yield good returns, for who or what could injure a locust?

Ornamental trees on the farm were few compared with the five hundred and more species indigenous to this country and included chestnut, hickory, sassafras, tulip, swamp oak, maple, aromatic black birch and sycamore. In shrubs there were half a dozen lilacs and a couple of spireas, one of which had a magnificent golden leaf in early spring, but lost its coloring later in the season, as do the ordinary copper beeches.

Defeat by the Insect Trust.

In the six acre blackberry patch was lost a mighty battle. We controlled at first the spring and fall orange rust that in a year or two made heavy inroads on this crop, while the peach and quince borers found death at the end of a wire which, spite of soiled clothing and bruised knees, was pressed into his hiding places, usually found where the trunk edged the ground or an inch or two below the surface. By like method was searched out and destroyed the apple borer in his bark-hidden lair.

The asparagus beetle, the raspberry borer, and cane girdler, the potato bug—in fact, all the various enemies of the farmer that flew, crawled, or bored—we fought tooth and nail with Paris green, hellebore, Bordeaux mixture, and other insect and fungi destroyers.

Purification by Fire.

Purification by fire saved foliage, bloom, fruit, and plant, whether it was currant worm, rose bug, or infected wood of pear or peach or vine of raspberry, blackberry, and grape that fed the holocaust and when our twenty years of apprenticeship at farming ended

we knew in a fairly satisfactory if amateurish way fruit, milk, trees, flowers, farm stock and utensils, in fact, almost everything pertaining to farming, except how to manage that unknown and exasperating quantity, farm help.

Farm Help.

Why farm help or the keeping of it proves a bugbear is a question that will not down even with the up-from-the-cradle-farmer and the amateur is generally nonplussed.

Birthright Sold for Pottage of the Fields.

The death-dealing triumvirate of drouth, disease and insect life can be circumvented and controlled if not entirely vanquished, but the farm help problem is rarely satisfactorily solved. If you let the farm on shares to avoid the cares of husbandry, you'll pocket your pride and be merely a tenant on your own domain, possibly dictatorially told which fields you may enter and those in which you must not trespass; have the privilege of paying for new machinery and helplessly seeing it broken up, and when the three years' lease has expired, seven to ten chances your soil has been impoverished, your cattle made non-producing, and tools and buildings left in poor condition. No! Be a prince, living in your own castle on your own estate if it's only a bungalow and two acres, rather than a vassal on a thousand acres. But if you own a large farm, pasture most of it, and in part with horse boarders as long as horse boarders exist. Let the trees grow, trimming when necessary, keeping down grass, weeds and underbrush with a flock of sheep or Angora goats. Farm lightly; take annoyances philosophically, and enjoy Arcadia to the utmost. A farm run in this way without expensive buildings to keep up, with large road frontage, and near a growing town, rapidly increases in value, and the carrying charges are simply nominal and more than offset by your summer rent.

Marauder Versus Marauder.

As in California especially they are using insect to fight insect and stamping out disease by letting loose some bitter enemy to feed upon it, so in time the microbiologist will discover the insect or fungus that will overcome the chestnut disease, as well as the hickory blight which is slowly sapping the life of another of our prolific nut trees and destroy the gypsy moth, elm beetle and other enemies to vegetation that swarm in mighty hosts in field, orchard and forest.

Scattered over the farm were nut trees by the hundred, monarched notably by a big five-trunked chestnut that we christened "The Emperor," after which was named the chestnut lot.

There were hickories, pig nuts and shellbarks, butternuts, pungent black walnuts, and copses of hazel or filberts. To this list was added the little chinquapin, also the large Japanese chestnut that, low-

growing and thick headed, makes an effective screen, and has at present no fungus enemy. The alder-leaved trailing chestnut was also successfully grown.

Hardy English Walnut.

A farmer sold us half a dozen walnut trees that he had raised from the nut of a hardy English walnut, and these gave after fifteen years' slow growth that rare product in our climate, a thin-shelled walnut of large size.

Rabbit Hutches and Squirrel Cages.

In a corner of the barnyard were the rabbit hutches against the fence barrier, with underground corridors boxed in wood, covered with galvanized wire netting to prevent their digging out. Near the wire squirrel-house containing half a dozen tame flying squirrels, and built large enough to give them ample freedom, was a small pool made by the overflow of a cattle watering trough, which, by the way, was a slightly damaged solid porcelain bathtub with square ends, priced at \$500 but bought for \$20. It weighed eight hundred pounds, and made an ideal year round trough for the cattle, its white interior showing the slightest befoulment and easily hosed. A fir tank fastened together with iron rods cost nearly as much, soon began to leak under the July sun and in a few years completely rotted, and a brick cement lined affair never looked as spotless as our bathtub trough.

A portion of this little pool in the barnyard, protected from cattle intrusion by a wire fence, was generally alive with turtles, the largest of which were tethered. They were taken from the duck ponds, from the big snapper, with his horny, shingled hide, guilty of many a duckling or gosling murder, to the daintily painted little black and yellow spotted lady-bird-crawler no larger than a half dollar. I recall one old moss-back snapper on whose shell was scratched the date 1849, proof by inference not only of turtle longevity but that someone hunted turtles on or near our farm sixty or more years ago.

Catch-All Shed.

We built what was labeled a catch-all shed, with a driveway through its centre to accommodate cumbersome implements. In this way ploughs, harrows, ponderous scrapers, etc., could be tumbled off the stone boat or sled and dragged out of sight. Here were stored several more or less useless experiments; for example, the iron stump rubber for uprooting grass tufts that dotted the lowlands, and that proved a failure, even when drawn by a double yoke of cattle, who were unable to budge the tiny rootlets, so that final resort was had to Patrick and a spade. It wasn't a total loss as it made a fine subsoil upheaver.

THE COT



YES - IT WILL BE A HOUSE



TOO SMALL



ADDING TO THEIR DOMICILE



POLISHING 'S' GROUNDS



BEDROOM AND DINING ROOM



AT HOME

THE LUSTY YOUNG HOMESTAKERS.

An emergency corner was devoted to chains, rope ends, straps, old harness, ox yokes, etc., while duplicate tools and odds and ends decorated wall and collar beams. On the latter were stored extra shafts—a grand-dad curved back and dashboard, carpet-lined sleigh, and other hundred and ones.

Circumventing the Sagging Gate.

The problem of the sagging gate fastening was solved with a Vermont farmer's device. To a heavy three-inch jagged edge pronged staple with five-inch opening made of three-quarter inch iron (two and a half inches above its centre round and two and a half inches below the centre square) was sprung a piece of half-inch flat iron about five inches long with square aperture. The round portion of the iron staple being of smaller diameter than the square, the flat piece turned easily, but when slipped down on the square fitted tightly and held the flat five-inch fender against the gate, securely fastening it.

The Boy's Cabin.

The shack built by the younger boy was on the same ridge and had the same extensive outlook as the farm house. The boy builder named it "The Cot," in honor of his grandsire's roof-tree at Fresh Water Cove in Gloucester, Massachusetts, built before that "war that tried men's souls."

Two berths, a kitchen, a rear porch, a front veranda, and a doorway just low enough to hit a grown-up's head, were what the cot inventoried. The lusty young homestaker who built it, from supporting posts to Boston-shingled-ridge, even if he lives man's allotted years, will never again experience such joy as he had in that first house warming, nor feel greater pride than when he surveyed his first wash. Years after, a heedless farm hand let a brush fire get beyond control, and The Cot, as well as the barns which once sheltered our prize Dutch belted Taurus and the rest of his kind, who stood in commendable alphabetical order from Arabella to Zoe, went up in smoke, a calamity that covered an entire page in our farm record book. It was the only brush fire ever started in my absence and insurance had lapsed the week before.

Toddlers' Garden.

The Toddlers' Garden meant absolute safety, entertainment, and health to the two to four year old toddlers. It was forty feet square, fenced and gated with close meshed wire, and screened with a three foot high privet hedge; in one corner a roof and four posts, in the centre a sand pile, a bit of greensward, and a few sturdy, flowering plants. Close to the house and in plain view of a dozen or more windows, it gave the tots the freedom craved and the contact with Mother Earth needed, and completely solved one of the most aggravating problems in the bringing up of the child.

Wayside.

A brush fire razed "Wayside," that quaint little shack with attic-stored heirlooms, from the great four-poster, and its convenient companion, the trundle-bed, to the Washington table. It also served once as the dog on which we tried the patent wooden-board-lath, advertised to take the place of the usual mason's lath. One of its weak points was that unless the knots were shellacked they showed through the plaster and stained the walls much more readily than the ordinary lath. It also had less clinching strength. The south veranda was covered in four months by that wonderful climber, the Kudzu vine, which lengthened forty feet the first season, and on its north side, where the winter sun could not burn it, the English ivy lived through the coldest winters. Pinned down with pegs this same ivy greened deeply shadowed banks and tree-dripped spaces.

Our Mushroom Venture.

The basement half-above-ground-cellar of Wayside was double-doored and double-windowed, and shelved and binned for storage of vegetables. Here too were kept the tub-plants, among them the beautiful, purple-blooming, tropical-leaved hydrangeas that lined the drive in summer, the bay trees that cornered the house, the brilliant scarlet Hibiscus cooperii, and an oleander twelve feet high, a legacy from one of our forbears. A half dozen fig trees also found a hibernating home in that elastic vegetable cellar, and one corner was partitioned off for the growing of mushrooms in a modest way which required the use of a small heater. The inevitable and essential clutter corner held its usual modicum of unsightly but useful articles.



THE BACK LANE.

In Wayside was the office, where I conferred with farm help and kept dairy and expense books. The veranda afterward added proved a wise expenditure and was well patronized.

Housing Farm Help.

The lounging and sleeping quarters of the help were also in Wayside, and here they had their meals when the force was large, a man cook being employed.

An ante-room was turned into a semi-sitting room. In it were a fireplace, lounge and easy chairs, a large table, well covered with agricultural and other papers, and hanging shelves filled with a small but instructive farm library.

Farm Scrap Book.

There were scrap-books regularly indexed, each devoted to a different topic—animals, crops, utensils, farm economies, and the like,—for which some of the help were interested in collecting items. On the walls hung pictures of animals, prize vegetables, etc.

Above this sitting-room were bedrooms, reached both from without and within.

A Ciderless Farm.

An orgy caused by the use of hard cider decided me to "mother" the cider into vinegar, sell the cider-press, and thereafter feed the surplus apples to the pigs or give them away with the understanding that they were not to be used for cider. Vinegar making, before the German twenty-four hour process was discovered, we found a long story. After the half filled barrels were given a bit of "mother" (which it took two years to mature) it was another year before vinegar spelled cash.

Wayside annex contained a thoroughly warmed tool shop fitted with carpenter's bench, anvil, forge, lathe, etc., and sometimes after an absence of months borrowed tools came back because they were indelibly marked "Hillcrest Farm" on metal and wood. Oil kept them from rusting when not in use.

The Tree House.

Close by Wayside grew the tall chestnut in whose spreading top for a dozen years, straddling its highest crotch and defying the wildest storms, clung the tree house of the same youngster who planned and built The Cot.

The Back Lane.

Yes, one edged our farm. It had an individuality of its own. For years the neighbors had called it "Break Neck," "Sheep," or "Hog Hill," the usual names for a back country hill. Narrower than the highway, the tree tops sometimes came together and skill was needed by the passer-by to avoid cat-briers and blackberry vines that hedged it. Here the real freedom of

ONE OF HILLCREST FARMS BOUNDARIES



FALLS THAT REALLY FALL AND BOIL AND SURGE AS THEY LEAP ONWARD TOWARD THE SEA



IN THIS WE BUILT THE CROWNEST



SWIRLING OF THE HALF FROZEN WATERS



OUR WILDWOOD



FIVE VIEWPOINTS ON THE FARM.

country life had fullest sway. In early spring its borders were yellowed by the spice bush, and in the fall the bloom of the yellow witch hazel brightened and the stag-horned sumach reddened each rocky weed-grown hillock. Occasionally some city friend of pronounced sylvan tastes camped out in one of the three or four shacks that bespoke man's effort to people the wilderness of thorn, thicket, and wild frost grape that in wanton growth crowded the narrow way. Another world was the back lane and a stroll through it part of our Sunday program both summer and winter.

God's First Temples.

On a rising knoll centreing our biggest hillside grew a double score of majestic swaying pines instancing again and again that "the groves were God's first temples."



OUR ICE FIELD OUT OF COMMISSION.

Our Woodland Paradise.

It's but two miles 'cross country to the wood lot, for what farm is worthy the name without such a lot? Its approach is through a rutty, scratch-gravel, rocky, brier-grown wood or ox-road, a right of way across a farmer's cow-yard and someone's pasture. But the wood lot stands for a blazing fire of birch, chestnut, hickory and maple, while its fauna was a continual surprise. It was a woodland paradise for partridges, woodcocks, gray squirrels, and rabbits galore. Its glades never echoed to a rifle shot, nor was the steel trap and wire or horse hair snare of the farmer boy ever allowed within its forty acres surrounded by a poacher-proof, ten foot high, galvanized wire fence, of close weave at the bottom and arched outward at the top.



GIPSY SPOT AND CHILDREN



WINTER



A BIT OF
THE TWO
MILE FLORAL
BORDER



PLAYING AT WORK



THE HUMBLE SERVATORS

DETAILS OF HUSBANDRY.

Deer and Trout.

The workmen who built the fence enclosed, quite by accident, a pair of beautiful deer. Safe from the hunter, they enjoyed the freedom of the woodland, and were one of the show sights of the farm. Its trout stream in season always insured a string of non-liver-fed fish. A walk 'cross country to our wood lot was a favorite jaunt.

Farm Barriers.

Neither stone wall nor wooden fence circumscribed house yard or lawn; when necessary, barriers were formed by hedges, using the California privet as our standby, though there were others also through the length and breadth of the two hundred and fifty acres, among them a glossy-leaved laurel-willow, whose rampant growth was made compact by severe pruning, also spruces and hemlocks, whose branches, thus compelled to sweep groundward in graceful curves, formed a close mass of green foliage all the year. A row of purple beeches kept well within bounds and rounded into shape was as beautiful as rare, but like the oak they are dead-leaf trees. The thorn-branched honey locust in one field and the osage orange in another, pruned as hedges, prevented our sheep from straying, and a woven wire fence hidden in the foliage kept out marauding dogs. We used both hemlock and spruce, in preference to *Arbor Vitæ*. In a corner of the garden was a sweet brier hedge which perfumed the air for fully one hundred feet, also a glorious *Rosa rugosa* barrier, and near the latter a clump of fine-fibred Japanese privet pruned into examples of topiary art.



THE SUMMER STREAM—AUSABLE CHASM, JR.



THE WINTER TORRENT.



FALLEN GRANDEUR.

All hedges were planted in double or triple rows to make compact growth and allow of artistic pruning. Many shrubs were readily propagated by thrusting the prunings into the ground in the shade of the shrub itself, and transplanting in the open the following season.

Several beautiful effects in privet hedge we obtained by the use of the ogee curve on a down grade corner, in this case planting the tri-color. A very docile hedge is the privet, America's general substitute for the English yew. It was forced to assume many more or less attractive, and, in some cases, grotesque shapes in an effort to get out of a rut, a characteristic which often led to unnecessary and possibly unwise but interesting expenditures. The sloping top of one hedge was pruned to spell Hillcrest.*

Privet edged one side of a set of entrance steps and was trimmed to match each step outline, it also solved an oft-met horticultural problem by its thrifty growth under shade. Another credit for privet was gained during the past winter by the delicately-fibred Japanese variety that stood with impunity an occasional bath of salt spray.

Barbarity of the Wire Barb.

In early farming days we ignorantly used cruel barbed wire fences, but a wounded colt convinced us there was a better way, and thereafter squared and knotted galvanized wire barriers were substituted; these were graduated upward from a four-inch to a ten-inch mesh and scantling nailed atop the posts, making the fence plainly visible to the galloping colts. When using trees as posts for fencing the wire was stapled to wooden blocks nailed to the trunk. As it grew, the wood moved outward, and trees were uninjured.

Climber and trailer, as exemplified in woodbine, honeysuckle, rambler rose, and the wistaria, one of our earliest and latest bloomers, beautified the ugliest wire fences. The more delicate climbers of sparse foliage when trained on sun-exposed wires sometimes shriveled and died.

Roads and gutters were important factors in our effort toward Arcadian living, and to them were given much time and thought. Weeds growing in cobble-stone gutters along the highway were a problem, but a dose of kerosene oil from a watering-pot eliminated the tedious work of pulling. One application was generally as efficacious as the kill-weed liquors.

Splitting Raindrops.

Stone gutters on farm roads were dispensed with by dumping and spreading on the *centre* of all steep inclines *trap rock*, mixed chip and pigeon-egg sizes. In this way the falling raindrops scattered,

*By close to the ground pruning we successfully transplanted a fifty-year-old privet hedge some thirty-five years ago and it is today a compact thrifty wall of verdure over eighty years old.



THE RAPIDS IN OUR RIVER



HILLCREST FARM



GLIMPSES of STONYCREST

SECTIONS THAT ARE BEING
UNDEVELOPED



SWIRLING RAPIDS OF OUR RIVER FRONT

so that even in a fairly heavy shower we had no washed roadways, for the rain trickled between the small stones, leaving roads and gutters practically uninjured.

Our River.

The river that bordered the farm and the brook that centred it both had attractions. Damming, controlled by a suitable spillway, made possible both fishing and canoeing on a small scale, the pond obtained being about six hundred feet long and one hundred and fifty feet wide. From it we filled the ice house, built to include a storage room with sawdust-packed walls for keeping fruits, vegetables and sides of meat. As I recollect, the cost of stocking it was about \$3.00 per ton, convenience being its largest asset. Shrubbery and vines screened it from the sun.

Where the river dashed through a deep ravine, we hung a gallery from the cliffside, supported by iron pipes sealed with melted sulphur poured into holes which our man-of-all-work drilled in the rock face of the cliff, as shown in the summer and winter photographs. This gallery was floored with two-inch fir planks laid with half-inch spaces to retard too ready decay.

Suspension Bridge.

The rapid stream was spanned with a suspension bridge, the supporting side chains of which were inset in the ledges, and for a quarter of a mile along the rugged shore a footpath skirted the foaming rapids. On the east side a high rocky cliff towered almost perpendicularly for one hundred feet, its face broken by projecting crags and huge boulders, while at the foot grew tall evergreens.

A Forest Cathedral.

This picturesque path led into an amphitheatre or forest cathedral of lofty hemlocks. A friend built a concrete ford edged with cement stepping stones across this same river which for heavy trucking was preferable, less expensive and more durable than a bridge.

Not far from our Ausable Jr. was the farm brook which gave an eagerly improved opportunity for a trio of small duck ponds at descending levels, where one of the boys rigged up a miniature water-wheel. In one pond rose a wee bit of an island on which was a duck house. These shallows provided safe recreation for the young folks the year around. The gold fish with which we attempted to stock it were foully murdered in a single night. The criminals? They may have been that 1849 snapping turtle, our water fowl, or piratical members of the finny tribe—at all events, gold fish were never again placed in pools fed by unweired running streams or left without care.



BITS OF THE TWO-MILE FLORAL BORDER

The Tornado.

In our twenty years of farming I recall two terrific tornadoes which uprooted and even snapped asunder many mighty monarchs of the forest. It took months of hard labor to clear woodland and hillside pastures after a five-minute gust of one of these devastating storms. It is singular that among thousands of uprooted trees I have seen in this and other storms, not one struck a house, though often they fall when close to a dwelling.

The Play Side of Farming.

But it was by no means all work in Farmarcadia, as shown in snap-shots taken by the boys, which include toboggan slide, pond, snow-houses and snow men, play-houses, sports, and pets of all kinds. In the meanwhile the arboretum grew apace, from a few struggling shrubs to a two-mile flowered border. In this the old farm begins to lose its identity, slowly merging into The Hillcrest Manor Park of today, an evolution that required over half a score of years for its accomplishment.

Farmers' Grange.

In closing the chapter in my life wherein I really farmed, I would fain pay my respects to the Farmers' Grange. Deeply interesting were these dueling grounds where green striplings, with the courage born of inexperience and ignorance, but often with cabal-headed persistency, threw down the gauntlet to bronzed warriors of hay and potato fields. It must be admitted that in these bouts those to the manor born were generally victors, though at times some new fangled agricultural tool, a prolific seed corn or luscious melon, and an improved method of cultivation brought to the attention of the Grange by some amateur spendthrift-enthusiast finally won out.

Alfalfa Road to Independence.

I recollect one chap who advocated alfalfa growing, and had all the farmers by the ears with his wonderful tales of the fine crops he grew for cow, horse and poultry fodder. He explained that the successful growing of alfalfa consists in keeping weeds out of the soil by repeated cultivation prior to seed-sowing, which, in our climate, should be about August 15, and in supplying plenty of lime. Experience taught that an interesting and important item is the inoculation of the soil at the rate of three bushels to the acre with soil which has already grown alfalfa. It must be sandy or gravelly loam, with no rocks nor clayey sub-soil, a difficult condition to find in Hillcrest Manor. Planted thus the roots delve sometimes to a depth of twenty feet or more, and the field will last a lifetime, yielding, under favoring conditions, three or four crops each year.

This was one of the many experiments of the amateur which made the men of the soil at times give even a city greenhorn his due.

In these winter evening meetings, a simple discussion often developed into a battle royal over the method of running a silo; to weight or not to weight, whether it was wise to feed horses on ensilage or injurious to man to feed pigs on brewery grains, what were the best paying crops, also irrigation and crop succession, what kind of green soiling was the best and the correct proportions of lime, muck, and nitrates to make a sand dune rival in fertility the drained river bottom lands.

To enter the realm of insect fighting, including the elm beetle and gypsy moth, as well as diseases that are killing the apple, peach, pear, chestnut and walnut trees, the proper scraping and tarring of trees, etc., was to run the risk of prolonging the discussion until morning milking time.*

The County Fair.

The County Fair was the climax of enjoyment, prepared for and looked forward to for months. The farmer's calendar in many, to him, important matters dates either forward or backward from the County Fair. In it the farmer's family also have some slight recreation, the wives and daughters, who feel the heavy burden of house chores and farm housekeeping, the monotonous grinding routine of which brings many to the verge of insanity—indeed, statistics are said to prove that the inmates of insane asylums include a large percentage from the farm. A brain saver and a brain builder is the change of thought and ambition to excel that come so largely through the County Fair. All hail to it and its prizes, rewards of merit and honorable mention, desperately fought for and on rare occasions won.

Serious Symptoms of Building Mania.

Thus in my musings, I trace the beginnings of Hillcrest Manor when it comprised but potato and hay fields and wild pasture land, with a single homestead crowning the hill. The building mania even then throbbed in our veins and tugged at purse strings.

The Last Stand Against the Insect World.

The yellows began to claim their prey in the peach orchard, and apple blight, assisted by the predatory coddling moth, scarred fruit and limb and sapped the heart's life from many a noble tree. The black knot seemed to grow again in a single night on plum and quince, and our hay crop was being steadily throttled by Canada thistle, white daisy and wild carrot. But *emancipation was dawning* in the rapid growth of shrubbery, trees and vines on all building sites as well as in the arboretum. That two-mile floral

*Tanglefoot as a barrier was voted a better insect discourager than bod lime which sometimes blights the tree.

ribbon took on added beauty, and, as the years passed, seemed to fairly *shout development*.

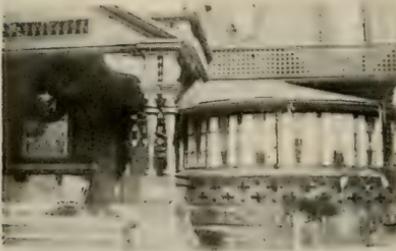
The time was ripe, and I began in earnest to work out my villa dream, closely identified with which is the arboretum, tying our Farmarcadia together.

Does it pay to have no recreation gaps between the working hours, hours that crowd each other hard in the mad rush to accomplish? A genuine burden-bearer—one forced by circumstances to be a pack-horse-treadmill-worker—loved to quote the well known lines:

“Better fifty years of Europe than a cycle of Cathay.”

Many a man in these strenuous days whose obituary gives his age as less than fifty years, has lived full five centuries, gauged by a slow moving past. Activity is joy, and roadways blocked with worries and wearing responsibilities, when met in the right spirit, become broad highways illumined from the source of all light.

“God’s in His Heaven, all’s right with the world.”



RED TOWERS
CONSERVATORY

Ingels' Rapid Transit



THE
FARM
HOUSE



A
BOOTHBY



OUR
BOOKS
ON
MANHATTAN
BRIDGE



AN IDEAL UNDER-HILL HOUSE



A WIDE RANGE.

CHAPTER III.

THE EVOLUTION OF FARMARCADIA INTO HILLCREST MANOR,
 BEGINNING WITH THE ARBORETUM—TREE PLANTING—
 ANYWHERE PLANTS—WONDER TREE—HORTICULTURAL
 ALPHABET—POETS' CORNER—PRUNING—BLUE RIB-
 BON SEVEN — FOREST THINNING — MAPLE
 SUGAR HARVEST—BUGS AND BUTTERFLIES—
 "YARBS"—WILD GARDEN—BOGLAND—
 TRY-OUT NURSERY.

"God the first garden made, and the first city Cain."

THESE pages include not only the planting scheme of the arboretum and fruticetum but a more or less complete description of their growth. In our lettered plan a diamond stands for an evergreen, a circle for deciduous trees, a triangle for herbaceous plants, while the figures within the symbol refer to an alphabetically indexed reference map and book, which give the name and location of each plant—evergreen, deciduous, herbaceous, perennial, and biennial, interspersed and varied from year to year with bright hued annuals raised from seed, root, or cutting.

Plants were so placed that the taller backgrounded the low-growing varieties, while color arrangement in planting was carefully considered both for summer and winter effects, the red branches of the dogwood, for instance, contrasting effectively with the bright yellow growth of the willows and the pea-green stalks of the kerria, backed by silver white birches that in turn fronted evergreens. These were in rare accord on glamored winter days "wherein the air bit shrewdly" and later prolonged the "uncertain glory of an April day." Did I plant them all? Yes every one, and nurtured them like children. No night was too dark for me to locate this or that shrub and tree.

Building Sites.—Plantings.

Each desirable building site was planted to beautify future lawns and develop vistas, aided by ornamental trees and shrubs, while along the *highway* frontage every fifty feet were set Wier's cut-leaf maples, forming a verdure-roofed roadway.

Retinosperas and Biotas, both plain and variegated, broad and feathery-leaved; the tropical looking empress tree (*Paulownia imperialis*), the queenly Chinese magnolia, and its American relative the cucumber tree, glorious rhododendrons, azaleas, and the rare plants that Japan has poured in such prodigal profusion over our land, we planted by the hundred.

The Horticultural Sextette, or Anywhere Plants.

Twenty-five years ago the ordinary village home boasted a wistaria over the front door, a clematis on veranda post, and a few scattered lilacs, spireas and weigelas on lawns or backgrounding box-edged walks and alleys. Today among hundreds of new varieties the poorest can afford the following six glorious and inexpensive plants: *Ampelopsis veitchii* (Boston or Japanese Ivy), California privet, *Thunbergii berberis*, *Hydrangea paniculata grandi-flora*, *flora*, the rambler rose—preferably the crimson and pink rather than the yellow and white, or that “agin natur” novelty of novelties, a blue rose, the latest rambler to climb the fence which encloses the queen of flowers—and *Rudbeckia laciniata* or golden glow. *Ampelopsis* and *Rudbeckia* we grew satisfactorily from seed.

The above plants will transform hedge rows, unsightly boulders, stumps, and even uncouth architecture into curves and lines of beauty.

Four main rules guided us in the laying out and care of the arboretum:

1. Drainage, deep digging and enriched soil.
2. Knee, hand and foot work in straightening roots and pressing the earth between and about them when planting stock.
3. Pruning when planting, also at any time when not too wet or cold to work comfortably (except those in which sap flows freely, as in the maple and some vines, especially the grape). A convenient time for the worker was the main consideration rather than season.



THE WONDER TREE.

A somewhat broad and radical statement which must not be construed to mean that bleeding, bloom, and fruitage should not be considered, as shown in cutting back grape, rose, hydrangea, and such plants as bloom profusely on new growth (a point to be carefully guarded), but, broadly speaking, we found time of year a secondary consideration.

Tree and Shrub Planting and Watering.

4. We never watered except during the act of planting, or in some killing drought. Why coddle the roots, teaching them to seek the surface for a daily drink which is *sure* to be withheld in a moment of forgetfulness. Let them work their passage, dig downward in the soil, assist by cultivation and mulching, but do not pauperize. Learn the stern lesson taught by the fairly thrifty, asphalt-covered roots of the city-grown tree. Rough treatment, but it proves the statement. In the case of plants treated as annuals, and in succulent growths which require cascades of water to attain their prodigious size, like the canna, the ricinus, the elephant's ear, and many perennial grasses, submit to the slavery if you crave the result, but let the hard wooded trees and shrubs grub for their living. If watering is an actual necessity to save the life of the plant, let it be a thorough drenching, then mulch, and only repeat under dire need.

As a rule, herbaceous plants were separated by cutting or dividing in two offshoot, clump, and rhizome, and replanting every three or four years, soil being renewed and enriched. New stock was thus gained with which to enlarge the floral kingdom.

Petal, stamen, stigma, anther, pollen, ovule, calyx, sepal, and corolla became household words in that first winter of study after buying the farm. Evening after evening we dissected plant and flower, first the green sepalled calyx, then the petals of the corolla, so thoroughly protecting the pollen bags or anthers which nestle within, and lastly the long pistil with its three essential parts, the viscid ended stigma, ever ready to grasp pollen from the legs or bodies of visiting insects and carry it through the style to the waiting ovules. When hyla and catkin heralded the arrival of spring with feverish haste we haunted bog, wood, meadow, and hillside to test book knowledge in field practice.

The Wonder Trees of the Pinetum.

Early in Farmarcadian days we developed a love for trees, and planted over one hundred thousand trees, shrubs, vines, and herbaceous plants in Hillcrest Manor, prominence being given to that wonder tree, the evergreen, which even when weighted with glittering ice or fleecy snow, sways gracefully, unscathed by biting blast and unscorched by arid heat, symbolizing everlasting life, while fast growing maple and sturdy oak are absolutely dead for half the year.

Among our plantings of *feature trees* in the ranks of the weepers were willows, birches, mulberries, lilacs, cherries, hazels, dogwoods, the light green tufted *Taxodium distichum*, and elm and mountain ash, while among the cut-leaf were beech, birch, maple and sumach.

In the seven rainbow colors lined up the maples, as seen in the varied shades of cut-leaved green, tri-color, gold, silver, purple and red, while our golden oak was a blue-blood tree.

In poplars were also gold and silver and in the low-growing filbert the purple. These and many more yearly put forth leaf and blossom to gladden all who passed their way.

Tree Outlines.

Each season brought its nature study hours—the different shades of green in the spring, the depth of color in summer, and the glorious kaleidoscopic changes in autumn, but in clear winter days we could best study tree outlines which centred about the two great divisions, *excurrent*, or straight trunk to the top, as in pin oak and poplar; and the more abundant *deliquescent*, as seen in the trunk divided limbs of elm and willow. The bark named the tree and pointed to the pole as surely as the star.

We crossed the threshold of one of the most interesting of nature's doorways when on a crisp December morning by starting into the woodland to learn the names of the leafless trees. Gracefully branched maple, towering elm, and shagbark slivered hickory lined up and answered promptly as well as the spotted plane tree, silver sheened birch and clean smooth limbed beech. It was child's play to niche the evergreens but the vast majority of the trees seemed a sealed book, yet ere willow and maple flowered we had mastered one secret of the woodland through bark, trunk, and limb.

Horticultural Alphabet.

We strove to grow at least a single specimen of all plants found in nurseries from one end of our country to the other that our climate and soil would support. Careful planning and thorough cultivation gave us a rare anthology of flowers, and it was surprising how many grew to maturity, spite of infant diseases, and indefatigable, virulent enemies, but the nursery was a grand tree and shrub feeder, and from it were replaced all dead or sickly plants. The bare ground could scarcely be discerned through swirl of leaf and bloom that glorified the arboretum. Where it could be done to advantage, we planted thickly to get immediate results; notably in the chubby, fibrous-rooted chaps, easy movers; and sparsely in long, tap-rooted species that uproot grudgingly, filling the spaces with the former. When elbows touched, a Patrick, a spade and a wheelbarrow, together with an overcast day and seventy-five per cent. prospect of rain almost invariably reclaimed additional land to floral possibilities, and the

giving of needed air and sunshine speedily lengthened stems and branches of those that remained. Low growing box hedged the walks in the Colonial garden while high growing varieties were clipped into varied ornamental shapes.

Beautiful was the spring awakening of Flora in the arboretum. The swelling pussy willows, cowl-crowned skunk cabbage whose broad green shafts seek the sunlight, and presage the rare spring blooming of snowdrop and crocus, and a bit later the yellow of the forsythia, often fringed with the damp spring snow, its branches readily blooming when cut and put in water, or forced ahead of time in our hot-beds, all did their part toward vanquishing winter. Then came the pink-hued daphne and onward through the fullness of bloom of spring, summer and fall, until we reach the witch-hazel, that last bloomer, the strange shrub that waits to adorn itself in yellow finery after it has been denuded of its leaves, and gives its life-blood to ease the pain of humanity. Under the warming rays of the sun, this botanical catapult shoots the contents of its seed pods twenty feet or more somewhat in the same way as in continuance of life the poplar, a true anemophilous tree, explodes anther bags of pollen which, borne on the wings of the wind, reaches its consort tree before leaf growth can thwart its mission. The Chinese witch hazel was in the front rank of our late winter flowering shrubs.

The Banner Shrub.

What family of shrubs do I most enjoy? If a choice must be made, give me the *Viburnum*, that fructifies in berries of white, black, coral and scarlet, and whose flowers and foliage vary greatly in size and color. *Viburnum rhytidophyllum* and *Viburnum Davidii* were evergreen crowns of glory 'mid their fellows.

The wand-like red-berried Indian currants and Cornelian cherries we placed in the arboretum to contrast strongly with the somewhat straggly growth of the snowberry. Fronting these were Japanese iris, the *Kempferi*, whose eyes of purple and white, bronze and yellow, peer out at one between their flag-like leaves like enormous spitz dog-faced pansies. Spain, Germany and Siberia were all taxed to fill out our iridescent fleur-de-lis patchwork quilt.

Beyond the beds of iris grew stately agaves (century plant) many of them variegated, and near by in serried columns the yucca, familiarly called the Spanish bayonet or dagger or Adam's needle, with its wand-like stalks of white, bell-capped flowers, nodded to us as it did to the cliff dwellers who once spun and wove into clothing the threads that dangle from the spike-like leaves, as is done today in the far off Philippines from the foliage of the pineapple.*

*To many the Yucca thread woven garments of the cliff dweller shown in our museums are of keen interest.

Pineapple Cloth.

Many a New England housewife in olden times robed herself for "meetin'" in the yellow pineapple cloth brought from across the water.

Among the yuccas grew the fiery, yellow-hearted, red-jacketed red-hot-poker-plant, the tritoma, or torch lily, and from the shores of the Sound a batch of prickly pears was transplanted that looked like a bed of hardy, creeping cacti. In doing this we encountered for the first time the wood-jigger, that buries itself beneath the skin and revels in eating it in chunks. A soaking in hot water and rough treatment with a scrub brush dislodged the intruder, but he left unpleasant memories.

One shrub section included the graceful leaved *Desmodium*, the fragrant strawberry shrub (the *calycanthus*), the bush honeysuckle, Japan quince, sweet pepper bush, *colutea*, Persian and Japanese lilac, English holly, and *Styrax japonica*.

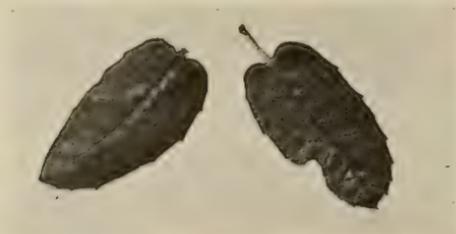
The Poets' Corner.

The Poets' Corner was edged by a border of narcissi.

"Who loves a garden still his Eden keeps"

was well exemplified in this little plot where were seed-grown plants from Stratford-on-Avon to Kendal Green and Abney Park, and from *Père la Chaise* to the Florentine and Roman "God's Acres" that front the *Porta la Pinta* and *Porta san Paola*.

Many friends encouraged this fancy, sending rare specimens. One enthusiast mailed a few grains that had lain dormant wrapped with a mummy for two thousand years in a Theban tomb, but truth compels the statement that Connecticut soil and prodigious care failed to bring them to life.



LEAVES OF THE OAK OF MAMRE. (Actual size.)

On March 9, 1870, I stood under an enormous oak tree, one of the very few Abraham's oaks, or oaks of Mamre remaining at that time on the Plains of Mamre in Bethlehem of Judea. The giant of this group was close to ten feet in diameter, a guarantee of its great age. It was undoubtedly alive, and may have been an old tree when King Herod sent forth his fiendish edict to slay the children of Judea.

This mighty tree's progenitors sheltered Abraham and his flocks when they came up from Egypt to possess the land.

"Then Abraham removed his tent and came and dwelt in the Plains of Mamre, which are in Hebron, and built an altar unto the Lord." Genesis XIII, 18.

The memory of those huge sheltering oaks of Mamre, the scene of his joyous entrance into Hebron, stayed with the patriarch Abraham until the end, and in the cave of Macphelah, almost within their shadow, according to his dying behest, the stricken Israelites buried their revered leader. Here also, in this family rock tomb in natural sequence, Isaac and Jacob, his son and grandson, found a final resting place near these same mighty trees that Abraham loved.

I picked the above peculiar leaves that spring morning from the only one of the Mamre oaks now left, which is, I am told, the *only* mature specimen of its species in the world. Perhaps we kept the half dozen acorns too long before planting, for they refused to germinate, though they received more care than any other seeds in the Poets' Corner, and disappointment number twenty was entered on the debit side of the ledger page marked "Experiments," under which caption we chronicled successes and failures in Farm-arcadia.

The Tree.

The best epitome of human life in nature is the tree, so closely symbolizing birth, growth, beauty, strength; sturdily withstanding blast and storm, until, like an old man bowed with a century of work, the roots loosen, the top breaks, the trunk splits asunder, and worm and mold attack that which, having performed its work, must submit to dissolution and readjustment, as Dr. Holmes realistically pictures:

"Now his nose is thin,
And it rests upon his chin
Like a staff;
And a crook is in his back
And a melancholy crack
In his laugh."

Joys of Pruning.

Immediately after the tree was planted, its methodical care began, but it was rarely arduous work; a lopped off limb; an uprooting of the suckering sprouts, a thinning of the branches, made a thing of beauty of what might have been supreme ugliness. Neglect of the pruning knife, with *too close planting*, will absolutely ruin the most attractive tree. One of our greatest pleasures was that of pruning. To let in air and sunlight; to spread out the spindler, and train upward the low grower; to cut out the leprous black knot

in the plum and quince—almost a herculean task after neglect had allowed the disease to gain headway—to remove cancer-rot from the older trees, paint the bruised wood and then fill the cavity with cement; and to fasten with iron rods controlled by turnbuckles the large limbs that threatened to split away from the parent stem, but which with care would live for years,—all this was most fascinating.

Haphazard Forest Thinning.

No ruthless gang of wood choppers cleared our woods, for an hour of ignorant labor might have destroyed the matchless growth of many years, so we blazed for cutting such trees as checked the development of the best, but allowed among others dogwood, laurel and sassafras, as well as bitter sweet and native clematis (*virgin's bower*) to grow as nature willed.*

The cup-shaped tulip, with its cone shaft of verdure; the fragrant, sturdy, right-angle growth of the sassafras—even the scarred and blotched buttonwood or sycamore, which is a veritable giant, as we in the east know trees, and gives up in a day its first crop of delicate green leaves to its inveterate fungus enemy, then immediately reclothes its denuded branches—were all represented on the farm.

The maple family in varied form and coloring has few peers, from the dwarf, split-thread-leaf maples of Japan, some of which retain their form for weeks after being picked, through all their varieties of gold and crimson to the graceful native maples that dot our landscape, and again the variegated vieing in color with the variegated arbuton, among others the purple maple with its blood red under leaf, the tri-striped bark variety, also Wier's cut-leaf, of rapid growth, with gracefully festooned branches, its only bitter enemy the "four winds of heaven."

"Clean as a maple" was rarely a misnomer. All were graceful and beautiful whether seen in massed outline or close detail.

Colors from a purple which crowded black, to the lightest hues of green and bronze flashed in sunlight and waved with the breeze. In bark they ranged from the rugged cork to those as smooth as a beech and shaded from dark brown to the white and green striped.

Maple Sugar Harvest.

When summer's reign was ended, and the frost-laden north wind wrapped the sugar maple in its wonderfully beautiful mantle of yellow and red, we were glad to have planted this tree with such prodigality, with the idea of a farm industry in future years. Barring a wandering rose bug and the borer, the maple has few insect

*We uprooted the lamb-kill variety of laurel which grew sparsely in the sheep pasture and from which the bees distilled poisonous honey.

enemies, and drives its roots into the most unpromising soil, seeming at times almost to draw sustenance from the very rock, often sharing honors with the cedar in being a cleft-in-the-rock tree. Maples edged the arboretum, lined the drives and diversified the lawns in Hillcrest Manor.

The Blue Ribbon Seven.

Among other beautiful trees on our lawns were seven that halted the most uninterested and careless passer-by, and forced his admiration, one, the *Cedrus deodora*, whose rare, blue, moss-like foliage attracted instant attention. This was partially screened by a mixed group of Weymouth and red pines supplemented in winter with cedar boughs thrust into the ground, and built upward into a protecting bower shielding it from the death-dealing winter sun and biting wind. Near it was a Nordman's fir, the silver lining of whose leaves glisten in sunlight and moonlight, flanked on either side by Koster's Colorado spruce, as blue as bluest steel, while one hundred feet from any other tree grew a glorious, kingly copper beech, and directly across the lawn a magnificent specimen of one of the most beautiful trees grown, the fern-leaf beech. A golden oak glowed sunshine on the copper beech. Our seventh was the queenly, cut-leaf birch, whose silvery branches peeped through a tracery of delicate green leaves. A passing glance at this made one nature's debtor.*

The above seven trees, with one exception, held the blue ribbon against all other aspirants, though it seems invidious to restrict one's selection to a paltry seven, when forest and nursery fairly teem with specimens clamoring for recognition.

The Elm.

Towering above the blue ribboners and in a sense outrivaling their skin-deep beauty, was the king of trees, the elm, the pride of our forbears. For nearly fifty years two of these had looked down on the farm house roof, and with o'erclasped branches seemed to breathe companionship, protection and even benediction. It was fully twenty feet to the first dividing limb crotch, so that sunlight and air brightened and cooled the dwelling in summer and in winter the gracefully swaying network of limbs and branches gave life to a dead landscape.†

The dwarf horse chestnut, the delicate leaved *Sophora japonica*, the tremulous silver and in contrast the golden poplar; the sturdy white oak whose outstretched arms sheltered our biggest herd of cattle, the buckeye and the *xanthocera*, cork and Camperdown elms, the rarely beautiful *Cedrus Atlantica glauca*, the *Katsura* tree, and in a low bit of ground the rosemary and Kilmarnock willows, as

*A *taxodium diesticum* fought hard for a niche in our arboreal hall of fame but was finally barred as to be at its best it requires the artificial aid of severe pruning.

†Lightning and tornado, both dire enemies of tree life, were the undoing of our farm house elms.

well as scores of others, gave beauty and variety to lawn, meadow, and hillside.

Folly of Transplanting Forest Trees.

Costly experiment taught that trees transplanted from the woods to the open generally stand still or die, while those from the nursery make rapid progress, that pruning both root and branch and several transplantings do wonders for tree development, but that native trees taken from a *clearing* often grow finely.

The propagation of trees and shrubs from seeds was interesting, but the wait too long, except in the case of pit-grown peaches, which generally proved worthless sports.

Spare the shears and you spoil the tree might well be axiomatic with the horticulturist, yet many an amateur hesitates before his choicest evergreens. We changed scores of straggling branched and bedraggled looking Norway spruces into pyramids of beauty from sod to topmost twig by simply beheading them a foot or two for several successive years, but not in freezing weather—thus giving the lie in part to the old saying: "The prettiest things in youth and the ugliest in old age are a pig, a negro baby, and an evergreen tree."

The Monkey Climber.

Among our natural curiosities was a wild grapevine that in some strange way had leaped without visible contact to the top of a lofty fifty-year old tree. It was fitly named the monkey climber and the loftiest vine in our viticetum.

The snowy cascade of the weeping Japanese cherry, a three days' wonder, ere its rarely beautiful white blossoms, grown dingy, wilt and fall; the weeping mulberry which screened an arbor seat and swept toward the ground in serried columns; drooping beeches and birches silhouetting almost grotesquely against the sky-line, yet when well grown, rising like camels' humps, one above the other, intensifying the tall, straight, dignified beauty of contrasting poplars (the cottonwood) and lordly elms—all these and more were to be found in Hillcrest arboretum, in rare cases goaded into unusual forms by the pruning knife. The birches were lined to form a sentinel barrier that far outshone in beauty the time-honored picturesque Lombardy poplar that unless planted with a positive end in view, grows straggly and moth-eaten when it reaches lonely maturity.

Twin Spurs of Guano and Shears.

With guano and shears one can metamorphose everything that grows. Few trees are homelier when left to themselves to struggle and straggle along than *Taxodium distichum* (southern cypress) and few more attractive than this same tree when judicious pruning compels it against its habit to form a mass of closely grown, pea green, feathery foliage. The long waving branches of the weigela, the result of two or three years' pruning, are the acme of

grace, tufted with pink blossoms in June, lacking only fragrance to rival the unrivaled apple blossom. With restraint removed they thrust with added force upward and downward their long graceful branches. Grown thus, once seen they can never be forgotten. *Thunbergii berberis*, which sometimes shrinks under the pruning knife, is a flaming torch in the autumn, and passes through the insect onslaught unscathed, as does the *Viburnum plicatum*, with its globular snow-white bloom, while the flowers of its American cousin no sooner begin to open than the petals are badly eaten and stained.

In the *Rosa rugosa* from Japan, was found another seemingly insect-proof plant. Even when not in bloom its fresh luxuriant foliage and later scarlet haws were a delight to the eye.

The scope of the arboretum constantly widened until it compassed a great variety. Hundreds of grouped plantings showed in their season masses of vivid color. The azalea, garbed in carmine and orange; the rhododendron, with evergreen foliage and large blossoms of varied colors, and peonies and dahlias, practically fungi-immune plants giving glorious color and form effects—single, double, starred and threaded, and well worth wider cultivation—vied with each other to brighten our floral realm, while in late summer came the big heads of hydrangeas of roseate hue, which when cut and dried far surpass in beauty the everlasting, that “posy” of childhood.

From trees and shrubs to grasses is a wide leap, as they creep upward from the low, straggly, witch-grass-rooted variegated ribbon grass to the stately waving plumes of the *Erianthus ravennae* or the more tender King Henry of Navarre white plumed pampas grass. The evergreen, *Bambusa metake*, rarely grown, but of great merit, its pinnated leaves forming a mass of verdure both summer and winter, carpeted several low, damp and unsightly spots, while from Japan we had the cross-striped *Eulalia*, the *Zebrina japonica variegata*, that plant that *disproves* the sometimes accepted theory that variation of color is a symptom of debility as it is painfully healthy from deepest rootlet to highest leaf tip. The *Arundo donax variegata* needing winter protection is far more striking than the plain green variety, and with its corn-like growth o’ertops and contrasts well with the reed-like waving leaves of the *Eulalia gracillima*. We leaned strongly toward variegated plants, from the *Euonymus radicans var.*, and the graceful variegated *kerria*, one of the most striking shrubs, up through sturdy *weigela*, dogwood, *forsythia*, *althea* and *privet*, represented in the tree line by a towering, spotted, acuba ash, seemingly a giant croton, and maples galore.

History, Sacred and Profane.

Many a page of history, both sacred and profane, can be read in the arboretum. Yonder is the massed purple bloom of the Judas tree (the *Cercis*), and near it the Japanese variety of the same, which has a closer blossom and richer hue. Next grows the bitter

wormwood, of shiftless and straggling habit, and in season the morphine poppy of China, that life saver or destroyer (according to its use) whitens the ground with its falling petals, while close by is one of those willows whose parent stock wept o'er the grave of the prisoner of St. Helena. At its base grew a clump of conium (poison hemlock), Athens' unrighteous death draught for philosopher and criminal. A thicket of nicotianas (tobacco plant) with their tough green leaves and tropical growth represents a century or more of slavery for the negro cultivators and probably many centuries yet to come of slavery to consumers. In the background is the Paradise Tree or Tree of Heaven, the unfairly maligned though odorous root-spreading ailanthus.

Lilies were grown in large beds set generally in sandy leaf mold. There were many varieties, from the maidenly shy, naiad-like drooping lily of the valley that seeks shade and grows best in damp soil, to the sturdy, brazen, gold-banded lily of Japan, through all gradations of Easter lily, aggressive, staring tiger lily, yellow field lily, oddly spotted toad lily, the *Tricytis hirta* from Japan, and near it, the *Tigridia*, every morning showing its tender newly-born bizarre blossoms, the low growing, variegated leaved *Funkia*, or day lily, the St. Bruno's lily and blackberry lily, also narcissi in dazzling hue.

Large beds of high stalked perennial phloxes, nodding standards of flaming color half the summer, and pink and white close to the ground patches of phlox *subulata*, also *Astilbe japonica*, the latter forced in winter, were plentifully scattered through the grounds. Beds of blue-eyed forget-me-nots and clumps of dog-faced pansies were planted profusely and mind-labeled flowers that talk, *Aquilegia* from the native red and yellow to the cultivated browns and grays, gave charming variety, and bulbs from scillæ to sword-leaved gladioli grew in rare abandon and great variety. No longer did June sadly view the shriveled dying blossoms of iris and columbine for late blooming varieties of these and other gorgeous early flowers lingered with us until autumn—*Veronica*, the iron plant, snow on the mountain (variegated spurge) ginseng (at eight dollars a pound, a valuable crop) jonquils, lupines, pyrethrum, tarragon, turtle-head, rock cress, vetch, wood sorrel, pinks, perennial pea, cinquefoil, harebell, Jacob's ladder, knotweed, liverwort, loosestrife, lungwort, leek, mandrake, sneeze-weed, sneezewort, bell flower, primrose, foxglove, mahonia, monkshood, and blue spirea grew in profusion, and hollyhock and larkspur waved triumphantly aloft their banner spikes of bloom.

“And the jessamine fair, and the sweet tuberose,
The sweetest flower for scent that grows,
And all rare blossoms from every clime
Grow in that garden in perfect prime.”

Among the tender varieties were the odd little cigar plant, set near a bed of sensitive plants that shrank into themselves at the slightest touch, and next to it a bed of ice plants glittered in the sunlight.

Yellow-gemmed moneywort gave us a full money's worth of compact bloom for an eighth of a mile in the spaces between plants in the arboretum, but after a couple of years the irksome and back-breaking task of separating weed and moneywort ended this dream of a golden carpet beneath the shrubbery.

Royal Pedigree of the Fields.

The arboretum had a wide gamut, native shrub often side by side with the rarest products of China and Japan, and, as the despised and down-trodden delicately laced wild carrot outshines in beauty some plant of extended pedigree, so the brilliant scarlet berries of the black alder, the intense orange tuft of the milkweed (that variety seen far afield); the feathery, curled wild clematis, the clambering, orange-fruited bitter sweet, and that glorious red dart of the fireweed shamed into mediocrity plants whose lineage is traced through a hundred propagating houses.

In our collection were the hobble bush, Scotch broom, wayfaring tree, the withe-rod, the hazel bush, whose branches the well digger believes weirdly disclose hidden waterways, and a clump of flowering raspberries, shading a patch of winterberries.

Stroll Path.

Amid the dense growth backgrounding the arboretum was laid out a *stroll-path* a half mile in length, completely hidden from the drive by the entourage of blossom and foliage. Rustic seats, generally a simple log, were set in bosky cover in this greenery retreat of the birds, and here one learned a few of their many secrets.

Unlocking Nature's Secrets.

It was once my good fortune to spend a day with our State micro-biologist. We roamed through fields, woods and fruit orchards, on our way stepping into a vegetable cellar. It took a full half hour to drag my friend out again to the daylight, away from cobweb, cocoon, dust-covered beam and wall, to me dank nothings; to him another world. Then came a rarely instructive walk of barely half a mile but lasting long past dinner time. Keenly interesting was this opening of nature's storehouse by one who holds a key. Discoveries everywhere! The gray bunched elongation of a grass spear, a cocoon, a slight increase in the thickness of an apple twig, another snugly clinging to the bark; the curled leaf "some happy creature's palace"; a bruised twig; a broken limb; a trampled bit of grass; a footprint in the soft mud at the edge of the brook; a twitter in yonder copse; a bursting song of divine melody from the topmost twig of a black walnut; a whirr as of flapping wings; the buzz of insects—a thousand

—no: a million sights and sounds to feed eye, ear and brain, if man could but grasp them. The camera was a constant friend and life had an added charm when the photomicrographic field still farther enlarged our vision.

Bugs and Butterflies.

Introduction Day was repeated several times by that obliging State microbiologist and when fall winds had swirled from the oak most of its leaves and disclosed to our newly awakened appreciation of insect life the tightly woven leaf nest of the caterpillar, introductions had culminated in an extended but one sided calling list, and as winter approached we lost no time in making many aurelian calls.

Man's very existence rests on the gauze wings of the bee and the butterfly. At the base of the pyramid of all life is the insect world. An insectless world is in the main a flowerless world, with the unavoidable sequence of death to bird, beast and man. Adjustment and balance can only be obtained through control of the predatory hordes that swarm over our planet, their seeming aim man's destruction, but changed by a directing hand to construction. It is an innumerable army that of these night and day propagators and scavengers who close heel man's progress toward the zenith of his powers, and as he draws aside the veil and peers into the outer court of this phase of nature he senses unseen and potent forces far beyond his present ability to understand. The microscope and the avarium aid mightily toward mastering the alphabet of the insect life. Man's physical inhumanity to man is as nothing to the carnage and butchery with which the insect world reeks from pole to pole. Let us hope that the line immortalizing the dying worm "it feels a pang as deep as when a giant dies" is only poetic license.

Insect life is prolific in schemes to side-track the juggernaut of destruction that even before birth is often on its trail following out the wonderful warring laws by which nature is kept in equilibrium.*

When the praying martin or devil's riding horse fiercely devours his victims alive, and the ichneumon fly incubates under the skin or within the intestinal canal of its benefactor, then slowly devours the inner vitals, pierces through the skin an avenue to freedom, and leaves by the wayside the shell tenement of its protector, let us hope that neither nerve, muscle, nor delicate organ has felt what to man's sensitively attuned system would have been untold agony. Insect life, the most prolific of all life, claims the closest study. Here the survival of the fittest is pronounced. To eat, to live, to escape its enemies and to propagate, is its entire decalog, as in primeval man, but the endless nonillions of the insect world aggregating in the

*The star and the aphid are extremes in realms heretofore practically untrod by man. Authorities state that a single pair of garden aphides absolutely undisturbed would in a few months plaster the entire globe with a solid mass of their progeny, as the fish of the ocean unless preyed on by their fellows would turn that stupendous ocean into a mass of putrid flesh.

A world out of balance would cease to be a world.

lepidopteras alone over fifty thousand named species, fortunately still grovel and see but that which keeps them alive.

Among the fascinating facts that after dinner studies taught and which we had little trouble in proving was that the hairy caterpillar who lays her eggs along the edges of a freshly eaten leaf does so with the deliberate purpose of having her offspring devour the vitals of the voracious insect that gulps them down. Mightily interesting was that insect who carries sail covers just as the yachtsman does to protect the wings of his yacht, with the deeper purpose of color disguise from his enemies.

The tent caterpillars pitch their moisture, predatory insect, and even bird-proof tents in the forked branches of the cherry and apple. They are strongly built and will stand persistent onslaught. After foraging, the colony returns to the fold from time to time to recover from its gluttonous debauches.

Leaf-Rollers.

We found that the leaf-roller weevil partially cuts off the supply of sap from the leaf to make it limp enough to roll into a snug egg pocket. Leaf hoppers hopped into the spread net of the carnivorous spider, the one who swallows his nearest relatives with fiendish gusto.

Some plants guard with a hairy growth their chalice of nectar from such crawling freebooters as ants and beetles, saving their mines of sweetness for the bee and his pollen carrying fellows.

A wonderfully busy and particular little fellow is that same pollinating bee. Unlike the fly, who takes everything in sight, he demands aesthetic coloring, choicest nectar, and delicious odor. Much of bee life begins its work 'mid the willow blossoms of early spring and the death of the fall asters sees the blotting out of a vast majority of these mighty purveyors to man's existence.

Egg to Imago.

Within the egg of a canker worm is epitomized the beginning of many a parasitical insect. Another parasite dwelling in its fellows is so wedded to hygiene as to cut a sewage outlet in the skin of his living, pulsating temporary home through which to eject all refuse. The woolly bear caterpillar thatches its cocoon with its own wiry spiny hair to withstand and discourage bird attacks.

Laze Bugs.

Laze bugs, such as the ambush, the flower bug and the ant lion, who can starve like a camel, eschew foraging, but, securely hidden, spring on their unsuspecting victims as they seek the lure of blossom nectar or inadvertently slide into the little sand pit trap built and set by his lordship, the ant lion, plebeianly called the doodle bug.

Typical marauders were the wasps. With omniverous appetites they stung fruit and insect alike, often killing the active cicadas.

Cuckoos of the Insect Tribe.

Cuckoos of the insect tribe are legion, and not only parasites, but often assassins, laying their eggs in the nests of other insects, fully cognizant that their progeny will eat their foster brothers and sisters in both egg and body form.

The Skunk Insect.

The saw fly unsheathes her pair of double action cross-cut and splitting saws to mutilate and deposit in leaf and tender twig her eggs which, when hatched, repeat the vandal act of their progenitors. The saw fly is the skunk of the insect tribe, and on occasion squirts a moist and acid stream on its enemies.

As the track walker swings a warning red lantern, so the color warning in the flashings of some species of black and red-winged insects proclaims to marauding freebooters that spiny hairs sting and acid flesh sickens, thus for the time being postponing the inevitable.

Queen of Night.

The Queen of Night, the Luna, as well as the hawk moths, in appearance like humming birds, were among our richest treasures 'mid a collection that grew apace as our interest in the wide field of lepidoptera increased. We aimed to know the genealogical tree from deepest rootlet to topmost twig of every specimen in our little cabinet, which was jealously guarded within protecting glass from rodent and moth. The evolution from egg to worm or larva and from larva to pupa or chrysalid, thence to fly and again back to egg, was a fascinating study. Head, thorax, abdomen, antennæ, two winged and four winged, four legged and six legged, all came in unending procession under the microscope, which opened wide the door to a heretofore closed world.

Though unable to attest by sight that the industrious ant was as well a foster mother, carrying within its protecting nest the eggs of other insects and rearing them with her own, it so read and we accepted it as we did many another surprising statement that we had neither time nor ability to prove, such as the ant keeping milch cow aphides and slaves.

One most interesting example of concealment was found on an elm tree; a caterpillar having a rough serrated bulging skin, an exact counterpart of the ridges in the elm leaf—even the sharp eyes of the birds seemed but rarely to pierce this environmental disguise.

The Tramp Insect.

Tramp by name and nature one might label the walking stick. The cares of motherhood sit lightly on her shoulders, as she drops her eggs helter-skelter in grass, woodland, or bog, and but few escape the maw of the hungry ones.

It was rare joy to thus roam in this minor within a major world and watch in sunlight and shadow, in dense wood and open

meadow, the great unending procession of insect life, the alder leaf case bearer staggering along under his pack, and near him a sturdy caterpillar laden with a whole nest of parasitical eggs, each containing an embryo grave digger, which he must carry to his grave. Slender waisted mud and digger wasps we found 'mid the insects that pupate in earth cells. The list of non-silk spinning cocoon manufacturers includes many vegetivorous insects, the potato bug, wire worm, crane fly, cut and tomato worm and root eating maggots. There also we dug up many of the fruit eaters in the first ranks of which were the curculio, the canker worm and apple maggot. The elm tree sphinx (at times, the immovable) and the destructive elm beetle, fortunately for the tree lover, are also earth pupaters. Tangle-foot encircling the elm trunk will keep her well under foot. The regal moth, the zebra caterpillar and a full line of grass diggers, all traced their ancestral homes to earth catacombs. In most of our insect hunts we found the ever busy ichneumon flies flitting from place to place, one main object in life being to puncture the skin of some less active insect and oviposit their death eggs broadcast among their fellows.

Hawks of the Insect World.

Dragon flies, as they lived their lives 'mid scurrying hordes of flying victims, were in a class by themselves. The true dragon we found lights with spread wings, the damsel with folded upright wings.

Night Moths.

In strolling through the woods close scrutiny discovered flat against the bark of beech and birch the night moths, each having selected the tree closest to its coloring, the sharpest eyed birds often taking them for a bit of wood. A true possum insect which feigns death when facing disaster is the large sphinx caterpillar, who hangs perfectly motionless head downward for hours to deceive its enemies.

Beetle hunting yielded a wide quarry,—whirligig, water, snout, tiger, black, blister, long-horned, the smug little ladybird, the epitome of bug cleanliness, water scorpions, water striders and boatmen all involuntarily joined the stick pin colony.

The great mass of insect life, aside from the stingers as exemplified in bee, hornet and spider, and a few spiny haired caterpillars, has no protection from its enemies. Concealment through color and in habitation is its strongest hold on life but at best often a broken reed.

One Romeo of the insect world, the cricket, in season continually serenades Juliet with rasping chirpings which rival the Katy-dids.

Footless larvae, aphidivorous gourmands, stayed where maternity left them and leeches life from contact with branch, leaf, and insect.

Plants as well as insects we found arrogantly commandeered by some of these tiny autocrats, notably when the willow leaves were

forced to surround insect eggs with red bean shaped galls and grass, stalk, branch, twig and leaf, and oak apple grew and thickened at their behest, giving up stored nutriment to nourish the trespassing pupa.

Those interesting insects, the leaf tent miners, claimed our closest inspection. They were much at home among the oaks, red maples and locusts—their little brown parchment-like blotches giving location of another insect's palace within the leaf structure.*

The butterfly field was studded with many stars and those of first magnitude included the black monarch, the sapphire mail, viceroy, tortoise, swallow tail and tiger tail, red admiral, painted lady, the mourning cloak, the comma and the yellow asterias.⁷

As a rule the insect world is an orphaned world. It is true the monarch and tortoise butterflies and a few other species follow the birds to the South in large flocks, some locusts bury in the ground, notably the seventeen year cicadas, and a few butterflies, for example the mourning cloak, hibernate in hollow tree or under buildings, but the great mass of struggling, warring insect life, when its purpose of scavenging, propagating and protecting its unborn offspring is accomplished, joins that endless, ever moving procession of the passers into the beyond and an orphaned progeny takes up and repeats the endless order of being.

Our Rosarium.

"Where you tend a rose, my lad,
A thistle cannot grow."

A patch three rods square was given up to the queen of flowers. Hardy perpetuals were the favorites but a bed of teas bloomed the entire summer even to early December, and, sheltered and protected, wintered finely. Tree roses, as well as tree peonies, cornered the rosarium.

The same three rod patch was a battle ground whereon raged our fiercest combats with the insect world, but eternal vigilance gave an unrivaled harvest of form and color.

Pruning and budding shrubs in tree form we tried out, notably in the rose, azalea, and hydrangea, but soon concluded that a tree's a tree and a shrub's a shrub, which resulted in better balanced growth, flower, and fruit.

A Semi-Tropical Corner.

The very word tropics suggests gleaming sunshine, refreshing shade, bright colored birds and delicately perfumed flowers, and in our arboretum were corners where every plant, as well as its environ-

*Close scrutiny of stream, branch and trunk revealed the cylindrical stone house of the caddis worm, the shell palace of the bark louse, the wooden burrow of the bumble bee, and the leaf mansion of the cherry leaf twig tier who builds a high class dwelling as insect dwellings rank, homes doubtless as satisfying to them as the most pretentious dwellings of the race of giants that crush them under foot. The "dog eat dog" spirit of insect life, that indomitable courage in bee, ant, flea, hornet, and mosquito, that neither cringes before nor fears its betters, if unchecked would soon depopulate the earth.

ment, seemed tropical. Here were the *Aralia spinosa*, or its more delicately framed sister, the *Dimorphanthus*, which nevertheless yields its sceptre less quickly to the frost king, fronting a beautiful specimen of purple blossoming *Paulownia imperialis*; then came the copper-hued *Ricinus* and glorious *cannas* of rampant growth and brilliant color—assiduous care forcing the rankest growers to leap upward a dozen feet—while in the foreground were elephant's ears (*Caladium*) often a yard or more in length. By copious watering with liquid fertilizer many of its leaves grew to the length of five feet, and in sharp contrast and goodly quantity a wide variety of sub-arctic plants, among them a bed of edelweiss from parent stock we brought from the base of the Matterhorn. Near by were Iceland moss, saxifrage, andromeda, ranunculus, clethra, and cloudberry.

Semi-hardy Canna.

During the past mild season, a canna bed planted against a south wall on slightly sloping ground wintered finely unblanketed, proving that with protection and under certain conditions, even in Connecticut, the tender canna can be thus handled.

Evergreens were scattered through the grounds in over one hundred varieties, totaling well into the thousands.

Grouped in effective contrast were green and golden yew, Colorado blue spruce, silver fir, cypress, and *Biota*, in silver and gold, the gold that shines as brightly in winter as in summer, as well as that variety that dons a bronze hued coat in the "melancholy days." There were also green and variegated, spatulated and pointed, feathered and curled *Biotas* and *Retinosperas* of varied hue, a bewildering labyrinth of form and color that to the real lover of trees spelled Elysian realms, and vastly improved the contour, foliage and bloom of our two-mile garden strip.

Let me relate an incident apropos of tree, shrub and plant cultivation. I had journeyed far to see what was considered the finest private collection of evergreens in our entire country, its owner a scholar, as well as a strenuous business man. Standing before a bed of inconspicuous *Echeverias* of a hundred or more varieties that formed part of this wonderful collection of trees, shrubs, and plants, I asked the gardener why there was not a single label to be seen in the entire planting.

The lack of real appreciation on the part of the family and friends was betrayed by his reply: "Mr. ——— knows their names, I know their names, and *no one else cares.*"

Plant Labels That Label.

We *all* cared in Hillcrest Manor; so did some of our friends. For labels, in addition to a carefully adjusted tree label, we used soft copper strips about four inches long and an inch wide. On these were indelibly traced with a sharp steel point the names, after which they were attached by a bit of copper wire to an eighteen-inch length of galvanized wire, one end of which was thrust into the ground at the

base of each tree or shrub. This plan prevents the usual wire cutting of stem and branches, while labels are indestructible, and easily lifted and read. True, careless workmen sometimes disturbed or plant growth concealed, but generally before that happened the name of the plant was fixed in the minds of those who cared to know. Bark abrasion in staking trees was prevented by having the cord or wire enclosed in a short piece of hose.

The Only Work That Kills.

Country life relieves nerve strain, sweeps cobwebs from the brain and gives much of the exhilaration called happiness, yet many stand within reach of these influences without sensing them. I can name a hundred or more men now in their graves, who I am certain, would have lived for years if their homes had been in the country. A new horse or cow, a brood of chickens just out of the shell, the bloom of a rare flower, a newly laid out road, a new dog kennel—even new disappointments and new worries so they are not associated with the daily grind—keep the heart young and pave the way to health. It is severe tension along *one line* that kills. I pity the man of millions or of pennies whose burden is daily carried in a beaten track from either counting house or ditch-digging to a city home. One needs the invigorating air of hill or ocean, not for a month or two, but for at least a portion of every month of the year, if it's no more than a Sunday tramp 'cross country. Man in his strenuous search for the fountain of youth finds that country living economizes best the "failing river of life."

"The world is too much with us; late and soon
Getting and spending, we lay waste our powers;
Little we see in nature that is ours;
We have given our hearts away, a sordid boon!

* * * * *

Great God! I'd rather be
A pagan, suckled on a creed outworn;
So might I, standing on this pleasant lea,
Have feelings that were less forlorn;
Have sight of Proteus rising from the sea;
Or hear old Triton blow his wreathéd horn."

In the arboretum record book were scheduled with keen interest the homely every-day names borne by those flowers of the wild which grew in profusion on hill and in woodland and dale, meadow and rough pasture. Daffy down dilly, bouncing bet, black-eyed Susan, ox-eyed daisy, Hessian field daisy, Michaelmas daisy, hepatica, wild balsam or touch-me-not, corn flower or bachelors' button, incomparable dandelion—the every month in the year flower—sky-blue violets, spring beauties, and the wind flower, the anemone, grew in profusion, delighting the opening eyes of childhood with their continual floral surprises, and glorifying maturity with tenderest recollections of the

budding romances of youth. Only common field flowers, but mighty factors through the centuries in developing and ministering to mankind.

"Yarbs."

In different corners of the hedgerows grew "yarbs," and at the edge of the woods and brook shrubs and roots that from the time of the progenitors of Philip of Mount Hope through a half score of American ancestors have cured the ills of puling infancy and eased the aches of old age.

"Scarce any plant is growing here that against death some weapon does not bear."

Among these *mute*, but *mighty* warriors, defenders and prolongers of man's life, were thoroughwort, stramonium or jimson weed, chamomile, senna, boneset, snakeroot, rhubarb, self-heal, sarsaparilla, rue, smartweed, plantain, mandrake, gentian, wormwood, fever-bush, rheumatism root, alum root, colchicum, bloodroot, bayberry, flagroot, arnica, colic root or star grass, sage, sorrel and tansy, and in larger growth toothache tree and balm of gilead, planted in a sheltered valley, as well as sassafras and witch-hazel, some of which in our home brewed extracts competed and often successfully with those of the apothecary shop. We brewed decoctions from lily of the valley and the fringe tree, and from the rampant growths of spearmint and spikenard, pennyroyal, bergamot, and spice bush, basil or thyme, fennel, caraway, marjoram, valerian and peppermint we expressed perfumes that permeated every corner of buffets and low and high-boys at times packed to their capacity with trousseaux, bed linen and best bibs and tuckers.

The animal kingdom in our fields, woods and at brookside had generous representation from the old-time grannies, or rather let us crown them *geniuses*. They labeled goatsbeard, skunk-cabbage, horse-radish, horse-geranium and horse-mint, adder's tongue and rattle-snake root, spiderwort and bugbane, crowfoot and coltsfoot, catnip, ragged-robin and wake-robin, cat-tail flag and cat-brier; cowberry, cowslip, cow-parsnip and goose grass, with a side line of milkweed, butter and eggs and buttercups, and dogwood, dogbane, foxglove, chickweed, hen and chickens, hogweed, horse tail, duckweed, leopard's bane, crane's bill and squirrel corn, crowberry and crowfoot, sheepberry, shadbush, nannyberry, crab apple, and toadstools, often overnight-surprise-plants. The delicate pink of the bleeding heart, the spider-web gauze of baby's breath, the gracefully waving, pure white festoons of the bridal wreath, were near neighbors to the matrimony vine; its pale, dull pink blossoms, made still duller by the blazing star (called the devil's bit, the old fashioned cure for quinsy), and scarlet-lightning, which, with the Star of Bethlehem, brightened hillside and pasture.

Soil and varied conditions on hill, meadow, at brookside, in lowland, and deep woods of our two hundred and fifty acres made it possible, with the aid of the birds, for a wide range of plants to find a footing within our borders. There were man-of-the-earth and jack-in-the-pulpit, the bitter tasting corms of which gave Sir Bruin when he formerly ranged our marsh land a bog onion breath, near the skull-cap and squaw-root or cancer-root, the latter fastening tightly to the roots of the beeches; maiden hair, the uncannily named corpse plant, commonly called the Indian pipe; also dragon-arum and dragon-root and prince's feather, St. John's wort, and St. Peter's wort. The pokeweed, which carries in its root death to humans, we destroyed. Great masses of ragweed, burdock, and mullein infringed on territory belonging to their betters, beggar's tick often tagged our best store clothes and tumble weed through fall winds tumbled dire trouble to our corn and potato fields. Sitfast (*Ranunculus repens*) fought hard for even standing room. Mushrooms, lichens, and mosses grew wherever they could gain a foothold. Jewel weed, rosin or compass plant, ladies' slipper and ladies' thumb and smocks and tresses all flung their offerings at our feet, keeping pace with the seasons. These wonderful floral outbursts of nature repeated before our very eyes the ever present and unsolved enigmas of birth, life, death and resurrection as they have been repeated year after year and century after century.

“Our birth at best a sleep and a forgetting,
 The soul that riseth with us, our life's star,
 Hath had elsewhere its setting, and cometh from afar.
 Not in entire forgetfulness
 And not in utter nakedness
 But trailing clouds of glory do we come
 From God who is our home.”

The Wild Garden.

One walled-in meadow was in the main left as a wild garden. In it was a diversity of plants and flowers, its boundary walls and crevices covered with the purple berried ivy of lusty, bushy-headed growth, often by contact so poisonous to humanity that because of its searing touch and brilliant hue it might be called the trail of the fire serpent, but eaten with impunity and well relished by horses and cattle. It was allowed to remain for the sake of its glorious golden-red autumn coloring, in contrast with the intense fire-red of the woodbine with which it was intertwined and often ran races, the goal being the topmost branch of some tall cedar whose green background brought out vividly their combined and rarely beautiful autumn shades, but any growing near the house was uprooted in deference to its malarial reputation as well as its poison blight, in fact, poison in leaf and rootlet lurked in woodland and meadow. The poison ivy, prickly nettle and pokeweed warred as far and

as deeply as inanimates could war against the flesh, but the twin guardians, knowledge and care, gave them a losing battle.

The discovery of a thicket of sweet fern in the meadow, (thresholding the smoker's paradise of the farmer boy) gave our youngest as great a thrill as the blare of the siren calliope heralding the May circus that periodically interfered with spring planting. Here the parasitical dodder relentlessly throttles to death the staff which aided it to climb upward toward the life-giving sunlight, *exactly as undeveloped humans shoulder ride and crush their fellows*. There also flourished the bindweed, the wild morning glory and patches of chokeberries.

Water Plants.

We lined the banks of the brook that ran through the centre of the meadow with iris, flagroot and such other water plants as we could collect. Great masses of mint and cress edged its borders and in a small pool were grown Egyptian lotus and the Victoria Regia, the largest leaves seemingly strong enough to bear the weight of a child. Close by were yellow and red wild lilies, pink marsh-mallow, with its delicate and profuse bloom, also grew to perfection. and could be seen three fields away.

Here was the bright orange variety of milkweed as well as the silk-podded, which is today being experimented with along rubber producing lines, while black alder, dogwood, wild aster and Joe-pie-weed made a very thicket of blooms. When man digs deeply, he will find the word weed a misnomer. But this meadow was not all flowers; in one corner was a patch of horseradish and near the wall a surplus row of rhubarb, which in early spring we forced with a manure mulch and enclosed within headless and footless barrels. From that same State microbiologist we learned how apogamy or panthenogenesis of plant life was well exemplified in the green algae that scummed a stagnant pool in a corner of our meadow, and could soon classify the interesting forms of oogamous, thallophytic plants which grew in abundance in odd corners, on dead stumps and in waste places.

Bogland.

In one corner of the meadow was a bog; here the stream divided and trickled more slowly. A bogless farm may mean better farming, but to us it would have meant absence of the cheery peep of the rana, and conditions and varieties in plant life that mere money could not buy.

Meat Eating Plants.

At the edge of the little stream grew two kinds of meat eaters—the pitcher, whose victims were inveigled to a watery grave, and the hairy, viscous deluged sundews, whose gladsome hand of greeting swiftly turned to a throttling hand of death.

A Double Barreled Plant.

"When one shot missed, the other hit," was the verdict over *Lysimachia terrestris* as it grew both tubers and seeds on its branches. In a dry season it propagated by seeds, in a wet one the bulbs which dropped to the ground grew as the seeds rotted.

Preachers edged the bog, and their red fruit brightened miniature shaded glades. Scant plant food in the soil meant larger tubers and in some plants enlarged branch and rootlet stood for stored up sunshine, a sort of plant-reserve-bank, from which to draw sustenance in a measure absent from the sphagnum—mossy peat—which abounded in our bog. Arrowheads, walking ferns which really walked on land, cow lilies, smooth stemmed and leaved plants and sedge and bur-reeds glistened 'mid watery surroundings. Brakes spelled abandonment, as attested by luxurious bracken growths in meadows left untouched by the ploughshare and death-dealing scythe.

Batrachians.

Here we took our first observation lesson of the tailless and tailed batrachians, from the near tadpole gill breathing stage to lung breathing four legged salamanders. The green frogs of the lily pads greened still brighter when herons essayed to "lift them," and the brown frog of the woods grew more woodsy still when avoiding its enemies—the boy that kept and studied turtles and bees took keen pleasure in testing the powers of the changing color frog from Bog-land.

A real floral Jack-and-a-bean-stalk was the *Polygonum Sachaliense*. Longfellow's first boy poem about Mr. Finney's turnip aptly applied to it, as it "grew and grew and grew behind the barn." Planted to screen a stercoreary, perennial, spreading, and unkillable, the yard stick proved that from frost time to May fifth it had stalked upward exactly seven feet and tried its best, ere the summer waned, to punctuate the soil for a good square rod. Blooming in August, its white lacy blossoms—embowered banqueting corridors and halls for the bees—wave disdainfully above its lowly mission. Spreading roots are its greatest drawback. The historical camel that pushed its head within the tent flap was but a novice usurper beside Mr. *Polygonum Sachaliense*, late of Japan.

Snakes.

Snakes? Very few, and harmless at that. In twenty years we saw but one puff adder. Garter and milk snakes were often found, even in the boys' trousers pockets, and an occasional black snake scurried across our path. I recall abruptly halting one assassin red-handed who was gulping down a nestful of young robins. In throwing over a stone wall we once found their eggs—a half dozen

or more clammy, misshapen objects—with the young snakes just emerging. In fact, I helped the wriggling mass of snakedom cross the threshold of life one moment and, remembering the robin episode, in the next assisted its exit, but as vermin exterminators, today they are spared.

More Trees and Shrubs.

The dark foliage of the Japanese umbrella trees contrasted well with the lighter green of a grouped background of umbrella-headed catalpas that outlined the "heater piece" where two roadways met. Glinting through the silver and green were golden chained laburnums, yellow jessamine, yellow currant, golden yew, golden hop tree, golden oak and the long list of yellows that glowed like bottled sunshine against the gray of overcast days.

Japan, that master developer of Dame Nature's products, was our stand-by as exemplified in lilac and quince, magnolia, sweet-scented syringa and delicate blooming deutzia, as well as the golden balled kerria, that has been brought to a brighter gold, more closely knit, and fuller rounded blossom under the skies of Japan. These and hundreds of other plants attest the painstaking propagation of centuries.

No more attractive shrub blooms in that arboretum than the purple-fruited *Callicarpa*. Close to it was planted the straggling, silver leaved *Baccharis*, and back of the two a noble specimen of *Nordman's fir*, whose silver-under-sided leaves dance in sunlight. The flaming red of the burning bush (the *Euonymus* or strawberry tree, one of the few plants that can squarely face salt water without cringing, but whose young life the scale dearly loves to throttle) is sandwiched between flat-branched, hardy orange trees, full of yellowish uneatable fruit. Near it in season are the beautiful shell-like blossoms of the pearl bush, and forming part of the same background is the maiden-hair tree. The luxuriantly growing mulberry, whose prolific crop of fruit resembling the thimbleberry drops before it really ripens; the feathery tamarisk from India and Africa; the tropical-looking catalpa—Indian bean—whose leaves are late in coming and among the first to shrivel with frost, contrast well with a group of golden elders, in turn fronting the dark purple foliage of the copper plum, the *Prunus pissardi*, and close by it the rose of Sharon, one of the last plants to leave and bloom.

Keyless and Never Closed Bird Restaurant.

Here grew that shrub of shrubs, the sea buckthorn, *Hippophae rhamnoides*, of striking silver gray foliage, later its stems packed with orange colored berries that added many feathered visitors to our home bird colony. In one long stretch of the arboretum where the stroll path was most heavily screened we made a protected game preserve, a real bird paradise; here were planted a wide gamut of

berry-bearing shrubs interspersed with a few suet decorated trees and bird fonts and in this keyless and never closed bird restaurant the bursts of melody were most divine.

Yonder is a sturdy trumpet vine, holding in its python grip the gnarled and barnacled trunk of a dead cherry tree. Bittersweet and clematis lock arms in the clean-leaved, white flowering branches of the fringe tree, at whose base grows the silk tree, while near it are the *Gymnocladus* or Kentucky coffee and nettle trees. Backgrounding these are light green feathered larches, in front the appropriately named smoke tree, and close by the lurid autumn leaved varnish tree, the *Kolreuteria*, and the rarely planted *Stuartia*, the American camellia or tea plant.

Silverthorns, hawthorns and thorn-apples a-plenty backed the indigo shrub. The flowering almond, fronted by great masses of garden pinks, contrasted with the glorious yellow coreopsis, while mock orange, bladder nut and New Jersey teas were also in evidence. The prostrate cypress and the little English yews stood side by side. Necessarily, European yews in our young country are small—it takes hundreds of years to grow the mightiest and sturdiest, as exemplified in the eleven hundred year old yew of Ripon Abbey, the epitome of strength and longevity. Ours were barely four feet high.*
 "Till fell the frost from clear, cold heaven, as falls the plague on man."

In spite of the rare beauty of the numberless varieties of golden rod that brightened field and hillside, and later the shell-like nodding heads of cosmos, a true frost flower, the swirl of feathery chrysanthemum, and the late bloom of wistaria and clematis Jackmanni, their coming as a near winter harbinger was a cloud over our Garden of Eden.

Try-Out Nursery.

In the vegetable garden was a try-out nursery where novelties were grown. Here were new melons, black sweet corn, a new variety of popcorn to gladden and shorten the long winter evenings, gourds of bright color and odd form,—one variety in square surface area rivaling our prize pumpkin, and scores of other freaks (some of them true horticultural pedants) which, though purchased with wonderful promises, often failed to live up to the farmer's past stand-bys. I recollect, however, some corn stalks sixteen feet high, selected from the twenty-acre field, that gained honorable mention at the County Fair. We grew sweet potatoes of large size but small flavor, and in our own biased opinion graduated many a Nestor in the agricultural world, but in time crucible tests often revealed a dunce who flunked and slipped into oblivion. Among other fruits was a French straw-

*The American sequoia outdistances by full two score centuries England's venerable yew. Science states there are today living specimens of the California sequoias that were old trees before the pyramids were built.

berry that ripens in the fall, and has a delicious wild strawberry flavor. The crop was larger when we destroyed the June blooms.

Here also were tested some of the seeds franked to us by our Congressman each spring—in fact, the collection of both flower and vegetable seeds furnished free by the Government made quite a garden.

Odd hours grew into *years of painstaking search* before all these plants had been found and named, but they finally stood on the record book of the arboretum and lived out their lives in fields, woods, copse, hedgerow and meadow, save when the brush fire got beyond control, as it sometimes did in spite of the cedar bush beating given to keep it within bounds, or the knife of the mower transferred the floral harvest of bloom to the hay mow, or the cattle nipped the budding blossoms.

From the green hills of Vermont, at the base of Mt. Mansfield, we freighted two large boxes of trailing arbutus, with a goodly quantity of the soil in which they grew. These were planted in a grove of Austrian pines, protected from our roving cattle, and it was always a joyous discovery to find them peeping through the late spring snows. As the seckle is the generally accepted standard of flavor in the pear kingdom, the arbutus, "the darling of the forest," should be the standard of fragrance in the world of flowers.

Ere the plant fever developed and before that rural instinct *dormant in all mankind* had become a living thing, the choicest shrubs meant to me only a bit of attractive color or graceful form, hence, I rarely grew impatient over some city guest's patronizing and flippant comment: "Yes, it's beautiful, but isn't it a lot of care?" and five minutes after the remark the visitor couldn't recall any detail of that which was such an expression of the Divine as to be fit to embower the gates of Paradise. My frequent panacea for outraged feelings was to lash the offenders unmercifully with a torrent of easily acquired botanical names such as *Taxodium distichum*, or *Bambusa metake*, but I soon reverted to the normal habit of calling an *Aralia spinosa* a Hercules club or a *Viburnum plicatum* a Japanese snowball, realizing that I had in the past been a greater ingrate and a grosser culprit than my guest.

The arboretum required careful planning, but it paid, for, aside from the joy of accomplishment, it made a connecting link between the house and grounds, giving an air of permanence and completeness to the entire development.

Moving Day.

Moving day had now arrived for the farm house. "Not good enough for this particular site, but very good for some other near by," was the verdict of the jury, and horse, block and windlass, roller,

plank, and guy moved it a foot at a time over the fourteen hundred feet traveled to reach its new homesite. With its removal the *sun of our twenty year farming day sank beneath the horizon*, and man's final estate as described in the line, "we shall soon be fogies," began to cast faintly outlined shadows the day we gave up the farm.

Farmers Versus Commuters.

While raising corn for the silo, we were raising roof-trees for the commuter, and in the next hundred pages is a record of how we worked out the farm problem into the villa community, made easier by the fact that the roads in Hillcrest Manor closely articulated with various highways.

CHAPTER IV.

HILLTOP—STONY CREST—THE GABLES—BUENA VISTA—HILL-
 CREST HOUSE—STORM KING—STONEHENGE—SKY ROCK
 —BRIERCLIFF—CROFTLEIGH HOUSE—CLIFFMONT—
 BREEZEMONT—LEDGES—DRACHENFELS—ISLAND
 HOUSE—CROSSWAYS—RED TOWERS.

THE first house with which I changed the sky-line of the rough Connecticut farm was Hilltop, two large stone chimneys its main motif. Hilltop was built before the advent in numbers in this country of the skilled Italian stone chimney mason, who, while often moving slowly, rarely picks up the wrong stone. I finally found a native boss mason willing to tackle the job. The chimneys, built of selected lichen-covered stones, both within and without, grew fast, and with them the house, of plain but strong design. Three large rooms lined toward the south, with the two exterior chimneys of field stone equidistant from each end. The stair hall was thrown toward the north in a semi-ell, and kitchen in the same manner at the other end, connected by a columned, palm-decorated one-story corridor. On the second floor bedrooms were all on the south and a well ventilated and lighted hall on the north. That roof of roofs



HILLTOP.

HILL TOP VIEWS



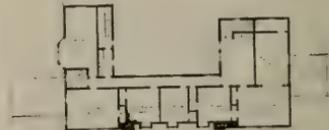
THE TREELESS KNOLL



THE THIRD YEAR



HILL TOP FLOOR PLANS



HILLCREST HOUSE FINISHED



TREELESS AND TREED HILLTOP.

STONYCREST



SIX MONTHS OLD



THREE YEARS



EIGHT YEARS

TREE AND SHRUB GROWTH.

STONYCREST



FIRST YEAR - INWARD



FIRST YEAR - OUTWARD

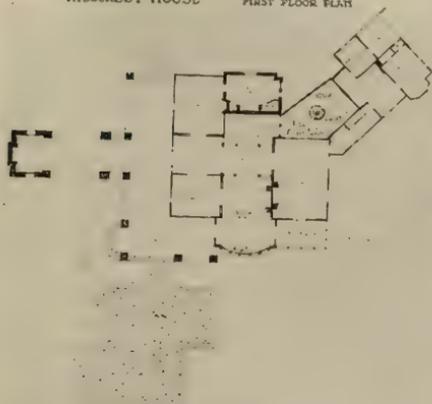


THE FIFTH YEAR

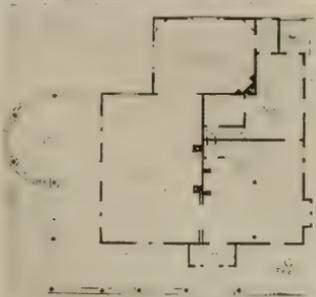


THE ADDITION TO STONYCREST.

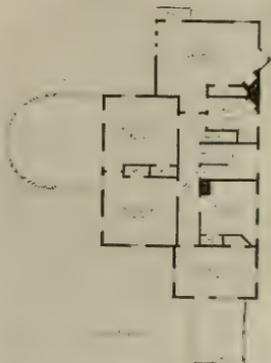
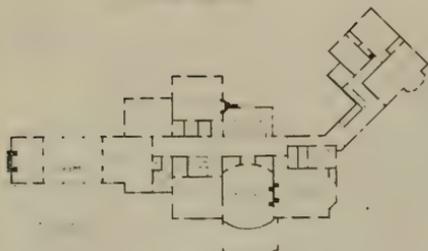
HILLCREST HOUSE FIRST FLOOR PLAN



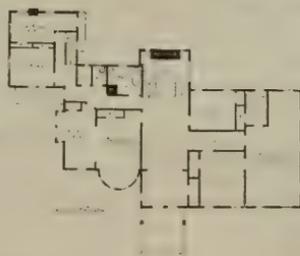
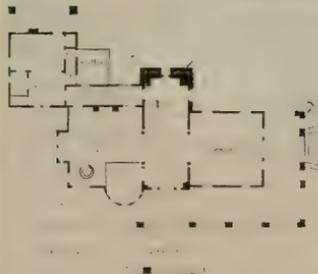
BRESEMONT OUR MOST PRACTICAL AND INEXPENSIVE HOUSE



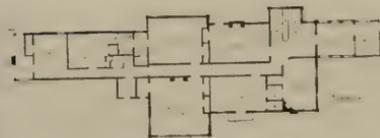
SECOND FLOOR PLAN



STONYCREST



SECOND STORY FLOOR PLAN OF BUBNA VISTA



THE BIG FOUR.

for space, the gambrel, gave large attic rooms. Yes, Hilltop, the first modern house in Hillcrest Manor, in presence and convenience was called a success.

Snap Shots of Building Progress.

Rarely have I built without taking photographs at different stages, making important data for future reference. First, the bare site, then, in natural sequence, the hole in the ground, the stoned-up cellar, upright corner posts, and so on to the completed dwelling, and year after year the increased tree and shrub growth, with each photograph usually taken *in scale* with some well known object as man, dog, or horse.



STONYCREST.

After Hilltop came Stonycrest, whose roof outline formed one of its several motifs.* The stone entasis foundation, the big sheets of glass from floor to door and window top, windows that occupied almost the entire ends of the rooms, and the deeply recessed inglenook two steps below the hall with its tiled floor in which was inset a lion rampant, were some of its features.

In the chimney centre was a colored, leaded glass window necessitating a double fireplace flue; had it faced the hills it would have been of clear plate glass. Box windows extended up into the partitions in low studded rooms, allowing larger view panes.

*The original plan called for an arched corridor, connecting stable and house, as shown on page 108.



DOUBLE
COURSED
STONEWORK



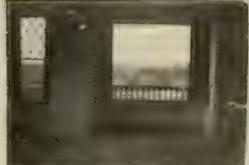
THE
OUTER
STONE
WALL



A PICTURE WINDOW



THE
INNER
STONE
WALL



A
DOUBLE
COURSED
STONEWORK
BUILT
BY
HAND



THE
INNER
STONE
WALL



DETAILS IN THE
BUILDING OF STONYCREST



DOUBLE
COURSED
STONEWORK

DETAILS IN THE BUILDING OF STONYCREST.



HOW WE SPACED SOME OF THE HOUSES



THE DAY WE RAISED THE ROOF TREE



THE MEDIAEVAL STAIR

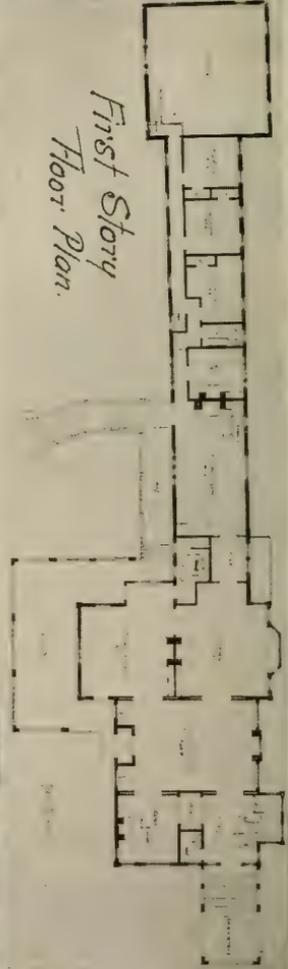


IT GREW OUT OF THE CLIFF



SITE + BUENA VISTAE

*First Story
Floor Plan.*



THE HOUSE THAT SPANNED A CITY BLOCK.

Translucent glass formed the risers in outside steps as well as *back stair flight*, flooding the basement and cellar with light, an excusable bit of commercialism. Heavy twenty-four inch fluted columns flanked the entrance hall on either side, and still other features were a niched window on the stairs, the great south plant window with curved top transom of stained leaded glass, and oaken carved griffins—a copy of those designed by Richardson for the library building in Burlington, Vermont—ornamenting the front door lintel.

But the prevailing exterior motif was the roof, that with curve and mitred soffit, peak and dormers, tried both purse and patience. As I remember it, six carpenters worked six weeks to close in and finish that roof in all its details, but it was generally conceded to be a thing of beauty.

The entrance posts built of big boulders were capped by rough stone laid in basket form for flowering plants, and fitted with galvanized iron drainage pipes.*

Prevention of Veranda Decay.

To dispose of rain water on the piazza a strip of ten-inch-copper flashing fastened with copper nails at the edge of piazza floor, formed a slightly inclined gutter, its outer edge cemented into the stone veranda rail as the stone was being laid up and connected with spouts leading into blind drains. This prevented decay in floor and beams and *solved* the annoying veranda water-drip problem when the veranda abuts against a solid stone railing. The bulkhead cellar doors of wired glass were screened and protected from uncontrolled grass or brush fires by plant-decorated *ramparts* of rustic-laid-up stones. Twice we lost valuable buildings through *burnings-over* carelessly handled.†



THE GABLES.

*Nine hundred dollars was the cost of the posts and short fences which joined them and in three years low evergreens and vines completely concealed their contours. Cheap but substantial boulder posts screened with vines would have answered as well.



UNDER THE SHED



A UNITED FAMILY



ANGORA AUREA



THE NEW ARRIVAL



DOGGIES



DODO



THE CHAIRMAN



VINE SCREENED ICE HOUSE



AT LADY'S DOOR



THE ORIGINAL HENNERY



STORM KING'S ARCHITECT



THE CAMP



PASTIME AND LABOR ON THE FARM



THE SITE

A WIDE RANGE IN FARM LIFE.

A short thousand feet, and we stand on the wide veranda of a long, low villa. "The Gables" featured a dozen outside balconies. Hall, parlor and dining room were on the ground floor as well as the kitchen extension which joined the dining room by a long butler's pantry. Yes, it was winged, and its isolation meant freedom from clatter, heat, and odors. Overhead were servants' rooms, bath, house-maids' sink room, etc., and laundry and cellar beneath.

The second floor had many connecting rooms, and increased area was obtained by building the front line of the house over the fifteen foot veranda, all overhang being thoroughly deadened.

Third floor rooms were made unusually cool by the high studded loft with three ventilating windows hinged from the bottom to keep out rain. These opened inward, were chain-hung at top and proved practical ventilators.

Leaf-Roofed Veranda Ceiling.

The ampelopsis has taken possession of the veranda ceiling, and one sits beneath a leafy canopy, while English ivy keeps the north stone posts green all the year. As the ceiling boards will last at least ten years and possibly twenty and can then be renewed, the unique beauty of this verdure-bowered ceiling made the doing worth while. Occasional sprinkling with insecticide downed fly, mosquito and spider. An improvement would be an indestructible cement ceiling.

All balconies are well flashed, canvas-covered and thoroughly painted. Door sills are *sharply* sloped and have triple rabbets. A poorly built balcony *invariably* leaks and is a large factor in falling ceilings and stained walls, and window frames about caps and sills need special flashing and close jointure.

Open and roofed verandas extend on four sides of The Gables, and include a servants' porch broad enough for an outdoor dining room at the rear of the house, well screened from the front entrance.

In Gables we succumbed to the arguments of the wall-paper salesman, only to find that sand-finished walls intended for paint or muresco and stencil treatment rebel when papered. Fall winds sweeping through open doors and windows stripped off roses, pansies, and nasturtiums by the yard.

Buena Vista.

Here is shown Buena Vista, which, with its length of 228 feet, stretches a full city block. It is built to fit the contour of the ground. When I first bought the farm and named it Hillcrest, I walked out on these ledges and planned to sometime tie the lichen-covered stone outcroppings together with a Moorish castle. After years of wait-

BUENA VISTAE



THE SOUTH FRONT



SOUTH AND EAST FRONT



SOUTH AND WEST FRONT



THE NORTH FRONT

THE MOORISH CASTLE.



BREEZEMONT



A BIT OF THAT
TENNYSON ROOF



THIS IS OUR FOREST PRIMEVAL



THAT ROOF.

ing and a score of months of continuous labor the castle, with stucco sides, and roof and towers of tile, at last crowned the hill, welcoming guests and owner through archway, up the broad stairway, and into its hospitable halls. Extravagance in paneled wainscot and beamed ceiling ran riot, as in leaded lights, arch-windowed turrets, and the copper-flashed, tiled roof, viewed from the lookout of which Buena Vista seemed like a miniature city.



BUENA VISTA.

I believe that Tennyson, with his love for tile, as against "slated ugliness," would have appreciated that roof, though it will be decades before it takes on its northern slope the moss-grown shades that pleased the poet. One can, of course, use tile in much less glaring colors, and in so doing span a century.

In Buena Vista were picture windows so large and heavy that they could not be conveniently opened, a remembered lesson to me. When I again tackled 8x8 foot picture windows they swung on pivots inserted in top and bottom or on either side. Fortunately, windows were so numerous in Buena Vista that stagnant air was unknown.

Hardware in the reception room was gold plated; this was not extravagant and never needed polishing.

Yes, it's a scrawny, uninteresting apple orchard, but you will see how in landscaping the east side of Hillcrest House, I used these old apple trees as a foil to the big building.

HILLCREST HOUSE



THE
OUTDOOR
GYM

THE STONE FRAMED LANDSCAPE



THE EAST ENTRANCE

A STONE FRAMED LANDSCAPE.

The Siren in the Apple Blossom.

The amateur farmer greets an apple orchard with open arms, looking upon it as the sure means of paying the hired man, possibly carrying part of the interest on the bank mortgage, and giving a severe drubbing to the wolf that stands ever at the door of man's domicile. His dream of a home embowered in apple blossoms gives him patience and courage to put up with the old house a while longer, and tends to dissipate the occasional depression caused by muddy roads, delayed trains, the unreason of farm help, and the myriad difficulties that daily dog the steps of him who, if undeveloped, cannot throttle disappointment or rise above vexatious surroundings. So the apple-



THE SITE OF HILLCREST HOUSE
AS IT LOOKED BEFORE WE DUG THE CELLAR

blossom-dream lures him on until he awakens to realize that apple blossoms last but one week of the fifty-two, that insects and fungi blight and disfigure, that a lawn is impossible, as grass grows unevenly and sparsely under the wide-spreading branches of apple trees whose trunks often *angle most ungracefully*, and that generally both view and breeze are shut out by their intertwined branches. In a word, if house and grounds are to be made attractive to the owner, *the axe must be his best friend*. Apple trees out of place are an aggravation, but it takes more courage to obviate the difficulty than was shown by "The Little Minister," who, spite of the fact

that the nearness of the cherry tree to his house menaced both health and comfort, followed in the footsteps of his predecessor, the old curate, and "never could find the axe."



HILLCREST HOUSE.

Hillcrest Hall and the Kingship of Living.

It's a long stride from the base of Hillcrest House to the lookout that crowns its ridge, from which is an extended view of land and sea. Truly one feels the kingship of living more keenly from house or mountain top, and even in lowly cabin instinctively searches for a place on the roof from which to breathe air that does not hug too closely the dusty highway.

A rare building was the big house. The oaken staircase of steamer stair design had a wide single flight to a landing lighted by a broad window of Tiffany stained glass, then divided into two separate flights. Stair rail was in keeping with the oak paneled hall, while string piece and balustrade were ornamented with metal beading.

The dining room, 20 x 30 feet, with doors at either end, led on the east to a tiled and fountained court and on the west to a conservatory. The ebonized antique oak trim increased its apparent size, especially as main windows were at each end.

The butler's pantry was 8x25 feet, and stairs therefrom led to the servants' suites in the ell.

Drawing room was in bird's-eye maple, with stained glass leaded transoms in the broad-seated bay, representing the four seasons

of an apple orchard; blossoming tree, half-grown fruit, matured apple crop, and snow-laden boughs. Mantel face and hearth were onyx with shelf supported by ormolu or mosaic gold brackets and lower half of the broad window opening on veranda, next to a side door screened with translucent leaded glass.

Hillcrest Hall towered four stories, and required a plot of land more than one hundred by two hundred and twenty-five feet to compass its angles and curves. There were at least two hundred windows. It represented both joy and worry in large measure, and I grayed a bit during its building.

Fireproof Den.

Adjoining the library was a fireproof den of iron, brick, and cement, with two air-spaced metal doors, iron shuttered and barred windows, and a wide fireplace. Under this den was a large stone walled room, its sides lined with asbestos covered metal shelves, making an ideal filing room with fireplace ventilation.

On the second floor were the usual half dozen bathrooms, tiled to the ceiling, and masters' bedrooms, both with and without balconies, dressing rooms with mirror doors, and everywhere a superabundance of large closets.

The billiard room windows on the third floor overlooked thirty miles of Sound and country. Wall decorations were pictures of hunting, yachting, fencing, and other sports.

Pistol Gallery.

Here was a Japanese room with lanterned, divaned and draped cosy corner, and leading therefrom a well ventilated pistol gallery, where bullets harmlessly impinged against the massive stone chimney breast. In the centre of this long corridor-like room stood a rowing machine.

A large linen and a cedar closet, the former having *two full sized doors*, completed this story.

On the fourth floor were housed the personal attendants of guests, distinct from house servants' quarters in the kitchen ell.

Gym. in the Open.

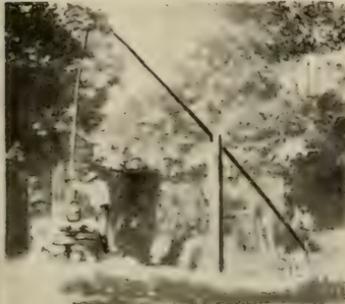
Over the arched and gargoyled porte cochère, screened by window boxes filled in summer with flowering plants and in winter with evergreens pruned in curves, is an outdoor canvas-floored gymnasium, equipped with trapeze, punching bags and other paraphernalia to be used for that few moments' morning exercise in the open that fills the lungs, develops the muscles, straightens the form, and



THE MEN BEHIND THE HAMMER AND SAW



BUILDING THE ARCH



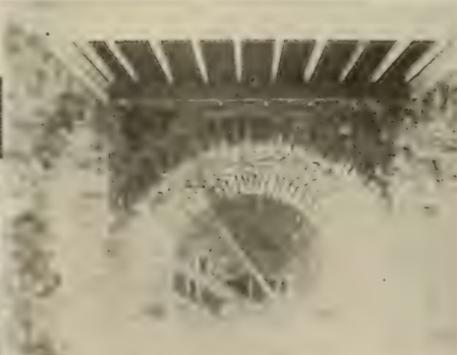
A PRIMITIVE LABOR SAVER



ON THE STOCKS



EACH STEP AND CAP A SINGLE STONE



THE FIRE PLACE IN THE PORT COCHERE



THE BOLD BALD SITE

RUGGED STONE WORK.

makes the blood surge and tingle, putting one in fine fettle for wrestling with the day's work.

The Rest Room.

Over the coachman's nook on the same floor is a writing or rest room with fireplace, reached from the house by the pergolad outdoor gym., a place to pull tired nerves into alignment, a room theoretically a luxury, but in reality a necessity.

Porte Cochère Fireplace.

Supporting the portals of Hillcrest House were grouped a half score of massive stone arches, framing a broad porch room, as shown in the accompanying photographs, from which a large area of countryside is visible. At the outer side of the porte cochère was built a high arched inglenook with a six foot wide stone fireplace, stone settles and recessed windows, intended as a waiting shelter for those who serve. Folk-lore has it that during the Revolution the Father of our Country was concealed over night in a cave less than three miles across lots from Hillcrest Manor. Whether the statement is true or false, its underlying sentiment coupled with our requirements caused us to transport by a double yoke of cattle a flat stone from the mouth of this cave to the fireplace-ingle in the coachman's nook, where today it serves as a settle as it may have served our first president.

Hero of New England's Dark Day.

We are on historic ground, for on the slope of the hill yonder lived Abraham Davenport, that hero who, when New England's dark day to the Puritan mind threatened the wrath of God, rose amid his trembling fellow legislators in the council hall at Hartford and in the words of New England's poet of the hills said:

" 'Let God do His work, we will do ours;
Bring in the candles.' . . .
A witness to the ages as they pass
That simple duty has no place for fear."

Putnam's Ride.

Across the valley we see Put's Hill, down which General Israel Putnam was pictured in our school books as recklessly urging his galloping steed while the pursuing English halted at the edge of the steep declivity. In the foreground is the plain 'cross which he dashed to safety, while just west of the hill is the stone chimney of the inn where he was eating when interrupted by his unwelcome callers. We are also but a short mile from Fort Nonsense, thrown up by the same rash and impetuous Putnam in face of querulous criticism on account of its useless location.

GARDENS of HILLCREST HOUSE



WELL-HOUSE, PERGOLA AND GREENHOUSE.



SQUARING THE SILLS OF HILLCREST HOUSE



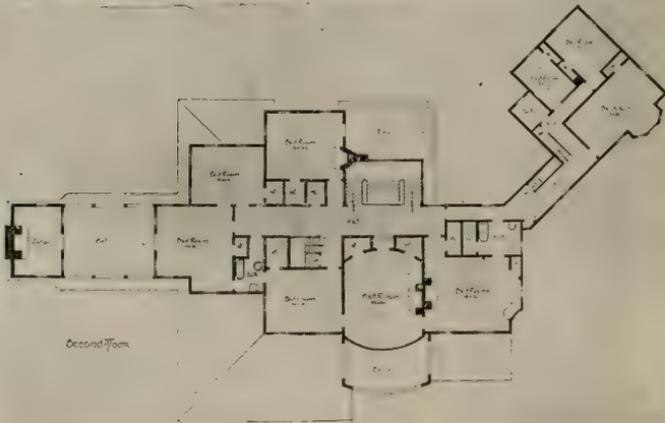
FRAMING THE VERANDA ROOF



RUSHING THE WORK



THE SKELETON IN THE VERANDA



THE BUILDING OF THE BIG HOUSE.
From Foundation Upward.



WHERE SEVEN ARCHES MEET



ARCH AND ARCH AND ARCH.



THE NEW ENTRANCE LOOKING SOUTH



FIVE YEARS LATER LOOKING NORTH SUMMER



THE SAME ENTRANCE IN WINTER BUT NOT IN DISCONTENT

THE ENTRANCE TO HILLCREST FARM AND MANOR.

The House of the Cross.

The cross was used as a motif in the building of Storm King, the roof of the porte cochère extending far enough beyond the house to form an outdoor lounging room, or ombra, entirely separate from the main building which is planned to throw the four wings of the cross into one large fountain-centred room. The manner of lighting the third story rooms with *side sliding* windows under the wide overhang left an unbroken roof line, much to the joy of any architect visitor, though it circumscribed the view. The clapboards with which Storm King is sided were mitred instead of abutting against a corner board.

Pompeiiian Fountain

Under the porte cochère and against the side of the ombra was placed a counterpart of one of the drinking fountains unearthed at Pompeii, in which one sees the depression worn in the stone two thousand years ago by the hand of the passer-by as he leaned against it while slaking his thirst.

In the tower a broad winding stairway followed the circular sides to the top, a somewhat difficult piece of work, especially the hand rail.



STORM KING.

Crowning a high ridge, its broad measurements and outlying wings making it stolidly indifferent to storms that rack and even rock the ordinary house, Storm King appeared as firm as its impregnable foundation, save when a severe thunder storm vibrated the granite ledges.

The Cromlech Stone.

Directly opposite Storm King is Stonehenge, that seems to grow from the ledge. Centring the lawn is a rough bouldered flat-topped stone similar to those strange altars that once served for Druidical

rites and sacrifices that make us moderns shudder at the horrible unaccountable cruelty of forbears—thank God—ages removed. The big arched entrance is half barricaded by a low, stone-capped wall, leaving ample space to enter the vestibule behind it, the design filched from Phillips Brooks' house in Boston. Overhead high stained glass windows are framed in the stones. Opening a heavy oak-battened, iron-studded door, one enters a small but lofty vaulted hall. The dining room is on the same level. It is sixteen feet to the beamed ceiling formed by the second story 4x12 surfaced floor timbers. This manner of making a beamed ceiling demands air spacing and very thick deadening to eliminate overhead noise.



STONEHENGE.

Dining Room on New Lines.

Few houses at *twice* the cost have as fine a dining room as "Stonehenge," whose high ceiling admits of the adjoining space being cut into two seven-foot rooms on different levels. One of these leading from the dining room forms a cosy inglenook, its red leather trimmed settles built each side the fireplace standing out in baronial richness against the ebonized wood. The other adjoining room is the butler's pantry and over both a mezzanine floor, making an ideal den but necessarily with a low seven-foot ceiling.

On the south side of the dining room French windows opening to the floor lead to a sheltered outdoor breakfast room and semi-conservatory. On the west over the low broad ebonized sideboard are especially designed leaded windows through which streams vari-colored light, while on the east is a doorway of the *unusual height of fourteen feet*, tapestry draped, giving commanding presence; in fact, any room rightly located is made impressive without extra cost by an unusually *high portière* doorway.

BRIERCLIFF

FROM ALL SIDES AND IN ALL SEASONS



BRIERCLIFF CREW OUT OF THE CLIFF



BRIER CLIFF FROM ALL POINTS.

In the side wall to the left of hall entrance is a projecting oriel window connecting library and dining room, and on the north, as we have seen, over inglenook and butler's pantry, the little den whose swinging casements of leaded glass open near ceiling height into the dining room.

Sky Rock.

Just beyond Stonehenge and northwest of Storm King stands Sky Rock. Its high cliff foundations and turreted outline silhouetted 'gainst the sky line make it true to name, fitting the cragged site as a long low building fits a plain.

The veranda view compasses a wildness of forest and ravine that belong to a wilderness rather than to a property within one hour of New York City. From the roof lookout is an unobstructed horizon view.

A desirable motif for a country house is a ten-foot wide fireplace opening as seen in Sky Rock. The entrance hall is 20x30 feet, with dining room a close second in size. One side of the latter is bayed, overlooking forest and valley, through which winds a silver-threaded river, merging into the waters of Long Island Sound. In the distance are the blue-hazed sand banks of Oyster Bay.

Settle in Stone Ledge.

A broad entrance porch fronts the cliff on the west. In it is a *settle cut in the stone ledge* on which Sky Rock is built. Cement steps from the porch lead upward to an iron-banded-donjon gate. Foot pressure on either metal door mat or old fashioned scraper starts the clanging of a gong that doubtless in feudal times called many a doughty warrior to don gasket and breastplate to repel invaders, but today answering that summons, the gate swings wide to greet the arriving guest, who steps into an ideal porch room, one of the half dozen motifs that inspired the building of Sky Rock. The marquise is formed by a curved extension of the platform of the porch room, which is about 25x30 feet. Densely headed rock maples and tall walnuts bar the western sun.

Domed Hall.

From the porch a wide Colonial door opens to the living room from which in turn three steps lead to a broad stair landing, holding a piano, a couch and a couple of chairs. On the west side of this landing are two long leaded windows, each four by twelve feet, while directly opposite is a stairway six feet in width leading to a second story, *circular, vaulted* hall twelve feet in diameter with coved ceiling, centreing in a dome of colored glass. Inset in the floor above is a sheet of translucent, extra heavy, floor wire glass. This entrance hall is pierced by six doors and connects with a nine foot wide galleried

hall with barreled ceiling. Opening therefrom are the sleeping rooms. The halls are unusual, but considered a success, and form one of the motifs of Sky Rock.

A basement and first story conservatory and fountain for the southeast corner I never built. Leading from the living room and wide veranda, they would form a feature well worth adding.

On the south wall was placed a motto-circled sun dial.



BRIER CLIFF.

Here is "Brier Cliff," riveted so closely to the ledge as to seem part of it. The veranda built on three sides narrows under the porte cochère on the front and extends to a belvedere on the west.

A Round Dining Room.*

Brier Cliff has stone fireplaces, French windows and balconies on three stories, and a circular dining room, with curved bay on the west, opening to the veranda, while the duplicate bay on the east has two mirror doors, reflecting the woods and the ravine gorge through which plunges the river, whose swirling current has worn its way deep into the rock. The steep sides of the ravine are held in place by lofty evergreens, tall walnuts and enormous boulders, some of which make caves within the rough-edged, lichen-covered ledges, while others are strewn in wild confusion along the rugged sides and in the river bed, forming what we called Ausable Chasm, Junior. It's a wild forest scene from the west veranda of Brier Cliff.

Nearly all rooms are corner rooms, with broad vistas from every window. The centre space in the attic is used as a billiard hall, with balconies built over the valley. There are large rooms at either end. Climbing still another stairway, one enters the tower lookout, commanding the horizon on all sides. North, south, and east are landscaped villas, while on the west is a forest wilderness.

*In another house an *elliptic* dining room gave better proportions, the waste corners utilized in adjoining rooms and hall as closets

The Crow's Nest in the Hemlock.

On the ravine side is a firmly built platform half way up the trunk of a big hemlock, reached by a railed step-ladder, forming a veritable crow's nest among the feathery boughs. Here the tune of the hemlock's faithful branches, "green not alone in summer time, but in the winter frost and rime" brings rest and inspiration.

Croftleigh House with its Galleried Veranda.

A few steps from Brier Cliff stands one of the most enjoyable houses in Hillcrest Manor. Croftleigh House has two pronounced



CROFTLEIGH HOUSE.

motifs that at once stamp it as out of the ordinary. One is the galleried veranda, projecting about sixty feet from the southwest corner of the house, and ending in a big porch room supported by stone posts. This room overlooks the same charming valley, threaded by the same silver stream, its beauty and utility greatly enhanced by separation from the house, standing as it does so that breezes reach it from all sides. Still farther away one sees the Sound and the sand bluffs of Long Island.

Feature Levels.

The second and interior motif is a combination of rooms at slightly different levels. North of the entrance hall three steps lead downward to the dining room and three steps under the large stair-landing bring one to the rear hall door leading to the east veranda. Opening this and the front door ventilates the entire house.

Hall, dining room and stairs are Colonial, with white enamel finish; the stair rail of mahogany. The broad landing with curved front holds a piano and a grandfather's clock, and over it is a three

sectioned, leaded, bayed window with arched head, to ceiling height, its delicate tracery of design showing through lacy curtains that break the glare of the eastern sun.

On the north side of the dining room, midway between floor and ceiling, leaded casements light the little den reached from a back stair landing practically in the same way as in Stonehenge, making a wide musicians' balcony. Over the dining room mantel, high in the brick chimney, is a niche with leaded design in clear glass, where rare bric-à-brac can be displayed.

The Ideal Suite.

Croftleigh had one especially large double bedroom with five exclamation points—exclamations synonyming view, size, glorious sunshine, air, and acme of comfort. When visitors crossed its threshold, it was only a question which point was voiced loudest or first. This room extended the entire width of the house—some fifty-five feet—and faced the south, with an horizon view of hill, vale, meadow, and Long Island Sound, fringed in the distance by the sand bluffs of Oyster Bay. The eastern outlook embraced vineyards, orchards, sloping hillside, flower and vegetable garden, field and pasture land, and the details of husbandry that make for joy as well as utility in country living, while on the west, barring a couple of extensive country homes, lay a wilderness of forest and stream, with broad vistas beyond.

In the boudoir portion of this ideal room, separated by grille and column from the main room, was a generous fireplace. The bedroom end connected with a completely appointed tiled bathroom and a sleeping porch 8 x 15 faced the southwest. The fourth compass point was compassed by a projecting bay.



CLIFFMONT.



CLIFFMONT

ITS
FRAMING AND FINISHING



OUR
ICE FIELD

SHAPING UP SQUARED UGLINESS.



HILLCREST THE
METAMORPHOSED FARM

THE
GABLE



HILLCREST AND ONE NEAR NEIGHBOR.

One of the motifs of Cliffmont, whose grounds join those of Brier Cliff, is the outdoor dining room reached through the living room, and well shaded by trees. The railed platform on which it is built is protected by an awning and forms the roof of the garage. Cliffmont boasts an exceptionally large lookout.

The stairs climb upward at the back of the chimney from the living room, and are side-settled at newel post.

In Cliffmont, as in several of the other houses, a *boudoir suite*, with its connecting rooms which make ideal living, occupies the *entire south front* of the second story, with south, east, and west windows. In the sitting room end, which is separated by columns, is a fireplace and inglenook, settled and grilled. A connecting bathroom forms the third member of the suite.



BREEZEMONT.

Misleading 20 x 30 foot Rooms.

Breezemont in plan and location justifies its name. It has one of the 20x30 foot living rooms that I have frequently built, but no two of which looked the same size, owing to difference in height, location, style, decoration and furnishing, which if arranged with "malice aforethought" can be made to increase the apparent size of a room twenty-five per cent.

Balconies, windows and well-lighted bedrooms are among the features of Breezemont, the largest bedroom facing all points of the compass by means of a windowed alcove.

Tree Basket Nest.

A big buttonwood tree grows through the centre of the veranda floor, and high in its branches is chain-hung a strongly framed, wire basket-nest large enough for a children's playhouse.

BREEZEMONT



HOW WE BUILT
BREEZEMONT



THE DOUBLE DECKER



FOR THE
MONEY
THE BEST WE
EVER BUILT

FROM OUTLINE TO FINISH.

Ledges, an English house built around a 12 x 12 foot stone chimney stack, with quaint stair tower, big arched and stone-settled fireplaces, beamed ceilings and timbered and stuccoed interior as well as exterior walls, is unusual, perched on a cliff overlooking a steep, wooded incline, fretted at its base by rock-strewn rapids of the swirling river.



LEDGES.

Norman Tower.

In Norman tower are set the slit windows of mediaeval times, through which feudal lords and their retainers repelled with javelin and bow-gun invading hordes.

Before speeding northward to Drachenfels, that house of mighty spaces built in the centre of a rare, Long Island Sound-bordered woodland, and ere we leave the undulating meadows and picturesque wooded knolls of Hillcrest Manor, we will bid adieu to the patriarch of this group, the old farm house that stood there before swamps were reclaimed and the wilderness of bramble and brier made to blossom as the rose; when the arable land was simply potato patches, corn, and hay fields instead of orchards, vineyards, Colonial and Italian gardens, and country villas.

In the houses in Hillcrest Manor I tested various modes of construction; a log slatted building; an odd design in roofing tile; stucco in its varied forms, plastered on either wooden or steel lathing; laying clapboards rough side out and staining as we do shingles; siding with lapped white wood boards twelve inches wide, mitred at the corners; belting side walls with shingle laths over clapboards; shingles



LEDGES



THE FEUDAL TOWER



THE
FIRST
FRAMING



THE MEDIAEVAL SLIT WINDOW

WHERE SOME OF THE STONE WALLS LANDED.

laid with different weatherage, seven coursed shingle roofs lapped in curves to imitate thatch; tile-hipped and tile-ridged shingle roofs, and a half height shingled veranda rail, topped with low wooden paling; novelty siding on outbuildings or battens with one side nailing and slip joint to prevent splitting, as well as blocked cement, hollow brick and terra cotta construction and veneered air-spaced brick, tearing out again where the effect failed in harmony and the result was unsatisfactory.

During these building years we turned nature topsy-turvy—at least, so said the farmer's sons who, after a twenty-year absence, revisited their birthplace.

The Adirondacks at the City's Threshold.

Within an hour's drive or a fifteen minutes' motor trip from Hillcrest Manor, a rough, wooded tract edges on one side a small lake, on the other the Sound. Through this tract was built a winding road, fringed by white oak, chestnut, cedar, hemlock, birch and beech, leading to the Sound. It is like a bit of the Adirondacks at the city's threshold and includes two verdure-crowned, rock-edged islands, deep ravines and wooded knolls, through which wind two miles of roadway. Here we built Drachenfels.



DRACHENFELS.

The house itself is baronial in appointments and decorations. A steep driveway leads to a porte cochère on the east. The oaken door is six feet wide, with heavy iron hinges and a knocker from an ancient castle on the Rhine. Stepping through the doorway, one stands in a beamed and columned hall of 20 x 40 feet, with a thirteen foot ceiling. The twelve foot wide mahogany staircase flanked by

DRACHENFELS



HOW WE TRANSFORMED DULL
NORTH LIGHT TO SUNLIGHT



THE WINDOW EXACTLY SIXTEEN
FEET SQUARE ON THE STAIR
LANDING.



THE WINDING STAIR

MANORIAL AND IN SOME FEATURES BARONIAL.

Ionic columns leads to a stair landing twenty feet in length with a ceiling forty feet high, wainscoted and settled, in whose wall is a sixteen foot square concave window of green and golden leaded glass, colors which swing the compass from north to south. Its form makes it appear six feet higher than its width, a point we remembered in building other concave windows. A broad columned entrance hall opens on the west to a veranda twenty feet wide.

The Colonial dining room, 20 x 30 has wide columned alcove window and mahogany beamed ceiling.

All mantels are high, wide, and deep; one marble, others mahogany, gilded wood, or white enamel finish in keeping with the rooms.

French windows open from parlor to porch, showing in their curved muntins a touch of Versailles. The veranda has an exceptionally low stone rail, increased to normal height by boxes of plants. Posts are unusual, as seen in the photograph, with tops broader than bases—seemingly too slender at the bottom, but for the enlarging stone support which is a foot or two above the low stone rail. They are of chestnut plank built about a heavy chestnut centre, the forty-two members of each post-shell held together as hard and fast as iron can band them.

A Trussed Transom.

Twin picture windows of one sheet of plate glass at the west end of both the long parlor and library are each nine feet wide and six feet high. A thirteen foot ceiling allows of leaded light transoms, but the wooden parting strip is barely two inches wide, and when they were first placed a gale threatened to dash the whole front to the floor. The problem was solved with a two-inch truss-iron set edgewise laid closely against each side of the lock-rail its full length within and without. It could not be beaten in with a sledge hammer as far as the parting strip is concerned. The library has mahogany book-cases, high columned mantel, wide window settles, and a big observatory window with leaded transom.

Under the stair landing is a butler's pantry with three divided sink of planished copper to avoid dish breaking. It extends the length of the three windows, which thoroughly light this important room.

An easy flight of basement stairs brings us to the tarred and cemented cellar blasted from the ledge. It is and has always been a stranger to moisture, except as the area entrance was flooded before we bricked and drained it, and built an overhead wire-glass, light giving bulkhead roof that shoots the water where it belongs, into cobbled gutter and thence to flower garden and lawn. The stone walled basement extends under the entire house, and contains kitchen,

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THE BIG HALL



THE TWELVE FOOT WIDE STAIR

THE TWELVE FOOT STAIR.

laundry, man's room, refrigerator and storerooms, shower room for the athlete, tool room and billiard room, the latter with arched and settled stone fireplace that would rouse to the joy of living the most phlegmatic and pessimistic skeptic or indifferent stupid tyke.

Returning to the first floor, one passes under the big cement-sheathed and terra cotta fire-protected steel I-beams that stiffen the house immensely and carry the north side of the hall, and climbs the broad stairs to the 20 x 40 foot second story hall, which, wainscoted and beamed, forms a vaulted room from which transomed French windows lead to the west balcony.

In the forty-foot staircase tower, half way to the third floor the flight is broken by a projecting mahogany railed balcony which seems suspended in mid-air. The stair turns and lands between columns on the third floor, where are rooms and baths for guests.

There is a fourth floor for servants and above that the lookout.

All bathrooms are tiled, fixtures of the best, properly back-aired, and with chimney ventilation.

Hanging Balcony.

Scant head room under the curved balcony leading to the third floor prevented the use of twelve inch wooden girders. Instead of the ugly chain-hung-from-ceiling method, two pieces of heavy iron trolley rail placed through double walls—one a closet wall—and fastened thoroughly by braces, gave a fine holding purchase. On this the balcony was built, and it is as solid as the proverbial meat axe.

Drachenfels has a boulder stone foundation, sides of stucco paneled with chestnut timbers, and roof of stain-dipped shingles. (It should have been of slate or tile.) Plate glass is used in all lower, and clear leaded glass in all upper windows, except twenty or more which are of stained glass. There are balconies from bedrooms and balconies from halls, their floors canvas covered; window seats boxed full length for dresses, many windows columned, and with suitably colored leaded light, specially designed stained glass transoms for halls, dining room, library, parlor and bedrooms, and hard wood floors throughout the house, some with parquetry borders, but avoiding sharp color contrast which tends to curtail the size of a room.

Twin Chimneys.

The chimneys of Drachenfels are stone, and one of its chief motifs is shown in the twin chimneys, one at either side of the amber-hued 16x16 foot leaded north window. Indeed, Drachenfels fairly teems with motifs. The first floor, each room of which has broad sliding doors, converting the large area into one room at will; the twelve foot wide stairway, the stair hall alcove with its forty foot height and striking leaded windows, and the mid-air balcony are all well worth working out.

DRACHENFELS

20 FOOT WIDE VERANDA



A POST WIDER AT TOP THAN BASE
Reversing on architectural rule

A TWENTY FOOT VERANDA.



THE WOODLAND



NORTH ENTRANCE TO DRACHENFELS

THE NORTH ENTRANCE



THE HOUSE



DRACHENFELS



THE ISLAND ROAD



THE EAST FRONT



ISLAND HOUSE



THE MAIN HOUSE



THE SOUTH FRONT



THE HOUSE WHICH EDGED A FOREST

THE HOUSE WHICH EDGED A FOREST.



THE
LAWNS
OF
DRACHENFELS



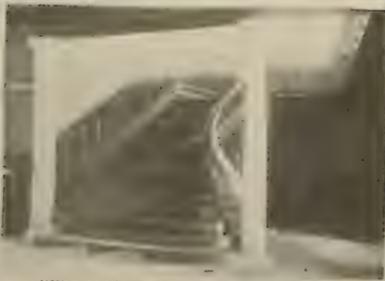
THE BILLING ROCK FIREPLAC



HEARTSEASE



BUILDING OF
CROSSWAYS



THAT TWELVE FOOT WIDE STAIRCASE



THE LAWNS OF DRACHENFELS.

The Crater Garden.

Grounds are arboretum-edged, while on the lawns are grouped choice and desirable shrubs and trees, and there is a rare Druidical garden, into the centre of which was dragged, by that double yoke of cattle, a ponderous, representative Cromlech stone. This garden outlines a miniature Monte Nuova crater like that just outside of Naples. Standing on its edge, one looks down at a varied mass of flowering shrubs and plants. The winding paths are bordered by old-fashioned box, while lily, eglantine and honeysuckle perfume the air and brilliant blossoms carpet the ground. This wonderful little basin was of nature's fashioning; man simply intensified its beauty by rearrangement and planting. In some ways it outclassed an Italian formal garden.



ISLAND HOUSE.

Passing through the depth of the forest that surrounds Drachenfels, as shown in the accompanying picture, in a spot where time and again the Indian pitched his wigwam, stands Island House. When one crossed the causeway, flashing in view, it seemed like a new discovery, so hidden by foliage and rocky cliff was this ideal semi-bungalow with the big living room and stone fireplace, stairway hidden behind the chimney, wide veranda, and upper balconies overlooking the water. The veranda posts rustic, the house itself attractive and homelike, it is the best example I know of a thoroughly constructed, plastered and finished house built in ten weeks. There are ten rooms of good size, and it cost exactly \$3,000. A pokehole head hitting cellar was the one drawback and a needless error.

Two miles 'cross country, at the meeting of the ways, stands Crossways. With that broad towering exterior stone chimney, it fits



DOGS AGAIN



STONY CREST IS FINISHED

NO IT'S A DOG



MEETING THE TRAIN



THE WONDER TREE



ETHEL



DOGS AND THEIR MASTERS.

rarely the demands of country architecture as well as the site. Across the front of the house is a wide, roofed veranda, extending beyond the house line on the northwest corner. How often



CROSSWAYS.

I pity humanity, baking on a south or east veranda, when, by building it as above and using an *open rail*, cool southwest breezes and a broadened view are obtained.

Building up the stone foundation into two foot high base supports to the veranda posts, as shown in the photograph, gives greater stability and a more pleasing effect than a continuous wooden railing. The wooden posts should have been twice as large.

The Lavatory Theft.

A screened minstrels' balcony on the stair landing is one of its features. A couple of steps under the main stairway give ample head room in a lavatory practically *stolen from the cellar*, a plan well worth more general adoption. Either living or dining room may be used for eating, as winter's sun or summer's shade dictates, for in the large butler's pantry are doors to each.

The windowed hall on the third floor in the ell between servants' quarters and main house is utilized as a servants' bathroom, but may be used as a thoroughfare on occasion, connecting the two portions of the house, as fixtures are screened with a wooden paneled partition—a pardonable makeshift under some circumstances. Crossways stands for comfort in every line.

Red Towers.

When I left Orange, the birthplace of Red Towers, I took with me as foreman a man born in Orange, who had never seen a rough bouldered stone wall like those crossing Westchester County and Connecticut in all directions. Indeed, the house is built in a stoneless land, as we in Connecticut understand stone and land. I've cleared many a Connecticut pasture with oxen, dynamite and

crowbar when there were upheaved on the surface enough stones to completely cover the ground to a depth of several feet and in a single winter on less than a dozen acres have had ten thousand inches drilled and dynamited, yet Orange is hardly sixty miles 'cross country from Hillcrest Manor.*



RED TOWERS.

America's Giant Causeway.

Red Towers savors a bit too much perhaps of the aggressive in architecture, yet is a dream of comfort within, while without a half dozen years' growth of trees and vines softened and toned its outline. Red Towers was a compromise between Queen Anne and an effort to do something out of the ordinary, a common failing, but standing for progress. It had many good points towering above its neighbors in its sheath of green, with foundation of selected hard brown sand stone, first story trap rock, similar to that in the Giant's Causeway in Ireland, and taken from a pillared rock deposit in the Orange Mountains, whose broken surface is almost a jet black and hard as flint—hearsay states it's the only Giant's Causeway in America. The mortar joints were red; the balance of the house, both side walls and roof, covered with red tile, ornamented on chimney face and banded under the balcony with terra cotta bas-reliefs, while the tower was copied from one built on College Hill in Burlington, that

*The man who reduces acts to figures and glories in statistics states that allowing fifty cents a day for labor the stone walls of Connecticut equal in cost the improvements of all kinds in the entire state.

hill of hills where from the windows on one side are seen Mt. Mansfield and the rare green mountains of Vermont, and from those on the other, snow-crowned Mt. Marcy, rising above Lake Champlain, surrounded by the health-giving pine forests of the Adirondacks.

A large wood carving arched the porch veranda entrance, before which was a broad stepping stone of granite six by eight feet.

The front door was of quartered oak with carved lintel and leaded light, the knocker, in which was cut the owner's name, made from a knight's vizor, while the brass strap hinges and lock were heavy and of quaint design.

The hall was trimmed in real cherry of dull velvet finish, and the brick hooded mantel, ceiling high, decorated with moose horns. Two large pillars carried the centre of the house, and sliding doors connected double parlors, dining room, conservatory and hall, making it possible to form one great pillared room when desired. The upper half of each conservatory sliding door consisted of a six foot square of plate glass.

Conservatory.

A honeycombed, ornamental design in the brick wall under the conservatory was copied from a palatial residence in the Berkshires and the glaring spectacle windows from some forgotten source.

The conservatory formed the arc of a circle at one side of the house, its roof of heavy skylight wired glass with ventilators protected by galvanized wire screens. It was later roofed in wood to prevent breakage. Glass electroliers and brackets were used to avoid corrosion. Connected by a private stair, but on a lower level, leaving an unobstructed view from the dining room windows, were the greenhouses. From these windows, one looked out on a continuous bouquet of bloom so far below and at such an angle as to overcome objectionable glare.

Just beyond were the cold graperies, roof connected to give length and proportion, yet entirely separated, and with air space between to avoid plant contamination through insect or disease.

The library alcove, with high leaded windows over the bookshelves, was in a bayed tower, and opened from the southwest parlor, while from the north parlor was a door leading to the northwest veranda, thoroughly awned and with absolutely water-proof floor. The space beneath served for storage, sides being screened with translucent glass.

Quartered oak trim was used in dining room, which was wainscoted and had a squared bay on the southeast. The butler's pantry on the west was also trimmed in quartered oak.

The basement, mainly above ground, contained kitchen, laundry, man's room, storage and furnace rooms, with potting house and boiler-room under the conservatory.

One servants' bath was in the basement, side walls to a height of six feet and the floor being covered with thick skylight glass—an unwise experiment as it proved slippery.

Kitchen walls were faced with white glazed brick.

The basement was made absolutely water-tight and ground air-proof within and without with underdrains and tar and cement treatment on floor and side walls.

From cellar to third floor was a lift large enough for trunks, but the block-and-tackle rigged in the upper loft over the stair well proved a disastrous experiment.

The entire second floor trim, like entrance hall, stairs, and parlor, was of genuine cherry.

One dressing room and an outdoor bedroom overlooked Llewellyn Park and the mountain. The bed alcove connected with bath and dressing room, and was separated from the boudoir by a Moorish horseshoe arch fifteen feet wide reaching from floor to ceiling.

The billiard room on the third floor was plaster finish to tower peak. On this floor were bedrooms with special features, for instance, mantels of unique design from eight to twelve feet in width, special cabinets, odd shelving, and picture windows, also dressing rooms.

The red birch floors were selected from a pile of flooring containing 500,000 feet, and it required the entire time of two men for a week to select the finest and most beautifully grained. When planed, glass or steel scraped, sand papered, filled and waxed, floors were produced which today after years of wear, are practically pictures in wood.

FORCES
KNOWN
AND
UNKNOWN



THE
GATHERING
STORM



CHAPTER V.

BELLERICA—WHITE ROCK—A YACHTSMAN'S SHELTER—SHORE
ROCKS.

NO finer bit of earth was ever wave-washed than the strand of sand and cliff that fronts Bellerica. It seems a fragment of the rock-ribbed coast of Maine transferred to Long Island Sound.

There are Moorish touches in outdoor bedrooms, roof and porch lines, with large supporting posts and overhang, while the wall space is pierced with rounded bays and large picture windows in groups of twos and threes.



BELLERICA.

The interior is spacious, with semi-Oriental treatment in stair, grill, balustrades, and alcoves. An over attic with casement windows hinged at the bottom, swinging inward and ever open, cools a third floor that is in many ways as pleasant and comfortable as the second.

Large trees shade the porch and give seclusion. In fact, building and planting were tightly hand-clasped here. The advantages of immediately beautifying with tree and shrub are fully illustrated in the photographs showing both crude beginnings and mature development.

Two Houses in One.

A study of the floor plan will show that Bellerica is really a bi-family house, each having advantages, and the two quickly and practically treated as one house when desired.



WHITE ROCK.

Here is conventional little White Rock, a Philadelphia inspiration. It may have been the white stone steps in that placid city that suggested this name, but the reason for its building was the fact that I chanced to see one day in crossing Walnut Street the demolition of one of the grand old houses of Philadelphia. I bought the interior trim, including doors and windows, which were quaint and odd, and had them shipped to Connecticut.

The roofs of the lift windows follow the slope of the upper gambrel. The *afterthought windows* at the ridge are convenient though ugly, as afterthought windows as well as other built-in features sometimes are, but transformed a dark garret into comfortable servants' quarters.

A big white quarry ledge on the shore was selected as its site, cellar blasted, and practically in three months this bit of Quaker City, as far as windows, doors and trim were concerned, was basking on the shores of the Sound.

A House Enlarged, Yet Not Enlarged.

A very convenient house was White Rock, porch-pillared and porte-cochère, its interior more attractive than its exterior. The capacity of the dining room was increased by the addition of a bay, an afterthought relief that helped amazingly, and the use of a round instead

of a square table. A compromise serving pantry was made from a closet with doors opening into both dining room and kitchen.

The front door had transom and side lights of "ye olden tyme," and all trim as stated was of pronounced Colonial type. A quaint and attractive staircase, columned living room, half a dozen cosy bedrooms, and a long room, half studio and half bedroom, over the porte cochère, all helped to make up a sightly and livable house.

Years after, like four others of my creation, guided by sturdy horse and windlass, it strolled inland to give place to a more pretentious dwelling, but the quintette still exist as homes in the truest sense.



Harbor View.

A couple of stone entrance posts and a winding drive between trees that shade a roadway leading to the shores of the Sound reveal a wonderful panoramic view of island, sea, and headland as strikingly beautiful in its way as that which suddenly greets the beholder as he crosses for the first time the threshold of the Catskill House and sees at his feet the valley of the Hudson, or emerges from the darkness of the Haverstraw tunnel into the blaze of light revealing the startlingly beautiful view of that same Hudson flowing toward the sea.

The development in lagoon and curving waterways is akin to fair Venice. Indeed, Connecticut's "Harbor View" or "Yachtsman's Shelter" is even more than the name implies, for it includes not only lagoon, harbor, and Sound views, but the beautiful woods through which the driveway reaches the shore are parked and arboretumed with rare skill. Houses of stone and stucco, shingle and brick, on wooded crag and hillock, fringe beach and cliff.

A house of flesh and blood is Shore Rocks. It is, like Pinnacle, representative of the building experience of nearly two score of years, and many of my air castles are in it woven into reality. To me it embodies solid comfort and completeness of appointment, but it was a far cry from its inception to the pulling of the latch-string.



SHORE ROCKS.

Water Lawn Groomed by Nature.

Volcanic-veined and lichen-rifted rock and boulder, both under and over cliff, stood where we blasted out its cellar. It seemed downright sacrilege to swing the axe against the gnarled and twisted cedar that had staunchly breasted the storms of *two hundred and fifty years* or to destroy the moss grown and beautifully veined ledges with wedge, drill, and dynamite; but the choice was made, and today my dream of years, with its forty rooms, outlying pergolas, bathing pool, and yacht pier is a reality. The house is embowered in trees and every main room possesses an uninterrupted outlook across the Sound—a water lawn of many miles groomed by nature, one of man's care-free legacies, presenting an ever changing kaleidoscope of beauty.

Over the entrance of Shore Rocks is a chain-hung marquise, partly enclosed with a glassed-in vestibule, that essential hall draught-stopper, while on the brick outer posts are quaint non-rusting metal lamps. The cement and red tiled platform with metal edge and inset door mat is ornamented at its corners by lions, the platform being indented at the centre, forming a base pedestal support at each side. Cement joints between the tiling are three-quarters of an inch in width. All eave spoutheads are duplicates of Nôtre Dame gargoyles.

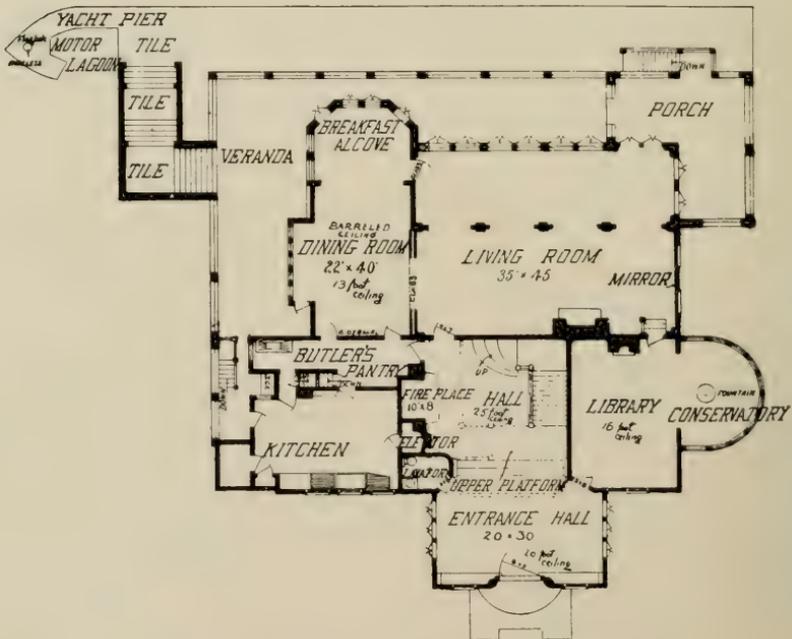
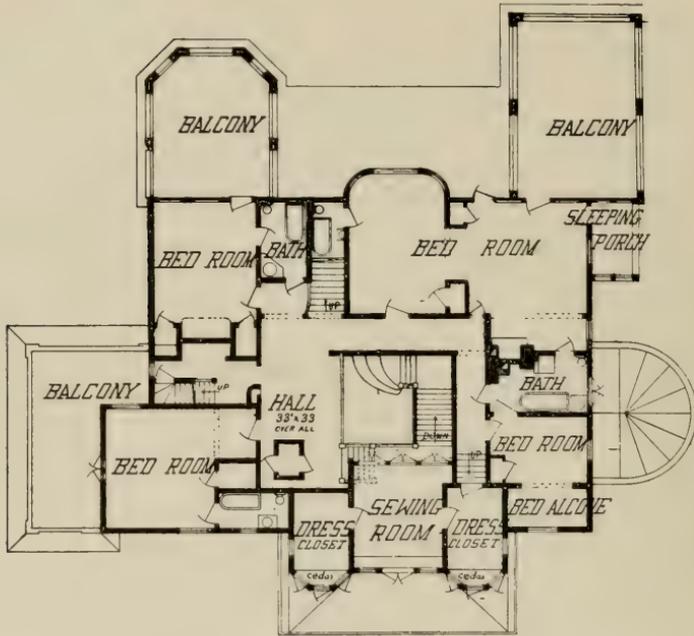


THE LAST OF THE THIRTY STEPS IN BUILDING.

The outer vestibule door is metal-grilled its entire length, the inner single seven by nine door of English oak, sill of marble, siding of cement, ornamented at the centre with a classic head, while at either side in the white marbleized front are niches for plants, and an oddly wrought iron scraper of the vintage of a couple of centuries is set in the cement platform.

The first story of Shore Rocks is écu-face brick, every fifth course fastened with irons to the heavy wooden studding, giving an extra air space for warmth. It has a corbeled stepped-outward brick water table on cut stone foundation. The second story siding is of three coat work in cement, the last coat thrown on with a trowel to give an exceptionally rough effect and disguise the small surface cracks which *always* appear in stucco. The middle coat was put on over the first coat to cover any openings through which moisture might strike the galvanized wire lath, an important point to remember when using this construction. Wire lath must be stiffened with iron rods and separated from the wood with V's, thus furring out the outer walls, decreasing liability to crack as the wooden sheathing shrinks. This air-space makes an absolutely dry house, appropriately called furring, from the fur of an animal.

The basement wall is of quarried stone; roof of red mission tile, and gables of chestnut plank set upright, of equal width, T'd and G'd and slightly V'd at joining with wooden keys placed a couple of



FIRST AND SECOND STORY FLOOR PLANS.



SITE OF SHORE ROCKS.



THE NORTH FRONT.



SHELTERED HARBOR.



THE ICE BORDERED COAST LINE ONCE IN A DOZEN YEARS.



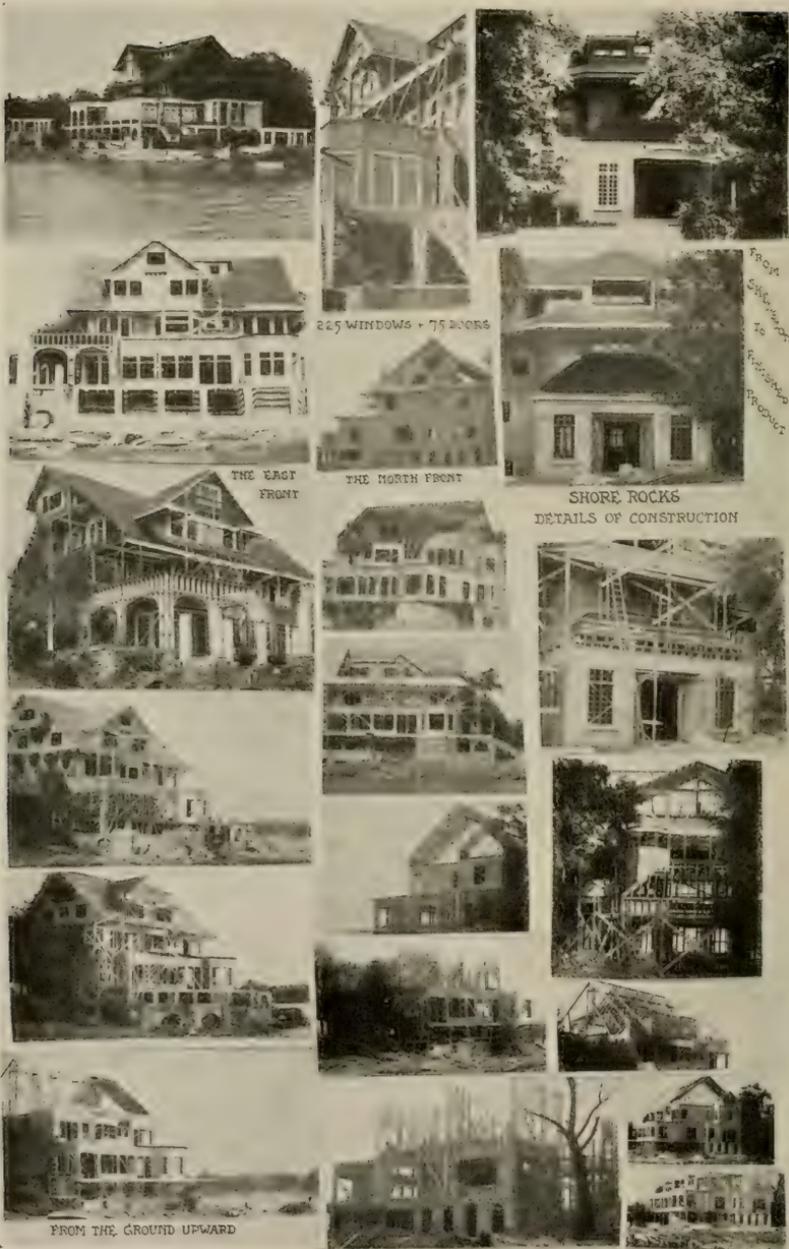
CRAG SITE BEFORE & AFTER



WHAT THE YEARS BROUGHT



WHAT THE YEARS BROUGHT.



225 WINDOWS + 75 DOORS

THE EAST FRONT

THE NORTH FRONT

SHORE ROCKS
DETAILS OF CONSTRUCTION

FROM THE GROUND UPWARD

FROM SKELETON TO FINISHED HOUSE.

FROM
SKELETON
TO
FINISHED
PRODUCT



SHORE ROCKS CONSTRUCTION



NATIONAL
LUMBER
CORPORATION



THE EASTERLY WATER FRONT



THE WEST FRONT



BUILDING THE GAZEBO

CONSTRUCTION IN VARIED STAGES.



CRAGS ON WHOSE
SITE AFTER HOUSE
MOVING WE BUILT
SHORE ROCKS



OUR WHALE ROCK



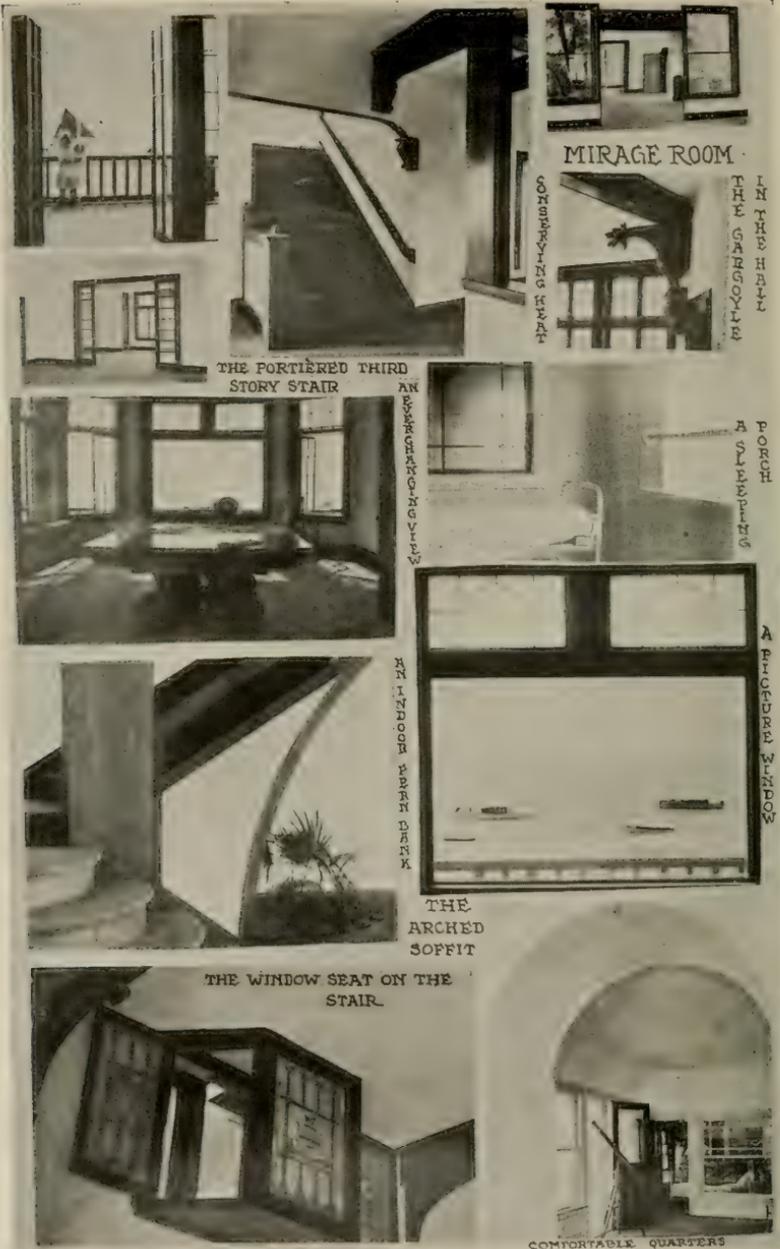
THE SITE THAT CHANGED.



THE EAST FRONT.



THE WEST ENTRANCE.



MIRAGE ROOM, SLEEPING PORCH, STAIR, WINDOW SEAT.



SHORE ROCKS
Diving Pier
in a storm.



SHORE ROCKS
Diving Pier in
the grip of
the Ice King.

feet apart on the seams. Woodwork of the upper portion of the house, together with the gables, is painted a bottle green, the rest of the trim being white. The eight foot overhang and this painting treatment lower the house.

A projecting gable forms the top, and two windows the respective sides, of a *panel five by ten feet*, in which is fastened a copper bas-relief along graffito lines of a rescue at sea, following in a way that old Saxon style of exterior wall decoration.

Windows, casement and lift, transomed and leaded, the majority of plate glass, number quite two hundred and twenty-five, and there are seventy-five doors and one hundred and twenty electric outlets.

Deeply embrasured Georgian casement windows, showing the heavy centre cross, light the entrance hall, whose floor is of quarry tile while the vaulted ceiling is braced at twenty-five foot height by cambered beams. Walls are paneled with oak in squares to ceiling and the ceiling is of dark oak in Arabesque design. Set high in the wall each side of the stair landing gallery are paintings.

Off the entrance hall are coat room and lavatory, enlarged and heightened by infringing on kitchen and basement, though not to the detriment of either.

Banishing the Funnel Stairway.

In some ways, the unusual was attempted in Shore Rocks, as shown in the entrance, lower stairway and second story corridor



THE ENGLISH WINDOW IN THE LIBRARY AND WINDOW RECESS SEAT ON THE STAIRWAY.



THE EAST SIDE OF LIVING ROOM, PORCH ROOM BEYOND.

THE BELVEDERE



MAKING A LANDING



QUOIN BUTTRESS AND ARCH



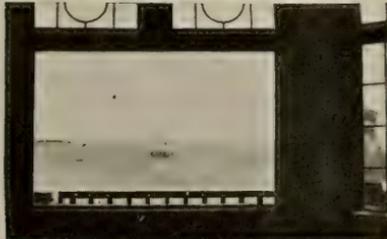
BALCONY



A BREAKFAST ROOM WINDOW



LAND-LOCKED MOTOR BOAT LAGOON
DEPTH OF WATER
THIRTEEN FT.



FROM THE BREAKFAST ROOM



LAND LOCKED MOTOR BOAT LAGOON.



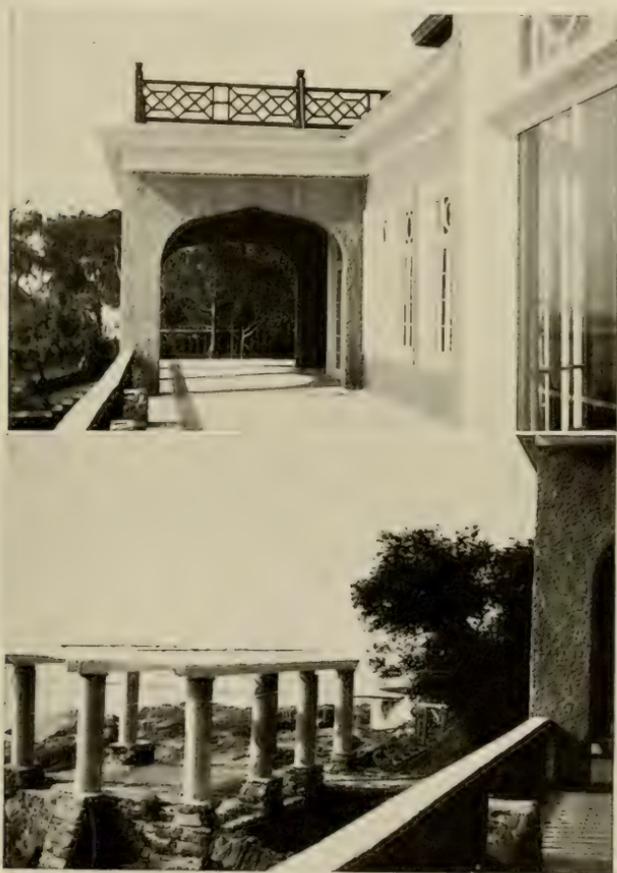
THE UPPER STAIR AND THE R. AND J. BALCONY.

halls. Instead of the city scheme of an upright funnel from front door to roof, incidentally causing a large loss of heat, the staircase from second to third story is at one side and behind a double arch, allowing of beamed ceiling treatment in the main stairway hall, and giving a twenty-five foot height in the clear over the stairs. One really enters the principal rooms of the house after passing through the entrance hall under a broad arch supported by rabid-mouthed, grotesquely-molded gargoyles, by a short flight of five six and one-half inch riser steps, twenty feet wide, which lead to the staircase hall twenty-five feet square lighted by leaded casements in the boudoir on the mezzanine floor. On the pedestals flanking these wide stairs are grouped masses of the unkillable *Ficus Pandurata*.

Fireplace Opening 10'8''.

The hobbled fireplace opening in the staircase hall is ten feet eight inches wide. It has crane and trammels and from its iron header

beam are suspended three metal rings used in "ye olden tyme" to handle "ye huge Yule log." The broad mantel shelf of oak, banded and ornamented with wrought iron, projecting two feet from side wall, is eighteen inches through and eight feet from the floor, supported by caryatides, and the motto across its face reads, "Sings the blackened log a tune learned in some forgotten June." For either end of this mantel shelf we had planned a complete set of ancient armor, but compromised with a single specimen of the armorers' art guarding the stairway.



THE PORCH ROOM SOUTH AND WEST.
THE EAST VERANDA.

Wide Range of Fire Dog.

In Shore Rocks the field of the fire dog is wide, ranging from twice the size of a Great Dane to that of the low pudgy dachshund, and from ponderous black iron to lighter framed, gleaming brass and



GLIMPSES OF THE SEA.



THE BALCONY

A NEW DOOR FOR THE SUN ROOM

THAT DINING ROOM WINDOW



SINGLE 7x9 DOOR

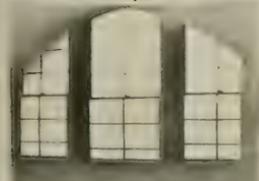
WOMEN'S ROOM



THE LIVING ROOM BAY



CORNER WINDOWS



THE STUDIO WINDOW



THE BUTLERY DOOR



MINSTRELS' BALCONY

A SLEEPING PORCH



THE TREE ROOM



TO THE LOGGIA

WORKING OUT INTERIOR DETAILS.



THE LOFTY ENTRANCE HALL



THE CONSERVATORY



WIRELESS ROOM



A GUARDED STEP

A SLEEPING PORCH



THE FLAMES GLOWED A LONG DISTANCE



INTERIOR GLASS DOORS



CLOSET ROOMS



ONE SLEEPING PORCH



THE SOLID BALUSTRADE

MUNSTRELS' BALCONY

THAT MEZZANINE FLOOR

WIRELESS ROOM, CONSERVATORY, MEZZANINE FLOOR.

nickel forged and molded in varied forms from cannon ball crowned fronts to grotesque midget fire-warders.

The woodwork of all first story rooms, including stairs and wainscoting of both entrance and upper and lower staircase halls, is English oak and all have oak floors. Basement and bedrooms are floored with Georgia rift pine.



THE WIRELESS STATION.
THE SHELTERED LAGOON.
THE TILED YACHT PIER.

Stalking Lion Guard Rail.

The first stair landing is ten feet wide, reached by four steps of the same width, with ten and one-half-inch tread, the protecting side rail formed by a stalking lion of Caen stone, and the main balustrade hand-carved, with deep and broad top-rail. Turning, the stairs rise about ten feet and connect with a musicians' or minstrels' balcony fourteen feet wide by twenty feet long, supported by



A BAY IN ONE OF THE MASTER'S BED ROOMS.



THE N. W. END OF DINING ROOM, SHOWING BARRELED CEILING.



LOW TIDE



W.C.

THE TILED YACHT PIER



A STUDY IN ROCK FORMATION FOR PROFESSOR AND LAYMAN



THE
ESPLANADE



REACHING FOR THE GOAL



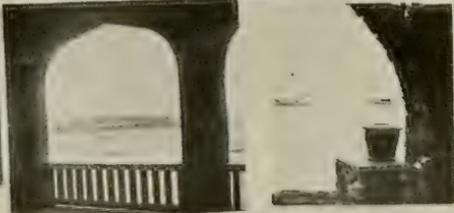
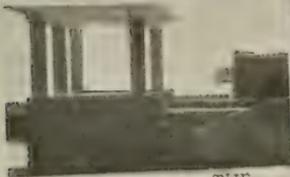
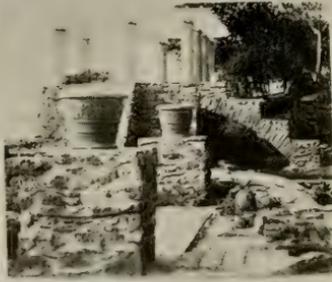
A BIT OF THE BEACH



THE MOTOR CAVE

THE ESPLANADE.

DETAILS OF SHORE ROCKS



THE BELVEZERE

THE TUDOR ARCHES



A STONE BYWATER

TO THE ESPLANADE



IN THE SHADOW — IN THE SUNLIGHT — OF LIFE

IN THE SHADOW—IN THE SUNLIGHT—OF LIFE.

brackets on the ends of which are carved panther heads. This balcony has a red leather trimmed settle its entire length, and overlooks both entrance and staircase halls.

Window Seat on the Stair.

Half way up the ten-foot rise is an oriel alcove, comfortably cushioned and projecting into the library, into which its casements swing high above the book-cases. Two of the translucent leaded windows have the usual book-mark motif, while on the centre window is the coat of arms, mottoed, "Seek and thou shalt find." Both hall and library are improved by this swinging casement, whether open or closed. The unattractive space under the stairs, sometimes utilized by a homely boxed-in closet, is featured with a marble-rimmed plant basin filled with interrogation point fronded ferns and brilliant foliaged plants, while surmounting the main newel is a lion rampant carved in oak. The under side of the stair soffit curves to the floor.

The second story hall is thirty-three feet square, including the stair well opening, and is furnished as a room.

The third story stair hall is lighted and carried to the somewhat impressive height of twenty-five feet *by abruptly stopping the fourth story floor beams* thus forming an overhanging balcony—the roof dormer lighting both halls and stairs.

Newel Problem.

Sameness is avoided in the stairs, whether basement or top story, back or front. Newels are of varied form, some built into pillars to ceiling height, with naiad or faun faced brackets braced against the ceiling; others plastered barriers surmounted with carved brackets and scrolls, or merged into railings, with inset bas reliefs. Crowning one newel is a crystal ball, another a statue, and a third a flaming torch. Balusters are placed singly or in twos and threes or separated by panels.

Trilobite Newel Cap.

We decorated the newel from second to third story with a bit of Himalayan rock lathe-turned in globe form, containing trilobites that ceased to breathe over two million years ago. One squared newel post reaching to ceiling height has metal half inch beading at each of its four corner joints, and gives bracing strength to an especially long trimmer.

Living Room.

Either through the wide mirrored door of the staircase hall or by the little library stair (which is protected on the living room side by a settle instead of a rail, on the opposite side by a brass standard and silken rope) one enters a living room thirty-five by forty-five feet, in

itself as large as many modest country houses. It is a room of arches, columns and mirrors. Six pairs of French casements open to a completely furnished porch room overlooking the water, counteracting in a measure the lonesome grandeur and monotony of an exceptionally large room. The entire east, north and south sides are doored and windowed in glass in winter, and its thirteen foot ceiling is cemented on galvanized wire lath, crossed by ebonized beams.



THE MOTOR BOAT CAVE.
WEST END OF PIER.

Two corners of the large living room have groined ceilings, while the remainder of the room is straight beamed. Fluted columns, and pilasters, double, single, and Ionic capped are freely used.

THE CONSERVATORY



THE MARQUISE



SHOWER

THE FLYING ARCH



THE OAK THAT SPANNED 2 1/2 CENTURIES



A TRUE SHELF



BEACH AND ROCK



THE HALF BURIED LEVIATHAN.



L I P P E



V A R I E D A C T I O N

C H A P T E R I V



I N V E N T O R Y



C A R E F R E E H O U R S

C H A P T E R I V



C A R V E D B Y T H E E L E M E N T S



T A K E U S O F F



T H E G U A R D E D D O O R W A Y



A N I D E A L H A T B O R



C A R V E D B Y T H E E L E M E N T S.



THE BREAKFAST ALCOVE WITH PICTURE WINDOW
THE BIG BAY IN DINING ROOM.



THE HALL FIREPLACE, A FIRE OPENING OF TEN FEET EIGHT INCHES.



ENTRANCE TO YACHT PIER FROM VERANDA.



A BIT OF THE MAINE COAST WITHIN AN HOUR OF NEW YORK.

Dining Room.

Through sliding doors whose pockets are evenly ceiled to guide the door and as protection from dust and draught and whose upper halves are leaded glass to avoid the barn like appearance given by a solid sliding door, one enters the barreled, arched ceilinged dining room. This is partly Grecian, with walls and ceilings paneled in marbleized cement. The floor is of quaint eight inch wide thoroughly kiln dried oak planks, riveted every four feet with black inset wooden keys. The sliding door to butler's pantry, made to close tightly yet move easily, controlled by foot pressure, is not in direct line with the kitchen door.

A semi-polygon bay on the Sound side is formed of plate glass picture windows and used as a breakfast alcove while the bay eighteen feet wide on the north fitted with seven deeply embrasured, transomed Elizabethan grouped windows—a flagrant lapse from a strictly Greek room—is cool and inviting on the hottest day and on the coldest a tropical temperature is assured by the combination of an efficient heating plant and double windows.

Barreled Ceiling.

The half moons formed by the barreled or segmented ceiling at each end of this room are decorated, one with viking craft manned by fierce and stalwart Norsemen on battle bent, the other with the historic Mayflower on its errand of peace and good will. The door of the electrically lighted cabinet for the display of cut glass balances the butler's pantry door.

Living and dining rooms can be thrown into one, giving an area of twenty-five hundred square feet, or, if desired, all of the gala rooms can be made to form one large room, aggregating over six thousand square feet.

Library.

On the level with the entrance hall are library and conservatory, also finished in oak and connected by a short flight of stairs with the living room. This arrangement gives the library a height of sixteen feet, and ample overhead space for the appropriate use of large cambered ceiling beams.

Under the windows, planted against a panel is a wall fountain of Caen stone and a corresponding panel on the exterior of the house is decorated with a bronze bas-relief. The arch under the stairs and beneath the platform has a uniform spring across the entire space. Below it is an ingle-seat.

Heraldry.

An heraldic design is molded in the hood of the Caen stone cement mantel which rises, in the form of a wide shaft, slightly tapering, to the extreme height of the room and has rounded instead



LIBRARY AND CONSERVATORY.



THE WIDE STAIRWAY.



THE PERGOLAD BELVEDERE



TO THE YACHT PIER



THE CONSERVATORY FOUNTAIN



THE SERVICE GATE



THE BOATING LAY-OUT



CHILDREN'S SWIMMING POOL



PERGOLAD CLOTHES YARD

BELVEDERE, SERVICE GATE, FOUNTAIN.



LEDGE LANDING STEPS AT LOW TIDE



PICKNICKING



CRAGS AND BELLERICA



HEARTSEASE



VIEW FROM HEARTSEASE



SERVANTS' STAIR

VIEW FROM THE GAZEBO



VIEW FROM THE GAZEBO.

of squared edges. The lofty, clear glass, English leaded windows on the west about fourteen feet high have centred in their upper panes a color design. At this end of the room a quaint little stair leads to a mezzanine floor fitted up as a reading or writing den. When the stair casement bay window on the north above the bookcases is swung open, one views the conservatory, which forms a portion of the south side of the library, and from the library the second story beamed corridors. With casements closed and drawn draperies over the stained leaded glass, each room is completely separated, but when open extended vistas are disclosed.

Electric Fountain.

A fountained conservatory leading from the library is roofed on the south with wood instead of glass, to avoid damage, prevent glare on second story windows, and give a cooler room. All upper lights of the nine windows that front the south are leaded, and ornamented with delicate tracery. A low glass-roofed greenhouse is an essential feeder if one wishes profuse bloom in a wooden roofed conservatory.

The white tile floor, thoroughly drained, is a restful contrast with the green of the plants. In the centre is an electric fountain, and on each side of the entrance are heavy Ionic-capped columns, while the *side wall of the library* the entire width of the room above the conservatory arch is of leaded glass, the design a sylvan forest scene, the inward view, birds, flowers and fronds, stirred by the splashing, electrically illuminated fountain; the outward Long Island Sound.

A Balanced World.

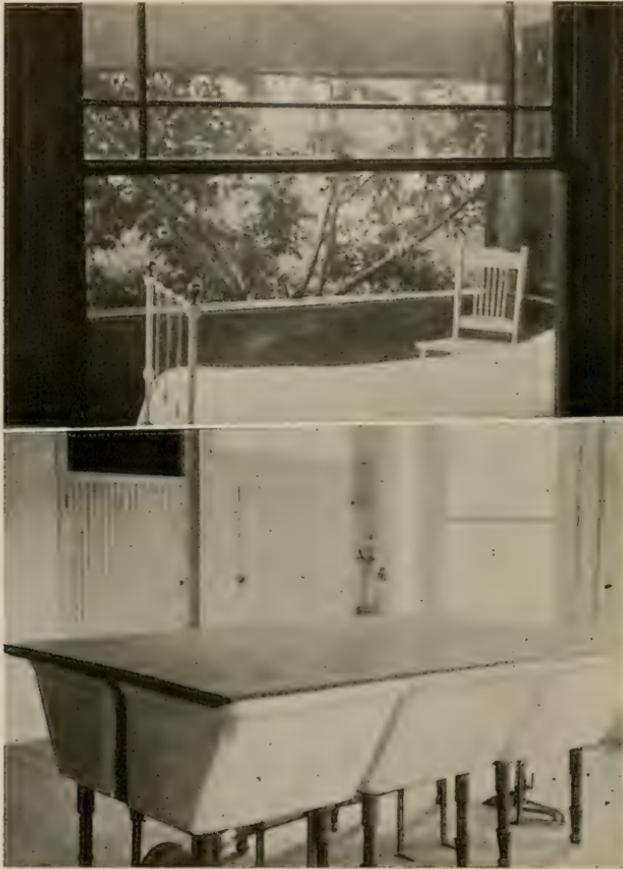
In a corner of the conservatory was an aquatic wardian case consisting of a glass jar covered with a pane of glass and fairly airtight, its contents water, algae from the brookside, and minute animal life. In this ad infinitum world were carried on year after year the processes of being. In a sense the same water, the same plant, the same insect, life and death and life again, an everlasting world within a world.

Kitchen.

On the main floor is the kitchen, with floor and side walls white tiled. A separate galley, in which the glass-hooded range fitted with electric chimney fan, makes the main kitchen comfortable even in the hottest weather.

Windows overlooking the front door are set overhead close to ceiling and with the addition of a skylight give pure air and a cooler kitchen.

Ample pantries, refrigerator room and servants' porch, complete the first floor, while below stairs are boiler and storage rooms, salt and fresh water baths, with showers and boat racks.



ONE OF THE THREE SCREENED SLEEPING PORCHES.
CLOTHES CHUTE CLOSET AND LAUNDRY TUBS.

Six Tubs Centre the Laundry.

The laundry in the above-ground basement has six tubs in the centre of the room placed back to back. When covered they form a large table and aid in transforming the laundry into an additional sitting room for the maids. The stairway is gridded and between two columns joined by a grill one enters the servants' dining hall, in a corner of which are dish closets and porcelain pantry sink. A balanced lift connected with the kitchen prevents dish breaking. Hardwood floors furred for air space are laid over the tar coated cement, and windows extend from floor to ceiling. Rooms decorated



THE GAZEBO



A SHADED BREEZE POINT



THE ENGLISH WINDOW



THAT
FANLE



ONLY A STEP *from*
VERANDA
TO DECK



ALL ABOARD



COMFORT
SIGHTING

GEORGIAN WINDOW AND GAZEBO.

THE LAND LOCKED HARBOR



A FORBEAR

EATON'S NECK



RACIAL DIVISIONS

VIEW FROM THE BOWLING ALLEY



LOW TIDE

THE SWIMMING POOL

A MILLION (OYSTERS)

MON
GUARD
TODIGHT



THE
GROTTO



A
SOUTHWEST CORNER

A
RESTFUL
NOON



FLYING ARCHES

A FORBEAR.



THE STAIRCASE HALL.

and calcimined in suitable colors, and woodwork white enameled, give a homelike look and eliminate all suggestion of a basement. Walls and floors separating the servants' quarters from the main house are thoroughly deadened.

Outside doors are four feet wide with upper panels glazed.

Bedrooms.

Bedrooms number twenty, several en suite, each with its own bath or bath closet, and two with salt water connection. There are three sleeping porches of generous size, and adjoining them cosy windowed and heated dressing rooms.

An overhanging stair balcony and a studio finished and beamed to the ridge with a window filling the entire north side are additional features. Some bedrooms have curved top bed alcoves from whose brass rods are suspended draperies, and jewel safes are inset in walls. There are burglar-proof vaults concealed in chimney arch in the



CONSERVATORY AND PORCH ROOM.



THE BATHING BEACH.

basement, fire protected by air spaces, the new close-jointed sliding door for closets and narrow spaces; secret panel doors in dressers and lockers; a roof lookout back of the chimney and an aluminum clothes chute to laundry.

Every house should have a readily reached and railed-in lookout platform. Aside from the uplift view, it is far easier to inspect and repair roof, chimney, gutters, and flashings.

The tub in the bathroom over the east hall closet is inset eighteen inches in the floor, protected with side railing, somewhat as in a Pompeiian bath, and several tubs are made stationary against the side walls—less tiling, less dust, more sanitary, yet more difficult to repair a clogged or split trap or pipe, and greater disturbance of tiling.

Several bedrooms, billiard room and den are on the third floor.



TWO VIEWS OF HARBOR FRONT.

The Telescopic House.

Shore Rocks is so planned and built that certain floors, stairways and rooms can be cut off from the rest of the house, the plumbing reduced by a series of shut-offs to that required for an ordinary ten-room house, three-fourths of the big heating plant



ENTRANCE HALL.
MUSICIANS BALCONY.

easily disconnected, and the occupants thus made practically independent of servants by reducing a working force of a dozen or more to two or three. All upright heating pipes placed to be easily reached are concealed within closets or columns.

Swimming Pool.

Grounds are laid out with pergola, Italian gardens, and swimming pool, depth of water in which is controlled by a water-



A CONNECTICUT CAPRI



LEFT BY THE GLACIER



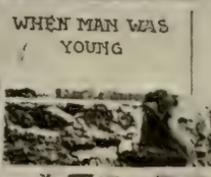
SALT DEPOSITED ON ROCKS



FOUNDATION WORK FOR GAZEBO



A N E A S T E R L Y



WHEN MAN WAS YOUNG



S E R V I C E G A T E



W H I T E F A N G E D W A V E S



M A N S C O M E R I Y W I T H N A T U R E

S T O N E A R C H F I L L A R A N D F L O W E R C U P

WHEN MAN WAS YOUNG.



SERVANTS' ENTRANCE



VIEW OF THE OFFING

THE COUNTRY PLACE



BECALMED



THE INDENTED PLATFORM



THE SHELVING BEACH



THE GROTTO



TO THE GAZEBO



S.O.S.



FISHING FROM VERANDA
EXTENSION

gate to the open Sound. Electric lights edge the rim of this pool, dispelling "erie creeps" that sometimes overtake even the



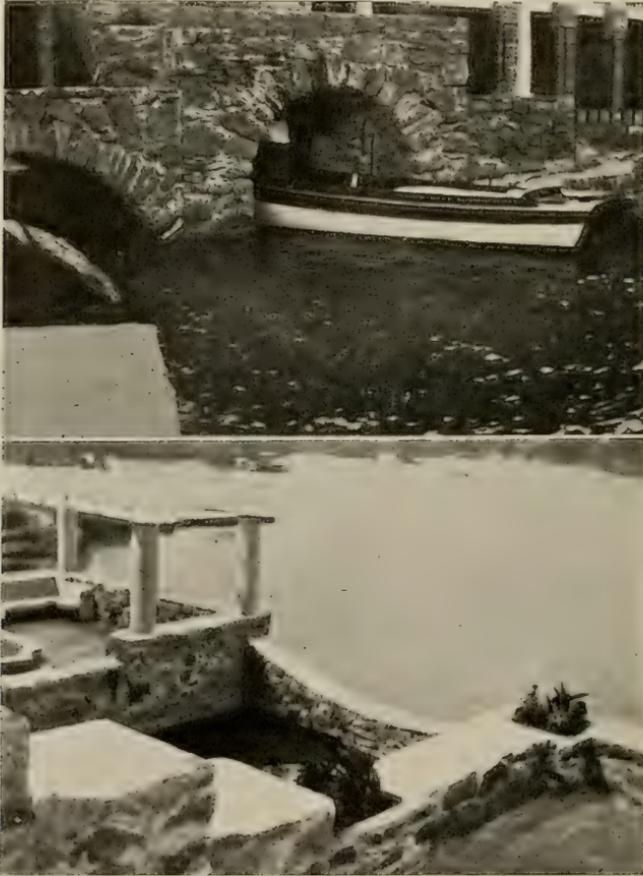
THE SINGLE DOOR.
ENTRANCE AND STAIR HALLS.

seasoned water dog who dips at midnight, while on barrier wall, esplanade and parapet are large terra cotta vases or statues in red, gray, and verde-antique.

There are deep-water landing pier, cement fireproof garage with suitable pit, and under the veranda bowling alley, workshop and bathing houses with hot and cold showers. In fact many of the features that make Pinnacle the house ideal one will find also in Shore Rocks.

A pergolad gazebo is built on seamed, rugged, sea-weed-clad rocks, a peculiar ledge formation fronting this portion of the Sound and of keen interest to the geologist. The stone rampart rail centred

with plants its entire length, edges the water with a green wall of salt-defying cedars. Under the gazebo, which is built on heavy stone arches, is a grotto. Sea grasses grow in stone crevices near the splashing waves, and hammocks swung in the shadow of post and arch mean luxurious comfort even on the warmest day.



THE MOTOR BOAT CAVE.
CHILDREN'S SWIMMING POOL.

Peering from a cave-like fissure in the rock of the grotto is a metal dragon that in a storm spouts white flecked foam with a roar above that of the pounding waves—a bit of realism that often pleases grown-ups as well as children.

Salt air and occasional salt mist spitefully but fruitlessly assail the poplars, Japanese privets, beach plums, the *Euonymus*, sea buck-thorns, tamarisks and *Rosa rugosa*s that among other plants adapted for use at the seashore fringe the rocky water front.

Stone buttresses of pronounced entasis and flying arches that support the gazebo are buffeted by pounding waves and even the top of the pergola at times is bathed with flying spume. At night electric lights illumine grotto, pergola, belvedere, swimming pool, yacht pier,

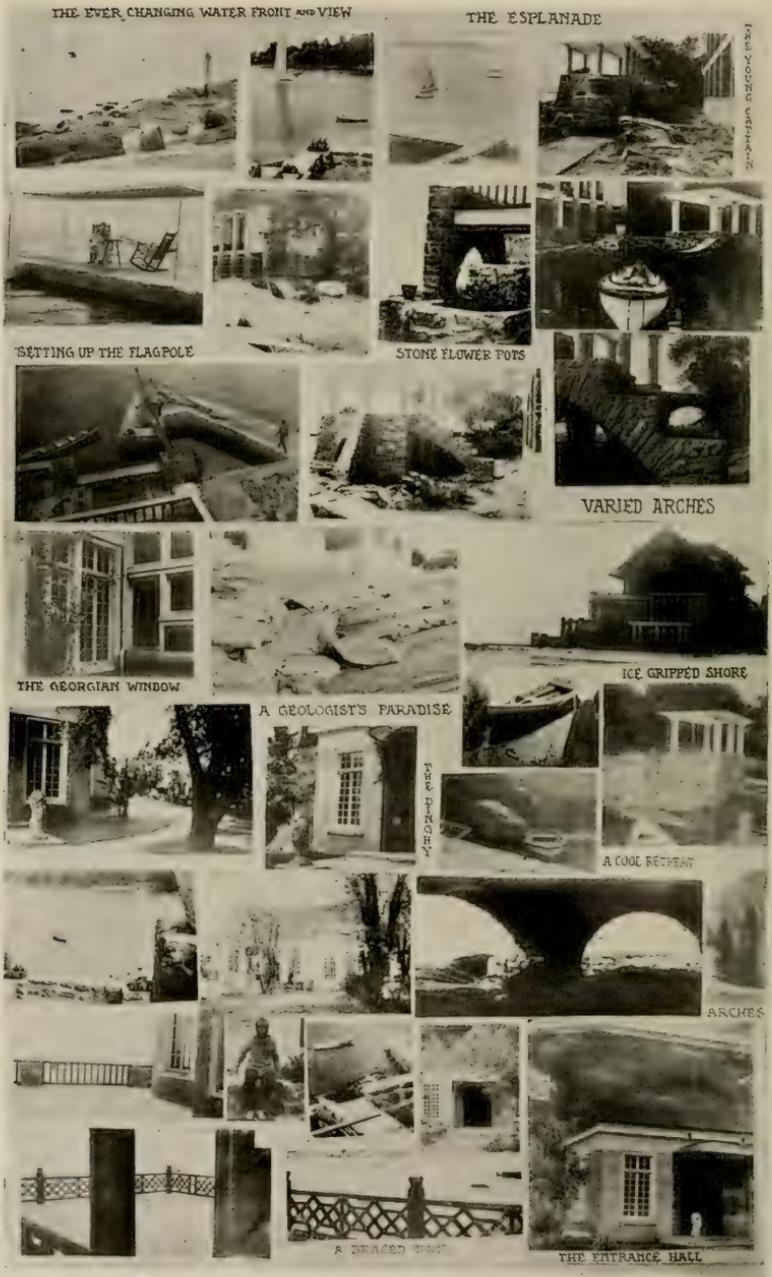


THE SERVICE GATEWAY, OUTWARD.
ENTRANCE TO HARBOR.

gardens overhanging the sea, and the boat storage room. Indeed, electricity has been harnessed to the limit of its present tether in Shore Rocks, installations including vacuum cleaning plant, range, laundry equipment, elevator, and telephones in each main room.

Yacht Pier.

The yacht pier is reached from the veranda by cement steps, protected by stone balustrade to red quarry-tiled landings. Stone posts are capped with plant receptacles.



THE EVER CHANGING WATER FRONT AND VIEW

THE ESPLANADE

THE HOUSE

SETTING UP THE FLAGPOLE

STONE FLOWER POTS

VARIED ARCHES

THE GEORGIAN WINDOW

ICE GRIPPED SHORE

A GEOLOGIST'S PARADISE

A COOL RETREAT

ARCHES

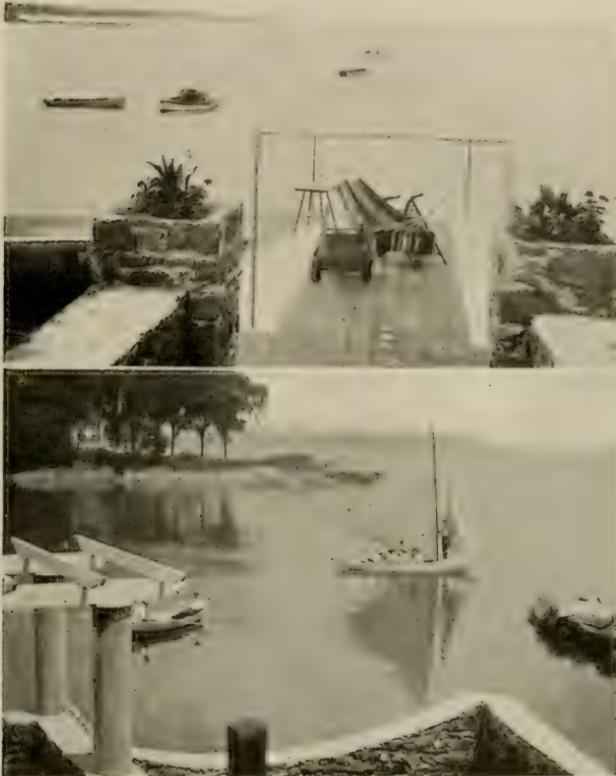
A BRACED WALK

THE ENTRANCE HALL

A GEOLOGIST'S PARADISE.

The Motor Boat Lagoon.

Lower down is the big stone pier, also quarry tiled, its centre excavated for a land-locked lagoon about 20 x 30 feet where a motor boat can berth in absolute safety. The pier is equipped with boat davits, diving plank, floating platform reached by steps,



A LOUNGING CORNER ON YACHT PIER.
BELVEDERE AND SWIMMING POOL.

and heavy galvanized iron rings for fastening boats. A brass railed platform and adjustable yacht steps hang from the wall of the lagoon. One end of the pier is covered with an awning on galvanized iron frame and single tiled steps are placed at regular intervals among the rough rocks that edge the Sound, that safety may not be sacrificed to the picturesque. An iron roller inset in the edge of the pier readily handles small boats without injury. At one end of the beach is rigged a convenient set of ways, with block and tackle fastened in the rocks, so that a motor boat or even a large yacht can be warped out.

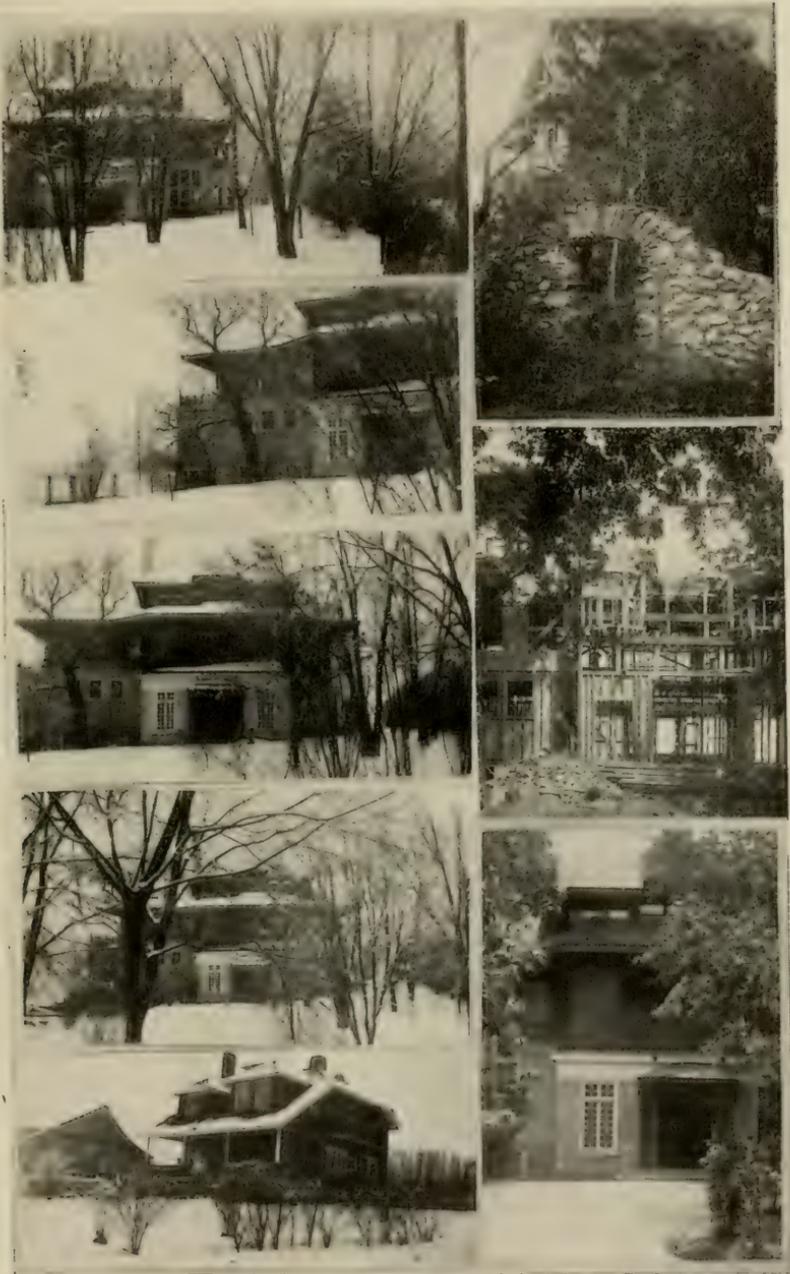
Our flag pole does double duty, as on it is rigged a wireless, catching messages from Eastport, Maine, to the Florida Keys, and for a thousand miles out at sea, from dreadnought and liner as they fly past, or the code language of a manoeuvring army.

The dock is partially enclosed with a woven, galvanized wire guard with brass top rail and broad stone ledge steps are built against its sides, enabling one to bathe or land from boats at all tide levels.*

In the grounds is an interesting example of tree growth. Bordering the Sound are two trees, one a hoary-headed oak of two and a half centuries, and less than a stone's throw from it a Wier's cut leaf maple that I shouldered and planted as easily as I would a bean pole exactly seventeen years ago. The trunk of the maple is now three-quarters the diameter of the sturdy oak, and in height closely crowds its aged neighbor.

Centreing the belvedere is a sun dial of the type that marked the hours for Pliny in that wonder garden. It is fitted with time equation and bears the motto, "It is always morning somewhere in the world," the antithesis of the less helpful and more lugubrious saying, "We are all traveling toward sunset."

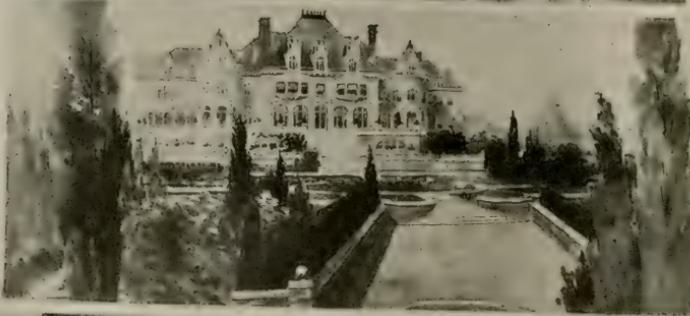
*The absence of all sewage in the clear water surrounding Shore Rocks made our special and essential August battle against the teredo and xylotrya strenuous. Kyanizing the wood did not rout the mollusk, his diet being minute organisms and plants that float through the doorway of his shell-lined house-tomb. Copper paint and big headed rusty nails saved boats, ways, and spiles from the inroads of these destructive rats of the water.



TWO SEASONS.



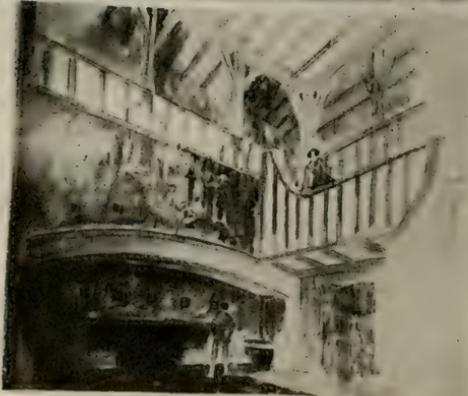
THE EAST OUTER FRONT



THE WEST INNER FRONT



PINNACLE THE HOUSE IDEAL



THE ENTRANCE HALL AND STAIR CASE HALL

PINNACLE THE HOUSE IDEAL.

CHAPTER VI.

PINNACLE, THE HOUSE IDEAL, YET THOROUGHLY PRACTICAL.—
HOME.



PINNACLE.

THE building of Pinnacle was the realization of a desire to put under one roof the experiences of a lifetime in experimental building, therefore I say that for twenty-five years I had been building Pinnacle before the time was ripe, and that June morning dawned when I staked out the house, and, emulating the railroad builder, "turned over the first clod of earth."

While its cost carried well over \$100,000 it contained some features that could easily be introduced into a \$2,500 bungalow.

Let us trace backward its how and why. Location was of first importance. Should it be by the edge of some inland lake, gemmed 'mid rock-ribbed mountains; on one of the Thousand Islands stemming the current of a mighty river, or near the sand and rock-bound shores of Long Island Sound, the centre of Eastern yachting; close to the roaring breakers, or in cloud-land, on some barren, ozone-bathed mountain peak, near the snow line; to the depths of the health-giving North woods; in the swim or away from it? But the snow line did not jibe with rose gardens, and the restless sea seemed ever to impart its restlessness to nerve and muscle. Then came the idea of using the old Dillaway place in the Berkshires, consisting of two hundred acres of woodland, meadow, and grassy hill top, and a

charming demesne it proved, the long driveway flanked with a veritable floral calendar wherein for eight months of the year and every day of the eight months new blossoms opened to the sunlight, and during the remaining months the rare coloring of red-stemmed dogwoods and steel blue spruces brightened a drear landscape. Near by stood tall Irish junipers, like sentinels among their fellows, interspersed with vari-colored, gracefully feathered *Retinosperas*, and *Biotas* in silver, gold, and green. In the centre of our largest field, in size, as a plainsman would put it, "three whoops, a halloa, and a holler," was left intact, picturesquely outlined against the sky line a ghostly dead tree—resting place for the bourgeois chicken hawk or imperial eagle who, unhampered by adjacent towers of green, scans with keen eye the horizon both for enemies and prey.

As nature had placed forest, hill, and dale, silver-threaded river, babbling brook and limpid pool exactly right to meet our requirements, location was simpler than construction. Eschewing clay soil, the very *worst* for a building site, we pre-empted the *best*, a dry, porous gravel edging a seamless, free-from-moisture granite ledge.*

How to Face the House.

The sun was invited where it would be most welcome. The rising sun at times met us at breakfast, scorching beams of July and August shot by our dining table, as this room faced southeast, but the living room, large enough to dodge heat rays or bask in their health-giving glow as temperature dictated, faced the sunny south and breezy west. The library on the north welcomed with blazing log, easy chair, and book, while the kitchen, as it faced north and east, could not saturate the house with odors that the west wind seems to joy in scattering. Due west rooms we found need special ventilation, as they broil to their farthest recesses with the heat of the low western sun, while in a southern exposure the King of Day is high in the heavens.

Architecture.

Before location came the vital question of architecture. Should it be Byzantine, Moorish, Gothic, French or Italian Renaissance, Elizabethan or Jacobean, a house outlined with Palladian formality without and probably inconvenient within, or the construction represented by that talismanic word of the Nineteenth and Twentieth Centuries—Colonial. The latter, with its high pillars, square rooms, and glaring "don't touch me" white enamel finish, to us lacked the homelike feeling that all crave, but its impressive columned and architraved exterior made it a near second in the final decision, as a pilared Colonial front is always a favorite. We could not copy completely the English country house, with its small diamond windows and lack of veranda and porch room, unsuited to our climate, but a

*The redemption of any soil, including clay, as a building site is possible by thorough drainage and the correct use of stone, cement, oil and tar.

coherent expression of the best, combining as far as feasible the intrinsic worth of all, brought us into that somewhat complex realm, the New American.

In considering the mooted question as to which is more desirable, exterior or interior beauty, the argument that thousands see the outside to one who enters a house counted as nothing in our decision to make an ideal interior, even at the sacrifice of exterior features.

A Bone-Dry House.

Corrugated hollow brick tile above the stone basement, covered with a rough coat of cement, was decided upon, but—and the but is a big one—the vitally important work of water-proofing by tarring the hollow brick tile on the back, and furring for a two inch air space aided greatly in making Pinnacle a bone-dry-house. Gables were paneled with chestnut *timber*, realistically chipped by the broad axe, avoiding the regularity of the scalloped pie-crust imitation. Though rough cement holds more moisture, it conceals the inevitable miniature cracks, and with suitable air spaces all side walls were damp-proof. It is the builder's duty to combat ground air to the finish. Any substance charged with from thirty to fifty per cent. of fumes, depending on soil conditions, detrimental to man's well being is worthy his keenest steel.*

Pinnacle was fireproof as far as I-beam, hollow brick, glazed and unglazed terra cotta, tile, cement, wire, copper, glass, wire glass, and fireproof paint could make it.

Exterior requirements called for embellishments of a tourelle on corbeled base, minaret, campanile, and dormers in a major key, and to harmonize its varied outline demanded ample space and a commanding site.

We followed the rule that a house should rise naturally from ledge or greensward. Paths and roads, of which there were but few, simply touched it at salient points, curving at easy gradient toward gate, garage, and garden. Foiled thus 'gainst nature's restful colors, more harmony was gained than by a network of blue graveled roads or dingy black asphalt close to house line, save in the necessary carriage sweep. In fact, those not hourly thoroughfares were foundationed by closely cropped turf, sloping away from which were banks of bloom and foliage, but from these were barred swift moving or lumbering vehicles, whether powered by horse or gasoline.

The Builder's Truck Horse, Cement.

Cement, though it shows marks of the beast in lime efflorescence and dampness, makes a fine truck horse, and we used it profusely in archway and buttress, outside steps and veranda rail, swimming pool, curbing, retaining walls and in walks, cellar and laundry floors,

*The moccasin shod or unshod Indian drew electricity through the soil as the tree drags it forth by the rays of the sun, doubtless to his well being, but modern dwellings and modern living demand drier conditions. Statisticians claim that common sense hygiene would banish forty-five per cent of our present ills.

side walls, back halls and servants' quarters—anywhere and everywhere that rough usage could mar, as well as in curves and molded ornaments, buttresses hollowed for plant receptacles, cement window-sill boxes, steps, seats and columns. Cement flooring was especially treated to prevent crumbling under friction, as a common cement floor is never clean. Under conditions where wood covered cement or brick there was ventilation.

Marble dust cement was used, efflorescent stains if present were removed with a one-tenth solution of muriatic acid. Capillary attraction fought with anti-damp, thick, pasty, water-proof paint, made our walls practically moisture-proof, as even the foundation stones were separately coated on sides and back with tar and wooden pegged between the joints for air spaced plastering. In all cement flooring was used a core of galvanized 1-2 inch wire mesh. Corners of the brick bay of the conservatory were of sheep-nose molded brick, avoiding the usual dirt collecting angle formed in a bay. The water table, of ogee bricks based with cut stone, threw water well away from foundations.

Outbuildings not roofed with fireproof tile or asbestos and cement manufactured shingles were covered with red cedar shingles, which often outwear white, the latter splitting more easily and causing many an exasperating leak.

No shingles over six inches wide were used; they were split that width when necessary, and laid with four and one-half instead of the usual five and one-half inch weatherage. Pantiles roofed some of the more important buildings.

Valleys were flashed with copper to a width of eighteen inches, and a wide open valley left to delay as long as might be the inevitable rotting of shingles through moisture, always a formidable enemy.

Construction was closely watched, with an eye to circumventing the fire fiend, and the carpenter who led stringers and rammed sliding doors into or against the chimney, as well as the plumber or plasterer who left fires unguarded, or used defective salamanders, received his Saturday night pay in a blue envelope.

The Window Problem.

Our aim was to combine comfort, convenience and luxury. One often enters an imposing dwelling with eager enthusiasm for a prospective architectural feast, but leaves with a keen sense of disappointment because of a window set too high or a staircase that had to be searched for and when found was dark and narrow, bringing up in a windowless hall. A generous forecourt, esplanade and belvedere once decided upon, attention was turned to the windows. It took time to settle whether they should be big and staring or unobtrusive and picturesque, to decide upon the merits of glaring plate glass over against the time honored leaded oriel pane. Outlook sometimes tires of manorial diamond panes, as does the housemaid

who cleans them. We finally compromised on plate glass where there was an extensive view, in several cases fitted with a swinging shutter of colored or clear leaded glass in simple design, serving to soften both light and outline, and answering the purpose of a double window in winter.

Large paned windows tend to decrease and small to increase the apparent size of a house both within and without and certainly detract greatly from the pleasing inlook of any dwelling, still, picture windows here and there always give good value for their framing cost, whether in view of glorious mountain range, white crested waves dashing 'gainst rock-ribbed coast, or in more peaceful contrast a pastoral scene or a towering, swaying forest. In sombre rooms some windows stretched nearly to ceiling height, where there is more light to the square foot, though this treatment seemed to lower the rooms; several had smooth edged plate glass wind shields about twenty-four inches high which could be easily lifted, as they slide upward in grooves, in others a framed sheet of glass set on the sill swung inward from the top, and gave still greater ventilation.

The House That Pays No Tax.

Monsieur Mansard is said to have circumvented that senseless window tax of France which placed a premium on dark houses by adapting, not inventing, the windowed roof that bears his name, thus helping to supplant imitation painted doors and windows which economy sometimes led the builder to intersperse with the real, catering to that monstrous law which enforced payment for air and sunlight. Our building laws tend in the opposite direction, while it is said Buenos Aires, that ideal city of ideal houses, goes us one better, as he who builds the most artistic house pays no tax. In some countries it is said a new house supplanting an old is untaxed.

"Woodman, spare that tree," however pathetically rendered, never held back the axe when the alternative was shade instead of health-giving sunlight. Inset in a few windows were restful leaded lights—in one a fishing craft, in another a coat of arms, and book-marks in the library. One glance through a half open casement thus decorated inclines to optimism. Windows with large panes were exteriorly draped with climbing vines.* Height was another question. The majority were so placed as to afford an unobstructed view when seated, while in the kitchen they were set high to avoid overlooking the front door approach, additional light being obtained through a skylight. Both gave rare ventilation. No casements were used on the first floor, sash-hung windows giving greater security, less draught, and being more easily screened, but when used we hung them to open outward, rabbeting thoroughly, and hanging from the top those more likely to be left open to prevent their being whisked

*We once realistically gilt framed and wire hung a picture window that shamed the artists' most strenuous endeavors.

across the lawn in case of a wind storm. All casement windows were fitted with the necessary convex screens which, however, more readily rust and decay.

Windows were chain-hung on brass pulleys to avoid snapping, stretching, or slipping of cords. They were fitted with automatic attachment holding them at any height, and with non-rattling fixtures, metal weather strips, and automatic fastenings. In some low studded rooms box windows slid upward into the partition, allowing broad view panes. Parting strips with adjustable screws in sunken sockets matched in color the hardware, and non-rusting wire screens had a patent insect escape to lure the fly to the open.

Leaded lights that cheer with varied hue both out and in-looker as day merges into night lighted the staircase landing.

Most leaded and stained glass bathroom windows were set high, and even a northern room was glowed by the use of opalescent glass of golden hue. We also juggled with two rooms facing due north, producing in some degree the effect of light and warmth by judicious placing of wall dressing mirrors.

Corner windows were many, as they give most light and more wall space for furniture, but care was taken that none were in line with those on the opposite side of a room. First story windows were set 2' 6'' from floor line, and those of second and third stories a trifle higher.

Translucent glass windows were fitted close to ceiling line on the *hall side* in several rooms with but one outside wall, affording more light and ventilation, and all bedrooms had transoms or fan lights.

Glass formed the upper half of the back stair partition, and the rail fitted with the hand grip.*

Fastened over the entire outside window were screens practically invisible, the wire approaching an atmospheric color, with frames painted to match trim and aid in the illusion. In some cases screens dropped into pockets when not in use.

Double windows were drawn tightly in place by screws put into the frame through screw eyes fastened in the in-face of the double sash, and each had its own ventilating wicket.

Telescopic Window.

The five inch round lenses were so ground that at some angles distant objects were magnified, but the effect on the eyes made the scheme impracticable.

Single Block Stone Steps.

The set of three entrance steps and the buttresses at each side cut from a *single block of granite*, prevented for all time a sagging, open-jointed step.

*The dark hall and stair were unknown conditions.



THE KNOCKER MADE FAMOUS BY PAUL REVERE.

The Pig Door.

The door through which we entered the home was called in old English parlance the "pig door," built by our ancestors to prevent wandering swine from encroaching on granary or dwelling. Both upper and lower halves swung on ponderous black iron hinges, and were oak-ribbed, bolt-studded and iron-banded. The quaint iron knocker was that used by Paul Revere when, on the night of his wild ride through Lexington and Concord, he awakened John Hancock and Samuel Adams with the warning that the British were marching on the Concord stores. Only a bit of metal, yet few lift the old knocker without being thrilled by the thought that it once vibrated with the first shots of the Revolution fired on the village green of Lexington—that fusillade that was heard round the world.

Feudal Hall.

In the hall we strike the key note of the house. Centreing the home, it centres our thoughts of hospitality and good cheer, its walls ever greeting the coming and speeding the parting guest. The impress of feudalism stamped generous fireplace, and vaulted and groined roof. Cold, I grant, through its very grandeur, but home feeling is ever the same, whether in mediaeval mansion, elaborated with drawbridge, portcullis, and conning tower, or in the rose-porched cottage under the hill.

Living Room.

Passing through the entrance hall, we enter the living room of Pinnacle. The half dozen French windows face the west, opening upon the loggia from which broad steps edging the esplanade lead to the formal gardens, embellished with pergolas and arbors. At the end of the long vista is the Italian adaptation of statue and vase.

Looking down on the sunken gardens, the eye covers a wide range of rare trees, shrubs, and plants, while on the outskirts are evergreens, interspersed with silver birches, imitating Nature, who often uses them as a foil against evergreen backgrounds, this planting forming a natural setting for brilliantly massed azalias, rhododendrons and peonies.

The sunken garden was developed and embellished as sunken gardens generally are, with centred pool, half-circled seats, colonnade, pergola, fountain, vase, and statuary. Yew and privet were trimmed to the extreme of formalism in cube, cone, oval, pyramid and mound, and even in bird and animal forms, and niches cut in the ten foot high privet hedge to frame and canopy faun and satyr, Greek god, and mythological hero as well as a Cleopatra and a Caesar.

Arbre-arched foot gates with garniture of bloom pierced the big boundary hedges, and tempted the stroller in that fair garden to wider wandering through sylvan realms of meadow, dell, and wood, threaded by babbling brook and foam-flecked waterfall that faintly murmur in the distance. At the horizon line loom the hills.

An entrance from one side of the living room led to a secluded, columned, and arched patio, whose courtyard centre was grass-sown, pathed, and shrubbed, save where fountained lily pond partially reflected arch, column and tiled roof line. We never transplanted weed-filled sod but used grass seed except for path borders, which were sodded wide enough for satisfactory use of the ordinary lawn mower.

Two large settles flanked the living room's twin fireplaces, and a most comfortable bit of furniture was a big double-sided club davenport, with concave end, in which fitted a movable round table for books and writing material. Foot wide mirrors in the corners to window top height gave no ill-bred, staring reflections, simply fleeting glimpses of persons and objects. In fact, in arranging this interior we tried to produce that "round the corner" feeling that destroys the sense of barrenness felt when every detail of a large room is seen at a glance.

The fluted columns and pilasters were ornamented four or five feet from the floor with inset pressed wood in appropriate design.

Ancestral Portrait Gallery.

At one side was a long corridor dignified by the term "Ancestral Hall," its ceiling slightly groined, and over the portraits of "cavalier and ladye faire" were grouped pike, asbolt, hauberk, and cuirass battered and slashed in battle before the beginning of our present American civilization.

Integral with the living room was the red, quarry-tiled loggia, with its chimney corner, settle, and easy chair. As many meals were to be eaten in the open it also connected with the serving pantry.

The music room, carpetless, pictureless, and almost draperyless, complying as far as might be with little known acoustic laws, and was so placed as to be neither over damp nor over dry, too hot nor too cold, and instruments were kept away from outside walls.

Library.

The tones of the driftwood fire were the keynote to the coloring in the library, and a sense of ease and comfort permeated every corner. Books everywhere, with bookcases convenient to the pair of big davenports that right-angled the fireplace proclaimed the book lover. Over the mantel in burnt wood was traced the sage advice: "First think out your work, then work out your thought," one corner stone of all accomplishment. The motto habit also invaded porch-room, den and billiard room as seen in: "Fait ce que voudrais," and "Usted esta en su casa." But of greater interest than all others was that ancient Egyptian motto that may have arched the library wall of the builder or architect of Cheops—"A storehouse medicine of the mind." No mottoes were carved in stone or wood, but admitted of change or elimination whenever tiresome.

A mezzanine floor at one end of the library, reached by a private stair, made the cosiest sort of a writing nook, ventilation being accomplished through a chimney flue.

A Novel Bookshelf.

Bookshelves built conveniently low allowed pictures hung at eye line. They were fitted with narrow, leather flap dust guards. The unusual and attractive effect of a long *perfectly level* and uninterrupted line of books the entire width of the room was obtained by the pardonable and harmless lapse in taste of setting back the usual four feet apart division supports three inches from the front shelf edge, and filling out the space with short dummy leather backed books securely fastened in place, harmonizing in color with the genuine.

The self-locking metal curtains used only at house closing or possible leasing times were thoroughly ventilated at top, bottom, and sides, to dissipate the moisture attracted by leather. The cupboard at the base was wide enough to form a convenient step or ledge, and the upper shelf served to hold minor lares and penates. Bookshelf area was sufficient to satisfy the most exacting bibliophile.

Conservatory.

Conservatory floor and side walls were white-tiled as in Shore Rocks to contrast with green foliage, and the basin of the fountain held that wonderful water plant, the *Victoria Regina*, which looks like an enormous pancake with turned-up edge. In one corner was a leather-cushioned, chain-hung seat, embowered in vines. Slate flower benches were held in place by galvanized iron supports, and there was a cement rose border. Electrolier and side lights were of non-

corrosive glass with pendant prisms, upper window sash of leaded glass with a tracery of vines, white tile floor was laid to properly drain, and roof framing beams of galvanized iron painted were to match trim—preferable in appearance to those of stained, reinforced cement.

Hidden Stair.

My business office had an outside entrance, and connected with the boudoir suite by a hidden stair of quaint design revealed in the wainscot on pressure of a secret spring. This stair opened into a closet on the floor above, with invisible lock and hinges and secure fastenings.

Detached Fireproof Den.

Separated from the house by an enclosed tiled court of less than a dozen feet in width, but adjoining the office, was a fireproof den of iron, cement and terra cotta construction, electrically protected at all outlets and with iron barred and shuttered windows.

Dining Room.

A dining room of generous size made possible a large breakfast bay across whose over beam at entrance was drawn a portière and here knight and ladye sat at a real "round table." The ceiling was crossed with six heavy beams and side walls were wainscoted to the ceiling in square panels of quartered oak.

Fruit and game pictures were tabu, but in a light that best suited it hung our "Jungfrau." The oak trim was that indefinable shade of faded gray made by sand, sun, and wave, as seen in some storm-tossed bit of beach wreckage. Two doors connected dining room and butler's pantry, each with an inset of six by six inch translucent glass, one fitted with rim-protected dish shelves on pantry side. Swinging on a pivot, dishes could be swerved to either room, and service shelves between pantry and kitchen operated in like manner.

The butler's pantry cupboard had sliding doors with curved upper muntins, shelves of varied width and height, with drawers beneath the working shelf, and storage lockers to ceiling. The radiator was in the form of a shelved plate warmer.

The Loggia.

One loggia practically open on three sides had ten glass doors which were replaced with screens in summer, a fireplace opening ten feet wide, roughly forged and hammered iron andirons, and fire tools six feet high. The floor of bricks laid narrow side up in geometrical design on a four foot deep tar protected cement foundation suitably underdrained sloped toward a manhole. Dry cement was dusted between the bricks, and hose turned on it, after which every vestige of cement was immediately scrubbed from the surface which was then left to dry and harden.

A ramp connecting veranda and belvedere was easier to climb and far safer at dusk than steps, danger of slipping being eliminated by tiling with hard, rough cast, square bricks.

The Log Cabin.

At one time it was humorously suggested that we give up the modern semi-Dutch kitchen and duplicate that of my grandsire, Robert Stewart of Gloucester, Massachusetts, with its hewn beams, wide fireplace, crane, trammels, turnspit, and a brick oven in which to bake the Beverly beans. The scheme was finally relegated to the log cabin built on one of the outlying crags of Pinnacle. Motoring to Haverhill, we took the measurements of the kitchen in the old Whittier homestead, practically a duplicate of grandfather Stewart's.

And "lest we forget," just a word about that log cabin built in Brobdignagian proportions. There we reveled in old-fashioned what-nots, lowboys and tallboys, bouldered stone fireplaces, and "sich." For an armoire we used the trunk of horse hair with drawers in the front and brass nails on top, proclaiming the fact that my great-great grandfather labeled it in 1708—probably just before some momentous and much-talked of thirty-mile stage trip to Boston town.

On the hand-wrought nails in rough-hewn beams of this log cabin hung seed popcorn and red peppers, matchlock and powder horn. Where the logs of which it was built showed on the interior they were peeled and varnished—a vandal act, I grant, but worms and woodtick intruders must be banished. For a door-step we took from the house of this same forbear the stone threshold on which the Indians once sharpened their scalping knives. Needless to say the massacre did not materialize, or Pinnacle might never have been built.

The Dutch door had a big clumsy ten inch keyed lock, in size rivaling that of the Bastile, and mid-way in the upper half a welcoming, bright, brass knocker, just below an antique bull's eye.

The Giant Hearthstone.

That hearthstone was the pride of our hearts. We once built a house simply to specialize big bouldered stone twin chimneys, and the log cabin was located to specialize the *biggest hearthstone* in the State. Glacial action had worn fairly smooth a rock eighteen feet wide and twelve feet across, and our Jimmy, as constant as the "Northern Star," jimmied off with wedge and sledge all protuberances and smoothed its edges until the cabin floor fitted closely against it. We relinquished a finer view to capture that hearthstone, placed for us by Dame Nature when the world was young. A dozen modern fire-worshippers could easily half-circle the blazing logs.

The well hole over the big living room extended to the roof and a half dozen bedrooms led from a gallery. Each side of the big chimney, the corridor being closed at this end, were roughly made iron banded shutters that generally stood open, and gave a

pioneer block house aspect to our cabin, a bit suggestive of the squint-eye window of a Saxon hall.

Flambeau Fireplace.

The log cabin chimney had not only a giant hearthstone, but a flambeau fireplace. A separate flue built above the stone mantel, and the fire barriered by a heavy iron grilled front, was a quaint conceit that never grew tiresome, as quaint conceits often do. Those were never-to-be-forgotten days when our big flashing wall candle of pitch pine knots, a relic of mediaeval times, fitfully threw weird shadows to the deepest recesses of vaulted hall, over banquet board and merry dancers. An iron floor grate increased the up-draught and safely disposed of ashes in a clean-out pocket.

At one end of our imitation of a Saxon-thayne timbered hall a dais not only served for a dining room platform but made a fine view point from which to take in the goodly proportions and distinctive features of the big hall. From it opened a door to an old Saxon bower room and at one side a Dutch door led to pantry and kitchen. A cedar-railed staircase crossed one end of the high raftered hall above the front door, and trailed upward to the lookout on the roof, stopping at the first corridor to land and receive passengers. We even essayed to trim the den with weather-beaten wood, but it soon grew monotonous, and caught both dust and clothing.

Beneath the unplastered shingle roof were extra sleeping rooms. When the cares of the big house with its guests and servants made nervous prostration imminent, the log cabin was a most delightful retreat and on cool fall nights the patter of raindrops on its shingle roof as rhythmical as that purling brook of the poet, that "goes on forever," lulled us to sleep in its prophet's chamber. In an inner sanctum of that same garret where we treasured what time had yellowed and odored, a fagged out, ennuied present drew inspiration from an angular, puritanical past.

One interesting mantel was of gray weather-beaten boards and fence posts, over-mantel decorated with berry-laden branches, the whole copied from a scheme worked out by some artist friends.

A White Kitchen.

Returning from the detour to the log cabin let us re-enter Pinacle by way of the white kitchen—yes, woodwork and doors enameled white and floor and walls white tiled, with ceiling of metal nailed over the plastering,—a room that could be easily hosed, or, as the English housewife has it, "swilled." Cooking utensils were mostly of aluminum, and hung in plain sight, so that their condition could be seen at a glance.

In the centre of the room stood a large cooking table, with adjustable soapstone top, preferable to marble, as it can be planed smooth whenever worn, leaving no scratch wherein the elusive

microbe may hide. It was fitted with curved drawers and a metal framework with hooks for cooking utensils.

The range, a combination coal, gas, and electric, with a glass hood, kept this important corner light and wholesome. Pressure of a button operated a fan in the ventilating flue, sending all odors within twenty feet skyward. Another flue at ceiling height captured any escapes. On the range was a thermometer and under it an ash flue. In another house the range connected by metal tube with a cellar metal ash barrel. A tight fitting collar joint and duplicate ash can made the scheme a success.

A copper boiler connected with the range by brass piping had in spite of plumbers' ridicule a safety valve, as well as mud cocks, and when careless cooks set it to hammering we listened with calm complacency. We found copper boilers heated water in record time.

A gas heating appliance fitted to the range boiler means less danger to health than when used in the confined space of a bathroom.* There was also a hot water heater in the basement.

The enameled steel built-in kitchen cabinet was easily hosed.

Chimney breast we faced with white enamel brick, and against the wall over the range hung a metal box in which to keep floor cloths, scrub brushes, etc. With pipe ventilation into the chimney, they were always dry, clean, and odorless. A gas garbage incinerator fed its fumes into the chimney flue.

Sinks were seamless porcelain, broad and deep to curtail breakage, and set six inches higher than usual, saving many a backache, and a silent protest to the manufacturer who, in order to place sinks under window sills, invariably makes them too low for comfort. We also used the hotel device for dish washing, eliminating the insanitary dish towel, as well as economizing time.

A grease trap under the kitchen sink not only saved soap grease but helped to prevent clogged pipes.

Eliminating Kitchen Odors.

In Pinnacle was completely solved one *bête noir* of housekeepers, kitchen odors, which were absolutely controlled not only by means of a glass hood, electric up-chimney fan and two widely separated doors in butler's pantry, but by a narrow passage between it and the kitchen with low funnel-shaped ceiling beginning at door top and centring an electrically fanned flue leading into an exceptionally large ventilating chimney flue holding in its centre by crossed irons the tiled range flue. The air lifting brick chamber did yeoman work in kitchen, billiard room and bathroom, and was largely responsible for our free-from-odor-house, while the funnel-ceilinged corridor was the court of last resort for kitchen odors from which there was no other appeal.

*Deoxidized air under the above conditions recently caused the death of one who did not know the danger.

The refrigerator room served also as a cold storage room, with packed sawdust doors as well as sides, and we had our own hygeia ice plant. One cake of ice would answer all the year though renewals are desirable, but in the event of needing ice it was delivered directly into the built-in refrigerator through a door opening from a small side porch. Drainage pipe whose end connected with a cement surface gutter was screened with copper wire. Pipe was left six inches above ground. A small alcove cupboard on side porch served for use of milkman and grocer.

Vermin-proof Store Room.

This cold storage room was made rat and vermin-proof by galvanized one-quarter inch mesh laid over floors, side walls, and ceiling, and set in the cement.

Basement Rooms.

As the house was side-hilled, laundry, servants' dining room and servants' hall were above ground, avoiding a dark unhealthy basement. Laundry equipment included porcelain washtubs with non-projecting faucets, electric washers, mangles, etc., and a drying machine in an adjoining room.

Wire screens shielding both laundry and some kitchen windows were the impossible old-fashioned slate colored landscape design.

Servants' dining room was separated from laundry by columns and grilles, and a wooden floor laid over the cement foundation with the help of enamel and spar varnish finish wood work made the word "basement" a misnomer.

Cellar.

The cellar was tarred and cemented to exclude ground air and dampness, walls murescoed, separate rooms brick partitioned and provided with thorough ventilation, and the entire floor drained to a water-sealed manhole. All corners were concaved to the ceiling line with cement. Ceiling was wire lathed and plastered and covered with metal to reduce noise, dust, and fire risk. Footings were rough stone, capped with flat blue stone, brick if soft often deteriorating under ground.

Here was also a housekeeping closet with broad windows and a set of old fashioned hanging shelves of non-rusting enameled steel, and a dark cool preserve closet with spring lock, on the north.

Coal bins, brick partitioned, with cement floors and sides, had automatic chute delivery, a shovel of coal taking the place of the one removed. Bins were next to boiler, and the scuttle entrance so arranged that coal delivery did not injure the lawn.

A fireproof brick vault—brick being our best fire resister—with metal shelf partitions and pigeon holes encased in asbestos—was built in a corner of the cellar to protect papers hardly valuable enough to

keep in the liquid explosive-proof safety vault built in the foundation arch of the chimney, but whose loss would be inconvenient.

All cellar windows were large and had step-down areas with self-draining blind ditch outlets. Iron gratings and non-corroding wire screens at all cellar windows effectually barred burglar, bug, and rodent, and allowed frequent and thorough ventilation.

Cellar woodwork, which consisted only of window frames and stairs, was painted white and spar varnished, and several ribbed glass reflectors increasing the light threefold swung within in front of area windows. The mixture of white marble dust in cement floor and sides and white water paint applied to ceiling made the basement exceptionally light. The white patent cement floor was as easily cleaned as tile.

Bowling Alley.

The bowling alley under the high veranda platform with glassed-in front, reached by cement steps from both verdure shielded porch room and belvedere, was finished before we heard of the Italian damp-proof glass-floored alleys which neither warp nor sag. It was the regulation eighty-three foot length with low return groove and loop-the-loop return rack.

Our elastic basement accommodated also the gymnasium, Turkish bath, and swimming pool, the walls of the latter finished with scagliola, and water inlet safeguarded as far as possible from germs by an hygienic filter. Here also was the tool room, with electric forge and lathe. On rainy days that basement was something of a beehive.

The main stairway centreing our big staircase hall led to a mid-height platform lighted by a window of stained glass, while a short flight of stairs connected with the floor above.

The Guest Stair.

The awkward predicament of arriving and departing guests mingling on the staircase with those in full dress was obviated by the following simple plan: The stairway twelve feet wide, divided by a movable rod and curtain into two separate flights, one eight feet and a narrower four-foot flight against the wall. This temporarily screened stair corridor reached by a private paneled door in the grilled and wainscoted partition which separated the entrance hall from the staircase hall admirably served its purpose—a private stair connected with the entrance hall is open to the objection that valuable space would be permanently taken from the broad staircase and second story thieves or undesirable callers could readily gain the upper floors undetected. The twelve foot wide stairway allowed plant decoration its entire length. Tall palms guarded from a misstep.

The squared staircase hall and the arched and pillared second-floor hall corridor, in a measure an upstairs sitting room with *fireplace*,

and also reached by an electric elevator, are thus intertied, and form unusual features.

Checkmating the Burglar.

As extra protection from the midnight prowler we enclosed the main stair well at night with flexible metal folding gates used laterally and concealed in side pockets inset in columns, hoisted into the ceiling beams or lowered within a solid surfaced balustrade would probably have been better. It is practically impossible for these gates to get out of order, but in case they do, ample means of egress are afforded by balconies and fire ropes. With this arrangement no intruder entering the first floor or basement could gain access to the floors above, as the back stairs were enclosed to form ample protection in that quarter. Thus barred, the watchdog, kept on the second floor, was secure from cajolery. Burglar-proof mortise bolts protected each bedroom and were inset above the reach of childish hands.

A frontiersman gave me the idea of secreting a revolver in a leather pocket nailed against the back of a picture within easy reach of the bed, less dangerous than the under-the-pillow plan.

Fire and Burglar Battling.

Fire ropes of flexible wire, with swinging safety seats, are coiled in each outdoor bedroom, but two distinctly separate flights of stairs and the ready exit given by balconies and sun-bathed outdoor bedrooms practically eliminate all fire risk to life and limb, especially as the conning tower surmounted with a clerestory lookout is in reality a narrow brick windowed shaft centred with an engine house sliding pole and reached through fireproof doors from each landing, the openings rail protected.

High under the eaves connected with the owner's suite, was fastened a loud clanging gong to call the farmer and his assistants in case of fire or burglary. This, with an electric switch turning on in *an instant every light in the house*, and a couple of good dogs one within the house and one without, seems preferable to a carelessly handled burglar alarm with its unnecessary "wee sma' hour" bone-chilling surprises or the percussion cap window fastening, one of many precautionary devices.

The Arch.

At the head of the first story stairs is a double arch, one forming a hall division; the other, directly back of it, leading to the third story stairs. The effect of these with the corridor arches on the same floor, is called particularly pleasing. Enthusiasm for beauty as expressed in the arch leads one back through the centuries to that first arch in active service in the world, the famous Cloaca Maxima round headed Roman-arch doing humble sewer duty in the Eternal City on the Tiber, 2,400 years ago, and even today in active service, that arch sprung over a dozen centuries before the Incas ignorantly

built their substitute peaked and narrow lintels over wide thresholds.

Bedrooms.

On this second floor are spacious boudoir, morning and sleeping rooms with many windows. In one suite double doors were used enlarging the room. Many bedrooms have two exposures, preferably south and west, cooler in summer, warmer in winter, bays and projections aiding materially in the accomplishment of this purpose, at the same time improving the exterior of the house. Most masters' bedrooms are large enough for two couches, one paralleling the foot of the bed, the other fronting the fireplace which is almost as much a feature of each main bedroom as are the windows.

The Wall and Fireplace Jewel Safe.

In the larger bedrooms are small steel safes set in cement and riveted between wall studs, kept plumb and solid by an iron pipe, and concealed by pictures. One fireplace and hearth on the second story is large and strong enough to hold a silver safe electrically protected, its front concealed by a brass grilled register face with invisible hinge and lock.

In the second story hall is a quaint little staircase of a half-dozen steps, the treads covered with red carpet held by brass rods. Beneath are bookshelves. The stairs lead to a boudoir guest suite, consisting of centre sitting room, two bedrooms and bath closet. Casement leaded windows of translucent glass swing open into the hall, assisting in its lighting, and make another of the motifs linking these three halls. Owing to the extreme height of entrance hall directly below, the casements of this low studded room necessarily open close to the floor, and require metal guard rails. All guest rooms are fitted with writing desks complete in every detail. In one the bed is placed on a dais with rounded corners in pillared and windowed alcove. When portières are drawn the room assumes the air of a boudoir. In another is a shallow wall recess wide enough to accommodate bed heads and draped by a canopy. This arrangement gives excellent closets each side of the alcove. All masters' sleeping rooms have additional blind doors.

A friend motoring through southern France noted that at a quaint farm house where he stopped the bed linen was kept in drawers inset over the fireplace, a custom that could hardly be copied in some American-built houses without a visit from the fire insurance adjuster.

The Sunshine Room and Sun-Bath-Room.

In planning we did not forget the sun room, which communicated with one main bedroom and the hall. With its wicker furniture, bright cushions, rugs, singing birds and plants, it metamorphosed January into June. The sun bathroom had a large south window and a roof skylight. A tiny fireplace hugged the wall and a mat-

tress hammock swung in the sunlight. Closely allied in comfort, though comfort of a different kind, were the outdoor bedrooms or sleeping porches. Their entire fronts opened to the south, with the additional protection of hinged glass windows as storm warders and screens in summer. One window set low and over weighted was raised by pressing a button and a timid sleeper could roll on to the couch set against it in the main bedroom. On the protected sides of these outdoor bedrooms each alternate window was high, leaving space beneath for dressing table or chiffonier. We cut away a portion of the floor of one sleeping porch to admit the trunk of a lofty maple and trained its branches across the south front making a veritable tree-top room.

North light was selected for the bird's-eye maple room, as strong sunlight fades its delicate silvery beauty to a dingy yellow. Floor, trim, doors, settle, mantel and furniture are all of selected bird's-eye maple.

The Children's Play Room.

The children's play room and the nursery were somewhat isolated and floors deadened. They had indestructible cement walls, wooden floors, and frieze, wall, and dado in pictured story which could be varied from time to time. On the high vaulted ceiling was outlined a chart of the star-studded winter sky. A door panel held an explanatory key. Windows extended to ceiling line, were not over low, and rail barred.

At the east side of the second floor hall sitting room, stairs led to the third floor, and on the fourth were rooms typifying Japan, China, and Spain, while American Indian life was exhaustively portrayed.

Cedar Closets and Window Seats.

On this floor was built a real cedar closet—the variety of cedar that holds its odor, rarely found in the lumber yard, but cut for us in the woods. Its next door neighbor was a shelved and drawered napery containing an inner shelved closet with *double* Victorian folding doors seven feet high.

Invisible Doors and Secret Closets.

Panels in several rooms served the purpose of doors, using invisible hinge and lock, much less disfiguring to the room; passageways leading from others were paneled, the broad panels opening into deep closets fitted with dress rods, hat fixtures, and partitioned shelves and drawers. A ten inch wide shoe shelf set six inches from the floor and extending on two sides of the closet is concealed in several instances by a rolltop arrangement similar to that used on desks. Sets of drawers were built into the sides of the chimney jog in some of the bedrooms, also closets fitted for men's apparel, and after the carpenters had left it was surprising how easily some secret closets

were planned and constructed known only to myself—in fact, the dress and diamond smuggler with his false bottom trunks can be easily outdone by the home builder. False backs in some dressers and chiffoniers slid upward, revealing a secret space some four inches deep occupied by removable plush covered shelves for jewelry and other small articles of value.

The Secret Room.

My chef d'oeuvre was a secret room five by eight with nine foot ceiling, entered by a concealed door whose location has so far defied the most observing.

Developing Room.

Magazine portholes were under the stairway and eaves. In the third story a developing room well ventilated by an up-chimney electric fan was fitted with porcelain sink, hot and cold water, and other conveniences. Its side walls and door were inset with colored glass. A porch room closet taken from a jog siding the parlor chimney conveniently held, under lock and key, wraps, toys, books, and sewing.

Toggery Closet.

Profiting by the experience of a friend whose plates and films, valued at thousands of dollars, stored in a closet under a bathroom, were ruined by the thawing of a frozen water pipe, we kept toggery such as fishing tackle, guns, camera plates, etc., in a Yale locked attic closet, building over the plate and film shelf as extra protection a water-proof metal hood. Our rarest plates and films however were pigeon-holed in the fire and damp-proof vault. Exposed rafters in the closet were fitted with hooks, nails, and shelves.

Passing of the Insect Pest.

Windows wherever possible were in all closets, and electric ceiling lights operated by switch just inside the closet door. Cord hung bulbs were conveniently placed for peering into any especially dark corners. Closet walls and ceilings had three coats of paint and a finish of spar varnish enabled them to stand occasional washing. Instead of baseboards, cement walls extended to the floor, with a sanitary curve in place of the usual right angle. Floors of patent cement that does not crumble and can be kept clean made closets insect proof and easily hosed. Back halls and all servants' rooms were treated in like manner.

Metal Clothes Chute.

The clothes chute of non-rusting aluminum connected with the laundry closet with snap lock and was thoroughly ventilated by wire screens extending two feet downward from the ceiling following the closet wall line, with a wired opening at the base. Doors opened to the chute from each floor.

Yacht Room.

The yacht room duplicated the stateroom of a cruiser in berth, locker, dead-lights, and even hardware, and was a favorite rendezvous for land sailors as well as a boy's paradise.

Morning Room.

For real inspiration there is nothing like a morning room facing the east, where one can see the rising sun filled with the promise of a busy day. It had long been my dream, and in Pinnacle was worked into reality, being simply furnished for reading, writing and lounging.

Mirror Doors and Mirrors.

On the same floor was the sewing room, fitted with electric sewing machines, latest pressing equipment, and several triplicate mirrors and mirror doors, the latter so hung here and in bedrooms that when open mirrors were opposite, a third in some instances set between them in side walls. In one room the door mirror divided into small squares, and in another curved wooden muntins were used. There were mirrors on stair landings, at the ends of rooms, between columns, over door heads—even in the space between the trim siding two windows, in this case having carved, interlaced muntins across the face.

Mirage Rooms.

Several unframed vista mirrors cutting through baseboards to the floor extended the apparent size of our rooms indefinitely, especially after lights were turned on—a scheme made more effective by filling the entire space between two openings with a mirror and concealing side and head trim with portières. A friend christened these unwall'd illusion rooms mirage rooms.

Bath Closets and Bathrooms.

That in which today even tenement life revels, the comfy of the tub, was practically unknown to mediaeval England. Boththane and yokel, in the crudeness of the times, made their advent and exit without it.

Most masters' bedrooms either connected with bath or the substitute bath closet, wherein the entire floor space is occupied by the tub, fitted with shower and long swivel faucets reaching close to the front, forming both wash basin and tub. As these closets adjoined bathrooms, very little extra piping was required. A glass fronted water tight niche protected the electric light. Our preference was for the completely enameled steel tub, rather than solid porcelain which when filled with water weighs over a ton and absorbs much of the heat. Two set twelve inches below floor line were safely railed in, the extra depth required taken from the room beneath, in one case a closet, in the other a butler's pantry. By the use of square end six

foot tubs with high overflow, we proved that no house is *complete* without such a tub and a porcelain tub four feet square and fourteen inches deep having overflow twice the size of inlet was especially installed for children.

Bathrooms had cork mats in brass edged insets, showers with sprinkler and needle attachments protected by plate glass and odorless canvas in preference to a rubber curtain, white enamel scales, mirrored medicine cabinets set between the studs and several shallow closets partially inset in the walls in the same way. Extra ventilation in some cases was secured by fireplaces, also registers at base line connecting with the outer air. Tubs were fitted with rubber mats and hanging seats. Nickel plated fire irons matched the plumbing.

A third story bathroom was tiled with sheets of cream white glass four feet square, and the same material made an excellent shower shield.

Electric Light in Chimney for Ventilation.

My physician always kept a lighted gas jet in one chimney flue, but we found an electric heater safer, more easily controlled, and it warmed the air sufficiently for free circulation. An electric bath cabinet, shampoo fixtures, sitz baths and bidets completed the bathroom comforts.

Sanitary Angle Toilet.

In the basement was a sanitary angle toilet. Bathroom hardware matched plumbing and lighting fixtures, and high leaded windows added much to, and thoroughly screened these rooms. Where two doors entered a bathroom, opening one electrically closed the other. In one or two a high flush tank and pipe were concealed in a near by closet, but the low white porcelain tank was generally installed, as it is more easily inspected and kept in order. Later all tanks were omitted in favor of the stop valve. Over the toilet was a chair with hinged cane seat. In several cases toilet and bath were placed in separate rooms. Barreled ceilings were used in two bathrooms and in another an electrically lighted, stained glass elliptic canopy where the domed ceiling centred over head. This, with Pompeiian wall treatment and growing plants, made a luxurious bathroom.

Gold-plated bathroom fixtures *never tarnish*, are most effective against a white background, add in appearance far more than their cost, and *should be* one of the features of a fine house. One master's bathroom was thus fitted, and in others expense was curtailed by using white enamel tipped with gold plate.

Glass was found satisfactory for the tops of dressing tables, desks, towel racks, shelves, set basin supports and shaving shelves. Several shaving jogs were built between two small windows, and fitted with triplicate mirrors and electric lights, and dressing tables in several rooms treated in like manner.

Overflow pipes in all fixtures were sufficiently large to quickly carry off the output of both faucets, and are important provisions. Trouble from stoppage is farther minimized by placing a porcelain safe under the housemaid's sink.

An inflowing pipe from the bottom of the bath makes it less convenient to ascertain temperature of the water or bathe injuries but has the advantage of being noiseless and preventing servants from drawing water in the bathroom. Most tubs were fitted with the single combination faucet, furnishing water of any temperature.

Plumbing Shut-offs.

Shut-offs for each and all fixtures were grouped in one easily reached place and legibly and permanently labeled.

The use of wood pulp plaster throughout the house helped to prevent falling ceilings caused by sudden jars or leaking water pipes.

Coal Saving.

In one of our cheaper houses we adopted the plan of having a galvanized iron flue for the furnace enter the chimney near roof line by way of back hall well hole, protected at floors and partitions by soapstone collars. It is a great house warmer and coal saver and is doing excellent work after twenty years' service.

Fireplaces from Ripon Abbey to Venice.

We now come to the soul of Pinnacle, for it has been aptly said that "as the windows of a house are its eyes, (and the patio its heart) so is the open fire its soul; the only physical matter therein that leaps and darts, quivers and curls; the quick and subtle spirit Prometheus lured from heaven to soothe and civilize mankind." The glow of burning wood brightened the living room, which had a fireplace at either end, while entrance hall's open mouthed log burner was ten feet wide. In fact, every main room except the dining room had its soul, but the dust-gathering stone affair was omitted except in the glass-enclosed porch room fitted with suitable radiators.

In a side porch storm windows lowered into an opening in the shingled railing, and the windy side of a west veranda was protected but unshadowed by a large sheet of framed plate glass extending from settle to porch roof *securely* screwed into place and removable in summer.

Feudal Fireplace.

Our 20 x 30 foot studio with its beamed ceiling following the roof line to its highest peak was centred by a triangular chimney with three fireplace openings, one on each side, inspired by a chimney in the Tiffany house, a fireplace at which one could imagine feudalism warming itself over a handful of blazing faggots in some flambeau lighted, vaulted hall of those fortified homes of the past.

Mantel mirrors were barred as reflecting generally the uninteresting back of a clock. We substituted tinted plaster casts, leaded glass cabinets, burnt wood designs and paintings, and in the library mantel face set a circular clock taken from grandfather's town house library, where it had faithfully ticked through the lives of the household for over fifty years. One over mantel was brick-hooded, one faced with copper, one with plush and still another in tooled leather on which was inscribed the Stewart coat of arms in shimmering silver. One fire back or reredos was iron, embossed with a coat of arms, others of fire brick in varied hue and one of cement criss-crossed with black headed nails. There were Norman and Pompeian mantels, with full recognition given to the line of Louis, while Egypt, that land of heat and hieroglyphics, was represented by a mantel front modeled from crude tracings gleaned from Thebes. A black grottoed fireplace became a real grotto of rocks and ferns in summer, while another held one of those big shells from the Orient, on whose white lip was painted a yacht race.

Hobs in the hall fireplace suggested the days when they served to hold kettles, etc., while a Dutch chimney and mantel and narrow leather cushioned seats at each end of the fender top gave a home-like air to the den.

Tiles in billiard room chimney breast represented windmills and quaintly rigged luggers.

We had always craved the antipodal in fireplaces—one as broad as that in Ripon Abbey and another as narrow and peaked as convex copper hood could make it and still keep the semblance of a fireplace. Lack of space dwarfed the former, but the latter played its part rarely well. Mantel breasts were carried to ceiling height and treated in tile, copper, or brass. In front of one fireplace was inserted a metal framed sheet of thick plate glass which served to extend one's view of the leaping flames. Break? No; not if fire-tested and correctly set.

Some mantel shelves were placed very low; others correspondingly high—one, a couple of feet from the ceiling line and boxed in two feet in width, another barely three feet above the floor level and supported by caryatides; others lined with the window or door capings. In the drawing room was an onyx hearth and mantel-face with gilded shelf and brass andirons, fender and fire tools. A trolley rail we found just the thing to firmly support level headed fire openings, and where flue space in chimney permitted the fireplace connected with an ash flue, leading to an ash pit in the cellar.

Reluctantly it was decided to omit the fireplace in dining room, though crackling flames add much to good cheer, for, unless this room is unusually large, someone is sure to be made uncomfortable.

A throated mantel hood was constructed in the billiard room by bulging out the side wall when the room was plastered. It harmon-

ized better with the decorations than the red brick mantel originally purchased for this room. The ceiling was treated in Pompeian red, crossed by black beams, and side walls wainscoted below a stenciled frieze. One window seat was regulation billiard room height, with foot rest, the window guard-railed. Step-up window treatment, giving both side settles and enlarged view, we adopted in several attic rooms.

For the convenience of those who did not care to climb, an extra billiard table was placed in an alcove of the den on the cool side of the house.

The chimney flue in the billiard room and an electric up-chimney fan joined forces against the smokers to prevent the nicotine-laden air from permeating the house. If a chimney is built on correct lines, the "help draw" ugly chimney pot is a useless addition. When the fireplace opening was extremely high, as an additional aid the chimney was split in two at and above the ridge. Windows were all on one side, avoiding cross lights which, with overhead skylight, made it an ideal billiard room, a trifle larger than the usual eighteen by twenty-four feet, its walls, as well as those of the studio, sand finished to better admit of mural stencil decoration.

A Feasible Lookout Room, a Real Clerestory.

Standing on a commanding peak in the Tyrol, one hears in the distant valley the tinkle of cow bells and from the village steeple the call to prayer and service—the only sounds that break the Sabbath stillness. As I thus stood one morning I determined to sometime have a home that would remind me of that fair spot, one where the Sabbath stillness, if desired, could last half through the week. From this wish of mine, or rather because of it, was evolved our lookout room, a real clerestory, compassing a magnificent view, and proving a fair substitute for that Alpine air castle. It was a homelike lounging and reading room of generous size, with fireplace and conveniently low book-shelves beneath the windows, protected from storm by a broad ledge. There were high ventilators near plate line, a wide overhang, awnings, and electric fans to cool the air of this glass-walled room—ideal comfort thus fashioned from the usual glaring *discomfort* of the average lookout room. Here big davenportes vied with mattress-fitted, chain-hung hammocks.

The dome, reached by a narrow iron stairway, arched an iron-grated platform on which was mounted a Clark telescope for sky-ranging and man-bird seeking.

Floors.

Hardwood floors of oak, red birch and maple were finished in wax, remembering in caring for them that wax and water clash. Parquetry borders, but of $\frac{7}{8}$ stuff, were used throughout the house. We found that even the smaller rooms lost but little in size if borders

were not of strongly contrasting color. Plain white maple lacked character and easily soiled; selected grain was used in preference.

All closet doors were hung to open outward and exterior and interior doors featured to fit their belongings. In some cases a portière more conveniently screened hall alcove and clothes press. Baseboards were preferably set on the under floor and the joint concealed with convex sweeping moldings. It decreased their height but made a better job.

Built-in drawers were not as a rule exasperatingly deep, and were on rollers operating on centre guide strips. Inside stops guarded incautious handlers from catastrophes apt to occur to incautious handlers of heavily laden drawers.

Small rubber plugs were set in as well as air check valves affixed to door frames, especially when doors were glass, behind them the regulation door stop, and rubber and metal tipping of heavy furniture saved both nerves and floor.

Hardware.

Black iron was the motif in the den hardware, and Colonial polished brass wherever suited to the room.

The small brass drop proved a fine escutcheon, and a few beaded brass finger plates were souvenired from grandfather's Colonial house where we all ran rampant, especially on holidays. Some doors had square or oval glass knobs, and porcelain rather than insanitary wood was used in servants' quarters. Lacquered hardware in door knob and handle soon wore off, while polished brass and glass stood all friction tests, but there was no tiresome uniformity in lock, bolt, hinge, escutcheon, window fastening and lift, drawer pull and knob, silver and gold plate, as well as aluminum being also used, the two latter with immense advantage to the *woodwork*, as they require *no cleaning*. French casements were fitted with the Cremona bolt or espagnolette fastening reaching the full length of the window. It rarely gets out of order, and secures both top and bottom with one wrist movement. Butler's pantry doors had the usual double action butt, and mortise locks prevented the use of thin closet doors. The ugly, commercial looking transom adjuster was replaced with a concealed wall fixture.

A key cabinet held duplicate labeled keys of important rooms and outbuildings, and was securely locked.

Pneumonia Prevention.

At ceiling height on each floor ventilators connected with a pipe leading into the brick chamber surrounding the range chimney tile flue, which, being generally hot, drew fumes and odors upward. This, with the influx of cool outer air through controlled ventilators at two outer door-sills and under several windows, effectually banished the usual steam-pipe pneumonia-conducting atmosphere that

sponsors half our winter ills. With thermostats in each room there was no excuse for over heating.

Asbestos (earth flax) and mineral wool, i. e., slag treated with steam until it looks like spun glass, were used wherever there was danger of a charred timber or the annoying sound of running water. One cellar ceiling was covered with sheets of asbestos, later painted to cover joints.

The Heating Plant.

It's a long span from the hypocaust used by ancient Rome to heat its public baths to the modern steam or hot water plant, but present heating methods trace backward to the luxurious Roman.

Our heating system was direct and indirect radiation, insuring a constant supply of fresh air. By using half of the double firebox and cutting off certain radiators the expense and care were reduced one-third. The heating plant in the cellar of the gardener's cottage connected with main house by underground asbestos-covered iron pipes which kept the house free from coal dust, furnace noise, and ashes. A metal shield was suspended from the ceiling over the furnace.

The Ugly Radiator.

Radiators were concealed in niches, alcoves, behind metal grilles, and in window seats, but never where they could not receive a free circulation of air, and grilles hinged to open in extremely cold weather created swifter hot air currents. Enclosed radiators require generally from twenty-five to forty-five per cent more radiating surface.

Radiators in the hall were concealed in alcove seats, hidden by silk fringe, and stair risers perforated and connected by ventilating pipes with boxed-in radiators. Wall radiators enameled or painted with heat-proof paint to match the trim were used in bathrooms, no impudent silver or gilt monstrosities stared at one in Pinnacle.

One big and ugly radiator installed in the cellar had special air duct within and without, but its inlet was through the side wall, rather than from an insanitary floor opening, and in a *clearance* instead of behind a door. Those concealed in settles were set six inches from window sills, this space, as well as the seat front, being metal screened.

Electric Lighting.

Considerations of safety, as well as ease in repairing broken wires, led to installation of the iron pipe system, in which every wire is under absolute control. If new wires are needed they can be readily drawn through the pipes. Outbuildings were equipped with the cable system and exterior telephone and electric damp-proof wires wherever possible buried in underground pipes.

Great care was taken that no electric wires on the grounds were fastened about a parent stem or main branch; if necessary to place a wire against a tree, it was protected by a wooden block. Many a

forest monarch has withered and died by a short circuited current, or simply through a wire stay embedded in the growing tree, cutting off the life-giving sap. The hour-glass moves swiftly in the horticultural world.

Electric Fixtures.

No one item for its cost can make or mar a house more than the electric light fixtures. From the time when King Alfred first encircled the snuffed-out candle with a metal shield to the present day, the lantern has been a decorative adjunct. We swung in the centre of our twenty-five foot hall ceiling a ponderous, electrically lighted cathedral lantern seven feet high and few features in Pinnacle attracted more attention than that christened King Alfred's lantern.

For the attic studio, whose beamed ceiling reaches to the ridge, we chose a fixture having three sets of circular lights of diminishing size, arranged one above the other, the whole suspended from a verde-antique chain matching the half dozen sconces that lighted the side walls. Two gala rooms illuminated by diffused light from glass tubes concealed at cornice line were good examples of indirect lighting.

Gas piping kept pace with electric wiring, and included gas log connections in several rooms.

Combination gas and electric fixtures were installed in some rooms, and when desirable low candle power bulbs used, preventing waste, while switches both up and down stairs controlled many lights within and without, including the ventilated sub-cellar, a real favissa, which, by the way, like St. Peter's Cathedral, was of uniform temperature summer and winter, and properly drained proved a most desirable addition. There were a number of base plugs—the *base trim being high enough* to properly centre them—connecting with movable electric stand lamps at bedside, study table and easy chair, dressing electroliers before mirror doors and bureaus, and especially designed fixtures for picture gallery, billiard room, bowling alley, den and conservatory. The latter were glass to prevent corrosion.

The electric light in hall wrap closet operated by opening and shutting the door, automatically turning the current on or off as required, an air check valve making it economically satisfactory.

All exterior entrances, including the cellar, were lighted from a switch within the house placed near a window so that any visitor could be scrutinized before the door was opened.

A secret switch was installed just outside the front door to light the house before entering, and on one memorable occasion this precaution proved of value. Light—the owner's best and *safest* defense against the midnight marauder—flooded the *entire dwelling* by operating a switch near the master's bed.

The front door bell was placed on the right of the door, there was also electric connection with the knocker, so that when lifted it

did double duty—another infringement on the realm of the sometimes over glamored antique.

In the dining room floor was the usual foot bell connection; the electrical handmaiden domineered in the kitchen. She peeled potatoes, prepared other vegetables, beat and boiled eggs, cooked food of all kinds and fanned the dishes dry—in fact proved trustworthy under the most trying conditions, and often simplified intricate house-keeping to the one servant limit.

Electric Elevators.

An electric safety elevator for passengers and luggage operated from cellar to attic through a brick, fireproof shaft; all openings and doors therefrom metal sheathed, experience having proved that a wooden door metal covered will not warp with heat like a solid iron door.

The same dynamo and engine used to operate electric lighting and ice making plants ran the vacuum cleaning outfit, whose pipes extended from cellar to attic with convenient outlets either in closet or hall, and through which into the cellar metal dust-box was forced every particle of dust from floors, walls, draperies and pictures. Indeed, we used the docile, industrious servant, electricity, that wonderful unknown force, in every possible way. Long before the carbonized vegetation of the coal mines is exhausted the pick of the miner will rust through disuse, for the penned-in and harnessed might of waterways will do the bidding of the great mass of humanity and the electric switch and a turn of the wrist will eliminate dust, ashes, and much of the laborious work of today. In time eight hours will be halved by this mighty giant, and an emancipated superman take the place of the present enslaved, undeveloped burden bearer.

Recesses.

Two recesses were much in evidence, one a usable angle, spaced for unscorched comfort, the other the billiard alcove big enough to squelch profanity, both advantageously placed to vista and enlarge what would otherwise have been small adjoining rooms. Recesses for sideboards, beds, cribs, bureaus, drawers, chests, closets, bath tubs, and shower jogs gave great results, and utilized waste space under stairs, eaves, and in chimney angles. Niches in side walls and over doorways in entrance hall, corridor, and ball room, as well as exteriorly each side of the front door, aided in giving distinction. A large sea shell from the Orient hooded a niche in the plastered wall of a hall recess holding a telephone, and the guest book was kept in a similar alcove.

Solarium.

One novelty, a recessed, roofed, and windowed solarium made by two projecting ells, and big enough for a real room, with wainscot

and beamed ceiling, was a veritable Sahara in July and August, as it faced south, but much used in early spring and late fall, being easily screened with glass, netting or awning. Loungingly furnished, it made life in the open possible for an even ten months. When southwest winds blew too strongly across the porch room or steam heat became unbearable, our solarium proved a welcome retreat.

The indoor effect of the porch room we emphasized by using a water-tight wainscot seven feet high, thoroughly painted on both front and back, and fastened firmly against the house. Over it a plate rack was set four inches from the wall, the open space protected by a strip of galvanized wire mesh. Wall area above the wainscot was covered with painted and stenciled burlap. A broad brick tiled terrace, handsomer, though more expensive, than cement, joined the porch room. The combination brick and tile honeycombed parapet railed atop with plants gave protection from the fifty foot ravine edging the terrace.

A couple of settles against the veranda rail extended beyond the guard rail line, and woven galvanized wire instead of the usual hard board seat supported the cushion. This projecting rail protected seat gave an uninterrupted outlook on three sides, and overhung the deep cliffed ravine, while wide eaves shadowed and shielded it.

Ten foot spaces between the supporting posts of one pergola were filled with a hedge barrier of fine-fibred Japanese privet and the wistaria centred pergola broadened at one end into a square tea house overlooking the ravine and the formal garden. Garden terraces pierced by closely cropped firmed and squared turf steps led to level underdrained grass paths—ribbons of velvet green stretching between borders of flaming color—while side entrances gave necessary ingress and egress to the several outlying features.

Pergolad Clothes Yard.

The clothes yard close by, hidden from view, had free circulation of air. A latticed, vine-embowered screen, with arched gate was our first thought, but a grassy slope facing the southeast was finally enclosed with a seven foot cement wall covered with climbing vines, and pergolad and side-grilled to catch the breeze. The entrance was through a gate balanced with clanking chain and cannon ball. In another yard we capped the honeycombed wall with red tile. An additional pergola screened the servants' portion of the house and path leading to the service gate. Between column bases were metalined, well-drained plant boxes covered with rough bark.

Awninged Platform.

Against the house instead of the objectionable covered veranda, often too narrow to be really useful, and always darkening the rooms, we built an awninged platform on the outer edge of which posts supported a plate. On this and projecting three feet beyond

rested pergola roof beams, fastened at their inner ends against the house. They were permanently boarded and canvas covered four feet from the building line, leaving the remaining ten feet to be fitted with an adjustable awning. Connecting with this platform was the porch room, with ceiling plastered in cement and beamed and decorated like a living room—an improvement over the usual glary, varnished, wooden porch ceiling.

Decoration.

The field of decoration in Pinnacle we simply edge. A room well proportioned, artistically trimmed, doored and windowed is already half decorated.

An ideal house is one in which the soul can grow. Sunshine, air, flowers and an enchanting view of God's green earth, sea and mountain, vale and plain, ease burdens and dissipate depression, that arch enemy of spiritual and physical growth.

One of the greatest charms of house decoration is harmony of color, and it may be made to cost but a fractional part of the whole. Years ago an artist friend studying in Paris gave me a genuine color surprise by painting a white picture, of its kind the most effective thing I ever saw, a study in shades of white. A white haired lady gowned in white satin stood on a rug of white bearskin; one hand rested on a white damask-covered chair, the other on a white enameled piano, to the right of which was the only bit of color in the room—an oriental palm. That picture is in my memory for all time—just as a single full blown rose or a few cut flowers vased appropriately in hall, dining room, library, and den, supplemented with growing plants on stair and centre table, give added charm to the most luxuriously furnished room and stamp it on the mind for days.

Papering.

The problem of papering we approached somewhat cautiously annoying experiences having taught its limitations, as well as strong points, one of the latter being the power of even a cheap paper if of suitable design to *counteract* the effect of outrageous architectural lapses. Care was taken to avoid the assertive spot, the gilt that flattens, the large pattern that dwarfs and the color that kills, also to remember that papers fade and polychrome effects tire.

Brilliant flowers, as well as bright colors, under foot and on wall, invariably hold the centre of the stage and detract from the effect of pictures, drapery, and furniture. Ceilings were light, fleecy, and uplifting, rather than dark, overcast, and cloud-lowering, and to prevent accident were canvassed or burlapped before being painted or frescoed. They were rarely papered.

The stripe that heightens the room that needs height and the one color that gives tone to the most ordinary room, each had an

appropriate place. The rule was to tack several strips from ceiling to floor and test for a few days the effect of both sun and artificial light.

In plastering in some cases colors were mixed in the mortar, the unevenness of tone so produced being at least novel.

In one room walls and ceiling were unhygienically rough as gold nuggets, and we copper bronzed and gilded until it fairly blazed with iridescent rays.

In a twelve foot ceilinged room a pictured side wall extending from the six foot wainscot to the cove made a finish in appearance antedating Colonial days.

Pictures in Wood.

In another was a rare wainscot of Circassian walnut, unpaneled, boards closely matched to form an almost imperceptible joining, and kiln-dried to the calcine point. Crowned by a bit of molded capping, these pictures in wood rivaled in beauty the work of the frost king on the window panes, but its well being meant drying out days throughout the year. Heat, sun, and ventilation can alone balk the destroyer that *always* lurks in a closed or partially closed house.

A touch of realism was given the lofty raftered studio den by suspending from the ceiling a trio of stuffed wild geese headed exactly north, rivaling the rich patina colored copper arrow inset in the loggia floor.

On the vaulted ceiling of a tower room an artist friend painted a flock of circling swallows, half hidden in fleecy clouds, while in another treated by a past master in the art was a wealth of rococo decoration whose delicate tracery seemed spun by fairy fingers. We banished from every room heavy dust gathering draperies that make one pant for fresh air and sunshine, substituting in the gala rooms non-dust-clinging silk and satin.

A Real Wall Covering.

The originator of burlap-covered walls smoothed many an awkward "thank you marm" that once marred the decorator's best efforts, and burlap covers many a crack, nail hole and blemish. One excellent effect was obtained by a new treatment of this old-time wall covering. A gray white burlap was glued to the wall, painted an apple green and rubbed down before it was thoroughly dry. The color thus removed unequally, as the cross threads on the surface received harder rubbing than the back threads, the green of the untouched sunken threads showed through the fainter green in spots, giving a Japanese silk effect, minus the raveled microbe dust-catching ends, forming a wall almost as hard as flint, an absolutely hygienic surface that could be redecorated again and again. Restful green and restless red were not forgotten. Green, combined with white enamel trim seemed almost as refreshing as the shade of a huge tree

on a hot summer day, exemplified in some giant horse chestnut whose branches and leaves green-swathe trunk and limbs from base to topmost twig.

In one boudoir we reveled in framed tapestries, the frame forming a door head within which were shepherdesses, cupids, green fields, and purling brooks. Again, the outside trim member was carried to the picture molding which, being in the same design, formed a frame in one instance for plaster cast, in another for a painting or burnt wood panel over a window head.

Where windows and doors were near together and in line, one long piece of trim over two or more incidentally made a frieze member, and in a number of rooms we built the usual wooden panels over doors and under windows, sometimes decorating the former with composition or dental work against cap and pediment.

Home-Made Ornaments.

Home-made ornaments, such as fire hoods, latches, hinges, door-plates, mantel fronts, hooded or plain, flat strips of wood covered with sheet copper outlining the hearth, and burnished brass on kitchen table top, shelf, and service door footings radiated cheer especially in the flickering light of that wonderful, glowing driftwood blaze that danced back and forth against polished andirons dented by long service and reflected in wall-hung warming pan so prized by our forefathers as to be often scheduled in last will and testament. Comfort and convenience, the tests every house must stand, were the first consideration, for a true home should be a haven of rest. The mantel, an essential factor in the appearance of a room, in strong measure keys decoration and furnishing, for structural beauty is lasting.

Armored Knights.

A complete suit of armor stood at each end of the mantel shelf, and over balcony and high in entrance hall hung rare old tapestries, lending charm to other furnishings.

Craving originality, as all do, it is a bit of a setback to find that the other fellow's idea has preceded that of today by centuries, but there is comfort in knowing that at least the "bump on a log" stage of the world is passed, even if efforts are honeycombed with mistakes. The Twentieth Century average man thinks "it is better to be a has-been than a never-was, a never-will-be, or a roi faineant."

Animal Lawn Mowers.

It seemed a novelty to some of our visitors that the lawns were kept closely cropped by a trio of Angora goats and a small flock of sheep, close rivals to the up-to-date motor lawn mower, and far more picturesque. An interlocking movable wooden fence

and saw-buck sheep hurdles purchased by the rod and fitted with turnstiles at convenient points prevented damage to shrubbery and kept all rovers within bounds.

At one time extra heavy wool fleeces encouraged us to increase our flocks and develop a business side to amateur farming, which included squabs, chickens, milk, fruit, asparagus, roses, violets, and grapes grown under glass.

The vista of our broadest lawn we lengthened by adding to it a half mile of pasture land, using the old English device of a verdure-screened fence barely eighteen inches high set at an acute angle at the top of a low terrace. It gave life to the view pastoral to see in the distance roving cattle and flocks of sheep, none daring to leap the frail barrier showing simply as an irregular curving line of low-growing shrubbery at the edge of the actual lawn.

Bird and Squirrel Rendezvous.

In a sheltered and sunny nook was a bird and squirrel rendezvous. Suet was nailed against the trees, while the ground was occasionally strewn with nuts and grain, bringing within eyesight, and often within touch a wild aviary wherein no wing was shorn, no tiny form ensnared, but where all were as free to come and go as the air that lifts them skyward. True, the birds of the Orient were missing from our unbarred aviary, but unfettered native bird life joyously warbled songs of freedom.

Colonial Garden.

"Not wholly in the busy world nor quite beyond it blooms the garden that I love."

We duplicated the old-fashioned alleys of box and the geometrically designed flower garden of our grandmothers, in some cases bordered with English ivy and one blaze of color from June to November, aiming to make it what such a garden should ever be, a house extension with verdure-canopied seats and rose-screened arbors, shaded walks, and shrub-arched gateways, a restful contrast to the statted and fountained Italian sunken gardens. Two monastic grass paths, closely cut, led from service gate to side door and to the well with its old-fashioned sweep, and a flat stone walk such as in Ischia, Capri, and Japan satisfy one's craving for the unconventional and romantic, connected a pergolad arbor with the house and lych gate, over which, framed by virgin's bower, was the gladsome greeting: "Through this wide open gate none come too early, none too late." Yet, while irregular, flat stones set in green sod are attractive, they are a bit unsafe, and even gravel is disagreeable under foot. If appearance must be sacrificed to utility, town asphalt, though heresy to breathe it, has more comfort to the square inch. Is it artistic solecism that leads one to turn from the safe artificial to struggle, slip and fall over the dangerous picturesque?

The "boneyard" of a terra cotta factory was found a good place in which to buy ornaments for lawn and porch room. A miniature temple, a stone god, a bronze dragon from Japan and a sun dial from "Olde England" with quaintly phrased and oddly spelled motto had appropriate setting 'mid shrubbery, on lawn, and in the plaisance of the garden.

The Maze.

Remembering an exasperating two hours spent once in trying to find my way out of the maze at Hampton Court, I essayed to drag my fellows into a like predicament by growing a maze of California privet (*Arbor Vitæ* would have required far less pruning and screened it all the year). Planted in a sheltered spot, the privet maze was in leaf up to Christmas, even in the Berkshires. A belvedere elevated six feet allowed the conspirators from their coign of vantage to chaff with good natured raillery the lost ones. A stiff wire fence centred the entire hedge, and once fairly in the labyrinth one mode of egress was to reach the Ibis-centred fountain and study the *map-of-escape* tooled on its edge or depend on the good nature of onlookers to direct the path to freedom.

Horse posts were placed about the grounds in shady spots and fitted with swivel-elbow knuckle bar and chain snap fastening, one protected by a wooden umbrella canopy bracketed with screened light. Near the porch, on a frost-proof foundation, was set a stone mount block.

Moat and Drawbridge.

In the Norman stables were large conning tower and big archway, approach being by drawbridge over a moat. We even attempted a portcullis gate, iron pointed, barred and bolted, the sort that "grazed Marmion's plume," but at the last moment it was recollected that the proverbially careless boy might loose the chain, so critical neighbors were spared this bit of vandalism. Fortunately nature had already formed the ditch and a few days' labor with pick and shovel and a horse-dirt-scoop, gave us the only moat in the entire country-side, drained to form a dry grass-grown hollow instead of a mosquito and malaria breeding ditch. The timbered bridge which spanned it, built from the staunch oaken girts of our pre-revolutionary barn deliberately wrecked for this purpose, was realistically strengthened by heavy bolts and rusty, corroded, clanking chains, found at a second-hand chandlery shop, with which accessories it sometimes to some people passed muster as a feudal drawbridge.

The porte cochère, or rather marquise, was on a sheltered side of the house, avoiding an ice-blast cavern, disastrous to heated horse and shivering coachman. The glass roof and location prevented it from unduly shadowing the entrance hall, as well as adjoining rooms.

An artificial pool fed by springs or slowly flowing water and without the stigma of a swamp lowland gives beauty to an estate obtained in no other way, especially if placed near enough to the dwelling to faithfully mirror its outlines from "turret to foundation stone."

Trout Stream.

The trout stream that in arid summers aided the springs that bottomed Pinnacle's forecourt pool to keep the water brim high, threaded a sylvan dell, and none suspected that neither frost nor stream placed boulder and pebbled bed or ate into the jettied cliff, but that with malice prepense Jim, John and Joe created with dynamite and pick the major and minor artificial rapids and waterfalls.

Absent Pennant.

When the master was at home, "Old Glory" floated in the breeze until sunset, and when away a flagless pole served in place of the absent pennant displayed on shipboard.

Garage.

The garage was fireproof, being of reinforced cement, with tile roof and working pit in the floor. It was large enough to accommodate several cars, with entrance wide and high, ample turning space within, and fitted with a turntable.*

Skating Rink.

Running the cars under a convenient shed and temporarily flooring over the pit of the garage made on occasion after a thorough cleaning, an excellent skating rink. Under the same roof were also squash court and chauffeurs' quarters.

The Lost Vista.

Follow the carrier pigeon close to two hundred miles as he alights on an evergreen tree forty feet high, but in those days barely a foot, and you reach the HOME of my "lotus eating days."

I bought this, my *first* place, mainly for its magnificent view, located as it is on one of the highest hills of Newton, overlooking the historic Charles River and the towns of Waltham and Lexington, Boston, its fine harbor and the blue hills of Milton. Today the view has absolutely disappeared; shut off completely by my neighbors and myself. The lesson—one of many *dearly bought* experiences of a novice—is never to buy nor build on the wrong side of the avenue, the side on which neighborly or unneighborly planting or building will in time shut out both breeze and view.

Home shows comfort in porch and veranda, as well as within, where there are rooms of generous size and abundance of fireplaces.

*The use of the turntable *solves* the often met difficulty of a garage in confined quarters and avoids extra road making for turn-arounds.



THE FIRST
STEP IN
BUILDING
MANIA



THE
SECOND



THE ROUGH BOULDERED ENTRANCE

THE FIRST STEP IN HOUSE BUILDING.



HOME.

The third floor contains billiard, tower and servants' rooms, while the little space under the eaves was sacred to the owner's use. It is reached by light weight steps hinged sidewise against the wall—a safer way of economizing on a makeshift stair than the weighted, ceiling-hung ladder.

It's many years since the fowl coop landed at the back door and a novice tried his hand at housing its contents. The hennerly was neither square nor plumb, but the pride engendered by that first effort has never been eclipsed. This success gave courage to make a second attempt in the shape of the little stable shown in the photograph herewith. These were the earliest symptoms of the building mania that afterward possessed me.

Hole-in-the-Ground Greenhouse.

In these days a hole-in-the-ground greenhouse represented more real enjoyment to the square inch than I ever derived from a handsome U-bar conservatory.

Seventy-five dollars for some old hot-bed sash, boards, and lumber ends, an oil stove and the services of Jimmie for a few days gave a greenhouse 10 x 30 and about seven feet to the roof centre. It *ended* against the south side of a six foot high tight board fence and was so built that the plants came near the glass, hence abundant bloom, while a neighbor's elaborate, high-studded, steel-arched conservatory produced mainly leaves or spindling, blooming plants.

Expensive construction was avoided by selecting a dry, gravelly southern slope and digging a trench thirty-five feet long, three feet

deep and four feet wide, which finished in the clear two feet six inches in width. A stone drain was covered with ashes, over which were laid planks, the sides roughly stoned to prevent the earth from caving in. The steep incline of the drain solved a vital question. Sills hugged the ground closely and rested on field stone, set in cement to prevent rotting. The 3 x 6 hot-bed sash met in the centre against a ridge board, thus forming a low roof, while every other sash was hinged at the top for ventilation. The solid bed of earth each side, covered a few inches deep with rich soil, being drained by the aid of loose stones six inches deep, saved all bench expense and brought plants and cuttings near the glass. The ground outside was mulched with straw and weeds a few feet from the building to prevent the earth from freezing. In the fall I planted closely in sand at least 10,000 geranium and other cuttings taken from out of doors just before Jack Frost appeared. In early spring these were potted off in cold frames for later planting out. We grew violets, pansies, pinks, geraniums and some bedding plants in profusion, keeping them free from insects and mildew by burning tobacco stems once a week, and occasionally sprinkling flower of sulphur about the greenhouse. A rheumatism breeder? No! not to us; heat was an excellent deterrent. Slipping and potting plants often outrivaled lecture or theatre.

This hole-in-the-ground greenhouse made an ideal place in which to start seedlings for spring planting, as none ever grew spindling or sidewise. It also supplied every south window in the house with blooming plants. Here were propagated in sand beds set on slate and over a kerosene heater rare evergreen cuttings by the thousand. The extra length of five feet in the trench was used for steps to reach the walk, and as an entrance. This outdoor five-foot space had a hinged cover to keep out snow and rain. Properly ventilated, kerosene stoves were used successfully for heating and in extremely cold weather the sash was covered with light weight straw matting.* If I repeated this experiment the trench would be finished to three feet and four feet added to the width of the borders to allow ample working elbow room. Many of the plants were set in boxes and pots as well as in the ground. The growing odors of that bloom-packed, underground flower pit made fragrant and brightened and lightened many an overcast day.

The 10,000 cuttings I raised every year took comparatively small space, as they were set only one or two inches apart in the sand. They alone paid the cost of this rough and ready greenhouse several times over. The site was far enough removed from buildings to eliminate fire hazard.

*Inexpensive small heating plants are made today that would do the job very thoroughly, and a large glass area covering this underground construction scheme could be heated with comparatively little expense.

Hamburg Grapes for All.

A note of economy was also struck quite successfully in the field of Hamburg grape growing, using the same hot-bed sash idea, built in chicken coop form, resting on two by four double sills close to the ground, vine roots planted in a regular outside border. This diminutive cold graperies measured four by six. The vine passed under the sash and carried midway between peak and sill the length of the little building, while sash was hinged for ventilation, and controlled by a short chain at one end to prevent breakage; there were also alternate two by six inch openings between the two sills. Vine borders in each house were planted with four vines, two on a side, richly made of two-thirds decomposed sod and one-third rotted manure, mixed with bones and sheep heads in goodly quantity. Underlying this eighteen inch deep earth border a drainage bed of small stones one foot deep circumvented that great retardant of the grape—wet feet. We had Hamburg grapes as fine as the finest grown in the more expensive houses, well repaying the time spent in thinning out the bunches and the grapes in each bunch. An occasional dusting with flower of sulphur kept under foot the industrious and pernicious mildew, another of the grape's arch enemies. The luscious Muscat Hamburgs and enormous bunches of Gros-Colemans did not mature well with this somewhat crude manner of grape growing, so we kept to the plain Hamburgs which were very satisfactory.

Just as our little graperies reached full bearing, suburban life abruptly ended, to be repeated again, 'cross country, in Red Towers. Years later, the twin manias of farming and house-building seized us as with a grip of steel.

BUNGALOW THE SECOND-1888
RESTCLIFF



TREE TOP



THE PIONEER BUNGALOW



OUR RAGGED LEE SHORE



WHITE ROCK



TREE TOP



AN ICE BOUND COAST



BELLERICA



PIONEER BUNGALOWING.

CHAPTER VII—BUNGALOWS.

RESTCLIFF—PORTABLE HOUSE—CLIFF EYRIE—TINY COTE—CRAGS
—FAIRVIEW—TREE TOP—HEARTSEASE—SEA BOULDERS.

THE bungalow of today, taking its name from far-off Bengal, is, with the addition of a big living room, porch, and wide overhang, the one-story cottage of one hundred odd years ago. When I had the bungalow fever it was an unnamed disease in our section.

Shack Bungalow.

Our cheapest bungalows might almost be called roofed verandas, so open to air and sunlight are they. Six weeks or so of respite from the stilted life that strains; this is what the cheap shack bungalow stands for. No cellar, bunked bedrooms, roofed back porch and kitchen—a step higher than damp, dank, floored or unfloored tent life or even canvas-walled framed shelters. In form and size these outing homes are as varied as the demands of the owner or the mood of the architect—if there happens to be one.

There may be only a living room for everything but sleeping and cooking; but cooking *must* be done in an outside galley, if it's no more than a lean-to or tent. An upstairs loft with ventilating louvres, a wide veranda, the lake or Sound for a bath, and the tree-sprung, screened-from-insect hammock, complete the essentials for this sort of outing. I have even built some bungalows with wide, swinging barn doors hung on strongly made strap hinges and for greater convenience hinged in the middle making at times four doors as two the whole width of the living room; the wide space spanned by a big G. P. timber, which fairly approximates living in the open.*

The Obsolete Parlor.

It was difficult to persuade the thrift-driven Yankee to give up his once-a-year-wedding and funeral-parlor, commonize the black hair cloth sofa, and allow daily living to come in contact with shell-decorated mantel and curio-filled whatnot. Quaintly decorated walls greeted one in that sacred enclosure. Framed mosses and autumn leaves there were and black silhouettes paralleled with later Daguerres of those who had gone before, and samplers worked by daughters of the house at the age of wisdom—nine—but the *pièce de resistance* was the wall of mortuary memory which, like the Jew's wailing place among the foot stones of Solomon's Temple at Jerusalem, fairly

*A *Follow-the-Sun Bungalow* was one never tried experiment. As planned, it was a four-roomed low building, a staunch turntable, a system of block chocking and post clamping giving a tornado-proof grip on the foundation. Water and sewer pipes were made to "hitch on" at fixed points with rubber connections. Result—more sun or shade, as desired, and changing views.

reeked with sorrow. Here were religiously hung, pictured in subdued gray or black, both weeping willow and widow bending o'er the tomb, and framed in glass the waxed flowers last held by the hand of death.

"Let the dead past bury its dead," and let the parlor of that past be galvanized into a real living room.

The bungalow has done as much as any one form of building toward making this sensible and radical change. Even a modest dwelling can have a room that dwarfs in size the largest in many a so-called mansion. In such a house there is no waste space and the care and cost of one large room is less than that of three small ones of equal area.

The bungalow or house facing both mountain and water always raises the question as to where and how to arrange a rear entrance and still keep the two fronts which such a location demands. This can be accomplished by ornamental stone or cement work in step, post and wall or wooden pergola and the judicious planting of tree, shrub, vine and bedding plants, leaving in-front and out-front uninjured and suitably screening the service end.

Essential Plastered Interior.

In any bungalow that has graduated from shackdom, the necessary freedom from vermin and noise, exclusion of heat or cold and an opportunity to decorate *demand* the small additional expense of a plastered interior.



RESTCLIFF.

The first two story semi-bungalow we built edged the Sound, and was fronted by the storm-beaten cliffs shown in the photographs. Restcliff stood six feet above the ground on the south and three feet on the north, soil being first well scraped from the cliff, natural drainage making it impossible for moisture to accumulate under it. Neither shoes nor clothing ever gathered mold. Any rock crevices

1880 - THE FIRST HOUSE ON THE WATER FRONT - SEPT. 1890



THAT BIT OF MAINE COAST IN CONN



BRUNETTE



ONCE IN TWENTY YEARS



MISCHIEF

THAT BIT OF MAINE COAST IN CONN.

we filled with rubble cement. On the first story twelve-inch floor beams were used. To the inner side of each, one inch from bottom of beams, shingle laths were nailed, boards cut, fastened crosswise, then came two inches of rough cement grouting lightened with ashes, and tarred paper across the top of the beams. Diagonal boarding was next nailed V-shape as a brace, covered with felt, and finally the finished, selected, grained, planed, and sand-papered, filled and waxed T & G red birch floor was laid—a floor that made the knees of the carpenters ache, but joyed the beholder. For extra warmth and dryness the under sides of floor beams could have been papered, then ceiled and whitewashed, or covered with cold water paint, but it would have been an unnecessary expense, and done at the possible risk of inviting dry rot.

In one corner under the kitchen, we blasted out and cemented a furnace pit and vegetable cellar. This, with the big storeroom above ground, did away with the need for a full sized cellar, and supplies were more easily handled.

Satisfactory Guest Rooms.

The second story of Restcliff belonged to our guests, and was seldom vacant. There were two suites with bath, and wide balconies front and rear, reached by a covered staircase connecting the lower south balcony with that on the second story. Later a limb breaker and weather shelterer crawled upward against the interior wall of the living room. An eight foot ceiling and a six foot space meant winders and staggering eight and a half inch risers.

The Sanitary Cellarless House.

When properly constructed, I believe the healthiest and driest house is that which is cellarless, and the healthiest place to sleep in our climate is above the first story, hence one great advantage of the two-story bungalow. The attractive low effect can be retained by using a four to six foot overhang, which also cools the side walls, and a long sloping roof pierced with eyebrow windows.* Lift roof windows are more picturesque, less aggressive and less expensive than the usual Gothic dormer. The kick-up rafter roof, as it is realistically called, plus wide overhang and broad veranda or porch room are *three motifs* that stamp comfort as well as grace in the exterior lines of a bungalow more than any others. In a twenty-five foot rafter the curve or kick-up must be at least six to ten inches; a two-inch rise is scarcely perceptible as I learned by experience. The quicker decay of shingle in this form of construction is overbalanced by picturesque effect. I built a kick-up rafter roof twenty-five years ago and the shingles are still fairly good. If desired, it can be restricted to the veranda roof, a slight saving in cost, but giving less graceful curves. It is usually inexpensively made by a

*The "eyebrow" is more expensive than the lift but on some roofs more appropriate.



READY

DIVERSE DIVES

OF DIVERS



GOING



GONE



CLOSE QUARTERS



STRICTLY PERPENDICULAR



A JANUARY PLUNGE



NUMBER TEN SHOES



A FIFTY FOOT DIVE



ALL OVERBOARD, QUICK AS A RANA!



ONE GOAL



SELF SUFFICIENCY OF YOUTH



DIVING PIER AND CEDAR ARBOR



SHADOW PICTURES ON THE SAND BAR



INSPECTING THE TOPSAIL



NO PITFALLS



THE FIRST SWIMMING LESSON



LONG WAYS FROM SHORE



THE SIAMESE TWIN ACT



TWO AND A HALF CENTURIES VS TWO AND A HALF YEARS THE CEDAR AND THE CHILD



"TUM IN - WATER'S FINE"



A MILE OFF SHORE

ON THE SHORES OF TIME AND LONG ISLAND SOUND.

bit of scantling sawed to pattern at the mill and nailed atop the regular rafter.

Ventilating hood windows were built near each gable apex, one equipped with electric fan, used with chemical batteries in the absence of power. Ample air space was also left above the rooms.

Second story bedrooms are but little additional expense, as no larger roof nor foundation is needed, only a trifle higher side walls, more partitions, extra floor beams, flooring, stairs and a few doors and windows—three to five hundred dollars or even less would pay for this added convenience of a full second story in a bungalow of moderate size.

Death Knell of the Expensive One Story Bungalow.

Well-constructed two-story bungalows are far more habitable even if only week-end propositions. The time has arrived when an interior with less of the camping atmosphere is demanded. The roomy living room can still be preserved, also the broad stair and big fireplace, but there will be added the *essential* vestibule *draught-stopper* or entrance hall, so that domestic routine will not be interfered with at unseemly hours; bedrooms will be larger, and the bungalow plastered, papered, decorated, heated and plumbed—in fact, suitable for use every day in the year if required. *The death knell of the expensive one-story bungalow in our climate has sounded.*

We built bungalows of varied sorts. One had only a single room, in size twenty-five by forty feet, with walls battered outward two feet at base, as in windmill construction; the resultant extreme quaintness if not extreme beauty.

Portable House.

A portable house? Yes, and for nine years it had but two resting places, first on the hill, and then on the cliff bordering the Sound. The "tooth of time" aided by one or two young tornadoes made it a trifle too cool for comfort. When we bought our portable house it was an infant industry, but is today a grown-up, matured and feasible summer cabin proposition.

CLIFF EYRIE or the LOG CABIN, as it was more frequently called, was built directly on the Sound, and exists exactly as shown, both cliffed and eyried, heavily studded, beamed and diagonally boarded, windows made to fit the studs, and weighted with springs inset in studding instead of the regulation weights. Back in the woods I found a saw mill, and rough bark slabs mitred at the corners gave a realistic log cabin exterior. But a log interior encourages vermin and dirt. It was necessary to peel off the bark and shellac a cedar staircase rail, a hint given when the dust made by the wood borer seriously irritated eyes and throat. We once found him doing dire damage to an expensive quarter-sawed oak wainscoting, the filler having failed to ferret out his hiding places.



CLIFF EYRIE.

CLIFF EYRIE was open in the centre to the roof, and galleried and bedroomed on two stories; had ventilating windows high under the ridge; bay windows, balconies, and many a touch that stands for comfort in country living.

The "Cave canem" belligerently carved by a jocose visitor on the door sill was obliterated and in brass headed tacks the word "venitas" welcomed all guests.



TINY COTE.



OUR STONE SHARK



ONE SWIMMING GOAL



THE STORM BEATEN UNDERCLIFF



THE BOAT WAYS



THE CRUELTY OF WIND AND WAVE



W.L.S.

LIVE AND DEAD WATERS.



THE ALICE UNDER HEADWAY

CLIFF EXRE



CARE FREE DAYS



B. B. L.
STOOD FOR
ABSOLUTE
FEALTY

LOTUS EATING DAYS FOR LAD AND LADDIE.

The Continental's Cabin.

Tiny Cote fitted its name, for it was really the tiniest house I ever built. While tramping back in the hills I came across a settler's cabin that antedated the Revolutionary War. It was on a lonely road, but no architect of the present day could give better proportion to roof and wall line than the Connecticut Continental who cut the logs and raised the roof-tree of this little cabin. Pacing it, the measurements quickly went into my memorandum book, and within a week Tiny Cote was well under way on the shore of the Sound. Two rooms, a garret, reached by a wall ladder, a stone fireplace, and a veranda inventoried its accommodations, but never did two hundred and fifty dollars give larger returns. Racked nerves that craved the simple life found it in this little cabin. The dinghy's painter was tied to one of its cedar foundation posts and there was fairly satisfactory fishing from the veranda, on the incoming tide.



CRAGS.

A cosy house is Craggs, perched on a veritable crag, its front half hidden in the shade of a sprawling cedar large enough for robins to nest in when the Mayflower entered Plymouth Harbor. Through the Dutch door we enter the hospitable living room which adjoins the library, arranged to be changed to a bedroom, if desired, as it also opens to the veranda. A burnt wood panel screened the stair grille and double doors closed the arched opening to the living room. The dining room with fireplace was at one side of the living room. Stairs have barely a $6\frac{3}{4}$ inch rise and lead to a windowed stair-landing large enough for a grandfather's clock. Stair

THE BARE CRAG SITE



TEN YEARS LATER



OFF FOR CAPE ANN IN AN HOUR

IN FRONT AND OUTFRONT OF CRAGS.

CRAGS VERANDA



SITE OF SHORE ROCKS



POSING 1-2



1

HOUSE MOVING



2



WHITE ROCK



SCUDDING TO HARBOR





FROM ARGOSY TO TARAMINA



ARGOSY

OUR
FIRST
AND
LAST
BOATS

FROM A PENNY-A-LINER TO A YACHT.



SAILING THE DEEP BLUE SEA



THE ALICE



TIGERS OF THREE DEGREES



THE WHIMPEL



BREEZE FLIES



THE WHIMPEL REPERTOIRE — SHEET 2



A DEEP OATH

TIGERS OF THREE DEGREES.

Y
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THE YEARLY CRUISE



SHIPSHAPE



A SUMMER IDYL



SCANT HEADWAY



THE LAZE OF THE SEA



JUST OFF



OUR BOATS

- SHEET 3 -

THE LAZE OF THE SEA.

THE ROCK-RIBBED SHORE.



OFF FOR LONG ISLAND



DIVING PIER



ICE BOUND



SUMMER

BELLERICA

WINTER

ICE BOUND.



CLIFF EYRIE



TREE TOP



MUCH IN LITTLE



FISHING FROM TINY COVE



SOME OF OUR BUNGALOWS



DIVING PIER

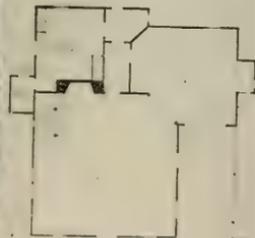
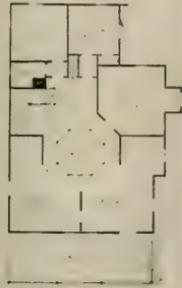


THE LOG CABIN FROM ALL STANDPOINTS.

CLIFF DYRIS

TINY COTE

CLIFF ENRID



TINY COTE

CLIFF DYRIS

IN THE GRIP OF THE ICE KING



rail is genuine mahogany and over-mantel decorated with a plaster cast framed in the same. An outdoor balcony bedroom, an after-thought ventilating lift-window on attic stair to cool the servants' rooms and a dry cellar blasted from an almost seamless ledge, barren of water courses, made a most complete bungalow.

The *best* all round little semi-bungalow that I ever built was Fairview, with its *eight* bedrooms, bath and set tubs. The dining-room was arranged to telescope outward when required, by opening two wide plate glass doors to a veranda, whose floor was brought to the dining room level by a movable platform. In addition were living room, fair sized hall, kitchen, and main and servants' porches.



FAIRVIEW.

There were two fireplaces, and ample storage room in attic poke-holes under the eaves.

I really think Fairview in plan and appointments outdid them all for the cost. The *interior* is its chief charm, as disobedience of orders on the part of the carpenter resulted in the omission of a wide overhang and kick-up rafter which were *exterior essentials*, lifting it above the stereotyped cottage.

Our Nine Hundred Dollar Bungalow.

In the tree tops stood Tree Top. It's really close to the tops of the trees whose upper branches once only edged the veranda rail. Today they tower far above it. Five rooms at \$180 each make up the \$900 that this little house cost, with cellar blasted from the rock. Plastered, trimmed, and decorated, it only needed a bathroom to be complete, and this was afterward added for two hundred dollars.



THE ALICE



THE ARGOSY

DREW FOUR INCHES
CARRIED EIGHTEEN



TIGER
NO 3



FROM ALOFT



FISHER FOLK



A MASTHEAD VIEW BELOW AND BEYOND.



AT THE MOORING

OUR LAND LOCKED HARBOR



HEADED FOR THE MOORING



CARELESS HANDLING



SECALIZED BEWICGERED



READY FOR CALKING IRON AND PAINT BRUSH

THE MAROONED CLOTHES REEL.



"TREE TOP."

Stone House Versus Health.

One of those old six-foot duck guns of our forefathers would about carry from the wide veranda of "Crossways" to the front porch



HEARTSEASE.

of "Heartsease," embowered in huge chestnuts, and fronting an arm of the Sound—one of those arms that look best when the tide is in, and worst when it is out, but restfully redeemed when dammed and properly water-gated with the essential and sanitary two foot rise and fall. No prettier sheet of water ever joyed the beholder than

that which fronted our stone bungalow, Heartsease. As a rule, a stone house sheltered by trees and with small windows means dampness. We avoided these conditions as far as possible by having but one story of stone. The second, banded with timbered stucco, gave a low effect, and it was windowed galore. The interior was columned and alcoved, settled and grilled, second floor rooms so arranged as to corral southwest breezes and cooled by an attic with windows facing north, south, east and west. A well lighted basement was secured by placing the house on a side hill.



SEA BOULDERS, OUR REAL SHORE BUNGALOW.

Some years later we succumbed to the craze for a modern bungalow directly on the shore and sturdy workmen began to build the rocky foundations of Sea Boulders. In laying water pipe for one of the houses a quantity of golden-hued rock was brought to the surface, which, mixed with the brown and green stones that skirted the sound, made an ideal color scheme for the chimney and foundation walls as well as stalwart quoins. Sea Boulders, frequently called by indulgent friends the "bungalow ideal," was built directly over the sea, down to sub-rock and iron-anchored in the ledge. The waves that at times dash head high against its solid walls and roll under its supporting arches can never move nor shatter the massive stone work. There is a brass yacht rail on one side of the dock, also on the veranda, fitted with galvanized iron mesh to keep children or grown-ups from tumbling off, and an arrow sawed from a quarter inch brass plate set in the cement floor of the veranda settles definitely the usual con-



DETAILS OF THE BUILDING OF SEA BOULDERS.



ONE OF THE ADVANTAGES



CRAGS
ROCKY FRONT



TREE TOP

CLIFF ENIE



FREEDOM OF THE WILD



LOG SPLITTING

FREEDOM OF THE WILD.

troversy among both salt and fresh water sailors as to the points of compass.

Capt. Kidd's Anchor.

Under the veranda in a water cave is hidden a boat, just as the pirates used to hide their big whale boats in some one of the rocky clefts that edged the shore, and over the hills is one of the late Captain Kidd's shore lairs. One of our neighbors fished up on the end of a grappling iron what the village wiseacre swore was Kidd's anchor, slipped by him to escape capture. We in turn captured the anchor and set it up at one end of the rock esplanade.

Entering the bungalow through a side-settled outer porch one inventories at a glance its most striking features. The big oak iron-strapped and grilled door, on whose stained sea-green glass wicket window is inscribed the name "Sea Boulders," opens to a short and narrow red-tiled hall, a stop draught as well as screen for the big living room, which is twenty by forty-seven feet, its size increased by an outdoor porch dining room, connecting with it by four large doors aggregating fifteen feet in width, hinged in two sections so that on occasion they can be swung entirely open, forming one large room, but such an arrangement is a rare finger pincher unless carefully handled. The centre of this room is thus made thirty-five feet in width against its full length of forty-seven feet. Ventilation is aided by electric fans set against outlets which, protected by baffle boards, are cut in each gable end close to the peak.

The Stolen Closet.

The dilemma of how to closet a bedroom without decreasing its area or injuring the symmetry of an adjoining room was solved by a full sized portière doorway leading from a bedroom into a false front six foot high cabinet firmly fastened against the separating wall of the larger room. The interior of the closet thus filched from it is lathed and plastered.

The inglenook end of the living room is fifteen by twenty feet, and has red quarry tile floor and a wide stone fireplace, at each side of which are big settles, placed under windows of copper-set stained glass, which stands wear much better in a swinging casement than if set in lead. The trammels hanging from the crane in the large fireplace have seen service for one hundred and fifty years, while the grandfather's clock in the near by inglenook has ticked in and out the lives of four generations. In the fireplace arch are three pendant iron rings for handling heavy logs. Ship-kneed brackets support the carrying beam fronting the inglenook and there are wide settles in the leaded bay window on the east.

In the centre of the living room is a flower-bordered electric fountain.

SEA BOULDERS

SOUTH WEST FRONT



NORTH EAST FRONT



INGLENOOK

SHIP KNEED BRACKETS

THE BUNGALOW IDEAL.

THE FIFTEEN FOOT DOORWAY



SEA BOULDERS



CLIFF EYRIE



THE MOTOR-BOAT CAVE UNDER THE VERANDA.



SITTING ON THE RIBS OF WRECK



CARE FREE



THE GATHERING AND GATHERED STORM



THE LOOK OUT



FROZEN WAVES

SITTING ON THE RIBS OF WRECK.

On this floor are three bedrooms each with set basin, beside two toilets and bath, laundry, servants' room and a kitchen, while below stairs are coal and furnace room, cold storage closet, bath houses, another toilet, and boat lockers. From the laundry private steps lead to a separate bathing beach for the servants. The three upstairs bedrooms all have special features. Copper-set stained glass casements made of bulls' eyes in an antique design swing into the large corridor, and in one room there is a stained glass window in the centre of the outside stone chimney, care being taken so to construct the two flues that the draughts will not be affected. At either side of the chimney is an outside balcony, and each bedroom has its own set basin with hot and cold water.

Trunk room on the north includes the generally unused space over the veranda—the tie floor beams of which are of nine inch timber—and is lighted both by hall and exterior windows set with translucent leaded lights. It is also conveniently reached by a securely locked trap door in the veranda ceiling.

Over the well, high under the roof, are heavy cambered beams.

Electric lighting is unique in several ways. On the under side of the ridge is fastened a heavy rusty iron anchor chain from which we suspended an electrolier built from swords and bayonets. Side brackets in inglenook are electrically-tipped stag horns, while at the four corners of the well opening on second story are tapering square edged posts six feet high, capped with plaster heads crowned with electric lights. At the four lower corners, close to the living room ceiling, project gargoyles, copies of those at Nôtre Dame, from whose mouths hang antique Paul Revere lanterns, modernized by electricity. A startling effect is produced by the shafts of light piercing their pin holes.

Under the glass hood over the kitchen range is an extra flue, within which an electric fan at the pressure of a button draws up chimney all odors. To economize floor space the boiler is stoutly hung from the ceiling above the range.

Back Plastering.

Construction of Sea Boulders is most thorough, and it is an all-year house. Stone work is laid in cement, and all wooden exterior walls covered with galvanized iron lath, with three coat work of stucco, the last coat pebble-dashed. The entire house is back plastered on wire lath. All floors are deadened with air spaces, using a mixture of cement, coal ashes, and sawdust—lighter and better than plain cement for this purpose—and two thicknesses of tarred paper. The upper of the two floors on both stories is of hard wood, house trimmed throughout with selected red birch, and lower floor trim stained a rich, dark mahogany, except bedrooms and kitchen, which

are enameled in cream white and coated with spar varnish, hard wood with the close grain of birch making a smoother finish for enameling than softer woods.

All rooms are plastered in wood pulp except halls, bathrooms, laundry, kitchen, servants' rooms, and closets, and have no baseboards to harbor insects, but are wire lathed and cemented on floor and side walls, forming a sanitary base. Bedrooms and living rooms are papered.

Salt Water Bathroom.

One bathroom has separate piping for salt water and pump with pipe connection to deep water. Strainer is of galvanized iron instead of copper, which is injured by salt water. There is also a bathroom on the second floor.

A standpipe for fire hose and another for vacuum cleaning have two connections on each floor, both protected in glass fronted alcoves.

Plumbing is open, and hardware and electric fixtures in bathroom are nickel plated.

Outdoor Shower.

The outside hot and cold water showers are set over a cement base, and shut-offs connect with bath houses.

A Lobster Tank.

A water-tight fish tank six feet deep with water-gate insures a supply of fresh shell and scale fish at all times. It is immersed two feet at high tide, and its inmates imprisoned by a galvanized iron mesh screen with hinged door.

The Yacht Studio.

Near Sea Boulders a friend warped to the edge of the lawn a condemned yacht.

Old Canal Boat Shack.

His next door neighbor beached an old canal boat, bought for a song, and these boats with a bit of fitting up made ideal dens on the water's edge. Many a magnificent mahogany brass-trimmed yacht can be picked up for a tithe of its cost, making a charming studio or even a summer home, a house boat on land, but a healthy location away from polluted waters *is an essential*.

The bottoms of these two boats received at least six coats of tar and rough boulders were piled against their sides to lower the height while vines and shrubs planted between stones embowered the windows.

They reminded me of ten year old days, when a yawl-rigged, flat bottom boat, with real cabin and cooking galley, and mast, sail, and rudder, was built in the centre of the lawn by a happy-go-lucky little lad.



THE LAND AND WATER HOME



THREE WORLDS



TWO OF OUR BUNGALOWS

This dry land boat gave glorious fun for several summers to all surrounding kiddom in the glamored hours of childhood, when *our* kites, sleds, and ponies are the "bestest" kites, sleds, and ponies, and grown-ups to this day talk of the children's white-winged lawn yacht.



TINY COT



FAIR VIEW



STIRRING OF THE WATERS



THE ROUGHED OUT PIER



NOW



SHORE FRONT OF REST CLIFF



STIRRING THE WATERS.



EXTENDING CONGRATULATIONS ON A SAFE TRIP ACROSS ON THE RAFT



THE DRAFT ON WHICH THE PERILOUS TRIP WAS MADE



WHICH IS FEET OF THE VERANDA



SPRING GIVES SELF



TREES SAVE THE GARDEN AND CEDAR



THE HARBOR WATCH-DOG



THE TITTLE CLOTHESLINE



THE HARBOR WATCH-DOG.

CHAPTER VIII.

HOW TO BUILD AND KEEP WITHIN THE LIMIT DECIDED UPON
 A LIVABLE HOUSE FOR FROM \$2,500 TO \$12,000.
 A MANSION UP TO \$100,000.

“When we mean to build
 We first survey the plot, then draw the model;
 And when we see the figure of the house
 Then must we rate the cost of the erection,
 Which, if we find outweighs ability,
 What do we then but draw anew the model
 In fewer offices, or at least desist
 To build at all.”

—Henry the Fourth, Part II, Act 1; Scene 3.

Building Hints to the Amateur.

Living is serious business and the advice “look before you leap,” particularly applicable to the would-be builder, for if an amateur gets into the toils of dishonest people and cannot furnish the wherewithal to dig out of his difficulties, he is liable to heartache, cankering worry, and even bankruptcy. But the landing can always be safely made if certain copper fastened rules are observed.

I’ve known scores of men who have sunk all their money, and some few have lost reason and even life by not counting the expense of the new house. Using these instances as warning beacons and reef-buoys, first carefully figure the cost, plan for payments through cash on hand, if possible; if not, raise money on long term or bank mortgages, at low rates of interest, and then make the plunge but only when the “*if*” and the “*but*” have been carefully thought out, ever remembering that the lure of country living is an insidious siren requiring constant watching.

The temptation to outdo one’s neighbors in acquiring additional acres, embellishing grounds, purchasing live stock, utensils, and vehicles, and giving unbridled rein to the fascinating pursuits underlying the making of a country place ever waits to undermine and destroy. Financial stakes should be set at the start, and only loosened, relocated, and redriven when amply assured invested income keeps step with prodigal outlay. Many a man has sown the tares of imprudent and lavish expenditure with his choicest flowers, and reaped disaster, if not premature death, his life work blasted by that phase of misguided ambition immortalized in the line “By that sin fell the angels.” Take nothing for granted, especially in purchasing land; a good lawyer or a title guarantee policy are essentials.

Throttling the Four Building Dragons.

Four dragons that often bar the way of the amateur are (1) ignorance, (2) impecuniosity, (3) duplicity, and (4) avarice; but forewarned is forearmed, and they are easily recognized and vanquished, however disguised by fair words, a bold front and specious promises. Eliminate these, and the path that leads from the lifting of the first shovel of earth to pulling the latch-string is one of delight. A few disappointments are to be expected, but they are slight compared with the pleasure of creating a sensible and livable dwelling.

How to Build.

A house to cost from \$2,500 to \$12,000 should be let under the usual contract form, unless one prefers to follow the special contract system advised for the building of a mansion or it can be let on a strictly percentage basis. Close competition will pound the price to a ten or fifteen per cent. profit to the contractor, which is little enough for assuming the monetary responsibility in addition to an employers' accident risk, but the owner must make sure that he is not made personally liable by letter or act for costly delays and extra expenses entailed in the process of building. Indeed, his peace of mind usually hinges upon the carrying out *to the letter* of the four following rules:

1. Never give out a building contract without a bond for its completion, and within a specified time, bona fide strikes, unavoidable cyclones, floods, fire and earthquakes excepted.

2. It is an excellent incentive to the contractors for the owner to promise a bonus on completion of their several contracts within or ahead of schedule time if satisfied with the result, or better still, a specified bonus as an offset to a time-forfeiture-of-money clause which to be legal must take the form of damage loss. The contract should stipulate that a certain number of men are to be kept at work, and at each Saturday payment the owner should hold back ten or fifteen per cent. of both labor and material bills until the work is completed.

3. Never change the accepted plans and specifications except in writing, having such changes immediately ratified in writing by the contractor. Minor changes often entail major. It will be mutually far more satisfactory, and save quibbling, if not a quarrel, later to settle the amount of the extra cost over signature if that is possible at the time changes are decided upon.

4. Payments for work done and material purchased must be handled with business acumen; carelessness in this respect may result in the owner being obliged to pay *the same bill* for labor and material *twice*.

The mechanics' and supply material lien and building laws, also the tax rate, in the State in which one is building are important documents to study before commencing operations.

Legal rights must be clearly defined between owner, architect, and contractor, the contract should also give the owner the right to change men or materials if either prove different from the agreement, and to make alterations in design or construction, always provided it is done and accepted in writing and the cost approximately adjusted. A builder must not be given the slightest opportunity to say a thing is according to plan when it is self-evident that a mistake has been made and plans must be accurately drawn to meet these aggravating contingencies.

Irresponsible Contractors.

Within the ranks of artisans are to be found bidders (I am glad to say they are few) who will submit phenomenally low figures—much below the sum for which the work can be thoroughly done. If the contract is given to any of these, there are ten chances to one that one or all of the four dragons, ignorance, impecuniosity, duplicity and avarice will give you the fight of your life before you have use for the latch key. After these contractors have drawn the last cent on an architect's certificate, to speak in building parlance, their *modus operandi* is to "lie down on the job," throw up their hands, and cry poverty. The amateur has then reached a stage in his operations that ordinary common sense, if given half a chance, would have warned him against in the beginning. I hear the echo of the cry. At this point the complicated situation beggars description. The weak-kneed and practically dishonest contractor frequently relies on being hired by the day to finish the job, cannily figuring that as he knows more about it than a new man, he stands a better chance to continue the work. As a rule, it is far more satisfactory to get rid of such poor timber. "Small choice in rotten apples." It is surprising how such a contractor to save a *few* dollars will injure a fine house *thousands* by leaving loopholes for moisture at window, door, and eave opening, skimping in paper and felt linings, allowing insecure nailing and scant bracing, covering up shaky and soggy lumber, and using green instead of kiln-dried wood. The owner often makes a close second by employing a makeshift architect or none at all and cutting corners by using cheap labor and material, thus wasting both time and lumber.

Building Dilemmas.

And now let us look at the other horn of the dilemma. There are responsible and reputable builders who will sign a contract at a higher price and will certainly finish the house, but when? At the hour of signing, the contractor, we will say, has but little work ahead, and his promises as to time are emphatic and specific. In

fancy, through his wonderful mirage language, even before the cellar is dug you are seated on the lawn gazing at a completed dwelling four months to an hour from the day of signing the contract. Poor unsophisticated humanity! If your house is at all pretentious you'll be fortunate if it is not an even six months before you enter your home, if the builder should be rushed with work, and especially if cautions numbers two and three have been omitted in the contract, and there is no time forfeiture working against him. It's human nature to take every job in sight if there is neither bonus nor time limit staring the contractor in the face, or if he has given only a verbal promise, he will handle his men like a pendulum, if he has several jobs, swinging them from one to the other, and will possibly become badly mixed in his "time data" for finishing your house. A threatened spell of rainy weather will dwindle your beehive full of workers on a Saturday *pay-day* to a couple of lonely carpenters on Monday morning, their occasional hammer taps a travesty on real work, compared with Saturday's progressive din. You take an expensive half-day from business to ascertain the cause of this sudden cessation of activity, and finally locate your gang laying sills and setting up the studding of a new house two or three miles away. *Your Saturday payment has been used to start another job.*

Excuses of Contractors.

Then comes the list of excuses, which I know by heart; some are certainly plausible and at first sight appear unanswerable: "The Georgia pine beams are short ten sticks, and it is unsafe to build higher until they are in place." "The sash came the wrong size." "The soft mud brick delivered is not hard enough for the chimneys." "Sand that should have been on the job for the masons was on a barge that ran on the flats and cannot be floated until the next perigee tide, which will be weeks off. In the meantime, while waiting for sand, the masons began a rush cellar job to last but three or four days," which is a disguised way of saying two weeks, and so on through an extended list. All good excuses, but excuses don't build your house, and you wish to be in it in August, not December. The non-arrival of *two loads* of sand at a critical time when I was away for three days made *four months'* difference in date of occupancy; everything froze solid, and it seemed unwise to start timbering until the stone work was in place. Stone or brick laid in frosty weather may be unsatisfactory, although a neighbor built a brick chimney one hundred feet high, years ago, with the thermometer close to zero, and it still stands.

Forfeit vs. Bonus.

But are these discouraging and annoying conditions surmountable? Certainly, if you have inserted clauses one, two, and three in your contract. If the honest contractor was confronted by a fat forfeit, or saw within his grasp, when the house was finished, a bonus,

conditions would be radically different, and by August first you'd be in a wringing perspiration running a lawn mower and swinging in hammocks on porch room and balcony to your heart's content. Even if the sand lighter was on the mud flats the contents of another would be piled on your ground. Those Georgia pine beams and hard brick would be in place, and the other fellow waiting. Building, instead of being a continual rasping menace, and an Iliad of woes, wondering what exasperating set-back would come next, would be a joy. From properly built and legitimately greased ways is easily launched the most ponderous super-dreadnought.

But assuming that cautions two and three were omitted from the contract, you may find the contractor considerably in your debt before the chaotic state above described has become chronic. At this stage you are practically powerless, and are in his hands, so far as time of completion is concerned. You cannot discharge the few ordinary workmen he has left and substitute a larger and more capable force; this would be considered uncalled-for interference and break the contract, and his over-draft in a measure places you in his power. The dilemma is most exasperating, yet in the midst of it all the builder airs his trials with workmen and material supply men so eloquently that, ten chances to one, in a weak moment you in a measure commiserate him in his jeremiads and possibly commit the farther folly of allowing him to still draw ahead of his just dues. It is true, your house is weeks, perhaps months, behind schedule time for finishing, but you can only worry, fume, and pay the bills, deriving meagre satisfaction by swearing that if ever this house is finished you will never build another, and perchance wearing out the patience of friends and neighbors by the recital of your woes, whereas a contract drawn along the lines stated would have placed you among the optimists in building.

The Building of a Mansion.

If the building of the \$2,500 to \$12,000 house appears intricate, that of the \$50,000 or \$100,000 mansion seems more so, though it is not in reality. Thorough consideration of and preparation as to the following four distinct points are the essentials for complete success:

1. Location.
2. Plan.
3. Material.
4. Method of building.

To build satisfactorily a house of this size, no matter how much care has been taken in preparation of the plans, is *practically impossible* without minor, and sometimes radical and more or less expensive changes, but if built along the lines indicated these changes will cost less than if the one contract system had been adopted. Changes under a one contract system, unless very carefully guarded, lead to

complications and extra expense that will sometimes *double* the cost and the builder is not always entirely to blame, for, unless carefully watched, the work gets beyond the least expensive change point. *In the realm of extras lie aggravating experiences.*

As to labor:

1. Dirt or stone costs so much per cubic yard to excavate.
2. Stone foundation costs so much per cubic foot in a wall.
3. Stone, brick and terra cotta blocks cost so much per cubic foot in place.
4. Plastering on wooden or wire lathing costs so much per square yard on the walls.
5. Tile, shingle, slate, copper and tin cost so much per square in place, and flashing can be combined with the plumbing contracts.
6. Plumbing and heating can be let in one contract, and totaled to a dollar.
7. Electric lighting, ditto.

It's simply a question of mathematics. The foregoing seven items can be figured accurately and a number of responsible bidders found who will make a fair living profit and yet give you an excellent piece of work. Add to the above items the following:

Carpenter's labor contract to plastering line, including *careful cutting* for the plumber and steam fitter.

Carpenter's labor contract from plastering to complete finishing of exterior and interior.

Painter's contract, including floor treatment.

Architect's fee.

Manager's salary, preferably for a year, privilege reserved by both owner and manager of canceling the contract any Saturday night—an essential legal form, as a contract with an irresponsible employee is always one-sided and in substance really only holds the employer.

Material of every kind should be figured with great accuracy. Have your architect, manager and a practical builder figure the list separately; in this way you can ferret out errors that with the greatest care are bound to occur. Material men will compete to supply you and much can be bought in carload lots, saving the price of an extra haul.

Allow liberally for freight, express, cartage and even interest charges.

Figure water supply, sewage, grading, planting, and general landscaping.

Insurance.

Insurance—fire, glass, and employers' liability—is also especially important.

To save all chance of a disappointing result, add from ten to fifteen per cent. for possible changes, and you will know quite definitely the *maximum* cost of your house under any ordinary conditions that may arise.

Building Inspection.

An absolute essential if the above system is adopted is to hire an honest, competent man, not necessarily physically able to work, to whom you will pay, say three to five dollars a day to be on the job every hour of each working day, but for reasons stated hired by the week. It will be his business to see that your orders are carried out, that every scrap of material is on the ground *ahead* of time, to check bills and keep a list of men at work in each department, and to aid in weeding out the sluggards, who have a bad effect on all other workers.

I beg of you, do not get enmeshed in the friendship net. Avoid the well-meaning man who says he knows all about building, and will enjoy looking after the construction of your house without a cent of remuneration. He is too close a friend either to be offered pay or to be criticized for his judgment and methods. I went through that mill once at quite a cost, and know some half dozen other unfortunates. In each case, it proved a lamentable failure on both sides.

Hire some one to *dog* the job whom you can discharge Saturday night if unsatisfactory, and talk to like a Dutch uncle all the week, if the case requires. You are to live in the house and you pay the bills.

The man for you should be a practical builder who can tell "a hawk from a handsaw," has had wide experience, is quick to note the value of important changes, and advise the least expensive and most thorough way of making them, and can see that no material is wasted nor carted away. He need not lift a hammer, in fact may be incapacitated except for head work, but "drest in a little brief authority," can shoulder a weight of responsibility that could not be carried by a layman, or, if physically fit and *amenable to reason*, work under direct supervision of architect or builder a portion of the time and thus pay at least half his way.

In a job of this character, the carrying away of any pieces of wood, however small, except chips and shavings, until the house is completed is objectionable. Crippling, forming frames for arches, coving ceilings, deadening of floors and stopping fire draft at plate line and floor beam ends require the very pieces that the contractors or workmen usually cart away, therefore, before beginning the job, have it thoroughly understood that no material is to be removed except that laid aside by the inspector for that purpose. It may not be so much the worth of the material as the lack of needed pieces at an important time, and in a big job the "carting away habit"

always evaporates considerable desirable material, and often causes quarrels among the men.

I invariably selected on the grounds, or on each floor of a building, certain places for waste lumber; 2 x 4's in one pile, board ends and timbers in another, but built up in solid masses, to avoid extra fire risk. From these may be selected by the handy boy material required by the artisan. Such a boy, interested in the work, and at everyone's beck and call for nails, water, material or tools, saves his wages many times. It's a good rule, as far as possible, to insist on workmen remaining on roof, scaffold or floor on which they are working until noon and again until quitting time, having their requirements brought by the handy man or boy. The dawdling habit is contagious and will greatly increase the cost of building.

Eye Service.

A contractor as honest as the sun cannot eliminate *eye service*, in a day job, and giving out to the men that it is a contract job deceives no one, therefore, unless the owner is willing to have the work cost more than it ought, under no circumstances should he build an elaborate house by the day. Building on a percentage basis is often but a partial solution. The special contract system, with an inspector, gives the owner many advantages without the waste, delay and extra expense that too often go with a day's work job.

Short and Long Mathematics.

Short mathematics will show in a line the cost of a house which with wide latitude may be figured from ten to twenty cents per cubic foot contents or from three dollars to eight dollars per square foot area including labor, which will cost from twice to three times as much as the material. A rule of thumb but elastic as the requirements of a vascillating owner. Used with judgment, it will hit approximately near the nail, but accuracy requires longer and closer mathematics.

Accurate Measurements.

The amateur builder working under the above plan will buy his own material, for he can thus make considerable saving. Sash and window frames to avoid mistakes should be ordered from the same mill, though at best errors are bound to occur, and must be rectified by the wood-working contractor, who should himself take the dimensions. *Accurate measurements* of everything connected with the building are *essential*.

Contracts for plumbing, heating and electric wiring (preferably iron pipe or cable system) can all be let by fair competition at a satisfactory price, and minus the extra charge made by the general contractor for this service.

Safeguarding Against Building Errors.

A substitute for this plan, if one does not wish to assume the care and responsibility of handling each individual contractor, is to get all the contracts lined up, then let the entire job to a capable builder and pay him a fixed sum to turn your house over to you within a specified time. Ostensibly, the builder is the man to whom the sub-contractors look for their pay, and he can handle them better than you can, for you may never build another house, while the builder will require services of this kind as long as he is in business. *In reality, you stand back of him.* A curious realm, this of building, and many of its members are no different from those who manipulate the stock market or corner cotton, wheat and oats.

Delay for Inspection.

Assuming that the former plan has been adopted and the exterior is about completed, let us halt to consider carefully the exact conditions *before plastering*. In this analysis stop all important work for a week at least, and bring all the talent and expert advice you can to bear upon any required changes, for these *must be made* if you are to have a satisfactory house, and can be tried out by the strips of wood hereinafter described. Should not this door opening be moved a trifle? Are the windows in the morning room too high or in the bathroom too low? Is the kitchen light enough? Should this or that partition come down? Would not double doors between these two bedrooms be a great advantage in case of illness, giving extra sunlight, companionship, care and air? That door is too close to the fireplace, and we forgot a toy closet in the playroom; a south-west window in the nursery will make it cooler for the children; one window in this room is unsafely low; by moving that stair opening forward or back a foot we can build a platform, thus avoiding a window as well as a winder, hence an easier and safer climb, and the window arrangement on the north as seen from the outside is abominable.

Sleeping Porch, Conservatory, and Aviary.

Leading from that south room we can construct a sleeping porch, and sometime build on the balance of the veranda roof space that *joy of the housewife*, a second story conservatory and *aviary* big enough to swing a hammock 'mid plants, singing birds, and winter sunshine. This closet is large enough for an outside window; had we not better cove that ceiling? By wainscoting the hall we can save a finishing coat of plaster and obtain a better effect—in fact, at this stage of the building changes and improvements frequently save, as well as cost, and crotchets of comfort can often be indulged at slight expense.

Essential changes that make a house just right should *always be made*, as one generally builds but one home. "Almost right" stays with us to the end, clouding an otherwise satisfactory conception.

Show me a man who tells you his house was built *exactly* as the original plan called for, and I will show you a man *dissatisfied* for life.

Study your house from garret to cellar, then re-study it, like your college valedictory, again and again, and see how startled you are at finding some glaring error that has escaped architect, builder, and all criticizing friends. One of my first houses was passed upon by the purchaser as absolutely satisfactory, when one day he discovered that to reach the front door the maid must trail across the dining room. I at once built a one story palm corridor which obviated the difficulty and vastly improved the house, but if I had stopped work long enough when the rooms were studded to consider possible improvements, this glaring defect would have been discovered and remedied before the house was plastered. When you are confident that everything is right, and after straightening and leveling all studding and floor beams, plaster, and when this is done stop work a week for finals. Forethought should have dictated months ago that which will have much to do with the beauty of your house, i. e., the kind of wood to be used for trim, and its treatment, for this will control wall and ceiling decoration, as well as furnishings—if unfortunate delays have occurred give your closest thought to trim selection, “better late than never” holds especially good in house building. Plaster effects molded in ceiling should be decided upon in detail, as they are more economically placed when the house is being plastered. Final touches can be settled after the house is trimmed.

In trim and stairs, material and workmanship you will find a wide range both in thoroughness of mill work and expense. I once cut the cost of trim for a large house *in half*—and both quality of work and execution were excellent—by ordering during a quiet season doors, windows, trim and stairs, *months ahead* of requirements from a first-class country mill near a hard wood supply, favored by cheap labor conditions, and in need of a back log to keep running full time. A rush order to a mill often means a high price, possibly poorer work, and half kiln dried material.

You have now reached your final labor contract, the setting up of the standing trim, hanging doors and windows, placing beamed ceilings, floors and stairs, which latter, as well as wainscoting and pantry dressers, can preferably be shipped ready to set. It will surprise you to find how reasonably this contract can be let *if you go about it in the right way*. Good mechanics ambitious to become general contractors will give both excellent service and low prices, but ability to handle men and lay out work is essential.

Meantime, with the help of the landscape gardener, you have planned the planting and general landscaping, for this should keep pace with the building of the house.

Cornering Elusive Time.

Don't lose an entire year. None of us have a surplus of that for which the whole world is gasping—*time*, so plant and protect. Over this work your inspector has had general oversight; he has also kept nails and other hardware under lock and key, protected door and window sills, scribbled across the plate glass to prevent breakage and attended to locking the house at night. He has carefully looked after the burning of all inflammable debris, especially shavings (*this should be done every day* when there is not too much wind), and had an oversight over all other fires, primarily those of the plumber and mason, and if salamanders are used, seen that they are in good repair and with ample sand bed protection; also carried the burden of the hundred and one other things that if *promptly attended to* help prodigiously in the building of a house.

Saturday Night Accounting.

I grant you this method of building has its intricacies, and means responsibility, but one great redeeming feature *that may be vital to your peace of mind* is *to know just where you stand every Saturday night*. By special arrangement with the contractors, and insertion of such a clause in the contract, you can insist on having fifty men at work Monday morning, and cut the number to two the next week. A friend building a fine home found it financially inconvenient to finish it as planned. Rather than cheapen the house, he boarded it in and completed it the following year, his contract allowing him this latitude. If details prove too onerous or you have not time for frequent inspection, plenty of contractors will stand in line at any stage of the construction to take the job off your hands and push it to completion. The contract can contain a clause to buy off your small contractors on payment of a stated sum on account of change in plans. A year in the business world is a long period and often brings reverses and financial sheet anchors *may* prove convenient to the most affluent.

The usual contract method of building a \$50,000 to \$100,000 house is open to the grave objection that few contractors will figure on a job of this size except with a liberal margin, counting the "know how," the risk, and the fact that in seven cases out of ten changes may run the total cost from \$75,000 to \$150,000, and perhaps entail legal complications. Then again, the careful contractor must add to his figures a percentage to cover the money risk in selling you labor and materials, a risk on which you of course do not figure.

All contracts should carry an employers' accident policy, and the owner should see that the premium is paid, even if he has to stand the expense.

The question of employing a night watchman must be decided by each owner for himself, but it is a wise precaution in a job of any magnitude.

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OUR THREE TYPE VERANDAS.

CHAPTER IX.

THE DRY TECHNIQUE OF BUILDING FOR THE AMATEUR.

TO build or not to build? Those who answer in the affirmative and have time, taste and coin of the realm sufficient, if they are true philosophers and can brook delays and disappointments, revel in the joy of creating *for its own sake*, a joy unknown to the portion of humanity that, like the swinging tree moss, catches first this branch, then that in its embrace; parasitical in habit, blowing hot or cold; often unanchored and drifting. The home can be made a permanent anchorage to the most restless mortal, and he who thus creates heels closely that time-honored human who made two blades of grass to grow where one grew before and leaves the world better for his brief advent.

Intensely interesting is the country house craze breaking out on every hand, giving a sensible excuse for the week-end exodus. It varies from the A. B. C. of living, as seen in the modest, one room bungalow or picturesque Swiss chalet to the luxurious hundred-roomed mansion crowning the hills of Lenox or Aiken; in design gamutting the world. What a will o' the wisp is Dame Architecture, she who in ancient Greece threw about the rough hewn girder, supported by still rougher and more uncouth pillars, the delicate outlined tracery of entablature and frieze, Ionic and Doric cap and gracefully fluted column, a beauty of design and construction that bids fair to last forever.

Line of Succession.

We read man's progress the world over, from primordial cavern up through hollow tree trunk shelter and tree hut of the African, the Icelander's igloo, the Neolithic pennpit burrow of early England, succeeded by the one room Saxon chimneyless dwelling,* the stone fortress retreat of the cliff dweller, lake-protected dwellings of Switzerland, the pueblo of the Mexican or the crude Mayan palace, to the stupendous sheltering walls of a Windsor or a Hohenzollern, or the graceful and delicate beauty of incomparable Versailles. One's pulse throbs as quickly and his pride in man's achievement rises as high today in the presence of the ruined Pantheon, that creation of man "Earth proudly wears as the best gem in her zone," as when it was first unveiled to acclaiming multitudes centuries ago.

In America the Romanesque especially of the Eleventh and Twelfth centuries, resurrected and adapted to later needs by Richard-

*Once lost in a snowstorm in the mountains of Lebanon and rescued by the Bedouin sheik of the village of Kaffir Hauer, I fancied Time had turned back the dial and that we were sleeping on the dirt floor of an English chimneyless hall

son and often imitated in somewhat gingerbread fashion by mediocre followers, has many advocates, as well as the Gothic of the Thirteenth to the Sixteenth Centuries, sometimes called one man stone work when compared with the megalithic masonry of Italy, Greece and Egypt and rivaling in beauty the Neoclassic of later date. In the Eighteenth Century Dame Architecture slept the sleep of the just, this being the nadir of architecture as the "Seventh Century was the nadir of the human mind," so absolutely without individuality was the period save for an occasional return to the Renaissance of France and Italy and to the classic grafted on the Colonial which, with high pillared fronts and Pantheon entablatures, graced many a country side. In America, in the middle of the Nineteenth Century came the *upheaval* of every known type; an agglomeration at times of a falderal of ideas jumbled into a veritable grab bag in which village carpenter—ignoring the fact that it takes at *least* twenty-five trades to build a real house—and inexperienced architect delved and brought forth, among others, the square, cupola-crowned country house and the Gothic cottage with head hitting ceilings and jig-saw embellishments.

Then came radical changes. The tide of departure from and decadence of the dignified Colonial set in, and a wave of Queen Anne—of far away Gothic parentage—swept over our land, interiors embellished and finished in varied styles, including the Eastlake and later the doveled and keyed Mission. Dissatisfaction was the inevitable result of these nondescript productions, and architects in the search for something more beautiful again turned to the Colonial and the coeval English Georgian, and in combination with the Queen Anne, evolved many examples of rare beauty, the beginning of a real apotheosis in American architecture. The grander houses were replicas of Italian, French or Dutch Renaissance—a broad mantle, covering an occasional sin—or again, Tudor, Jacobean, Elizabethan or Victorian asserted its influence; the latter, often overloaded with inartistic decoration, fields wherein many a gimcrack creation, the outcome of architectural revel license, today horrifies the beholder, or later the period when the suburban builder seized with avidity upon the Mansard, which has the single redeeming merit of changing low-eaved attic rooms to those of high ceilings and semi-perpendicular walls.

The limitations of unlimited wealth, aggressively self-evident when unguided by knowledge, are sometimes responsible for much that is bizarre, incomplete, and uncomfortable in the house building field. The small man of large means, to save a few dollars will often ignorantly vandalize the finest conception to the extent of thousands. His only safety is to leave it to that architect *who really knows*, and pay the bills without grumbling.

Acme of Living.

Given a clearing and virgin soil, save for the steel edge of the woodsman and steel point of the plowman, it is the acme of living to reclaim and to build as one desires, *absolutely untrammelled*. In place of tangled forest and rock-strewn field, to rear a habitation adapted to and in harmony with climatic topography, to gather from the four quarters of the globe the best of earth's products and mold them to one's use; to master *savoir faire*, and no longer have planning ever synonym compromise—*this is the acme of living, the "sine qua non"* of house building.

In ideal, hypercritical building, there are three essentials:

Ample funds; ample land; ample time, and the job to be thoroughly done must be from *under* the ground. Even using an old foundation may be a serious handicap, as it is most important that the house angle should suit the site, with the sun where it is needed and the kitchen, one *bête noir* of the architect, so placed as to neither hide an important view nor over-heat and over-odor the house.

Remodeling may make for comfort, but effectually bars achievement, and the completed product is *always* far from ideal. A year is not too long for planning the house, and during that year if your heart is in the work, you will be "bethumped with ideas," and have mind-built a dozen houses, and mind building is not only interesting and inexpensive, but profitable. The January house in the light of your December product will generally seem crude and impossible, and the months between may be strewn with dismantled and wrecked dwellings which died a-borning. *A year's residential try-out* while developing the plans gives ample time to grasp all conditions of an unknown neighborhood and may prevent unnecessary shrinking of one's bank account and heart-breaking disappointments. Buy when you find your ideal site, but *sell* before building rather than label the completed dwelling and its location a mistake. Keen observation and adaptation to your special requirements are essential guides. Few houses meet one's ideal. With the world from which to choose, the owner-builder, keenly interested in his new home, strives though fruitlessly in the egotism of creation to lead that world if only in *one* feature, but to carelessly stray afield outside the pale of simple strength in avoiding anaemic architecture and a dull level of sameness is often to conflict with the canons of good taste, and unduly blot and smear a garden of Eden.

Life of a House.

In building, one should aim to compass in all possible measure the three fundamentals of *health, comfort, and idealism*. In the planning before building days, picture and re-picture your home from every possible vantage ground, remembering that in our climate a wooden house will deteriorate yearly from three to ten per cent., and one of stone or brick, from two to five per cent., and that *eternal*

vigilance is the price of comfortable living. A systematic inspection by mason, carpenter and plumber every six months is essential. Prevention will keep you well abreast, and even *ahead*, of all destroying forces.

To be critical about one's home castle, whether an adobe dwelling, a sod-roofed dugout, or a palace, is worth while.

Barbaric architecture and slathers of ornamentation are dangerous lodestones with which to trifle, but enthusiasm often leads architect, builder, or owner to play the role of copyist of past creations. Such lapses are not open to criticism, as all the world is with us. Architecture was born centuries ago, and is still sisterless.

Ferro-Cement Construction.

Fireproof is a misnomer under certain conditions. Fill your fireproof building with combustibles and let water enter to fight the flames, and your seemingly adamant cement, impregnable stone, and unyielding steel will peel, split, and crumble, while the last turns on itself like a squirming serpent. Is it a life marriage, this union of cement and iron, or will acid, attrition, vibration, and electrolysis disintegrate bolt head, iron binder, and rivet? *This is the crux over which every architect is puzzling*, and that architect who fails to reckon with the prodigious contracting power exerted by a forty degree below zero temperature on an iron column and girder and the enormous lengthening force of a one-hundred degree temperature will shatter both building and reputation. Cement walled and floored buildings are extremely difficult and very expensive to *enlarge*, *change*, or *rebuild*, especially when partially destroyed by fire. Artificial reinforced stone in quoin, sill, and lintel, with tooled surface, if of the best, is permissible in brick and stone structures. The difficulty of making door and window frames set in cement walls *tight* is partially solved by inseting especially constructed non-rusting metal weather strips in the cement. Alternate brick headers between layers of hollow tile make for strength.

Smouldering wood means less pecuniary loss than crumbling cement walls and twisted steel. Brick that has been through the fire to make it more staunch under conditions mocks at powers before which cement and steel grovel. Eliminate draughts in partitions and as far as may be on stairs, and avoid using inflammable gum varnish and oil saturated pigments, choosing fireproof paint instead. Make floors of semi-solid timbers, and with brick or hollow brick covered with cement exterior, hollow brick partitions, tile roofs and metal gutters, you are fairly near *fire control* that is in many ways preferable to the much vaunted fireproof, moisture-laden, inartistic structure of cement and iron. Fireproof conditions are perfectly possible in a detached dwelling, unless filled with combustible material. Drenching a conflagration with water will often seriously injure, if not destroy, such a building.

One objection to cement walls and floors in houses is that an echo may detract from the homelike atmosphere.

Filing-Cabinet Fireproof Room.

Slow burning construction and a low fireproof annex cover the owner's usual requirements, unless he decides to build a one-story cement affair, say 10 x 10 x 10, *detached* from the house, lined with boiler iron, and burglar-proof, electrically connected with the master's bedroom through pipes laid in a cement grouted ditch, and entirely free from all risk of burning debris which is bound to endanger such a room if in or annexed to a dwelling. Cumbersome maps, deeds, contracts, and the long list of papers that may never be used, but if wanted and readily found sometimes *save* or *make* a fortune, and a card index showing in an instant where past or present needs are stored, all find a place in this important, thoroughly protected, and practical filing room. The lack of such a room and the temporary loss of an important paper once cost me many times the expense of a filing-cabinet fireproof-room.

"Forest-born Houses."

Forest-born houses, when rightly planned and constructed, are drier and warmer, and we think healthier, and preferable to those of any other material; they also lend themselves more readily to homelike and artistic treatment. As science has tested its theories on guinea pigs and monkeys, so makers of country houses have *unwittingly* tested stone and cement walled homes for horses, cattle, and poultry versus forest-born shelters, and found less rheumatism and better general health in the latter. It is good construction to veneer hollow brick with rived shakes.

Death Dealing Moisture.

An important phase of the building problem is solved when we so construct as to exclude moisture through the insidious avenues of leaking roof, wall, gable, hip, valley, balcony, window and door frame. The driest possible house, but more expensive, would have its exterior of glazed brick or glazed or unglazed terra cotta in color harmony with its surroundings. Radical? Granted, and *possibly commercial*, but far less so than that house built of glass from cellar to roof-tree, that western-built copper house, or an octagonal or possibly gasometer round house. The latter scheme, if in a large building with architrave, entablature, and column, is capable of most impressive effects, but expensive to enlarge and ventilate, and as generally built is puny, bare, and often grotesque. A glaring, glazed or unglazed terra cotta or brick exterior should be softened by suitable vine, shrub, and tree planting, and, while neither tree nor shrub must shut from any house the health-giving rays of the sun, approaches should be so laid out as to give the impression of a foliage-embowered dwelling.

Veneered beauty soon vanishes, green wood shrinks, poorly flashed chimneys, valleys, and balconies leak, thin walls and hastily laid floors echo, and insecure nailings gap—the result, *King Moisture comes into his own.*

Hidden Basic Construction.

Hidden basic construction is too often flimsy and even the simplest domestic requirements ignored, the builder relying on an effective, decorative composition to conceal errors which should not occur in the most modest dwelling. I have noted within a month fireproof and semi-fireproof *public buildings*, and also what would be called a superior dwelling—one, a city hall with wooden studded and lathed partitions, another a costly library building, with wooden cornices, entrance, and ornaments; an expensive brick school house with flat, leaky shingle roof, a high class English stone house with wooden roof—with interior and other exterior appointments and effects that are glaring errors, to be recognized and criticized by the veriest tyro in architecture. Even after a fine house is built on some magnificent site poor landscaping and an unnecessary network of walks and paths may blemish the entire conception.

It is a reef-strewn channel into which the optimistic amateur builder has boldly and recklessly headed his craft. It behooves him to have an expert pilot at the wheel, and a *first class architect's advice and guidance* is worth many times its cost.

Horses vs. Houses.

Standardizing points in houses is as essential as scheduling points in horses, and he who achieves the one hundred per cent. striven for—a *goal yet unattained*—has reached the alembic of ideal housing. Among thousands of addenda a few essentials stand out in relief after location, material, form and method of construction are settled. These are pronouncedly seen in window, door, fireplace, staircase, height of each story, and harmony of color treatment—even blinds are inanimates to grapple with and conquer. Color within and without, as seen in roof exterior, window frame and soffit, or interior wall, ceiling, floor, trim, and stair, has much to do with the beauty of the house, and requires an artistic touch.

How to Face and Back a House.

The proper angle of the foundation to fit the site is a vital problem. Some rooms can be easily planned to corral the sun all day remembering that “where the sun does not come the doctor does.” Such rooms are life memories. Neither kitchen nor stable yard should mar the view nor offensively saturate southwest breezes. Plan and build so that when more faces peer over the edge of your dining table and wider acquaintance knocks at your door you can make the *inevitable* additions beautiful, rather than ugly. Madame, as a rule, is a better authority on the location of parlor, kitchen, etc., than

the financial head of the house. Rooms must be carefully considered in their relation to each other, to the points of compass, and use, and glaring contrasts, such as Gothic interiors elbowing Colonial should be avoided.

A common mistake is that of making a small house a diminutive copy of a large one. Possibly fine in the large conception, it is usually pernicky in the small. Another error is in making an uplifting, gem-site of rising ground stagger under the incubus of a house with stiff citified outlines.

It is a fine thing to live a long time with the plans before beginning work. Comfort and convenience within are the first consideration, then the exterior, not necessarily of grandiose architecture, but of graceful and impressive outlines.

A square house is cheapest, roomiest, and *homeliest*, and requires less wall to enclose a given space, and a plain pitch roof costs least, but the slight additional expense of the gambrel often makes a world of difference in beauty and livableness.

A symmetrical roof has a uniform pitch in all its sections, usually as four to sixteen, this gradient making a grand water shedder and increasing the life of the roof.

Square or rectangle the house if you will, but keep the proportions correct, and break wall and roof line with bay, porte cochère, wide overhang, porch room and eyebrow, lift, or Gothic dormer. Chimney it plainly and strongly in the right places, window with mullioned triplets, casements and transoms, use doors in good style—perhaps Dutch, or with side and over lights—stain or paint artistically and you have a thing of beauty. Success in designing an attractive and practical house requires an axis, as well as strong and effective motifs and material adapted to the site. Individualizing even close to the line of criticism is desirable building and banishes uninteresting stereotyped construction.

Essentials of Comfortable Planning.

Given a big hall and living room, wide stairs; a unique dining room, one fine bedroom and boudoir suite, and *your house is made*, even if economy requires a kitchenette and the hall bedrooms of the summer hotel to keep the balance on the right side of the ledger. A generous porch room connected with a cement, brick or a terrazzo-paved terrace and a porte cochère make for comfort and appearance out of all proportion to their cost, and a front door just right is a fine home greeter.

Foundations.

Foundations must be squared and plumbed, aside from the entasis of an occasional buttress or exposed cellar wall, first treating cellar bottom and interior walls as well as exterior underground walls with tar to keep out ground air and dampness. At the foot of the excavation in the ditch which parallels the wall outside the cellar, lay a drain pipe covered with small stones to within two feet of the

lawn surface, leading to a blind well of sufficient size to dispose of all moisture.

Think ahead; have all material at hand. There is no better goad to keep the job at concert pitch, outside the silver spur, than a pile of lumber stacked to half story height, construction shed filled with barrels of cement, lime and brick, and an overflowing sand pile. It is human nature to dally and spin out work when material is scarce.

Seven Important Levers to Raise a Modern House.

The seven following materials, hollow brick, glazed or dead finish terra cotta, cement, galvanized iron lath, wire glass, steel I-beams, and tar, when properly used have simplified and improved building an hundred fold. In so important a matter as the building of a home, it will often pay even the layman to master in a measure at least some of the dry details of construction, the underlying "know how" of actual work to be done before one tries to even outline pergola, veranda, fireplace, dainty outdoor bedroom, and tiled conservatory, or spacious entrance hall, mantel, and staircase, all features delightful to dream of, plan, and execute.

If exposed to severe gales it is better to anchor a wooden framed house to the ledge at each corner and projection with heavy irons sunk into the rock and firmly fastened in drilled holes with melted sulphur. This precaution gives greater solidity before the building is fully braced and weighted. There should also be a prodigal use of I-beams, and posts and stirrups of iron, concealed and fire protected by cement, or hollow brick.

Woods.

It's interesting to know that a king post holds up the ridge and centres the collar beams, which in turn are steadied by the queen post at each end; that this latter must rest on a solid partition wall or other support amply able to hold it, while trimmer heads and tail beams form and strengthen stair and chimney openings; that white pine boards shrink but little compared with spruce, chestnut and N. C. pine, and that spruce boards unless thoroughly nailed are apt to curl at the edges, sliver and wear out quickly; that beautiful hard red birch which is more durable than even oak under foot decays rapidly when exposed to the weather, and unless thoroughly kiln-dried, warps, shrinks, and draws, as is also the case with chestnut, but that both, nevertheless, are entitled to wide use, the latter because of its beautiful grain and the former for its veined texture, rich mottled coloring, and close resemblance to mahogany which can also be fairly imitated in softer white wood. Cypress makes an excellent weather wood, especially for frame, sash, belt course, soffit, and trim. Locust and chestnut are two fine *underground* woods.

The objection to chestnut on the basis that it is apt to be wormy can be overcome by selection of the fittest, or a dose of creosote will

prevent farther ravages if its use does not interfere with future color treatment.

A difference in floor levels, when not so frequent or great as to give opportunity for accident, increases the impressiveness of a house, just as a plant or fountain rightly placed improves the whole aspect of a room and a loggia and porte cochère add value to an exterior far in excess of their cost.

If on a side hill—and the side hill house is the most economical to build—a cut off, stone filled trench is laid a dozen feet above the cellar wall and connected with side drainage trenches, straw being bedded on stones below the earth topping, an essential in making a dry cellar.

The Arched Under House.

One of the most pleasing houses I ever built was arched-under. Taking advantage of a side hill location, a small entrance vestibule was arranged from which one ascended broad steps to the main hall, which connected with living room, library and den, all on the first floor. The kitchen, butler's pantry, and dining room were on the *lower road level*, reached also by a stairway from the living hall. This kept culinary appointments and kitchen mechanics remote from gala and living rooms, while allowing more impressive dimensions for the latter.

In another under-hill house was the garage, with gasoline in a near by earth-buried tank.

Stone, Brick, and Cement.

For stone work, the boulder laid-up-rustic, cement bedded, is satisfactory, or rubble,—coursed or random—broken ashler-random-face, or range laid smooth cut quarry—in fact any stone harder than soft limestone, certain grades of which disintegrate more or less rapidly in this climate. Foundations should total at least twelve inches wider than the superstructure.

Tackling a spring or water course in cellar or cesspool is a trying problem. I once spent nine hundred dollars in blasting and attempting to stopper a boiling spring at the bottom of a rock-quarried excavation intended for a cesspool. With the house gridironed by pipes connected with a community reservoir, the living spring was a travesty. We had better luck with a water course in the cellar, having no ledge with which to contend. Digging sufficiently deep and underdraining at an incline settled the difficulty.

Cellars.

A stone cellar wall so built that the stones extend from the exterior to the interior, binding the wall, needs extra tarring treatment; otherwise these stones add their quota of moisture to the water drawn from the ground by capillary attraction, encouraging those insidious foes, fungoid growth and ground air. Weather beaten

and cracked rough stone taken from old walls should not be used in the construction of a fine house. Their proper place is in the underdraining of land and roads. The old-fashioned method of covering the foundation wall with moisture-proof slate or blue stone slabs before the house wall is built is still good. It is a fatal mistake to tolerate stone cellar walls laid up dry, the surface only smeared with cement. Moisture and rodents can only be balked by stones *embedded in cement*, which is vastly improved by being mixed with crude oil. Jogs and angles in foundation walls add largely to their cost. A projecting water table flush with a cement sanitary angled gutter a foot wide on the surface of the ground will carry drip away from the foundation.

Ground Air.

Nowhere inside the house must tile set in cement be laid directly on the earth, however well drained or gravelly the soil (unless possibly in a conservatory) as ground air and moisture will, under certain weather conditions, work to the surface. I once injured an otherwise attractive inglenook by overlooking this fact.

Cement and metal under conditions will carry sound, therefore it is desirable to deaden the floors with asbestos, seaweed, paper, hair, felt, or other non-conducting material. All overhangs should be thoroughly deadened to prevent cold from entering the house. Mineral wool is excellent for this use.

Damp-proof Walls.

An outside wall of brick or stone is made damp-proof by being thoroughly painted on its interior and exterior where it is buried in the ground with water-proof paint or tar, and must be furred for plastering. Confined air makes a warm blanket. Air space will carry sound unless curbed with baffles, but is a positive preventer of condensation. Watch closely during construction for crevices in walls and about door and window frames. Unless cemented most thoroughly, a stone or cement house is a cold damp house. Air spacing is its salvation. Wooden frames set in stone need special care to keep out wind, cold, and moisture. Calking crevices with oakum saturated with white lead decreases coal consumption.

If necessary to lay brick in freezing weather, dry brick laid in cement mortar, with but a small quantity of lime, and joints neatly struck, gives the best job. Care should be taken that there is no jar before the cement hardens, otherwise the brick will at once loosen. In warm weather brick should be wet before being laid. The picturesque appearance of rock faced brick is marred by affinity for dust and liability to damage by friction. Its main advantage aside from the effect of lights and shadows produced is that the broken surface prevents the annoying window sill drip that *always* mars the front of a brick building.

Water-proofing brick walls with a colorless solution does not

change the appearance of the brick and prevents frozen moisture from scaling mortar joints or dampness from entering the house, thus removing the *one* possible objection to brick construction. Harvard, Roman, and tapestry brick are all good.

The so-called "mud brick" of commerce is more or less a water absorber, but has holding strength in the wall; its rough surface absorbs the mortar even better than the smoother face, but harder, machine made, piano-wire-cut brick. Headers and stretchers, if of suitable contrasting hue, and laid in Flemish or English bond, make an effective building, but meddling with contrasts requires infinite care and skill. The amateur often ruthlessly "stomps" "where angels fear to tread."

In a non-earthquake country, hollow tile covered with cement is ideal construction if made damp-proof with tar or rough paint and air spaces, and is more serviceable than stucco on wire or wooden lath. A double hollow tile wall is best if brick tied.

Floor Deadening.

In deadening floors, an excellent light weight combination is a mixture of cement, sawdust, and ashes. It brings but little extra strain on the timbers, keeps out cold and noise, and is along fireproof lines.

If the room immediately over the kitchen is used for other than storage, the floor should be deadened in order to bar kitchen heat and noises and there must be an air space between the wall of this room and the kitchen chimney.

In all cementing of exterior walls, wire lath should be nailed on eight inch centres to avoid sagging, which is bound to occur when nailed to the sixteen inch spaced studding. V-irons will give a half inch air space between sheathing and cement. They hold the wire and cement away from the shrinking wood, and tend to prevent cracks. This method is less expensive than hollow brick construction, but not as durable.

The cement cellar floor should be four inches thick, made of three inches of concrete set on a bed of sand. A good concrete mixture is one part cement, three parts sand, five parts broken stone, and when set immediately finished with one inch Portland cement made of one part cement to three parts sand.

If steps and open loggia are not of stone or brick, durability requires that they be of reinforced cement. Rounding very slightly the edge of a cement step will delay inevitable nicking.

Heavy buttresses at the corners of a rough foundation wall are good, especially for a high veranda. As simple a thing as a piazza post wrongly placed will seriously mar an otherwise beautiful house. An entasis effect flaring outward at the bottom of an exposed foundation wall gives stability and beauty.

Flying Arch.

A flying stone arch or two supporting a porch room or a flight of steps, if properly built, will be found far more ornamental than the usual plain arch.

Stone, brick and cement are the best materials for the sleepless arch; wooden arches except for decorative purposes are impractical.

If brick construction is used, the water table can be formed by corbeling and drawing inward five or six courses above the stone foundation. Soffits under the eaves and big bracket supports are preferably covered with cement on galvanized wire lath, or hollow brick, but this necessitates an absolutely tight roof to prevent the cement from scaling. A porch room is much improved by beams over a cement ceiling.

Exterior iron work must be made absolutely rust-proof by galvanizing and thorough painting. This also prevents staining of adjacent brick and stone.

All wire lath should be galvanized for outside work, as plain iron will rust even if cement covered, and painting it is but a makeshift.

Iron posts in the cellar (supporting iron girders) with suitable foundations, take less room than brick or stone but are more easily damaged by fire than are brick. Both post and girder are nearer fire-proof if encircled with $\frac{1}{4}$ -inch mesh of galvanized wire and evenly swathed in cement.

Rat-Proof House.

If the house is of timber construction, use large sized timber. Rat-proof at sill line by filling in with rough grouting, brick, or stone, and curb the fire risk at plate line end of floor timbers by stopping draughts and filling between studs with odd pieces of joist. Extra crippling is an additional advantage in hanging heavy pictures. Reinforcing any specially important bearing by two or four inch wrought iron pipe filled with cement as extra supporting pillars with wide flanges gives added strength.

The sanitary cement base is an advantage in cellar, laundry, kitchen, back halls, and closets. If wire screening is inset in cement of floor and wall, rodents pass by on the other side, and even cockroaches and water bugs are unknown.

Cement Expansion.

If cement walks are used, they must have *below frost line* foundations, and each cement block should be cut through its entire thickness to allow for expansion and contraction, and an asphalt expansion joint inserted every fifty feet is a good precaution. Mere marking will not avoid cracking. Secure footing is obtained by slightly corrugating (crandalling) the surface, preferably in some geometrical design, and a convex surface makes a dry walk.

Curbs should be edged with metal corner bead to prevent a dilapidated appearance when nicked or broken, as they *surely will be in time*.

It is a convenience to have the number of the house, and in public buildings the name, metal inset or cut in cement walk near the gate, and the lower straight iron tie of the gate brace formed into a foot-scraper.

Windows.

Clustered windows are as effective as clustered chimneys, and a large wide-eyed window placed at correct angle in veranda roof will give additional light. Two feet six inches above floor line is the rule for setting first-story windows, and a trifle higher for second and third.

Deeply embrasured grouped windows can be placed in a thin walled house by building the entire side of the room *inward* a foot or more, balancing the space on each window side with a convenient and artistically fronted ambry.

Broad deep window sills are convenient for frond or flower, and also serve as a sun-couch for the "necessary and harmless cat."

Pockets in window frames when plate glass is used if made extra large allows the substitution of iron for the more expensive leaden weights.

There is no more important matter than the proper design and location of doors and windows. *Afterthought* doors and windows are generally expensive. Extra lipping and rabbeting of both is a *necessity*, and double balcony doors are fitted with the knuckle and elbow joint at parting strip.

Rooms should be planned with due regard to their furnishing. For instance, refreshing sleep comes to some only when beds are placed north and south. Preferably no bed should directly face a window; dressing mirrors must have good light, convenient ingress and egress should be considered, and the throne of the fire king so located as to centre his group of devotees, instead of being inconveniently close to doors and windows.

The entrance, whether an ornamental projecting porch, or a recess, gives to the house either a hall mark of distinction or a black mark of mediocrity. Columns, architraves, or coat of arms, in wood or stone, make a distinguished entrance, framing a door that should always bespeak a message of welcome.

Imprisoning June.

We once used in the wall of a dining room a plate glass framed panel ten by ten feet, edged by a quaint postern-gate, beyond the glass a jungle of flowers and vines, a bit of semi-wild mid-summer garden, pathless and potless, a tangle of color springing upward from greensward, glass imprisoned in the midst of an ice and snow-bound

winter landscape. In a corner of the jungle were a half dozen sandal-wood trees between groups of midget Japanese evergreens centuries old when the keel of the caravel Santa Maria reached the shores of San Salvador. The greatest picture gallery in the State boasted nothing so fine as our ten foot square framed nature-picture, changing with the seasons, and replenished from time to time from the greenhouse, all flower pots and boxes being concealed in mossy bank.

Vines versus Wooden Exteriors.

Do not give that matched board portable porch horror a resting place. The fancy for thus marring a beautiful home is unaccountable. Settled, windowed, or screened permanent porches or a glassed-in semi-conservatory veranda entrance are attractive solutions of the porch problem. Against stone or brick one must avoid as far as possible the incongruities of wood, often emphasized still more by inappropriate painting in porch room, veranda, bay, and porte cochère, adjuncts to be built at all hazards, but planned to fit into the whole. If to be covered with vines they should be *oiled* instead of *painted*. With care re-oiling will not injure them.

The pergola and even a modest belvedere add to the appearance of a property much more than their cost, and the former often saves an unfortunate situation. Ugly lines can be concealed, bare outlines broken, and high, stilted, and box-like structures lowered and widened thereby. An effective but more expensive pergola is made by the cross members sweeping downward a couple of feet with an under curve on the outer side. Broad spaces can be spanned and still kept uniform by sloping the wider timbers at bearing ends to one width.

An Attractive Entrance.

Calling on a railroad magnate some years ago in his wonderfully beautiful Fifth Avenue home opposite the park, we climbed to his attic den by a circular marble staircase that cost a fortune, while another fortune was represented in the leaded windows, rarely carved woodwork, mosaic floors, pictures, and statuary, yet after all these years, but one feature of the house whose cost, compared to the above, was as pennies to dollars, is clearly recalled, and that is the vestibuled entrance which led through a labyrinth of banked palms interspersed with floral gems of rich and delicate coloring, the air laden with divine melody from silver-throated songsters, who lived their lives in this bower of beauty. Remembering that exotic entrance, when the opportunity came, I struck a duplicate, though minor key in one of my vestibule entrance halls, in size twelve by eighteen feet, centred with a red tiled walk five feet wide. Grassy banks, waving fronds, and swirl of bloom stamped it forcibly on the mind of every caller, whether mendicant, stranger, or bosom friend,

through that touch of nature that "makes the whole world kin," and to my mind far outshone expensive pillared, beamed and paneled entrance halls.

The "Over" in Building.

The "over" in building is a familiar reef to the enthusiast. An over-windowed house, aside from its appearance of frail wall area, blows hot or cold as temperature dictates. Over decoration, as seen in the lavish use of gold and silver, red, green, and yellow, in wall, ceiling and colored cornice—anything and everything to detract from expressive paintings, fine etchings, rare tapestry, and century framed oak, often plunge the new house into the mire of mediocrity. Accentuate door, window, wainscoting and mantel, but avoid the "over."

Shingles vs. Thatch.

If buildings are shingled, shingles must be stain-dipped, not painted, for paint dries in ridges, dams back water, and quickly rots the shingles. Do not be persuaded to thatch barns and outbuildings in reaching for the picturesque; vermin and fire are risks, to say nothing of possible leaks. I've seen more than one thatched building condemned and re-roofed with shingles or tile. England, recognizing the extra fire hazard in some sections, has passed laws against building thatched roofs. A coat of whitewash gives fair thatch protection and is a short job with a whitewash gun. Avoid as you would a pestilence the diamond panel in shingle work and the grosser outrage of a colored design on a slate roof. Odd modes of roof and side shingling can be introduced along pleasing lines, but, like many an innovation, it requires thought to avoid the grotesque.

The best artistic result to be obtained from shingles is the rounded thatch on dormer and eaves, expensive, but unparalleled for effect. Six or seven lappings of shingles laid in curving lines across the entire roof give the nearest approach to a thatch effect in wood.

The upper mullion in a gable, if inset three feet, with sides rounded and covered with tooth-edged shingles, with straight header and base, is about the best shingle gable effect I ever tried. The Boston hip takes the place of the old ridge board, but shingles split and blow off if carelessly nailed, some splitting more readily than others, therefore care must be taken in their selection. While narrow shingles take longer to lay they make a tighter and better roof than the extra wide. None over six inches wide should be laid on a roof unless they are the hand rived shakes of Colonial days. Cut nails hold a shingle in place better than a wire nail and *prolong* the life of the roof. The wire nail is a good friend of the shingle merchant. Single nailing of shingles has advantages.

In a high house a double banded shingle or cement belt gives relief to the surface and picturesquely shadows and lowers the house, while the gable end that bulges six or eight inches to a point three

feet below the peak, the lower edge slightly curved outward in horizontal line and edged with toothed shingles, or the gable that concaves not only at peak but along the whole verge edge gives beauty and variety.

Shingles fastened on shingle laths when wet dry out more quickly and last longer than when laid on boarding, but indoor heat is best conserved and exterior heat or cold excluded by covering the entire roof with T. & G. boarding, on top of which is laid fireproof paper generously lapped, then shingle laths, then the shingles, allowing extra air space.

In a severe climate a ceiled roof under the rafters, protected by fireproof paper, gives an air chamber, added warmth, and is easily laid before plastering, which, for still greater comfort, should be furred out an inch from the rafters. Close valley shingling looks neater and stops leaks, but curtails the life of the shingle.

A Stone Roof.

The enthusiasm of our Hibernian thatcher whose arbored summer house was a source of chagrin to all base imitators tempted us to let him loose in our quarry and stone roof the ice house—we never thought of its melting the ice faster. It was a small affair, three-fourths underground on a side hill, with roof frame of heavy logs. The greenish tinge of moss and rain streak, and a sprinkling of thrifty growing stoncrop gave that roof a name for sylvan beauty far and near. The roughness of Pelasgic walls was softened with running ivy and woodbine that had been protected while building. A rough board and hay-filled lining curbed the heat of summer on that rare stone roof partly shielded by plant life.

Tile Roofing, Balconies and Skylight.

Tile makes a desirable roof, especially the mission, but the under covering must be such as to prevent leaks. Unserviceable paper or canvas has canceled many a tile contract.

Rafters for tile roofs should be at least two by eight (2 x 8), better still two by nine (2 x 9), in valleys two by twelve (2 x 12), reinforced by supporting posts, partitions, and extra strong and well nailed collar beams.

If red tile is laid on main roof, avoid repeating it on a south veranda, owing to sun reflection. Glare can be softened by painting it in some subdued color, using tile of neutral shade, or covering with thoroughly paint soaked canvas. Copper makes an excellent substitute for tile, its tendency to split under weather changes being curbed by ridge-seaming it every eighteen inches, but if a house is isolated and left unprotected it is a temptation to thieves to unroof it, as it is to steal copper boilers and brass pipe.

Roofs covered with sheet lead, zinc, or tin, the latter painted on both sides, make serviceable head pieces. Copper flashing does good

work around chimneys, at roof line, in all valleys, under and over windows and on balconies. Few leaks are more difficult to stop than those of a poorly built balcony, the door sill of which requires a steep pitch. It is said that in Ontario's rare dry climate unpainted tin on the exterior is bright after a dozen years' service, but the usual rule in other climes is a thick coat of paint on both upper and under sides, repainting exteriorly every two years. Canvas roofs if covered too thickly with paint will crack.

The roof skylight, that inartistic protuberance so apt to leak if not properly flashed, or if not securely fastened liable to centre the lawn, can be generally entirely hidden behind chimney, dormer or ridge, leaving contours uninjured, and both overhead and under foot skylights should invariably be of substantial wire glass of extra thickness for durability and fire protection.

Roof House and Roof Garden.

A roof house of one room and a roof garden might connect with a prophet's chamber, leaping from questionable experiment to a glorious success, but because of limitations should be worked out on a flat roof Moorish house.

The scheme of a Colonial one room cottage screened 'mid vines and fronted by a small old-fashioned garden placed on a cement floored flat roof lifted in a measure above the turmoil of earth, made an ever remembered guest room.

Iron roofs and sides for outbuildings unless kept thoroughly painted readily succumb to rust and decay, and are more suited to commercial purposes except in an inexpensive garage.

Timbering, Framing, Etc.

Proper sizing of timber goes a long way toward preventing wavy floors and uneven side walls, and when, as is often the case in the attic, there is but one floor, it is vastly improved by the usual method of selecting the best boards from the large quantity of sheathing used for under floors, siding, and other portions of the house.

Floor beams set in a brick, stone, or cement wall should be cut at an angle to insure their falling without prying out the wall in case of fire. This treatment also checks dry rot.

If metal bridging is used, it *must be* supplemented with wood, which hugs closer and firmer, and cannot rust. Thorough strutting of timbers is imperative.

Tie beams at plate line and in gables should be plentiful, and crippling cross-herringboned. It makes firmer bracing, and in shrinking holds better than when set straight. Doubling every third or fourth beam when a span is from eighteen to twenty feet is necessary and makes a stronger girt or girder than single beams of equal size, each piece of wood having a different grain. They should be slightly crowned to allow for the usual sagging. Scantlings, purlins, and wall and roof plates must be of suitable size, and free from

shakes, and studding well toe-nailed. Bridle irons on floor beams, strap irons on rafters, and tie rods through plates are essential safeguards.

Cutting and tenoning of timber, unless done with judgment, often defeats its purpose by weakening the support, but all joinings of plate and sill should be halved.

The cantilever principle, as well as the under brace, will make the porch sleeping room reaching into tree top or open absolutely secure.

Overhang, whether in roof or veranda flooring, adds valuable area with the *same* foundation expense. Nailing of bridging to both sides of floor beams is left until just before plastering to fasten floor beams when and where they have shrunk.

If one objects to iron beams, which in all cases cannot be satisfactorily fastened to wood, Georgia pine girders may be substituted. A flitch or sandwich beam made of either one or two three-eighth inch iron plates twelve inches in width firmly bolted each side of or between the girders or beams their entire length stiffens a building tremendously, and trusses made from one inch iron rods set up with a turnbuckle placed between two by twelve inch planks well bolted together have the same effect.

The ends of house rafters and pergolas look better if in somewhat similar design and false rafter ends close jointed. In a house of superior build, outside studs should be two by six, or three by four.

If cramped for closet space, studs can be set flatwise unless they support floor timbers. Under no circumstances should timber ends be completely embedded in solid masonry. If the end of a timber is hermetically sealed, the chance of infective dry rot exists and is almost a certainty where there is dampness. A small air space at the timber end is a necessary safeguard.

The furring down of ceilings in bathrooms, even as low as seven feet, will make them compact and more easily heated beside giving an overhead space for open or secret closets, and allowing of tiling to ceiling line at slight additional expense. This *satisfactorily settles* the difficult question of how to treat bathroom walls and also avoids capping the tiled wainscot. Projecting crowning tile is liable to be laid irregularly and in time works loose.

Diagonal board exterior walls (provided there are not too many openings), bringing boards together in the shape of a V, forming an additional side-thrust brace. In a gambrel roof this treatment is especially desirable as it is weak construction until firmly braced. In smaller buildings preference may be given to balloon construction with ledger board supports notched in studding instead of braced frame and plates.

In some localities diplomacy is required to banish alcohol, and keep the men contented when the evergreen roof-tree nailed to the ridge proclaims that the roof is raised, but a small present generally solves this difficulty.

Floors.

Diagonal the rough floor as in sheathing. It means more labor and material, but gives a far better braced building, a firmer grip on finish floor, and there is less chance of buckling or getting out of shape than when both floors are laid straight.

The accurate furring-up of an uneven under floor is a job the mediocre carpenter invariably shirks, as he does the knee-aching task of scraping the finish floor surface. Both are essential, and omission of the former will cause even furniture of the best construction to appear wobbly and a poorly finished floor makes a fine dirt gripper and retainer.

A partial over-floor covering either of expensive half-inch cork boarding or the cheaper cork matting—both non-absorbent and soft under foot, without the drawing objection to rubber—will ease aching feet of cook and laundress and take the chill and slip out of a tiled bathroom. Service room floors can be made fireproof with patent cement flooring. Hardwood floors mean from one-half to one-third less work to satisfy good housekeeping.

Stud crippling midway between floor and ceiling not only braces and ties, but stops fire draught.

Cut, square headed nails are preferable to wire for flooring, and blind nailing is essential.

The effect of a level long distance floor means the passing of the door saddle, that retainer of dust, disturber of carpets, and space shortener, but its use where rugs and carpets closely edge openings means a tighter fitting door. If the mat is inset there is no conflict with the front door.

Convent cell and hospital ward simplicity should in a measure guide for health the mind that plans our sleeping rooms, yet comfort must reign.

Sound readily carries through partitions and flooring unless guarded against, hence no false beams should be placed until ceilings are plastered, nor may one commit the error of having the floor or floor beams of one story form the ceiling of another. Heavy felt-ing between floors will *not entirely* eliminate noise.

The Gutter Problem.

If the concealed cypress gutter is used, it should be V-shape within to prevent ice from splitting it, and should of course be metal lined. Leaks occur through imperfect roof covering and sides as in split shingle and clapboard, in outside chimney breast, top, bottom, and sides of windows and doors, in carelessly flashed valleys and

chimneys, ventilating pipes, balconies, and clogged gutters and occasionally even in the opening used for an overflow pipe in attic storage tank.

Copper gutters and spouts, preferably sixteen ounce, properly fastened to a house and deeply grounded in the moist earth, answer the purpose of a lightning rod, which mars the appearance of any building, and is today seldom used, as it is a questionable protection.

The gutter problem is surely exasperating. Ice, dirt, and leaves choke gutters and spout-heads and force water upward and sidewise under shingles, tile, or slate, whence through cracks it percolates inward, sometimes from a *long distance*, marring wall and ceiling, paper and tapestry in most aggravating fashion. The ugly half circle hanging gutter solves this problem, but unless of copper rusts about as soon as the arris zinc-lined cypress. Crimping a leader prevents its possible bursting from ice. Short gutters over entrances, and a shallow, turfed, stone-underdrained ditch with a few spout-heads where valley rivulets clash will help to keep inviolate and attractive roof contours—the architect's sacrificial altar and most sacred fetich—and is a fairly satisfactory solution of a serious question.

Chimneys and Fireplaces.

It is difficult to realize that the chimney, a roof-tree's crowning glory, was unknown in Rome before the Fourteenth Century and for hundreds of years in England the louvre or roof opening was its only substitute.

Grouped or big stacked chimneys are most satisfactory, and the tall, slim, solitary spindle should be fattened to harmonize with a massive structure, in fact, the ordinary house or bungalow is often improved by a stout chimney.

Chimneys should be built of hard brick with preferably an eight-inch wall, or, better still, two four inch walls iron-tied, and with a two inch air space and ample ventilating flues, all fire flues being tile lined and tile collar joints plastered and set with cement. The crane, if one is to be used, can be built in the fireplace while the chimney is in course of construction. Cement covered chimneys, and occasionally brick, are apt to show lime efflorescence, especially in the spring—removable by a diluted acid bath. Stone or terra cotta combined with common or finished brick is as a rule very satisfactory. A scaling cement chimney is a blot both on the landscape and the builder's escutcheon. Chimneys built above the ridge with cut broken ashler or rubble stone, as architectural license may allow, require *special care* in flashing.

The best sand is sharp and gritty, its face unsmoothed by action of the sea or running water, and should not contain much salt.

Chimneys draw better with flue lining of *round* rather than square tile, as evidenced by experiments in certain industries requiring enormous heat. Foundations should be carried to bed rock if

possible, or at least to hard pan—in this case having cement and rubble foundation—and below frost line. The chimney breast should be furred out with fireproof lath before plastering to avoid dampness and discoloration of walls and decorations. Thimbles and stoppers in cellar and garret and far away rooms are sometimes a convenience.

In pointing up, excellent exterior effects can be obtained by the use of gray, red, black, or white mortar, or raked-out joints of one-half an inch in depth and thickness between the bricks, as preferred. Coal efficiency is lessened when heating flues, especially in *thin* chimneys, are allowed to hug exterior walls too closely.

To so locate a chimney as not to clash with roof lines requires skill, but when well done adds much to the beauty of the house, and he who studies chimney contours and makes a wise selection in design and color will be well repaid.

The rough stone, dust collecting chimney is frequently a dismal failure, except in appearance, and is suitable only for porch room, bungalow, and possibly billiard room or den. It can be made useful and ornamental. Flues should be from ten to twelve inches in diameter, and all crevices *thoroughly* filled with cement. It is especially necessary to use tile flues in stone chimneys.

In fireplaces width, height and strength in design and material were the ear marks for generations until the discovery of coal in the Sixteenth and Seventeenth Centuries dwarfed and narrowed their beauty as the era of grate, stove, and furnace dawned.

It is a convenience if fireplaces are provided with iron covered ash flues and connected with the cellar, but the outlet must be carefully guarded from rubbish, which increases fire hazard. An ash flue, in itself a convenience, was the cause of one of our most disastrous fires. The man of all work carelessly left the iron cellar flue door open, and live coals reached inflammable debris. A cellar fire is the worst kind of a fire, and when fairly started leaps under favoring conditions to the roof-tree in short order. Chimney flues should be provided with iron throats and dampers. Building a fireplace hearth above the level of the floor increases fire risk, even though protected by a fender. A brick partition centreing a fireplace is a novelty.

In forming hearth arches, the skew-back, made from 4 x 6 joist, halved to form a triangle, should be nailed against the two long sides of the hearth. This will prevent any displacement of the brick arch through shrinking of wooden floor beams.

Cure for Smoking Fireplaces.

Chimneys can be made to draw by having a narrow opening at flue ingress, and providing a smoke shelf, not less than six inches wide the full width of the fireplace, projecting just below the flue edging the fireplace opening. If the back of the fireplace is curved outward three or four inches at the top toward the room, air thus

forced more directly over the flames will heat quickly, hence rise rapidly in the flue, while the tendency of damp, dead, chimney air to sink into a room is checked by the flue shelf, and hot air mixing with it *forces it up chimney*. Smoking chimneys can be made to draw with this treatment if fire opening is not over high—say two and one-half to three feet. This construction also conserves heat. A big mouthed and big flued chimney will usually draw after the damp, cold air becomes warm, but is a heat waster of the first magnitude.

A deep, broad-mouthed fireplace gives warmth and paints a glorious seven-toned wall picture that gladdens man's inmost being, but often makes an uncomfortably draughty room as it pulls the air with giant force up-chimney. We semi-shackled the draught, as well as a goodly portion of the ninety per cent. heat thus lost, by installing an iron damper and baffles;—less beauty, less flame, more heat, more comfort.

Use without abuse of the health-yielding chimney and stair flue draught is true beneficence, for disease has no more relentless foe than *pure air*. Forty days without food forty years ago failed to kill Dr. Tanner who at this writing is very much alive, yet four minutes in the black hole of Calcutta when it reached a certain condition would have immediately changed the abiding place of his soul.

A Freak Fireplace.

One of our experiments possibly open to objection was to so arch at a low level a fireplace between two gala rooms that an open fire answered for both. A reredos lowered at will made a fire back for each room, and gave when desired seclusion to each, as well as better draught.

Veranda and Conservatory.

See that the veranda is extended beyond the house wall to catch that southwest breeze, and build an open balustrade for coolness.

The wide covered veranda requires a flat upper balcony projecting from side wall, a metal or canvas roof under these conditions being necessary. In fact, it is good planning in order to get ample sun and light in winter to have the veranda roof high, using, if needed, awnings on the front or a grille to annul the stilted look of a high flat roof. If facing south or east, a sun-room or second story conservatory on this roof adds in comfort and appearance far more than its cost, and if built during house construction is an inexpensive luxury.

More sunshine will be obtained if the outer half or third of the veranda roof is pergolad, as the awning can be rolled back on cloudy days, and removed in winter. Proper bracing and cantilever beaming make it feasible to construct the sun-room-addition.

It is good building to cover the floor of an outdoor balcony with canvas, as on a steamer deck, laid in wet paint and oil. It should be fastened with copper tacks. One we thus treated is still in good con-

dition, with occasional painting, after twenty-five years' wear. Platforms of concrete laid over well seasoned timber will outlast half a dozen wooden floors, but should be reinforced by *twisted* mesh screen wire of at least one eighth to one quarter inch caliper; they will then be independent of the rough wooden under flooring. If a wooden floor is preferred, white pine set with leaded joints and painted and with the usual fall to each foot is the best. Next in choice comes fir. North Carolina pine if exposed to the weather will last but five years and sometimes only two or three.

Glassing in the porch in winter is today almost a necessity, and when installing the heating plant extra pipes, including water pipes, which can be capped, should be laid to it as well as to the sun room and second story balcony or conservatory. Radiators can at any time be connected at moderate expense if not installed in the beginning.

Plastering.

Whether to use plaster board must be decided according to preference and season. It is desirable in cold weather, or if crowded for time; a barrel, dome, or coved ceiling, however, would render its use impossible. Beaver board has limitations, but fits well into the bungalow realm. One gets bracing strength in a wooden lath, though requiring more plaster, but wire lath is along fireproof lines, and curtails warping and swelling. Dry wooden lath should be sprinkled.

It is best to use angle irons where corners are not rounded in the plaster, relegating to the past the acorn-tipped corner bead or other wooden substitutes.

All walls must be thoroughly plastered to the floor and wainscoting, trim and woodwork—always the kiln dried species—painted on the back before being nailed in place, otherwise, especially on an outside wall, panels will crack and warp. It goes without saying that trim placed against plaster containing *any* moisture is a building crime.

Lime must not be of the damaged sort that pock marks and drops off in small specks. The mason minus a conscience or careless of his trust will often use too little plaster of paris and too much lime to save a few cents in gauging, resulting in a powdery wall surface that *rubs off*. Freezing produces much the same result. The correct mixture of hair is a necessity, but patent plaster applied in new ways is rapidly taking the place of old material and methods. Sound carriers should be avoided.

To get a suitable clinch, one must insist upon enough pressure to force plaster through the crevices, especially on wooden lathing. The first coat must be well scratched to hold the second or brown coat, and the finish skim coat whether the job is two or three coat work, evenly surfaced to show a smooth, straight edge for trim, untrue placing of which pillories for all time a careless mason. Plastered ceilings, often dangerous shams, should be covered with canvas or burlap before decorating, *eliminating* the always present risk and possible disaster

of a falling ceiling, but if plastered with wood pulp they rarely loosen. A barrel ceiling is unique in a long hall.

Cement can be used instead of plaster in many cases. In building walls in damp ground it should be water-proofed by *mixing with crude oil*. The addition of salt and lime makes possible its use in freezing weather, but at the risk of the salt whitening the bricks.

Plumbing.

In piping for plumbing, right angles must be avoided. Main pipes should go perpendicularly to the cellar, then at draining angles to the sewer. As far as feasible, lateral pipes extending any distance should be ceiling hung in the cellar in plain view. Condensation on pipes in a large house is about a quart of water a day in summer, and any crossing the house in a horizontal direction are liable to drip and stain ceilings and furnishings. Pipes should be placed before floors are laid, and kept close to chimneys and away from exterior walls wherever possible. They can be concealed in wooden pockets in closets, kitchen, and back halls. Breaking plaster to reach them when out of order is thus rendered unnecessary. All fixtures should be provided with *free outlets*, otherwise annoying overflow may occur in basement fixtures. Galvanized iron pipes should be painted. Brass piping under laundry tubs is the most satisfactory aside from raising cupidity in the tramp.

There should be extra faucets and sill-cocks on porches, as well as on the grounds, and at least one non-freezing outdoor sill-cock, beside a number of cleanouts in and outside the cellar, with accessible hand and manholes.

Water pipes passing through or near outer walls should be wrapped in mineral wool or some suitable substitute, as protection against frost. Dripping from condensation is also thus checkmated.

Shower Jog.

In planning a bathroom, lay out a shower jog. A space about five feet square between two closets, one in bathroom, the other in adjoining bedroom or hall gives a perfect shower and needle bath alcove, the three sides and floor being tiled or cemented, and inexpensively solves the knotty problem of installing a shower.

When glass traps are a mechanical possibility, one can tell at a glance if air bubbles, downward suction, or evaporation have destroyed the vital though insignificant looking water seal that holds in leash, except under undue pressure, sewer gas, that most virulent poison, one danger from our modern conveniences.

The latest toilet fixtures are nearly noiseless and non-siphoning. A safeguard shut-off close to a toilet is a wise precaution.

Four inch soil pipe in the ordinary house flushes more easily than five inch, narrowing to a swifter current, and makes a better

job. If properly back-aired four inch soil pipes with fresh air inlet at ground surface extend from cesspool pipe connection well above ridge tree, avoiding all window openings; they are satisfactory ventilators. Better uptake draft is secured by placing them next to the hot water pipes. Stacks must be perpendicular.

Banish the set basin in or near sleeping rooms. *Inlet* water pipes of one and a half inches allow ample supply for one line fixtures, even when all are used at the same time, and two inch outlets add but little expense and decrease liability to stoppage.

An air chamber at the end of the highest pipe line, or even in the cellar, to cushion the back-kick of quickly shut-off water prevents many an annoying leak, and with high water pressure is almost a necessity.

Side wall instead of floor connection for set basins makes the best job.

Expensive re-nickeling of fixtures is saved by rubbing them bright, then covering with tried-out unsalted tallow when houses are closed.

Plumbing spells common sense, and a layman can easily master its seeming intricacies.

Heating.

If the system of heating is hot water, an open expansion tank is a complete safety valve, frozen and leaking pipes, especially in far away rooms or through neglect of careless servants, being the only possible objections, except extra expense of installation over that of steam, which if used should be the safe low-pressure system. Hammer noises are readily controlled by low pipe connection. Steam pipes placed close enough to wood and paper to char them favor conditions that, fed with sufficient oxygen, may result in spontaneous combustion, in spite of the contrary opinion held by many, and is not worth the risk.

If one is using a hot air heating plant or indirect radiation, heat can be economized in windy weather by feeding air to the furnace through a register near the front door sill. This furnishes semi-heated air, and is of course in addition to the regular cold air box, which, to give best results, should face at least three points of the compass. It took two fires to convince me that cold air boxes should be metal rather than wood.

Over heating a hot air furnace is prevented by permanently fastening one register open, preferably in the hall. Carelessly connected pipes at the furnace mean danger of breathing sulphurous oxide or monoxide gas, even five per cent. of carbon dioxide, the choke or black damp of the mine, endangering health, if not life.

Heating economy calls for boiler and fire box larger than the cubic feet of the area to be heated figure. To cover all requirements, there are boilers that admit of additional sections being added.

Wrought iron boilers lose their efficiency through formation of scale, especially if the cellar is damp—an *entirely unnecessary evil*. Cast iron boilers are better in this respect, but we are losers in both health and money when we allow dampness, that insidious foe, to get the upper hand.

If windows exceed one-eighth of the wall area, the heating plant must be proportionately larger. Lack of care in setting window and door frames, a very common error, increases heating expense.

Trim.

Trim covers a wide latitude. Narrow trim is often more effective than wide and thin. One extreme is a thick trim, scarcely wider than a narrow picture frame. A very satisfactory door and window trim is an ogee curve mitred at corners. Care must be taken that this form of molding should be exceptionally well kiln dried, as joints will more readily show and require greater skill in mitreing. Plain work is preferable as a rule to elaborate beading, which is another dust gatherer.

Fumed and chemically eaten wood are both suitable for a den.

In boudoir or drawing room the intarsiatura work of the Fifteenth Century in door casing and window head or a combination of jig-saw and hand chisel work is satisfactory, and can be made to closely imitate carving. Plain trim is preferable for servants' quarters, kitchen, and laundry.

In main rooms without wainscot, baseboards eighteen inches high add in appearance more than the difference in cost, and give the ample base plug space which good work demands. Where style of room allows, the Colonial dental may edge beam and cornice, but the square set corner block formerly used to cover joints should be omitted and trim mitred in one of the several methods now in use.

We found that the carpenters, especially in cabinet work, setting up trim and building in stairs, made better mitres and closer-knit joints during the clear atmosphere of fall and winter than in damp spring or muggy, moisture-laden dog-days.

The temptation to apply to indoor uses material appropriate only for exteriors, as exemplified in a shingled interior wall and mantel hood, rough bouldered stone partition, or a wooden latticed wall in a billiard room, should be conquered. Beside being in questionable taste, they are dust collectors of the rankest kind.

Closets and bays make good safety valves for ugly square box-like rooms, and the former are excellent noise barriers. If rooms are connected, doors each side of and flush with separating partition solve the noise difficulty.

A second story windowed trunk closet sometimes saves steps and dented stair and hall.

Verdure-crowned Lintel.

One of the most pleasing ornaments for an entrance was made by leaving an exterior opening two feet high in the house wall over the door lintel the entire width of the doorway, forming a unique fronton by glassing it without and within, in reality a zinc-lined giant wardian case. Planted with ferns and red-berried plants, it rarely required watering. In cold weather the inner hinged glass was raised.

One dining room had a rectangular shaped skylight so located as to be mainly in the shade. In the oak paneled and walled sides reaching nearly to ceiling line were windows set five feet from the floor. At one end of the room was a tall hooded mantel, at the other a picture windowed bay, and lights and shadows were thus evenly balanced.

Beamed Ceilings.

Beamed ceilings are preferably composed of large beams which are also less costly to build. Beaming where side walls join the ceiling can often be dispensed with and a cove made in the plaster. Two big cross beams set well apart give sturdy strength and beauty unknown in a cut up and costly paneled ceiling, while cambered beams in a high studded studio or billiard room often transform it into an imposing hall.

Plaster ribbed, decorated beams, though expensive, give an air of elegance. They may also be made two or even three feet wide and edged with wood.

Another good overhead treatment can be obtained with beams paralleling the four sides and placed a couple of feet from the side wall which is also beamed where wall and ceiling join. From these short beams spaced in proportion, the long ones are tied together, leaving a blank space in ceiling centre for decoration.

A wooden ceiling, if *not* of stereotyped T. & G. beaded stuff, is a desirable finish and eliminates all risk of falling plaster.

Stairs.

The stair-builder at times harks back to the tortuous winding stair of the early Gothic, coeval with the unpretentious stair of early France and Germany, surpassed even in that day by the beauty of the broad, severe lined and dignified marble staircase of Italy.

The staircase hall often makes or mars the house, and the problem of stair building is intricate.

A featured hall or stair, or both; the entrance room square or rectangular, with side or inner stair alcove partially concealed; the comparatively narrow staircase or a broad steamer or platformed affair eating well into the hall area, are work-outs worthy the best planning.

To dissect still more closely, stairs need not link the entrance door with the bathroom, and the thoroughfare to the front door should not be through living rooms. The architect's conception must tie conveniently together hall, door, window, stair, and fireplace.

To get the proper height for a stair step, the width of step plus height should equal the ordinary walking stride. Seven inches is good riser height. An abnormal increase of step width is awkward and uncomfortable and any pronounced infringement of the above rule makes an undesirable stair. Too wide a step is as inconvenient as too high a tread and should not be used, unless a short, wide flight is needed to give an imposing entrance to hall or salon. Seven by nine, totaling sixty-three inches, is good stair mathematics. The close string staircase admits of more substantial and richer treatment than the common cut-string stair so universally used in cottage and bungalow.

The baluster Colonial, the carved Jacobean, the ogived Gothic, as well as marble step and metal balustrade, to the manor born and appropriately used, add their quota to stairway motifs.

The rail, whether with Colonial ramp or heavily carved, should be three feet six inches high to protect alike childhood and age. The side view of a staircase is generally the most interesting. In several houses curlicues ornamented the outside of each step, and one low staircase wainscot was heightened by a line of uniformly framed pictures.

An awkward second story hall is obviated by a bayed and settled window nook, a divaned book alcove leading to a balcony, a second story conservatory, or a prosy but essential sewing corner—in fact, a bit of foresight will often change an ugly landing or an angular entry into a useful and beautiful hall. Ugly falls are prevented by mid-stair platforms, absence of winders, and ample head room.

That half a loaf is better than none applies aptly to the half-back service stair, though a house of any pretensions should have nothing giving less seclusion than a *full flight* of back stairs, at least to the second story.

Painting.

Paint is not always a wood protector. Green wood hermetically sealed with paint sponsors dry rot. Old, unpainted houses prove that *air* is the great preservative. Oxygen in the lungs of men or in the depths of matter lengthens life, while confined moisture is a destroyer. Any paint that does not contain sufficient pure oil to withstand a fair amount of soap and water scrubbing is not worth the labor of putting on.

Color matching, whether paint or stain, as seen in roof and side wall or in the interior on ceiling, wall, trim, doors, window frames, stairs and floors, is important. Rarely is a large house built but, through carelessness of owner, architect, or painter, the wrong *stain*

or paint is used on new wood to the annoyance of all concerned, and the damage once done is *never* completely remedied.

Save where hygiene calls for white enamel paint in kitchen and laundry, or prevailing style arrogantly dictates its use in bedroom or gala room, woodwork may be treated with non-odorous stain and pumice stone, a finish that neither soils nor perishes under dust, friction, or blow.

Real instead of imitation should be the endeavor, whether in plain chestnut or Georgia pine nature graining, but never the spurious quartered oak produced with hand, brush and cloth.

Blinds.

Seemingly a simple matter, but neither ordinary nor extraordinary blinds harmonize with picturesque oriel casements, broad and lofty grouped embrasured English windows, and mullioned triplets. The list from which to choose includes the Colonial crescent-peep-eye shutter, the somewhat insecure pent-roof-blind either full length or with hinged centre joint, the roll-up-in-pocket top or bottom blind, the aggressive and unconcealed sliding blind, the full-slatted whole, half, or cut-in-centre blind, the regular stock blind with moving or stationary slats, and that final anchorage, Venetian blinds. Interior pockets for solid paneled or slat shutters give character to any dwelling.

It is a disjointed selection, both within and without, but the Venetian blind may prove a mainstay, though given to wind swaying propensities.

New and better ways of doing things are not necessarily more expensive; in fact they often make for economy. For instance, it costs but little more to put a sanitary base in the kitchen and laundry, and it is absolutely vermin-proof and a complete phaser to rat or squirrel. Artistic triplicate windows cost less to make, set, and trim than do separate windows. Bays at the *time of building*, are inexpensive, and often a fifty per cent. improvement. A well lighted stairway is an essential, and a curving line, often a paying luxury.

Red birch that some builders cannot distinguish from mahogany when finished, costs no more than many common woods.

A plaster wall is but little more expensive than wood filled, shellacked, and re-treated every few years, and is far superior save when wood paneling or wainscoting is placed over plaster.

In building for sale, selling points are often more in evidence than essential fundamentals, and get-it-in-at-all-hazard features frequently mar a unique design.

How to Know Your House Though Unbuilt.

As a preliminary, batten-board the site, then, before breaking ground, line off first and second stories on the greensward. White and colored whitewash will differentiate each room. Without spend-

ing a dollar, the exact bearing a part has to the whole and all view points within and without can be thoroughly grasped.

By the following plan, an amateur can tell in still closer detail, providing he gives the necessary time to studying results, just how the new house will work out, even to the smallest item, *before the cellar has been dug*. This is something that neither architect nor builder, with a lifetime of experience, ever really knows in its entirety before completion; much less can he explain it to another if the house is elaborate.

As the builder of an ocean liner turns out from his model room a miniature vessel before its keel is laid, so let the housebuilder lay out his home.

The one hundred or more dollars it might cost would be offset by the prevention of even one glaring error. A cabinet maker or journeyman can readily be found who will work overtime if necessary, modeling from plans of the architect a complete archetype of a miniature house in plaster or wood, preferably the latter, on account of durability and light weight, or the entire house can first be worked out in cardboard. An $\frac{1}{8}$ scale conveys the best idea of proportion.

It might be built in sections, so that each detail can be closely scrutinized or may only be skeletonized to attain a fairly satisfactory result. It could be set on library table and taken to pieces and put together again as readily as one dissects a wooden puzzle. In this way details of general construction, number, size and location of rooms, position and number of doors and windows; relative height of ceilings, vistas both in and out of doors—even the most convenient side to hang a door, a minor, but often important detail,—can be settled, and the front door in design and coloring is well worth exact duplication. (The entrance door of feudal England was a narrow one-at-a-time door, contrasting sharply with our wide doors of the present day, every line of which should express hospitality. Prior to the Sixteenth Century a paneled door was unknown. The earliest were pivoted at the centre.) Even the number and style of stairways can all be studied and re-studied, and when this miniature house has served its mission it can be riveted together and handed down as a toy house to gladden the hearts of children of more than one generation, and photographs of a completed property shown before the lifting of a pick-axe.

How to Partition a House in One Day.

Closely allied to the above plan, and of so little cost that it should be tried, even in the least expensive dwelling, is the following method that I have used to get acquainted with the nooks and corners of a house before it is much more than framed and enclosed, therefore in ample time to make any changes desired, and make them in the most economical manner. After the house has been

raised, roofed, sided and roughly floored, and the main carrying partitions placed, procure a quantity of plasterers' grounds—say $\frac{7}{8}$ x $\frac{7}{8}$ stuff—that will readily bend. These long, straight, slender wooden sticks some sixteen or eighteen feet in length are flexible and so light in weight that half a dozen can easily be clasped in the hand, and set up, lined and spaced two or three feet apart and lightly tacked at floor and ceiling line. In this way can be shown experimentally changes of all kinds, and how they would affect the arrangement of furniture, radiators, or electric fixtures, settle the location of a possible closet, an extra semi-partition carried to the frieze line of an inglenook, or outline the radical shifting of side walls in some room showing squared ugliness when it should be nooked or cosy-cornered. These slender pieces of wood can be bent to outline arches, place balconies, curve overhead openings, mark out a flying arch under stair soffit, segment the ceiling of a dining room or barrel that of a long hall and bathroom, groin a vaulted roof, locate columns, pilasters, and spandrels, steal an extra bathroom from some barn-like room, or arrange alcoves or ambrys at either end; line a stair-window-seat on a landing, widen a stair opening, lower a ceiling—even change and rearrange the layout of an entire floor, and prove beyond peradventure whether the billiard room is not a trifle too narrow, a common error. If a partition is to be moved, it can be tried out in this simple way, to least interfere with door or window. This method will boudoir a bedroom, corner-cove or ceiling-cove a drawing room (or, as it was originally called, a withdrawing room), change an opening or an entrance, show different effects and settle one's preference for a round or square column, a square headed opening or a Roman, Tudor, or Gothic arch, for there is nothing so convincing as ocular demonstration. It will locate to an *inch* the ceiling beams in connection with window and door openings—sometimes a difficult proposition, though it looks simple enough to the novice. Faulty construction is always an annoyance if realized, and if once known will be realized *for life*. By the use of these sticks it may be prevented and features kept in proper balance. In like manner each mantel in the house can be laid out, deciding whether it shall be high, low, or hooded; with square or rounded edges, built half way or to the ceiling or cabinet-locked. Proper height and width of plate shelf, whether best lined with door and window trim or above or below it, and other numberless details can be more easily settled in this way, and sticks left in place as long as necessary to arrive at final conclusions. The house that in the morning had but a roof, four sides and a few carrying partitions, by night can be ready for inspection, so far as division of rooms and general effect are concerned.

These same slender strips of wood also aid in the inexpensive laying out of extra verandas, bays, and projections, avoiding encroach-

ments on some interesting view, and transforming jarring effects to those of harmony.

The last word in building is never spoken—new methods of construction are frequently advocated by the experimentally inclined architect and builder and sometimes prove aggravating failures—common sense makes the best guiding rudder.

Building Fundamentals.

The "do it," and "don't do it," in building are legion, but a few fundamentals should be rightly settled:—Do not build too close to the highway or at a lower level; the only excuse for the latter is to obtain the sunken garden, bird's-eye view effect across the lawn from the highway, in which case the land should slope away from the rear of a house, and if abruptly all the better.

A trolley and automobile traveled turnpike are desirable for the rear entrance to an estate, but freedom from noise, dust and commercialism decrees that one should never front it, unless the house is placed *well back* from the roadway. A dusty highway seriously retards the growth of vegetable and flower, but parlor floor roadways banish the dust nuisance.

Just right, in mixture, mode of application and use of cement and reinforced concrete in house building is the key note to prevent its crumbling, cracking and breaking. Discoloration and absorption of moisture by cement are difficult problems to solve. The drying out of a house through heat and non-damp breezes is a *necessity*, requiring months to do it thoroughly and the reprehensible habit of covering walls and ceilings with any substance before this is accomplished prolongs the drying out process for a long period and foundations many an ill.

If your roof is inartistically high, drag it down with a wide overhang and suitable color treatment and insist, in spite of some architect's bias for an unbroken roof contour, on enough dormer and gable windows *to thoroughly light that third story*, even if you don't finish its interior aside from the necessary bracing and supporting rough partitions.

The time will surely come when that third floor will make all the difference between comfort and discomfort, and possibly the selling of the property—*an hour which comes to all property*—at a substantial profit or a disastrous loss. If you build servants' rooms on the second story, locate partitions, windows, and doors in such a manner that they will make suitable guest rooms when you or your successors (in later years) move the servants higher up, and frame the timbering so that if necessary certain partitions can be removed and stud in the rough for future doorways. Also carry main plumbing and heating pipes to the third story, capping outlets.

Roof and foundation are big factors in the cost of exterior construction. Build the roof to avoid an undue number of valleys and

angles as well as carelessly constructed balconies that mean stained ceilings and falling plaster.

If your house is on a side hill, it's just the house for a generous billiard room in the basement, where an immovable cement foundation makes possible a permanently spirit-leveled billiard table. Here you can also build a huge stone fireplace, and install a lavatory with shower for the golf and tennis devotee, but fight dampness and ground air strenuously.

Don't forget to heavily tar and also ditch-drain the outside walls where they are buried in the earth, and after the usual cement floor is laid and well dried out, fur up the floor to have at least that inch air space between the cement and the wooden floor. A copious coating of tar prevents its use as an insect lair. Flooring if laid on scantlings directly over stone, gravel, or earth, even if air-spaced will swell and tear asunder. Failure to thus checkmate all warring forces will transform your attractive billiard room into a first class rheumatism breeder, if not an assassin.

FIRE! FIRE!

Five times in twenty-five years in Hillcrest Manor, that weird, uncanny cry which in an instant transforms some types of humanity into frenzied beasts, trampling their fellow mortals under foot in the mad effort to escape an agonizing death, echoed back from the hollow square of our farm buildings and across hillside and meadow. Thrice the fire was smothered before the leaping flames had risen breast high, but twice the fire king was victorious. Gables, with its dozen hanging balconies and verdure-canopied verandas, in two hours was a smouldering heap of ashes, the occupants barely escaping with their lives. Again, the highest tiled tower of Buena Vista was struck by lightning but the heavy downpour quenched the flames. Yet again, the stock buildings, carriage sheds, silo, hennery, The Cot and, woe betide us, Wayside itself, stored to the roof-tree with household gods and heirlooms, some of which antedated Colonial days, vanished in smoke. The cause (a frequent one), the *careless handling of a brushwood fire*.

Across the valley we saw beauteous Alta Crest, transformed into a human pyre, pay its blood curdling tribute to this same relentless conqueror, and many times on summer evenings from the vantage ground of Hillcrest the darkness of night was brightened by sheets of flame devouring hay-barn, stack, or farm house, on some distant hill or in near by valley. Fire! Fire! Fire! Expensive object lessons these and if we had it all to do over again, we would plan along lines that better aid in fire control.

A fire line stack with connecting hose should be installed on every floor in each building, and piped to the pressure tank or reservoir, chemical fire extinguishers on the wall wherever needed and an extra supply stored in some get-at-able closet where also should hang

blankets which, when saturated with water, make rare life savers and kerosene fire-querchers, supplemented with a few buckets filled with sand. Fire axes, fire hooks, crowbars and wire rope ladders should be fastened against the walls and placed on upper balconies. Ladders of different lengths, one long enough to reach the roof at gable end, should hang from hooks under the sheltering veranda floor and be kept for this one purpose. In carpenter shop and horse barns, especially should be installed the overhead automatic sprinkler, also a perforated water connected galvanized and painted pipe the ridge length of all buildings. A thorough roof-drenching will frequently give fire protection.

First Aids to the Fire-Fighter.

First aid instructions to the amateur fire fighter are essential; plain simple directions as to location of apparatus, what to do and what not to do, tacked up where he who runs may read—a sort of fire catechism and it wouldn't be a half bad idea to have an occasional fire drill and test out those stand pipes, gain speed in ladder raising, inspect fire extinguishers, etc., etc.

This first aid list of things requiring prompt action should include closing of windows and doors, especially those of stairways, shutting off all draughts the moment a fire is discovered. A full pail of water is difficult to handle, and only through practice can one get the free circular and effective sweep throw. A water-saturated broom will do great execution. If it is a curtain or bed on fire, get it on the floor where no under draft can fan the flames. If it's soot in a chimney, a couple of pounds of salt thrown down the flue forms gases which explode, detach the soot, and keep the flames from entering any crevices between the bricks, and water dashed on the hearth will finish the job. Animal and vegetable oils are often responsible for spontaneous combustion and it goes without saying that dirt and rubbish, especially about stairways and in cellars, are fire inducers. This scheme of fire fighting would include say, a half dozen adjacent neighbors and a large signal gong high under the eaves, while an extra number of chemical tanks on wheels to rally round the flames would greatly decrease fire hazard and under some conditions lessen insurance premiums.

Mottoes.

Mottoes pivot and concentrate thought and help to individualize estate, house, and room. From the following gleaned through a score of years were selected several to arch fireplace, and centre hall, library, festive-board-room and boudoir.

"Abide now at home."

"A good book is the precious life blood of a master mind."

"A hundred thousand welcomes."

"A poor thing, but mine own."

"A storehouse medicine of the mind."

"Au dieu foy aux amis foyer."

"Aux livres je dois tout."

"Bene facere et discere vera."

"Bepred Diger."

"Blessings on him who invented sleep."

"Bon feu à mal hiver."

"Books are my brave utensils."

"Books that are books."

"Come blessed barriers betwixt day and day

"Come hither, come hither;

Here shall ye see no enemy

But winter and rough weather."

"Come sleep, O sleep, the certain knot of peace."

Dear mother of fresh joyous health."

"Drive away the cold, heaping logs on the hearth."

"East, west, hame's best."

"En servant les autres je me consume."

"Fait ce que voudrais."

"First think out your work, then work out your thought."

"Goodness, discipline and knowledge, teach ye me."

"Grow old along with me, the best is yet to be."

"He that hath a house to put his head in hath a good headpiece."

"Heaven trim our lamps while we sleep."

"Hearth whose good cheer warms and comforts chilled and worried humanity."

"Hic habitat felicitas."

"His table dormant in his halle always stood ready, covered all the long day."

"Home of the homeless, friend of the friendless."

"Ignorance is the curse of God, knowledge the wing whereby we fly to heaven."

"In portu quies."

"In this my house I live at ease and here I do whate'er I please."

"It is always morning somewhere in the world."

"Lay up seasoned wood while you may."

"Le faire ou bien dire."

"Let good digestion wait on appetite and health on both."

"Let me not to the marriage of true minds admit impediment."

"Let not one babbling dream affright our souls."

"Let them want nothing that my house affords."

"Music when soft voices die vibrates in the memory."

"My house, how little you may be, may you always be mine."

"My library was dukedom large enough."

"Non dormit qui custodit."

"Paix et peu."

"Pauca sed mea."

"Piccola si ma studiosa."

"Qui legit regit."

"Qui uti scitei bona."

"Quietet et musis."

"Scripta manet."

"Sibi et amicis."

"Sings the blackened log a tune learned in some forgotten June."

"Sleep dwell upon thine eyes."

"Sleep that knits up the raveled sleeve of care."

"Sleep that shuts up sorrow's eye."

"Sleep, that which makes the shepherd equal to the king, and the simple to the wise."

"Soft touches of the night become the touches of sweet harmony."

"Some hae meat and canna eat

And some wad eat that want it;

We hae meat and we can eat,

And sae the Lord be thankit."

"Take thou of me smooth pillows, sweetest bed, a chamber deaf to noise, and blind to light."

"The last of life for which the first was made."

"The man that hath no music in himself, and is not moved by concerts of sweet sounds is fit for treason, stratagems, and spoils."

"The mantle that covers all human thought."

"The ornaments of a house are the friends who visit it."

"Through this wide open gate none come too early, none too late."

"Turn the key deftly in the oiled wards, and seal the hushed casket of the soul."

"Usted esta en su casa."

"Venitas."

"Warm ye in friendship."

"When friends meet hearts warm."

"When the world is cold to you, go build fires to warm it." . .

"Wilt thou have music? Hark! Apollo plays, and twenty caged nightingales do sing."

"Your presence makes us rich."

"Youth is but thought and think I will,

Youth and I are housemates still."

Gates and Barriers.

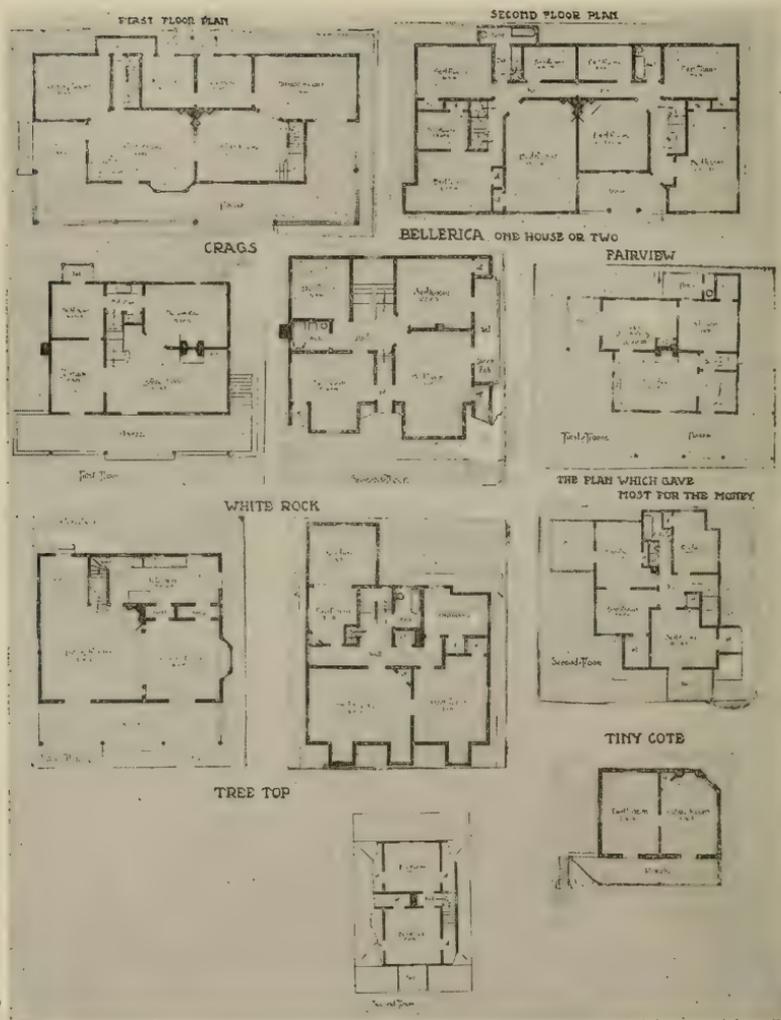
Barriers as seen, gates and fences in outlines, material and manner of construction are, like chimneys, seemingly limitless. If the old exist where the new should abide, it is the owner's bounden duty to change them; for they must harmonize with the new house.

A whiz-view from a car window gives a slight idea of the possible variety, as one can easily schedule one hundred or more different styles in a day, from the upturned stump, riven criss-cross rail and rough bouldered wall of the pioneer to the productions of famous architects.

Hedges range from the shrub and tree deciduous as seen in privet and copper beech to evergreens, from arbor vitæ to Norway spruce and hemlock, and there is a complete alphabet of form and color in shrub, tree, stone, brick, tile, bronze, wire, cast and wrought iron, and cement with various combinations thereof, as well as turf and shrub-topped walls, their crevices filled with plants, and the whole backed by luxurious vernal growth. The finicky cobble stone and big boulder, the rarely beautiful yet inexpensive rough, open-jointed broken ashler, with plants growing in and over it and vines climbing along its sides and scrambling atop—even a line of half buried single stones—all make good boundaries. A wall containing many small stones can be lined off (with or without lamp black) to give a solid front by the use of a liberal quantity of cement. Building barriers more than head high, so that the passer-by sees but a black streak of hard and dusty road imprisoned between high walls, is a selfish attempt to shut off the uplifting view of an earthly paradise. In the parking of narrow village lots one realizes the true democracy of country living, "all for each and each for all," as seen in views 'cross lawns and gardens for a half dozen blocks or more, under some conditions necessarily restricted, yet but slightly marred by vine-draped wire fences.

Huge privet posts squared and trimmed as true as blocks of granite or sheared into pointed or globe-topped pedestals, for eight months are living masses of green.

Barriers are well worth best thought, also the gates that pierce them, whether but an iron chain, riveted and hooked into single rough boulders, a lofty bronze grilled, lantern-centred gateway, one of the most effective forms of entrance, or a stone arch beneath the conning tower of a Norman castle. None of the belongings of a dwelling more forcibly herald to would-be despoilers or trespassers ownership and possession than gates and barriers.



PLANS WHICH GAVE MOST FOR THE MONEY.

CHAPTER X.

HOW TO BECOME A HOUSEHOLDER WITH TWENTY TENANTS IN
YOUR EMPLOY, STARTING WITH A CAPITAL OF
TWO THOUSAND DOLLARS.

NEW YORK CITY is to-day surrounded by a community of rich and independent farmers, close questioning of whom will develop the fact that the onion patch and the corn and potato field did not produce all their riches, unless exceptionally located as to the best markets and under most favorable labor conditions.

Improved railroad facilities and trolleys bring the business man and the city clerk to the farmer, and are sometimes his main source of wealth. In other words, take heed to the object lesson taught by the farmer, let a man keep his clerkship in town and at the same time buy a farm, never a village lot that, aside from the faint prospect of business inroads, will be worth no more in ten years than it is the day of the purchase, and generally less. Let him see to it that his acres front some roadway that within five years will be traversed by trolleys. In from five to ten years at least twenty tenants will be living on his land and their mortgages will be in his safety box, while he will be motoring or cruising, with just enough work in the laying out of his property to avoid ennui and the constant leisure so detrimental to the average man.

My experience is that of many another who has taken the trouble to investigate. The scope of operations, thanks to automobile and trolley, is being so extended that there are many opportunities for large profit to-day for those of very moderate means. For example, I know of a section within an hour of New York, where in a dozen years property has advanced not in one, but hundreds of instances over one thousand per cent., without expenditure on the part of the purchaser except an interest charge of five per cent. per annum and taxes. Even such unusual conditions as I herein describe have a bearing on my general statement.

Two extreme instances yet absolutely correct as to increase in value may be given from a score that I could name:

Less than twenty-five years ago a property within thirty-five miles of New York City was offered me for thirty-four thousand dollars that is to-day worth and would easily bring half a million dollars, and that without a dollar of improvement. Another property purchased at that time for less than a thousand dollars is now conservatively estimated at twenty thousand, property on which a savings banks would readily loan ten thousand dollars at five per cent.

Opportunities still exist for those who search, though rarely with such large profits. Let one devote the necessary time at odd hours to thoroughly scouring the out-lying country, map in hand, assuming it to be near some thriving centre such as New York City. When what appears a suitable site has been found, question closely several disinterested "natives," who are usually authorities on local matters, though absolutely purblind, as a rule, to speculative values. If financial help is required, one or two friends can be let in "on the ground floor."

Selecting the Site.

In determining on a site, there are a few "must bes" which schedule somewhat as follows: High land, extended views—long road frontage is a great advantage and fertile soil is desirable but not an *absolute* essential—trees, as little swamp as possible, and good water. With trolley possibilities within five years, no near nuisance nor prospect of any, such as sanatoriums, poor farms, slaughter houses and objectionable factories, and with property, say not over one and one-half hours, preferably one hour from the city, and not over two or three miles from railroad station, the success of the project is assured. If, in addition, there are a deep ravine, a fine stream, with water power possibilities, fruit trees, good roads, desirable neighbors and it is within a mile of a station, assets will bear marking up.

In selecting as well as planting land, remember that the light sandy soil on your farm suits crops that mature early, before drought days begin and that heavy soil is for crops that require the entire summer to mature.

The fact that all of your future customers may not keep devil wagons and that plodding dobbie and shanks' mare will surely lengthen the distance, should have a bearing on your selection of a farm for country homes; at the same time beware of the nearness of a railroad track with its accompanying smirching smoke, screech and jangle, and other bedlam noises, intensified when moisture-laden south and east winds blow toward your Mecca. Your idyl must be a real idyl, antipodal to the man-made town.

Even if inspection of the proposed purchase reveals a rotting sill, a leaking roof, and decaying window frames, remember you are buying but a makeshift house. It is *building sites* that you want. If land, location, and possibilities are satisfactory, brace up the sills, as well as your courage, and with great care slip bits of tin under the shingles that leak, (even walking on an old roof loosens enough shingles to necessitate a new one), and let the rest go until you can build the new house. Spend what is essential in *purifying the cellar*, removing old wall papers and sterilizing walls, floors, and surroundings in general; clean up all refuse, calk all crevices, and put the rest of your spare change and energy into the building of a few absolutely necessary roads and extensive plantings.

Rapidly increasing values in effect actually *decrease* your mortgage without your *paying a dollar toward it*, and if the land has been well selected, judicious sales will enable you to pay off the entire indebtedness and still leave the major part of the property *free and clear*.

The summer kitchen that will yield summer comfort and the woodshed or old English "outshot" beyond, 'gainst which the "norther" fruitlessly beats, are both desirable features if in your Eldorado find, but neither are essential.

Avoid farming, at first, except in a small way for family use. *Wait!* Make the old house do, with a few must-haves. Keep a cow, a horse to plough and cultivate, and chickens. That cheap automobile picked up second-hand, but carefully selected, will answer as means of locomotion, and give family and friends an occasional outing. Set out immediately an asparagus bed for home use at least, and if-for market, all the better, and a shrub and tree nursery. Buy as many hardy, ornamental, small plants by the thousand as you can afford; they can be had for a few cents each in Europe and at times in this country, including evergreens, rhododendrons, etc., and start that hole-in-the-ground greenhouse for early stuff and shrub propagation. Fill out with the surplus stock of some nurseryman that you can get at a bargain out of season, you to move it if conveniently near. Put on an extra man occasionally to push cultivation and care for the nursery stock. Set out some fruit of the right sort—grapes cost little and yield enormously, but plant only the non-mildewers and sure ripeners.

Landscape Gardening.

Employ a landscape gardener to lay out your farm *on paper*, showing roads, building sites, and the general planting scheme. If you know in some ways more than he does, at least buy his advice, but settle the price ahead of the buying, then do as you please, keeping the horse and extra man busy in cutting and filling grades, moving this tree or that shrub, thinning out where needed—in a word, shaping up your farm roughly with *choice building sites*, so planted with fruit and ornamental trees as to avoid shutting off prospective roads and views or interfering with lawns or vegetable garden. *There is no better aid to longevity than this kind of life.*

No man ever voiced a greater truth than Abraham Lincoln when he said the most valuable of all arts will be the art of deriving a comfortable subsistence from the smallest area of soil.

Aim to have in five years fifteen or twenty building sites of two or three acres each, with *main* landscaping finished. Meantime, you can harvest hay and possibly sow and gather some essential crops, and, by protecting the trees, use some of the land for pasturage, throttling expense in large measure with horse boarders. *Prospective*

customers like action and you may discount the five years' wait quite a bit.

Let me emphasize again that the site of a house makes or ruins it, and it is imperative to settle the different sites *first*.

It takes time to grow trees and shrubs, and he who has set out the right kinds and has them properly located will surely find appreciative customers.

Asparagus Profits.

In addition to ornamental shrubs, trees, and fruit, I planted an asparagus bed on each site of a tract I thus laid out. The farm asparagus bed of two or three acres will pay for many an improvement. The ordinary farmer dodges the three years' wait, therefore he who plants it has less local competition. We never bunched our asparagus, but cut it in haphazard lengths and sent it to the local market. This was our trademark of freshness, and the yearly income from a three-acre bed was over one thousand dollars. Its requirements were inexpensive, a mulch of manure, cultivation, and once a year a little salt. Manure and salt also worked wonders in the radish bed.

Farming the City.

With farm carefully selected, the battle for independence is half won. Sun and rain, with but little cash outlay, and that along the lines mentioned, will do the rest. But in those five years of waiting the head of the family should *farm the city*, and strict economy must be practiced.

This is a practical plan for living a helpful and healthy country life.

With a cash capital of two thousand dollars with which to begin, and an income of from \$1,500 to \$3,000 a year, let us see how those figures that "cannot lie" line up.

Absolute Independence on Small Capital.

From twenty-five to fifty acres of such land as I have described can be found by painstaking search for five thousand dollars. The temptation to buy extensive acreage would increase distance and the additional expense hamper development, and possibly wreck the enterprise. Neighboring banks will loan \$2,500 on a fifty per cent. valuation, as per the law of limitations, at five per cent., the usual bank rate. The seller can often be persuaded to take back a second mortgage of say \$1,500 at six per cent. for three years, which can be re-sold at a small discount, or the purchaser can with persistent effort find an investor, or some friend might share the profit. A second mortgage where improvements are to be made can always be negotiated. This, with the \$1,000 cash paid to the seller gives ownership. The first mortgage will stand indefinitely as long as the \$125

interest and taxes are promptly met, and the second may remain for two or three years as long as the \$90 interest is met. This assures one a good home at the moderate rental of \$215 per year, plus taxes and insurance, which are usually moderate, and the \$50 interest on the \$1,000 investment. Add to this \$1,000 to cover stock and extras—the \$1,000 outlay should bring large returns—thus investing the full \$2,000 and increasing the interest charge \$60 per year.

Values advance when a city family moves into a locality and improvements are begun, therefore with little effort one could dispose of part of his holdings the first year—say enough to halve carrying charges, still keeping a speculative quantity of land. The commutation, which must be added to the yearly rent, will bring the amount to \$450, plus the chargeable items for repairs and improvements which should be kept as low as possible.

As covering in part the above, one can figure the fresh vegetables, milk, and eggs consumed and sold which would certainly pay for the man of all work, and with good planning cut down the \$450 quite a bit.

A City and a Country Home Totalling for Rent \$650 a Year.

The second half of the plan is that, assuming the base of operations close to New York, in late fall one can advertise for a furnished apartment in town. Many families go south and are glad to rent for as low as \$50 per month or even less to careful people. Thus is provided a country house wherein to enjoy the spring, summer and autumn and in which to keep prized furniture, books, etc., that an habitual apartment house dweller would be obliged to relegate to the storehouse for half the year, paying thereon enough to materially aid in maintaining both a modest country home, and a winter home in town for not over \$650 per year. A \$3,000 income would admit of both; a \$1,500 but of one.

A Tent on the Beach.

A caretaker can always be found for the country home, and a tent on the beach for an occasional week-end outing makes the final link in vanquishing the ennui of existence and getting the most out of the usual prosaic routine of dressing, eating, and sleeping day after day, year after year.

Acquaintance and a little effort will accomplish the selling end;—a club or business friend—a week end or a Sunday visit; a talk over luncheon or on the car. Give your friends a choice of sites, if need be, to get started on this *real missionary work in the interest of pure air and healthy living*. Once the ship is off the ways she moves easily. Judicious newspaper advertising coupled with skill and patience produces excellent results.

Build? A vital question. It is a safe rule to let the other fellow do it to suit himself. However, if you sell several building sites

for enough to build a bungalow or two do so to enliven the property, but go slowly and let the contracts, for your mind must be on your business in town. You will have enough enthusiasts over Sunday to develop a congenial neighborly neighborhood.

With these lines ends the writer's partial record of the twin hobbies of country living and housebuilding, which for a quarter of a century took the place of other amusements, but the lure of the lumber pile and the sound of saw and hammer, the call of the land, as seen and heard in rustling tree-top, silver melodies from copse and woodland, lowing herd, ripening harvest, swirl of bloom, will not down. Love of country life with its endless ramifications underlying all realms in still in the blood, and we shall again sometime enjoy to the uttermost a real possession of the wild, man's rightful heritage.

APPENDIX

TWO houses of somewhat radical type are described below in response to a request reading, "From eight to ten thousand statements made from actual experience in building and laying out country places, and a thousand or more photographs illustrating country houses and country living make helpful data, but go one step farther, Mr. Author, and outline in a dozen pages a couple of type houses, one for *the man of moderate means* and one for *the man of wealth*, and do it so thoroughly that the prospective owner will not expect a sow's ear to yield a silk purse. For instance, were I about to build a country house and undertook to follow the myriad suggestions of well-meaning friends, I might be a bankrupt before it was enclosed, but, aspiring to build a *feature* house, with a type before me illustrating details that have been actually worked out, I could doubtless better outline a rough plan to submit to the architect."

THE HOUSE FOR THE MAN OF MODERATE MEANS.

Location preferably within a mile of the station, about an acre of rich soil, thorough drainage, rising land, large trees, good neighborhood, no near nuisances nor prospect of any, town water, electric lights, sidewalks, good roads and lighted streets, are all desirable. The dwelling should be placed not less than seventy-five feet from the street and face south, on a lot preferably about 200 feet square, with an extended view that neither tree growth nor buildings will ever entirely shut out.

House, 30 x 40, is enlarged by porch-room wings at each end, the *west* porch connecting with an esplanade floored with cement, if expense precludes the use of the more attractive terrazzo or brick, and ornamented with potted plants, the *east* wing joining the *porte cochère*. The house is side hilled so that portion in the rear is four feet under ground, and at the sides averages about two feet under ground a third of the width of the house, walls, as well as all footing courses built of rough uncracked field stones, in case such are on the place, or any hard stone, crude oil being mixed in the cement as a damp deterrent. Basement walls and those of first story are hollow brick, coated with rough cement and colored to harmonize with the hand-dipped stained shingles which cover upper story and roof, preferably laid on the latter with four and one-half inch weatherage. The hollow tile will be interiorly treated with tar and cement and air spaced, and gutters of copper and leaders crimped.

Second story, studded, boarded, shingled and back-plastered, projects four inches, the under mold forming a narrow belt course.

The shingle roof should have a two foot overhang and its kick-up rafters a fourteen-inch dip, the soffit covered with cement on galvanized wire lath.

Windows on first story should be sash-hung, giving greater security, less draught and being more easily screened. They may be fitted with automatic sash bar locks, lower lights to be of plate glass, upper in small squares, or if in one pane it may be squared or diamonded with wooden strips laid over the glass. Extra size pockets save the expense of leaden weights. Second story windows in the main are casements with triple rabbeted and lipped jointure. The third floor should have sliding windows under the eaves for moderate light and much ventilation, but in the gables use wide curved bays with not over eighteen-inch centre projection, bracket supported, shaded by pent eaves. One eyebrow on the front and two lift dormers on the rear of the roof are ample. Set all windows when possible as mullioned triplets; head trim and apron practically in one piece, and build sleeping porches over east and west wings.

Porch wings should be featured as outdoor eating and living rooms, with breeze-wooning open rails, space against the house wainscoted, and capped with plate rack, *smooth cement* wall above painted and covered with thoroughly water-proofed burlap and the ceiling, cemented on galvanized wire lath, crossed with hollow cement or wooden beams, and verdure canopied.

The floor of red cement, cored with galvanized wire mesh, has embedded in one of its twenty-four inch squares a patina colored copper arrow pointing north. Joints of the tapestry brick chimney are raked-out. Set in house wall on the east end, directly over the door-head a glass fronton, say eight feet wide and two feet high, as an over-lintel—a giant wardian case filled with plants and mosses from the woods, the inner sash arranged to open in extremely cold weather, a glimpse of woodland all the year around. On the south wall fit a mottoed sun dial with time equation.

Entrance steps facing three ways in monument style are of red cement, crandaled for safety, and lead from porte cochère—glass roofed to avoid undue shadowing—to the east wing porch with its slightly convex red cement walk four feet wide. The door mat is inset, and an antique scraper bent to match the curved edge of the step firmly embedded in the cement. This glassed-in entrance porch gives a bower of bloom at all seasons. Flower beds border each side of the walk, sloping from porch foundation, and singing birds greet all comers.

The oak-battened, iron-studded Dutch door is fitted with bulls' eyes, a ten-inch Bastile lock, and an electric knocker in the form of a knight's vizor in which is cut the name of the villa and on the marble sill is inscribed the word "Venitas." The porch is columned,

the architrave centred with coat of arms and cement lions flank the steps.

Side hill construction means strenuous work in blind ditch draining, tarring and cementing, but aids in eliminating a large and somewhat useless cellar.

With no greater foundation nor roof area, this plan will wonderfully increase the comfort and presence of the house and give most space for the money.

The cellar may be made exceptionally light by having floor and side walls of white marbleized cement and windows set from ceiling to two feet below grade, protected by brick and sand drained areas. The list must include double windows, rodent and tramp barring non-corroding screens and iron grilles, cellar floor drained to a man-hole, concave non-dust collecting corners cemented to ceiling line, plastered ceiling covered with metal, and heating pipes wrapped in asbestos. One corner will accommodate the coal bunkers and a pit-set boiler for hot water heating, protected overhead with an extra sheet of metal or asbestos.

Beneath the cellar proper, suitably ventilated and blind drained, excavate a sub-cellar or favissa ten feet square with six foot stud and reached through a rail-guarded trap door inset in the cement floor. It will have a uniform temperature at all seasons. We have planned for an arched vault in chimney foundation concealed behind wooden sheathing as a receptacle for a safe with liquid explosive-proof seams.

Two windows on *opposite* sides of the housekeeping closet will cheat the sour microbe out of many a meal.

The kitchen entrance door is to be exteriorly lighted, also lock-controlled by the much maligned push button placed near an upstairs window to readily inspect after-dark callers. Range boiler will be firmly riveted to ceiling to save floor space, and floor and walls covered with a light shade of dirt and tear-proof linoleum in two weights. The balance of wall length should be inexpensively chair railed. Windows can be protected with crescent "eye-peep" shutters, and service rooms have patent non-dust-making cement floors and sanitary bases, as easily cleaned as tile.

Dining room, butler's pantry, kitchen mechanics, laundry and servants' lavatory are all planned to go on the lower floor level, which is reached by two entrances, one on the south, and a service entrance on the north.

The dining room, exceptionally lighted and extra well blanketed in winter by double windows hinged from the top, each wicket ventilated, can go under the west wing porch, the ceiling necessarily low. An excellent size for this room would be 12 x 18. The small wall space, wainscoted to frieze line with chestnut uprights, is capped with plate rack, and the ceiling crossed with *thin* wooden

strips. Preparation before laying the double floor to combat ground air and moisture must include *thorough draining*, cementing, tarring and air spacing. The chimney breast, built in line with west porch-room fireplace, can be faced with burnished copper. Inset in over-mantel a cleverly executed burnt wood tracing. The somewhat radical plan of this road-level-floor is made possible by the lay of the land which slopes sharply to the west as well as the south. The entire first story of thirty by forty feet is to be treated as one large gala room spaced to include stairs and chimney, alcoved to allow a stop-draught entrance vestibule from the porte cochère end, and ample room for library and reception corners. Good planning will make the three steps to a landing five feet wide, whose side can be protected by a firmly fastened standing lion of cement used as a balustrade and fronted by a settle, the end of the platform resting against, *not in* the chimney. Stairs trail upward back of the chimney to a mid-height landing, sunned by a golden-hued, opalescent, leaded glass window facing due north, hand rail of three-inch cotton rope covered with red velvet, not as hygienic as metal but in appearance less commercial, and fastened by brass sockets against the side wall. For the service portion of the house use the half-back-stair, and reach this landing behind the chimney, it can form part of a servants' porch and roof their summer dining room; here will be an opening to deliver ice to the ice box, and in the house wall an alcove for milk bottles. This porch abuts against the rear and is roofed at the same gradient as the main house, which is carried down to cover the "outshot" projection. The chimney ten feet wide built of Harvard brick, with six-foot fire opening, will have over the inset stone shelf, seven feet from the floor, an iron grille-fronted-flambeau-fireplace where on festal occasions pitch pine knots flare, sputter, and fitfully brighten the entire room, metal rings pendant from a trolley iron that supports its front, a crane hung with trammels set in the brick work, and andirons and fire irons six feet high. An arched forward back, a narrow flue opening of six feet, a smoke shelf, and a flue lined with round tile tightly cemented at each collar, are forms of construction that effectually checkmate a smoking chimney and forever bar an ugly help-draw-cowl swivel-chimney-pot. The fireplace may have an iron reredos embossed with coat of arms, and a wide deep hearth of cement, and the six foot log burner can be changed to a grotto of ferns in summer, centred with a rose-lipped shell from the Orient.

Our big 30 x 40 gala room will surely be wainscoted seven feet high with chestnut boarding set upright, capped with plate rack, and stained by acid to that shade seen in some storm tossed, sand and sun bleached bit of wreckage, and the twelve-foot ceiling inexpensively divided lengthwise by three heavy made-up beams cross-sectioned twice. Two plate glass mirrors five feet wide carried through base-

board to window cap, cloth draped at sides and top, will give mirage rooms that greatly extend the vista.

Electroliers, built from old swords and bayonets, we will suspend by rusty chains and on side walls set sconces of bulb-tipped elk horns.

In the grilled corner forming the library set back the shelf supports three inches from the front, conceal by three-inch dummy books firmly fastened in place, and nail a dust flap across the edge of each shelf. Ivory tinted plaster bas-reliefs decorate the frieze of this corner.

A folding iron gate concealed in a wall cupboard pocket would bar the night prowler by closing in both staircases *at the top* on the second floor.

Second story.—The lion's share of this should be given up to the owners, the main room, 15 x 30, facing all points of the compass, a bay giving the north outlook.

The boudoir end, planned as an upstairs sitting or morning room, should have double connection with the canvas floored space over the east porch wing, one leading to a simple *sleeping jog* in the open, which could be made a near-tree room if a large tree edges the balcony rail by training its branches across the front, the other to a sun room, semi-conservatory, and aviary, with ample space to swing a mattress hammock. Centre the glass partition between sleeping jog and sun room with a pulley-hung pane of plate glass about four by six feet, all sash fitted for removal in summer.

Electric fixtures for this room are best of glass. Entrance doors must have sloped sills and triple rabbeted joints.

The bedroom end, grilled and portière, should connect with a bathroom which also opens into the hall. The outside member of door trim, matching the picture molding, can be mitred into it, forming a panel over each of the three doorways, to be decorated with pictorial tapestry of nymph, purling brook, and primeval forest. Ceiling and corners may be coved. The master's weapon of defense, represented by a seven shooter, could be safely concealed in a leather pocket nailed on the back of a picture hung high on the wall.

In the main room include a bay window seat lined with freshly cut cedar, a davenport with bookshelf at one end, and a tiny fireplace built up from rock foundation or inexpensively and safely carried on trolley irons placed on second story floor beams, saving valuable space in the living room.

The over-mantel in this suite can be a throated hood affair, seemingly made by bulging out the side wall, but really produced by a cement covered metal frame firmly riveted in chimney breast, projecting at the centre to eighteen inches, and tapering at sides and ceiling height into a plastered wall the full extent of the chimney front. A small jewel safe can be securely bolted and cemented

between studs and placed behind the chiffonier, and two mirror doors so hung as to be used for dress-fitting mirrors when open. The bathroom of this suite, furred down to seven-foot stud, if tiled to ceiling will avoid the use of capping which in time generally works loose. A porcelain-lined tub *six* feet long synonyms comfort, and if set close to tiled floor and side-walls will eliminate those aggravating dust-gripping levels and corners. Metal plumbing fixtures covered with porcelain shells and the exposed metal, where there is not too much wear, gold-plated, is not expensive and wonderfully effective, but the white and gold of such a bathroom might prove an envy generator of the rankest kind. Fit the shower with an odorless canvas curtain. Toilet, of low-down type, and basin (with pipe connection from side-walls) are solid porcelain, with safety shut-off in supply pipe close to fixtures. Complete the room with a wall-inset mirrored medicine closet, mirror doors, a window of leaded glass set five feet from the floor, sill of marble to match the tiling, glass and nickel fittings, and a pair of white enameled scales. The space over bathroom ceiling would make secret cupboards to be opened from the bedroom behind a wooden coving.

The guest room must have a *hygienic* canvas-curtained *shower-jog* with swivel faucets, economically piped through the wall of an adjoining bathroom.

Two small bedrooms and another sleeping porch can be crowded in. Closets should have dress rods, racks and shoe shelves. The sleeping porch as planned would be a *hall extension in the open*, with double Victorian doors which should be triple rabbeted and meet in the centre, with water-proof knuckle-and-elbow-joint. Such an arrangement banishes sleepless August nights, and bedroom blind doors bring added comfort.

An electric bulb set in ventilating flue at ceiling line in the hall lights a dark corner and creates an up-chimney current, aiding to make a free-from-odor house.

Under the eaves rivet a fire and burglar gong, wire-connected with the master's suite.

The third story can be windowed and rough-studded to add at some future time a guest room fronted in the gables with wide bays which pay fifty per cent. dividend on their cost. In the rear *plaster-finish* a servant's room large enough for two single beds, although with a liberal use of the electrical handmaiden this house may not get beyond the one servant need. Complete the floor with servants' bathroom. The toggery and trunk room can be roughly boarded in and padlocked.

The use of aluminum in escutcheon and butt will prevent injury to woodwork in cleaning. All bedrooms have burglar-proof mortise bolts, set above the reach of childish hands.

Electric light installation may include a switch to light outside entrances from within, the interior from without and the entire house from the master's suite, light being a safe and effective defense, also base-plugs for bed-head and stand lights, as well as vacuum cleaning connection.

A fire pipe line, if placed from cellar to roof and elbowed into a perforated galvanized iron pipe extending the length of the ridge to flood the roof at a moment's notice, might prevent fire loss.

Hose and pipe can be kept on each floor, in dust-proof glass-fronted cupboards inset between studding, concealed or not, as preferred. Plumbing shut-offs should be in one place and legibly labeled.

A non-rusting metal clothes chute from attic to cellar will save steps and possibly marred walls.

THE WELL APPOINTED HOUSE OF GREATER COST.

Many of the features of the House-for-the-Man-of-Moderate-Means will naturally be incorporated in the more elaborate country villa, hence are not described.

Grounds might schedule about five acres of ridge land with a commanding view and include a bit of rich meadow, edged by a clear-running, pebbly-bottomed brook. Several genuine forest monarchs interspersed with smaller growth, a bearing orchard, and an abundance of small fruit would be important adjuncts, and land must be in a desirable neighborhood, preferably within two miles of the station, and approached by good roads.

The main house should not be less than 30 x 60 in area and somewhat irregular in form, with wing-porches at each end, one connecting with an esplanade and the other joining a porte cochère, the style New American, with a touch of the Colonial in high pillared front.

Lay up basement walls with rough or smooth stone in entasis effect, thoroughly window and fit for double windows in winter. Make exterior and main division walls of hollow brick, tarred and air-spaced within, and coated with smooth cement, and roof of tile, in harmonious shade, with superior water-proof under-covering. Lift dormer windows obtain in roof with ample window area in gables and side-walls, and lower panes of plate glass in small squares, leaded lights on stair landing, in bathrooms and in some transoms. Timber substantially with G. P. girders, as well as an occasional I-beam, and make house vermin and rat-proof.

Basement should contain laundry with ventilated soiled clothes closet, drying machine, furnace room with big sectional boiler (unless it is decided to have heating plant in an outbuilding), cement coal-bunkers (filled without injuring the lawn), a water heater, and dark preserve, also windowed housekeeping closets. Iron posts should be swathed with galvanized wire covered with cement and support substantial iron cement protected girders, and the ceiling

asbestos covered. The space under awninged platform, which will cross the entire front of the dwelling as well as the west porch, could be utilized for an 83-foot bowling alley, with loop-the-loop return groove (if of glass it would neither sag nor warp). It must be well windowed at front and ends, connect with lavatory and shower, and have an exterior entrance. The billiard room placed in the basement to insure an immovable spirit-level foundation can be floored with scagliola, have fireplace sided with stone settles, large windows, and plastered walls of sand finish, appropriately calcimined.

The *west* porch-room, duplicating the *east* in size, may be arranged for enclosing either with wire screen or glass as season of the year dictates, floor of red cement marked off in 24-inch squares, and fireplace and chimney-breast of lichen-covered cobble stones, topped above roof with brick. At one side of the fireplace build a porch closet for wraps, books and toys. Rooms may be wainscoted to a height of seven feet with wall area above plate rack burlapped, painted and stenciled, the ceiling of cement on wire lath stained Pompeiian red, and crossed by two large ebonized beams. French casements connect with the pergola.

The *porte cochère*, which for convenience will connect with the *east* wing, might have its outer end sheltered by a windowed, settled and fireplaced coachman's nook or *ombra* in whose exterior wall is a Pompeiian drinking fountain. Rust-proof metal lanterns set high above carriage top flank the sides of the stop-draught entrance. Arriving guests peered down upon by repellent, rabid-mouthed, grotesquely molded gargoyles may on occasion be warmly welcomed by glowing, sputtering logs.

The *east* porch-room, strictly an entrance, twelve by eighteen feet, reached by three steps cut from a single block of granite, a true century wearer, is fitted with sash-hung windows, to be completely glassed in and heated in inclement weather. The centre walk to the front door may be built five feet wide, of red quarry tile, laid slightly convex, with half-inch white joints and the space on each side filled with plants set in mossy banks sloping upward to the top of the two-foot stone foundation. Drooping ferns, orchids, Southern mosses and Southern birds would give both color and life to such an entrance porch. Centreing the flare of the over-doorway can be inset shield or head and in recognition of the custom of the centuries a motto traced in the door sill.

The lintel over a *single* seven by nine foot door whose wide open swing proclaims hospitality can be finished at the ends with carved griffin heads.

Siding the entrance, with halberd close gripped, stands as warder a full suit of armor whose former owner possibly crossed swords with the Saracen.

We are planning the Villa of Import as a two-level house. Within, three steps to the left will lead upward to a loggia reception room which connects with the staircase hall, while on the right of the entrance hall with its sixteen-foot cambered-beamed ceiling decorated in Arabesque style, and at the same lower level, is the dining room, also with a sixteen-foot ceiling, but domed, and a true ellipse, the lost corners utilized as closets in adjoining hall and room. A small electric, fern-edged fountain may centre a white tiled alcove, large enough for a few potted plants, to brighten this somewhat unusual room. The outer wall of the house above the glass roofed alcove may be filled from arch to frieze height with large stained glass window in sylvan design.

Fluted pilasters with Ionic caps edge window and door openings, and support pediments, the former with under-panel. All door head panels are decorated and a line of Colonial dentals circles the room. An ingle centred by a fireplace flanked by red leather-covered settles extends along the inside wall, its low seven-foot ceiling allowing a seven-foot-stud mezzanine den overhead, reached by a door from the minstrels' balcony which overlooks the entrance hall and is lighted by low leaded casements in an oriel window swinging open into the dining room near ceiling line. The dining room floor is of kiln-dried eight-inch oak planks, inset with ebonized keys four feet apart. Its sixteen-foot height is a pronounced feature, the door opening fourteen feet high, but a copper-set, stained-glass transom reduces the space to nine feet, the same height as the front door. Portières are impressively hung the entire height of fourteen feet. A leaded, clear plate-glass cabinet can be built in the chimney breast, high above the mantel shelf.

One of the two doors leading to butler's pantry is fitted with rim protected dish shelves and pivoted, swinging to either dining room or pantry, while the other doorway is grilled down to a five-foot nine-inch height, screening upper pantry shelves, and has a closely fitting sliding door controlled by foot pressure. Care must be taken that neither door is in line with that opening from butler's pantry to kitchen.

The balance of the floor area we will divide into library, living room, studio-den, reception room and palm-decorated corridor which, if built with groined ceiling, entered beneath spandrelled arches, and its walls hung with family portraits, may aspire to the dignity of an ancestral hall.

The library, sided with a semi-polygon bay, has one end wall built inward a foot to inset deep Georgian windows centred with book mark design, this plan allowing of broad cushioned settle with convenient ambry at either side. A wall fountain might fill a panel in the lower half of one Georgian window, protected in the outer house wall by a bas-relief in Caen stone. Bookcases should have not

only leather dust guards, but ventilating metal roll curtains, securely locking on occasion.

The living room with its barreled or segmented ceiling has appropriate mural paintings in half moons in the two end walls and a ten-foot square sheet of plate glass overlooks a semi-wild mid-summer tiny garden, a tangle of color springing up from greensward, glass imprisoned. Walls are Caen stone lined off in blocks.

The little den reception room may connect with boudoir suite by a narrow, steep, hidden stairway reached through a sliding panel in a closet.

Trim and floors of all rooms on this story, except one with intarsiatura trim and the white enamel kitchen, are oak, as are also all main staircases and halls.

The main fumed oak staircase should be close string with thick, wide balustrade and panels of two-inch stuff in a sawed-out design, tool-edged. Stair rails, out of respect for childhood and age, as well as to protect the frequent recklessness of maturity, must be three-foot six-inches high.

A minstrels' balcony mid-way on the stair can be supported by brackets ending in carved panther heads. A hall lavatory is practically stolen from the cellar, and reached by half-a-dozen steps leading downward.

The newel text, worth careful thought, may be preached in wood, glass, and bronze. The wood, a squared newel with metal beaded corner insets, extends to trimmer height, and is braced against the ceiling by gorgon heads; the glass, an eight-inch crystal globe capping a low brass newel, ends a metal balustrade, while the bronze, a Richard Coeur de Lion, flaunts aloft a banner of light, still in a righteous cause.

A seven-foot high electrically equipped cathedral lantern hangs from the ceiling and a marble fernery half circles the space under arched stair soffit.

On the second story a solid balustrade of lath and plaster makes a fine background for a strip of rare tapestry or a plaster frieze.

Banish the funnel stairway by placing stairs from second to third story, shut in by portières, at one side leaving a clear space for a high cambered beamed ceiling over the main staircase.

Back stairs extend from basement to attic, with risers from first to second story hall of translucent wire glass, which aids materially in cellar lighting. Plastered stair soffits are firmly held by cross wooden moldings, and the upper half of the enclosed stair is of glass. Upper stairs may be built open string, with Colonial curlicues each side of step, balusters set alternately in twos and threes and tied with short pieces of wood two inches from top and bottom, the rail moulded to form a firm hand support.

One ever-present dust gatherer, the corner where tread and riser meet, on the upper back stair is banished by closely filling each corner with a three-sided bit of burnished brass. A mid-stair platform, lack of winders, and ample head room yield good accident insurance during the life of a house.

That third story hall where pulpit-front built on long collar beams peers down at the stair climber (the scheme giving an unusually high hall ceiling) can be lighted by three crowns hung on a chain, each circle a trifle larger than the one above, daytime lighting being accomplished by a wide roof lift dormer.

Among kitchen appointments (the range end being galleyed) include a glass-set hood over a combination gas, electric and coal range, with ash pit and brass pipe connections, an auxiliary gas heater set under the easy to heat copper boiler, a garbage incinerator, grease trap, soap-stone table tops, and a safety valve on the boiler. Kitchen walls are best if white tiled to a height of at least five feet, all trim painted enamel white, and the floor of non-dust-crumbling cement bisected with strips of comfort-yielding cork matting. This room as well as all servants' quarters should have a sanitary base, vermin-balking walls and corners, and floors and walls deadened. Bedrooms over the kitchen as well as the range chimney are better if deadened and air-spaced.

The sink of seamless porcelain and a set wash basin which *solves* an aggravating domestic problem will be six inches higher than usual in both kitchen and butler's pantry, and the radiator of the latter made in the form of a plate warmer. The range hood will be aided in its efforts to send odors skyward by a small electric fan placed in the chimney flue. A water pipe set close beside the range conveniently fills pots and kettles, and a metal scrub cloth box can be fastened against the chimney breast connecting with a brick, air-lifting ventilating chamber, which adjoins the always heated range flue.

An enameled steel cabinet, a metal frame over the table, cooking utensils of non-rusting and *non-flaking* aluminum and a fireless cooker set at waist height should be among the appointments. A funnel-ceilinged corridor proves a court of last resort for all kitchen odors. Trim in the service portion of the house should be plain and non-dust holding, and beaded wainscot *if* used of convex mold.

The basement laundry will have large windows, wooden floors, and make an additional sitting hall for servants, its four porcelain tubs equipped with non-projecting faucets, set back to back in the centre of this well-lighted room, and when not in use wooden covered, forming a table.

On the second story plan the *master's suite* the full length of the house, forty feet, and eighteen feet wide, the fourth compass point compassed by a broad bay. A room of four exclama-

tion points, size, air, sunshine, view, rivaling in comfort a city apartment, but far larger, divorced from air shaft and alley, and in a realm of pure air and health yielding sunshine. Two-thirds of the forty feet would make a morning boudoir or upstairs sitting room; the bedroom and bathroom end to be grilled and portière. This bedroom may have a fireplace in an angle, with side settles, and be connected with a glass-enclosed room built over three-quarters of the roof of the porch-room, making a true sun-room featured with flowering plants. The outdoor sleeping gallery floored with canvas not so lavishly painted as to crack, covers the remainder of the porch-room roof and connects with a roofed gym. over the porte cochère, to be decorated with rough bark covered boxes of plants atop the rail, in winter changed to evergreens. It can be used as a corridor to reach the small rest-room with fireplace, built over the coachman's nook, in one of our houses termed a luxury until use proved it a necessity. Over the gym. and rest-room, under the roof, a low, well-lighted and ventilated pistol gallery is bulwarked by the big stone porte cochère chimney breast.

The lower part of a closet in the master's suite conceals an electrically-protected silver safe. The bathroom of this suite, featured with shower jog formed by two closets, one opening to the bathroom, a fireplace, tub six feet long, a bidet and a shut-off valve toilet, has the ceiling preferably furred down to seven feet, side-walls tiled to ceiling, floors tiled and sill of marble. Mirrored doors, medicine closets, a high-set leaded light window and hall connection are most desirable.

A guest room with bath closet, one general bathroom and three additional bedrooms, one of which may acceptably join a sleeping porch, should be on this floor. A bedroom with double doors connects with an adjoining bedroom and another has a shaving jog arranged for ample light night or day. A *built-out* sun bathroom supported by heavy brackets, facing south and west, and a skylight flooding the little alcove with health-giving rays may come under the head of extravagance but comfort will heartily endorse its building. One bathtub can be inset eighteen inches and rail protected, the space below taken from a closet. Another may be planned with a square tub 4' x 4' and fourteen inches deep for children. Bathroom appointments might schedule also a shampoo fixture, sitz-bath, electric bath cabinets and in one a cane-seated chair to disguise the noiseless toilet. A Pompeiian, plant decorated bathroom will be lighted by an electrically fitted glass dome. Outflow pipes should be twice the size of inflow and plumbing pipes kept from exterior walls and when crossing ceilings (crossings to be mainly in the cellar) asbestos-covered, decreasing the drip from condensation. An air chamber cushions the noisy back kick of water pipes and back air pipes near hot water pipes give uptake draft.

Water and heating pipes should be carried to porch rooms and sleeping porches and when not used capped, and sill cocks, including one non-freezing, installed at important exterior points.

Careful planning will evolve a secret room 6' x 6' x 6'.

In a Moorish room the bed alcove may be arched from floor to ceiling with a Moorish arch fifteen feet wide at the centre and the same design carried out in the brick arch of a fireplace. Transoms may be regulated by inset wall fixtures instead of the usual ugly adjuster, some panels fronting closets fitted with invisible locks and hinges and where wainscots are not used the base trim of main rooms made eighteen inches high.

The second-story hall will have a fireplace and in a far away corner on this floor it may be possible to work in a convenient, windowed trunk and storage room and a housemaid's sink closet. A dark hall and stair landing may be lighted by a glass transom over a bedroom door, and a bedroom with but one outside wall gains ventilation and light from a transom or translucent glass window opening into a *hall*.

The silver sheen of the bird's-eye maple room in both trim and furniture can be kept by selecting a northern exposure, realizing that sun-baked bird's-eye maple takes on a dingy yellow meerschaum shade.

A curved top bed-head alcove with twin beds placed on a round-cornered dais would permit at either side closets for madame and master. Over a brass rod extending outward from the wall tapestry may be draped.

The theft of a bedroom closet from a larger room without causing an ugly jog to ceiling height in either can be easily accomplished by building a false front cabinet six feet high, the interior to be lathed and plastered and entered from the smaller room.

Bedrooms not connected with bathrooms will have dressing rooms, allowing open window sleeping of the chilliest but healthiest kind.

The third story shall have one large room with a broad bay, three servants' bedrooms, and a bathroom sided with sheets of white glass. On this floor there could be a cement-walled, wooden-floored, children's play room, deadened under-floor, and walls decorated with nursery tales, vaulted ceiling painted to represent a winter's sky, and the explanatory astronomical key framed in a door panel. Windows should be high and wide and protected by low grilles. A tower billiard room ceiled to the peak might be decorated with fleecy clouds and darting swallows. In an attic studio on the north, windows should be guarded by low metal grilles, and extend from one foot above the floor to ceiling height. From the peak could be suspended a trio of geese headed due north.

The clerestory, *our room-in-the-air*, has little in common with the hot, barely-enough-space-to-turn-in, cupola of the village squire,

often half-filled with dried apples, musty newspapers, and discarded garments. This is a plate glass-walled view room with overhanging sun and rain sheltering roof, cooled by weather-proof ventilators placed at its highest point, aided by electric fans, the fireplace, out of respect to Dame Architecture, fitted with a gas log, and fronted by a broad davenport.

One of the eight or ten fireplaces in the house shall have a plate glass, brass rimmed screen extending the view of the cheerful blaze four feet up chimney, and a fender topped with a narrow leather seat fronting the hearth. In one room the over-mantel can be supported by caryatides, in another the hood covered with leather tooled in heraldic design in shimmering silver, and in a third the shelf supported by ormolu brackets with onyx facing.

A picture window set not over four feet from the floor and centring a chimney breast (which is to have two flues and a split chimney at ridge line) causes, at times, a seven-hued winter sunset to vie in coloring with a seven-hued driftwood fire.

As the raised hearth increases fire risk, we will omit it. A Tiffany three-faced feudal fireplace, with blazing fagots flashing three ways, could be built in "that brain room" where the roof slopes to plate line.

The throne of the fire king must centre his group of devotees, rather than elbow too closely door and window. In a draughty hall arrange for iron baffles to semi-shackle that ninety per cent. up-chimney waste of heat.

A far-away room has a mantel face of cement sprinkled with silver, gold and bronze powders, and thimbles are inset in chimney breast in several attic rooms and upper hall.

Mirrors are much in evidence, some triplicate for dress-fitting and with special overhead lights. In a room facing north, wall mirrors might be so juggled as to give a strong reflected light, and narrow mirrors between door and window openings crossed by curved muntins, but none so set over a mantel as to reflect the ugly back of a clock.

Decoration, whether rococo, the best in Nouveau art, burlap, paint, or paper, covers a wide field. In the dining room, Colonial, pictorial designs of country life can be used, in one room restless red and possibly in the library restful green, but polychrome effects will be absolutely barred, as well as the stain wrongly placed.

Burlap painted, then roughly cloth-rubbed before drying, will give an hygienic surface and also a suggestion of the Japanese silk fibre effect, minus its microbe-catching ends.

As a wood preservative, air is often as efficacious as paint and certainly does not promulgate dry rot, at times the result of painting green wood. Oxygen, whether permeating lungs of man or fibres of matter, prolongs life.

Closet walls should be painted and then coated with spar varnish.

In place of the barn-like, all-wooden sliding door, we can use leaded glass in the upper half, the pockets ceiled against dust and noise. In the basement the outer door should be four feet wide, and glazed to aid in making the term "basement" a misnomer.

Recesses there can be in goodly measure, whether in the form of a usable ingle spaced for unscorched comfort, a billiard alcove large enough to squelch profanity, a solarium—a veritable Sahara in July and August but a welcome retreat in March and November—a simple jog under a staircase or 'gainst a chimney, arranged for a built-in chest of drawers with rollers and guide strips, a nest of pigeon holes, or a pokehole closet for magazines and papers, remembering that closets and bays make good safety valves for ugly square box rooms.

Parquetry floors of seven-eighths stuff instead of thin veneer prevent warping but should not be narrowed by strongly contrasting borders.

The passing of the door saddle means less dust, disturbance of carpets and space shortening but generally at floor line a wider opening.

A developing closet will have porcelain sink, ventilating fan, and colored glass inset in door.

The list of hardware requirements should include espagnolette bolts, double-action butts, drop escutcheons, cut glass knobs, old-fashioned latches, bead-edged, brass finger plates, window lifts and check valves. A gilded, decorated reception alcove could have gold-plated hardware at moderate expense.

All casements and glass doors should have rubber plugs set in the door frames, and window stops may have adjustable socket screws to match hardware.

Blinds and gutters are essentials requiring our best thought.

Copper flashing and calking with oakum and white lead at the right time, and in the right place, save much trouble farther on, and effectually circumscribe King Moisture's realm.

Seaweed, felt, and heavy paper will be necessary as floor and wall linings and for sound deadening.

In plastering (made non-sound carrying) where angle irons are not used corners are rounded in the plaster. All walls are plastered to the floor.

Every ceiling in the house will be insured by either canvas or burlap firmly fastened against it and decorated as desired, but neither this nor wall covering of any kind should be used until *months* of drying out have brought the walls to a state of absolute dryness. The correct proportion of plaster of paris, proper mixing, application, and non-freezing of plaster prevent pockmarked, easily rubbed walls.

Box-windows sliding upward into the house wall give wider vision in a low-studded room. In the nursery, windows may be set high and partially metal grilled, reaching to ceiling height where there is more sunshine to the square foot, and in laundry and servants' hall, where the ground and step-down area admit, should span the entire space from floor to ceiling. In front of cellar windows ribbed glass reflectors can be suspended, greatly increasing the light. A western picture window realistically gilt framed and wire hung would shame the artist's most impressive sunsets, while a more pretentious picture window could be pivoted. Corner windows give wider views and less draughty ventilation. Windows should be hung with metal chains over brass pulleys. Non-corroding semi-invisible screens with insect escape cover the entire window and, as a farther disguise, have their hinged frames painted to match the exterior trim. Elizabethan grouped windows would certainly give tone to the dining room. Overhead the highest second story sleepers we will place ventilating hood windows in the gable peaks, hinged from the top and swinging outward, using as storm-warders inconspicuous baffles back of the windows. Step-up platforms will lower high attic dormers.

All windows shall be fitted with non-rusting metal weather-strips and in some inset glass hinged ventilators.

The sleepless arch as seen in the round-headed Roman, the peaked Tudor, and the ogived Gothic, we will use in hall, billiard room, stair and fireplace opening, and on a side porch as an effective stone flying arch. In the same side porch the windows can be made to drop downward into the rail, being protected by a weather cap, but the old-fashioned stored in the basement or attic method is generally the most satisfactory.

The electrical field will include an arrangement to close one bathroom door when the other opens, a cut-glass cabinet electrically lighted, electric range, washer and mangle in kitchen and laundry, and a device to keep that block of ice frozen.

In winter the electric fan will force radiators to do double work and at all seasons fan dishes dry, effectually supplanting the too often insanitary dish towel. The dining room will have a floor bell and in a dry basement tool room we can plan for an electric forge and lathe. Opening and closing a hall closet door will automatically turn on or off an electric light, a check valve preventing waste. Every closet must have electric light, either cord or wall hung.

Radiators ample in capacity may be concealed with settle, silk fringe, stair riser, metal grille, or other device, remembering that when glass exceeds one-eighth of the wall area greater heating capacity is required.

In the awninged, cement-floored veranda fronting the house and roofing the proposed bowling alley, the rail can be broken by two

projecting settles which, if placed equidistant from ends, will vary the stiff, straight balustrade line and give unobstructed view; galvanized iron wire mesh forming the seat under water-proofed canvas cushions.

A side porch will be shielded but not shadowed from the north-west winter winds by a framed sheet of plate glass fastened firmly at settle top and porch eave, and the lower light of the porch window screened with leaded glass.

Cellar bulkhead doors fitted with wire-glass set in metal covered frames, buttresses at their sides raised three feet above grade, will balk that burning-over fire that sometimes reaches a bulkhead door; built of cement and hollowed for plants they would brighten the servants' porch end of the house.

The swimming pool, an outdoor affair, glass enclosed in winter, serves the double purpose of reflecting the villa "from turret to foundation stone," as well as flowering shrub and towering elm, and gives exhilarating enjoyment on warm sultry days, the incoming water filtered for germ protection. Electric lights circle its edge. The expense of building may be somewhat curtailed as the soil can be used to grade the pool-centred esplanade connecting by an arched gate with a patio, which will greatly aid in giving a true infront and outfront.

A fireproof filing-cabinet-room, 10'x10'x10' (which may prove a grand money saver) can be built about fifty feet from the house, in which to store maps, deeds, valuable papers, films, plates, etc. Constructed of cement, lined with boiler iron, and electrically connected with the owner's room by wire buried in a cement-grouted ditch, it will prove a first class time and money saver, located on trifle lower ground than the house site, and the roof, capped with a belvedere of cement, iron and tile, it would make a capital tea and breakfast room as well as a siesta nook, the connecting walk to the east porch-room shaded by a vine-embowered and plant centred pergola which, with belvedere, would completely disguise the somewhat commercial appearance of the filing-room, give presence far in excess of the additional expense, and improve infront and outfront.

If a tree grows close to the servants' porch encircle it with the platform that leads to the clothes yard, and in the largest limb crotch build a tree eyrie reached by railed and platformed steps. From its topmost branches a bird trolley can travel to the box-greenery window in the sewing-room, and occasionally the more courageous songsters may venture among the house plants.

In the exterior wall, as in the old Saxon days, may be attempted a copper or terra cotta panel designed along graffito lines.

The pergola, which can be made an extravagant adjunct or an inexpensive adornment, will help greatly in dragging down the height of the house and connect it with the extension Colonial flower-

garden which joins the west terrace. "That garden is a lovesome spot, God wot, rose plot, fringed pool, ferned grot."

Whitewash in colors will enable us to line out the entire first and second floors on the greensward before lifting a shovelful of earth, and we shall be greatly aided in building by archetypes of wood or cardboard, one-eighth scale, of each house, which can be dissected and changed before nailing up the first batten board. Grounds can be laid out in miniature and photographs and planting arranged and rearranged in the model. After house is enclosed we can temporarily partition it in a day with mason's grounds for inspection and change.

Conveniences ranging from a key-cabinet to a thermostat include a coil of water piping in the ice-box, niches at each side of the front door, in hall wall, over entrance door, and in gala room, a telephone jog large enough to hold a guest book, and a utility closet.

Careful planning to fit the house to the site will make the living room face south and west, dining room east, library north, and kitchen north and east, remembering also that poor landscaping and an unnecessary net work of drives and paths may blemish a fine conception.

While our two type houses embody a wide range of features, the get-it-in-at-all-hazards spirit, which so persistently dogs the footsteps of the obsessed amateur builder, must be strenuously fought. It is good planning to have three *stop-off stations* in that journey from batten board to latch key, giving at each two or three days of thought, *before* studding, *before* plastering, *before* trimming. Alterations then made would often prevent those ugly afterthought work-outs which raspingly stand by one for life.

In house building we often lose sight of such expensive essentials as foundation, roof, chimney, window, and door, the matter-of-course things, but are apt to most enjoy and more clearly remember and note for reference the comparatively inexpensive things: that marble door sill, a motto, a carved newel, a segmented ceiling, a swinging leaded casement, a picture window, the lines of an unusually high, undooed opening, a white and gold combination in a bathroom, semi-conservatory-entrance porch, white tiling against green plants, plate glass windows, sleeping jog, settled ingle-nook, niche, even such an insignificant matter as alternating three balusters on one step and two on the next. It is easy to name a mightily interesting list of things which, judged by the strict rule of essentials, are unnecessary, yet well worth the doing and minister *hourly* to the enjoyment of owner and guest as long as the house is a house.

SIXTY SOMEWHAT UNUSUAL AND EFFECTIVE FEATURES THAT WE HAVE USED

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