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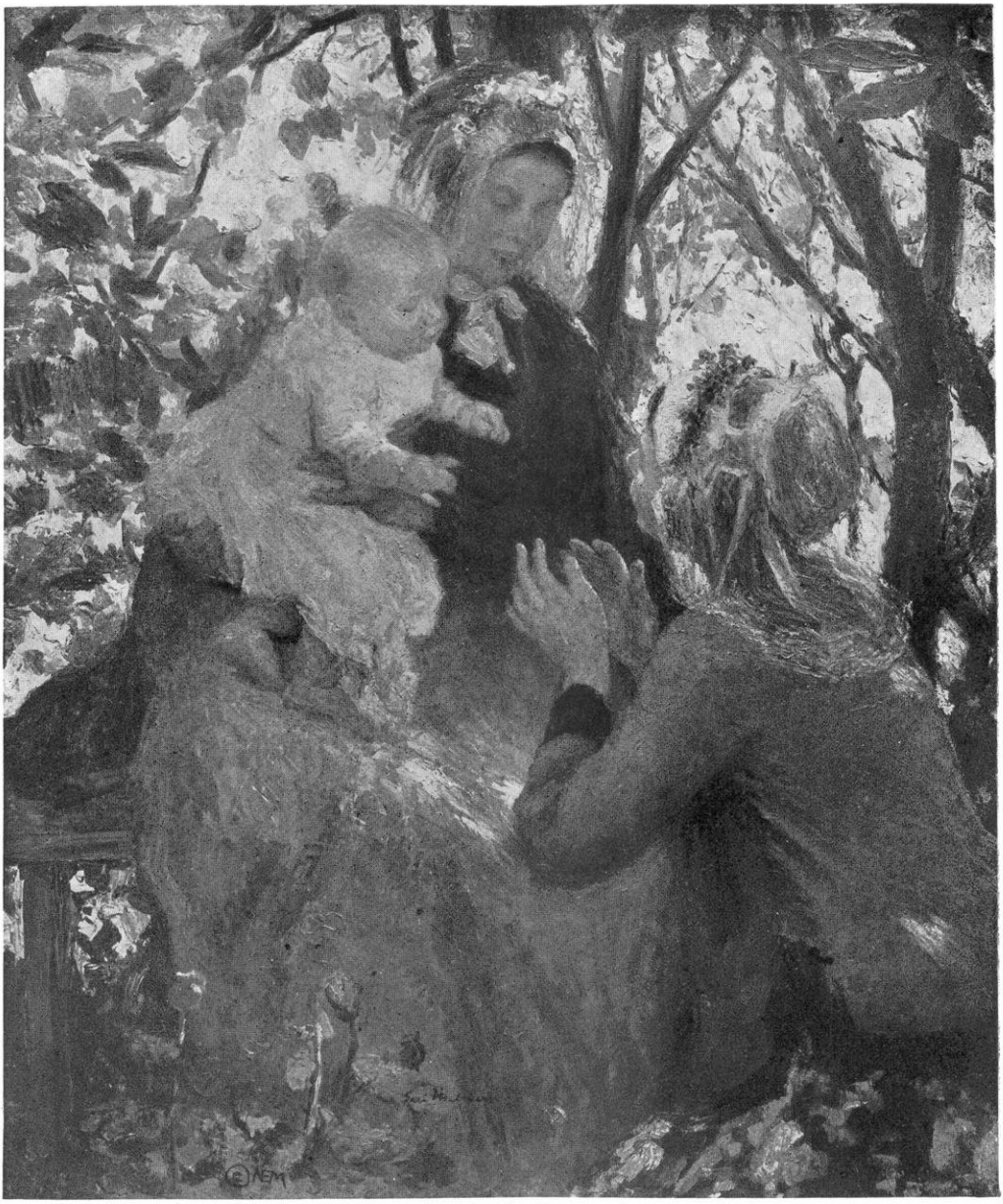

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"MADONNA": FROM A PAINTING BY GARI MELCHERS.

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THE CRAFTSMAN

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CONSERVATION: THE GREAT PRINCIPLE OF NATIONAL THRIFT: BY OVERTON W. PRICE, VICE-PRESIDENT OF THE NATIONAL CONSERVATION ASSOCIATION

ABOUT four years ago on a crisp February day, I was riding among the Virginia hills near Washington with a man whose name stands for public service, for public spirit, for self-sacrifice and for achievement. On that day, Mr. Pinchot told me of his conviction that a movement for practical forestry in the United States might be made the germ of a still greater movement for the preservation not only of the forest, but of all other great natural resources—the mine, the stream, and the land itself. It was my privilege to be the first man whom Mr. Pinchot told of this idea of his, which in its foresight and its fruition, was really more like an inspiration. It was during that ride that the name "conservation" was first spoken of in connection with this idea; and I remember very distinctly how we discussed the word, and feared that its unfamiliarity might reduce its effectiveness.

There followed the historic Conference of Governors at the White House in May nineteen hundred and eight, called by President Roosevelt, which for the first time put the urgent need for conservation squarely before the American people. Then came the work of the National Conservation Commission, appointed by President Roosevelt, of which Gifford Pinchot was chairman, and which made the first inventory of natural resources ever prepared by any nation; and which gathered as the fruits of its work, knowledge necessarily not always complete, but which in general furnishes an adequate basis for action.

All this time the conservation movement was gaining in strength, as the people came to see what it meant. Many State conservation commissions were appointed as well as commissions representing great industries, and the movement grew rapidly as its creator knew it would grow from the statement of a great principle to what it is today—a question generally accepted as yielding to no other in its relation to the public welfare; a question which has entered promi-

nently into public affairs and into what we call politics, because every public question is necessarily a political question, as well; but above and beyond all, a question on the right side of which have stood steadfastly men like Roosevelt, like Pinchot, like Glavis,—simply because they knew it to be the right side, come what might.

What is conservation? What is this great principle, so clear in its purpose, but which offers so many difficulties in its practical application, and which in a few years has aided or marred the careers of public men, has figured in both political platforms, and whose name has become a household word? Conservation, as Gifford Pinchot has put it, is the application of common sense to common problems for the common good. It is the embodiment of the principle of thrift. There is no fundamental difference between the careful housewife who saves what is left of a meal to be used at another, and the miner who takes the treasures from underground with as little waste as possible. Both are conservationists. There is no fundamental difference between the farmer who plows deep and often and by skilled crop rotation and the use of fertilizers puts back into the soil at least what he takes from it, and the lumberman who so harvests the ripe timber that those who follow him or even he himself may cut timber again upon the same land. Both are conservationists. Conservation means to the nation what common sense and business foresight mean to the individual. It means living within our means. Conservation means development, but it means development by use, not destruction by use. It means clear streams and a green, protecting mantle of forest over land which will grow only trees; it means thrifty farmers and fruitful farm lands, whose soil is not robbed of its fertility, but is steadily improved. In the last analysis, it means for man and nation not merely material uplift but moral uplift also.

THE most productive result of the conservation movement has not been merely its great achievement in a brief period in preserving from waste and from monopoly, resources essential to public welfare; it has yielded results of at least no less importance in the truly wonderful effect of the conservation idea upon the standard of American citizenship. For there is in the idea of conservation an appeal not merely to men's pockets, but an appeal to their patriotism; an appeal to them not merely as lumbermen, or miners, or farmers, or representatives of any other great industry dependent upon natural resources, and that means every industry, but a direct appeal to them as Americans—as men and as women having personal responsibilities not only to their families, but also to the nation

of which they are a part. Whatever doubts a man may have as to how a given resource under given conditions may be conserved instead of wasted, he must if he is a good citizen, subscribe to this great principle of thrift. Therein lies, in my judgment, the most powerful element of strength and of usefulness in the conservation movement. For after all, its great purpose, as Mr. Pinchot said to me four years ago, is not merely the conservation of material things for their own sake or for the sake of the direct personal or national benefits that may accrue thereby, but flowing from these good results, and greater than them all, is the fact that conservation means, as we look forward into the centuries, a steadily higher national efficiency; and that its reverse means no less inevitably, dependence and inefficiency for the nation as well as for individual citizens.

But, as Mr. Pinchot foresaw, the mere statement of a great truth does not get that truth into effect. When a man climbs to the top of a mountain, he generally finds obstacles in the road. If they are small, he can get around or over them. But if they are large, he must go through them or wrest them out of the way. There are great obstacles in the path of the conservation movement. One obstacle is ignorance of what conservation means, and of the practical methods for applying it. That calls for education on a national scale, for publicity, for facts, for the kind of work, for example, that the Forest Service has done in teaching the people that it pays them and it pays the nation for them to take care of their forests. Another great obstacle lies in inertia, in adherence to tradition, individualistic policy, in exaggerated views as to the extent of our natural resources, in incompetence. But the greatest obstacle of all lies in selfishness, in sordidness, in those predatory instincts characteristic of some men and groups of men, which lead them to seize and gorge and waste the property of the people just as the wolf slinks down upon the defenseless herd.

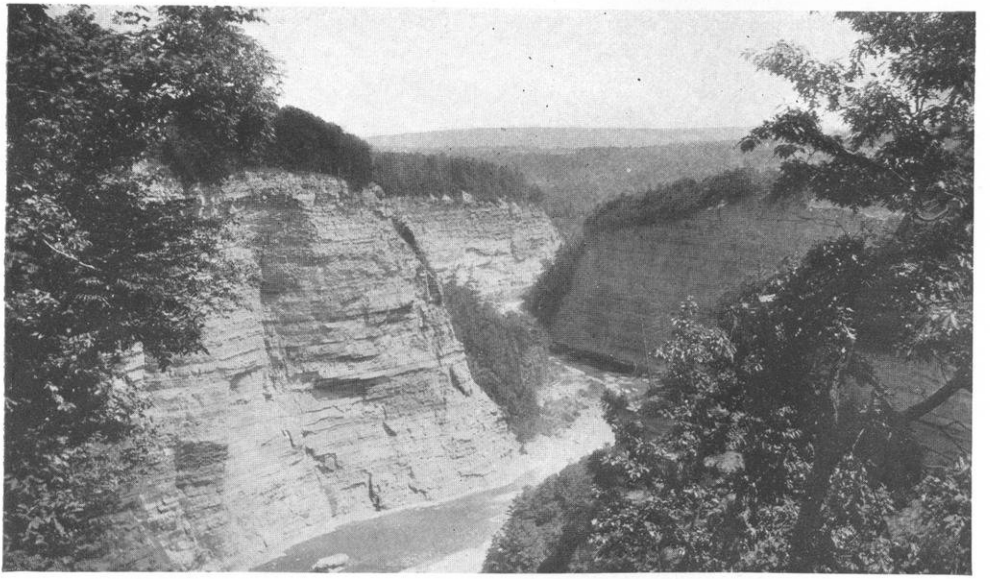
If a man is looking for strife, he will find it in the conservation movement. He will find on the one side the highly organized forces of selfishness; on the other side, are men who, like Gifford Pinchot, are trying to save the people's property in the people's interest. And around the amphitheatre in which this struggle is going on, stretched farther than any eye can reach, lies that multitude, ninety million strong, which is just awakening to a realization of its strength, and which we call the American people. But if we could see them, we would find their faces turned to the light, instead of toward the darkness. And we should find stirring within them a dawning realization that America belongs to them, that its forests and lands and waters and minerals were meant for many men to use and conserve, and not

for a few men to fatten upon and to destroy at the expense of all the rest, now to come. I feel, and my conviction is strong, that many of us will live to see the American people not merely *turning* toward conservation but *moving* toward it; and that the forces which block the path will have no more chance for existence than a bending grass blade in the path of an avalanche.

MANY people still have the habit of thinking that practical forestry, which is what forest conservation means, is a measure which the Government may well apply to the public lands in the public interest, but they fail to realize how closely it touches the welfare of the individual citizen. They hear of the great national forests, and of admirable results which they yield under conservative management; and they come to feel that whatever the lumbermen may do with their own holdings the application of practical forestry to the two hundred million acres of national forests will at least ensure an adequate future timber supply. But great as are the national forests, their total stand of timber is small compared with the total stand of timber in the United States. They are in the main, mere islands of forest in a treeless region, essential to the conservation of timber and water for local use, but insufficient as the source of a continued supply of wood for the whole nation. Three-fourths of all the forests in the United States and four-fifths of all the timber standing in the United States are owned privately, only one-fourth and one-fifth respectively being in public hands. The total area in farmers' woodlots alone is as large as the total area of the national forests. This means that the question whether this nation has timber to supply its needs or whether it must face a timber famine is one which the private owner of forest land must decide.

We have forest land enough to grow under right methods at least four times as much timber as we now cut each year. But as the result of wasteful methods the general condition of our forests is so poor that we are now cutting about three times what they produce. These are general statistics and general statistics do not always drive their lesson home. But the situation before the nation is essentially the same with regard to timber, as the individual would face, who, with capital enough to live upon well, failed to put it out at interest, and thus drew upon the capital itself for his living expenses. We are using up our forest capital exceedingly fast, simply because we are now drawing the interest which right methods would yield in the growth of a second crop upon properly cared for cut-over lands.

The causes are familiar. They are the same causes which oppose the progress of the conservation movement today—ignorance, inertia,

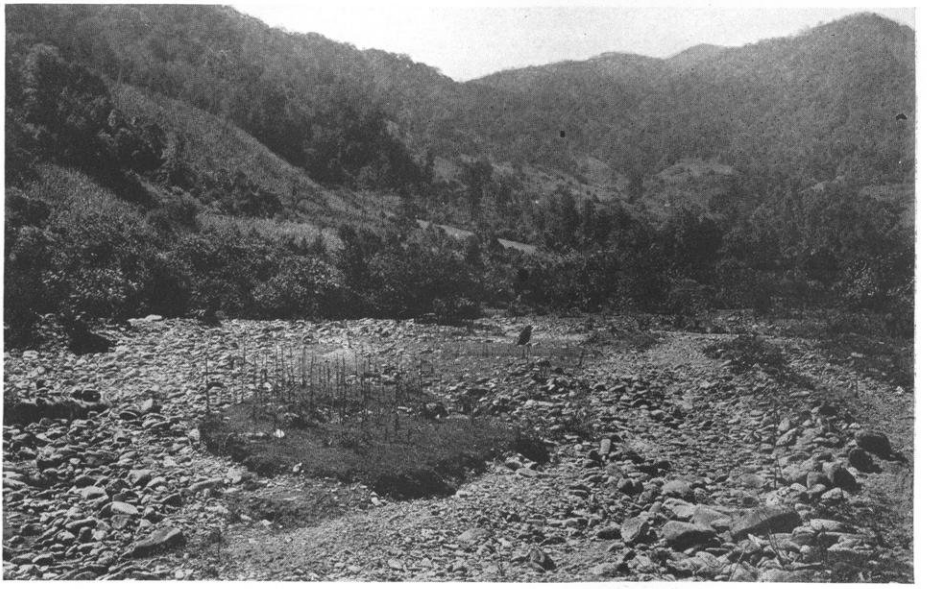


LOWER FALLS IN THE FOREST ARBORETUM AT LETCHWORTH PARK, NEW YORK STATE.

THE GORGE OF THE GENESEE, IN LETCHWORTH PARK.

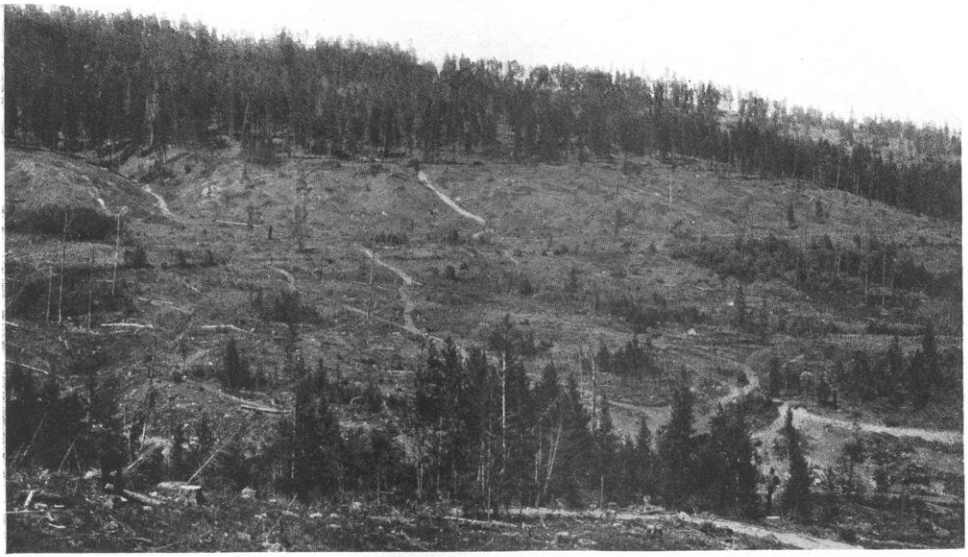
WHAT FOREST DESTRUCTION HAS DONE TO MOUNTAINS IN CHINA, ONCE AS BEAUTIFUL AS THE SOUTHERN APPALACHIANS, AND NOW TERRACED TO CHECK EROSION.

PRACTICAL FORESTRY IN THE HIMALAYA: ABUNDANT YOUNG GROWTH OF LONGLEAF PINE FROM SELF-SOWN SEED HAS FOLLOWED CAREFUL CUTTING.



SHOWING THE RESULT OF A DAY'S FIRE ON A COLORADO HILLSIDE WHICH A CENTURY OF EFFORT CANNOT REPAIR.

FERTILE FARM LANDS IN NORTH CAROLINA RUINED BY FLOODING; THE REVENGE TAKEN BY A RIVER FOR FOREST DESTRUCTION AT ITS SOURCE.



THIS ILLUSTRATION SHOWS THE DIFFERENCE BETWEEN UNRESTRICTED LOGGING ON THE LOWER SLOPE AND CONSERVATIVE LOGGING BY THE FOREST SERVICE ON THE UPPER SLOPE.

THE MOUTH OF MINE TUNNEL NEAR WALLACE, IDAHO, WHERE FIRE FIGHTERS TOOK REFUGE AND FIVE PERISHED: THE TUNNEL IS SIXTY FEET LONG.

selfishness, short-sightedness. Enormous progress has been made. We have the great national forests and the great Forest Service. We have a generally clear public conception of what forestry means, and an equally clear approval of it. We probably have a stronger national sentiment for forest conservation than any other nation; but so far less than one per cent. of all the forest lands in private hands is properly cared for or protected from fire.

We have scarcely made a beginning upon our urgent task in forest planting. We have in the United States waste and denuded lands which will grow trees well and which will grow nothing else, whose aggregate area is many million acres. But the entire area already planted successfully to forest in our whole history is less than one-fifth of that upon which we destroy the forest every year.

THE one thing needed more than any other to encourage forest planting in the United States is object lessons, practical examples of how planted trees will grow successfully and yield commercial products, cover denuded hillsides, restore natural conditions, and of how this can be accomplished at reasonable cost. Right here comes the great national importance of the forest arboretum which through the public spirit of the late Mr. William Pryor Letchworth and the public spirit of the American Scenic and Historic Preservation Society, is about to be established at Letchworth Park, New York State. This will be the first arboretum of its kind in the world.

The great arboretums, like the one at Kew Gardens, near London, are simply living herbaria collection of trees from all over the world planted singly, or at best in small and open groups; and while they are very instructive to the landscape gardener, and exceedingly charming to the casual observer, they have no important bearing upon the problems of practical forestry, for the behavior of trees growing in the open is totally different from the behavior of trees growing in a forest. It would be quite as unwise to draw conclusions from individual trees standing alone, as to the size forests of the same tree will reach in a given time and the quality of the product they will furnish, as it would be to base conclusions regarding the habits and life history of the buffalo which used to cover our Western plains by the millions, upon observations made on an individual representative of the species at a zoo.

At Letchworth Park will be planted not single trees, but a forest. This forest will contain, when the work is done, every important commercial tree which can be grown successfully in that locality. So as this experiment ripens, the farmer who thinks of reforesting his

denuded lands, or the forester or the forest student with problems in forest planting to work out, or the average man with an earnest interest, as more and more average men are coming to have, in the practical aspects of forestry, will find at Letchworth Park a rich field for observation and for study. Here the visitor will be able to pass quickly and easily from miniature forests of one species to those of another; from a forest of tulip trees from the South to one of Engleman spruce from the Rocky Mountains, or silver fir from Germany, or of a hardy pine from distant Korea, possibly of the deodar from the Himalayas—a veritable menagerie not of animals or even of trees, but of forests.

Letchworth Park offers a most unusual opportunity for the successful carrying out of such a plan. Within it is a considerable range of local conditions, both of soil and of altitude, all of which are exceedingly favorable to tree growth.

I have taken this occasion to write of the Letchworth Park arboretum because while its establishment is only begun, it affords in my judgment a notable illustration of what the conservation movement is accomplishing. Generalizations about this great principle of thrift will never alone get it into full effect. The people need not merely to be taught that conservation pays them and the nation, but how to put it into practice. The forest arboretum at Letchworth Park will aid materially to that end.

While the opportunity for the establishment of the forest arboretum is due to the benevolence and patriotism of the late Mr. Letchworth, it should also be known that the plan for its establishment is due no less directly to the foresight of the Honorable Charles M. Dow. And it is in my judgment a most noteworthy thing that an American citizen of large affairs, but without special training in technical forestry should have initiated a clean-cut plan for one of the most useful object lessons in forest conservation ever undertaken in this or any other country.

PROMISE OF SPRING

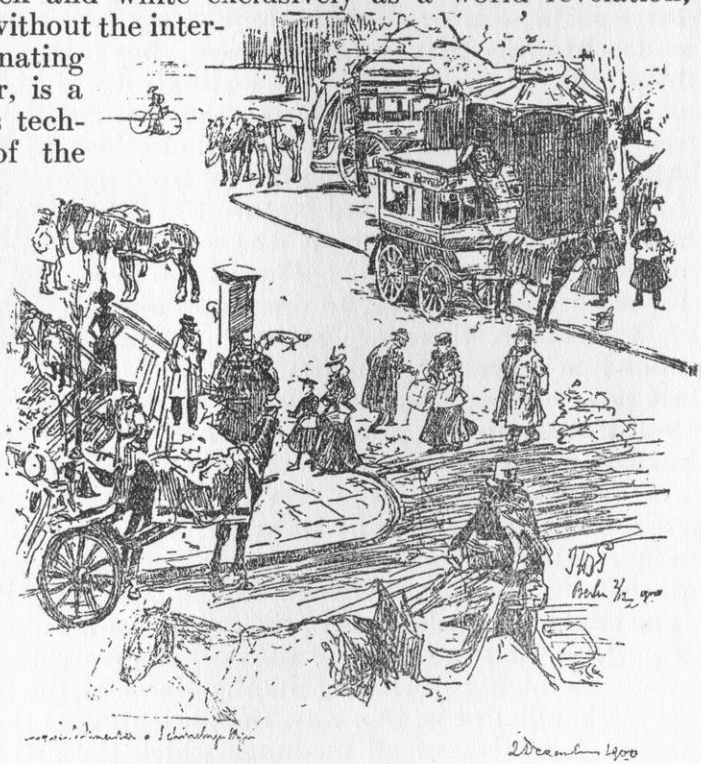
THERE are no buds upon the trees, and no birds anywhere,
But there are moments when there seems a softness in the air.
And over 'gainst the brick wall where the naked ivy clings,
With a trilling, thrilling rapture the hurdy-gurdy sings.

M. I. HASKELL.

INTERPRETING NATURE WITHOUT COLOR

MANY of the greatest masters of color, from Whistler, down the ages, past Rembrandt, Dürer, Holbein, to Cellini and Giotto, have at one time or another given their undivided attention to achievement in black and white. It is hard to say whether these men were consciously or unconsciously striving to understand the complete value of line work in relation to their art, and whether they ever fully appreciated the wonderful power that the simple line has to extract from Nature all her finest subtleties and hidden reserves. It was as though they refused the help that the emotional quality of color would give them, and demanded of Nature that she should face them naked, lovely or whimsical, confusing or limpid, with no single defect hidden under the rich vestment of color, every mood clear, every depth sounded. With equal relentless restraint they depicted humanity,—eager, restless, irritable, impulsive,—insisting that the simple black curve tell the whole story of the world and the inhabitants thereof.

The use of black and white exclusively as a world revelation, static or dramatic, without the intervention of the dominating possibilities in color, is a test of the artist's technique as well as of the reality of his vision, far more searching and drastic than anything color can offer. There is but one artistic situation in the world analogous to this,—pantomime, that form of personal intercourse without the illuminating word. For the spoken word and the revealing color hide a multitude of physical insufficiencies only realized when form and gesture alone are relied upon to



Courtesy of John Lane Company

"STREET SCENE IN BERLIN," FROM PEN AND PENCIL DRAWING BY J. HOYNCK VAN PAPENDRECHT.

express thought. The artist who works in black and white must know his medium so well and realize his subject as so inherent in his art, that his pen or pencil or needle will outline without hesitation his fullest understanding of life. How completely and marvelously Rodin has done this in his fluent sketches of the human figure. A dozen lines and a man's history is revealed; a dozen lines and a woman's beauty or ugliness, her joy, her stoicism, are shown. Again in a moment his pencil has told you that two people are in love with each other, or that a man is mad with the joy of life, or that a woman has found life too hard to be endured. It is all "black and white," and very little black in these life studies of Rodin. There are no emotional intricacies, no physical elaborations that Rodin is not master of in the whirl of his pencil. So completely has he mastered his medium that not only does he give to you the most absolute impression of form, but color is there, and activity, and not only the complete object itself, but its relation to other objects in life, and to its physical environment. Matisse has done much the same thing in his drawings of the human figure. And a new young man called Maurice Sterne, an American, has found out how to write the biography of the world in the swift stroke of his pencil.

For the man once truly interested in what he can give us with the black line will recognize no limitations in what he has to say. All that the world has thought and lived and expressed he will reveal for you, holding man and Nature to your vision, as richly clad or as nakedly illuminating as is the purpose of his revelation. What color *may* do, he *will* do. There is no limitation to the power he has to touch your memory, to open up your imagination.

Of course, there are many difficulties for the artist who relies upon line instead of rainbows, but once his interest in line is awakened, his power to see and reveal grows with the difficulties he surmounts. And if his vision is great enough and his skill keen enough, he soon realizes how completely all vast unknowable space is subject to limits and boundaries, how the very mists of the morning have their final edge, and that the gray dawn whirls into light in encircling lines. The reach of a moonbeam over a lake becomes as definite to the man developing his line sketch as to the scientist with his spectroscope. The smile of a child ends in the point of a needle if Pennell is etching a portrait, and the spray of the ocean is caught on the tip of a pencil when Steinlen is bringing in the shore of the world to his studio.

Although line is, in a way, the presenting of the skeleton of Nature in art, it is also, of all mediums which the artist handles, the most capable of suggestion. It holds in its boundaries the sense of space; it portrays in its intricacies the sense of motion, and it indicates in

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"THE LAUNDRESS," FROM A CHALK DRAWING BY PEZU CARLOPEZ.

Courtesy of John Lane Company.

"THE OLD UNCLE," FROM A CHALK DRAWING BY LIZZY ANSINGH.

Courtesy of John Lane Company.

"PEELING POTATOES," FROM A CHALK DRAWING BY KATHE KOLLWITZ.

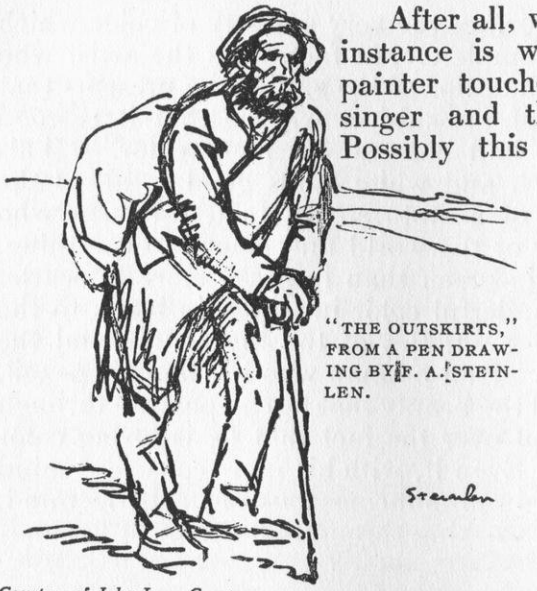
Courtesy of John Lane Company.

"RUNNING THE GAUNTLET," FROM A PEN DRAWING BY GORDON BROWNE, R. I.

the lights and shadows of its surface the very subtlety of color which it seemingly disregards. So completely, in fact, does the artist who is making his line sketch feel the color of the subject he presents that eventually his own criticism of his subject will be that it is good because "it has color," or is bad because "it lacks color." This same strange criticism of black and white holds good in all of the artist's appreciative criticism of sculpture. In fact, the men who have the vision for the beauty of the world find color in everything. There is possibly more color in green than in gray, more in scarlet than in black; but there is wonderful color in white, in black to the eye that is trained for all the subtleties of the big spaces and the sharp boundaries of the world. And no man who is using his pencil, needle, or crayon, or pen for all the beauty that he can portray through them, is troubled for a moment over the fact that he is losing color in the work that he is doing. Even if, with his more conscious mind he sees black instead of color, in his subconscious big artistic mind, which is the soul of him, he is working through all the most wonderful mysterious eccentricities of color which are found out on the edges of the imaginative world. If he were to force his mind to see black and white before he portrayed what he calls "black and white," we should have very dull leaden presentations of life. It is because he is seeing color, thinking color, living color all the while that he is making his more somber presentation, that we have in all interesting line work, in Whistler's etchings, in Steinlen's charcoal, in Glackens' wash, the most complete summary of those very things which in life are redolent of color and which in reproduction carry our minds back to the most vivid and illuminating sense of color.

Courtesy of John Lane Company

FROM A DRAWING IN LEAD AND PENCIL BY BERNARD BOUTET DE MONVEL.



"THE OUTSKIRTS," FROM A PEN DRAWING BY F. A. STEINLEN.

Courtesy of John Lane Company

After all, what we get from art in every instance is what we know of life. The painter touches our memory; so does the singer and the sculptor and the etcher. Possibly this is the great utility of art, that it illuminates the memory until it reaches the imagination, so that in the future we see more completely and more vividly than we did in the past. We even see the same things more completely; we hear the same music more wholly, more emotionally. Our own capacity for vision, which is only seeing all the beauty there is just as it is, is stimulated by art through our memory of what beauty we know. And so what can the man who is painting great masses of splendid color do for us more than the etcher has done with his tiny needle? If once we open our minds to all that the line drawing or the pencil sketch holds, all that it can stimulate into activity in our own minds, art is giving us all we dare ask of her. Perhaps in a way, because the line sketch demands more of us than the painted canvas, in turn we will get more from it. To be sure, many of us respond more amiably to what we call color than what we have called black and white, just as we respond more cheerfully to the simple music than we do to the more intricate harmonies born of more subtle contrasts. But it is a question, if we do not limit ourselves in selecting the simpler modes of enjoyment, and if perhaps the great masters of color when they made excursions with their pen and pencil did not find greater flavor in the work, more profound enjoyment than was their usual brighter portion. Surely, the "black and white sketch" could not have held a man like Whistler if it had not furnished him keenest analytical interest in life and art.

At the beginning of this article perhaps our tone seemed a little apologetic for the men who turned occasionally away from the rapture of color to the more sensitized method of expression in black and white, but the more we endeavor to think with them, the more we realize that undoubtedly they secured some of their highest development through the simpler channels of black and white, and we wonder if they did not there also even find the apex of artistic realization.

OLD ENGLISH DOORWAYS: BY HENRY S. CHAPMAN

Illustrations in this article are from photographs by Louis A. Holman.

HEN you consider that doorways are after all only gaps in a solid wall, devised for the exceedingly utilitarian purpose of providing a convenient means for getting in or out of buildings, it is remarkable how very interesting they can be. Like the mouth in the human face, to which comic artists have whimsically compared them, they are likely to be the most characteristic of features; they may indeed be the one detail which gives character to an otherwise commonplace and uninteresting structure. In many cases they offer the most graceful and ingenious examples of architectural detail and decoration; it is probable that they were the first objects to arouse the imagination and develop the skill of prehistoric builders.

The Egyptian pylon, the Greek pillar and cornice, the Roman arch and the Gothic pointed arch, each the characteristic structural unit of four great types of architecture, may be conceived of as growing out of the doorway, for it was from the necessity of providing some support for the wall over the entrance opening that such devices must originally have been planned.

And even when they convey no hint of beauty or dignity, a peculiarly vivid human interest attaches to doorways. Through them the life of the house passes; they gain a certain charm from their constant use by the dwellers within, and never seem quite complete unless a human being is seen entering or standing within them. When their steps have been worn by the feet of some famous figure in history they gain another claim on our interest; in such a case the most commonplace of doorways becomes worth seeing, becomes the object of a pilgrimage.

There are plenty of attractive doorways in our own country—the beautiful entrance porches which dignify so many of the old Colonial houses in Salem and Newburyport are familiar examples—but across the Atlantic there are many more. There the centuries of careful building and historic association have borne fruit. The difficulty is to choose from among the thousands of interesting doorways the few there is room to describe. Those which are pictured in this article are but a selection from scores seen in a brief trip about London and in the West of England.

London, for all its age, has not much to show in the way of Mediæval or even Tudor architecture. The great fire of sixteen hundred and sixty-six swept away almost everything; eighty-nine churches and thirteen thousand houses were destroyed. Historic London is

Renaissance, and Sir Christopher Wren is its prophet. Fortunately, this style made much of doorways and porches. Many of the business firms in the side streets of the city are sheltered in former dwellings with doorways of exquisite proportions, embellished with graceful fanlights above and crowned with ornate canopies, rounded and carved in shell pattern, or reproducing in modified form the most elaborately decorated of Corinthian cornices. The same striking effects are to be seen in the older West End—the fashionable regions of the eighteenth century. The house which the infamous Judge Jefferies occupied in Delahay Street, and Number Nine Grosvenor Road are charming examples of this style—which our own Colonial magnates took pride in following in their own mansions.

The dignified entrance to the Inner Temple in Kings Bench Walk is a simpler but no less interesting type of Renaissance doorway,—worth a moment's notice, too, as an excellent example of the "cut and rubbed" brickwork which on the recommendation of the authorities was largely used for ornament after the great fire had shown the danger of all wood construction.

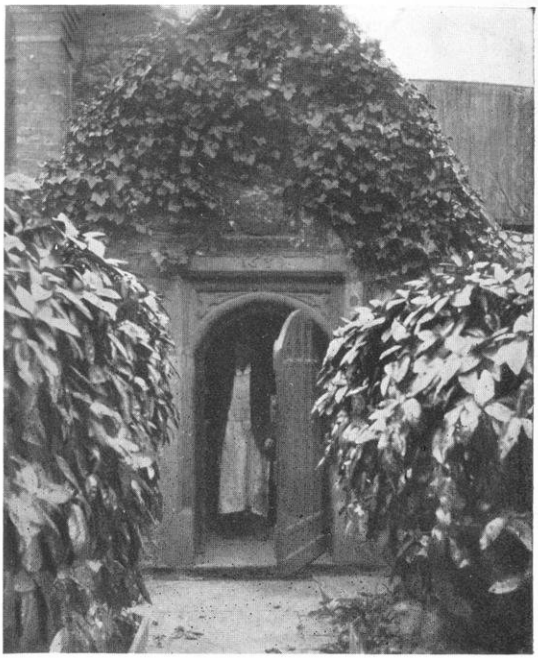
MORE decorative and unusual is the doorway of the Hall of Staple Inn, one of the old Inns of Court, which to most people is famous less for its real history than for its place in the pages of Dickens. The doorway, which is dated seventeen hundred and fifty-three, is much more modern than the hall itself, and is a rather fantastic though very graceful variation of late pointed or early Tudor work, known as "Strawberry Hill Gothic," from its employment by Horace Walpole in the rebuilding of his famous suburban villa at Twickenham.

A picture is also shown of two office entrances of Lincoln's Inn,—ordinary enough in itself, but interesting because of its associations. Oliver Cromwell, William Pitt, Lord Mansfield, Lord Brougham, Disraeli and Gladstone were members of this ancient Inn, and to most readers it is still better known as the building wherein were conducted the extensive Chancery practice of *Kenge* and *Carboy*, and the remarkably lucrative legal business of the redoubtable *Sergeant Snubbin*.

The Charterhouse is one of the few really venerable landmarks of London, and though the school has been removed to a rural town in Surrey, the eighty old pensioners,—of whom, we all remember, *Colonel Thomas Newcome* was one—still haunt the courtyards and inhabit the buildings of Thomas Sutton's old foundation. The doorway in the Master's Court is worth a glance for the many associations that are connected with it. Architecturally it offers little

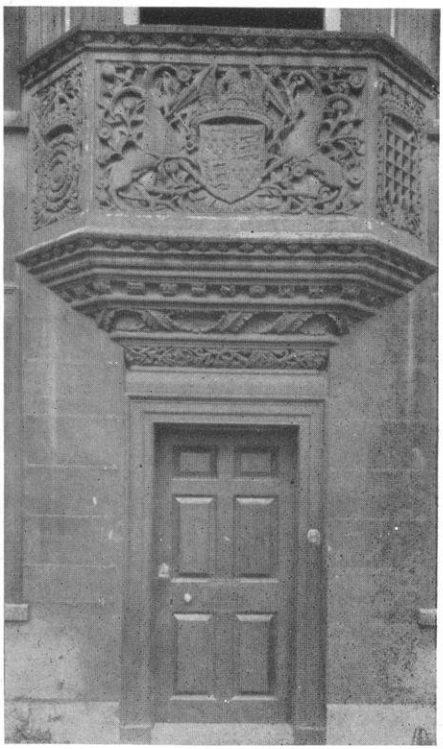
THE DOORWAY OF MILTON'S COTTAGE,
CHALFONT ST. GILES, ENGLAND.

DOORWAY IN THE COURTYARD OF EXETER CATHEDRAL.

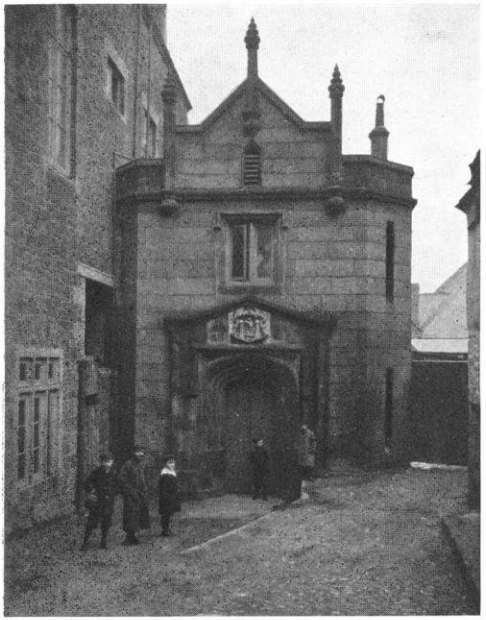


SIXTEENTH CENTURY DOORWAY OF ST. ANDREW'S, PLYMOUTH.

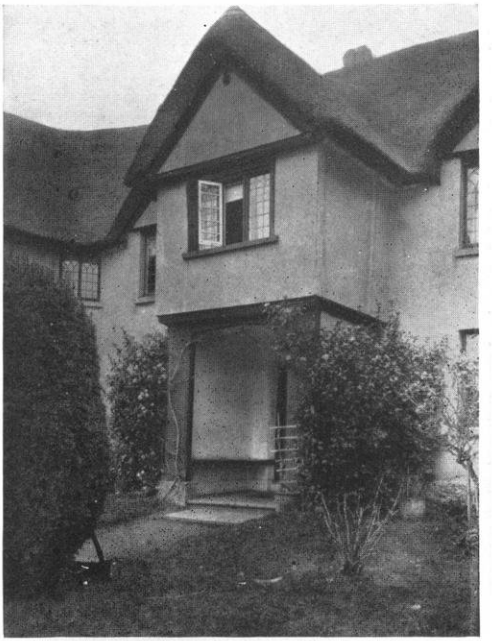
DOORWAY OF THE SEVENTEENTH CENTURY, IN PLYMOUTH, ENGLAND.



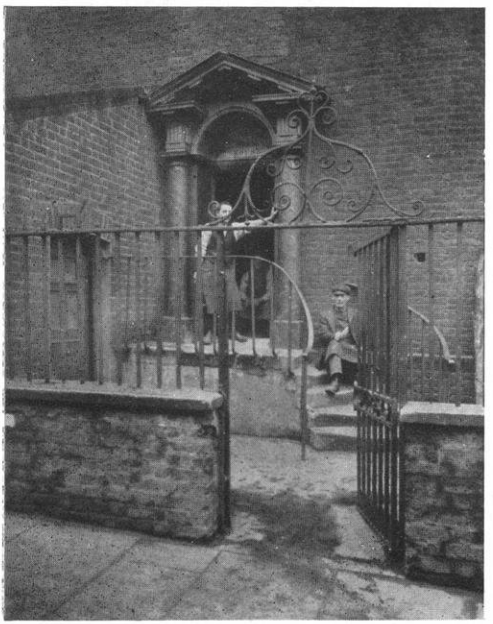
DOOR OF THE MASTER'S HOUSE, CHRIST COLLEGE, CAMBRIDGE.



ENTRANCE TO CHAS. KINGSLEY'S SCHOOL IN CORNWALL.

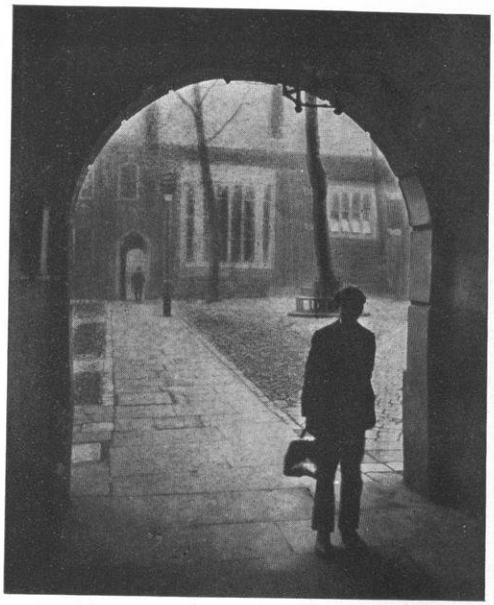


DOORWAY IN HAYES BARTON, THE BIRTHPLACE OF SIR WALTER RALEIGH.

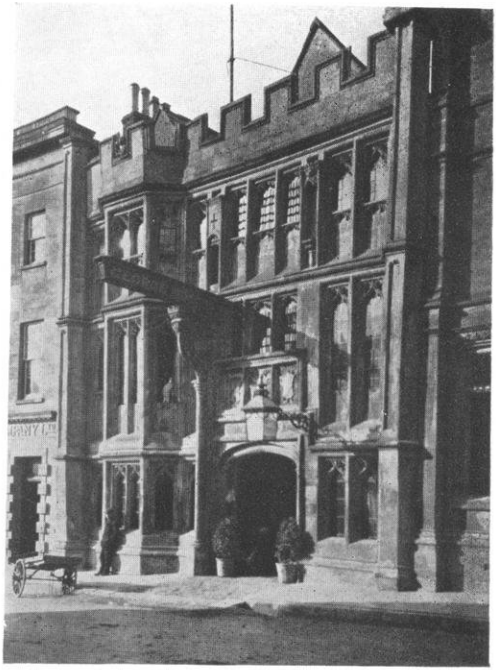


DOORWAY OF "BLEAK HOUSE."

DOORWAY OF BRISTOL HOUSE IN WHICH CHATTERTON WAS BORN.



ENTRANCE TO OLD STAPLE INN, MADE FAMOUS BY DICKENS.



PILGRIM INN, NOW GEORGE HOTEL, IN GLASTONBURY.

THE TWO OFFICES OF LINCOLN'S INN: CROMWELL, PITT, DISRAELI AND GLADSTONE WERE FREQUENTERS OF THIS ANCIENT HOSTELRY.

to the visitor, its chief characteristic being a sort of blocky solidity, and it seems to belong to a later and less graceful age of building than the hall to which it gives access.

Not far from London in the rolling Buckinghamshire country is a quiet little village,—not so often visited as it deserves to be—namely, Chalfont St. Giles. First of all Chalfont is immortal because it was here that Milton finished his great poem "Paradise Lost," and began "Paradise Regained." His connection with the village was temporary and accidental, it is true; he had retired to this healthful countryside chiefly to escape the plague that was ravaging London. But here he lived for some time, simply and if not happily, at least peacefully in the charming English cottage.

It is pleasant to imagine the gray-haired poet seated beneath this humble porch in the long sunlight of an English summer evening, his sightless eyes raised to the heavens they would never again behold, his musical voice rolling out the majestic lines which his daughters wrote down as they fell from his lips. It is a picture that touches the imagination; we are glad that a part, at least, of the great poem was written here at Chalfont; the London house, if it were still standing, would offer no such ideal setting.

A little way from the village is another simple but interesting building, the Quaker meetinghouse at Jordans. With this congregation the Penns were connected; and in the little burying ground nearby is the grave of William Penn. The doorway is undistinguished except by the diamond-paned window above,—and that is severely rectangular. No compromise with beauty anywhere about this bare, square meetinghouse, yet Americans, at least, find it worth visiting for the sake of the wise and honest man who founded one of the greatest of their States.

The mention of Milton reminds one of the unusual doorway of Christ College, Cambridge, of which the poet was a graduate. The door itself is severely framed, but above it blossoms forth a wonderful balcony of cut stone beautifully and intricately carved with all manner of heraldic and decorative devices. The coat of arms upon the front of the balcony is that of the Tudor family, for the college was founded in fifteen hundred and fifteen by the Countess of Richmond, mother of Henry the Seventh. The present buildings are in great part of a much later date.

THE visitor to England does not at first appreciate the extraordinary wealth of the country in beautiful relics of Mediæval architecture. It is not until he begins to come across them in the most unexpected places and devoted to the most humble uses

that he understands how commonplace a possession they seem to most Englishmen. There is, for instance, the great stone barn at Glastonbury, now a mere farm barn, but once the tithe barn of the great and wealthy Abbey of Glastonbury in which was stored the monastery's share of the produce of its wide possessions. It is a really beautiful building, excellent in proportion, and substantial in construction; its great doors are as impressive as those of many a church or public building. And on the four gable tops may still be seen the sculptured figures of the four evangelists, whose symbols are also carved upon the stonework of the gables themselves.

Then in the grounds of St. Andrew's Church at Plymouth, the last church the Mayflower Pilgrims saw as they left England for their promised land—stands a little vine-covered toolhouse, with a handsome doorway in pointed stone and old oak, which many a more imposing edifice might envy. And in the poorer quarters of many of the towns you may see fine old doorways of massive heavily carved oak, beautiful and intricate work which no museum would scorn to exhibit. One, in Plymouth, the door boldly carved in diamond pattern and several inches in thickness, comes especially to mind. It was, of course, once the entrance to a stately mansion, though the house is now inhabited by the poorest of tenants.

Another house that has come down in the world is Hareston Manor in Devonshire. Farm laborers now live in the old mansion, age and neglect have robbed it of its former beauty, but there is still dignity and attractiveness about its fine old doorway. In contrast with the disrepair of Hareston is the careful preservation of Place, the home for four hundred years of an old Cornish family, the Trefrys of Towey. The oldest part of the house, built at a time when Gothic was at its most ornate if not its most beautiful development, has a singular charm. The little door at the side, in which a graceful and intricate pattern has been wrought out with round iron nailheads, is particularly to be noted.

There is great variety among the doorways which the monks in the West of England added to the traveler's collection. The magnificent ruin of Glastonbury offers a splendid though much defaced specimen of carved and vaulted Norman work. The inn in the same little town, where the pilgrims to the famous shrine of St. Joseph of Arimathea were entertained, is a no less interesting example of the domestic architecture of the perpendicular period. The entrance is well designed, but less attractive than the artistically grouped and heavily mullioned windows.

Sir Walter Raleigh's birthplace at Hayes Barton, a plastered and thatched country house,—which is also distinguished by a very

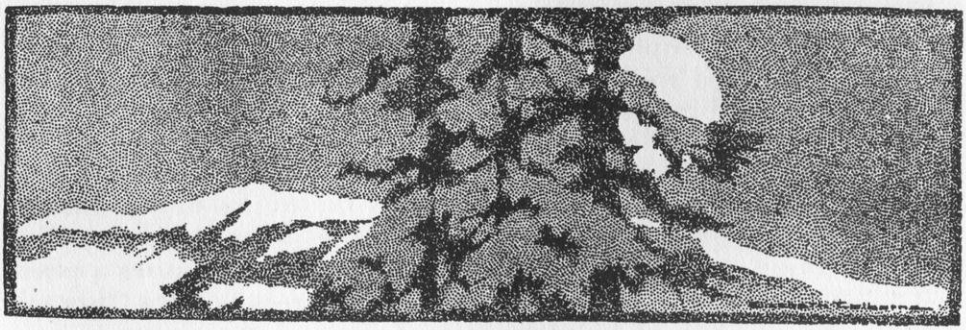
charming arrangement of windows—has a simple and unpretentious doorway and entrance porch beneath an overhanging gable, which speaks in every line the language of comfort and hospitality.

At Exeter there is a certain lovely glimpse through an arched entranceway of a cobble-paved courtyard, at the end of which one sees the lofty windows and the beautifully carved door which belong to the house of the Cathedral organist. And in one Cornish or Devon village after another there are quaint, delightful doorways, of no known architectural style, inserted in the most unexpected and illogical places, up stairs or down inclines, or tucked off in seemingly impracticable corners, each a puzzle and a joy to the discoverer.

By way of literary association there is the birthplace of the poet Chatterton, the master's house at the rear of the school at Bristol, over which Chatterton the father presided. The doorway is rather ordinary and has only its connection with the extraordinary boy who must often have passed through it to commend it to our notice.

And finally there is the really charming little courtyard and entrance to the grammar school at Helston, Cornwall, which Charles Kingsley attended.

But Helston, it seems, knows little of Kingsley, and has its own hero, whom it thinks far more worthy of celebration. Judge what were the emotions of the pilgrim from America, when he met a Helstonian of intelligent appearance, who looked blank when the author of "Hypatia" was mentioned, and who took it for granted that the stranger must have come across the water to see the town because it was the birthplace of Robert Fitzsimmons! Evidently there are Philistines and those who delight greatly to honor Goliath of Goth in other lands than our own.



PLANTING LARGE SPACES FOR HOMELIKE GARDENS

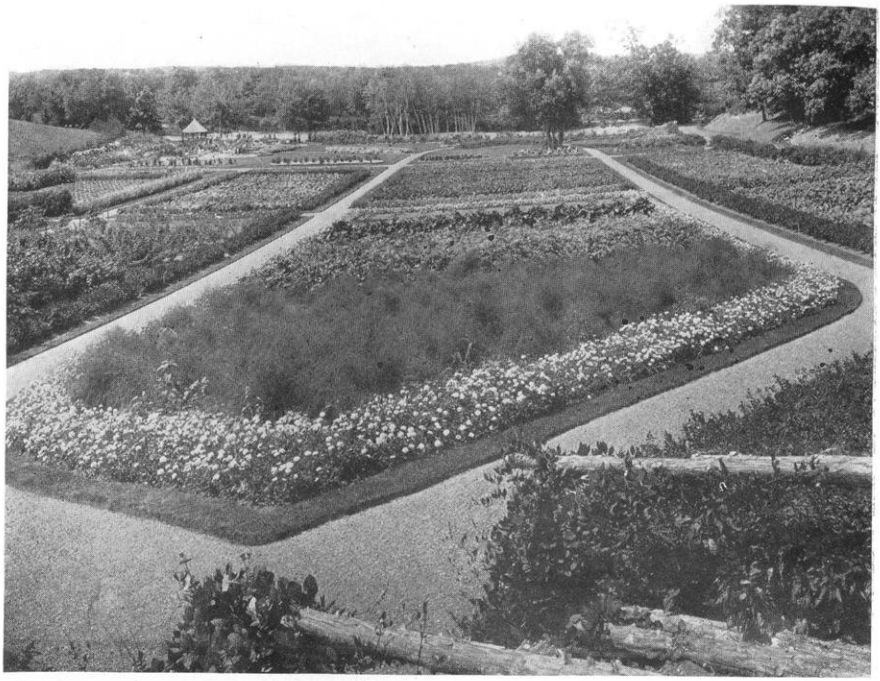
MERICA has always extended sympathetic and hospitable arms toward men and women who desire a real home—a home that holds possibilities for sane, free, beautiful living. The nation's very existence is due, in great part, to this craving for a truer life that stirred in the hearts of people rebellious of narrow mental and physical confines. This land is rich in fertile valleys, gently sloping hills, grassy pastures, flowery meadows, cool groves, sheltered canyons, living springs, singing brooks and little rivers that fairly invite the building of cozy homes and encourage the making of gardens. Certainly no country can hold out stronger or better inducements for pastoral living, and there is room enough for every one of us to have a comfortable home and a homelike garden.

With such alluring natural conditions, America should be one continuous garden, a field of flowers touching a field of grain, natural woodlots alternating with groves planted by man, cultivated flowers joining forces with those of the wayside in an endeavor to fill the air with perfume and the earth with color. There is little need for people to live in the crowded, unwholesome conditions of a city unless they prefer the life, for the country more and more offers facilities for comfort, health, happiness and growth. People are beginning to appreciate the fact that better homes are within easier reach than they have supposed, so they are now busily exploring rural lands, pushing into all the nooks and corners of the country adjacent to the big cities for a bit of soil on which to build and plant. They want a place where their houses can be set on the ground in the midst of a garden instead of being piled one above another like tombs in the catacombs—as they needs must be in a great city's limited area. It is the natural craving for an outdoor life in beautiful gardens that is rapidly drawing people from the artificial life of cities into the fresh air and sun-steeped meadows of the country, where boys and girls may grow strong, brave and wholesome, with minds and bodies fresh and vigorous as the hills.

To take a few acres of ground in an undeveloped condition and turn them into the fair garden you dream of, requires first of all the power of imagination—the ability to see the potential beauty of a place. To translate beauty from imagination to life requires a practical knowledge of the habits and vagaries of trees, shrubs, flowers, soils, an appreciation of balance, color, form and the ability to fuse the infinite varieties of garden detail into a restful unity. The aim of

Courtesy of Lewis Bros.

LARGE EVERGREENS OF WHITE PINE AT THE LEFT, HEMLOCK IN THE CENTER, AND LARCH AT THE RIGHT, GIVING A FEELING OF GRANDEUR WHICH IS CHARACTERISTIC OF THE LANDSCAPE IN THE DISTANCE: THE HERBACEOUS FOLIAGE AT THE RIGHT OF YUCCA, IRIS AND OTHER HARDY FLOWERS IS ALTOGETHER IN KEEPING WITH THE SPIRIT OF THIS FORMAL GARDEN, THE FORMALITY OF WHICH IS ACCENTUATED BY THE STONE CONSTRUCTION.



Courtesy of Lewis Bros.

A LONGITUDINAL VIEW OF A FORMAL GARDEN SHOWING ITS CHARM AND SPACE: AND A LAYOUT TAKING ADVANTAGE OF THE CONTOUR OF THE LAND ON EACH SIDE WITH THE MASSIVE BACKGROUND OF FOLIAGE IN THE DISTANCE: FOR USE IN SUCH GARDENS HARDY PERENNIALS ARE THE BEST.

AN OLD-FASHIONED GARDEN BUILT ON THE AXIS OF AND ACCENTUATING THE MASSIVE TREE IN THE CENTER: HERE IS A WEALTH OF OLD-FASHIONED FLOWERS GIVING AN ABUNDANCE OF BLOOM FROM EARLY SPRING UNTIL LATEST FALL.

Courtesy of Lewis Bros.

A FORMAL GARDEN ENCLOSED BY A BRICK WALL: THE OLD APPLE TREE AT THE LEFT GIVES AN IMPRESSION OF CHARACTER AND FRIENDLINESS: THIS GARDEN IS SUCCESSFULLY LOCATED TO TAKE ADVANTAGE OF THE BROAD OPEN LANDSCAPE IN THE DISTANCE.

A GROUPING OF WHITE BIRCH ARRANGED TO GIVE THE PATHWAY A FEELING OF HAVING BEEN CONSTRUCTED TO SUIT THE CONVENIENCE OF THE EXISTING TREES: THE ANNUALS ARE USED FOR COLOR IN THE SUMMER MONTHS.

Courtesy of Lewis Bros.

RHODODENDRONS ARE HERE USED TO TIE A HEAVY FOLIAGE MASS OF DECIDUOUS TREES TO AN OPEN LAWN, AND TO COVER UP THE BARE AND UNSIGHTLY PROPORTIONS OF THE TALLER GROWING VARIETIES IN THE BACKGROUND OF WILLOW, MAPLE, OAK AND LINDEN: THE HARDY HYBRID VARIETIES OF RHODODENDRONS ARE HERE USED.

ANOTHER VIEW OF THE WHITE BIRCH; THE HEDGEROW IN THE FOREGROUND IS OF WHITE SPRUCE, AND THE FORMALITY OF THE WALK ARRANGEMENT ADMITS OF THE USE OF VIVID-HUED ANNUALS.

the landscape gardener is to enhance and render more intimate the beauty of nature; but to perform this friendly service exacts a knowledge of plant life in addition to poetical imagination. Before an attempt is made to plant a large plot of ground—one that consists of several acres—it is well to become thoroughly acquainted with its possibilities for development, and also to gain an appreciation of its intrinsic beauty, that this may be retained, and not lost by a too enthusiastic course of improvements.

THE site of the house is the first thing to be decided upon, and its location should be tested carefully that the sun may not shine too ardently upon it or winter winds blow too cold. The whole plot of ground should be measured and drawn to scale, for a working drawing is of invaluable assistance in planning the water or sunken gardens, in determining the curves and grade that the road should take, in taking advantage of a view or trimming away trees and shrubbery so that a view may be had, in providing long stretches of lawns and in planting barren hillsides. The whole garden should be the result of one idea, a gradual growth from the natural suggestions of the place to a place of infinite comfort and peace.

After the location of the house has been decided upon, the large features, such as a lake or lawn or a group of trees, should be planned. They are of the greatest importance, for they provide the mass effects without which a sense of spaciousness is impossible. Then the details can be worked out so that they will not destroy the breadth of the masses, but will emphasize and grace them. For instance, the wide stretch of lawn should not be broken up by meaningless paths, artificial looking flower-beds, statuary, arbors, etc. The paths should follow the edge of the lawn with flowing lines and trees can be set out in little groups of irregular sizes, ages and forms, so that the paths may wind in and out among them in a natural and pleasant way. It may seem a very simple matter to an inexperienced person to plant a few trees so that they will seem indigenous to the place, but in reality it is a very difficult thing to do. Trees of fulness and roundness of form such as oaks, sycamores, maples, horse chestnuts, should be mingled with those of slenderness, such as the elm, poplar, pine. Shrubs, such as dogwood, hazel, lilac, chokecherry, laurel, should be planted at the borders of the group in uneven spaces, to tie them to the ground, so that no sharp line of separation will be felt. Annual vines may be trained over the bushes and up the trees, ferns set out under the shade so provided, flowers sown in front of the shrubbery so that all will be blended and tangled together, and look as far from an artificial planting as possible. Individual trees of especial grace

and beauty may be planted here and there along the edge of a road, at a gateway or sometimes even in the center of the lawn, for nothing can exceed this noblest of all forms of vegetation in ornamental value.

The value of trees placed at the border of a lawn, and also the beauty brought about by an irregular planting and grouping of them, is well illustrated in one of the accompanying photographs. These trees are like a graceful screen giving seclusion to the garden plot, yet not shutting away the fine sweep of the hills. Such a group will give great color interest also, for the delicate blue, gray and mauve tints of the distant hills showing through the lacy foliage and shafts of the trees, with the dark green masses as a rich contrast will, under the changing light of day or night provide endless combinations of beauty. Viewed from different parts of the garden its irregularity of form will compose into pictures, whereas if the trees had been all huddled together in one compact, mathematically spaced group no fascinating change of form would be possible. Trees placed on the crest of a hill, or even on a slight rise of ground, give a rare sense of exaltation or expectation, as this photograph illustrates, and the curve of one of the trees gives grace to the whole group, preventing any suggestion of the stiffness that sometimes occurs when a number of straight trees are grown together.

Another charming group of trees is shown where a clump of white birch is placed near the water's edge, and brought into fine relief by a dark mass of trees. A little path winds through the group, follows the bank of the pool, flowers nod and sway with the coming and going of the winds, a rustic seat invites to rest. Massed shrubs and borders of flowers furnish a note of gay color that is a fine complement to the flat green of the grass, silver of birch and glitter of water. This is an ideal bit of gardening for summer effect and even in winter would be lovely, for the birch is almost as beautiful when its branches are bare as when its leaves quiver and rustle in the summer breeze.

A GARDEN need never be a sad, colorless place in the wintertime, for there are so many evergreen shrubs that will hang bright enlivening berries through the months of snow and ice, as well as many which retain rich green polished leaves. The barberry is one of the cheeriest of shrubs for winter effects, and if left to its own devices will be one of the most satisfactory features of the garden in both summer and winter. It is death to its beauty and individuality to trim it, for its grace will be lost as well as its blossoms and fruit by a too energetic use of the pruning shears. It should never be touched until after it has finished blossoming, and then only to

remove the dead wood. The common barberry that runs wild in New England hangs its berries in clusters so thick the bearing branch sways to the ground. This variety will grow to a large-sized bush suitable for hedges, while the smaller variety (Thunberg), with berries growing as a fringe on the under side of slender drooping stems, is more suitable for use in borders where a flat effect is needed. The high bush-cranberry bears large red berries that hang in graceful clusters until the new growth of spring appears. Another bright berried shrub is the black alder. The mountain ash tree with its scarlet fruit should be in evidence somewhere, within sight of the house if possible.

Broad-leaved evergreen shrubs are steadily growing in favor for garden use though rather expensive to buy; there is little chance of loss in their cultivation, and they are long lived and beautiful. They require a strong soil containing plenty of clay and organic matter, should not receive much stimulation, but should be mulched heavily with leaves. If large fine blossoms are wanted, excess buds must be broken off. The taller variety—the maximum—requires a little shade, but the smaller—the catawbiense—needs the sun to develop its wonderfully gorgeous colors. The mountain laurel and the azalea are equally beautiful and are great favorites for use at the edge of the lawn, near water courses and scattered through all kinds of deciduous plantings of trees. These three broad-leaved evergreens are often planted with good effect among the finer foliaged evergreens, such as retinospora, cedars, spruce, box, etc., in large borders of roadways or in covering banks. Evergreen banks can be enlivened in the summer by plantings of flowering shrubs, such as the dogwood, forsythias, hydrangeas, bush honeysuckles, snowball, Chinese and Japanese magnolias, and by flowers such as lilies, cosmos, asters, chrysanthemums.

Refreshing coolness can be had for the driveway by elms that overarch it, maples which dapple the sunshine with shadow, ash, birch and oak trees planted at irregular intervals and in little groups, with flower strewn stretches of grass in between. A fruit tree now and then will add variety of contour and fill the drive with fragrance during the seasons of blossom and fruit.

STILL another suggestion in regard to the use of trees in a large garden or on a country estate is given in the photograph of an apple tree at the edge of a terrace. How much more beautiful is this ragged old fruit tree than any young, symmetrical tree possible to purchase and transplant! What character it gives to the place! What food for thought its time-scarred branches give! How per-

fectly it centers the wide landscape, and how much at home it seems! The whole scene is a fine example of tasteful landscape gardening, for the soft flowing outline of trees at the skyline, the long sweep of meadow and irregular patches of low bushes have been retained in their natural wildness and echoed again in plantings of low bushes and flowers around the terrace. The terrace is thus united with the whole scheme of nature and does not appear presumptuously foreign to the picture—it seems rather to strive respectfully to be at one with it, endeavoring to adapt itself gracefully to its environment rather than to change it by the force of its own individuality.

The transition from trees and lawns to the flowers should always be easy and natural, a flowing together in sympathetic friendly way, harmony of form and color being kept strictly in mind. An artistic feeling for color harmonies and a botanical knowledge of plants is absolutely essential when it comes to the making of many or large flower-beds, else confusion and discord will result. Beds laid out on a large scale, either to provide ornamental color masses or else to furnish flowers for picking should never be stiff and rigid, conveying the impression that they are experimental beds for scientific research work. Flowers are especially effective planted near trees, or in little open glades like natural meadows. The design of large beds or a union of several small ones must be exceedingly simple, the lines of the borders and paths generally curving. A few straight paths are extremely effective and in no way give a sense of severity to the garden, but if all the paths are straight the garden will appear geometrical and precise, an effect always to be avoided. Too many straight lines tend to separate rather than unite the different parts of the garden, where the curving lines afford a warm sense of unity and friendliness, a perceptible blending of all the beautiful things that are to be found in a garden. Thus the form of the beds really becomes of more importance than the color.

Contrasts of color in some parts of the garden are more dramatic in interest, yet the more restful schemes that include but one tone, yellow or pink or purple have their full value. It is a good plan where large spaces are to be planted to have one part of the garden where the flowering vines, shrubs and plants are all of harmonious shades of pale reds, with deep reds in shadowy corners; another part, say at the edge of some open sunny slope, with the blossoms yellow and orange. Plant forget-me-nots in some retired moist bit of ground, mass delphinium in a sunny plot near a shield of trees, and campanulas near banks of fern. Vines draped from tree to tree, clambering over a pergola or running along a wall, aid greatly in bringing about a sense of unity.

A constant procession of color can be had by a little careful planting. For instance, in the corner of the garden where yellow is the color scheme, daffodils, tulips, yellow hyacinths and crocus should be planted under or near the forsythia bushes. Coreopsis, calliopsis and marigolds can be set thickly as borders, and the closer the flowers are massed the better for their growth, for the ground is thus kept moist by the thick shade of intermingling leaves. Yellow pansies can be set in front of these, nasturtiums or even the gay sunflower at the back of them. Put the meadow lily and garden iris in a moist place and the yellow Japanese lily in a sunny plot. Scatter thickly the seeds of the California poppy in ground that is too sunny for most other flowers, and they can be depended upon to furnish the gayest splash of color in the whole garden. Yellow asters, chrysanthemums, dahlias must be in evidence, and honeysuckle vines and climbing yellow roses allowed to ramble at will over a fence or over a tree. Arranging the flowers thus in a succession of crops not only affords continuous bloom and color but is also a valuable form of intensive gardening.

ONE photograph shown suggests an interesting arrangement of many little beds of flowers set so close together that the effect is equal to mass planting. Such a center of interest is also practical, for it simplifies the labor of caring for so many plants. It is in a sunny little vale well surrounded with sheltering wooded hills; a small lake gleams in the distance—a charming setting for the meadow of flowers. Still another view is given as an example of successful planting of trees for the value of skyline, here the partly planted bank connects the hillside with the garden. Annuals have been extensively used for the color effects of the beds, which are beautifully designed and proportioned, a natural looking pool of water enlivens the picture and a division wall of especial interest can be noted in the foreground, which is simply a planting of spruce trees of different sizes interspersed with field stones.

It is good to have a bed of old-fashioned flowers in some corner, if possible, for it is always full of interest, beauty and sentiment. An illustration of one is given that has been laid out in rather trim little walks, reminding one of the sweet and modest primness of the Puritan dames whose joy of these old-fashioned peonies, columbines, phlox, bleeding hearts, geraniums, pansies, hollyhocks, has been transmitted to all flower-loving American women. The noble old tree would lift the whole garden into a spot of beauty though no flowers bloomed, and the stiff line of hedge secludes the garden, giving it a quiet life of its own, and shutting it modestly away from the larger life of the adjacent park.

OLD MAN CHEPO: BY CHARLES H. SHINN

E HAD not lived long on our mountain ranch before we found that "Old Man Chepo" occupied a place of his own among the several hundred Mono Indians scattered through the Forest, north and south along the Sierra. He was neither chief nor doctor, and yet as this little old fellow trotted and stumbled along the trails or prowled about the roads, generally alone except for several dogs, and casting sly glances here and there, one somehow felt that he knew more or less about everything that was going on.

I find it difficult to say how innocently simple he appeared to my wife and me, and how he grew upon us in the course of a few years.

"How old that man Chepo?" I asked Indian Frank, the chief of this branch of the Monos.

"Dunno."

"How long Chepo here, Frank?"

"Long time."

"How long, Frank?"

The Chief sat on my doorstep, eating one of my apples. He was a good fellow; we liked each other. Sometimes he plowed in my field or hauled my wood.

"Very long time." He began looking at his fingers, and his lips moved slowly. Then he struggled painfully to tell me, but first he looked around to see that no one else heard him.

"Old Man Chepo one time little boy." He stopped, looking at me; I encouraged him to go on.

"Once little boy, long time ago. One white man come, kill big bear, catch beaver in trap. Go away. More white man come. Wash gold in creek; give whiskey to Injuns; kill Chepo father an' mother. Chepo run away, live alone a while. How many year that make?"

"Very long time, Frank," I told him. No one could be sure from what Frank had said. Trappers were here before eighteen hundred and forty. The gold mining began here about eighteen hundred and fifty. But what a situation! Other Indians confirmed it, later. The ten-year old Indian boy, an orphan, lived somehow in the forest a year or so, somewhat by preference. There must have been Indian camps where he might have stayed. Out of it all came Old Man Chepo's humorous shrewdness, which always outmatched the rest of us put together.

"All right. You no tell Chepo I tell you?" asked Frank, dubiously. "That old man he know most everything."

"No tell," I responded.

Frank took another apple and went off, very serious-minded over the problem. He really put much faith in the saying that what isn't told isn't repeated, but then he liked apples, and maybe Chepo would not find it out.

It was only ten minutes later when my wife came out laughing about Chepo, with whom, it appeared, she had been dealing in the garden while Frank and I had been on the front porch!

"Old Man Chepo," she said, "can take care of himself—every time. You know he comes over for tomatoes as long as there are any. Today, as usual it was:

" 'Dat Susy woman, she want tomato.'

" 'Why, Chepo,' I said, 'I gave you tomatoes yesterday. There aren't many left. Tomorrow I will give you a few more for Sue.'

" 'But,' he said, 'dat Susy woman she like dat kind,' and he pointed to the one yellow tomato plant where there were just ten salad tomatoes that had escaped the frost. His mingled surprise and politely restrained indignation were simply perfect. He made me feel as if I were trying to cheat them. So I divided, of course. I wonder what he really thinks of us."

"He has a right to think he is giving both of us a liberal education," said I, who had already received several doses of it from time to time, whereof I had not as yet told my wife. She has weapons to spare, as it is.

I had a dreadful feeling that somehow Old Man Chepo had gathered an inkling of the somber fact that Frank and I had been talking about him. If that were so, I was sorry for Frank, even if he was the Chief. The brunt of the trouble would come on him; the asking was nothing—the telling was everything.

Yes, Chepo certainly held a place all his own among those Monos. Though he had no authority, still he was a highly privileged character, and he seemed to have his own way in everything

I began to put together what I knew about him. He had lived many, many years, and was still wonderfully strong. He had lived and wandered, and gathered up his kind of wisdom, which was not small, or unavailable in time of need.

Doubtless he had taken a succession of wives; several sons they had borne him. One of these sons, many years before, had been shot by a rancher, and later, in some inexplicable way (it was whispered that Chepo could tell about it) the rancher's only son had perished in the mountains, by accident perhaps, and yet perhaps by not quite an accident. "That was the time that Old Man Chepo went away somewhere for nearly five years," a miner had told me.

Chepo still went down to the yearly grape-harvest in the San

Joaquin Valley. He still chopped wood for the settlers, none of whom liked to do it for themselves, but he was beginning to be shy of the bigger oak trees, and liked best to cut manzanita and other small stuff. On the whole, however, he lived by the judicious use of his very capable wits.

HIS little old cabin was on a hilltop near a spring. Chepo had made it there himself. A white man had pioneered a while in a richer hollow to the east and had put up a house of sawed lumber. When the white man gave up the hopeless struggle and moved away, Chepo had taken board after board from the flimsy cabin and dragged them up the hill. There he had slowly tacked them together, and had made him a stone chimney outside. The settler having sold his one window sash, Chepo made his domicile with no opening but the doorway. His two or three old horses and a colt grazed on the adjacent slopes.

Chepo's wife was called Susy by the Americans, and so he called her in public. A few weeks before he had found it desirable to say to me—my wife being absent:

"Hello, Shain! How do? My Susy woman she sick. She very sick. She get apple maybe so she get well—what you tink? You got plenty apple."

(It happened, as I noticed later when I rode down to the village for the mail, that Mrs. Chepo, a quiet, pensive soul as tough as a pine knot, was calmly putting out an enormous wash at Mrs. Madison's. I was not altogether amused, but it increased my respect for Chepo's ability.)

However, when Chepo brought up the apple subject I was still in ignorance. There he stood, gazing at the orchard, then beaming hopefully on me. The little old orchard was indeed heavily loaded, and the autumn was far advanced. Enough apples had fallen in last night's wind to fairly redden the ground.

Besides, though Chepo did not mention it, I knew well enough that long before we came to the Sierras and bought our mountain home, repaired the old fences, pruned and cultivated the neglected orchard, Chepo and the other Indians had shared all the fruit with birds and wild animals. Chepo did not really expect us to stay long, anyhow; we would go away some time, and the old apple trees on our hill would again become as much a part of nature as the oaks that gave him acorns. The dignity of this thought was manifest in his whole atmosphere. No beggar was Chepo; he merely asked lest we forget that he was there ages before we were, and was a part of the whole thing. He gathered acorns wherever he chose, clear to our dooryard,

but after we had made a bulb garden under one oak, he always asked if he could have those particular acorns. Spade and plow were to him the white man's mark of use; mere fences were not. Gardens, apples, grapes, tomatoes—these illustrated white men's prejudices, but it was well to defer somewhat to them.

And so Susy continued most conveniently ill all that autumn,—and many others afterward, even to the verge of death at times. She managed to wash for her neighbors (ourselves among the rest) about six days out of seven, but she did not officially recover until the last of our winter apples was gone.

"Man shall earn his bread by the sweat of his brow." I was brought up on that sort of thing by the dearest of stately and severe New England grandmothers. Chepo had his apples that time, of course, but I began to think how nice it would be to persuade him to raise his own apples by the sweat of his own brow, instead of vicariously.

"Chepo," I called out, one day as he went past, "You come here." He came slowly; he was pretty sure the apples were all gone.

"Chepo, me like you; me give you something."

I took him over to the garden. "Here, Chepo, are ten rooted grape-vines all ready to grow, and six good apple trees and five peach trees. I give. You take."

"What I do wid 'em?"

"You plant, Chepo, on your hill. He grow easy. I show you where; I show you how plant. Tomorrow I come help you. Bimeby you get plenty grape—three year; more bimeby plenty peach, plenty apple. Susy like that; your little grandson he like."

"Me take," said Chepo, gathered them up and so departed. He lived up to his statement literally,—and no more.

I had shown Chepo how to "heel them in" and after he left I felt like a missionary of horticulture.

So I took an old spade that I could spare anyhow,—I meant to give it to my interesting pensioner, Chepo—and I started over my hill, across a hollow and up his hill, along an old abandoned trail through the ceanothus brush. Chepo, bent almost double, could always negotiate that pesky trail better than I could with my six feet of height and my long-handled spade.

I REACHED his cabin to find it deserted; door locked; horses gone; no smoke from the cold chimney, so they had left the day before. By this time, after a couple of years' experience with Chepo's elusiveness I was ready for anything, so I began to explore the surroundings. There were Chepo's barefoot tracks coming in yester-

day; here they continued down to the spring where he was to "heel in" his trees till I came, but no trees were there. His footprints went right on, west by north, to a descending scarp of rock.

"I think the sinner has thrown those trees away!" I said to myself, and, exploring below the rocks, soon found them drying in sun and wind!

It was a trying experience. I gathered them up, took them to his cabin, laid them reflectively on Chepo's door-stone, went home, and permanently abandoned any idea of an Indian nursery.

"Where Chepo?" I asked Frank the next day.

"Maybe so he go fishin' down ribber; maybe so he go see he boy Jim up Crane Balley."

Chepo came along the next week with an indescribable air of peace, good will, forbearance and charity. He sat down on the doorstep.

"How you? Me bully."

I looked him over, and considered his inscrutable air of complete ownership of the mountains, while I, poor fellow, was tied down to one little piece of land, by daily toil "in the sweat of my brow." I wondered just what my grandmother's grandmother would have said to a New England Indian who acted as Chepo had. I approached the subject:

"Chepo, where you been?"

"Bin way off, up Crane Balley. My boy, dat Jim, he get drunk; he t'row he's wife out door, break her leg. He wife cry all night. Dat berry bad; dat whiskey. No flour, no, no money. My poor boy, Jim."

It would have been very convincing if I had not known that Jim was chopping wood, and could not possibly get any whiskey until he had been paid for his work. Mrs. Jim had gone up our trail only the night before.

"Chepo! That big lie!" I said.

"What for you ask me?" returned Chepo, smiling very sweetly.

"Where trees I give you, Chepo?"

"Dat trees? Dat berry bad," said Chepo. "Come back, find tree on door-stone. Guess maybe so coyote dig him up. Too bad!"

We looked at each other. I heard that wife of mine laughing out in the kitchen, for cabin walls are thin, and doors stand open. Again I felt my utter newness in all this ancient world, and I considered the look of Old Man Chepo, so forgiving, so tolerant, as of a man to a foolish child. In spite of myself I, too, broke out into laughter, and fired Chepo out, so to say, with all the honors of war, and all the politeness I could muster.

I began to understand why the Indians for fifty miles around had a care of what they said about Chepo.

IT MAY seem odd, too, but really, as I thought the matter over from Chepo's point of view, why should I interfere in his methods of life by giving him apple trees to plant? If I began this way, and were allowed to advise in all his little affairs, he would soon have to fence a field, plow it, build a barn, raise hay, fuss and moil over all the horrid things that white people suffered from. Chepo hated it like poison, but then he liked future apples from my orchard, and he was a very Talleyrand for diplomacy, and—shades of our Puritan grandmothers!—his lies, we agreed, were really delightful! Besides, Susy's washing was better than that of any other Indian woman in the neighborhood.

For a little while after this we had few dealings, none of them notable, with our friend Chepo. My neighbor, Jack Burns, had one, however.

Jack was a strict temperance man, and he hated to observe what happened whenever he paid Chepo for chopping wood.

Like the rest of the Indians, Chepo abandoned his cabin as soon as summer came and lived in the woods wherever he chose. So Jack rode down through the brush, as soon as the wood was corded up, and found Chepo lying under a tree while Susy got supper.

Jack was an eloquent talker, and he explained it all to Chepo: "Chepo, I owe you eighteen dollars."

A long pause here, while Chepo worked it out in chips.

"Dat all right."

Then Jack told about flour and bacon and coffee, and told how good a wife Susy was, and how hard she worked, ending with: "So I'll buy flour and bacon and other grub for you, Chepo."

"Susy buy."

That looked good to Jack, who, as he told me afterward, felt that Chepo had some sense if only you went at him the right way.

"All right, Chepo, I'll give Susy some of that money for grub. You don't want too much whiskey."

"Whiskey bad," assented Chepo, with suspicious readiness.

"Eighteen dollars here, Chepo, all silver. How much shall I give Susy to buy bacon and beans and coffee and flour?"

"Me no care," said Chepo, with still greater readiness.

"Bully for you, Chepo," and Jack instantly gave Chepo three dollars and, walking over to the fire, gave Susy the other fifteen. She looked at it doubtfully and held it in her hand while she went on cooking. Jack shook hands with Chepo and started to untie his horse.

Chepo rose, walked across to the fire, held out his hand to Susy, before the astonished eyes of Jack, received the fifteen dollars, gave her the three, and turned to Jack.

"That better way. Good-bye, Jack!"

Our neighbor came, and told it to us in sorrow and in wrath. "Called me Jack, too!"

"They like first names," I said, "and who can blame them? He understood you fully, and your sermonette did some good, otherwise Susy wouldn't have had the three dollars. That equals three days of hard washing.

"As for names, there is an Indian up the ridge whose little boy my wife once gave medicine to, and the next time he went by and saw her in the orchard he called out 'Hello, Julie.' No one supposed he knew her first name. Now she is Julie to every Indian in the region.

"Chepo likes you all right, but you mustn't worry him. I used to myself, but I've quit.'

Again autumn and the red, red apples; the much-traveled Chepos were back in their cabin. But we had been having an inroad of half-wild Indian dogs. They killed some of our cats, and almost ended poultry-raising.

"Frank," I said to the Chief, "dogs very bad."

"You poison him," he advised.

"Who they belong to, Frank?"

"Too many; come way off. You kill. Tell Chepo tie up he dog two t'ree day."

So I called Chepo in, and told him about it. "All right," said Chepo, "me tie."

That night, five or six wild and utterly worthless dogs yielded to strychnine in my yard, the cats being safely locked up. They were disposed of, and about noon my wife and I drove out together toward the village. Just outside our gate we saw Old Man Chepo slowly walking beside the road. He really looked forlorn, for Susy had been truly too sick to do any washing, and he was on short commons.

He stopped us and stood, quivering with emotion. Several times he tried to speak and failed. We thought Susy was worse. Would we better go over to his cabin and see what we could do? Poor old fellow!

He looked at me in a hurt way, as if I was to blame for something. What on earth had I done? Then he said:

"Las' night dat dog he come home. I tie him up an' gib him grub. He break rope and run off. Bimeby he come home, brekbus time. He berry sick."

Here Old Man Chepo's face began to work, and as we looked at

him both my wife and I felt that this, this was surely genuine if anything on earth was.

How we had laughed at poor old Chepo, with all his harmless, amusing shifts and audacities! He was our own Indian neighbor, and his poor dog was sick.

"That too bad, Chepo," I said. "I go see your dog right now."

Chepo leaned against the wagon wheel in absolute sorrow. "Dat no use, Shain. Dat dog he lay down, he stretch out dat way, he get hard, no can bend he leg. Maybe so he die!"

"Oh," my wife cried out (never have I regretted that she spoke first). "We have poisoned poor Old Man Chepo's dog. Oh, give him something quick, and tell him we'll never put out poison again."

"Chepo," I said, "that awful hard on you. It's all my fault, I suppose." I put my hand in my pocket and brought out a large round silver dollar—all I had with me. I wished it was more. How much enjoyment Chepo had given me all these years, and now I had poisoned his dog! As I handed over the dollar, however, I could not help being glad his usual half-dozen had diminished for various reasons to the homely one-eyed yellow mongrel which he now mourned.

OLD MAN CHEPO pulled himself together, slipped gently back some ten feet to the bank, climbed up several feet and sat down under a manzanita bush. He pulled out his red cotton bandana, mopped his face, then tied the dollar carefully into one corner. The sad episode seemed over. Poor lonesome Chepo! My wife and I had tears in our eyes. "I'll send him up a sack of flour, too," I whispered. She nodded in approval, and I picked up the reins to start on when suddenly the yellow mongrel bounded out of the bushes, and sat up by his master.

Chepo looked at him in mild surprise, but no whit abashed, then looked at us with melancholy regret.

"Maybe so dat dog all right now. Get well mighty d—— quick. Maybe so dat dollar pretty good med'cine." They were just beyond the reach of my whip, and the rascals knew it, of course. They sat there side by side, withdrawn into an impenetrable silence. What were we, little and fluctuating whites of a few generations, feverishly surging across their world. Chepo patted his dog and smiled at him; the dog wagged his stub and grinned at Chepo.

I laughed out till the rocks reëchoed, while my wife tried in vain to keep her pose of offended dignity.

"You smart man, Chepo. You cheat me good this time. Now you stop. Lies very bad."

But any force that the rebuke might have had was materially

lessened by the shouts of laughter with which my wife and I drove down the mountain road.

The next year Old Man Chepo moved off somewhere, and we missed him. True, when his cabin was torn down by some other Indians, the hitching ropes, dog chains, old tools and odds and ends we had lost and forgotten turned up in a somewhat surprising way, but the sum total was of very small value, and we had been proverbially careless, ourselves.

I heard at last that Chepo was badly off—had been severely burned and was really in want. So I went over to see him, and took a sack of flour. "All same that dog, Chepo, that dog I poison. One dollar, one sack flour, pretty good pay," I said, facetiously.

He was lying on the floor by the fireplace, a mere dark ghost of a man, but he looked at me with the same old Chepo look. "That dog—he real dead—now," he said. His inscrutable look made me feel as if I were somewhat late in bringing the flour. I knew that if I stayed very long Chepo would invent an irrefutable reason for offering up another dollar to the memory of Mongrel One-Eye, so I departed.

The interview somewhat disappointed me. I had a vague idea that Chepo might have shown a little gratitude. He might have told me I was his good friend,—might have dropped a repentant tear over his own shortcomings. Indeed I invented several such expressions for Chepo and tried them on my wife. But she rejected them with utter scorn.

"It never happened that way in the world," she declared. "Chepo is too elemental. He does what he does, and he thinks what he thinks and his yesterdays are forever past."

A few days later Charley Camino, the Indian doctor, came past.

"You come cry tonight? Big Injun cry. Ole Man Chepo he dead."

We went. We sat near the mourners around the fire, under the pines. Old Man Chepo's delightful shifts and diplomacies were no more.

When our turn came we walked forward and looked in his face. It had taken on that wonderful expression which none can fathom, or describe. We know it in our own dead—that mysterious knowledge and aloofness. On the face of Chepo, besides something of this, there had come out a certain weirdness, and a kinship to the coyote and lynx of his own mountains. Had Old Man Chepo ever seemed to me a mere nagging pensioner? If so, he had at last taken his own rightful place among all the children of the Forest—and we were not free of debts to him.

A PROGRESSIVE EXHIBITION OF AMERICAN ARCHITECTURE, AND ITS ENVIRONMENT

HE Architectural League of New York has just brought together architects, sculptors, decorators, brick men, pottery workers and the makers of beautiful gardens for the twenty-seventh time. For the first few years of its life, it would probably have been very difficult to tell one League exhibition from another, for there was the invariable annual assortment of Italian villas, imitation Gothic cathedrals, English country houses and French eccentricities. The Association apparently met to show what had been done in other countries and what could not be done in this. Even the most serious of our own artists had very little to say that was of value to the art and architecture of America. As for the builders, their individuality had no expression whatever, and the mural decorators were still hovering around thoughts of Justice and Truth and Hemispheres in Greek draperies. Indeed, through the first decade of its existence it seemed as though the League were accomplishing almost nothing, and yet there can be no doubt that out of these repeated meetings and the bringing together of the work of dozens of sincere men has grown the spirit of enterprise and of progress which has resulted in the achievement which has been shown at these exhibitions in the last few years. The fact that at the beginning these men were willing to spend money and time, would prove that their purpose was to accomplish all in their power, and for each man to watch his neighbor's work, his achievement or his failure, to profit by what each other did, to reach out for suggestions, to determine to better his own standard from one year to another, unquestionably furnished the force which has resulted in so notable an exhibition as the one presented this season.

How much has been accomplished since those first meetings it would be difficult to understand without repeatedly visiting the Twenty-seventh Annual Exhibition now at the Fine Arts Galleries on West Fifty-seventh Street. It is undoubtedly the best that the League has ever shown. It is modern, original, practical with widest spirit of interest in all worth-while work that is being done in this country, and at the same time with the most reverent spirit of appreciation of what has been done in the past in other countries. There is a room full of Beaux Arts drawings, marvels of technique and accuracy and loyalty to the old standards, which for so long a time were the only standards; but in the three adjoining rooms where the modern exhibitions are shown, there is the liveliest inquiry into all that this country has done, is doing and may do. The Vanderbilt Gallery is largely given over to the designs and drawings in archi-

tectural experimentation. There are new ideas for churches, for civic buildings, for railroad stations, for schools, for municipal halls; there are modern and practical suggestions for houses, large and small, and for gardens, rare, beautiful, vital, with all the possibilities of economy and comfort carried out to the last degree.

In this article we present several of the most interesting houses, a new skyscraper, and some designs for brickwork. In the April number of THE CRAFTSMAN we shall have articles on two features of the exhibition which seemed particularly interesting to us. One will be the treatment of an estate by Albro and Lindeberg, showing the various houses and the handling of the landscape; the other will show the lovely gardens of Mr. Platt and Mr. Saltus, both landscape architects of significance. In a general review of this exhibition we find it difficult not to stop and dwell upon the work of these firms, which are of the widest value to architects and builders and lovers of gardens in America.

The bungalow which we reproduce, exhibited by Mr. Wilson Eyre, is an excellent example of the extremely interesting and practical work which we are doing in domestic architecture in America. There can be no doubt of the fact that we are establishing in this country a new and significant type of home building. The first inspiration for this work was felt on the Pacific Coast, where conditions of climate and of building materials enforced a new type of house, a type suited to the comfort and convenience of the people of new ideas and modes of living. It never seemed to occur to the Pacific Coast people that they should imitate anything or anybody. The material at their hand was adobe, which we later have worked out into numberless ideals in concrete and cement. They had plenty of space, and so they built one-story buildings, which were cheaper. The best ideal of architecture which was about them was in the old Mission buildings. These they studied, and adapted to modern conditions. The wood most convenient for their use, most durable to the climate, was the redwood, beautiful in color and interesting in texture, and so the California bungalow grew to its rare perfection.

In the East we are adjusting this bungalow to a more elaborate system of living. We are making it a two-story house, but we are holding all the features which render it the American type of domestic architecture. The pergolas of Italy and of the West are both finding their way over the paths and porches of our new homes. We want to live outdoors, yet we want some shade from our long cloudless days. So the vine-covered pergola is becoming an almost inseparable phase of our domestic architecture. We have been so slow in building the houses we need, in painting the scenes we love,

CONCRETE BUNGALOW NEAR BRYN MAWR, PA.: WILSON EYRE, ARCHITECT: AN EXCELLENT EXAMPLE OF THE BEST MODERN DOMESTIC ARCHITECTURE.

TWO TYPES OF MODERN COLONIAL COTTAGES AT KENSINGTON, GREAT NECK, L. I.: AYMAR EMBURY, II, ARCHITECT.

MRS. SCHOFIELD'S HOUSE, TUXEDO PARK, NEW YORK: SHOWING EXTREMELY INTERESTING STONE CONSTRUCTION: WALKER AND GILLETTE, ARCHITECTS.

THE MADISON AVENUE BUILDING, NEW YORK: THE NEW TYPE OF SKYSCRAPER: C. A. VALENTINE, ARCHITECT.

in modeling conditions of vital interest in our sculpture, that it is hard to limit our enthusiasm for the genuinely artistic and practical domestic architecture which is beginning to adorn our landscape, and which was so beautifully represented at the Architectural League.

The new churches shown at the League are in a way as essentially modern and American as our houses. They are built for greater comfort, suited to the building materials and to the land which they are to adorn, just as our new civic structures are mighty and strong and simple and practical, useful in every detail. The skyscraper we have often spoken of as a significant phase of American architecture. It grows more significant as the years go by, more simple, more honest, more really beautiful. All this we have said many times, and the League this year proves the value of our prophecy.

Of the gardens and gateways shown, the brick fountains and mantels, the model cities (especially the Forest Hills Gardens, of which Grosvenor Atterbury is the building architect and Frederic Olmsted the landscape architect), too much could not be said. And then there are interesting fountains by Enid Yandell, C. A. Heber, Anna Hyatt and Janet Scudder, and modern tapestries by Albert Herter.

A detail of the Marshall Field Memorial by Daniel Chester French was the dominating figure in sculpture. Of the mural decorations the most significant, in the eyes of the League, at least, were, the "Legends of the Saragossa Sea," "The Triumph of a Condottiere," the large canvas, "The Pioneers," by Maynard Dixon, the Indian pictures by E. W. Deming and the sketches by C. Y. Turner for the Hudson County Courthouse. The workers in ecclesiastical architecture were most interestingly represented by Charles R. Lamb and there were stained-glass windows by Taber Sears, Joseph Lauber and Helen Maitland Armstrong. There were delightful Italian panels by Ernest Peixotto and figure drawings by E. H. Blashfield. Sewell was there with his Mediæval people, and there was one most interesting and humorous caprice for a mural decoration by George Bellows. The best stencil work shown was a series of panels of ducks, geese, chickens and pelicans designed by Carton Moorepark, intended for a decoration for a child's room. It was delightful in color and charmingly humorous.

In this fine arts end of this exhibition, as in the recent Academy exhibitions and the Water-Color shows, we find again and again the charming use of children as subjects for painter, sculptor and decorator,—happy children at play, humorous children and the purely decorative children in bas relief and stencil work. Also, we find everywhere a presentation of art for children, in book illustrations, in room decorations and in portraits.

THE RETURN OF THE BIRDS,—FEATHERED WARDENS OF OUR FIELDS

To a Water Fowl:
"He who, from zone to zone,
Guides through the boundless sky, thy certain flight."—W. C. BRYANT.

THE instinct of migration in birds, one of the great mysteries of Nature, is full of both scientific and romantic interest. Probably no phase of animal life has so completely baffled the skill of scientists or stimulated the fancy of poets, as this wonderful yearly coming and going of our feathered "wardens of the fields." How accurate this force that directs their flight from ocean to ocean, from the tropics to the frigid zones! How strong the tireless wings! How sweet the memory that encourages them to dare the hardships of the perilous journey back to their home and how true the compass that delivers them to the familiar orchard, grove or shore!

The secret of their guiding and the reason for the marvelous flights remain mysteries as inexplicable now as in the days when Homer questioned and Linnæus began to record his observations. Strange theories have been advanced from time to time, so ridiculous, sentimental and foolish that it seems impossible to believe they could have been seriously considered. One theory was that birds went to the moon for the winter, another was that they hibernated in trees, caves or in mud at the bottom of lakes. Even Linnæus and Cuvier believed that swallows spent the winter in a torpid state, buried in mud. Strangely hidden in mystery even now is the disappearance of the chimney-swift and swallows, for our present-day scientists are forced to acknowledge that they do not know where these fleet-winged birds go or from whence they return.

Some ornithologists say that birds but drift before the cold winds or follow the pleasurable emotion of flying toward moist south winds, or follow the sun in response to a desire for longer days, or that they are influenced by meteorological conditions, or that they are possessed by a sixth sense—that of direction. Frank M. Chapman says, "I believe that the origin of this great pilgrimage of countless millions of birds is to be found in the existence of an annual nesting season. In my opinion it is exactly paralleled by the migrations of shad, salmon and other fishes to the spawning grounds and the regular return of seals to their breeding rookeries." Alfred Russell Wallace and many other modern scientists also lay emphasis on this theory of seeking a retreat where the young can be reared in safety, where food is plentiful and long flights to and from the nest of hungry fledglings are not necessary.

The question of food undoubtedly plays an important part, and it may be, as has been suggested, that this search for food may have begun thousands of years ago in a small way, venturing into the next field, then the next valley, then the next, increasing the distance of exploration until, as time went on, it has become simply an hereditary habit. Dr. Allen says that migration of birds is but the outcome of the glacial period, that it is the growth of ages, of gradually adding new territory for feeding and breeding purposes, that the inherent experiences of many generations have resulted in the present migratory instinct.

But how is it that these "guests of summer" find their way? Some mighty force draws them together in flocks numbering thousands at times. Everyone is familiar with the sight of countless birds gathering together, chattering excitedly, for weeks sometimes, and awakening some morning to find that not a bird is in sight—they had departed in the night for faraway, unknown, sunlit lands. Some birds, right after the nesting season, begin to resort nightly to certain roosts, as if organizing for some great undertaking. During this time they are generally moulting, resting from the arduous duties of rearing their young, feeding greedily that they may be in fit condition for the exhaustive flight. They are putting on a new coat of plumage also at this time, and when all is in readiness according to their ideas, they silently depart. The flights are generally by night, the old birds leading the way. The strong winged birds, such as the bobolinks, blackbirds and orioles fly by day, making brief stops for food. The swallows and swifts, being almost tireless of wing, travel by day also and obtain food as they fly. The weaker, more timid birds, such as the thrushes, vireos, warblers, wrens, travel by night and feed during the day.

THE eyesight of a bird is exceptionally keen and, no doubt, though they often fly a mile high or more, they see and follow the large rivers, coast lines or mountain ranges. We know that their route often follows these. Their hearing also must be of help to them in determining their course. Many dangers are encountered, such as fogs,—when they lose their way,—birds of prey which follow the flocks and, above all, the hunters. Sometimes these "winged marches" are made leisurely, at other times we have every reason to believe that thousands of miles are covered with little rest. The males often start some weeks in advance, waiting at the old home for the coming of their mates.

The trail of the bobolinks has been most thoroughly traced, and an interesting one it is. They come to us in May, raise their

families, and make themselves at home in our fields until the latter part of July or August. Then they begin to congregate in Chesapeake Bay, where they are known as reed birds, then down to the South they fly and are called rice birds. By October they have gone again, some flying by way of Cuba, others to Central America, some to the banks of the Amazon and Central Brazil, returning to us again in May.

The study of the scientific and economical relation of birds to man, to each other and to the plants is of intense interest to many people, but there is another phase of this great subject of bird life, and that is their æsthetic value. In this relation their appeal to our love and interest is universal, for is there anyone with heart so callous that it is not stirred by the sight of the first bluebird, or at the call of our old friend the robin when he returns again to us for another summer? Can anyone help feeling a tenderness for the little familiar birds, those "that seem indigenous to the open fields"? They flit busily and cheerily about, building their marvelous little nests, singing a song now and then as they work, so piercingly sweet, the listener stands motionless with the wonder, the beauty, the joy of it. Can Nature show us a lovelier sight than a nesting bird under the boughs of a blossoming fruit tree? Is not the song of the unseen thrush one of the most thrilling things in the world? Is not the soft fluttering sound welling out of the dark blue void of an April night as the birds are passing far overhead on their mysterious flight, like the beating of angels' wings?

The poets have honored the birds in song, melodious as their own notes of love and joy. Is not the very essence of spring contained in James Whitcomb Riley's "The First Bluebird?"

> "Jest rain and snow! and rain again!
> And dribble! drip! and blow!
> Then snow! and thaw! and slush! and then—
> * * * * * * *
> A breezy, treesy, beesy hum
> Too sweet for anything!"

The bluebird is the first of the birds to arrive North, hastening so eagerly to his old haunts that sometimes his azure coat becomes white with snowflakes. He is in truth the "herald of April," for he generally comes at least one week in advance of this delightful month. He sings as he flies close along the ground, in a pleading, plaintive quiet way, as if only for the ears of his mate. Quite the opposite is the exultant song of the meadow-lark, who wants all the world

to know that love is in his heart. The bluebird is like a bit of cerulean sky detached and flitting about among the groves and fields of earth. John Burroughs has written with inspiration so true that there is little left for one to do in writing of this spring favorite than to quote his words: "When Nature made the bluebird she wished to propitiate both the sky and the earth, so she gave him the color of one on his back and the hue of the other on his breast, and ordained that his appearance in spring should denote that the strife and war between these two elements were at an end. He is the peace-harbinger; in him the celestial and terrestrial strike hands and are fast friends."

THE red-winged blackbirds soon follow, the familiar robin hunts about for his old nest, then the song-sparrow begins to insist, in spite of the bleak appearance of the earth, that "spring is here, is here." He has well been called "the poet of the unadorned pastures." The phoebe, fox-sparrow, meadow-lark come next, then the kingfisher, mourning dove, swamp and field-sparrows, purple finches, tree-swallows, myrtle warblers, pipits, kinglets. The last of April sees the whippoorwill, towhee, purple martins, house wren, brown thrasher, catbird, green heron, sandpiper. By the eighth of May migration is at its height, the birds arriving almost too fast for the student and lover to keep track of them. The night-hawk, flycatcher, bobolink, indigo-hunting, grosbeak, tanager, yellow warbler rush in almost simultaneously. If the season is an early one this order is hurried and varied somewhat, but by June everyone is happily at home again.

Though there is such a constant arriving and departing of the birds in the spring that it is hard to study them all, yet it is much easier than in the fall, when they leave so unexpectedly. Some birds, such as the tree-sparrows, juncoes, winter wrens, golden-crowned kinglets, brown creepers, come North in the fall and leave again in March or April. The southward flights start sometimes as early as July, when the blackbirds begin to congregate, and by November it is almost all over again. The Eastern sparrow, bluebird and robin winter near the Gulf coast, the majority of insectivorous birds in the West Indies or Central America. Some of the snipe and plovers breed within the arctic circle and winter on the coast of Patagonia.

John Burroughs says that great pleasure can be had from a "pursuit of just the friendship of birds," leaving aside the desire to call them by name, to know how they accomplish their aerial pilgrimage, and that we may love them and enjoy their winning ways, while the scientist seeks only to know them and understand the secret of their ways.

TO A BLUEBIRD

The scientist's interest in a robin ceases at the completion of exhaustive notes upon his habits, food, anatomy, but we have loved him as a lifelong friend and do not care to subject a friend to a critical analysis. Our love for the robin began when with a merry call from him we tiptoed with childish craft across the lawn, through the long grass of the orchard, even into the boughs of the apple tree in an earnest though futile effort to capture the pretty singer and keep him with us always. But he comes of his own accord again and again to our gardens, seeking protection while he nests, singing his way into our hearts, filling the earth with melody, adding beyond expression to the joy and beauty of the world.

TO A BLUEBIRD

WHILE yet the pall of white snow wraps the hill
And all the world of winter stretches drear,
Now breaking the iron sabbath of the year
Thou comest waking with thy song the rill.
How all the startled echoes thrill and thrill
Stirred deep with thy entrancing largess clear,
And how the void and breathless atmosphere
Seems with thy presence suddenly to fill!

Hail, herald of the April, hail to thee!
Back to the wearied bosom thou dost bring
The raptured tides of hope and joy and mirth.
Sing on, O spirit of glad minstrelsy
Still wearing heaven's livery on thy wing,
And on thy breast the homely garb of earth!

EDWARD WILBUR MASON.

MODERN COUNTRY HOMES IN ENGLAND: BY BARRY PARKER: NUMBER TWENTY-TWO, SECOND PART

IN THE February issue we considered the building of cottages having comparatively narrow frontage, but plans for cottages that are less restricted in this respect are also worth careful study. Perhaps we should begin by considering those which have a frontage not wide enough to preclude their being used within, or very close to, town areas, where land is not so costly that a garden is impossible, and yet is sufficiently valuable to render impracticable anything but a small garden plot for each house,—the areas, in fact, on which most cottages are built. In such places the custom is to build the cottages in rows, each cottage as a rule having only the prospect afforded by the row of houses across the street. If the streets run east and west, the living rooms of cottages on the south side face north.

Let us see whether some substitute for the row could not be devised, eliminating some of its most unpleasant characteristics without increasing the frontage required or the cost of building. Interior and exterior photographs of a pair of cottages built at Starbeck in Yorkshire are given here. The design for these cottages was determined by considerations of the possibility of repeating them, arranged as suggested in Diagram Ten. As the outlook from such cottages must in most cases be very limited, it was obviously important that whatever outlook was to be obtained should be the best the site could afford. If the cottages at Starbeck were disposed on the site in the way shown in Diagram Ten and in the photograph of a model, the grave

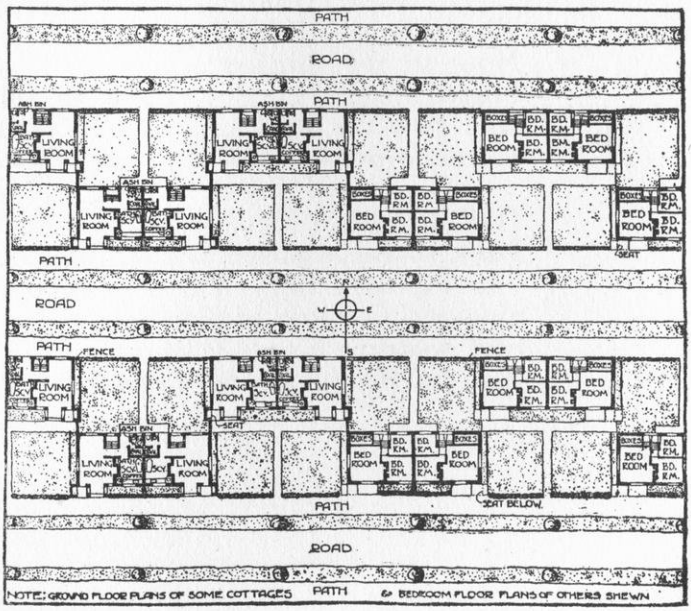
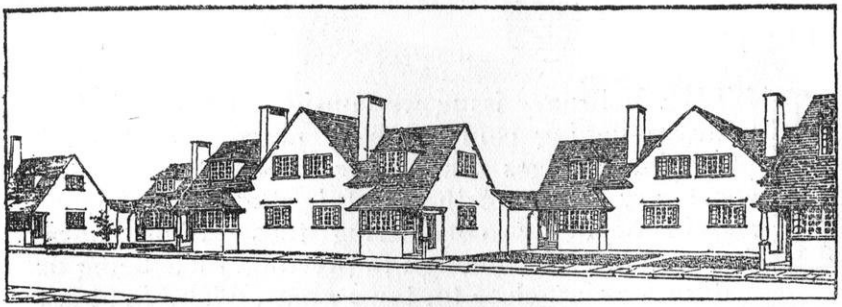


DIAGRAM TEN: SEE PAGE 645.



FRONT OF ROW OF COTTAGES SHOWN IN DIAGRAM TEN.

defects of rows on either side of a street would be absent. Each living room would have windows on three sides, and the most limited outlook from any one of these windows would be across two gardens, or one garden and the street. From most points of view a more extended outlook would be commanded. Every living room would have a south window and in addition either an east or west window, and would get a very large proportion of sunshine. Every scullery would face south. Out of every three bedrooms, two would face the south, and the third would have an east or west window, so that an estate laid out on these lines would not have a sunless room upon it.

When laying out an estate on which cottages are to be built, it is necessary in each specific instance to determine first what will prove to be the most economical way of providing access to the back of the cottages. Broadly speaking, there are two alternative ways of

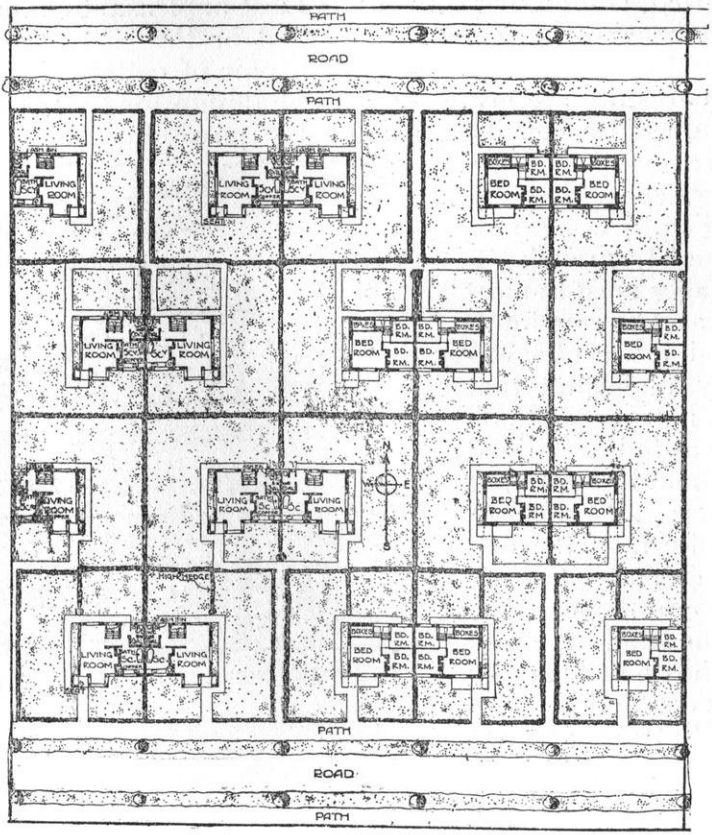
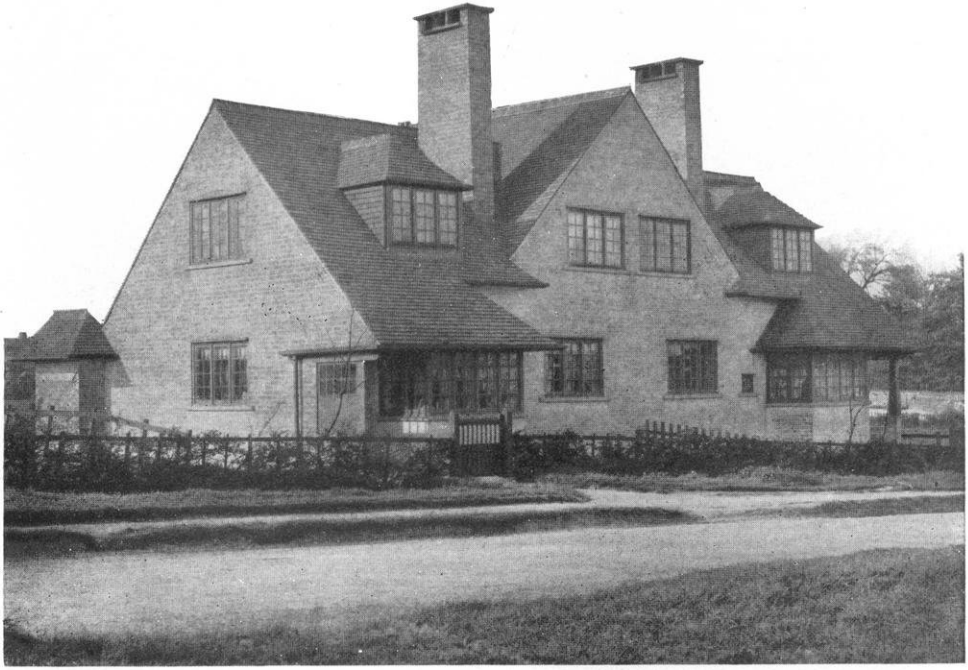
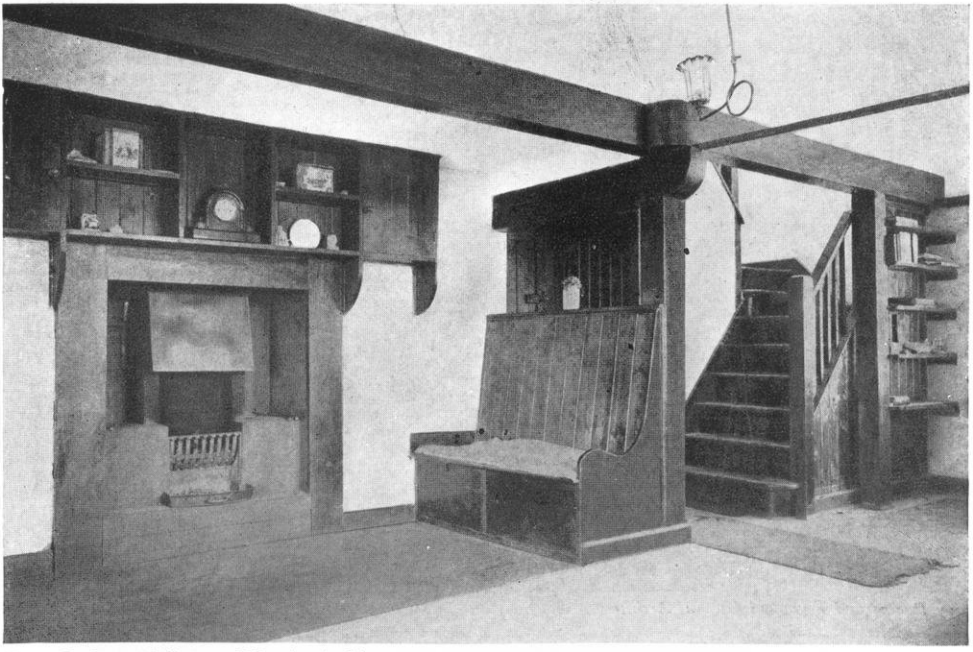


DIAGRAM ELEVEN.

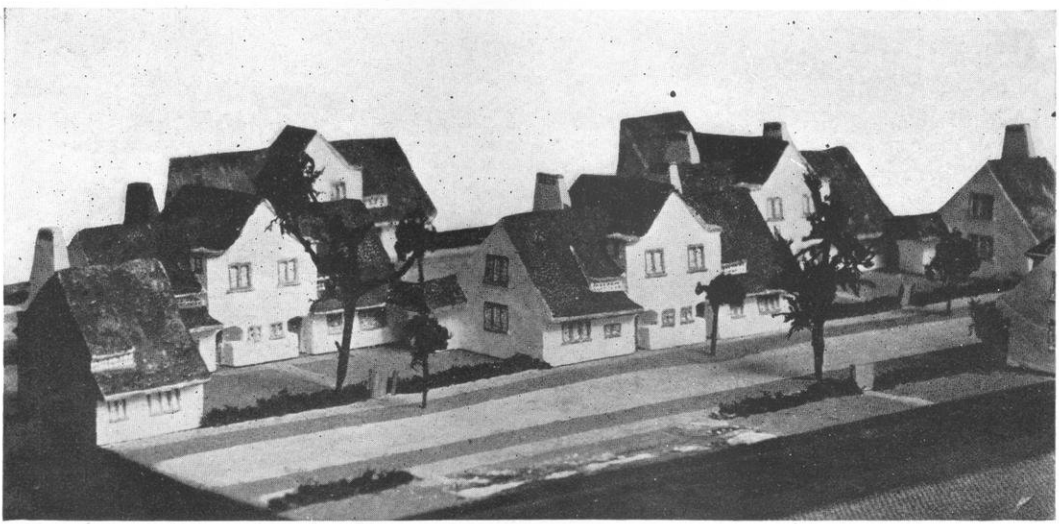




Barry Parker and Raymond Unwin, Architects.

A PAIR OF COTTAGES AT STARBECK, YORKSHIRE: SEE DIAGRAMS 10 AND 11.

INTERIOR OF A COTTAGE AT STARBECK, YORKSHIRE, ENGLAND.



Barry Parker and Raymond Unwin, Architects.

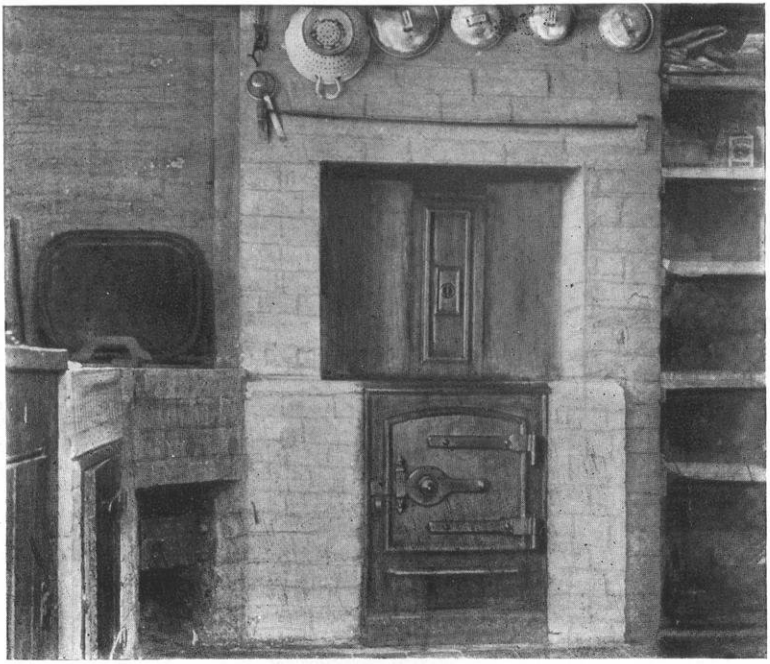
BLOCK OF FOUR TWO-BEDROOM COTTAGES: FOR PLANS SEE DIAGRAM TWELVE.

MODEL MADE FROM DIAGRAM TEN, SHOWING BACKS OF COTTAGES.

Barry Parker and Raymond Unwin, Architects.

A PAIR OF CONCRETE SEMI-DETACHED COTTAGES: FOR PLAN SEE DIAGRAM THIRTEEN.

GROUP OF EIGHT COTTAGES: SEE DIAGRAM SIXTEEN.



DETAIL OF WORKING KITCHEN IN DIAGRAM FOURTEEN, SHOWING OVEN AND HOT PLATE.

FIREPLACE IN LIVING ROOM OF SAME COTTAGE, WHICH HEATS OVEN AND HOT PLATE IN KITCHEN.

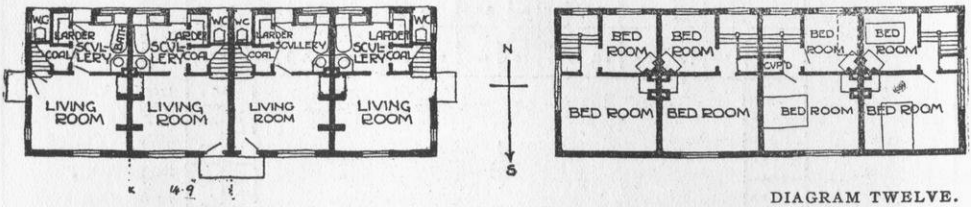


DIAGRAM TWELVE.

doing this, one being by means of back lanes running behind the houses and the other by means of passageways between the houses (one passageway to every two houses). Which of these is most economical can be determined by ascertaining whether the cost of the increased frontage of each pair of houses, caused by the addition of entries between the houses, overbalances the cost of providing a back road. In Diagram Ten each back road becomes a front road and additional cost is entailed, but

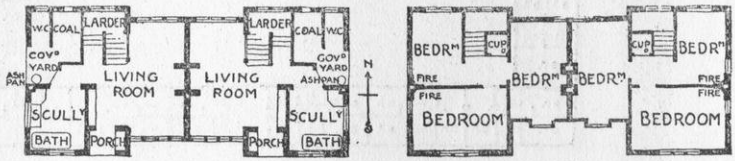


DIAGRAM THIRTEEN.

these roads are not essential to the scheme at all. When the cottages are arranged as they are in Diagram Eleven, there is no need either to devote frontage to passageways between the houses or to make a back road, and the only way in which the cost would be greater than that of continuous rows would be by the additional end wall required for every pair of cottages, which would amount (varying with the locality) to between ten dollars and eleven dollars and seventy-five cents per cottage, so that it is obvious that a number of cottages could be built more cheaply on this plan than they could in rows. In many instances the expense for drainage would be less. To gain the greatest advantages of either of these suggestions (Diagrams Ten and Eleven) a little covered yard within four walls and under the main roof is especially desirable. Anything in the nature of a backyard or of projecting or detached outbuildings behind the cottages would be overlooked by the windows of other cottages even more than if the cottages were in rows.

It might be well to point out that though this suggestion is put

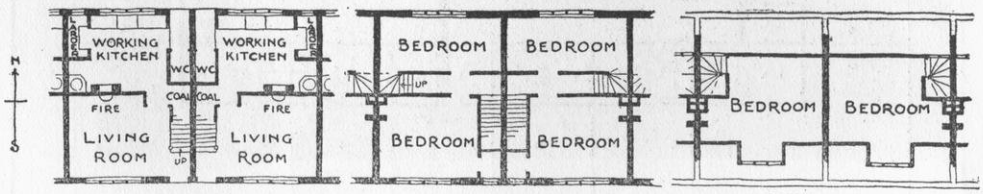


DIAGRAM FOURTEEN.

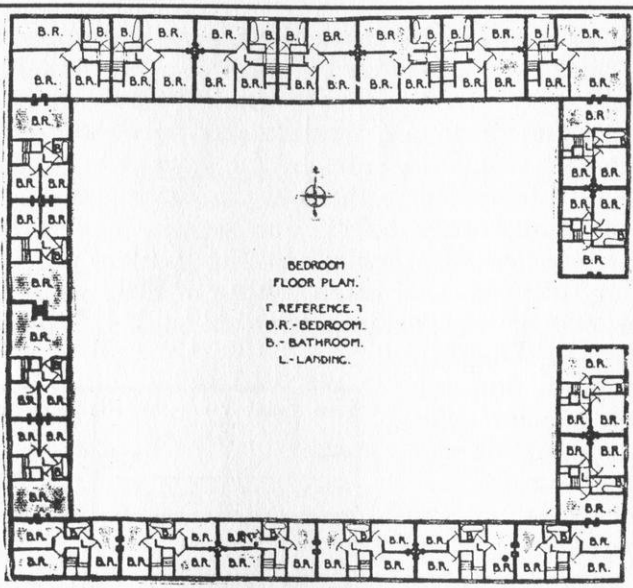
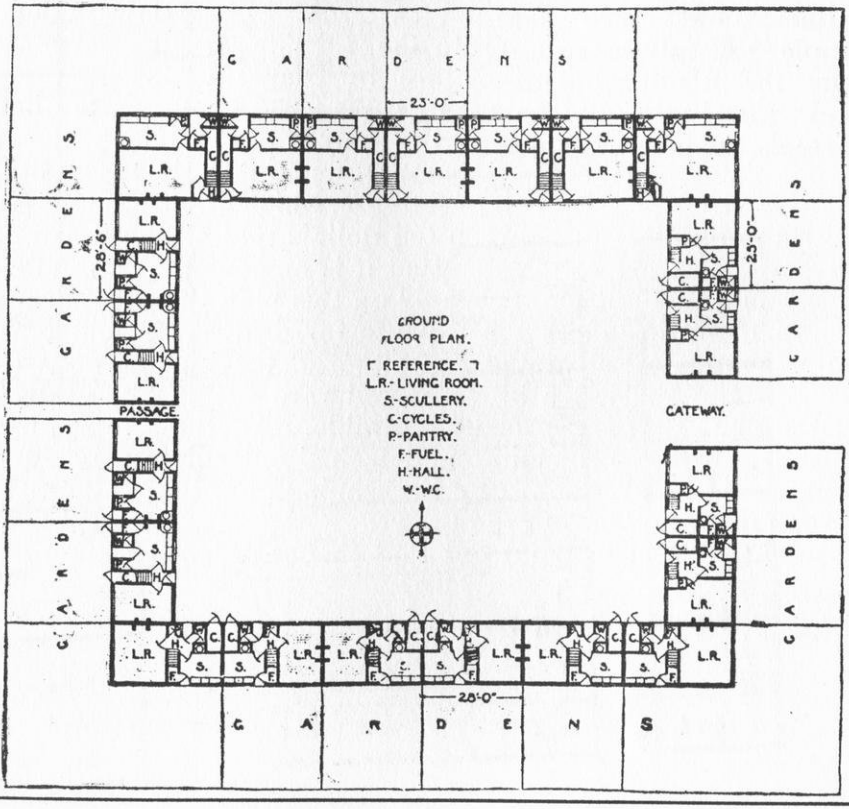


DIAGRAM FIFTEEN: THE PARLOR-COTTAGE PLANNED TO AVOID NORTH PARLORS, TO SECURE AS MUCH SUN AS POSSIBLE, ALSO FOR COMFORT AND SAVING OF STEPS.



forward as an alternative to rows of cottages and not as an alternative to the customary arrangement of pairs of semi-detached cottages, it may even compare favorably with this infinitely more expensive arrangement, as there is no ugly wasteful gap between each pair of houses and the sun can reach the sides of the houses as well as the fronts. Attention might be called to the fact that with semi-detached houses, in addition to many other defects due to gaps between them, not only are the gaps useless in themselves for garden purposes, but they cause cutting draughts that often render of little value a considerable area of the rest of the garden, front or back. Where the arrangement shown in Diagram Ten is adopted, not only is the whole garden space open to sunshine, but each garden is much more sheltered than it is in any other arrangement. Each is, in fact, almost a walled garden, and very few people will fail to appreciate the abolition of the back road with all that the term implies. A glance

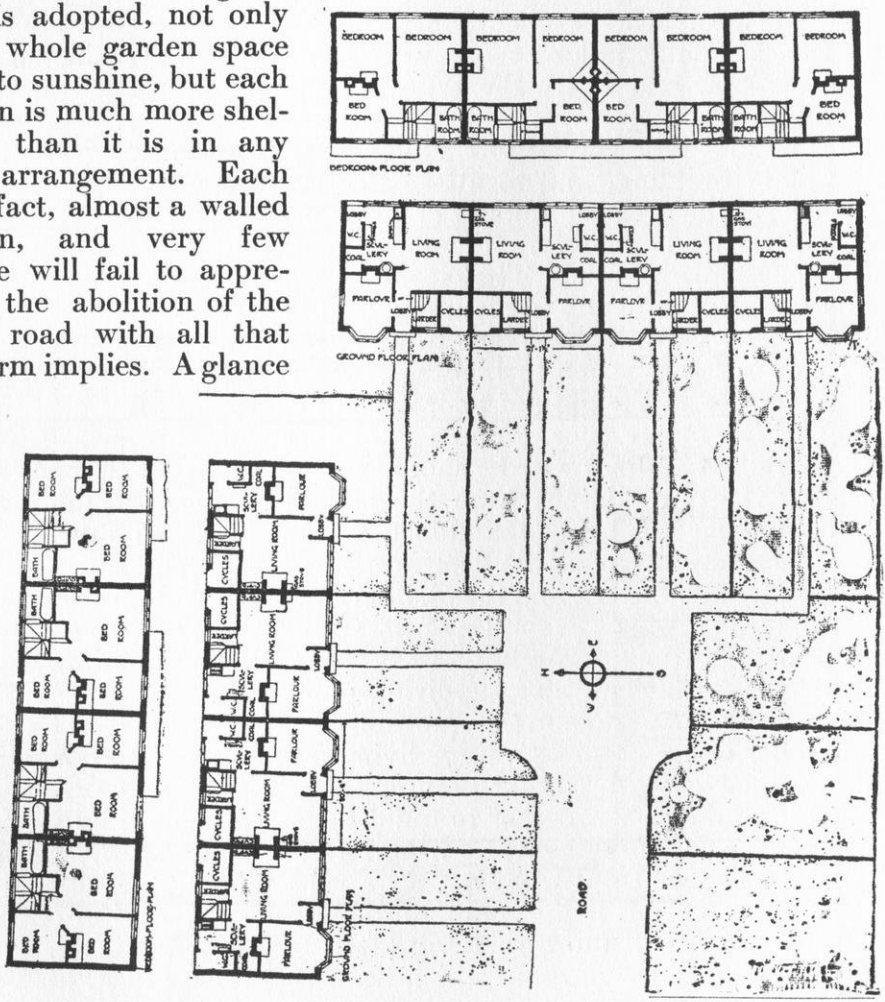


DIAGRAM SIXTEEN.

at the sketches and photograph of a model, the latter showing the backs of the cottages, will suggest how great a difference this arrangement would make in the appearance of the streets. Instead of monotonous rows or pairs of houses, with a long line of continuous shade, there would be presented to the passerby continual change of light and shade, of building and garden; the constant interest of the fresh recesses with variously arranged gardens, revealing themselves one by one; instead of the long strip of sky, wide spaces of cloudland would open to view as each garden opening was reached.

The cottages we are considering may be roughly divided into four main types: those which contain living room, scullery, larder, coal place, lavatory and two bedrooms; those with a third bedroom added to this accommodation; those with working scullery-kitchen and a living room, and lastly the type of building we may call "parlor cottages."

The first type can be planned so as to avoid all projections from the main building, and to attain that cubical form which, because it encloses the greatest amount of space possible to any given quantity of materials, is therefore the most economical. Diagram Twelve is given as an example. The second type of cottage at once introduces much greater difficulty in planning, as it is necessary to contrive three rooms over two, all the rooms to be of reasonable size and accessible without wasting space in landings. And the plans must not call for any increase in the ground floor accommodation in order to increase that of the upper floor. When grappling with this sort of problem the architect realizes why he should be thankful that the idea of projecting the outbuildings from the main building, or building them quite detached, is being abandoned, for putting them under the main roof increases his available floor area for the bedrooms.

Diagram Thirteen and the photograph of the cottages built according to it are given as examples of the second type, designed to be built in pairs. Various examples will be found in the quadrangles illustrated here, which are also one-living-room cottages suitable for building in rows. Apart from the question of whether to have a parlor and a smaller living room or a large living room and no parlor, no question connected with cottage planning has been so much discussed as has the problem of whether to build the staircase in the living room, as shown in the photograph of the interior of one of the cottages at Starbeck, or shut out from it. As a rule, the cottager does not like the staircase in his living room, and when every shovelful of coal is a consideration and more fuel will often be needed to keep warm in cold weather a living room which has the staircase in it, his point of view is easy to understand. On the other hand, a closed door at

the head of the staircase would do much to prevent heat escaping from the living room, and during the greater part of the year there is much advantage in being able to ventilate the living room by means of a window on the bedroom landing. Also, where the living room is necessarily small, the additional size given to it by adding the space occupied by the staircase (often five hundred cubic feet) should not be overlooked.

To illustrate the third type, Diagram Fourteen is given. It is a sort of halfway house between types one and two, and a parlor cottage. It is designed to meet the requirements of the man who cannot afford a cottage which has a parlor, living room and scullery, but has tastes and the kind of work which necessitate his having some place that is safe from interruption. This type, instead of having a living room and scullery, has a working kitchen and a living room. The defect of this arrangement is the same as if the range were in the scullery. In the latter case, as a rule, the family, not being able to afford two fires, lives in the scullery, and the living room is left unoccupied. So in the cottage we are considering, the cost of two fires is likely to prevent the living room from being really effectively used. This difficulty can be very successfully overcome by so planning the house that the oven and hot plate are in the kitchen and the open fire in the living room; both rooms thus become available, and only one fire is needed (see photograph of cottage at Letchworth). The plans of the cottages at Starbeck shown in Diagrams Ten and Eleven were adapted to this end.

The fourth type of cottage is the real parlor cottage, containing living room, scullery and parlor, of which many examples are given here. The chief disadvantage in this is that the parlor or "best room" in ninety-nine cases out of a hundred is practically unused, and becomes merely a sort of shrine of respectability, a home for the family Bible, china ornaments and the suite of best furniture. If, in such cases, it is provided at the expense of reduced size in the living room, it should not be there at all. There is another side to this question, which is so well put in "Old Country Inns," by Maskell and Gregory, that I cannot do better than quote:

"But it will be a bad day for England when the 'best room' disappears from the artisan's home. It is, by long tradition, his castle, his secret keep, the innermost temple of his religion. Every patriotic instinct of the poor man has its center within that little stuffy apartment. Home to the working man means the best room. The safety of the best room justifies all the national expenditure on a standing army and a huge navy. In the defense of that best room he is prepared to send his sons to lay their bones in some nameless

soldier's grave in the most distant corner of the empire. Take away the best room and the wage-earner has no home worth either working for or fighting for."

Each of the four types of cottages of which I have spoken may be sub-divided again for convenience according to their aspects. But these sub-divisions need not be considered in detail. Where the width of frontage assigned to a cottage makes such an arrangement possible, the advantages of having both scullery and living room facing south are obviously great. Efforts should be made to avoid north parlors, as the tomblike impression the parlor will probably give in any case will naturally be increased by a northern exposure. In cottages facing either east or west the ideal living room should run through from front to back, so that, as it does not receive south sunshine, it will get all that comes from both east and west. (See Diagram Fifteen.) As a matter of fact, as the sun is lower when in the east and west than when in the south, it penetrates further into the room, and thus the living room will have a greater number of sunshiny hours during the year than if the aspect were due south. Of course, if both parlor and living room are to be through rooms, a very generous allowance of frontage indeed is needed; in most cases this will not be possible. When neither living room nor parlor can be through rooms, they should be on different sides, so that one may get the sun at one time of the day and the other at another, the whole house being sunless only a very short time each day. See Diagram Sixteen and photographs of houses built to these plans at a contract price of less than fourteen hundred dollars each. It will be noticed that bicycle houses are provided in many of the cottages illustrated here. There are so few cottage homes now where no member possesses a bicycle or a perambulator that it has become essential to provide such a room in most cottages.

This reminds me that when enumerating the uses to which the parlor was put, I overlooked the fact that a very large proportion of them have in recent years established a substantial claim to consideration by housing bicycles and perambulators. But the best argument for the parlor is that its influence, on the whole, has been toward maintaining a demand by the cottage dweller for a higher standard of living. Perhaps the most important thing to bear in mind is that in so far as our efforts tend to raise the standard of the cottage itself and of the cottager's demands with respect to it, the influence will be for good; that such economies as can be made without loss in efficiency are for the benefit of the workman and for the whole community, but all economies made by lowering standards only result in loss to the community as a whole. Many people are

asking for poorer cottages on the plea that the rents of those provided for laborers are beyond their means, losing sight of the fact that it is not the wages earned that determine how good a cottage the workman shall live in, but that the kind of cottage and style of living he demands determine what his wages shall be, so that all effort to awaken him to an appreciation of a higher standard of living will tend toward increasing his efficiency and thus his earning capacity.

If the parlor goes, it should only do so in order to give place to something that will express a truer refinement in the lives of the workman and his family, something demanded by a broadening of their sympathies and tastes, some part of real life exchanged for the attempt to affect supposed symbols of gentility. But until this better thing can be substituted, the parlor should be retained wherever possible without undue sacrifice of realities, lest the cottager's standards be lowered by the removal of an expression of something which does not ring true before the need is felt for something better in its place. The desire for a parlor is but a groping after something better, and symbolizes a stage of development which might be hampered if the symbol were taken away.

The time is not very far distant when there will be a bathroom in every cottage as a matter of course. I know it will be truly said if this were done now, a considerable proportion of these bathrooms would never be used for their original purpose, but it is only by providing them that the use and appreciation of them will grow.

I have arranged the cottage plans used in illustration of this article partly in quadrangles, primarily for the readers' convenience in grasping each plan in relation to the aspects for which it is put forward, but partly for reasons which those who read my article in the January CRAFTSMAN will readily appreciate, and those who do me the honor of reading my next will also understand.

SEEING NATURE WITH A PAINTER'S EYE: BY ALBERT SCOTT COX

IT IS worth while to open our eyes to the painter's knowledge, for the reward of the artistic observer is great and the pleasure increases with experience. If color is studied it will soon be seen that all nature acts as a series of mirrors. A credit system will be found in the color world where objects are constantly borrowing and lending. All of us who have roved the fields in childhood have noticed this principle of color reflection, when we held a buttercup beneath the chin of a companion to see if he liked butter. With greater delicacy, nature plays this way with us constantly, but few realize the gentle game. The roof of bright red tiles changes in color in an instant to a gleam of silver-gray, when a passing shower glazes its surface, conceals local color and mirrors the sky. The metallic ivy leaves fluttering before us, that we call green, change their color with every breeze that shakes them, at one angle giving a glint of sunlight, at another a flash of the cold blue of the sky; the next moment they show their local color and then blend sky reflection and local color for a second. Paradoxical as it may sound, a red leaf sometimes is blue, and a green leaf may be yellow.

Moist and firm surfaces are naturally the best mirrors, yet the dull gray fence rails, on the under side, on a sunny day borrow a greenish yellow from the grass and reflected sunlight below, while on the upper planes in shadow they gleam with pearly gray, because the dull gray wood reflects imperfectly the blue sky and gives forth something of its own color. Those parts on which sunlight falls are not only lighter but more yellow than the perpendicular shadow planes.

The play of color on a grazing white cow is highly instructive; the under plane of her belly will be seen to be greenish yellow, while the perpendicular planes, when in shadow, approach a neutral gray until the plane inclines from the perpendicular, when it at once turns purple under the influence of the blue sky. Where the sunlight falls on her back the white becomes a glowing yellow white. In this way not only do the shadows tell us that the cow is not a flat surface, but the color aids the shadows in modeling the animal for our vision.

HOW many have ever seen the action of color on the faces of what we call white men and women? Look at one of those white persons attentively some cloudless day in the sunlight, when their face is in shadow, and heed the warm glow that is thrown up from below on the under planes of the chin, under the nose and under the projecting brow. Then see how the upper planes of those parts of the face exposed to the sky borrow something of its purple-

blue or take upon themselves what artists call the cold lights. Then hold your handkerchief by the face of one of these so-called white persons and notice how far the lightest is removed from white. Go to the other extreme of humanity and the blackest human to be found is hardly darker than chocolate when compared with soot from an oven. Look at the glossy skin and see the wealth of varied color that pervades it. White men and black men exist only for convenience in classification. The most elementary observer has discovered that neither black nor white exists in nature. There is always the influence of red, yellow or blue, and often two or more colors unite to destroy them. An object or a deep recess at first glance appears black, but all students soon perceive that nature cannot be translated to canvas without the addition of one or more pigments. The whitest cuff is infused with yellow or red or with both, where the sunlight falls, while the shadow cannot be interpreted without blue. The color of the cuff, like the planes of the white cow, is determined by angles and by the character of its surroundings.

Study a flock of black crows at close range and discover that they have been tinted by all the rays of the prism and that the black crow we have talked of all our days does not exist, has never gladdened or depressed us with his caws. Black as a crow and white as the driven snow are terms rendered useful by antiquity rather than by accuracy. When the conditions known as white or black are realized in their endless variety, a wide field of observation is opened.

Flowing water often reveals little of its own character, it borrows color in such profusion; it is deceitful indeed; more than two-faced, it is ten-faced; it throws back at us the varying sky changes from morning until night, becoming the color of anything within range of reflection. When the wave surface is turned at the right angle we get a hint of the local color of the water, or when it is excessively colored by foreign matter, its hue is discernible by standing and looking directly at the water at one's feet. Watch the leaden ocean beaten by rain, and then on a cloudless day trembling with deep pure blue, pure green and violet or aflame with the sunset glow, and you will realize that the prism or the mirror cannot surpass water in variety of color.

MAGICAL color transformation is visible to the dullest eye, when the city streets are bathed in rain and the gray pavement trembles with the borrowed splendor of the marble building above, and makes the fiery gleam of a druggist's gorgeous vessel a part of its raincoat. In a lesser degree indoors, and without in dry weather, do surfaces borrow and lend, but it profits the practiced

observer only. It is a knowledge of subtle color interchange that rescues a painting from a crude artificial quality; this sensitive appreciation and an intimate sympathy with the moods of nature is preëminently the gift of the best of modern work.

The same object illuminated by the noonday sun has a different color when lighted by the yellow warmth of sunset. When the pale light of the moon replaces the sunlight another change occurs. At night it is difficult to release our memory from noonday recollections and realize the truth before our eyes. The ability to forget other conditions of light and perceive only that which is before us cannot be acquired except by experiment and study.

A black hat held above the eyes with its shadow side against the distance aids the observer in making a comparison. A white window sash, lighted from within, assists one looking out to analyze in a degree the nature of moonlight. When moonlight falls on one side of a face and firelight on the other, the sharp opposition of warm and cold colors brings vividly to mind the influence that the source of light has on color. Nature abounds in exquisite color combinations in which the animal, vegetable and mineral world rival one another.

A number of birds of different species may not be agreeable as a color relation, yet the parts of each individual bird rarely fail to combine with marvelous beauty. The snake is not repulsive when his color is studied, for these squirming reptiles supply wonderful color plans for draperies or rugs, and the painter finds them highly suggestive. Vegetation may choose its color companions to advantage, yet I have never seen a single leaf or flower that was not consistent in its own color relation. The aquarium has its color wonders to reveal as well as the woods and fields, and minerals are marvels of beauty.

I AM often impressed with the choice color combinations of tree trunks, combinations that could with great propriety be adapted to house painting and rescue our towns from the shocking glare of discords that so often startles the sensitive eye. Often one sees a warm gray tree trunk trimmed with a deep neutral green lichen, with here and there a dash of silvery gray-green, a restful harmony at peace with the landscape, as our houses ought to be. The exquisite color that wood often attains when its raw surface is exposed to the magic touch of time is an endless delight to an appreciative eye, the hues running from rusty yellows to light grays, and now and then into deep, velvetlike brown. If we profited by nature's suggestions our villages would be rightly related to the landscape instead of marring it.

The charred logs of an open fire have a somber beauty of peculiar attraction. The dull bark, the warm black of the burned surface, the light neutral gray of the ashes and the glow of a hot coal unite to complete a harmony of impressive beauty, which must have been the inspiration of many a Japanese, for it suggests some of their finest color arrangements. The spiral smoke movement and bark texture have been suggestive in design to many craftsmen. Both glowing coals and flashing firelight have a power that is half-hypnotic in its appeal.

For an artist who would interpret reality, the study of values is of the utmost importance, and to realize their power and subtle influence on what he sees requires years of observation. The term values is here used in reference to the varying degrees of objects or shadows from light to dark and the reverse. Fail to realize the proper relation of objects and they will not take their place; there will be no depth in the interpretations unless studious comparisons are made. If you nearly close your hand and form a deep dark recess where the light does not penetrate, you will find that the surface shadows and wrinkles are far lighter than the deep recess, for shallow depressions cannot hold the deeper shades any more than a pint measure can hold a gallon. The recess is the unit of dark, all other shadows by contrast seem very dark when in the midst of light, yet when compared with the unit of dark it will be seen that they do not approach it in depth.

The painter who has not mastered the art of realizing relations exaggerates in portraiture time's record of our smiles and frowns, and the lady with a suggestion of a concave cheek seems wasted by famine because a partial shadow is given the value of a deep recess. Fractions must be split in dealing with subtle observation or a lady's feelings.

To comprehend what is seen, in addition to shadow value, color value must be studied. The youthful artist who has made a great reputation with his grandmother because he "never took any lessons," nine hundred and ninety times out of a thousand will paint a rosy cheek in full light as dark as those parts of the face in shadow, simply because the rosy flush by contrast with the light transparent flesh surrounding seemed dark. The color on the cheek would not have looked so dark had he compared it intelligently with the mass of shadow. By painting the slight change of color value with as strong a contrast as that of shadow value, the boy destroyed modeling and made the portrait flat.

SEEING NATURE WITH A PAINTER'S EYE

A WHITEWASHED house in shadow, unless there is an unusual amount of reflected light, is darker than a black hat with the sunlight falling on it, yet far lighter than black in shadow. A white church with the sun behind it and backed by a group of dark trees is no lighter below than the spire against the sky, yet all untrained eyes see it so, and amateurs invariably paint it lighter at the base. Our eyes are so easily deceived in this respect that unless this vital fact is brought to a student's mind he may work for years and not perceive it. The competent artist's mind is stored with these truths on which reality depends, and with them he fortifies his memory against the deceptions that nature plays upon the unwary. Lines seem to lean this or that way by association with those that incline. An object appears to change color when surrounding color is changed, and so we have value, color and form cheating our eyes; yet many a man would be highly incensed if you told him he did not know what he saw. If form alone were not so alluring that many are content to express themselves in metal and stone, we would have no sculpture.

Mankind has chosen the human figure as the highest type of beauty in animal life, and in the absence of primate and protoplasm standards we must accept this verdict. Despite the tailor and dressmaker, enough human anatomy is visible in the modern world to be a source of pleasure. As we peep back through centuries of fashion's fantastic absurdities, we realize that a truly beautiful face and figure are difficult to bury in millinery or armor. We who have suffered from corsets and collar buttons look upon our ancestors smiling sweetly while strangled by a ruff, with deep and tender sympathy. She was a beauty, we think, and "a man's a man for a' that."

The most essential points of beauty in the human figure are poise and proportion and these are rarely hidden by the costume of any age. An unconscious child at play, with its ceaseless variety of poise, its flexible turns and twists, revealing its emotions by attitude and expression, is one of the pleasant subjects for observation that has a wide audience. The beauty of mature feminine grace and masculine power needs no advocate, but it may be interesting to analyze some of the attributes on which beauty depends. If a face is made of angles it is harsh (doubtless the origin of "hatchet-face"); if modeled entirely in soft rounded forms it is insipid (the probable source of "dough-head"). To be pleasing it is necessary that the rounded forms be contrasted with points of clean decision, as is true of all classic standards. The highest type of beauty adds to these qualities the charm of personality.

The play of line of the human figure, caused by the bone framework and muscles swelling from compact tendons to large rounded

forms, gives that unceasing variety in quantity and quality of plane which beauty must depend upon,—now the firm joint and then the sweeping curve. The mass of the male figure is from shoulder to shoulder, that of the female from hip to hip. The designs differ, one standing for power, the other for subtlety; each creates its own standard and is the complement of the other. Every posture, every movement speaks of the nature that rules the individual form. Humanity is writing its autobiography with every breath and every step. The vital and the feeble, the vain, the brave, the timid, the purposeless, tell their story all day long. Neither clothing nor flesh nor bone hides the nature of the man within. Poise and movement are full of narrative for the thoughtful. The interest of human poses is far greater than that of animals, as human poses reveal wider mental range and consequently a greater diversity of expression. The acute observation requisite in one who draws accurate characters often accompanies an unusual perception of human nature. Every face is a personal document, and to read the temperament of those we meet gives power, instruction and entertainment. Individuality has an interest quite equal to beauty, and artists often find enjoyment in a face that the casual observer passes unheeded.

The habit of observing nature in minute detail, although not the practice of all painters, affords unceasing pleasure. Thirty thousand dollar pinks or flowers of great popularity do not always gratify our sensibilities as much as some wayside plant searching desperately for nutrition in the crevice of a rock or struggling joyfully in a barren soil. There are so-called "weeds" whose chaste design inspires all craftsmen. We see their influence as the motive of the choicest metal and lace work of fabulous value and exquisite delicacy. To rate beauty by its reputation or commercial contribution is like valuing poetry by a bard's income, which comes dangerously near to a denial of poetic production.

In vegetation, despite the similarity of construction in common, the various growths abound in individuality. Every daisy wears a white sunbonnet, yet each head-dress and jovial yellow face is unlike its neighbor's.

The simplest combination of objects out of the window, if studied under all conditions, becomes most instructive and entertaining. In the morning's light, at noon and night the same motive has a new face. In sunshine and storm, from season to season, it smiles with changing expression throughout the year. One who sees the moods of nature, its form, its changing play of light, tone, color and value, will not be obliged to scour the world for beauty, for, in varying de-

gree it exists everywhere. Without this appreciation one might as well study geography and timetables as to travel in search of beauty. The rarest natural conditions make no appeal except to awakened sensibilities. Some painters have chosen a commonplace motive and painted it scores of times under different effects to reveal this fact to themselves and to the world.

If you are confined to the same scene try and extract from it more than would a globe-trotter who perceives only vastness of valley or mountain heights, and who flies the world over because he cannot see, or in search of self-control which he may never find.

Getting the most out of conditions before one is a healthy and helpful practice to cultivate. Studious attention to the beauties of nature establishes a genial fellowship with the world, while it reveals the charm of the much-abused changing conditions of weather, and teaches that all days are beautiful days for those who live with open eyes.

GREATNESS

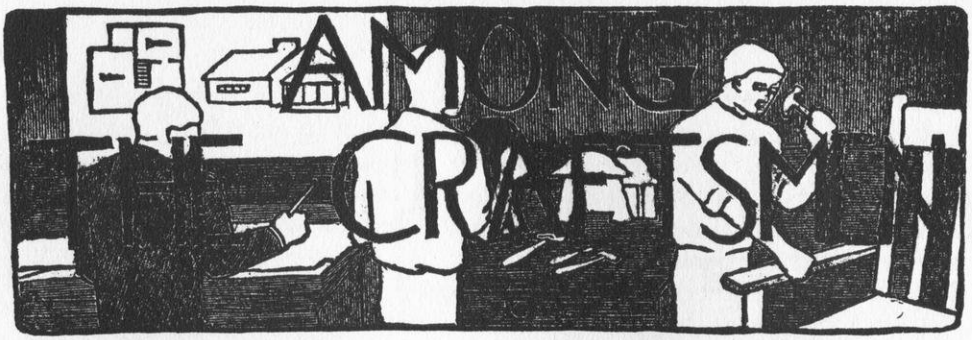
THE sun like jewels through the air
Flings beams in every place
So does the mind of beauty share
Its treasures with the race.

The purpling rose in shine and shower
Yields to the winds its breath
So is the gracious heart a flower
That spills itself to death.

Music of nature clear and whole
Sounds in the shell and wind
So voice of the ennobled soul
Speaks soft to all mankind.

As God might from the sky descend
With robes of healing free
So do the souls of greatness bend
Clothed with humility!

EDWARD WILBUR MASON.



CRAFTSMAN CONCRETE BUNGALOWS, SHOWING ECONOMY OF CONSTRUCTION: BY THE EDITOR

I AM presenting here two Craftsman bungalows embodying a practical and economical idea in concrete construction. I believe that this new method, which is illustrated with perspective views and working drawings, will mean a reduction in cost and an increase in efficiency over the methods hitherto used, and so will be of interest to architects, builders and all who are considering the problem of building a home.

In order to make this new process of construction clear, it may be well to explain briefly those usually employed. When concrete was first used it was found to be an ideal building material, because indestructible and fireproof. The problem, however, was just *how* to use it to the best advantage. Solid concrete walls were built at first, but these had a serious disadvantage. Concrete is a good conductor of heat and cold, and is affected by changes of temperature and varying atmospheric conditions. In winter, therefore, the cold air outside the house chilled the solid concrete walls, making the inner surface colder than the air within the rooms; whereupon the warm air within the house, coming in contact with the cool wall, was at once chilled, decreasing its moisture-holding capacity and causing the surplus moisture to condense upon the cool inner surface and run down the walls. This is what is known as sweating, and the dampness produced not only made the rooms chilly and unwholesome, but also stained and discolored the wall coverings and hangings.

Various methods were devised in an attempt to obviate this difficulty, and to construct a solid concrete wall which would not sweat. Furring was used—that is to say, strips of wood were placed at intervals against the inner surface of the solid concrete wall, and lath and plaster were applied, the air spaces left between the concrete and the plaster serving as an insulation and thus preventing sweating.

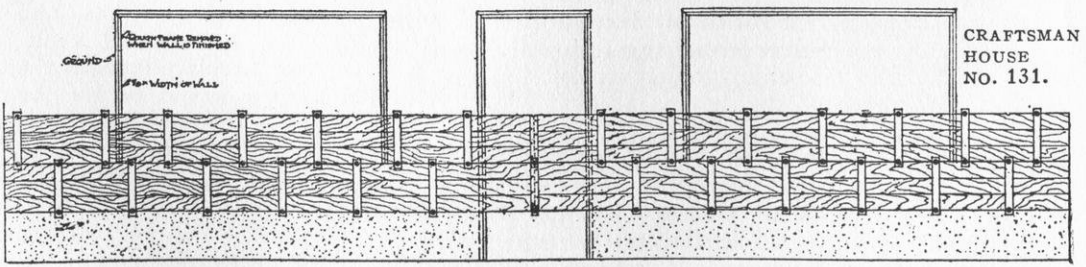
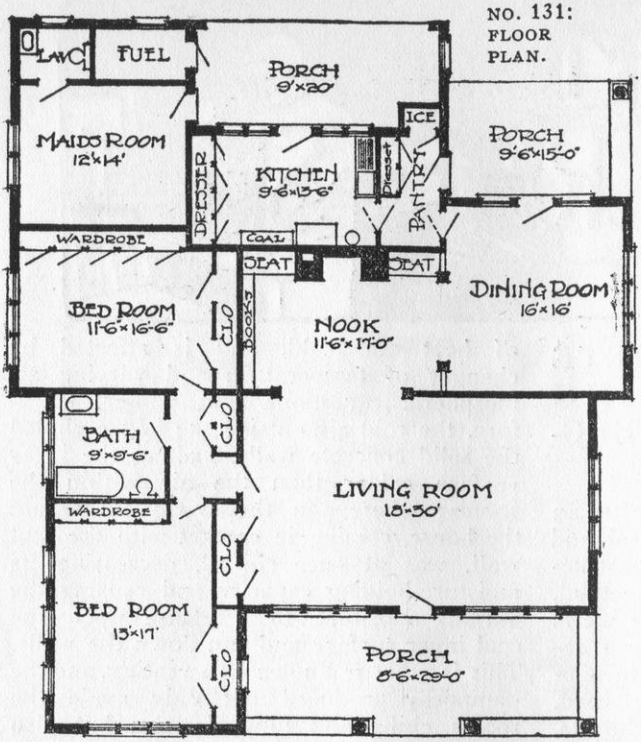


FIG. 1: ELEVATION OF FRONT OUTER WALL OF LIVING ROOM IN BUNGALOW NO. 131, IN PROCESS OF CONSTRUCTION, SHOWING DOOR AND WINDOW FRAMES SET IN WOODEN FORMS PREPARATORY TO FILLING IN THE CONCRETE.



NO. 131: FLOOR PLAN.

CRAFTSMAN CONCRETE BUNGALOW.

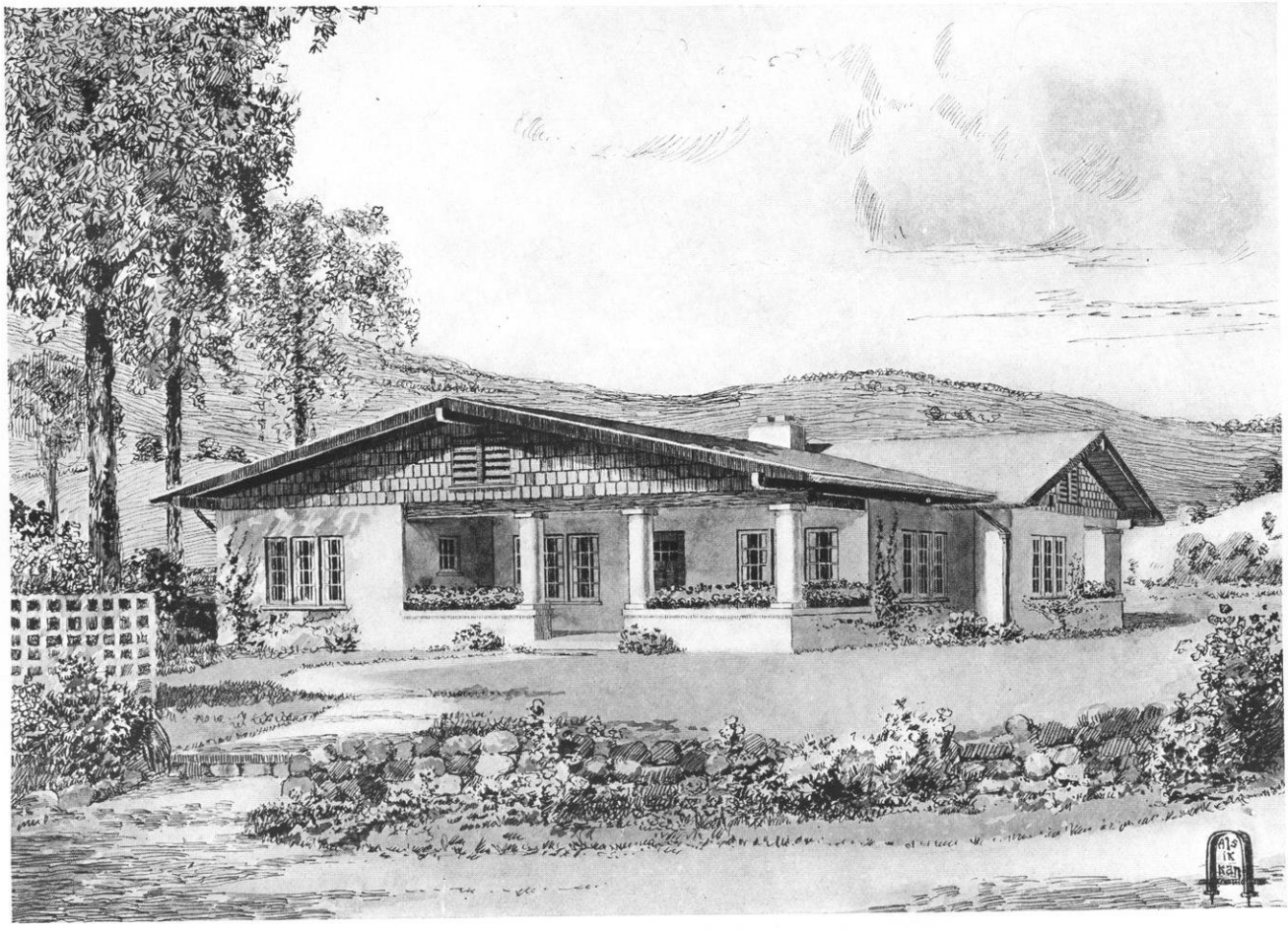
This construction, however, besides not being fireproof, involved the extra cost of wood and plaster, much time and labor, and so has never been considered quite satisfactory. Such a structure, moreover, is not ideal from an architectural standpoint, for it represents an attempt to remedy or cover up the defects of an unsatisfactory structure by imposing a superstructure not so durable.

At the present time one of the most widely used and efficient forms of concrete construction is the hollow concrete block. But even in this a serious objection is present, for although the hollow spaces extend vertically through the blocks at close intervals, and thus provide frequent air spaces between the inner and outer surfaces of the completed wall, the sides of the blocks which form the divisions between the holes still serve as a connection between the inner and outer surfaces of the wall, forming an occasional but nevertheless active conductor of heat and cold. The wall is thus only partially insulated, and sweating takes places to some extent wherever this solid connection occurs.

Concrete walls have also been made so as to include a continuous insulating air space, but these have either been cast in one piece or else expensive interchangeable metal forms have been used, and both methods, though efficient, have rendered the cost of construction high.

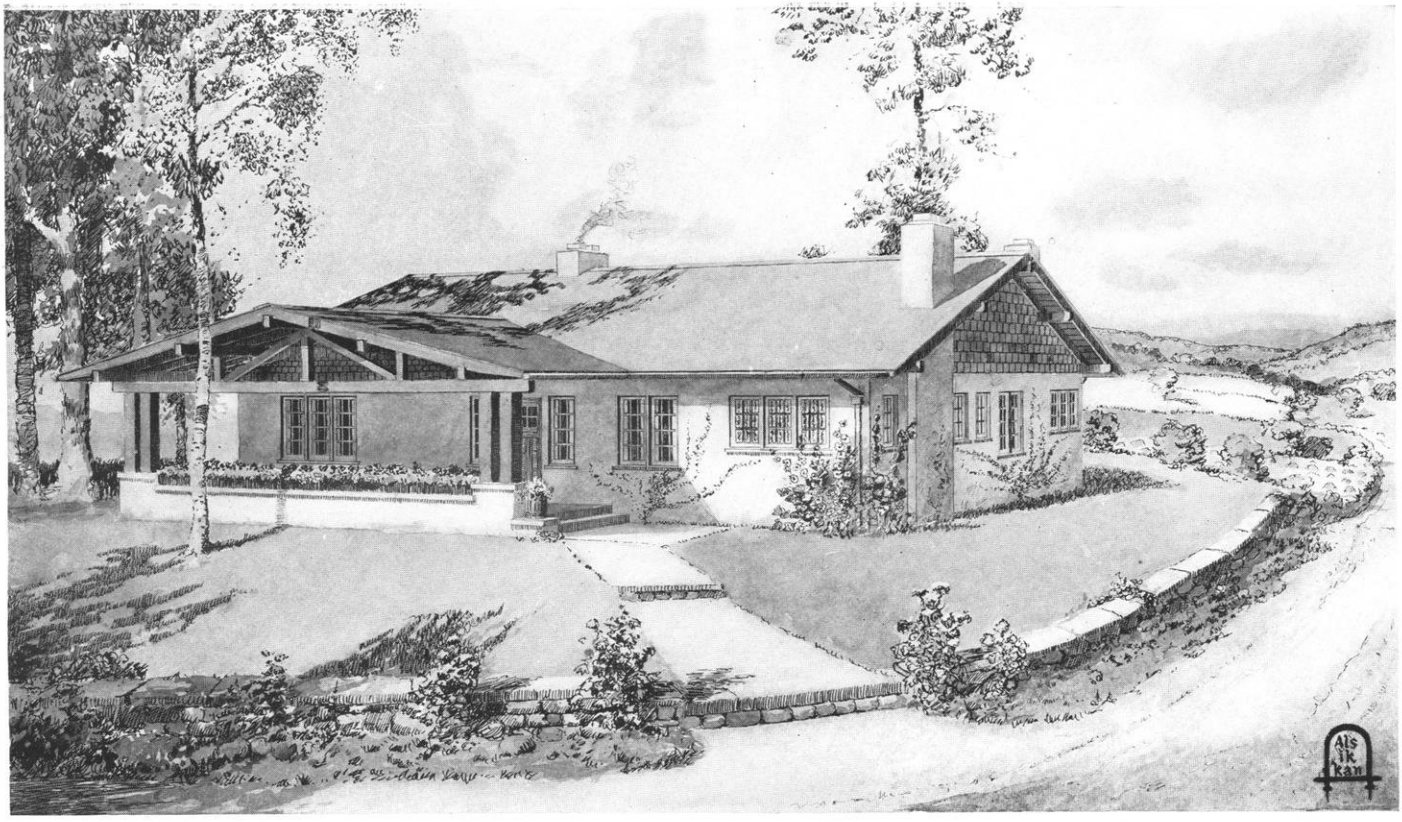
The only drawback to this last method being its expense, I have worked upon the theory that the most satisfactory form of concrete wall is one which can be cast with a continuous vertical air space, or other insulation, between two thicknesses of concrete, yet built in such a way as to necessitate only the simplest, fewest and least expensive forms possible. I have decided, therefore, to use wooden forms, which cost much less than the metal ones and can be put up right on the building site by any carpenter; the forms being interchangeable, so that they may be used again and again as the wall is gradually built up, thus minimizing the number of forms required. I have also tried to devise reinforcing ties that would be sufficiently strong and yet as simple and economical as possible.

In designing the two bungalows which illustrate this new process, I have omitted the cellar, because this permits a concrete foundation on which the concrete partitions of the house can be built. The omission of a cellar is a considerable saving of time, labor and materials, and if the bungalows are heated and ventilated by a Craftsman fireplace-furnace the only excavation needed would be for the ashpit. If a different heating system is desired, however, with the furnace located in the cellar, a sufficient space can be excavated for this purpose, in which case, of course, the coal bin would be included in the cellar instead of being on the ground floor. But if the cellar is used the usual wooden partitions would be built instead of the solid concrete partitions shown in these bungalows, as the excavation would prevent the use of the concrete foundation needed as a base for the concrete walls.



Designed by Gustav Stickley.

CRAFTSMAN CONCRETE BUNGALOW, NO. 131: THE ECONOMICAL FORM OF CONCRETE CONSTRUCTION USED HERE AND IN BUNGALOW 132 IS EXPLAINED IN THE ACCOMPANYING DESCRIPTION AND WORKING DRAWINGS.



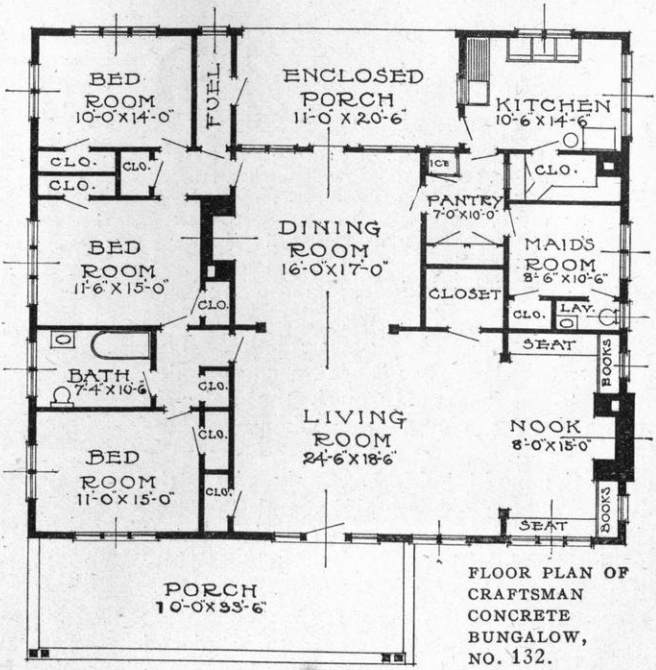
Designed by Gustav Stickley

ONE-STORY CRAFTSMAN CONCRETE BUNGALOW, NO. 132, SHOWING PRACTICAL AND DECORATIVE USE OF WOODEN BEAMS FOR PILLARS AND GABLE OF PORCH.

With the form of concrete construction used here, a trench is dug for the base of the outside walls. This trench is made deep enough to carry the walls below frost level, and the foundation walls are built up to the height desired. The ground enclosed by these walls is leveled off, covered with a layer of cinders, and on top of this is poured a layer of concrete. Nailing strips, 2 x 2, to which the wood flooring of the house may be nailed, are placed in this concrete layer while it is still soft, and the concrete which fills the spaces between these strips is leveled off flush with the top of them. This hardens and forms an inexpensive, practical and sanitary foundation. The exterior concrete walls extending below frost level prevent any frost from penetrating beneath the floors of the bungalow, the bed of cinders forms an insulation by taking up any moisture, and the concrete layer beneath the flooring gives the necessary base for the concrete partition walls of the interior.

The walls—which are preferably of cinder concrete—are cast in wooden forms. Each form consists of matched sheathing boards, 7/8 of an inch thick and 5½ inches wide—known as the ordinary 6-inch sheathing boards—three of which are fitted together as shown to make each side of the form, which is thus 16½ inches deep. These three boards are then fastened together by wooden strips or cleats, D, nailed to the form at intervals of about 24 inches as shown in Figure 3, which represents part of two of the forms during the casting operation. Bolts are provided, which extend through the cleats and sides of the form, each bolt head having two projections or pins, and a beveled washer, B, being inserted between the head of the bolt and the inner side of the form, as shown in Figure 2. The outer end of the bolt has the usual washer and nut which may be screwed up to secure the parts rigidly in place.

Three similarly joined boards are held in place opposite the first, to make the other side of the form, the two sides being 8 inches apart, with the central insulating boards, C, between and parallel with them. These are also sheathing boards, the same as those used for the sides of the form. These boards are selected because they are comparatively inexpensive and are always carried in stock, and by having the outside forms and the central insulating boards of corresponding sizes, the work of building up and casting the walls is greatly simplified. Before using these insulating boards they should be soaked in water for twenty-four hours, which will bring them to their maximum swelling point. Thus, when they are embedded in the concrete wall, they will shrink and become somewhat loose, leaving a slight air space on either side and so more completely insulating the concrete surfaces. Three of these boards are fitted together and temporarily fastened by means of wooden laths, and a saw notch is made in the edge of each outside board to receive the metal tie which is to hold the parts together. This reinforcing tie, A, which is 1½ inches wide and 1/8 of an inch thick, is bent in the center, as seen in the drawings, in order to hold the insulating boards in position and prevent any side motion of them during the casting operation. The ends of this tie are bent



FLOOR PLAN OF CRAFTSMAN CONCRETE BUNGALOW, NO. 132.

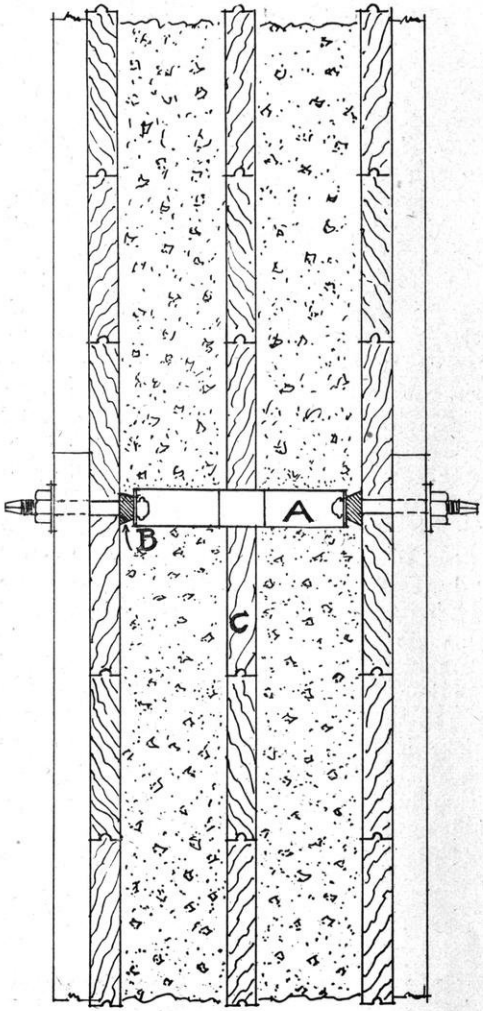


FIG. 2: VERTICAL SECTION THROUGH TWO OF THE WOODEN FORMS USED IN CONSTRUCTION OF BUNGALOWS NOS. 131 AND 132, SHOWING CENTRAL INSULATING BOARDS EMBEDDED IN CONCRETE AND HELD IN PLACE BY METAL REINFORCING TIE.

and provided with holes having opposite notches which register with the projections or pins on the heads of the bolts. This allows the bolt heads of each wooden form to be passed through the holes in the ends of the metal tie; whereupon the bolts are given a part turn so that the projections will hold the tie in place, the nuts are screwed up tight and the two sides of the wooden form and the central insulating boards are thus held rigidly in position the required distance apart.

A sufficient number of wooden forms are constructed to allow them to be placed around the foundation of the house, in two rows, one above the other, and the upper row is fitted to the one below by means of the cleats, as shown in Figures 1 and 3, with the central insulating boards and reinforcing ties in place as just described. The mixture of concrete is then poured in from above until it fills the spaces between the sides of the wooden forms and the central boards, and as the mixture is sufficiently liquid to spread and fill all the crevices, a solid wall is obtained.

This is left standing until it has set, after which the lower of the series of wooden forms is removed by simply loosening the nuts that hold the securing bolts, giving each bolt a slight turn to allow its head and projections to be withdrawn through the hole and notches in the bent end of the metal tie, and then pulling away bolts, inside washer and wooden forms from both sides of the concrete wall. This leaves a solid construction consisting of two thicknesses of concrete with the continuous insulating boards in the center, all held together rigidly by the metal reinforcing ties which are left embedded in the wall.

The holes left in the sides of the concrete by the removal of the inside washers are pointed up with a trowel, and any ridges or unevenness caused by the joints or roughness of the boards are smoothed off with a wooden float. This gives an interesting sand finish to the concrete, and if a perfectly smooth finish is desired a steel trowel may be used and a skim coat applied.

Another series of central insulating boards, C, is then fitted above those of the second row, provided with metal reinforcing ties, A, with the bottom row of forms, just removed, fastened on either side of the central insulating boards, the cleats being always arranged in staggered relation as shown in the drawings. The bolts are then tightened and concrete is again poured into the molds around the walls of the house.

This process is repeated, one layer of concrete being cast each day, until the entire outer walls are completed. By estimating the amount of time and labor required for each daily operation, the exact number of men needed can be employed, putting the work on a most economical basis.

One of the most practical features of this construction is the simple way in which the doors and windows are set into the outside walls. In building up the forms and casting the successive layers of concrete around the house, wherever such an opening is needed, the rough frame of a door or window is placed inside the wooden forms, with the sides of the frame at right angles to the sides of the forms: see Figure 1. This frame, which consists of side and top boards, rests on the hardened concrete layer below, and is temporarily fastened to the forms to hold it in place while the wall is being cast. It is provided with vertical grooves, as shown in Figure 4, to insure its being locked firmly in the concrete. As this rough frame is only 4 inches wide and the wall is 8 inches wide, a temporary rough inner frame, 8 inches wide, is fastened to the 4-inch frame, thus closing the door or window opening during the casting operation. The concrete is then poured into the forms on each side, the inner temporary frame preventing the mixture from filling the space required for the door or window. Successive layers of the concrete are cast each day, as previously explained, until the tops of the frames are covered. The removal of the wooden forms and temporary inner frame then reveals the desired opening left in the concrete wall, with the rough frame embedded in the concrete. To this rough frame the door or windows may afterward be fastened, leaving a concrete reveal. When several windows are grouped together, making an extra wide opening in the wall, like those shown in Figure 1, the top of the opening is reinforced to center the load, and the frame is propped in the middle until the mullions are inserted, after which the prop may be removed.

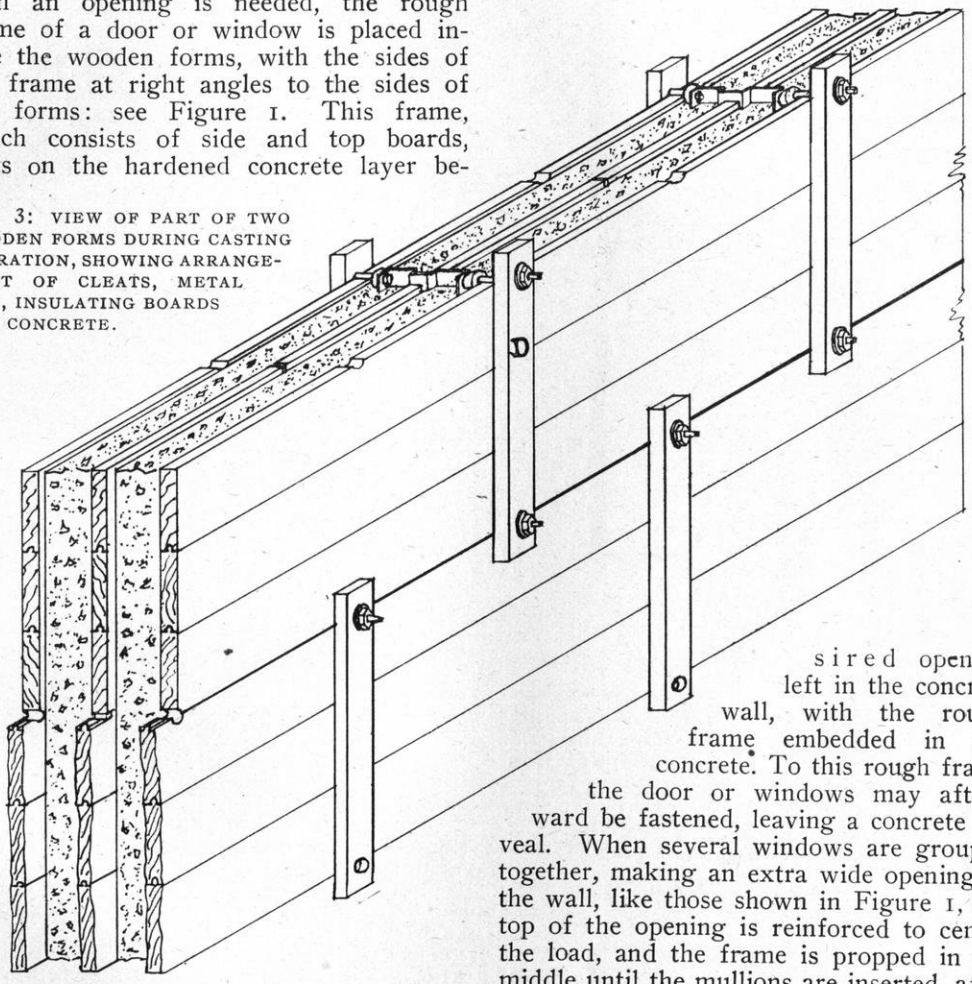


FIG. 3: VIEW OF PART OF TWO WOODEN FORMS DURING CASTING OPERATION, SHOWING ARRANGEMENT OF CLEATS, METAL TIES, INSULATING BOARDS AND CONCRETE.

From this description and the drawings it will be seen that the walls are cast in successive layers all around the house, unhindered by the door and window openings, which are thus provided for at the same time.

The interior or partition walls of the bungalow are somewhat different in construction, for the temperature on either side of them will be practically the same, no moisture will condense, and so no central insulation will be needed. For these partitions, therefore, solid concrete can be

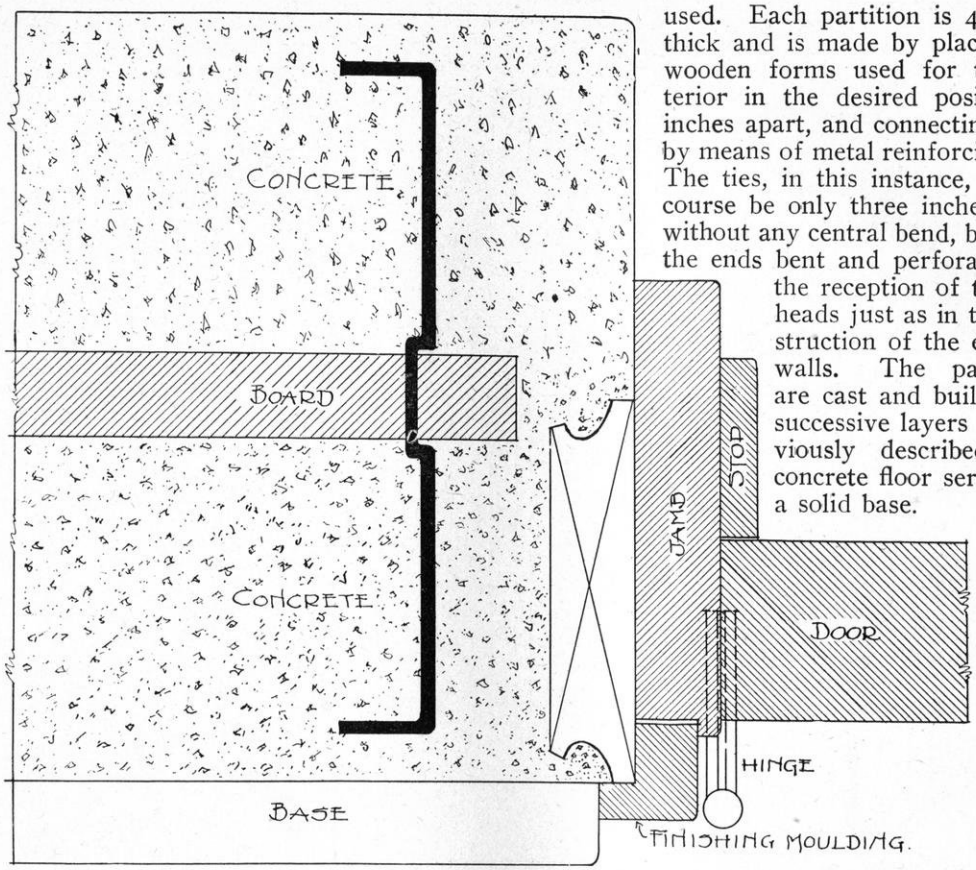


FIG. 4: HORIZONTAL SECTION THROUGH EXTERIOR CONCRETE WALL AND PART OF DOOR SHOWING FINISHED CONSTRUCTION, AS USED IN BUNGALOWS NOS. 131 AND 132.

used. Each partition is 4 inches thick and is made by placing the wooden forms used for the exterior in the desired position, 4 inches apart, and connecting them by means of metal reinforcing ties. The ties, in this instance, will of course be only three inches long, without any central bend, but with the ends bent and perforated for the reception of the bolt heads just as in the construction of the exterior walls. The partitions are cast and built up in successive layers as previously described, the concrete floor serving as a solid base.

In order to insure a perfect union at the junction of the exterior walls and the partitions, during the casting of the former, a 2 x 2 furring strip is placed upright on the inner side, within the wooden form, at the point from which the partition wall is to extend. When the forms are removed this furring strip is also pulled away, leaving a vertical groove on the inner side of the concrete wall. Afterward, when the partition is being cast, the concrete poured into the wooden forms fills this vertical groove, hardens, and ties the outside and inside walls of the house firmly together. Thus when the whole has been cast, foundation, walls and partitions will form practically an integral construction.

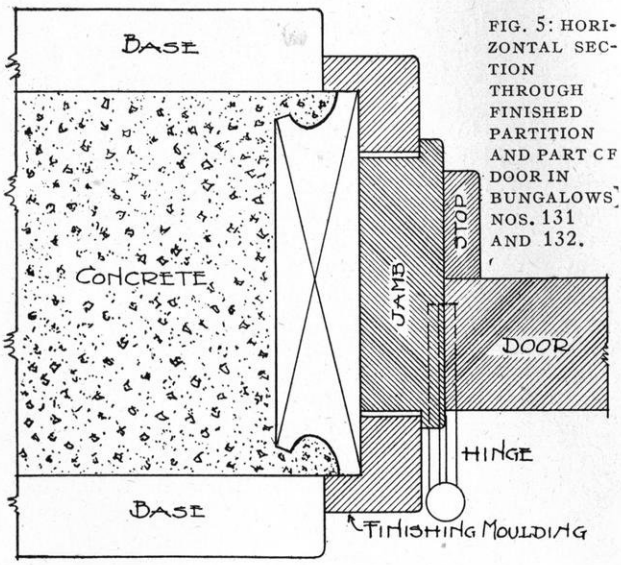


FIG. 5: HORIZONTAL SECTION THROUGH FINISHED PARTITION AND PART OF DOOR IN BUNGALOWS NOS. 131 AND 132.

Usually, in building a house, the interior trimming is one of the most expensive items, often representing one-fourth of the total building cost, for it involves both expensive

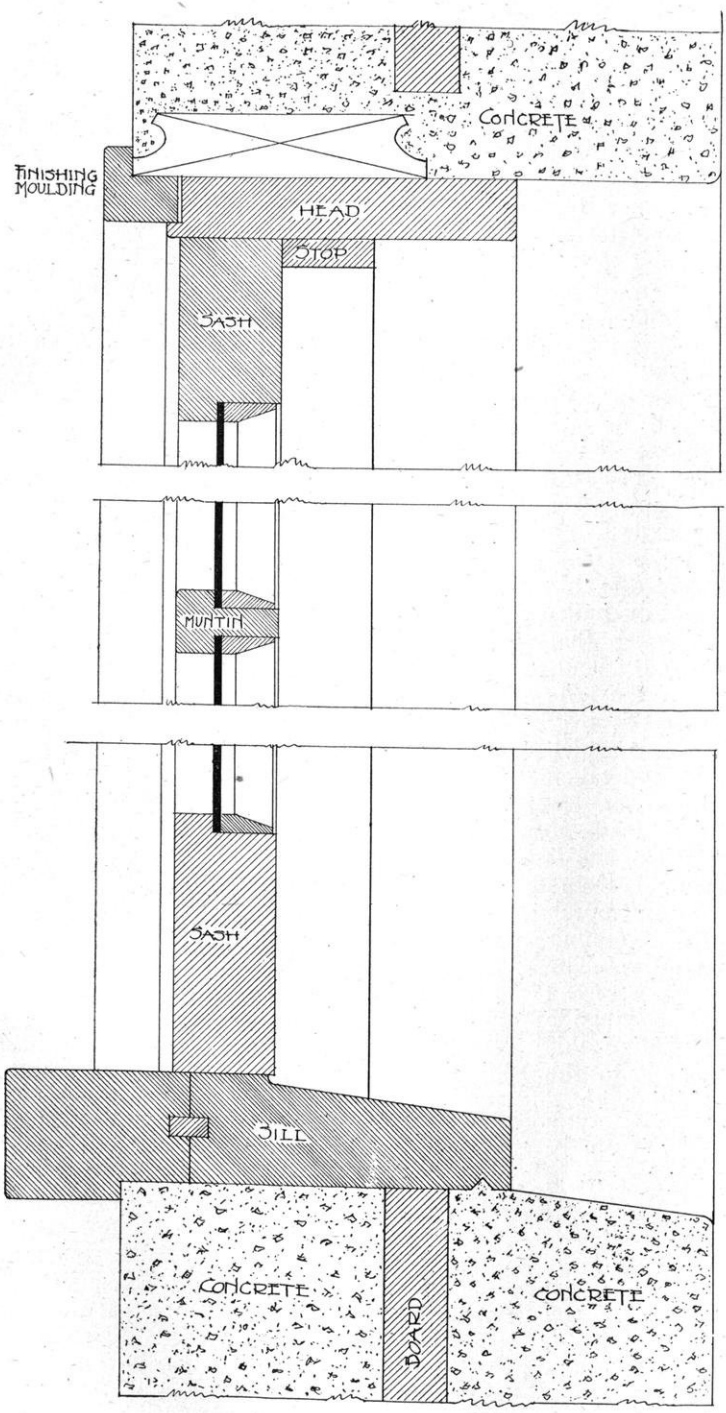


FIG. 6: VERTICAL SECTION THROUGH WINDOW IN CONCRETE CONSTRUCTION USED FOR BUNGALOWS NOS. 131 AND 132, SHOWING HOW THE VARIOUS PARTS ARE SET INTO THE OPENING IN THE CONCRETE WALL.

materials and skilled carpentering. With the method of construction used here, however, this expense is reduced to a minimum.

IN constructing the partitions of these bungalows, openings are left in the 4-inch concrete walls by inserting rough wooden frames within the wooden forms and casting the wall around them just as in the case of the exterior walls, the rough wooden frames serving as a foundation to which the door jambs are afterward fastened. In this instance, however, no temporary inner frame is needed, the walls and rough frames being the same width. This construction will be seen clearly by reference to Figure 5, which shows, in horizontal section, the concrete partition with baseboards on either side, the rough frame embedded in the concrete, the door jamb fastened to the rough frame and rabbeted to receive the finishing moldings, the rabbet being sufficiently deep to prevent any crack showing if the wood shrinks, and tight enough to insure a close fit between jamb and moldings. The door stop is fastened to the jamb and the door is hung in the usual way. The edges of the rough frame will serve as "grounds" for the plasterer.

These parts and similar parts for the windows constitute practically all the interior trimmings required, and the material can be got out in the mill and sent to the job already stained and finished, so that all which is needed is for the carpenter to miter the pieces at the corners and put them in place. In this way the whole

interior can be trimmed with little labor and expense compared with that usually incurred.

The gables of both bungalows are shingled, the roofs are of Ruberoid, and the chimneys, though shown of concrete, would be equally or possibly more satisfactory if of brick. In each case the rooms are all on one floor, as compact as possible and yet with a hospitable sense of openness in the arrangement of living and dining rooms, inglenook and porch spaces.

In bungalow No. 131 the entrance door leads from the recessed corner porch, with its concrete pillars, parapets and flower-boxes, directly into the spacious living room, made cheerful by three pleasant window groups and by the welcome vista of the inglenook at the farther end. From the dining room, through another wide opening, a glimpse is also had of this pleasant nook, with its open hearth, built-in bookshelves and fireside seats, so that both rooms share its comfort and friendliness. An interesting feature of the left-hand fireside seat is the fact that it may serve as a storage place for coal, which may be put in from the kitchen and taken out in the nook as needed for the fire.

From the dining room a door leads to the corner porch at the rear where meals can be served in warm weather. Doors also lead from the dining room and porch to a small square passageway communicating with the kitchen and pantry. The kitchen in turn opens upon a recessed porch which will serve as an outside kitchen or laundry. Off one side of this porch is the coal bin and a door to the maid's room, which is provided with a lavatory. Two bedrooms, bathroom and ample closets occupy the rest of the floor plan, being shut off from the living room by a small hallway.

In bungalow No. 132 a somewhat different arrangement is shown. The large living room and dining room are planned with only a slight division between, so that upon entering from the front porch one has a vista through both rooms to the dining-room windows in the rear which overlook the enclosed porch. The inglenook occupies the whole right-hand end of the living room, and on each side of the chimneypiece are built-in bookcases and seats. A large closet is also provided, and a smaller closet is placed at the left of the entrance door, for umbrellas, wraps, etc. A fireplace is also built in the dining room. In one corner of the plan are pantry, kitchen, maid's room and lavatory, with ample closet space and shelves. The kitchen communicates with the enclosed porch at the rear, which will serve as an open-air dining and living room, and on the opposite side of which is a place for fuel. Three bedrooms and bathrooms are provided on this side of the bungalow, with plenty of closets both in the rooms and in the small hallways between them.

CONCRETE AND COLOR

THE neutral gray of a concrete house is the best possible background for the display of a one-color garden scheme. In the first place, the concrete itself can be slightly tinted when it is being mixed, so that it will be a cool bluish gray, a warm red or a deep cream. It can be made to imitate the local rocks in color—sandstone, limestone, granite or any of the infinite modifications of soft and warm or hard and cold gray rocks. It is needless to say that the concrete must not be in any sense a pronounced shade, but only merge toward the tone of gray that will be the most harmonious with the surrounding country and with the flowers that are to be grown near it.

Unless the concrete be mixed to a definite tone, it will be, when finished, a cold, unsympathetic, trying gray, and for a house of this type the predominating color of the flowers should be yellow, for yellow, like the sunlight, will warm the coldest slate tones into cheeriness. Any of the yellow climbing roses or the orchidlike canary vine, trained over a porch or pergola, or allowed to climb in and out through a lattice against the walls or around a window, will warm and mellow the whole house no matter how cold the tone of the concrete may be or how severe the lines of the building. Forsythia, tulips, poppies, asters, daffodils, nasturtiums, bush roses and many other yellow flowers shine their brightest when planted near the foot of a concrete wall. Flowers of the shades of blue or purple, such as heliotrope, asters, Canterbury bells, delphinium, stock, cosmos, wistaria, clematis, are particularly effective against a light greenish gray wall. White flowers, such as daisies, chrysanthemums, candy tuft, climbing roses, can be planted with good effect with the shades of violet.

THE PICTURESQUE QUALITY OF MODERN BRICK

BRICK has two qualities—aside from many practical virtues—which combine to make it one of the most interesting of modern building materials; and these qualities are—*texture* and *color*. Most of us have felt this fact more or less vaguely, but few of us have stopped to wonder or inquire, or explain to ourselves just what it means. Those, however, who care about the art of home-building and the nature of different building materials, and even those to whom architecture makes only a casual appeal may find it interesting to penetrate a little beneath the surface and discover wherein lies this subtle charm that lurks in a mere brick wall.

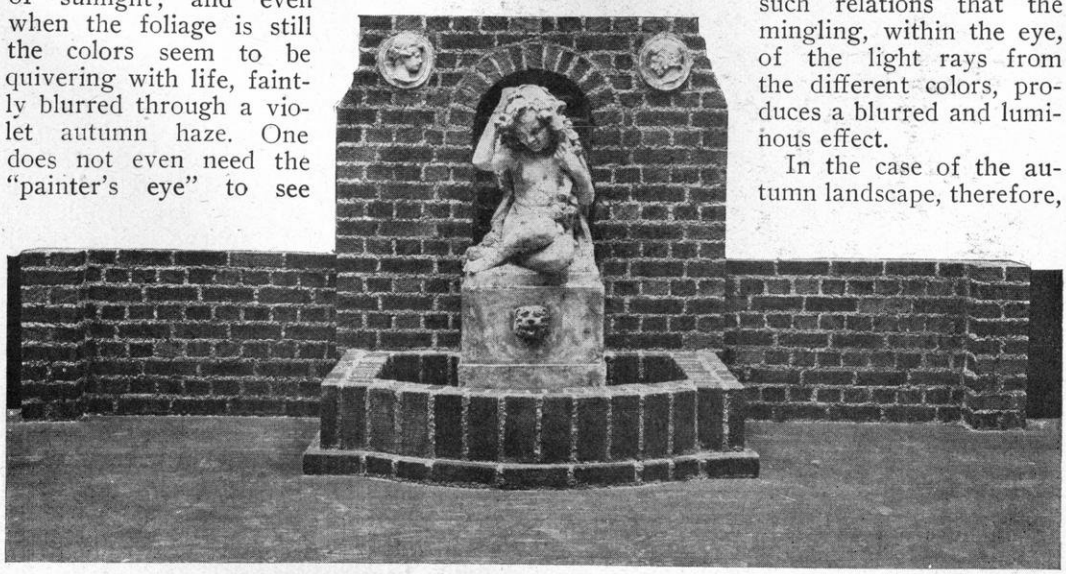
Like most scientific phenomena, it may be explained best by reference to some familiar phase of nature, and perhaps the most appropriate comparison is an autumn wood, for a reflection of many of its colors are to be found in the best varieties of modern brick. In the changing foliage we find crimsons, vermilions, oranges and yellows, rusty greens, patches of bronze, copper and gold, innumerable shades of brown, and all the varying tones between —a veritable chromatic scale of color. Sometimes they are darkened by the luminous purples of the shadows; at other times they grow vivid at a sudden touch of sunlight; and even when the foliage is still the colors seem to be quivering with life, faintly blurred through a violet autumn haze. One does not even need the "painter's eye" to see and feel the "atmosphere" in which this mosaic of color is bathed.

So strongly, in fact, does it appeal to one's sense of harmony, so full is it of the ethereal and the picturesque, that it seems difficult to realize that this very quality of poetic vagueness depends upon the most rigid natural laws—laws as inexorable as gravity and as old as the universe; laws which perhaps sounded stupid or unintelligible to our young ears when they were drilled into us in physics class, but which, when applied to nature herself, fairly bulge with life and meaning.

The atmospheric quality which pervades the autumn landscape is the result of several influences. One of the most important is, of course, the air itself. The minute dust particles which it contains break up the light rays from the various colors into different shades, the degree of variation depending upon the distance of the object from the observer and upon the density of the atmosphere between. So we have "color perspective."

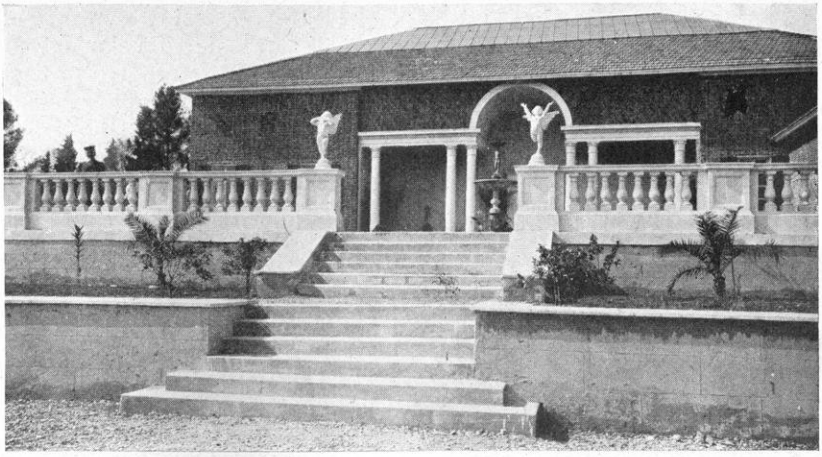
The atmospheric effect, however, is due only partially to distance and the action of the dust particles in the air. It depends very largely upon the colors themselves and their combined effect upon the sensitive nerves of the retina. This fact, it is interesting to note, is appreciated and put into practice by modern artists, who attain the illusion of atmosphere in a painted landscape by placing certain colors in such relations that the mingling, within the eye, of the light rays from the different colors, produces a blurred and luminous effect.

In the case of the autumn landscape, therefore,



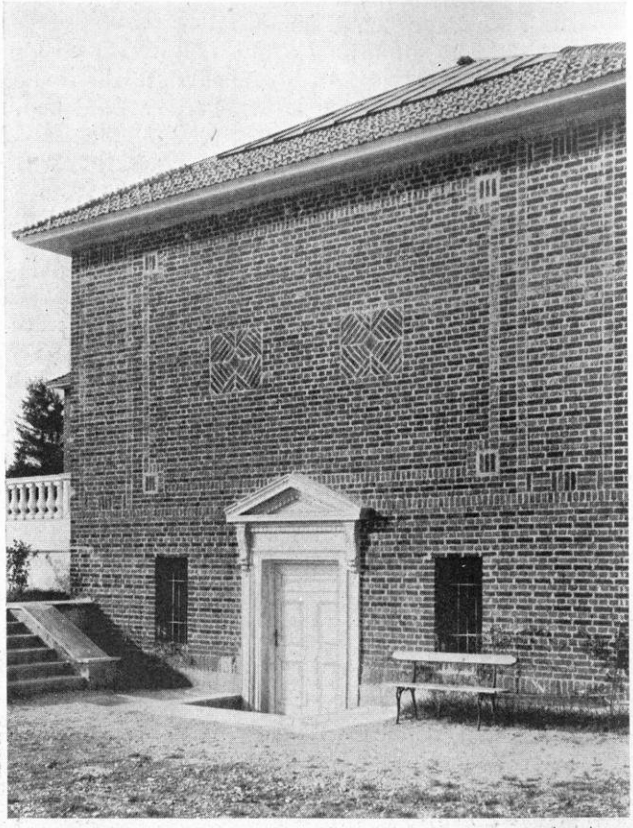
FOUNTAIN BY C. A. HEBER WITH WALL AND FOUNDATION OF TAPESTRY BRICK.

with its infinite variety of harmonizing and contrasting colors, the combined effect produced upon the retina by the original colors of the foliage and their complementary colors, all seen simultaneously, will result in the peculiar sensation of luminosity and color vibration which we call "atmosphere," and which will include a blurring not only of the colors but also of the outlines of tree forms and foliage masses.



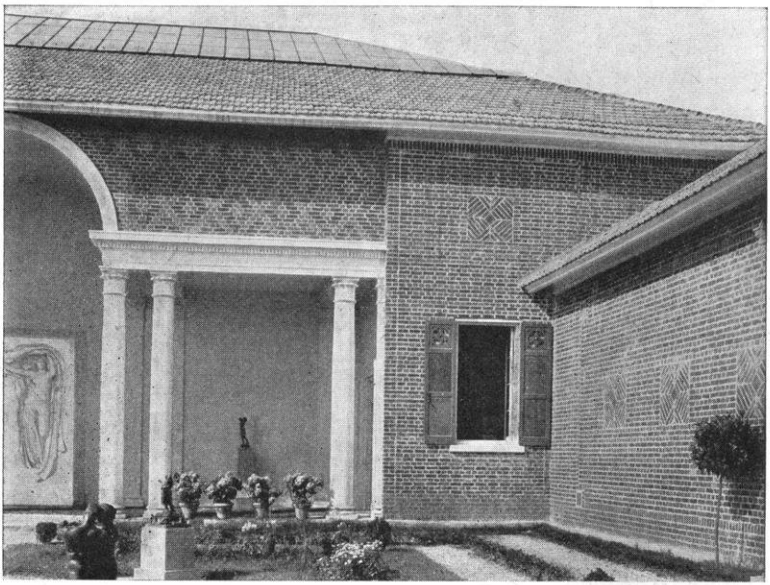
ENTRANCE TO THE UNITED STATES GOVERNMENT BUILDING AT THE INTERNATIONAL EXPOSITION OF FINE ARTS, IN ROME, 1911: CARRÈRE AND HASTINGS, ARCHITECTS.

There is another important element, however, in our analysis, and that is—texture. Even without the aid of distance or variety of color, we find, in a single brown, decaying leaf, for example, a certain depth and vitality. If we examine the leaf we shall find that its surface is rough, uneven, full of tiny holes. It does not reflect the light that strikes it as a smooth shiny leaf would do; instead it absorbs many of the rays and reflects others from the different angles of its rough surface so that the effect of the whole is an intermingling of lights and shadows, and we get a color sensation of different shades of brown,—a warm golden brown where the sunlight strikes, a darker purplish brown in the shadows. And this quality of texture, which is present in every tree trunk and group of foliage, gives still greater variety to the whole scene, breaks up the light rays, increasing the color vibrations and adding to the atmospheric quality of the whole.



ENTRANCE TO STORE ROOMS OF THE EXPOSITION BUILDING, SHOWING DECORATIVE EFFECT GAINED IN USE OF TAPESTRY BRICK.

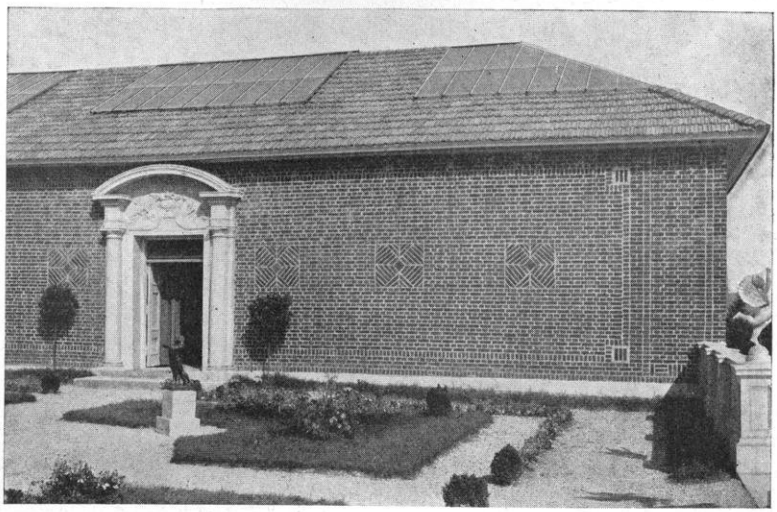
Turning now from the autumn landscape to the brick wall, we shall find the same principles hold true. Here also we have color and texture, and therefore, in greater or less degree, a sensation of "atmosphere" will result varying, of course, in interest and vitality ac-



DETAIL OF FRONT ELEVATION SHOWING INTERESTING PATTERN IN TAPESTRY BRICK.

cording to the number and arrangement of the colors and the quality and texture of the brick. In the best examples of the modern brick wall, with its rich texture and variety of color harmony, we find not only an echo of autumn coloring, but also a warmth, a depth, a feeling of tone gradation and a certain vibrating quality which give interest to the whole construction. There are no hard flat surfaces to reflect monotonous planes of light and present unbroken patches of color; every inch is rough, uneven, full of lights and shadows, made up of a thousand tiny planes which break up the rays and reflect them at different angles, just as in the rough surface of the autumn leaf. And the different colors of the brick, in their varying relations of contrast and harmony, obey the same laws of light and color, produce in the eye the same mingling of original and complementary hues, the same effect of "simultaneous contrast" as did the different tints of the foliage, resulting in the same sort of atmospheric vibration.

The colors of the modern Tapestry brick range from pale buffs, yellows and oranges to deepest purples, with an endless variety of shades between — pale and bright reds, terra cotta of many shades, golden browns, reddish browns, olive browns, dull blues, violets, mauves, almost all the colors in fact that one finds in autumn foliage, on a less gorgeous scale, perhaps, more like the subdued colors of the tapestries from which they take their name. Among these, terra cotta, with its many different shades and tones, may perhaps be considered the color which will prove most useful in the future as it has in the past. Its warmth and richness give an impression that is essentially homelike, it harmonizes well with other building materials, and with most environments, especially when a partial covering or screen of vines, shrubs and trees help to make it part of the surrounding landscape.



ENTRANCE TO SMALL GALLERIES FACING FORMAL GARDENS.

THE PICTURESQUE QUALITY OF BRICK

The many different shapes and sizes in which modern brick is made, the variety possible in the coloring, texture and treatment of the mortar joints, the methods of laying the brick, the many different patterns in which they may be arranged, and the opportunity afforded for the expression of individuality, originality and artistic feeling in architecture, make it especially interesting as a modern building material. In addition to this, brick lends itself to modeling, and so admits of endless possibilities for decorative treatment in relief, bas relief and other styles.

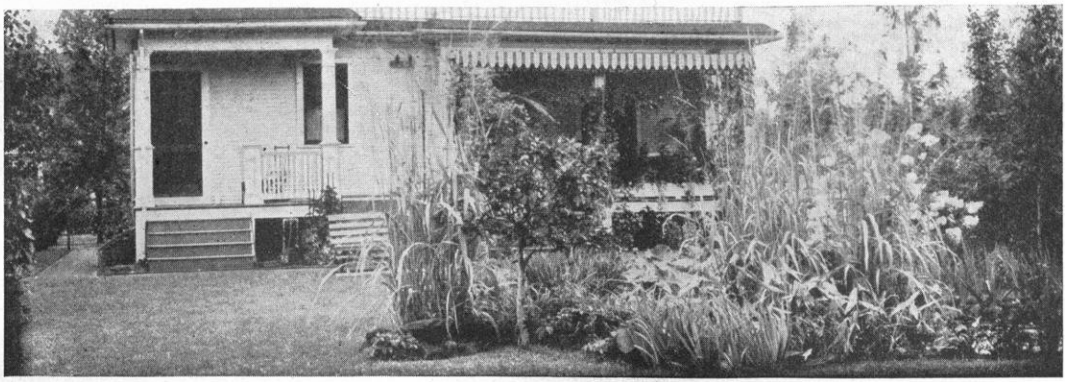
Moreover, the decorative quality of brick, unlike many other building materials, is inherent in the brick itself. It does not depend for ornamental value upon any external application or trimming. Its color is self contained, not applied. Its richness of effect and its atmospheric quality are due to the color and texture of the material. Nor have any of these æsthetic features been attained by the sacrifice of practical virtues, for it is fireproof, durable, a good protection against the weather, and sufficiently economical to be within the means of almost everyone who can afford to build.

We are reproducing here several photographs which show how brick is being used by architects today. Four of these photographs are of the main entrance and details of the United States Building at the International Exposition at Rome. The use of the brick in various geometric designs breaks up the wall surfaces in an effective way, and over the entrance especially has much the quality of mosaic or tapestry. There is also a pleasing sense of contrast between the darker tones of brick and the light stucco and concrete of pillars, doorways, terraces and balustrades; yet the contrast is not a harsh one, the well-balanced proportions of the building and the interest of the details bringing the different materials into harmony.

The country house designed by Albro and Lindeberg is another example of the effective use of brick with light trimmings. In this case also the excellence of the proportions, the careful grouping of the windows and the placing of trees and shrubs help to bring out the quality of the brick, giving an effect full of dignity and friendliness, and bringing the house into harmony with its surroundings.

A photograph is also given of a fountain by C. A. Heber, with wall and foundation of Tapestry brick, shown at the Twenty-seventh Annual Exhibition of the Architectural League of New York. The rich texture of the wall and the warmth of the terra cottas and purplish reds of the brick make an excellent background for the fountain and its figure.

A BRICK HOUSE OF RARE PICTURESQUE QUALITY AT HEWLETT, L. I.: ALBRO AND LINDEBERG, ARCHITECTS.



THE BACK VERANDA PLANTED WITH PAMPAS GRASS, LOTUS IRIS, WATER ARUM, THE WHOLE BORDERING A POOL.

A BACKYARD GARDEN: FROM JAPANESE INSPIRATION: BY T. H. PARKER

ONE of the problems that discourage the city dweller who longs for a flower garden, is the limited area in which he has to work. It hardly seems worth while to try to do anything with the small plot he calls his backyard, and usually he contents himself with a little lawn and a lawn mower. He is so accustomed to seeing things done on a large scale in this country that it seldom occurs to him that anything small is worth while. He may admire the large canvas of a master, but the exquisite art of the miniature is lost to him.

On the other hand the Japanese have learned the beauty of the miniature, and nowhere is this characteristic more evident than in their gardens. They have brought the art of miniature gardening to a high state of perfection and it is to them the despairing American gardener should turn if he would learn how to make the most of his little plot.

It was from the Japanese that a neighbor of mine learned a few lessons that enabled him to make his small backyard one of the most beautiful spots imaginable in the brief space of two years and at an unusually moderate outlay. He was for six years a resident of Japan, and there he studied his gardener's methods closely.

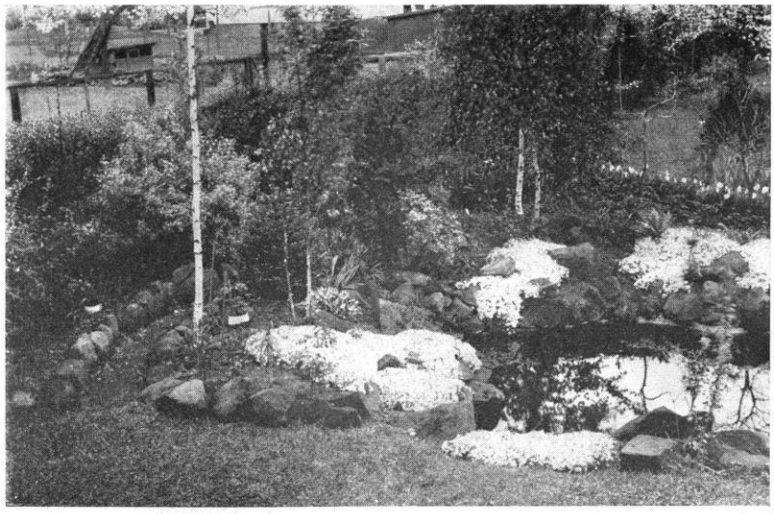
The largest expense in creating this Japanese garden was incurred in piping the water to the fountain and small hydrants. The trees, for the most part, were obtained from the woods, and all the flowers were common perennials, so that in this respect the expense was kept down to the minimum.

THE LOWER POOL IN WINTER TIME.

The plot in which this garden grows is 120 by 60 feet, and at the time the garden was begun it was nothing more than a sandy piece of ground, of such poor quality that even the grass had a hard struggle for existence. On one side was a neighbor's hen-coop; on an-

other, a tall telephone pole close up to the boundary line, and on the third side was a playground for boys where baseball was the favorite pastime.

Moreover, another unpleasing element was added in the form of a wire fence, for the first thing a city gardener must do is to guard his domain against mischievous boys, neighbor's hens and stray dogs and cats. All this, at the outset, produced a combination of inartistic surroundings that would be hard to beat, but they have been entirely blotted out, and the manner in which this was done is interesting.



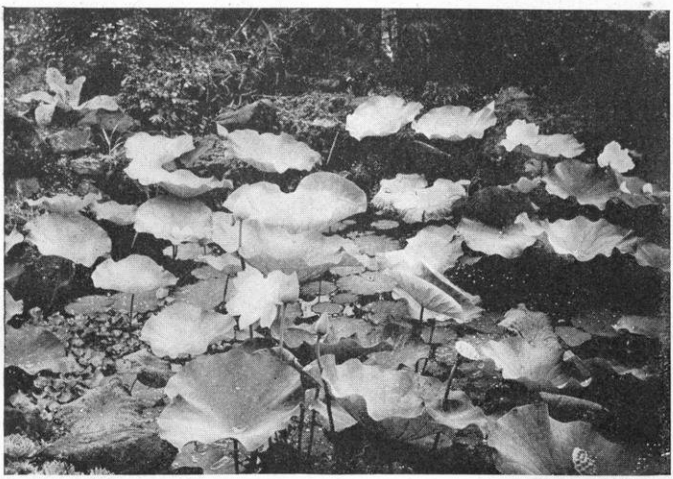
A CORNER OF THE SPRING GARDEN PLANTED WITH MOSS VERBENA, IRIS, NARCISSUS AND FERNS.

First of all the plot was enclosed with a four-foot wire fence of strong, close-meshed wire to keep the intruders out. Of course this fence did not add any beauty to the garden-to-be, so the next step was to obliterate it, together with the nearby coop and telephone pole. This was done by planting a hedge of Siberian privet close to the fence, and in two years' time the fence was entirely concealed. Siberian privet was used because it winters better than California privet, which in New England is frequently winter-killed down to the roots. In setting out the hedge and in fact every tree, shrub and plant in the garden, good, rich earth was put in to replace the sandy soil.

In eliminating the coop and pole from the landscape, trees were planted close to the hedge at a point opposite the objectionable features, and in the case of the pole, quick-growing poplars were used. Then on the side next to the playground the wire fence was extended up to the height of ten feet to stop the ball from coming into the garden. This fence, too, is now hidden by two artistic trellises that support Japanese rambler roses, and some tall trees were transplanted to their present places close by with such care that their growth was scarcely retarded. One of these is a fine maple about four inches in diameter.

A TORII PLACED NEAR AN APPLE TREE FOR THE BIRDS TO REST UPON IN SUMMERTIME.

Thus on three sides of the garden the hedge and trees make a fine background of green and effectively conceal the boundaries of the yard. Many flowering shrubs are planted close to the hedge where there is room for them, and farther out in the



JAPANESE WATER-LILIES AT CLOSE RANGE.

garden are the smaller varieties of flowers.

One of the most effective groups of trees is that of white birches, their slender white trunks making silvery tracery through the shiny green leaves. Pine trees work into the Japanese idea very readily and many are used.

Across the lower end of the garden, where two apple trees that were found growing in the yard have been adopted into the general plan, and where the shade is densest in summer, the hedge is reinforced with wild raspberry bushes. Here stately wild ferns flourished in profusion, and all they cost was the trouble of going into the woods and digging them up. In fact the feature of the whole garden is the number of native trees and plants that were obtained at little or no cost. There are some rare trees to be found in this garden, too, among them being a real Japanese pine, an imported Scotch pine and a weeping Japanese cherry to emphasize the Japanese effect.

Now for the flowers. These were selected with a view to having blooms from earliest spring until the frost comes. Moreover, perennials were used exclusively, except the asters which are planted for the purpose of providing flowers until frost time. By using perennials one avoids the labor of setting out new plants or sowing seeds every spring.

Just as soon as the snow disappears the crocuses in their different colors first light up the garden. Close behind them comes the beautiful moss verbena that carpets the margin of the miniature lake with its blossoms. And so on in succession follow the daffodils, narcissus and the tulips until the summer flowers take their places.

On the edge of a group of white birches a cluster of Oriental poppies blaze against the green background early in June; nearby the modest columbine swings its blue blossoms, and a little beyond foxglove and larkspur are budding in front of a row of hollyhocks, at this time a foot high. In another place lemon and salmon colored azaleas call attention to themselves by their vivid contrast. A small bronze beech forms an excellent background for some common, yellow lilies, and so on through the whole garden, each flower being placed with care to stand out in contrast with its neighbor.

So much for the basis of this garden. Now we come to the distinctively Japanese features. First one sees two little pools of irregular shape at the upper end of the yard near the house. They are directly in front of a veranda that is used for a living room in summer, and they

VIEW OF POOL WITH FOUNTAIN CONCEALED BY WILD RICE AND JAPANESE WATER-LILIES.

form a refreshing spot for the eye when the midsummer sun is trying to burn up everything. The pool farther from the house, in which the fountain is located, is higher than the other and overflows into it, the little stream tumbling down over a miniature cascade. The lower pool drains into the sewer.

Each pool has a cement bottom to prevent seepage and is bordered with pieces of red sandstone of irregular size and shape. The edge of the higher pool is lined with iris of several varieties, even the simple wild iris finding a place beside the rarer Spanish. The lower pool is edged with moss verbena.

In the center of the higher pool is the fountain surrounded by foliage of wild rice and Japanese water-lilies that hide it in daylight. To conceal the fountain further the pipe and nozzle are made to represent a huge lotus flower.

Connecting the two pools is a tiny stream crossed by a small, arched Japanese bridge. Under the bridge is a small hydrant by means of which it is possible to get a flow of water over the little cascade without operating the fountain.

In each pool are water-hyacinths, water-lilies and the beautiful white lotus not commonly seen in this country. Both pools also contain goldfish of the ordinary and double-tailed Japanese variety, and frogs from no-one-knows-where have taken up their abode there. The fish and frogs keep the pools free of mosquitoes.

As the trees and flowers do not extend a great way out into the garden there is a good-sized bit of greensward in the center. In the lower left hand side of this plot and on a line drawn diagonally from the upper right-hand corner to the opposite corner, two *torii,* the familiar bird roosts of Japan, have been erected. These are usually found before the entrances to temples and are commonly thought to be intended for gateways, but they were originally perches for pheasants and other birds of beautiful plumage that were presented to the temple by worshipers and thereby became sacred birds. So the *torii* in this garden lead to a little temple with its idol, in the far corner surrounded by ferns.

In looking across the garden toward the little temple you get the impression that the place is a great deal larger than it really is. The vista through the *torii* and under the apple trees has a distance that is most deceptive. Winding among the trees, shrubs and flowers are little paths that one may follow in exploring the beauties of the place and these, too, give an idea of a larger space. In this respect it is true to the Japanese idea.

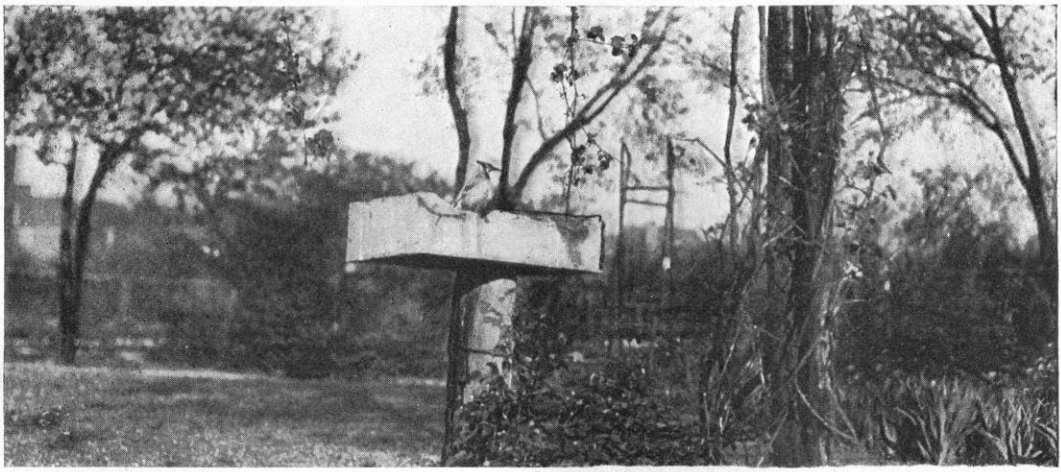
Such a garden has individuality and reflects the careful work that has developed it into such a success. It amply repays all the time and labor put into it and even in winter, when a blanket of snow covers everything, it gives pleasure by the anticipation of the coming spring.

SMALL WATER GARDENS

FEW garden features give greater pleasure or require less attention than a water garden, and its construction can be as simple or as elaborate a process as desired. When the larger water-lilies are to be planted, one end of the basin should be dug to a depth of at least three feet (no artificial pond need be deeper no matter how large) and slope gradually to about eighteen inches. Such a sloping pond will suit the requirements of any aquatic plants. Puddled clay is generally sufficient for the smaller pools, though they can be lined with brick, stone or concrete if preferred.

If there is no natural flow of water from running brook or spring, water from a concealed hydrant will answer the purpose, provided a continuous flow can be maintained, enough to keep the inflow and outflow relatively even. A slight movement of the water keeps the pond from becoming stagnant and fresh water flowing in is necessary for the health of the plants. Soil can be put directly on the floor of the basin to the depth of about one foot, or boxes and tubs filled with earth holding plants of different species can be set in. The soil in either case should be a rich compost of loam and leaf mold.

Lotus, the various water-lilies, water-hyacinths and poppies, water-snowflakes; crowfoot, spearwort, plantain are all exceedingly lovely flowers that will bloom continuously with but little attention. At the margin of the pool iris, cardinal flower, forget-me-not, turtle head, mimulus can be planted, as well as the many varieties of ferns. Back of these can come the moisture loving shrubs such as azalea, dogwood, viscosa, laurel, magnolia.



A HOME-MADE BATHING AND DRINKING BASIN FOR BIRDS.

HOW TO MAKE A CEMENT DRINKING AND BATHING BASIN FOR THE BIRDS: BY ADELINE THAYER THOMSON

IF there is one way above others of making the home grounds a constant rendezvous for birds of many kinds, it is to furnish, in a settled place, a *never failing supply* of fresh water. The feathered songsters are great drinkers and revel in a cold water plunge seemingly as much as in the finding of a wriggling worm or fancy bug. And a yard, whether in the city or country, where water is always to be found in spite of heat and drought, in basins shallow enough for safe and easy bathing is a boon too greatly prized by the birds to escape notice for long, or when once found to remain unappropriated.

Bird basins fashioned of cement are unusually satisfactory and are very easily and inexpensively made. The main points of advantage over the earthenware crocks, pans, etc., commonly used in the modest yard, are that the cement basin is practically indestructible; it never rusts; it keeps the water refreshingly cool, and its surface is rough enough in texture to give the birds a safe and firm foothold when drinking and bathing.

The necessary materials for making a very neat and thoroughly practicable cement basin are: a cheap, wooden, oval chopping bowl to form the oval mold for the basin, measuring about 15 inches long, 9 inches wide and 4 inches deep; a coverless box, planed perfectly smooth, made of wood not less than ½ inch thick, and measuring 20 inches long, 12 inches wide and 6 inches deep. As this box furnishes the outside mold for the bird basin and must be taken apart when the cement within is dry, its sections should be fastened together with screws instead of nails, to guard against all danger of breaking the finished work. A piece of ½-inch gas-pipe is used to make an opening in the bottom of the basin to drain off the stagnant water, and the remaining requisites are oil, Portland cement, some sharp sand and gravel, such as is known to the trade as torpedo sand, a trowel, a screen for sifting and a wide board on which to mix the cement.

When all is in readiness, bore a hole through the bottom of the chopping bowl, the size of the gas-pipe, and after inserting the pipe treat this, together with the entire inside of the box and the outside of the chopping bowl to a liberal dressing of oil. The oil will prevent the cement from sticking to the mold at the time of removal. Now turn the box bottom side down on a table or other firm support presenting a flat surface that may be left undisturbed for a week. This done, place the chopping bowl, oval face down, in the center of the box. Now the hardest part of the work is over, for making the concrete is really no more difficult than mixing up a batch of mud pies, and quite as much fun. The recipe for the concrete is: one part Portland cement to one part gravel and one part sand. First sift the sand through the sieve, measuring the al-

loted part of this and the gravel secured by sifting, then blend them together on the mixing board with the same amount of cement. The thorough mixing of these dry materials is the secret of success in making the concrete. Add water to the mixture, stirring all the time, until the substance becomes pasty. This paste should not be thin and watery but stiff enough to require a moderate amount of tamping when filling it into the mold. Now put the cement in the box carefully that the chopping bowl may not be disturbed, until the box is filled up to the top. Then, after leveling off the cement perfectly even with the top of the box nothing remains but to allow the cement to harden undisturbed for a week. In case the weather is hot, however, it is a wise plan to pour over the cement a small pail of water once or twice during the week, to guard against all danger of cracking.

When the week has passed and the cement appears perfectly dry, remove the screws that unite the different sections of the box, and withdraw the sections carefully from about the cement; work the iron pipe loose, pull it out and fit a cork into the hole; then turn over the cement block and cautiously slip out the bowl,—and behold, the finished bird basin fashioned of cement!

Should the cement stick to the mold, it may be safely loosened by light quick tappings on the mold with a hammer; this, however, should be done most carefully, as if one had all the time in the world.

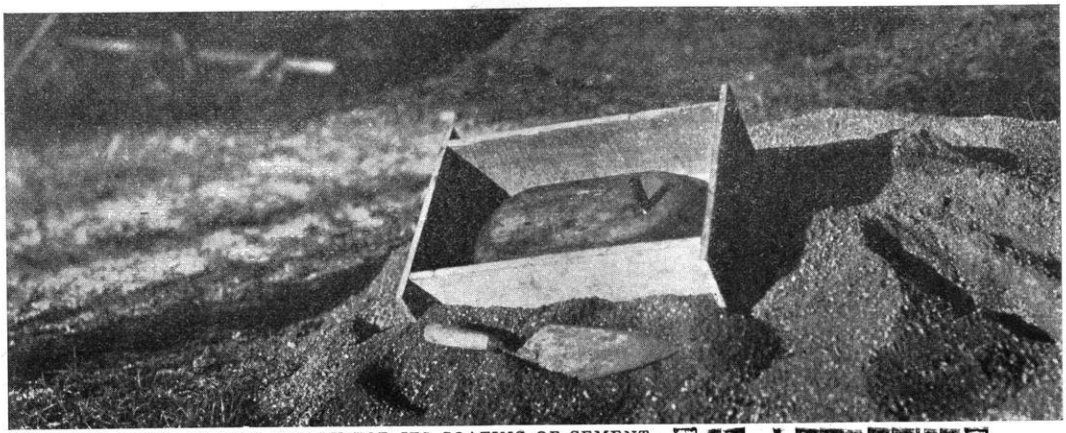
A bird basin of this style is extremely effective mounted on a rustic pedestal. A common cedar post, however, twined with vines, is also attractive.

The making of these bird drinking bowls would be a delightful vacation pastime for little children. It would open up for them the pleasures of craft work and at the same time awaken their friendship for the birds, a condition as valuable for the children as the birds.

The birds soon learn to know the children and will perch trustingly upon their hands, flutter around their shoulders, hovering over their heads, alighting occasionally among the ribbons and flowers of their hats as if enjoying the daring adventure of the game. They make the most delightful playmates for the children, unconsciously teaching them gentleness and thoughtfulness, quickening their faculties of observation. Even a very little child will notice a bird and watch with sweet wonder its swift flights in the air and quick, playful dashes across the lawn. The fluttering wings of a bird lead the child into fairylike lands of fancy and into the even more marvelous realm of visible nature, opening wide avenues of enjoyment.

A bird basin in a garden is also an endless source of pleasure to those children of a larger growth who have not lost their childlike sympathy for the flying, walking, blossoming things of the earth.

If tall hollyhocks grew all around it so that the smaller birds could alight upon the topmost buds and swing delightedly before flying to the basin for a drink or a bath, or sway upon the slender stalks as they sing songs of joy and gratitude after the refreshing drink, it would complete the birds' happiness and add to the beauty of the garden.

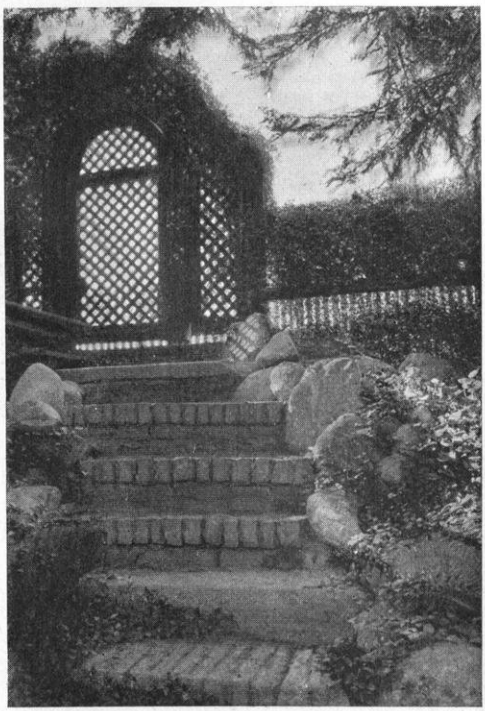


CHOPPING BOWL IN BOX, READY FOR ITS COATING OF CEMENT.

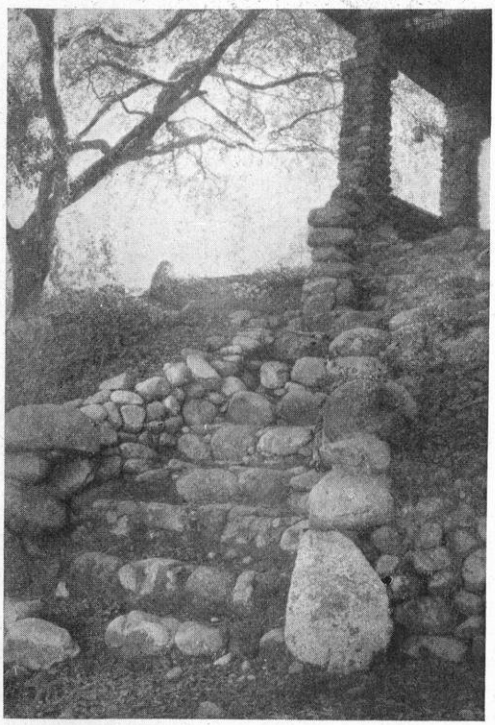
THE PATH IN THE GARDEN: BY HELEN LUKENS GAUT

HARMONY—that essential of the ideal home—depends on many factors, and one of the most potent of these is the right relation between the house and its environment. The building itself may be a perfect bit of architecture, embodying all the beauty and comfort that love and skill can devise; but unless it is at peace with its surroundings, unless there is a sense of kinship, of unity between the man-made masonry and the little portion of the nature world about its feet, there will always be a feeling of incompleteness.

There are many ways in which this sense of unity can be attained—by the use of porch, pergola, terrace, arbor, gateway and other features, of such construction and materials as carry out the general scheme of the house. But one of the simplest and most practical things that help to link the home and grounds together, is the garden path. In the right development of this primitive but essential feature lie infinite possibilities for garden beauty.



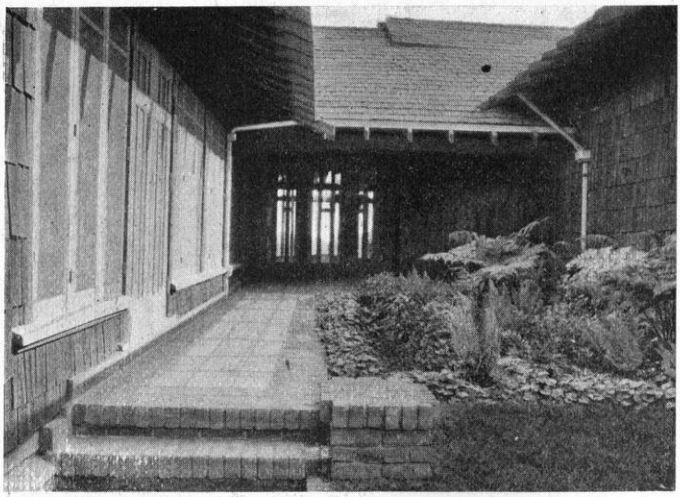
BRICK CAN BE MOST PICTURESQUELY COMBINED WITH STONES IN STEP BUILDING.



FIELD COBBLESTONES ARE EQUALLY EFFECTIVE FOR STEPS AND WALL.

In the first place, it is so easy to have a path—of some kind. Anyone who has a little garden space around the house must have some sort of a walk, and the problem of making just the right kind depends not so much on the money and labor expended as upon the amount of careful thought that goes into the planning, and the sympathy with which that plan is carried out. By ignoring old rules and conventions, and letting the character of the house, the requirements of the site and the nature of the materials suggest the keynote for each theme, we shall get a result full of originality and freshness, alive with that individuality on which depends so much of a garden's charm.

For a long while the average garden walk has been a thing devoid of any special beauty. We have been content with plain, uninteresting paths made without regard to architectural or garden harmony, useful no doubt, but quite uncompanionable, lacking all quality of sympathy or imagination. But now our home-makers seem to be stirring out of their indifference, and architects and gardeners are working together to make out



BRICK AND CEMENT ARE USED IN CALIFORNIA FOR PAVING THE PATH TO THE INNER COURT.

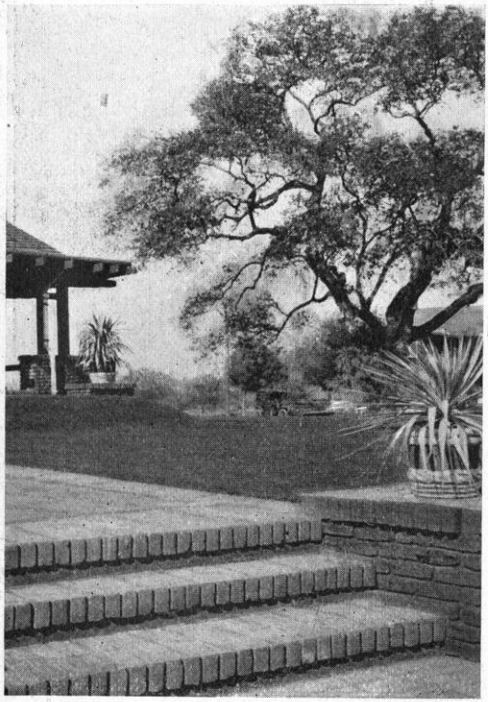
of our pathways a friendly chain that binds house and garden in one perfect whole. Thus, the straight-edged cement walk, so long popular, which suggested nothing more romantic than keeping one's feet out of mud or dust, is being supplanted rapidly by walks showing graceful curves, mysterious corners, shady and inviting nooks; walks which, while useful and practical, serve at the same time to enhance the garden's loveliness and lure us oftener into the open air.

As for construction, these new walks are made of anything and everything—cobblestones, field stones, brick, broken slabs of cement, crushed granite, gravel, shells, wood slats, logs after the fashion of corduroy roads, cement in various colors. Sometimes these materials are used singly; often two or three are combined harmoniously with excellent results.

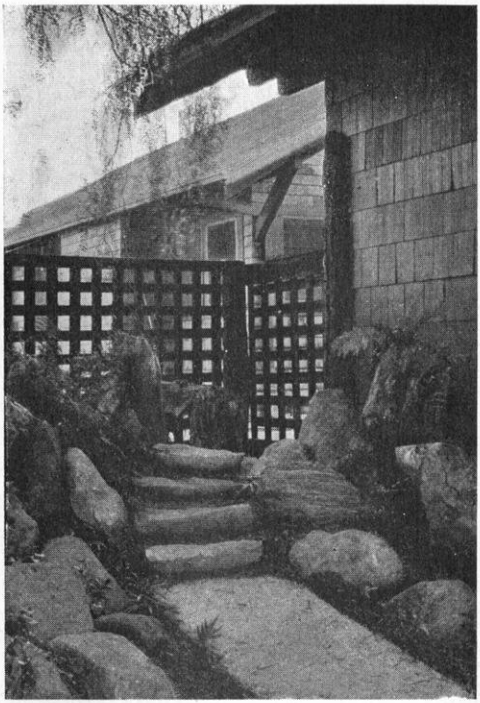
It is always best, of course, to construct the walks of whatever materials are used in the house itself, or at least of materials which will be in keeping with the general architectural scheme, and frequently one sees most interesting and attractive combinations. Nowadays single houses, more especially of the bungalow type, show a varied and sometimes wonderful collection of building materials in their make-up, and this architectural prodigality is also introduced into the garden walks.

Some idea of what can be accomplished in this direction is given by the photographs of several Western gardens reproduced here. These show such rare simplicity of treatment, are so practical and yet so full of poetic originality and winsome outdoor charm, that it would be hard to improve on any of them. And yet, with all their picturesqueness, their variety of materials and design, they are obviously not expensive. In some instances, in fact, they must have cost little more than the work of putting them in shape. In each it is the personal elements of ingenuity and thoughtfulness rather than the intrinsic value which has made them so rich in suggestion and so full of appeal.

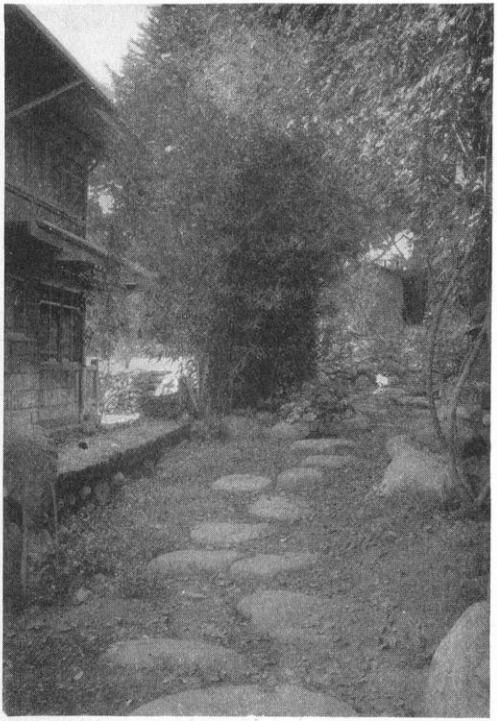
Perhaps the simplest and most obviously inviting of these varied types of garden pathways is the one consisting of huge flat-topped water-polished cobblestones set in deep clover or blue grass, the white slabs gleaming in their green setting. They are spoken of fittingly as stepping-stones rather than as a walk, for they are sunk in the ground so that their tops will be at a uniform level, and at intervals convenient for walking. Sometimes split rocks are



TRIM-LOOKING STEPS WITH THE MORTAR ROUTED OUT



SPLIT COBBLESTONES MAKE INTERESTING STEPS FOR A RUSTIC DWELLING.



STEPPING-STONES ARE MOST APPROPRIATE FOR THE RURAL PATHWAY.

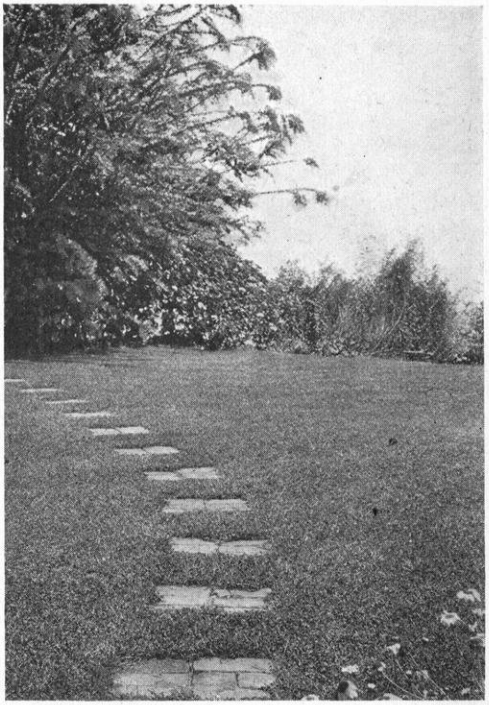
used in the same way, the broken side placed up to afford a flat surface. While every stone seems full of poetry, luring our footsteps with unspoken invitation, it is a most practical arrangement, for it enables one to cross a damp or muddy lawn with safety, and also protects the turf from being worn.

It is also surprising what an attractive walk can be made from broken slabs of cement, pieces from old sidewalks that have been torn up and discarded and which were very likely en route to the city refuse dump. Set in grass or clover, or among low flowerbeds in a garden, these old plebeian fragments become quite aristocratic and dignified. With their smooth surfaces, these slabs have an advantage over the cobblestones, in that they are safer and more comfortable to walk on, though being man-made, they lack the appealing charm of nature-made stones.

These slabs of cement make an excellent pavement for a garden sitting room. If set irregularly, with bits of space between where grass, clover, low ferns, flowers and mosses can grow, the results are more than satisfactory. While such a floor is hardly suitable for chairs, it is a delightful place for hammocks and swinging couches. These slabs should, of course, be broken off in varying sizes, and with no rules for symmetry. This freedom and lack of order indicates a sort of Bohemianism in gardening. If one wishes to carry out some regulation scheme, blocks can be cut diamond shape, in squares, or any other desired form. In the "old-fashioned" gardens of today one finds the quaint flagstone walk walled with hollyhocks or dahlias, or bordered with pansies, mignonette or snapdragons. Brick laid in the sod in groups of six make a pretty and inexpensive walk, and, as in the case of stepping-stones, are a great saving to the turf.

If there is opportunity for steps in the garden, they should be of the same construction and materials as the walks. They always add greatly to the beauty of any garden scheme. Rough stone steps hugged by ivy and ferns and dainty blossoms, with perhaps a rustic seat tucked in one side where the garden lover may rest and dream, or enjoy the fragrant shade,—such garden steps are an acquisition worth considering.

In the simple gardens, one often finds

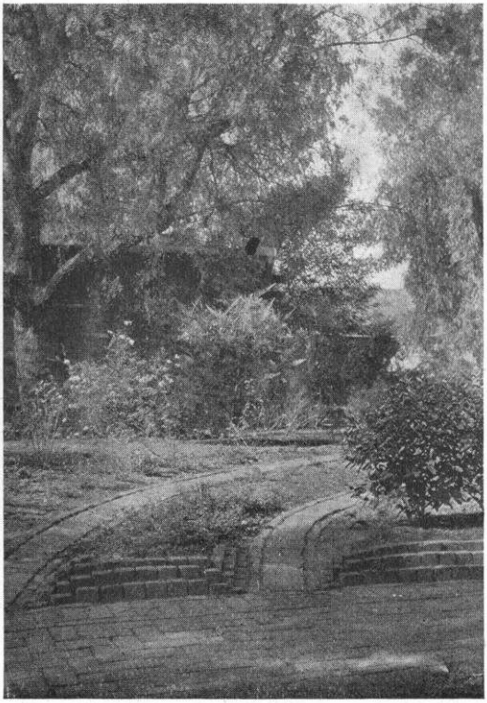


A PATH THROUGH THE LAWN OF RED BRICK BEDDED IN THE GRASS.

paths of just plain, everyday dirt. If the dust is kept settled by sprinkling, and the paths neatly swept, they are very pleasing. At any rate, they are comfortable to walk on, and remind one, if there is abundance of shade, of some quiet pathway through the woods. Such walks should always have strips of wood on the sides, else the dirt and mulching from the flower beds will cause annoyance and untidiness. It is always well in laying out a walk of any kind to raise it slightly above the level of the flower-beds, and thus avoid any chance of the flower-beds running over and making the path untidy. A walk of crushed granite, although good to look upon, is a very unsatisfactory path except for the heaviest shoes, for the stones are sharp and cutting. Rolled gravel walks are always attractive, and are popular. They are quite troublesome to put in, and are rather expensive if one has to pay for the gravel and for having it hauled, spread, tamped and rolled, but once in, these walks require little attention other than an occasional wetting down and rolling. To be satisfactory, three layers of three different materials are required, first a layer of rough granite, then one from the crusher, and last, a fine pulverized granite which makes a smooth top coating very much like cement.

A clever mason can do wonders with brick and stone and mortar and tiles; in fact there seems to be no limit to design and combination. A most unusual walk, shown in an accompanying illustration, consists of an eighteen-inch center of cement in which cobblestones have been imbedded—a friend of the family jestingly calls them "hobblestones"—while on either side is a fourteen-inch border of red brick, low-walled by a line of cobblestones set upright. At the street, this walk ends in a quaint brick-paved garden "cozy corner," walled with rock, one half shaded by a rustic pergola mounted on stone piers, the other half open to the sun.

An odd innovation for a walk is that consisting of two narrow lines of brick set three feet apart, the space between being planted with flowers. One must "keep to the right" on such a path to avoid possible collision. There are many other interesting ways to lay brick,—straight and triangular, flat or on edge,—and as brick are of many sizes and shapes and colors, there is practically no limit to what can be done with them. Especially pleasing is a walk with two or three rows of brick tile running through the center, with twelve-inch borders of ordi-



WINDING PATHWAY AND CURB OF BRICK

nary red brick on either side. The square brick in the center can be either red or white with equally good effect. Split logs laid like a boardwalk close against the ground, make an interesting walk in a bungalow garden, especially if a rustic rail is added. Small unsplit logs lashed close together are attractive for the old-fashioned garden, or for making bridges across ponds or bits of sunken garden.

THE SUCCESS OF COLOR PHOTOGRAPHY

THE Professional Photographic Society of New York exhibited over two hundred examples of color work recently in New York. This was the most noteworthy and comprehensive exhibit of autochrome portraits, landscapes, still lifes and interiors ever assembled either in America or Europe. It was made possible mainly by the untiring efforts of Mr. B. J. Falk, of New York.

The occasion of this remarkable exhibition was the seventh annual convention of professional photographers of America who have this year concentrated their efforts upon the solution of the problems in color photography. Every year this body of workers meets to discuss technical matters of interest to the craft, listen to lectures on photography and witness demonstrations. This recent meeting was especially notable, because it proved to the workers and to the world that this marvelous development of camera art is achieving practical results.

For fifty years or more color pictures have been the dream of photographers, and success has been heralded again and again, but the trails proved to be false ones, and not until the present day has any dependable knowledge been gained. Two years ago in Dresden a number of autochromes were shown, but they were mostly the results of the experiments of unprofessional men or dilettanti. Now and then good work was accomplished, but the practicality of its processes was not fully determined.

All color photographers were asked to send examples of their work to this exhibition, and while some of it was openly experimental and therefore of double interest to the profession, much of it was beautiful and significant beyond expectation, arousing great enthusiasm. The collection displayed proved that color work in the camera is not altogether an automatic process, that it can be made to answer the demand of the artist to a remarkable degree of perfection.

The work of pioneers as well as that of distinguished modern foreign and American artists were on view, arousing admiration from the ranks of the craft as well as from the outsiders.

Dr. Arnold Genthe showed the wonderful possibilities of this art in a wide range of subjects, revealing in his work all the poetical and realistic treatment possible. His interiors had the richness and charm of a painting, and the flesh tints of his portraits were delightfully realistic. A rainbow in one photograph held the atmospheric witchery of nature itself, and a study of the nude was one of the most beautiful things of the whole exhibition.

B. J. Falk's portrait of Otis Skinner as *Hajj the Beggar* held the rich color of the Orient. A. H. Lewis showed a poetical, lovely glimpse of a pool of water-lilies, and a fine bit of winter woods with the elusive blue snow shadows caught in perpetuity. H. H. Pierce, of Boston, showed a photograph of a little boy in a white suit who had waded out to a rock at the edge of the ocean and bare-footed was playing in the water; this was full of the sun-steeped brilliancy of the ocean, the water so limpid that the child's feet showed through—a remarkable photograph, reminding one of Sorolla's genius for revealing the color and atmosphere of the sea. Some interesting portraits were exhibited by S. L. Stein, of Milwaukee and Miss Frances B. Johnston, of New York, and some landscapes by F. J. Sipprell, of Buffalo.

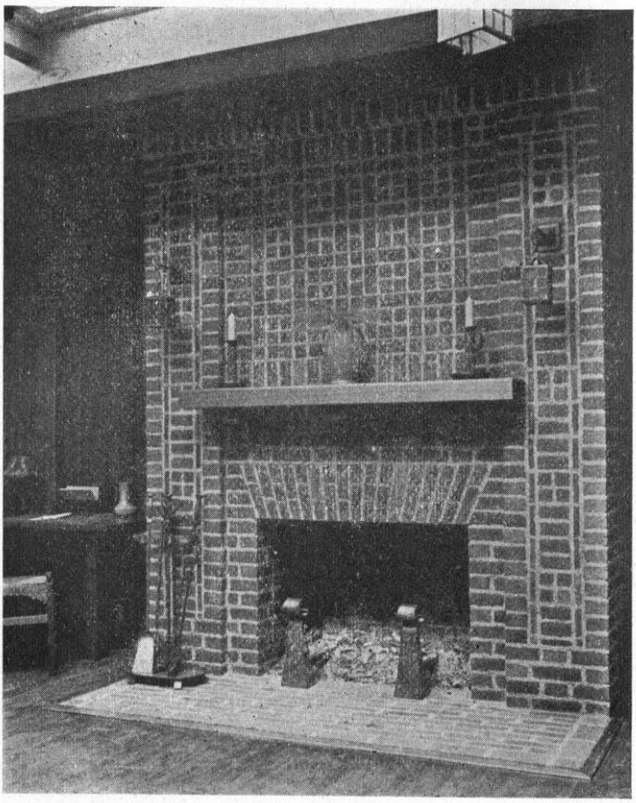
The exhibition was prophetic of much that will come later in this interesting and important branch of art, especially along the line of portraiture, for in this field the most practical work will doubtless be accomplished. In landscape there is always the difficult matter of atmosphere to be handled, and the camera as now in use is prone to slight this poetical aspect of nature and give too clear and detailed a report of objects. Its records often seem to have been taken by an analyst rather than a poet or naturalist. Many of the color photographs shown looked as if a telescope had been used with which to peer into distant hills. They were but hard, detailed foregrounds, with no veil of distance to enhance their beauty. However, such unfortunate renderings may have been but the result of unfamiliarity with the tricks of Lumière plates—experience will surely give full control.

THE CRAFTSMAN FIREPLACE: A COMPLETE HEATING AND VENTILATING SYSTEM

ON account of the number of inquiries that have been received in regard to the Craftsman fireplace-furnace, I have thought it advisable to publish another description and set of drawings embodying several improvements over the form of fireplace originally shown. These improvements have simplified not only the construction of the heater but also the work of installing it.

As shown in Figures 1, 2 and 3, the body is made of large sheets of steel, welded together by special welding machinery into one piece of continuous metal, making leakage of gas, smoke or dust an impossibility It is so constructed that each smoke compartment is self-cleaning; the smoke area being vertical, there is no place for soot and moisture to collect. The heater is six feet high and four feet wide, and weighs complete with grates and other iron parts needed in the construction about 1,000 pounds.

Grates for the burning of coal or coke are supplied with each heater. These consist of only three parts and are easily and quickly set in place, no fastening being required. Figure 1 shows the removable metal hearth and grates in place for the burning of coal. The ashes sift through the grate and fall into the ash pit, which is so large that it needs emptying only once a season. This arrangement also eliminates the objectionable feature of dust from the ashes escaping into the room. If it is desired to burn wood upon an open hearth, the metal hearth and grates are removed and the opening into the ash pit is covered by a metal plate on which andirons may be placed, for burning wood, as shown in the photograph. As evident from both these illustrations, whether the fireplace is equipped with hearth and grates for the burning of coal, or is arranged with open hearth and andirons for the burning of wood, the impression is at once satisfactory and permanent.



THE CRAFTSMAN FIREPLACE BUILT OF TAPESTRY BRICK EQUIPPED WITH ANDIRONS FOR BURNING WOOD.

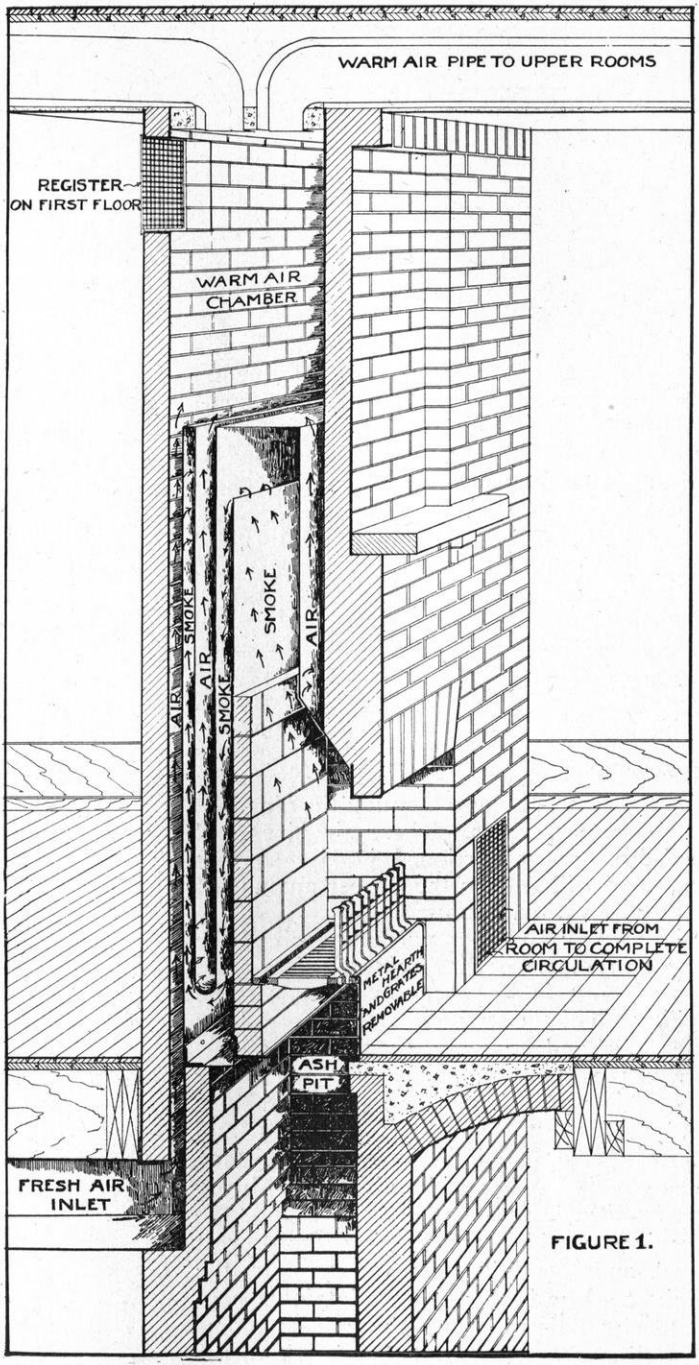
The heater is set on the floor level, and the installation consists in merely building a four-inch brick wall around it. This wall, carried up to the ceiling and roofed over, forms the warm-air chamber above the furnace body. In one leg of the chimneypiece is set a fire-clay smoke flue, shown by dotted lines in Figure 2, which is connected with the body of the heater. I furnish one section of this flue lining having three holes, one which fits onto the flange around the smoke outlet of the heater, another which may be connected with a pipe from the kitchen range, and a third which opens by register into the room for the purpose of checking the coal fire, but which is kept closed when wood is burned. This flue starts at the bottom of the smoke outlet on the heater shown in Figure 3. This arrangement leaves the leg of the chimney below the flue free for the circulation of air.

Any mason can build the wall and make a correct installation. The cost of the brickwork compete with chimney is less than that for the usual fireplace of

equal size. About 3,000 brick are required where there is a cellar and the chimney is carried up two stories. At a cost of $10.00 per thousand for brick and an equal sum per thousand for sand, cement and labor, the entire cost of brickwork, including $5 for flue lining, would be about $65.00.

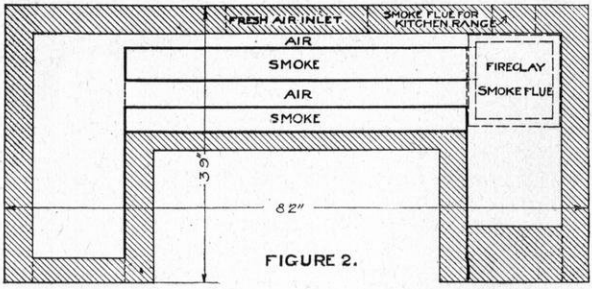
I have used the common hard-burned brick as a basis for the above figures; where the owner desires to make the fireplace of plaster, stone, Tapestry brick or tile, the additional cost will depend, of course, upon the material selected. Hard-burned brick, at the above cost, if laid up with a wide mortar joint will make a beautiful fireplace. There are no limitations as to the design of the chimney-piece, the only requirement being that the inside measurements are kept to those shown in Figure 2.

The Craftsman fireplace may be installed in houses already built, as well as in new ones, the work in each case requiring a new chimney and the cost being practically the same. Because of the universal favor of the open fire it seems best to make only a medium-sized heater, as many people would prefer to have two or even more fireplaces in different parts of the house. The piping of warm air to the various rooms is then a small factor of the cost, as the pipes will necessarily be few and short. These are to be furnished by the owner, since they are always in stock at the local hardware store and are inexpensive.



VERTICAL SECTION THROUGH CENTER OF CRAFTSMAN FIREPLACE.

The operation of the heater itself is as follows: As shown in Figure 1, which is a vertical section through the center of the fireplace, the smoke generated by the fire passes up through the smoke compartment, down behind the steel smoke wall to the bottom of the heater, then up through another smoke compartment to the top of the heater, where it passes through the smoke outlet flue shown in Figure 3, and out through the chimney.



SECTIONAL PLAN OF CRAFTSMAN FIREPLACE.

During its passage the smoke heats the steel walls of the smoke compartments, which in turn heat the air in the air compartments, as will be seen by reference to Figures 1 and 2. The air is thus caused to rise and pass up into the warm-air chamber. This action draws in outside air through the fresh-air inlet, up through the air compartments into the warm-air chamber. At the same time air is also being drawn in from the room through the registers at the base of the fireplace, up through the air compartments into the warm-air chamber, where it mixes with the warmed fresh air from outside. The warmed air passes through the upper registers into rooms on the first floor, and also through the air pipes to the upper rooms. These air pipes and registers are proportioned in size so that each one will deliver the proper amount of air to the various rooms.

The warm air, upon entering each of the upper rooms, being lightest rises and spreads out in an even layer against the ceiling. This layer, as it cools, descends to the floor and passes out under the door down the stairway opening to the lower floor. Part of this air is drawn into the fire and passes out through the chimney, and the rest is drawn into the lower registers. The circulation is rapid and positive, being accomplished, as seen, by gravitation, the heavier or colder air seeking the lowest level, and the lighter or warmer air the highest. The heater thus maintains a constant circulation between the various rooms as well as a movement of the air within the rooms, making a given air supply go much farther than with other heating systems.

In this circulation, the air absorbs all impurities, and naturally the zone of the most vitiated air is nearest the floor. It is from this zone that the fireplace draws immense quantities of air and discharges it through the chimney. An adult vitiates from 2,500 to 3,000 cubic feet of air per hour. The fireplace is constructed to admit 20,000 cubic feet of fresh air and discharge through the chimney the same amount of vitiated or used air per hour, thus making perfect ventilation for seven adults. In this way the air throughout the house is entirely replaced with fresh warmed air from outdoors every fifteen or twenty minutes. Doors and windows should be kept closed in order that the circulation of air may not be disturbed, for upon the proper circulation depends the efficient heating and ventilation of the house. Under these conditions, there can be no draughts.

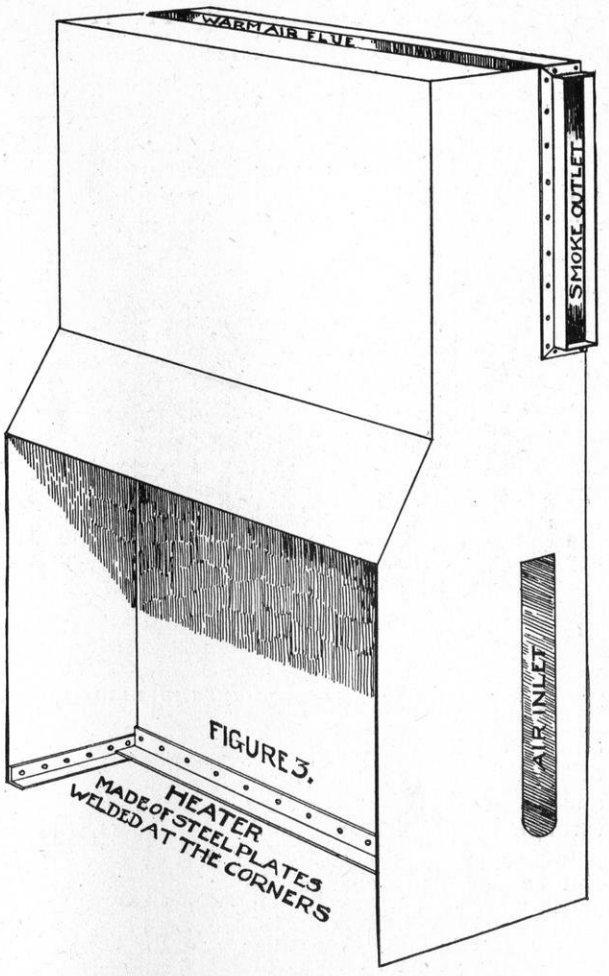
The danger of the fireplace smoking is entirely eliminated, as the smoke and air openings are properly proportioned and, being part of the steel body, do not depend upon the judgment of the mason. Moreover, it is not only impossible for back draughts to force smoke into the room, but sparks are prevented from escaping through the flue, thereby removing all danger of fire on the roof.

The conserving within the brick walls of all heat which has formerly been lost in the cellar; the circulating of volumes of air in contact with the large areas of smoke surface, thereby extracting practically all the heat from the smoke, and the radiation of heat direct into the room from the open fire, make the Craftsman fireplace a most efficient heating system. One fireplace will amply heat a seven-room house, with a consumption of from seven to ten tons of coal per year in a climate like that of our central States. The exact amount of fuel consumed, however, depends largely upon the exposure, the number and size of the windows, and the construction of the house. Coal or coke will furnish a more even and steady heat both day and night than wood, but because of the slow combustion due to the down draught, wood may be used as fuel with entire satisfaction from a standpoint of both economy and attention.

One of the most practical features of the Craftsman fireplace, as previously mentioned, is its adaptability to various forms of fuel, and the readiness with which the change can be made. For the burning of coal, I am making a shaker grate, and this, together with the metal hearth and upright

grates, can be simply slid into place. As shown in Figure 1, the grate rests upon a half-inch shelf made by the projection of the brick; thus, when the grates and hearth are removed and the steel plate (which I also furnish) is in place, there is no mechanism left to indicate the transformation from grate fire to open hearth.

I have designed the fireplace in this way because, in most localities, there is an occasional chilly day in the summer when a little fire would be welcome, or a damp day when its warmth is needed to dry out the house. At such times a coal fire would give more heat and incur more trouble than would be desired, while a wood fire requires very little care, need not be kept in longer than it is wanted, is cheaper than coal and much quicker. Besides, the crackling logs on the open hearth, and cheery glimpse of sparks and flames seem more companionable for such a day than the more steady glow of coal behind a grate. Then, of course, there are many weeks during the late fall and early spring when a wood fire can be kept in all day, giving sufficient heat, so that the regular coal fires need not be started until the beginning of December nor kept in after March. Especially would this be the case in localities where wood is cheap, plentiful and easily procured. In any case, it is always pleasant to know that one can have a few logs ablaze at any time with very little trouble.



PERSPECTIVE DRAWING OF STEEL HEATER FOR CRAFTSMAN FIREPLACE.

In the next number of THE CRAFTSMAN I am planning to have another article with further details about the fireplace, and I shall then show just how the fire may be checked or increased by the double regulating dampers which control the draughts.

The price of the steel heater complete with grates, registers and all metal parts (except the pipes needed to conduct warm air from the heater to rooms distant from it) amounts, with the freight, to $150.00. By combining this with the cost of the brickwork and the pipes one can easily install the heating plant complete inside of $250.00. The fireplace is sold only direct to users. I require the plans of each house in which it is to be installed, and from them I make and furnish free to the owner a heating layout which shows the location and size of warm-air pipes and registers, and includes complete plans and instructions for the mason to use in building the brickwork. I guarantee the fireplace to heat and ventilate properly each house in which it is installed, and by making the heating plant myself and selling it direct to users I am in a position to assume the entire responsibility.

I am ready to make shipments of Craftsman fireplaces and shall be glad to hear from all those who are considering the installation of heating and ventilating systems. I shall also be pleased to correspond with any readers who may wish further explanation of the construction of the heater and the manner of its operation.

Gustav Stickley

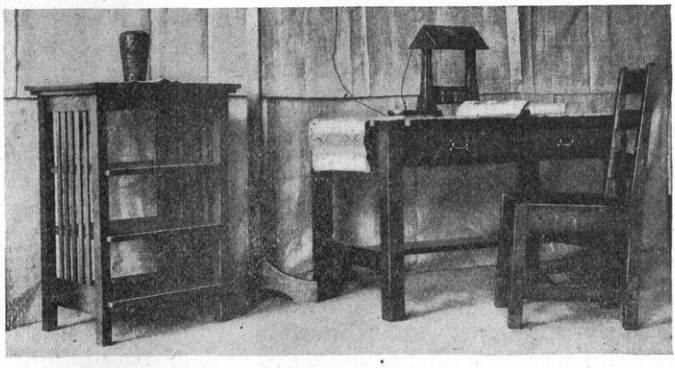
SOME CRAFT WORK IN A SOUTHERN HIGH SCHOOL

THE study of art has always been a great factor of education,—the familiarizing of students with the best that has been accomplished by all nations in all arts,—architecture, painting, sculpture and the various crafts. The method of acquainting the youth of our country has been almost entirely cultural—through books, lectures and photographs of good work. But a decided change is being seen and felt all over the land, and we are constantly hearing of schools that are teaching art, not through books and lectures alone, but through a personal application of the rules of art. A hand-to-hand encounter with any bit of artistic work is more illuminating than the glib reciting of many rules, is more educative in every way, and results in a truer appreciation of what is essentially good or bad.

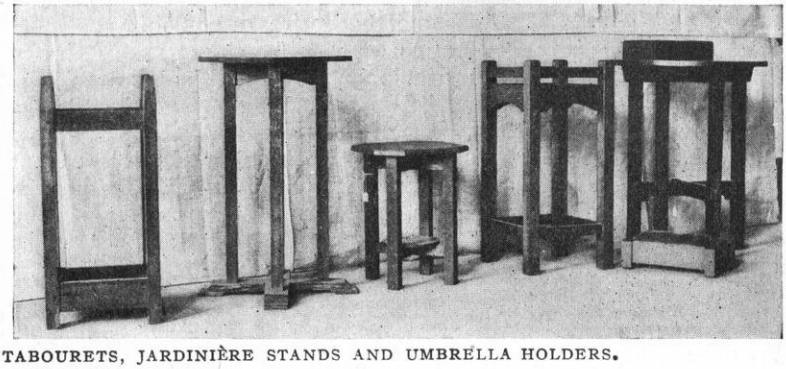
SERVING TABLE MADE BY BOYS IN THE HIGH SCHOOL AT RICHMOND, VA.

Many schools have taken positive steps toward the manual training of their students —training the hands to carry out the ideas of the mind, and the results prove unmistakably the wisdom of thus practically embodying art principles.

The first-year pupils in the John Marshall High School of Richmond, Virginia, have done much to illustrate the benefits of manual training, as can be seen from the photographs of their work which accompany this article. The pupils work directly from working drawings (in the form of blue prints) which they have themselves made. The influence of the Craftsman ideas is plainly to be seen, though no article of furniture is a direct copy of Craftsman models. The Craftsman lines of extreme simplicity have been noted, studied and applied with the boys' own modifications. They are substantially made and look as if they would endure through much daily use. There is no useless ornamentation about them, but all are simple and attractive because of this simplicity. Each piece represents an individual expression of some special need of the pupils. The finishing of each piece has been used as a



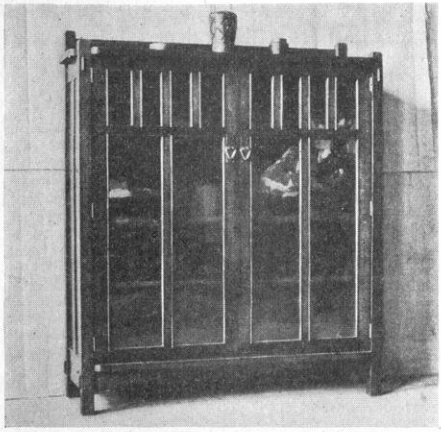
LIBRARY FURNITURE OF GOOD DESIGN.



TABOURETS, JARDINIÈRE STANDS AND UMBRELLA HOLDERS.

means of teaching harmony of color and surroundings, thus completing a chain of instruction beginning from design, through actual construction to the placing of the article in the environment in which it is destined to be used.

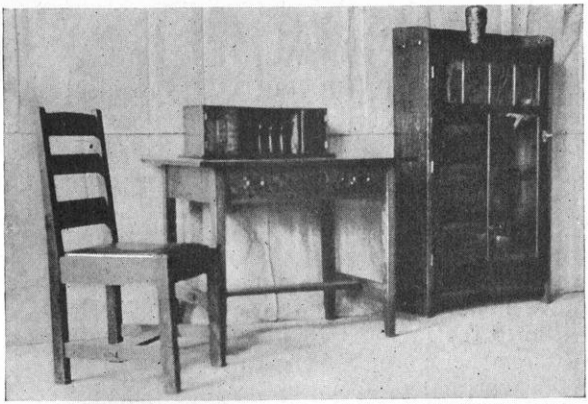
A quotation from a letter received from H. Clay Houchens, the director of manual training in this school, acquaints us with the purpose of this form of teaching: "We are ambitious to develop an appreciation of honest and beautiful workmanship, thereby creating a demand for better methods and work from the manufacturers of our country.



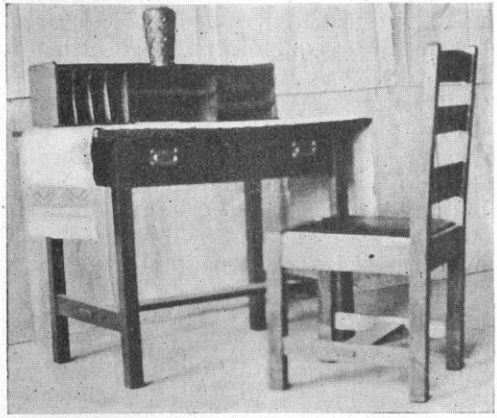
THE EXCELLENT QUALITY OF THE WORK SHOWS THE WISDOM OF THIS SORT OF EDUCATION.

* * * Only the best methods of construction are made use of. Modern shop methods are taught only when such methods are strictly honest."

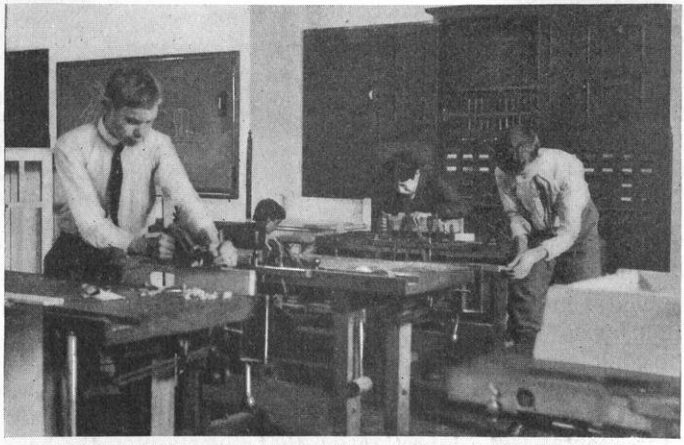
Their aim has been, not so much to make mechanics of the boys as to develop an appreciation for that which is useful and beautiful. The photographs are a good illustration of the wisdom of this form of education.



BOOKCASE, TABLE AND CHAIR DESIGNED AND EXECUTED BY HIGH SCHOOL BOYS.



EACH PIECE OF FURNITURE REPRESENTS THE FULFILMENT OF SOME SPECIAL NEED.



THE BOYS DESIGN AND MAKE EVERY BIT OF THE FURNITURE THEMSELVES.

Such a practical form of education teaches a boy one of the most important lessons in life—to learn to think for himself. When a boy faces problems which he must overcome he has got to learn to think. And as he is thinking his way through these problems he comes up against the need of information on certain subjects, and of his own accord he seeks knowledge to help his own thinking brain. He learns eventually to value books, not as something to study, or as a means of culture, but because they help him in his work.

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OVEREQUIPPED UNIVERSITIES

DAVID STARR JORDAN, President of Stanford University, California, one of the great educators of America and an illustrious scientist, has come to the conclusion that "no man ever adds much to the sum of human knowledge because the road is made easy for him, that *facilities do not create,* that the men who have honored their universities owe very little to the facilities their universities have offered them, that the great men succeed by endeavor, not by facilities." These facts are of the greatest significance, as practically all the efforts toward improving educational opportunities in America are given up to the *increasing* of *facilities,* not to the placing of men and boys in the position where through their own struggles they will hew a pathway for their own achievement. Dr. Jordan feels that as a matter of fact it is easier to be swamped by equipment for work than it is to succeed through the help the overequipped university offers. He further says that of all the men he has trained in his own particular department of biology, the five he "regards as best because their creative contribution to science have been greatest, were brought up out of doors or within bare walls in which books, specimens and equipment were furnished by the scantiest of salaries."

Education made easy seems to be the watchword of the American university, and the thing that is made easy not only eventually ceases to be of value to those for whom it is made luxurious, but from the very force of nature begins to run down hill. As Dr. Jordan says, "It is easy to slide in the direction of least resistance, and that direction is not upward." The men who are going to achieve creatively have got to have some means of strengthening their intellectual muscles, just as the man who is strong bodily has got to have the opportunity for physical exercise; in other words they have got to struggle—and grow in the conflict.

In spite of the fact that such a man as Haeckel is reported to have said that "the output of any scientific establishment (and the same is true of any educational establishment) is in inverse ratio to the completeness of the equipment," here in America our interest seems to lie not in furnishing opportunities for actual growth, for mental, spiritual and physical development, for the struggle which must mean creative achievement, but for more perfectly equipped departments, for more shelves and bottles and scientific implements, for more books, for more pedantic professors. In other words, for more well-oiled, smoothly running appliances to deaden the brain and atrophy the creative impulse.

To quote Dr. Jordan further from the official report of the proceedings of the American Association for the Advancement of Science, *"with the scantiest of equipment much of our greatest work has been done.* It is said that Joseph Leidy's array of microscopes and knives cost less than a hundred dollars, that the famous 'Fish Fossils' was written when its author lived from hand to mouth in the Latin Quarter, and that the precious manuscript was just scraps of paper torn from old books." Victor Meyer, the great German scientist, has even gone so far as to say that it would be a good thing if all chemical laboratories should be burned every ten years, which does not mean that he is merely an iconoclast, but that the mental effort and the physical energy required to put the laboratories again on a working basis would prove the development of scientists of vigor and enthusiasm. The man who gets what he wants without a struggle may have the material thing he has sought, but he has not the spiritual development which comes through stoking up his own energies until they flame into creative activity. Indeed, the great value of achievement is not what we do for our own world or for posterity, but what we gain in spiritual and intellectual growth through the battle to achieve. This is true in art as well as in science. The artist's greatest reward is his own enlarged vision; the scientist's greatest achievement is his own increased capacity for creation.

Our universities, with all their immense endowment funds, with their elaborately and luxuriously equipped departments, are rendering our young men practically a race of imitators and pedants, who are spending their lives finding out and remembering what great men *have done,* which perhaps is better than only being interested in the trivial or the infamous, but of what value to the world, to the creative world, is the mere cultivated memory and the scholarly interest and the classic tradition? Investigation may be valuable, but investigation for a purpose, the investigation that gives a man the background for his own labors, the investigation

which makes him realize how little he has accomplished, how much there is to be done, not investigation for the purpose of rendering a man superior mentally to his fellowmen.

In the early days the universities merely offered students the chance of supplementary information from men authority on their own subjects. There were no systems of elaborate buildings; there were no luxuriously equipped laboratories and libraries; there were in many instances merely courses of lectures given at the houses of the men who had sufficient renown to be employed. There were no recitations, there was no bringing together of bodies of students for competitive trials, and the man who went to Heidelberg or Jena or Bonn took his course of lectures seriously, acquired the information that he needed in connection with his work, and naturally gave as little time to this as was possible. He needed the years of his life for his own investigations, for his own work. He needed his energies for his own achievement. Even today in going to Heidelberg one looks in vain for the material symbol of the "great university." The effort at Heidelberg has been to fill the students with enthusiasm, with the desire to labor, with the desire to accomplish, not to bring them together in the sort of institution that would engender self-satisfaction and enervate mind and body.

The most slavish tributes to the worst phases of the modern university system are everywhere in practice in America. Dr. Jordan says: "Today the conditions are adjusted to the promotion of the docile student rather than to the man of original force. * * * He (the student) finds the university like a great hotel with the menu so varied that he is lost in the abundance. * * * He has but to touch a button and at his hand he has alcohol, formal, xylol or Canada balsam. * * * Every usable drug and every usable instrument is on tap in his university, and in Germany degrees and all are made for us. Another button brings the student books of all ages, the records of past experiences. * * * Worse than all this * * * is the fact that the student is set to acquire this elaborate training without enthusiasm." The university has given him material help, but no personal inspiration. The enthusiasm for the struggle of life, the flash of originality, the purpose to create at all hazard, these things grow rarer and rarer as our educational machinery grows more perfect. And futile as most of our colleges are for the actual development of men to run the real race of life, the "fellowship system" keeps them alive regardless of their value to our kind of civilization. So long as we "hire men to take degrees," then send them out to starve as instructors, so long shall we find our present type of university without advantage to our present kind of life.

As matters stand now we shall soon wholly cease to expect our American universities to produce significant men. We have permitted ourselves in this country to disregard the need of a definite kind of education for a definite kind of civilization. America as a political body is perhaps the only powerful successful democratic civilization in existence, or that has been in existence for a century or more. To superimpose upon this kind of a civilization the educational traditions of England and Europe is an absurdity that should long before this have appealed to the American sense of humor. We establish and endow educational systems all over our country. We have a greater number of educational facilities to the inhabitants than has probably any other nation in the world, and yet it is the exception, so great as to be notable (if we ignore our trade schools and agricultural colleges), to find any educational institution which relates to our type of civilization. We are as a nation a working people. We have a very limited idle money aristocracy, and in most instances even the support of this aristocracy is found in our business streets, not in our banks. Yet, the men who are educated to carry out the business which supports the nation are given the kind of opportunities that are supposed to be most successful with the idle nobility of England, Germany and France.

It is a matter of statistics, not only given by Dr. Jordan but by others who are authority on educational and business matters in this country, that the smallest salaries paid young business men are usually received by the university graduates when they first leave college. They are not prepared for their work. They not only are not prepared for any kind of creative achievement (we have ceased to expect this), but they are not prepared to be practical business men. Often they do not know how to write even the simplest business letter (this, of course, is the average, not the

exception); they are not ready to do the kind of work they have got to do to earn their living and become a factor in the business situation to which they are destined to belong.

Not only do we fail to educate our nation of business men for their work, but with few exceptions, and these very recent, we fail to educate our agricultural men for their work. Our colleges are breeding places for idleness, for uselessness. Even the young men who go to college with the vain hope that it will benefit them, that it will give them a better start in life, come away without any connecting link with the world of endeavor they have got to enter if they are to succeed. This indictment of the universities is equally true of our public schools, but that we have already taken up at length in THE CRAFTSMAN, and repeatedly. We make paupers of the children of our immigrants in the public schools, and we prepare our young men at college to starve because when they are graduated they are not ready for the simplest effort in the business world.

Dr. Jordan does not suggest a remedy. He merely makes statements which are a terrific indictment of our educational system. He relates these statements more specially to his own department of biology, but they have been made before of the educational world at large. To us the solution seems to lie wholly in the simplification of education, in the giving of our boys and young men the sort of training that will teach them to think and to work, that will enable them to know the force, the power, to be gained from actual conflict, not only mental but physical, the education that will develop them personally in their need of coping with the difficulties of life. The farm boy has this education. He may not get it in the best way. Usually he is not made to understand its value, and so it becomes irksome to him, but the opportunity is there. The boy who has to learn how, single-handed, to cope with farm life, will know how to cope with the business world, because fundamentally all the struggles in which human nature is involved require the same qualities of patience, courage, sympathy and alertness. And the boy who has gained sturdiness and has endured hardship, who has met emergency, summer and winter, in the development of land, in the care of animals, in house making, in the struggle for his own existence, will not be at a loss in any metropolitan civilization that has come under our observation.

The social end of it we are not discussing. That is an artificial thing, and a knowledge of it may be acquired or its practices ignored as the sturdy spirit decides. But the boy who through the formative years of his life has made the most of the development which can be received from farm life, has received the beginning of the best education that the world can give him, and has in his training the foundation of a sturdy democracy. If to this training he adds the book learning which he craves and needs to make his practical life successful, if he gathers stores of printed wisdom where it is closely identified with the business of existence, more or less, as it is essential to his development and power, he will find himself as a man with the ideal education for success in this present democratic civilization.

BOOKS RECEIVED

"Rodney the Ranger:" By John V. Lane. Illustrated. 297 pages. Price $1.50. Published by L. C. Page & Company, Boston.

"What Diantha Did:" By Charlotte Perkins Gilman. 250 pages. Price $1.00. Published by The Charlton Company, New York.

"The Believing Years:" By Edmund Lester Pearson. 303 pages. Price $1.25 net. Published by The Macmillan Company, New York.

"Mother:" By Kathleen Norris. 172 pages. Price $1.00 net. Published by The Macmillan Company, New York.

"John Temple:" By Ralph Durand. Illustrated. 371 pages. Price $1.25 net. Published by The Macmillan Company, New York.

"Æsop's Fables:" With forty drawings by E. Boyd Smith. 172 pages. Price $2.00 net, postage 14c. Published by The Century Company, New York.

"Two Years Before the Mast:" By Richard H. Dana, Jr. Illustrated in color. 415 pages. Price $2.00 net. Published by The Macmillan Company, New York.

"Famous Privateersmen and Adventurers of the Sea:" By Charles H. Johnston. Illustrated. 398 pages. Price $1.50. Published by L. C. Page & Company, Boston.

"Stories of Useful Inventions:" By S. E. Forman. Illustrated. Price $1.00 net, postage 11c. Published by The Century Company, New York.