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SOME WORK *of* AYMAR EMBURY, II *in the* SAND HILLS *of* NORTH CAROLINA

By
Russell J Whitehead

Photographs by Kenneth Clark.

BEFORE DISCUSSING the subject matter of this article, it is almost necessary to give some description of the peculiar country known locally as the "Sand Hills of North Carolina," because the quality of the work cannot be appreciated without some knowledge of the landscape which forms the setting of the buildings, and of the difficulty of obtaining good results in a community so remote from sources of supply of both materials and labor.

The Sand Hills are far from being mountains, but are rather undulations in a country generally flat; this section of North Carolina was once a sea beach and the hills used to be dunes along the sea coast, mingled with volcanic clay; geologically speaking, it is a new country, with little rich soil, so that its natural forest was of pine and scrub oak, the only trees which flourish in barren soil. Fifty years ago the whole region was virgin forest with no roads, no towns and practically no inhabitants. The country offered no invitation to the colonist; on a seventeenth century map of Virginia it is shown as "Montana Deserta"—desert mountains—and it so remained until the lumbermen came in, built logging roads and a little railroad; and in twenty years cut off practically every tree in the whole area, leaving a melancholy landscape of seedling pine and scrub oak, without grass, without much water and with the bare fields white with drifted sand.

One thing the Sand Hills did have, however, was a soft and bracing climate, never very cold in winter nor, (for North Carolina) very warm in summer. The soft, dry air attracted the attention of people looking for a place not too far from the north which still had open winters, and the little towns of Pinehurst and Southern Pines were founded; Aberdeen, the third of the Sand Hills towns, was the headquarters of the lumber industry and the junction point of the lumber railroads with the main line of the Seaboard Air Line.

In such a region, one of new settlements, there was, of course, no native tradition of building, and neither native labor nor manufactured materials. The South as a whole is in a backward condition as compared with the rest of the United

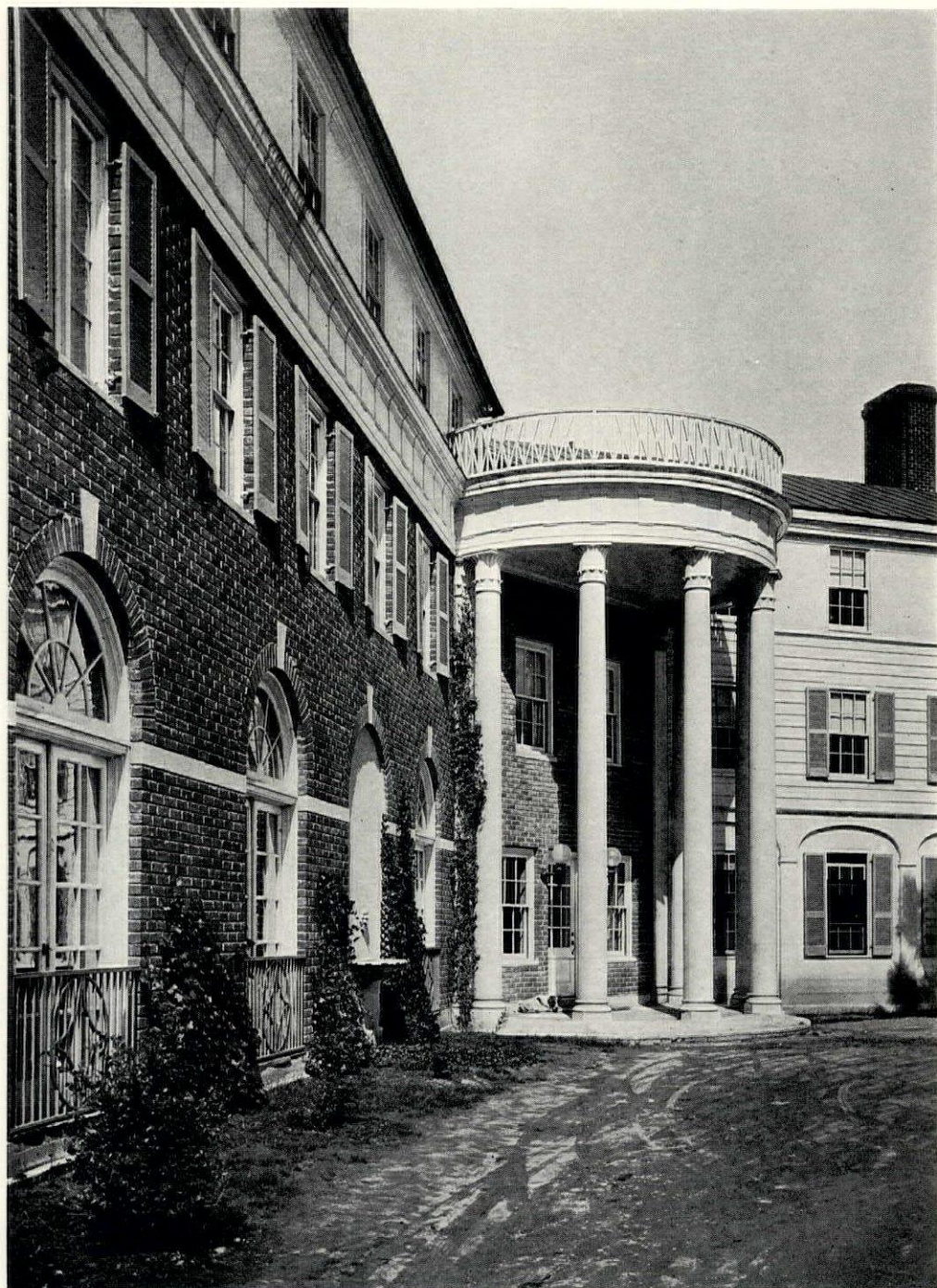
States, partly because of the terrible impoverishment of the country by the Civil War, and partly because the old system of slave labor so degraded the mechanic that the quality of the work in the south progressively deteriorated from Colonial times until after the Civil War, as trained white mechanics became replaced by half trained black ones. The course of slow recuperation following the Civil War reached the larger communities first, leaving such back waters as the Sand Hills to recover last of all. When Pinehurst was begun its founder, Mr. Tufts, discovered that it was necessary to establish his own building material yard, and even today for anything but sand or lumber the local builders go to this Pinehurst warehouse, and if it is not stock, it must be sent for out of the region.

When Mr. Embury did his first work in the Sand Hills in 1911, the country had long emerged from poverty and squalor, but was still struggling hard to keep its head above water. To raise the money necessary to build the Highland Pines Inn taxed the resources of the little town of Southern Pines to the limit, but the people thought it essential to the future of the place to have such an hotel; and when one knows that this hotel, with a hundred bedrooms, thirty baths, its own plant for heating and generating electricity, a laundry and servants' quarters was built for less than sixty thousand dollars, one begins to understand why some knowledge of conditions is essential to a just appreciation of Mr. Embury's work. One photograph of the Inn is included among the illustrations and shows an excellent piece of design along simple lines; this, as most of the other buildings, had to be built of local materials because of limitations of cost and also because local labor could be depended upon to execute only the type of construction to which it was accustomed. Herein has been the architect's greatest handicap; good carpenters are rare; there are many who can frame well, can put on siding or shingle a roof, but when it comes to anything outside the ordinary practice of the country, careful and detailed personal explanation is necessary; even a box cornice presents difficulties to many of them. It may be interesting to northern architects to know that much of the labor is black, but that both black and white mechanics work together without friction and without prejudice.

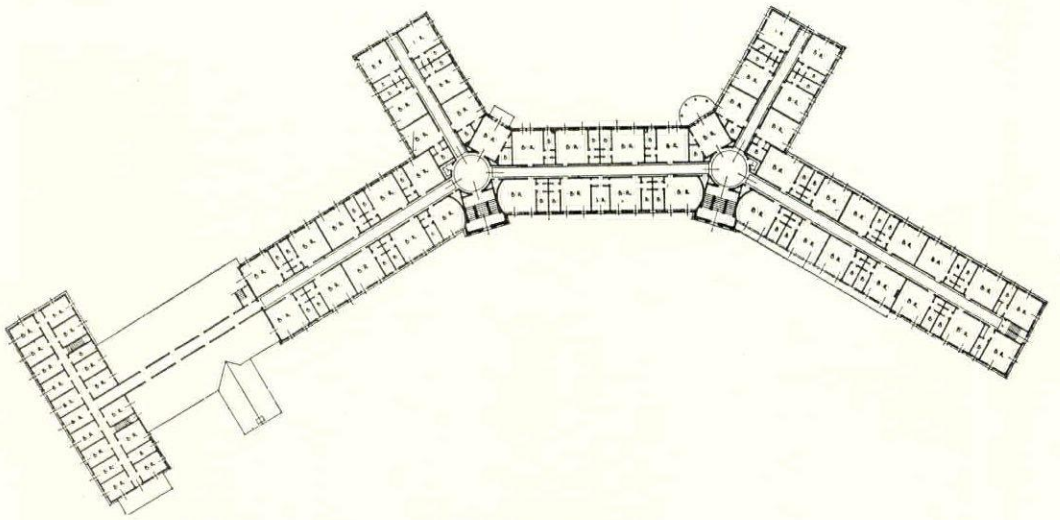
The ignorance on the part of these mechanics of what seems to most of us ordinary good construction cannot be held against them. Because of the former poverty of the region all building was of the simplest and cheapest character. Until Mr. Embury began his work in the Sand Hills some contractors had never seen a blue print, or built from plans, and full sized details were unknown. These men, however, were keen to learn and quick to take suggestions and among them there are today many mechanics who can read plans intelligently and execute them well and directly or indirectly to a surprising extent they have been educated by Mr. Embury. In the same way the people in the Sand Hills have been quick to appreciate the value of his work, both from the aesthetic standpoint and because of its usefulness in increasing the value of the real estate in the community. The mayor of Southern Pines has even proposed, (not wholly in jest), that the town permit no building but that designed or approved by Mr. Embury.

Such appreciation naturally stimulates an architect to do his best; and it seems to the writer at least, that, in spite of the handicaps of cost and distance and labor difficulties, in the Sand Hills is to be found the best work Mr. Embury has done. He says himself that the job he did with most pleasure and which he feels is his most successful work, from the standpoint of pure design, is the new clubhouse of the Southern Pines Country Club, completed only a few days before our photographs were made, and unfortunately not yet in condition to be shown properly. His success in winning the confidence of the southern community has had a result very useful to him, for around New York he is known as a specialist in country houses, and it is rare to find any work of his that is not a country house, while in the Sand Hills specialization has not the sinister meaning it has elsewhere, that an architect can do only one sort of thing well,—there Mr. Embury is known as a good architect for any sort of thing.

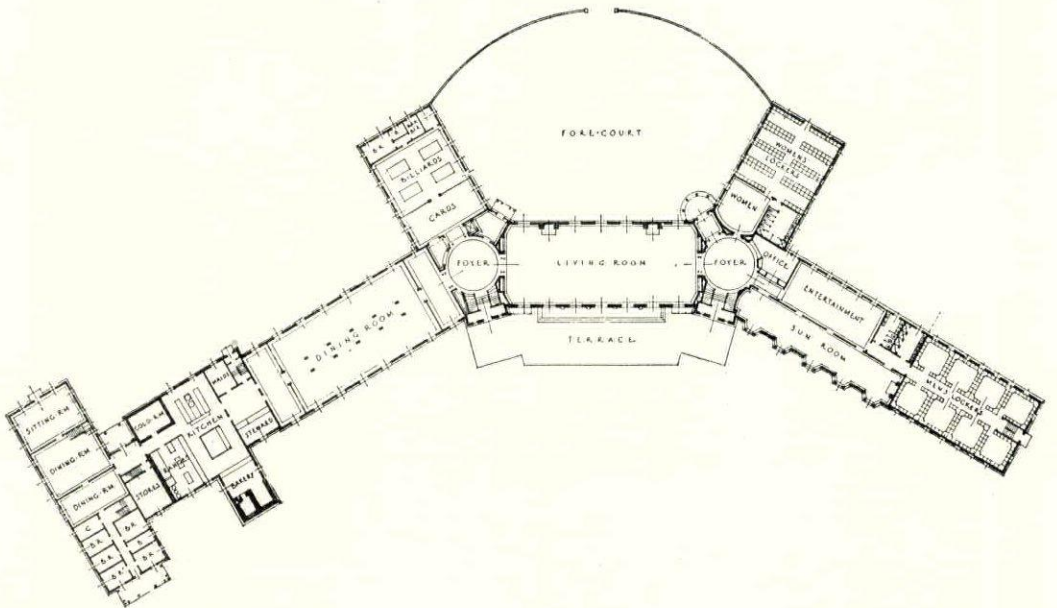
(Text continued on page 537)



Entrance Detail
THE MID-PINES COUNTRY CLUB, KNOLLWOOD, NORTH CAROLINA
Aymar Embury II, Architect

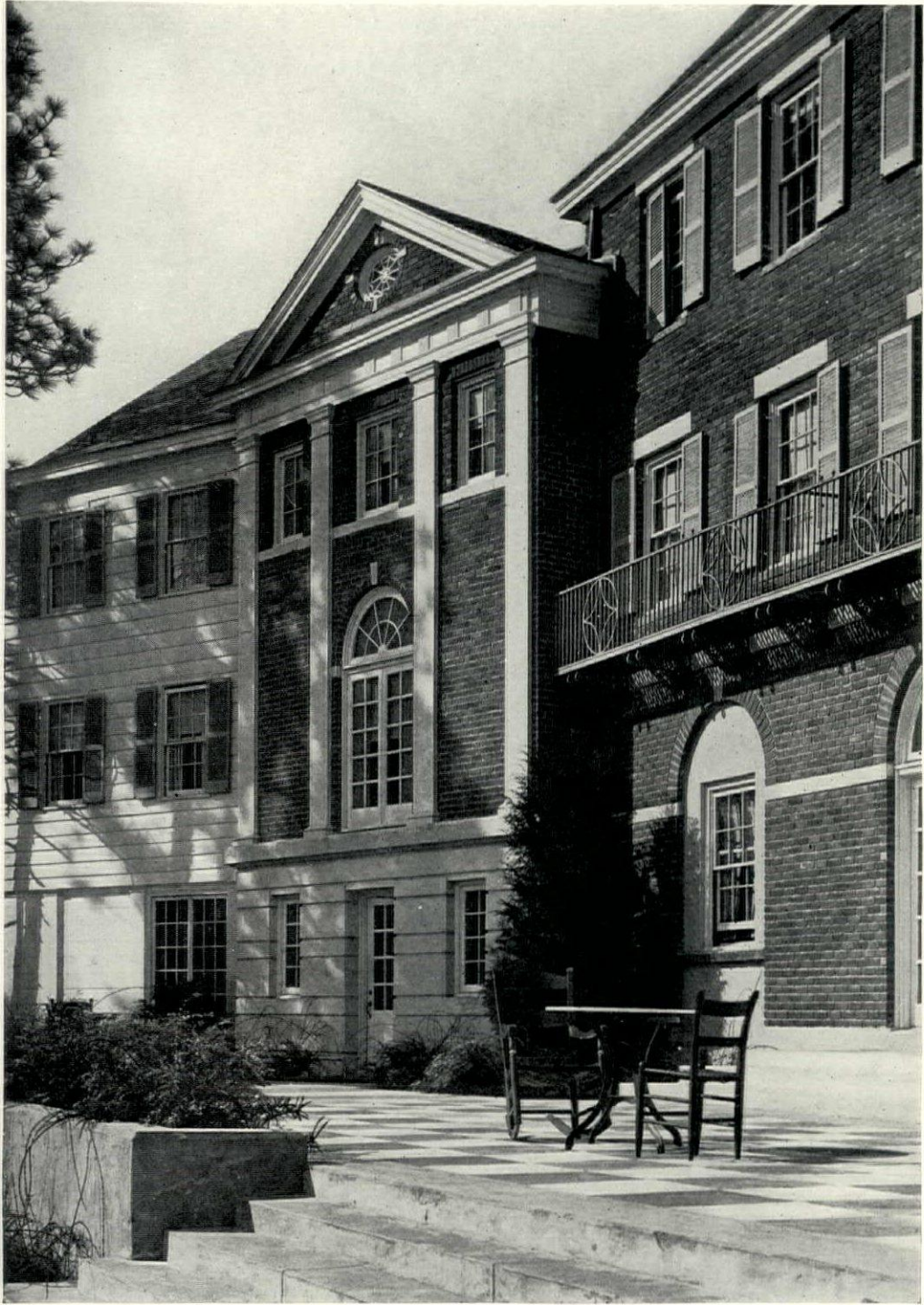


Second and Third Floor Plan



First Floor Plan

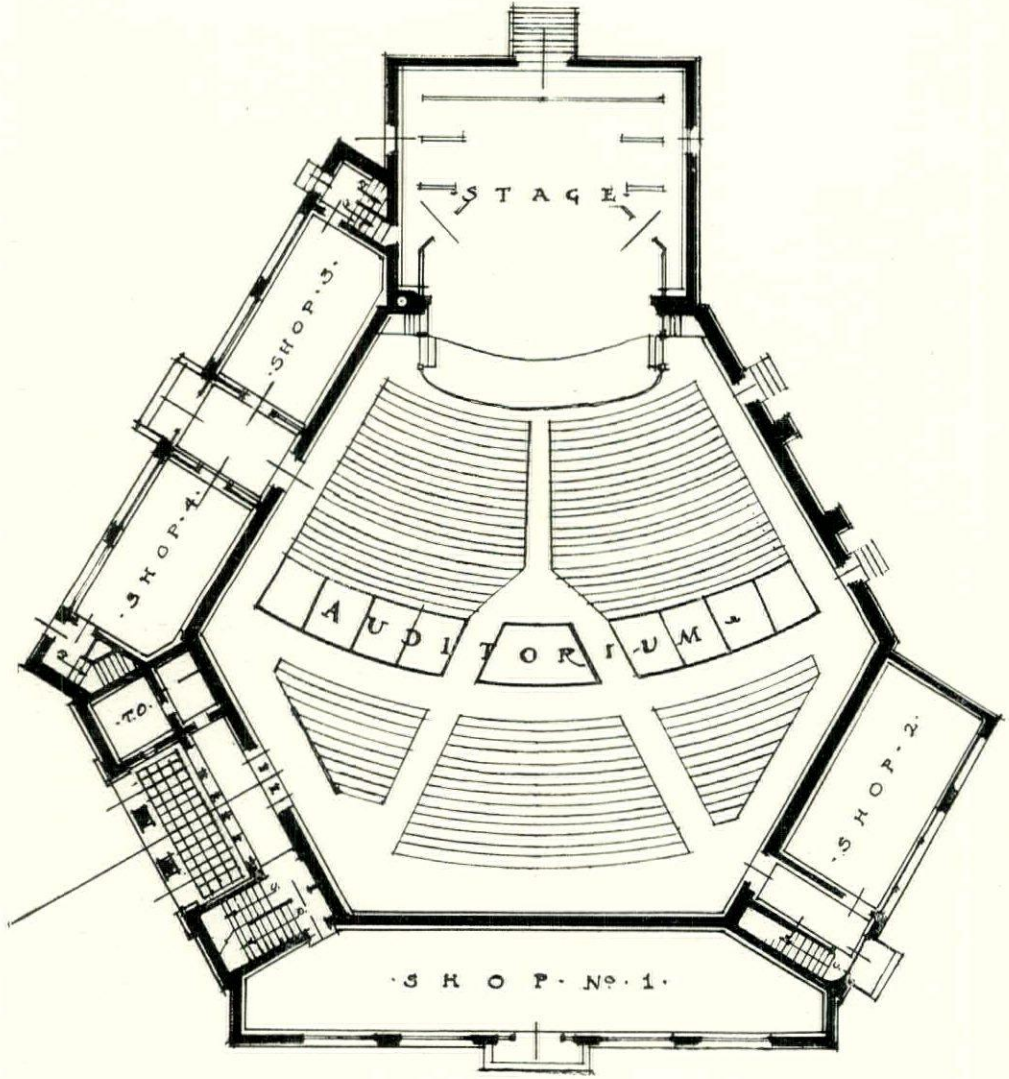
THE MID-PINES COUNTRY CLUB, KNOLLWOOD, NORTH CAROLINA
 Aymar Embury II, Architect



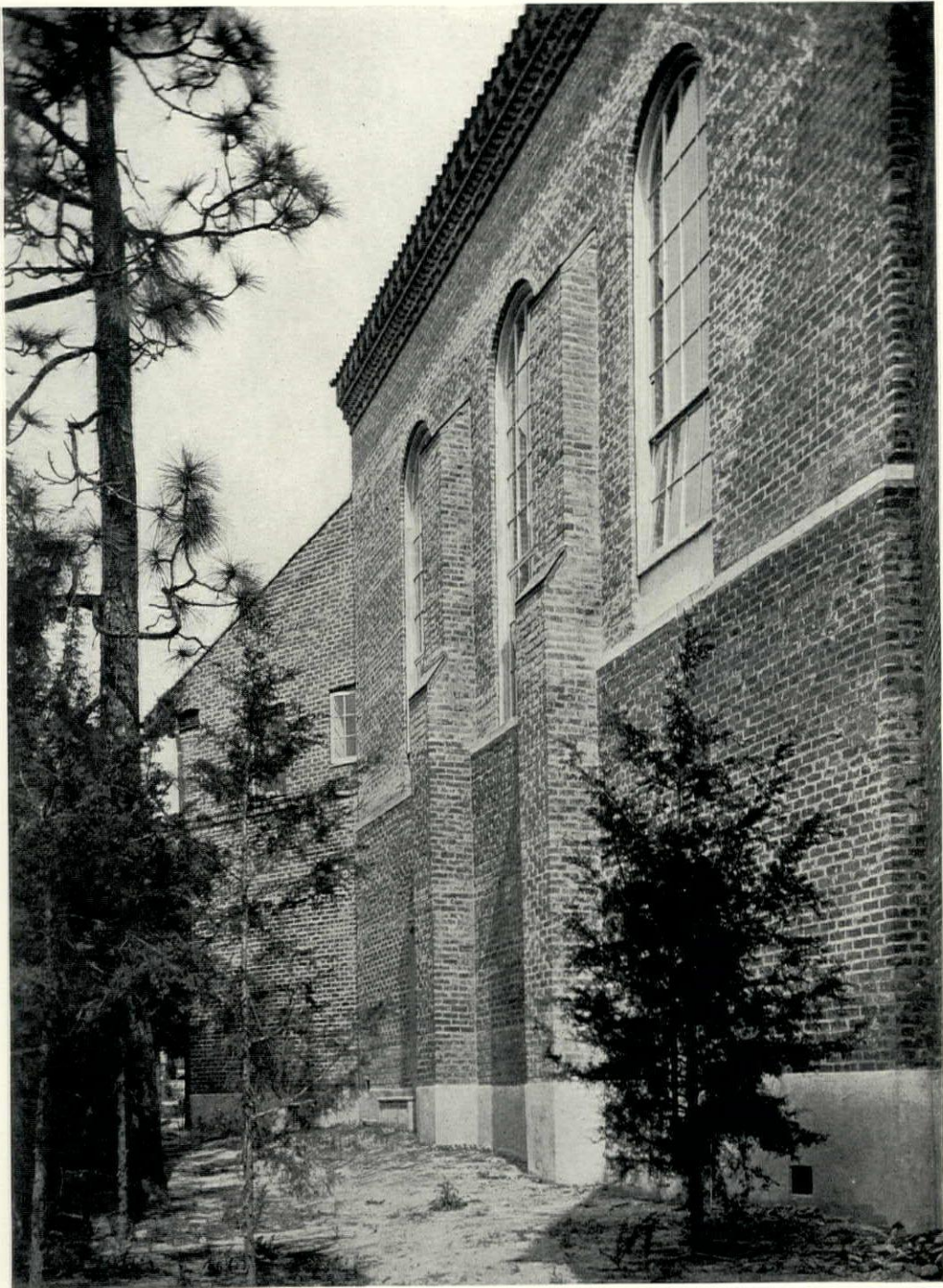
Detail of Terrace Façade
THE MID-PINES COUNTRY CLUB, KNOLLWOOD, NORTH CAROLINA
Aymar Embury II, Architect



Detail of Entrance Façade
THE CAROLINA THEATRE, PINEHURST, NORTH CAROLINA
Aymar Embury II, Architect



First Floor Plan
THE CAROLINA THEATRE, PINEHURST, NORTH CAROLINA
Aymar Embury II, Architect

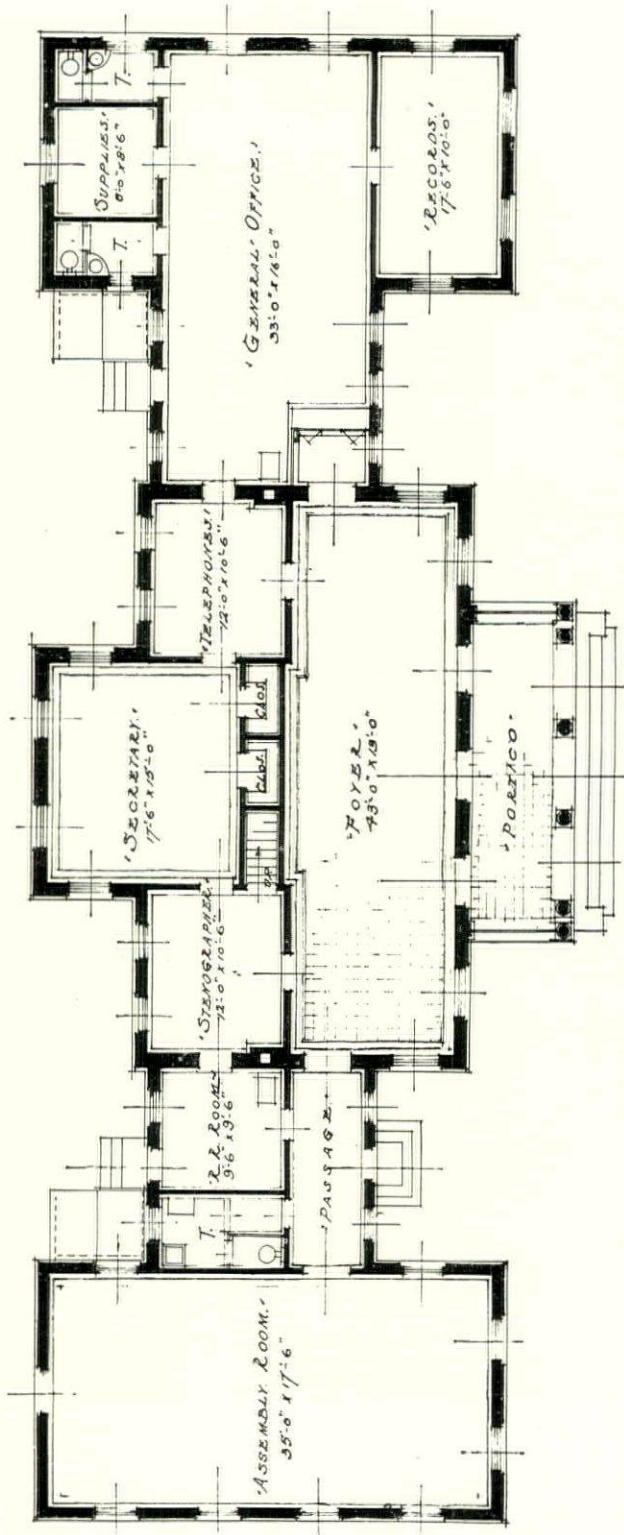


Detail of Side Wall
THE CAROLINA THEATRE, PINEHURST, NORTH CAROLINA
Aymar Embury II, Architect



Detail of Entrance

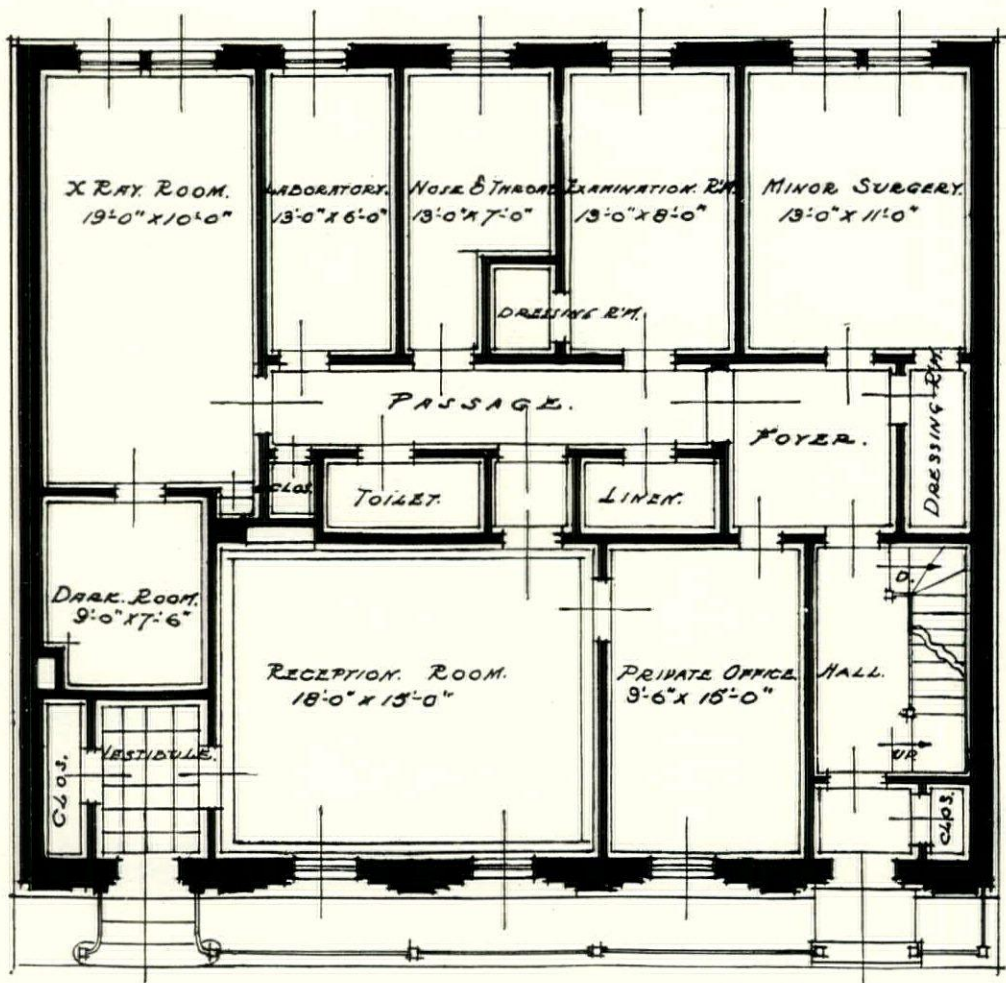
OFFICE BUILDING OF THE SAND HILL FRUIT GROWERS' ASSOCIATION,
ABERDEEN, NORTH CAROLINA
Aymar Embury II, Architect



First Floor Plan
 OFFICE BUILDING OF THE SAND HILL FRUIT GROWERS' ASSOCIATION,
 ABERDEEN, NORTH CAROLINA
 Aymar Embury II, Architect



OFFICE BUILDING OF DR. W. C. MUDGETT, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

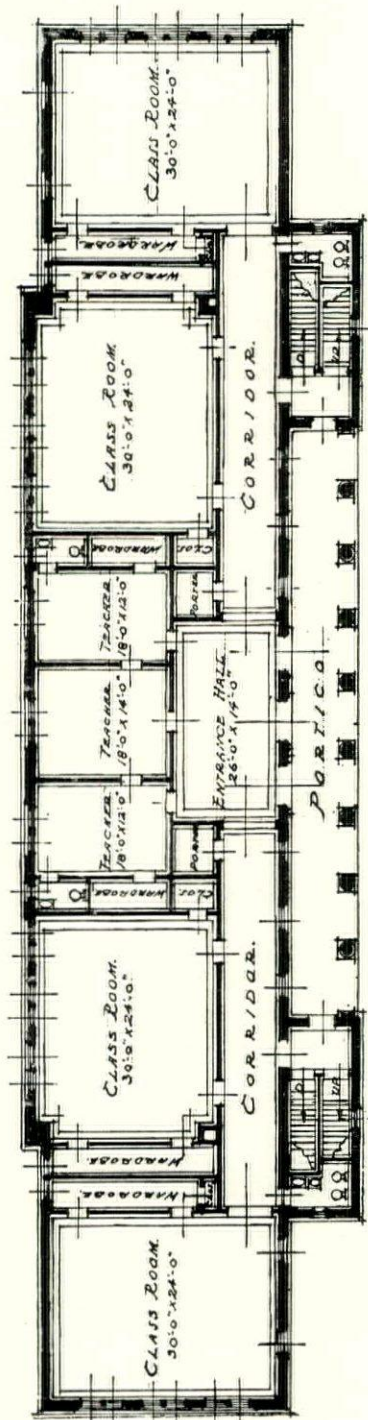


First Floor Plan

OFFICE BUILDING OF DR. W. C. MUDGETT, SOUTHERN PINES, NORTH CAROLINA
 Aymar Embury II, Architect



Detail of Portico
THE ABERDEEN PUBLIC SCHOOL, ABERDEEN, NORTH CAROLINA
Aymar Embury II, Architect

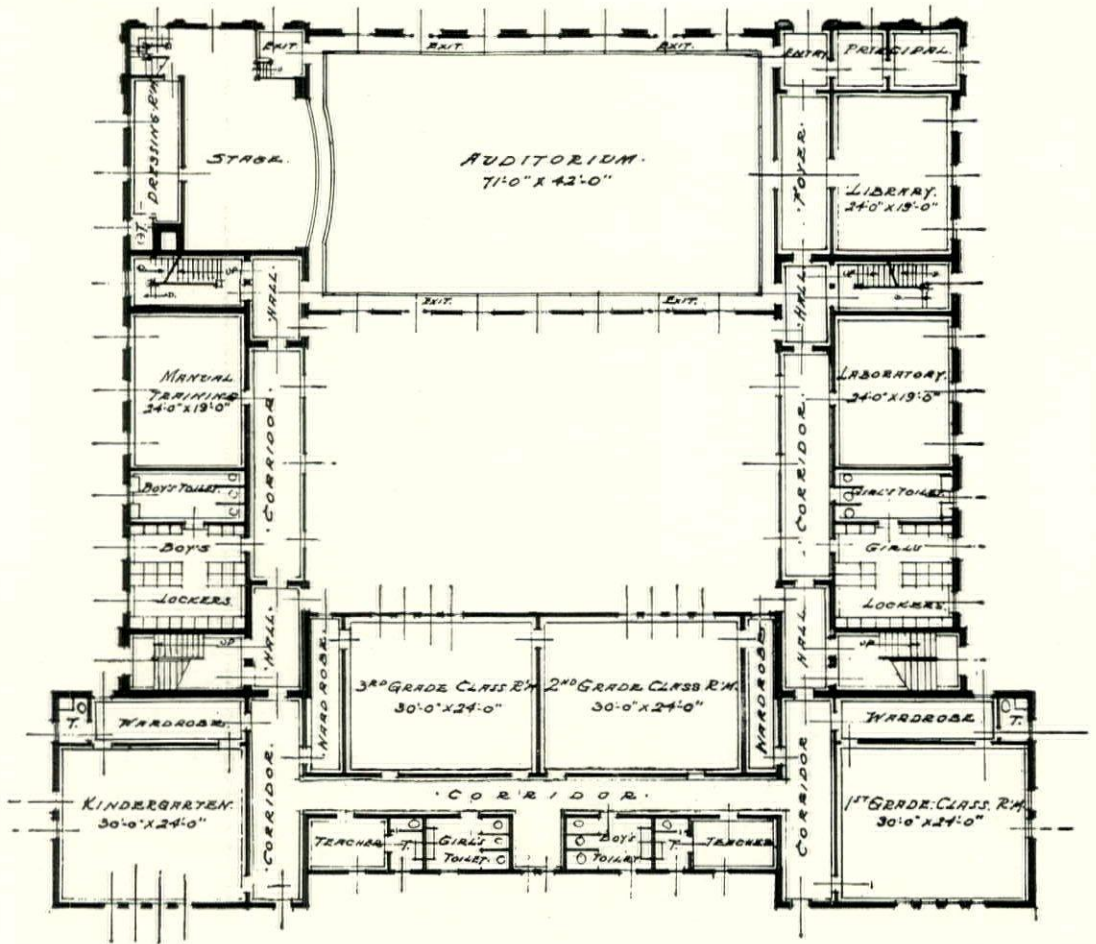


First Floor Plan
 THE ABERDEEN PUBLIC SCHOOL, ABERDEEN, NORTH CAROLINA
 Aymar Embury II, Architect



Detail of Front

THE SOUTHERN PINES PUBLIC SCHOOL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

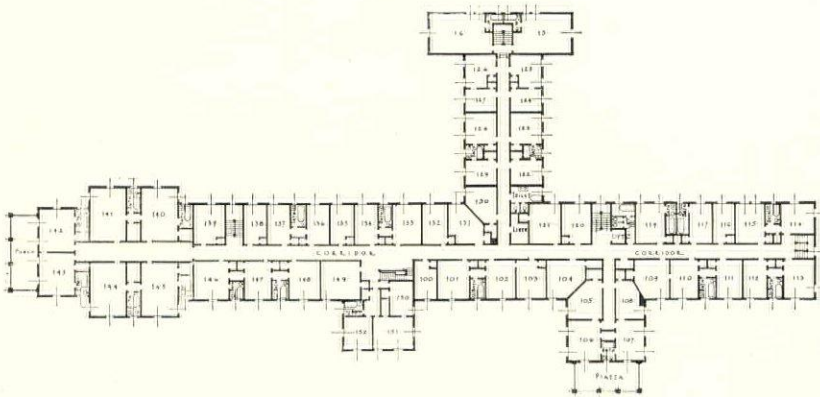


First Floor Plan

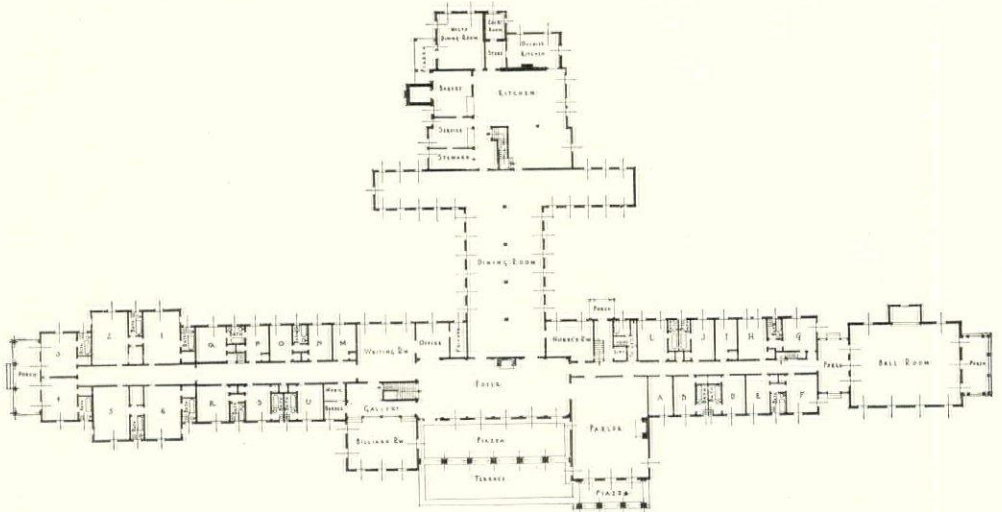
THE SOUTHERN PINES PUBLIC SCHOOL, SOUTHERN PINES, NORTH CAROLINA
 Aymar Embury II, Architect



HIGHLAND PINES INN, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

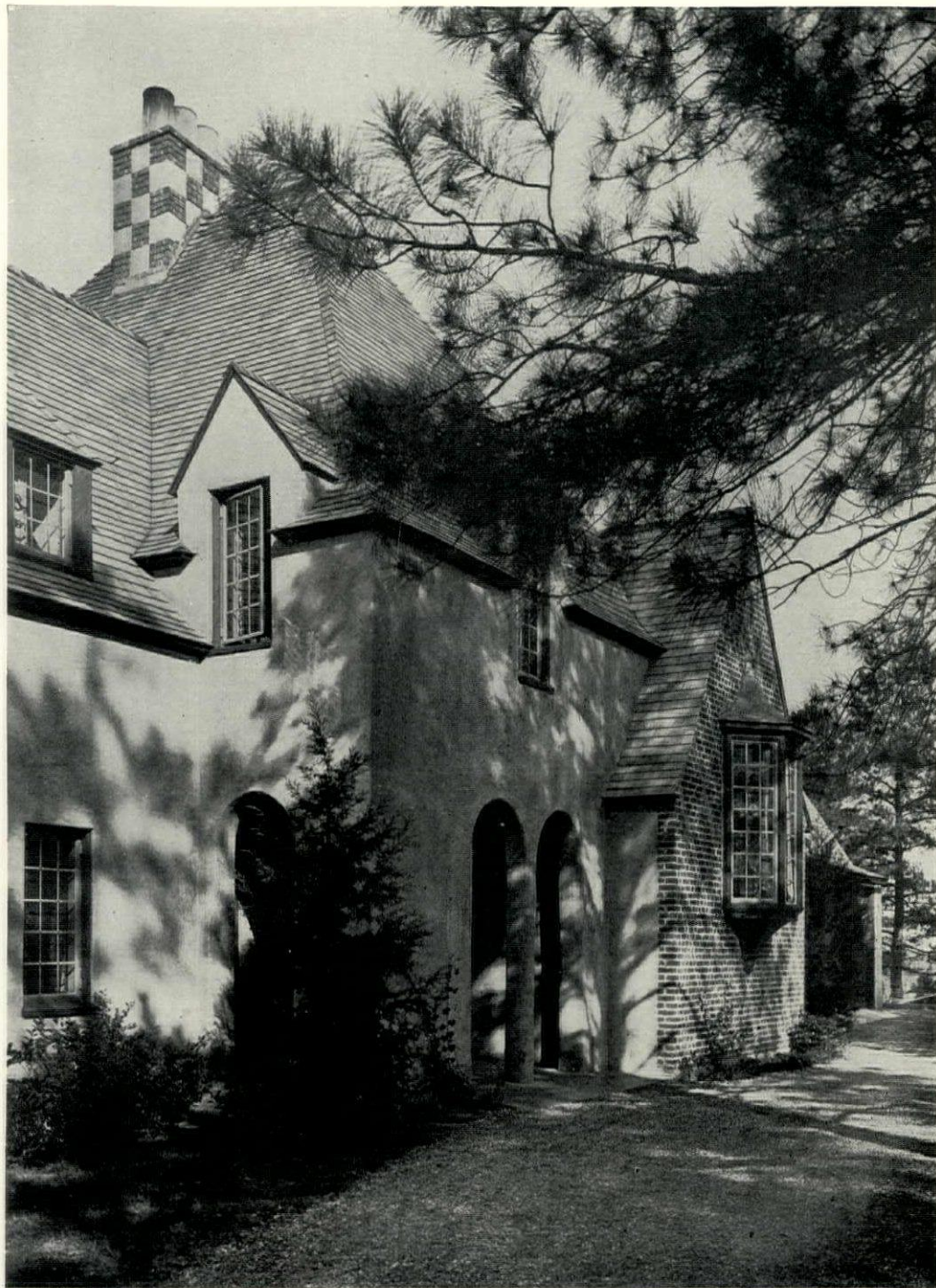


Second Floor Plan



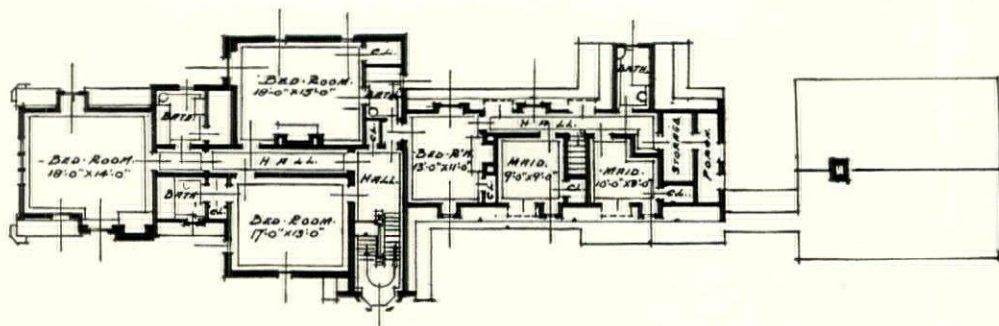
First Floor Plan

HIGHLAND PINES INN, SOUTHERN PINES, NORTH CAROLINA
 Aymar Embury II, Architect

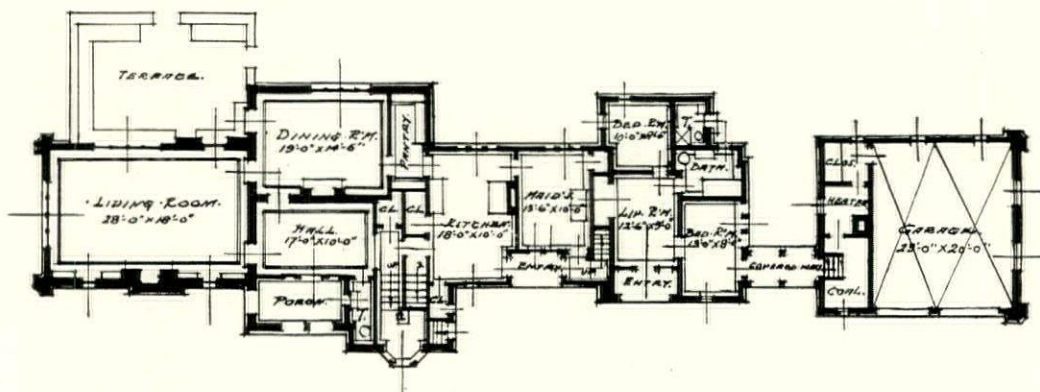


Entrance Façade

"LOBLOLLY"—HOUSE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Second Floor Plan



First Floor Plan

"LOBLOLLY"—RESIDENCE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

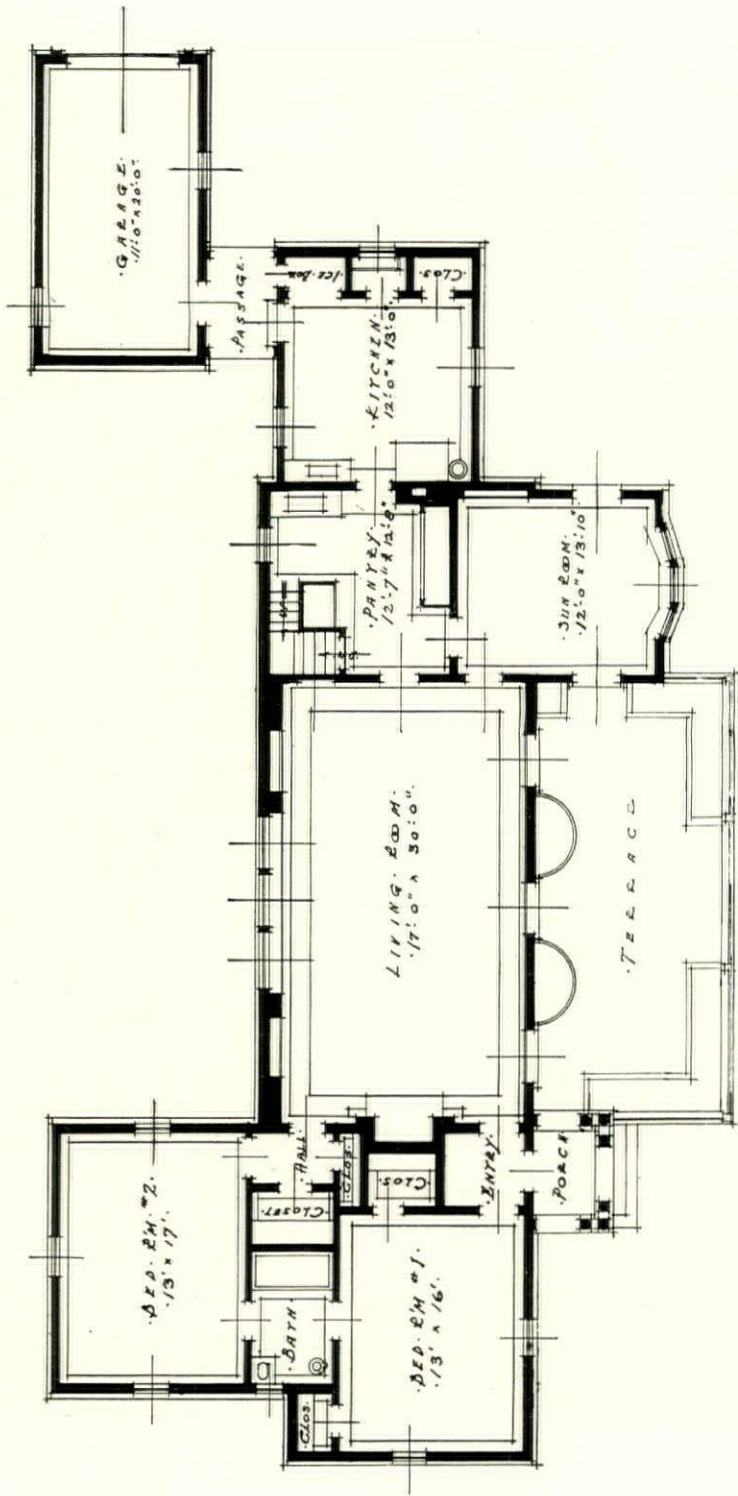


Detail of Garden Elevation

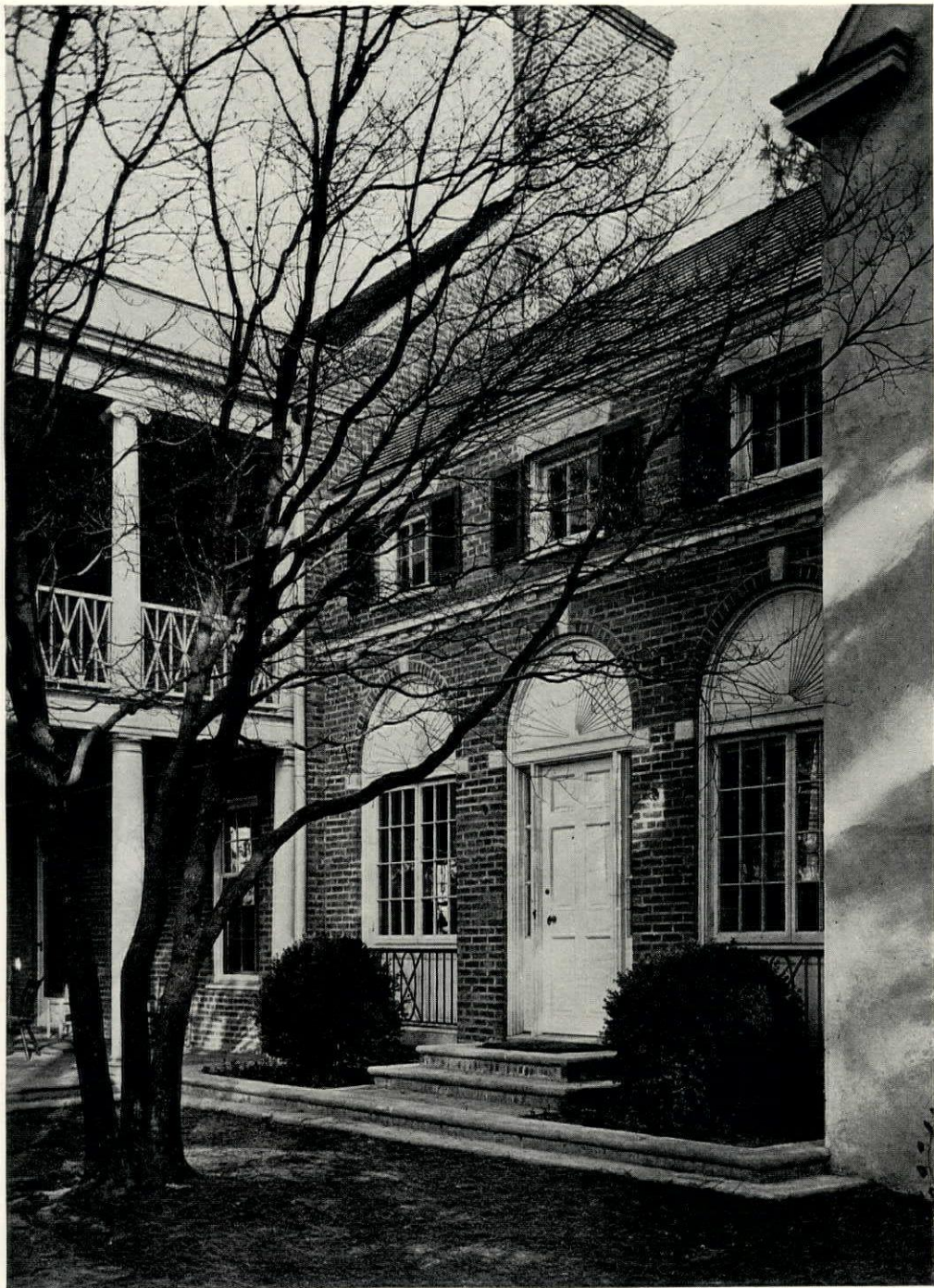
"LOBLOLLY"—HOUSE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Detail of Front Elevation
THE DR. E. E. CADY HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

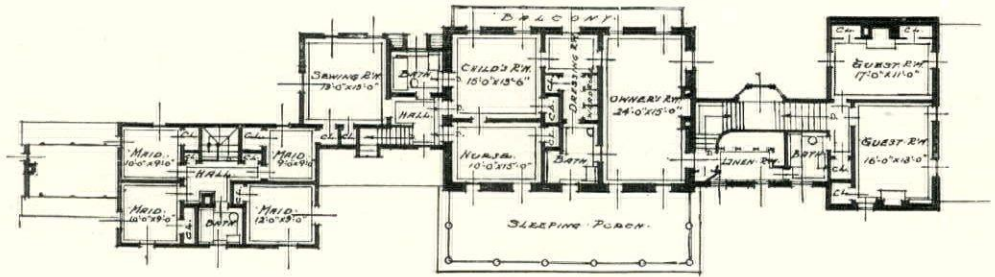


Ground Floor Plan
 THE DR. E. E. CADY HOUSE, SOUTHERN PINES, NORTH CAROLINA
 Aymar Embury II, Architect

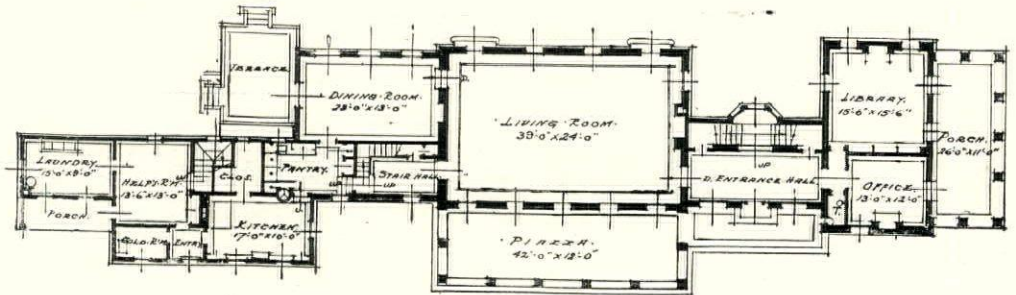


Detail of Entrance

THE JAMES BOYD HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Second Floor Plan

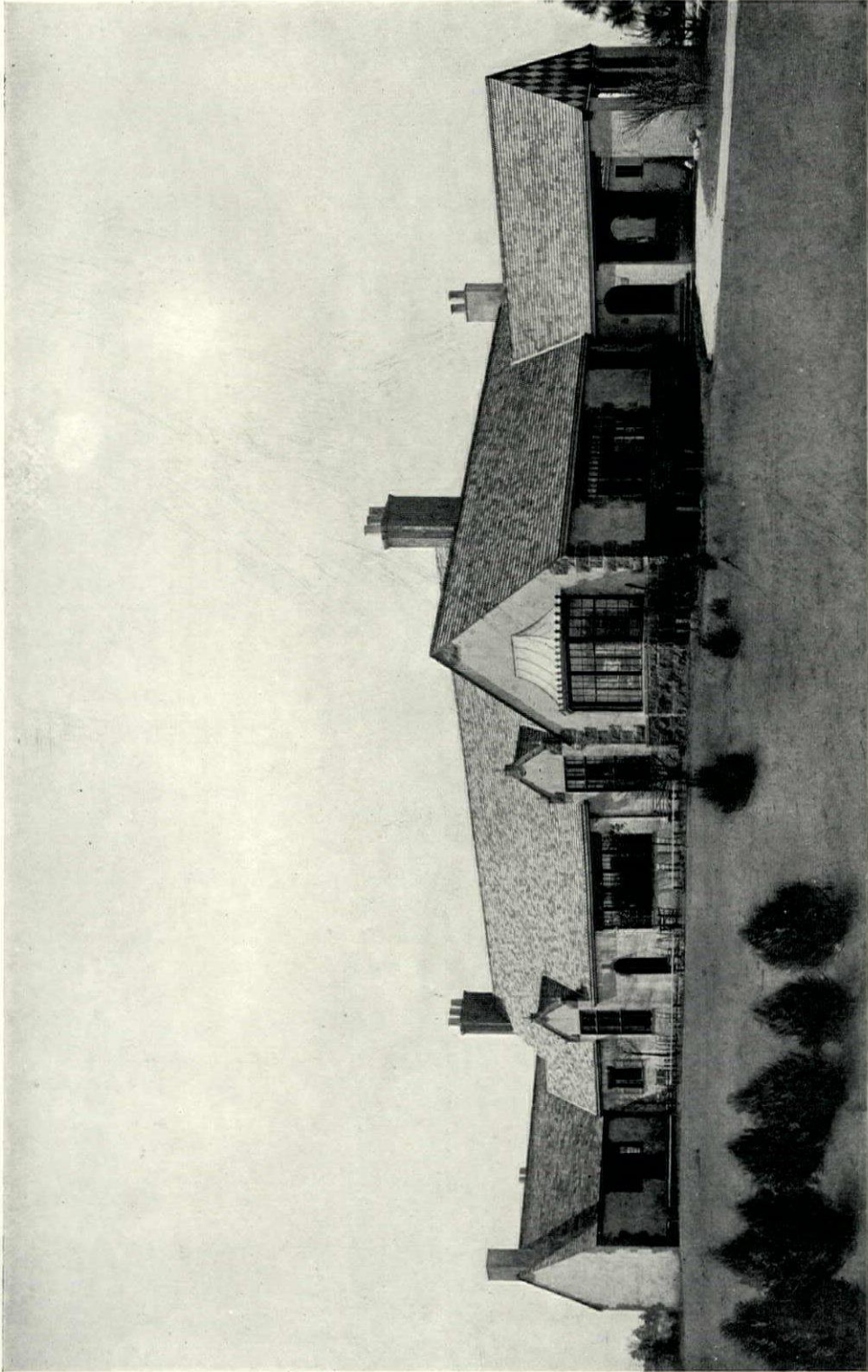


First Floor Plan

THE JAMES BOYD HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Detail of Bay Window and Rear Elevation
THE JAMES BOYD HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



THE SOUTHERN PINES COUNTRY CLUB, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Detail of Terrace Elevation
THE SOUTHERN PINES COUNTRY CLUB, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



THE JAMES BOYD HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

THUS FAR WE have discussed principally the factors which have brought about so considerable an amount of construction in one locality by one architect, and it is time to consider in some detail the work itself. We find that it falls into two categories, the first being that derived from Georgian precedent, which includes the large majority of the buildings, and the second, two of the most recent buildings, the country club and the house of Mrs. Dull, both at Southern Pines, to which no definite precedent can be assigned, although they are loosely derived from English and Northern French cottage sources.

The question at once arises as to the propriety of the style selected; if one is perfectly adapted to the setting afforded by the country, how about the other? And, if as before suggested, there was no historic tradition in this particular part of North Carolina, why should the Colonial style have been selected for so much of the work?

These questions could be answered only by the architect, if at all, and very likely he would find it difficult to answer them, but it is permissible to speculate a little on his reasons. In the first place, North Carolina is part of the Old South; sentimentally it seems fitting that the traditional architecture of its old towns, Edenton, New Bern, Salem and the like, should

be continued in new work in a new part of the state. Further, the Colonial type of work was undoubtedly more familiar to the local mechanics than the English, simpler to build, less expensive, and of materials more readily obtainable. These reasons are sufficient for its adoption. However, both the classic and the non-classic have been handled with a freedom and informality that are characteristic of all of Mr. Embury's work, but with a distinct (if indefinable) local flavor. All these buildings look as if they belonged in the Sand Hills; it is hard to say why, but they do give that impression.

Of the residences the largest is that of Mr. James Boyd at Southern Pines, a lovely, loosely connected, informal sort of enlarged Colonial farm house. The unusual and interesting plan was a close transcription of the owner's own sketches, and the exteriors were developed from the plan, rather than from preconceived notions. Although the house was originally designed to be whitewashed, three materials were used appropriate to the importance of each part. The guest wing is of stucco, the main portion of the house of brick and the service wing of long white shingles. However, when the house was completed and ready for painting, the owners were so charmed with the color scheme and the texture of the various



Garden Elevation



THE JAMES BOYD HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

materials that they refused to have it touched, and perhaps to the good of the building. The house is of great length, although only one room deep, and while of extremely simple character, possesses a genuine dignity and charm that few more magnificent houses have—probably because it is evident that the house has no motive added to make it picturesque, but is an absolutely straightforward devel-

with a succession of blacks and whites at such excellent intervals that it takes its place so unobtrusively as to be unnoticed until looked for. The same is true of the whole building, and is indeed the distinguishing characteristic of all Mr. Embury's buildings. He is not a designer of *art nouveau* houses, but shows in all his work full knowledge of precedent without exact adherence to it; he has that little



Living Room

THE JAMES BOYD HOUSE, SOUTHERN PINES, NORTH CAROLINA

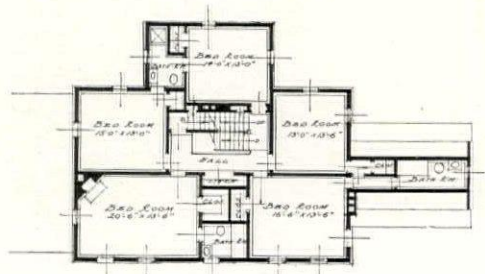
opment of the plan. The two-story porch was needed; the big bay window lights the main staircase and forms a landing for it; the iron balcony on the rear is a sunny place for the baby carriage—one feels that there is nothing extraneous about it, no padding of the design. The detail, too, is of unusual excellence, and is not book detail. Look at the belt course at the top of the bay window (Plate 533), which resembles a Gothic label mold rather than a classic cornice, but is so justly designed

personal quirk which distinguishes the architect from the archaeologist.

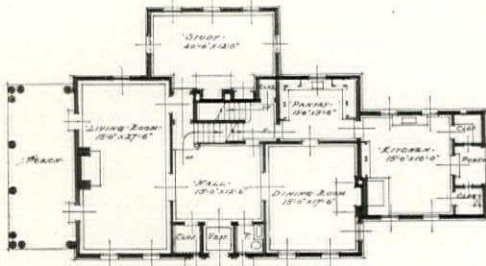
Of the smaller houses, of what we have called the Classic type, it is hard to say which is the best, and it is pleasant to find in really small and inexpensive houses so much variation in form, but in form designed in the same spirit. Probably the site of each house and the needs of each client had much to do with the particular shape selected, but whether economy of space required a simple block, as in the



Front Elevation



Second Floor Plan



First Floor Plan

THE JAMES BARBER HOUSE, KNOLLWOOD, NORTH CAROLINA
Aymar Embury II, Architect

house of Mr. James Barber, and "Woodstock," or whether ground floor bedrooms were wanted, as in the Cady, Way and Pushee cottages, one finds no meaningless repetitions of stock designs; each has a personal character of its own. The plan of the Barber house is a miracle of economy. To get five large bedrooms, three baths, and ample closets on a floor of this size is a triumph of planning, and it will

gracious and inviting; a very simple little house, but a very charming one.

Of quite different type is the Cady house. This is a genuine bungalow, but a bungalow without long dark passages, and without that lack of privacy which suggests that the planners of most bungalows were brought up in a bowl of goldfish. The house may be roughly classed as "Colonial," for just as "Colonial" is



"WOODSTOCK"—SOUTHERN PINES, NORTH CAROLINA

Aymar Embury II, Architect

be found if the plans are studied that all rooms are corner rooms or have cross drafts, and that in all the principal rooms symmetry has been maintained with the utmost care, and yet with an appearance of ease that every architect knows to be deceptive.

"Woodstock" suggests New England rather than the South, but a New England transplanted and fitted into its entourage. Though compactly planned, it is easy,

stretched to cover a multitude of sins, it also has attributed to it many virtues which the old work did not possess. The grouped windows, the French doors, the open roof of the living room, and, indeed, the whole conception of the house are far from the work of the eighteenth century American. It is rather a Colonial dress on an English frame work—but a dress which shows no maladjustment, and is manifestly proper. Here again the

architect has scored in making a design so simple, graceful and natural that it seems as though anyone could have done it.

The Way cottage (done in association with Mr. Richard Tufts) is another pleasant, low building intended for winter use only, and it is interesting to note that in this as in several others of the small

The Batterley and Cady houses have some bedrooms on the ground floor and some on the second, affording a chance for interesting variations of roof level. Full advantage of this had been taken in the Batterley house as well as of the interesting recessed porch across the front, lined with flush boards instead of with the shingles that cover the rest of the



Living Room
THE DR. E. E. CADY HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

houses and one or two of the other buildings, the mouldings were all of stock pattern picked out of the catalogue of the southern manufacturers. That to be compelled to use stock moldings is a handicap no architect would willingly have enforced upon him cannot be denied, but that in the hands of a skillful man they can be combined into appropriate combinations of proper scale is sufficiently proved by this building.

building. This house was comparatively inexpensive and the most has been made of simple changes in material, as well as of the plan, to produce something which was neither ordinary nor bizarre.

"Loblolly," the house of Mrs. A. P. Dull, is of all the residences certainly the most interesting, perhaps because of its unique quality. There is no other house in America quite of the same character,
(Text continued on page 551)



THE DR. E. E. CADY HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



SIDE ELEVATION AND GARAGE—THE DR. E. E. CADY HOUSE, SOUTHERN PINES, N. C.
Aymar Embury II, Architect



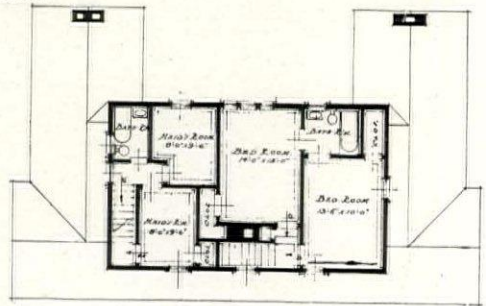
THE WAY COTTAGE, KNOLLWOOD, NORTH CAROLINA
Richard Tufts, Architect. Aymar Embury II, Associated



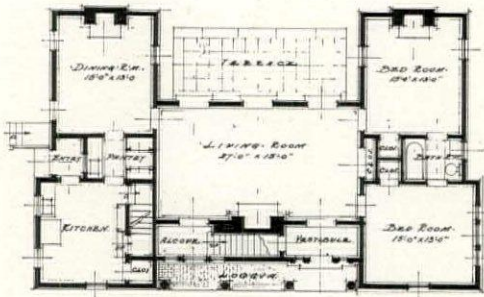
THE HUGH BATTERLEY HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Rear Elevation



Second Floor Plan



First Floor Plan

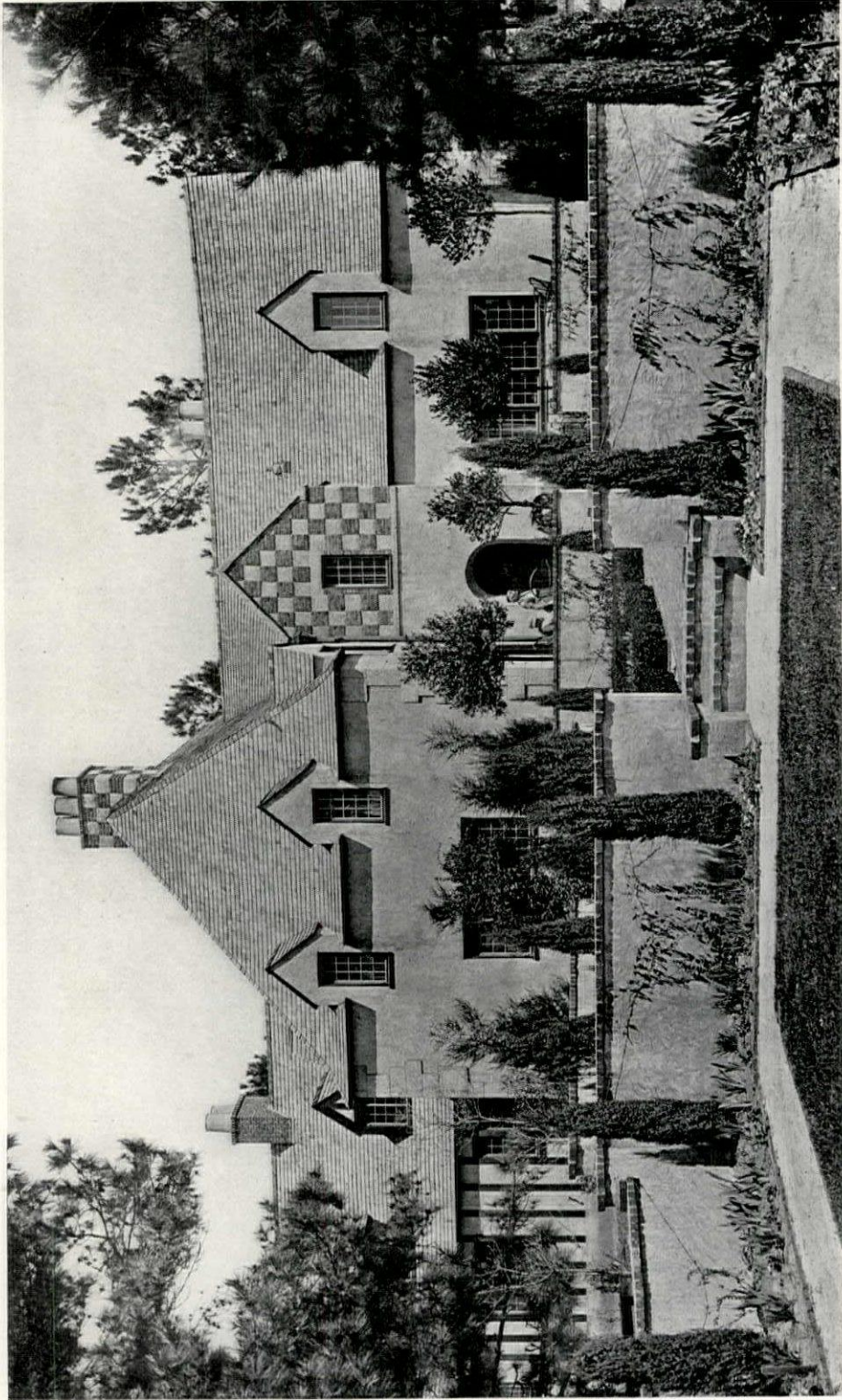
THE HUGH BATTERLEY HOUSE, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Terrace Detail

"LOBLOLLY"—HOUSE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA

Aymar Embury II, Architect



FRONT—"LOBLOLLY"—HOUSE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



REAR—"LOBLOLLY"—HOUSE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Dining Room



Living Room

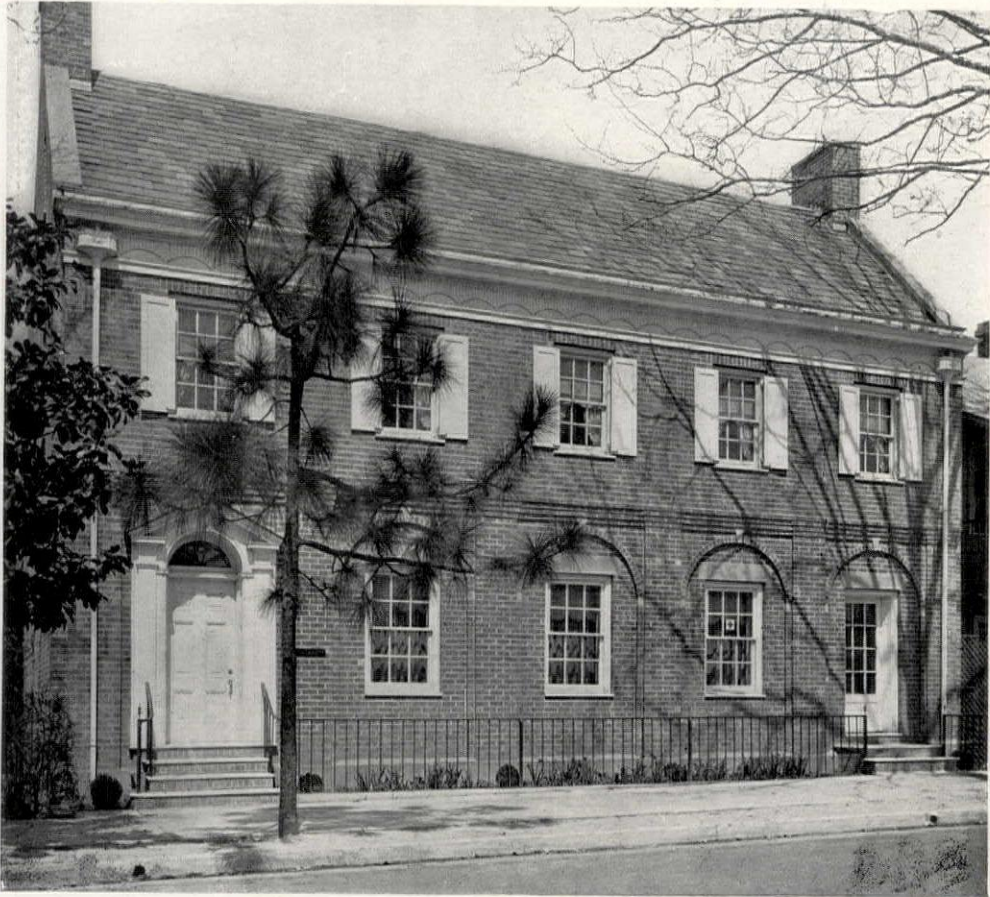
"LOBLOLLY"—HOUSE OF MRS. A. P. L. DULL, SOUTHERN PINES, NORTH CAROLINA -
Aymar Embury II, Architect

THE ARCHITECTURAL RECORD.

so playful in the use of material, without affectation, so difficult to find precedent for, although there are many things about it of haunting familiarity. It is not quite English, nor quite French, nor can it be called Art Nouveau. It is rather the result of a thorough assimilation of many historic precedents and complete mastery over them. It is clever without being tricky, gay and insouciant without lacking

the sandy soil and the green of the pines. We like this house exceedingly.

The two little office buildings, that of Dr. W. C. Mudgett and that of the Sand Hills Fruit Growers' Association, manage to be country in character without being domestic. Too often we find that the small town office building apes the city one; if it can't be a skyscraper, it will retain the faults of the skyscraper with-



OFFICE BUILDING OF DR. W. C. MUDGETT, SOUTHERN PINES, NORTH CAROLINA

Aymar Embury II, Architect

dignity—yet, like all the others, it is a logical expression of the plan, treated in a manner which may have been set by the client, or may be an unhampered expression of the architect's opinion of the colors, scale and texture most suitable to the Sand Hills. Certainly seen in reality the sand gray structure, the dull red brick and the gray brown woodwork, the mottled roof are absolutely in harmony with

out the necessity which causes them, and it seldom occurs to the small town business man that an office building can have a character indicative of its purpose and still be appropriate to its surroundings and beautiful in itself. Dr. Mudgett's small building has these qualities. It is, regardless of its purpose, a charming piece of block front architecture, and has

(Text continued on page 558)



Entrance Detail

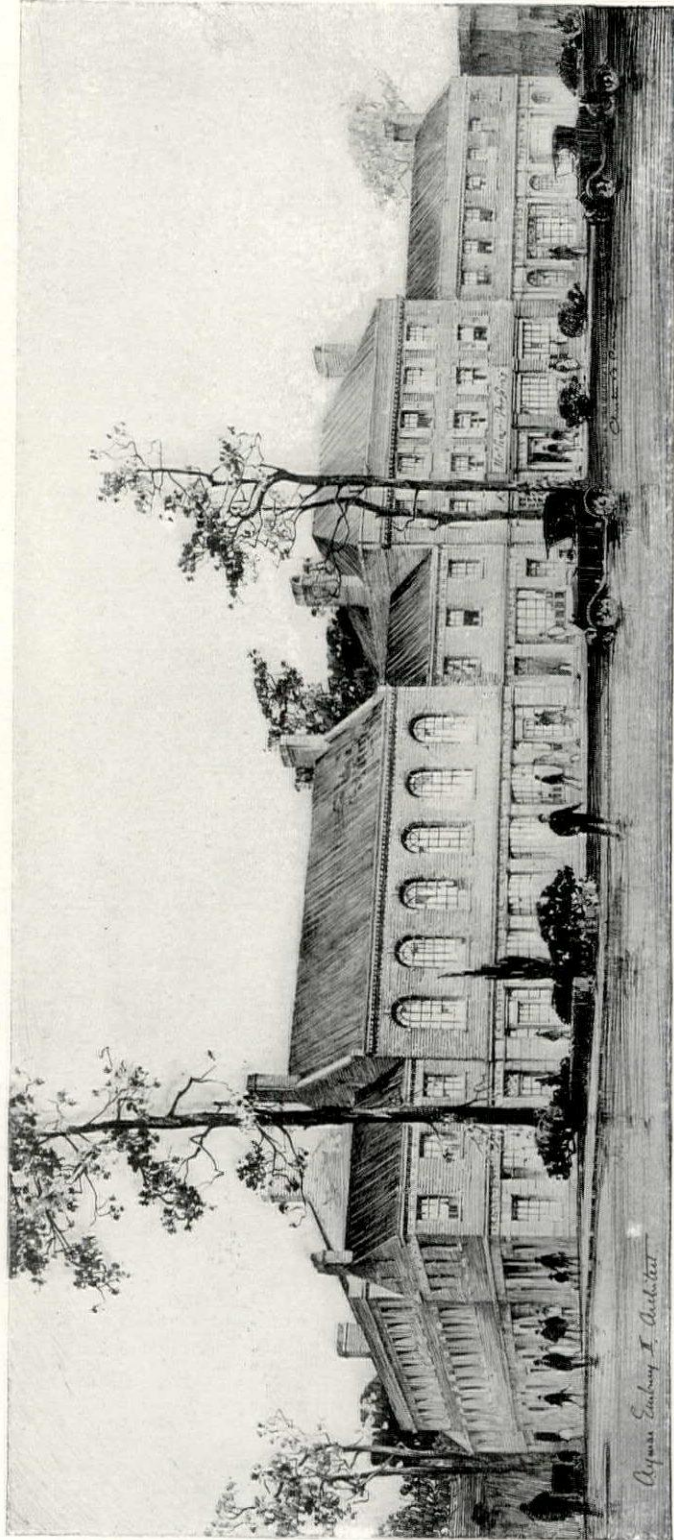
OFFICE BUILDING OF DR. W. C. MUDGETT, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



MARKET SQUARE BLOCKS, PINEHURST, NORTH CAROLINA



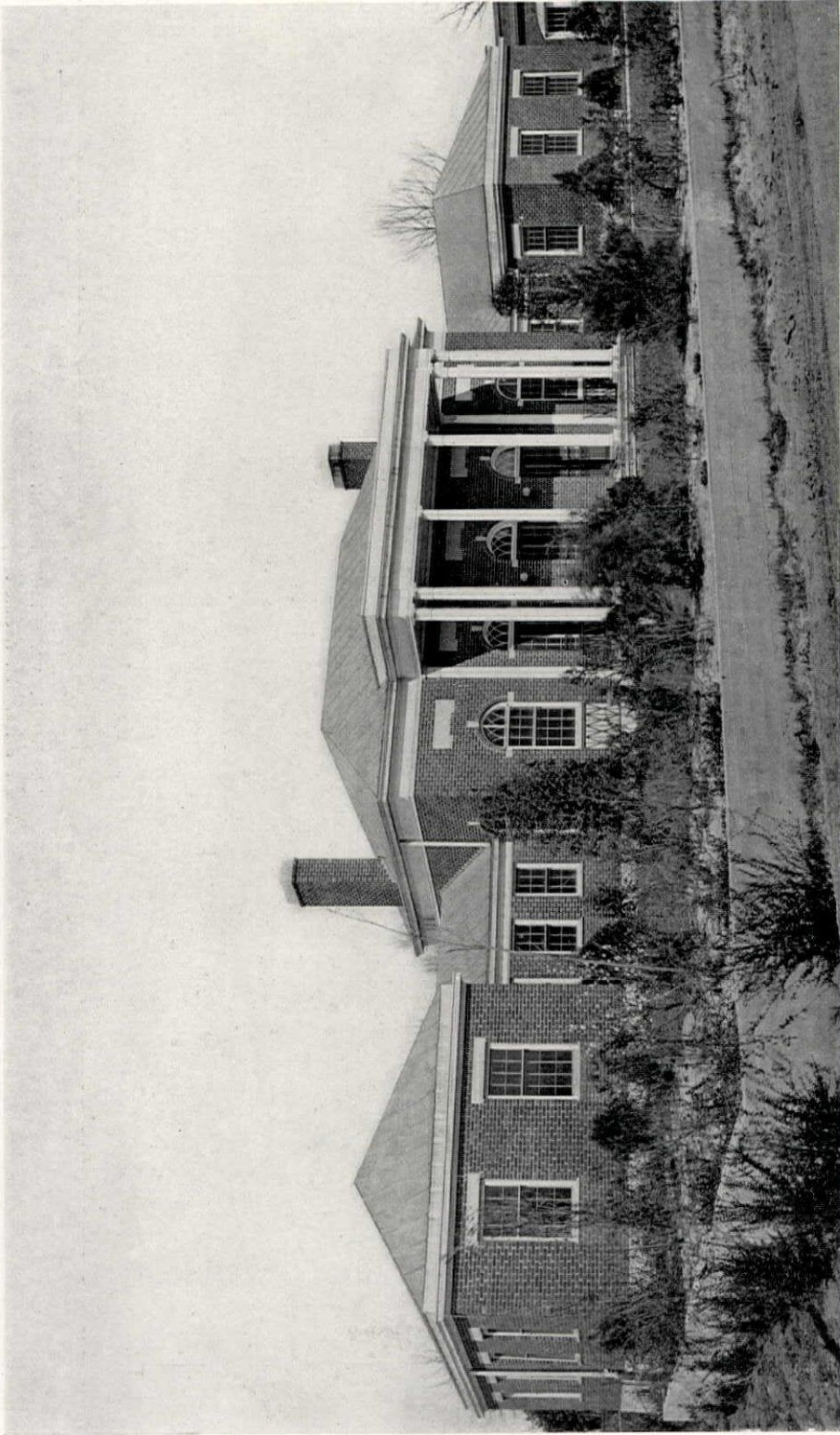
"CLIFTON CHAMBERS," PINEHURST, NORTH CAROLINA
Aymar Embury II, Architect



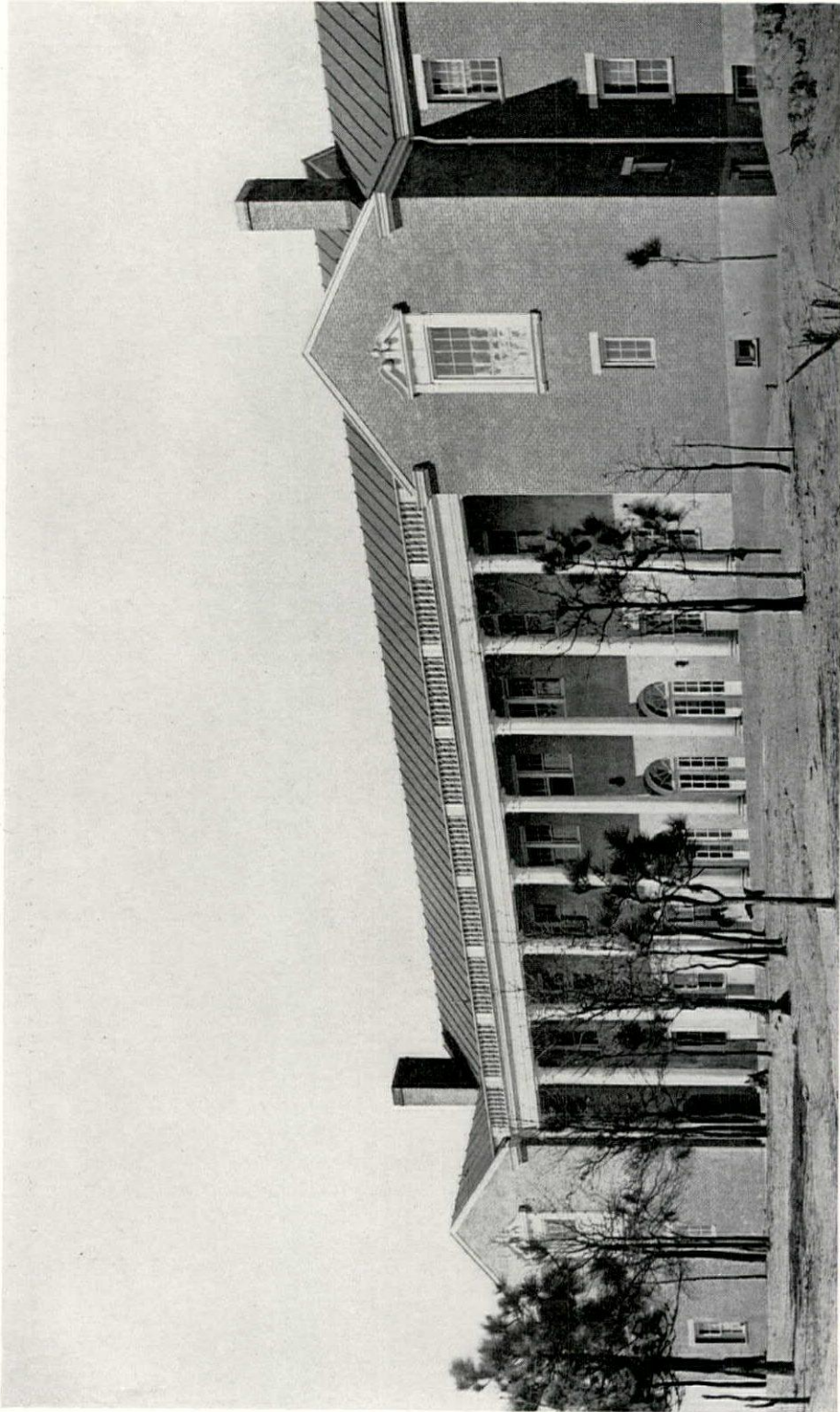
The Architectural Record

Rendering by Chester B. Price
NEW BLOCK FRONT AT SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

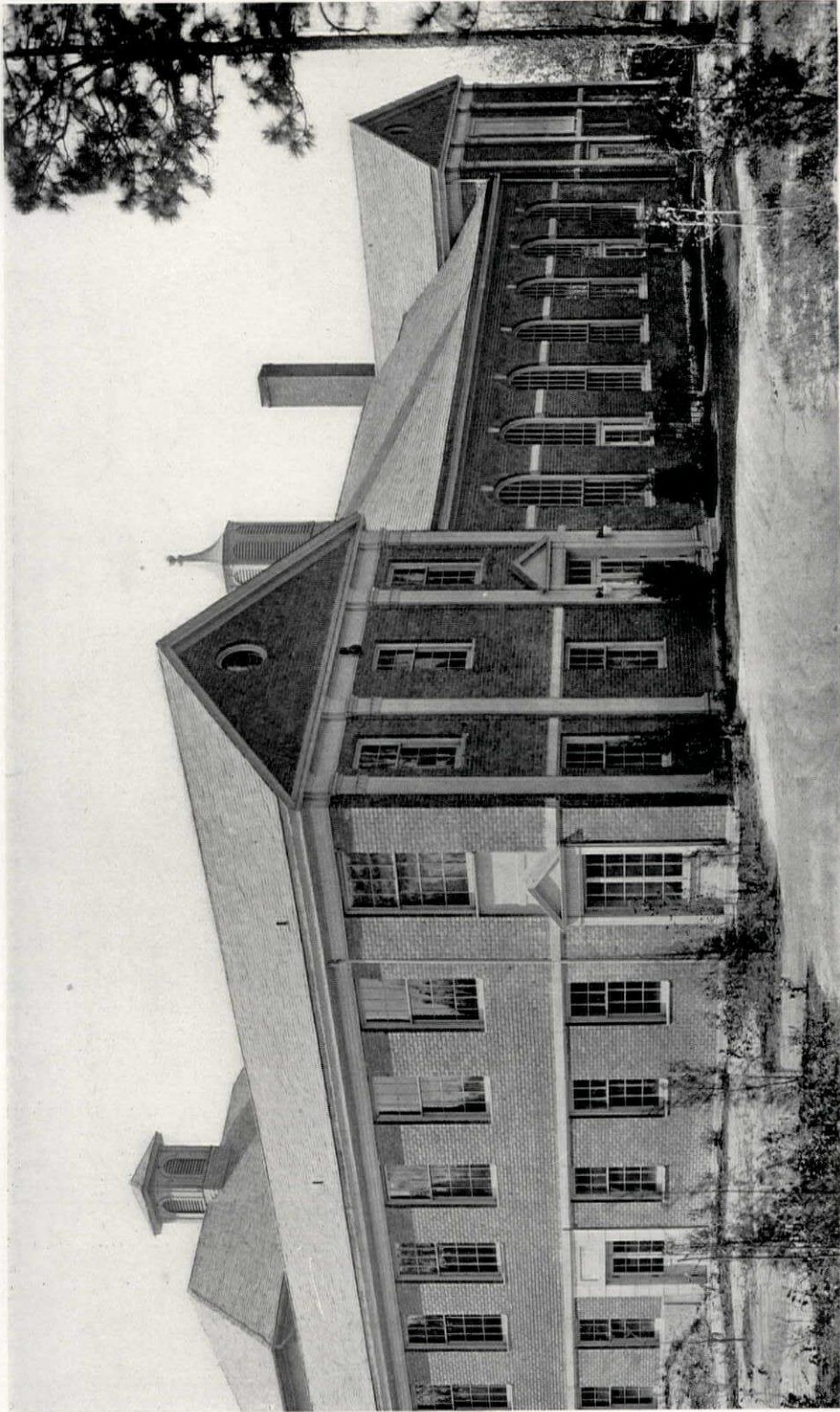
June, 1924



OFFICE BUILDING OF THE SAND HILLS FRUIT GROWERS' ASSOCIATION, ABERDEEN, NORTH CAROLINA
Aymar Embury II, Architect



THE ABERDEEN PUBLIC SCHOOL, ABERDEEN, NORTH CAROLINA
Aymar Embury II, Architect

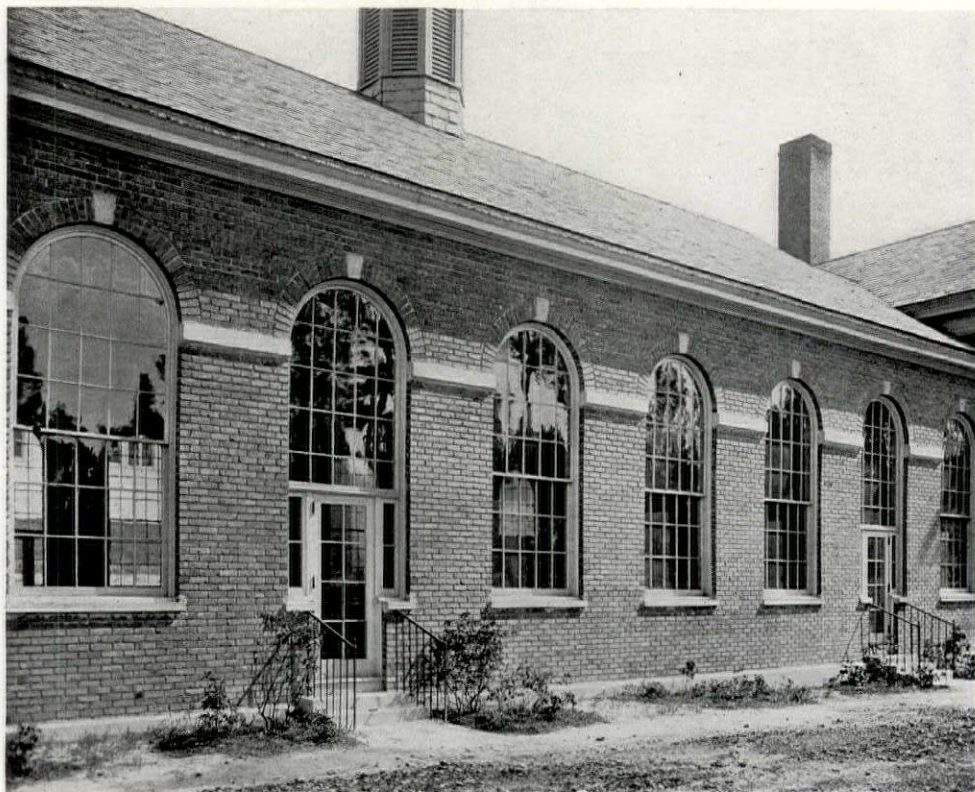


THE SOUTHERN PINES PUBLIC SCHOOL, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

besides an air of discretion and competence. It is entirely occupied by one office for the doctor on the ground floor and by other professional offices on the second. The architect has certainly expressed in the exterior precisely those qualities which we desire in our professional men—modesty, ability, rectitude.

The Fruit Growers' Association building is the commercial center of the Sand

hurst, are the only completed portion of a full block front and are commercial buildings economically built, but with a charm that most such structures do not possess, and which should be worth money to their occupants. The projected block front at Southern Pines is even more interesting, mainly because of the variance in the length of the different buildings, which Mr. Embury has been clever



Detail of Front

THE SOUTHERN PINES PUBLIC SCHOOL, SOUTHERN PINES, NORTH CAROLINA.

Aymar Embury II, Architect

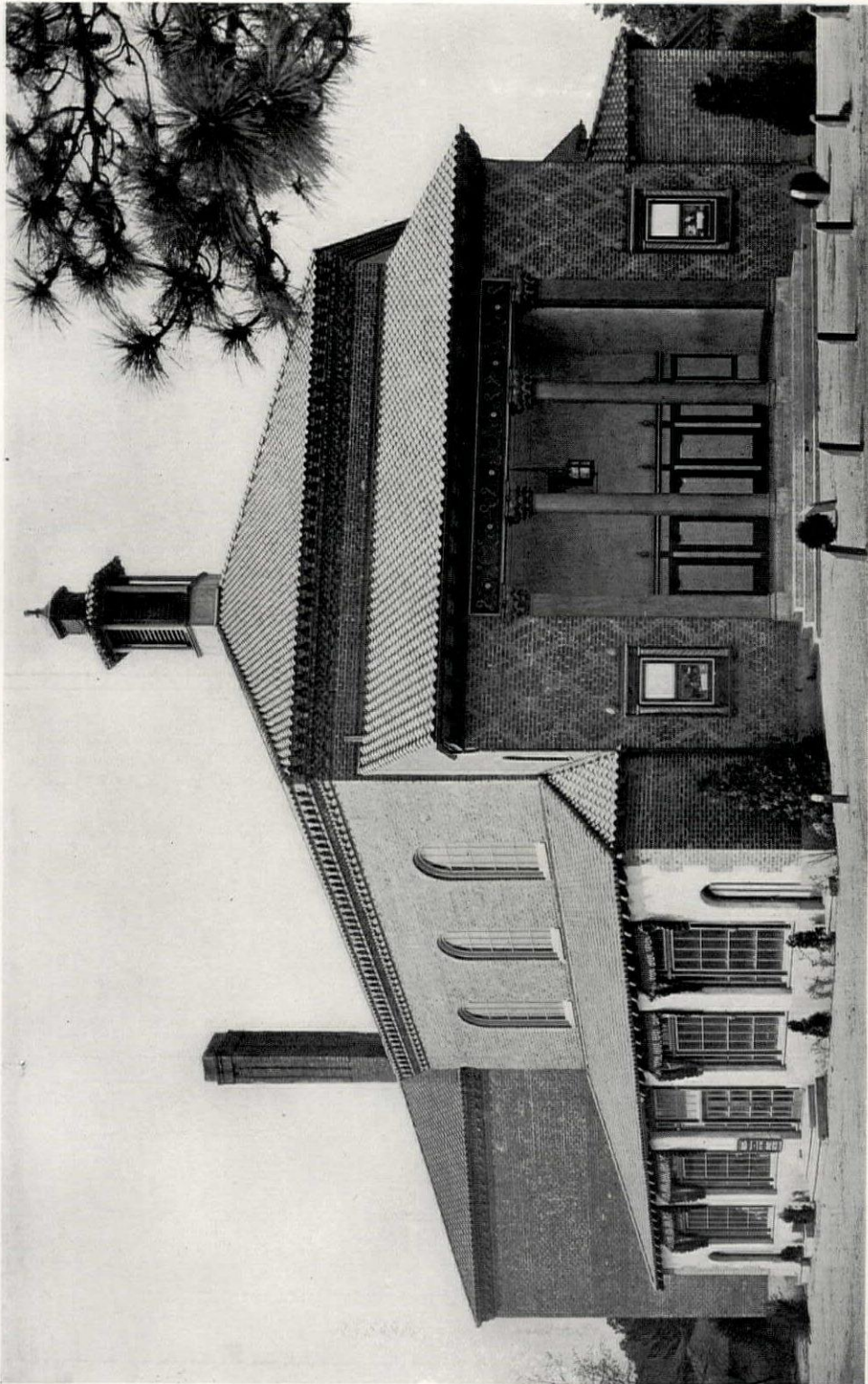
Hills, for the principal industry is the raising of small fruit (especially peaches), so the building for this association was designed to give considerable foyer space and a large quotation room for use during the marketing season. The building committee desired that the building should combine a certain dignity with the open and hospitable spirit that the South likes to associate with business.

The shops on Market Square, Pine-

enough to make an advantage rather than a detriment. The shops look somewhat better in drawing than in reality, because plate glass show windows have been substituted for small panes, and there are unkempt awnings all over the fronts of the executed work.

The two schools at Aberdeen and at Southern Pines are almost unequalled in design among our public schools. Admi-

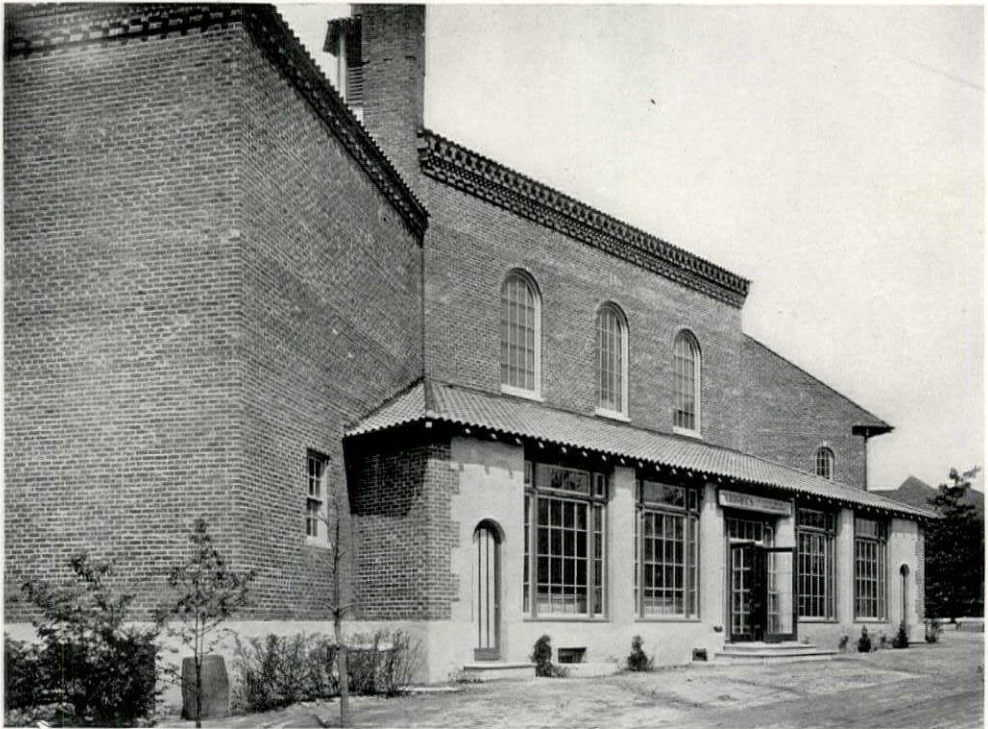
(Text continued on page 561)



THE CAROLINA THEATRE, PINEHURST, NORTH CAROLINA
Aymar Embury II, Architect



Detail of Shops around Theatre



THE CAROLINA THEATRE, PINEHURST, NORTH CAROLINA
Aymar Embury II, Architect



LOUNGE AND DINING ROOM—MID-PINES COUNTRY CLUB

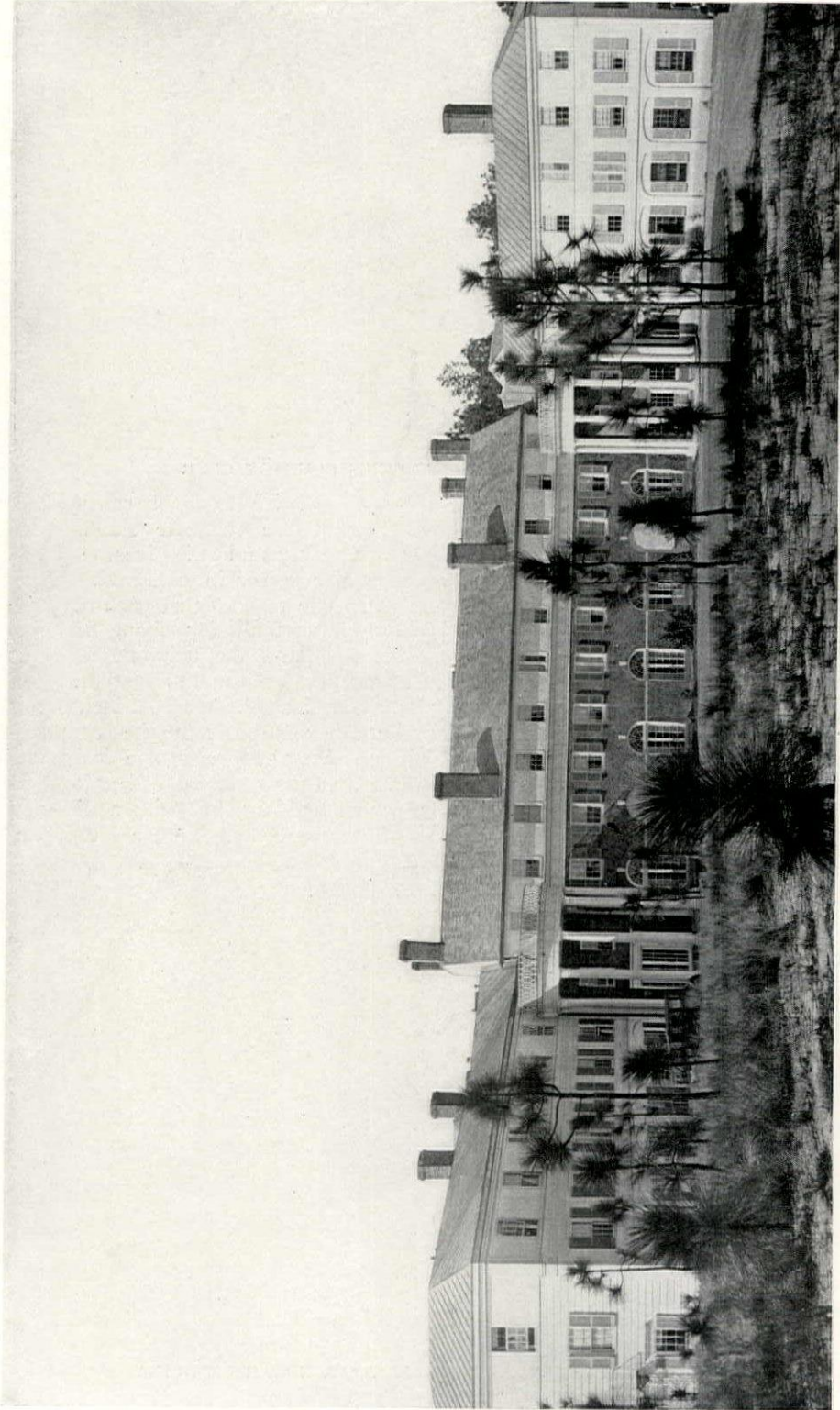
rably planned with regard to the peculiar North Carolina law, requiring the entrances to stairs to be through open fire towers, they have the required window area so disposed that the usual factory-like exterior of our public schools is conspicuously absent. We have made the American school house a model of sanitation and safety at the expense of appearance, and the accusation so frequently levelled at the United States, that our civilization is mechanical, has nowhere more justification than in our school buildings. Mr. Embury has shown that the man who

does not specialize in schools can produce buildings of the requisite standard of light and safety and still give the pupils a daily object lesson in good architecture, and when one realizes that each of these buildings was built for about fifty-five thousand dollars, the magnitude of his achievement is even more apparent.

The Carolina Theatre at Pinehurst is another departure from the commonplace. Moving picture theatre design has become almost as stereotyped as that of the school building, but with a different set of requirements. Here a lot of un-



Sun Room
THE MID-PINES COUNTRY CLUB, KNOLLWOOD, NORTH CAROLINA
Aymar Embury II, Architect



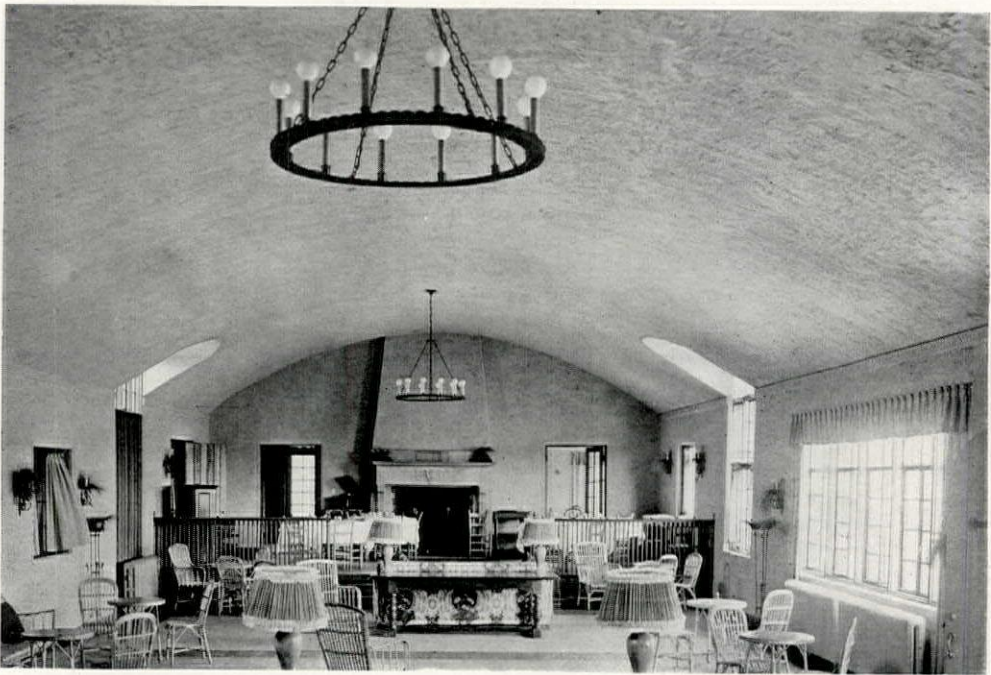
ENTRANCE FRONT—MID-PINES COUNTRY CLUB, KNOLLWOOD, NORTH CAROLINA
Aymar Embury II, Architect



LOOKING FROM THE GOLF COURSE—MID-PINES COUNTRY CLUB, KNOLLWOOD, NORTH CAROLINA
Aymar Embury II, Architect

usual shape was made, not the excuse for a bad plan, but the reason for one so simple, logical and practical that one wonders if it could not be adapted for locations which do not demand it. The auditorium is an irregular hexagon, with the stage at the narrow end, and the gallery at the wide end, opposite. Exits are ample and easily reached, and the boxes are placed in the best location instead of the worst. This plan, carried up directly and without concealment of its form, is lighted above the roofs of shop windows which adhere to its sides in a most engaging manner,

buildings, both in purpose and in treatment. The Mid-Pines club has a hundred bedrooms and a hundred baths, besides servants' rooms. The building committee required the bedrooms to be fifteen feet square with two windows in each, at least half to face south and as many of the rest as possible to face southwest or southeast; the building to be three stories high. This resulted in a façade over 500 feet long, with one window every 7' 6" of the length. What a problem! That the architect was able to do so handsome a building is remarkable. Obviously, it was a



The Big Room

THE SOUTHERN PINES COUNTRY CLUB, SOUTHERN PINES, NORTH CAROLINA

Aymar Embury II, Architect

forming an irregularly shaped mass, somewhat reminiscent of Italian work, but without such emphasis on stylistic resemblance as to be out of harmony with the adjacent structures. The brick cornices are especially admirable; we see such cornices far too seldom, but what excellent crowning motives they may be!

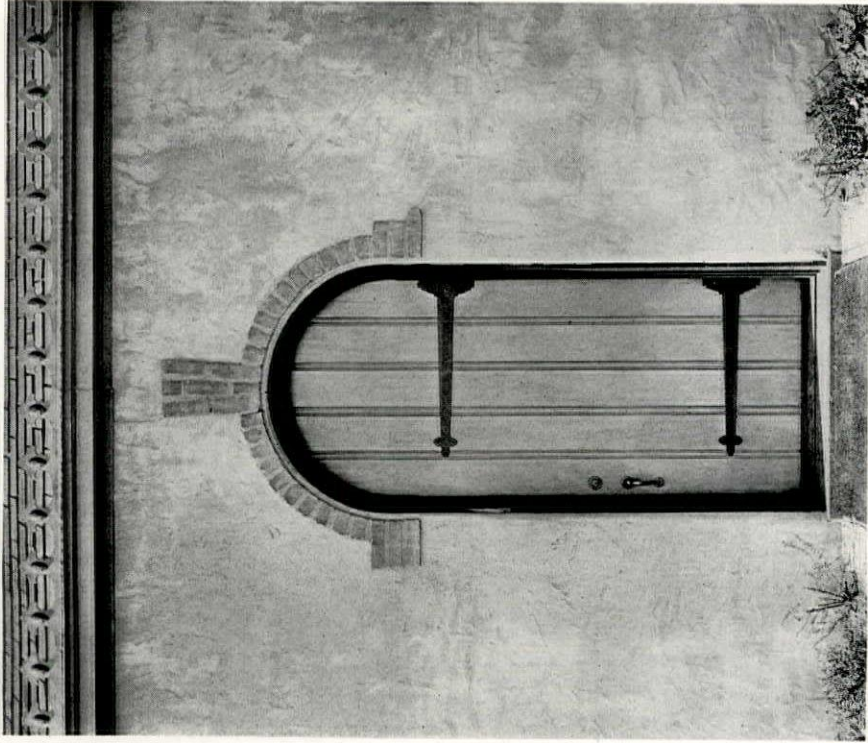
The two country clubs, the Mid-Pines at Knollwood (between Pinehurst and Southern Pines) and the Country Club of Southern Pines, are widely divergent

question of breaking up the façade and treating it as a group of small motives rather than as one long one, and this has been admirably handled, while the plan is most excellent in the bedroom and main floors.

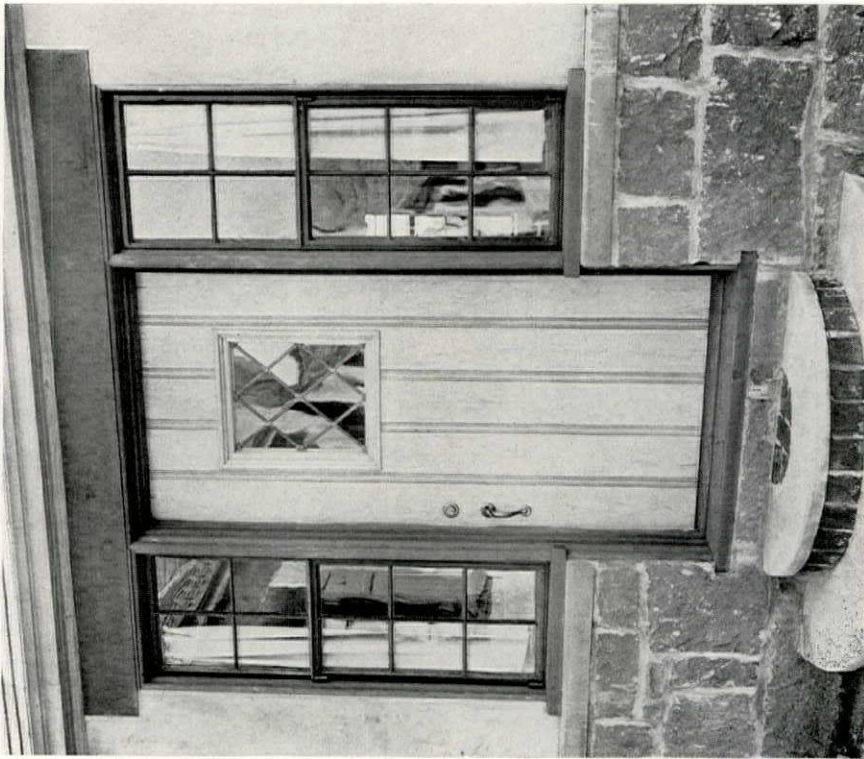
The Southern Pines Country Club is of a different type entirely. Set on a treeless, barren, sandy hilltop, it was necessary to do a building which would carry itself. And, in spite of its low cost and its bleak situation, we are inclined to be-



THE SOUTHERN PINES COUNTRY CLUB, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect

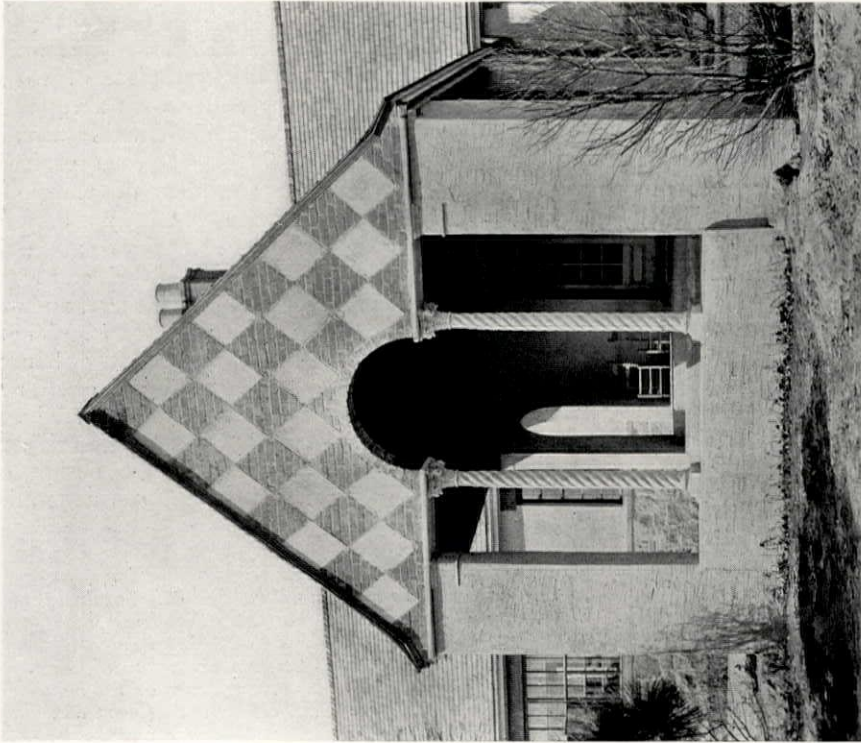


Doorway to the Big Room



Doorway to Card Room

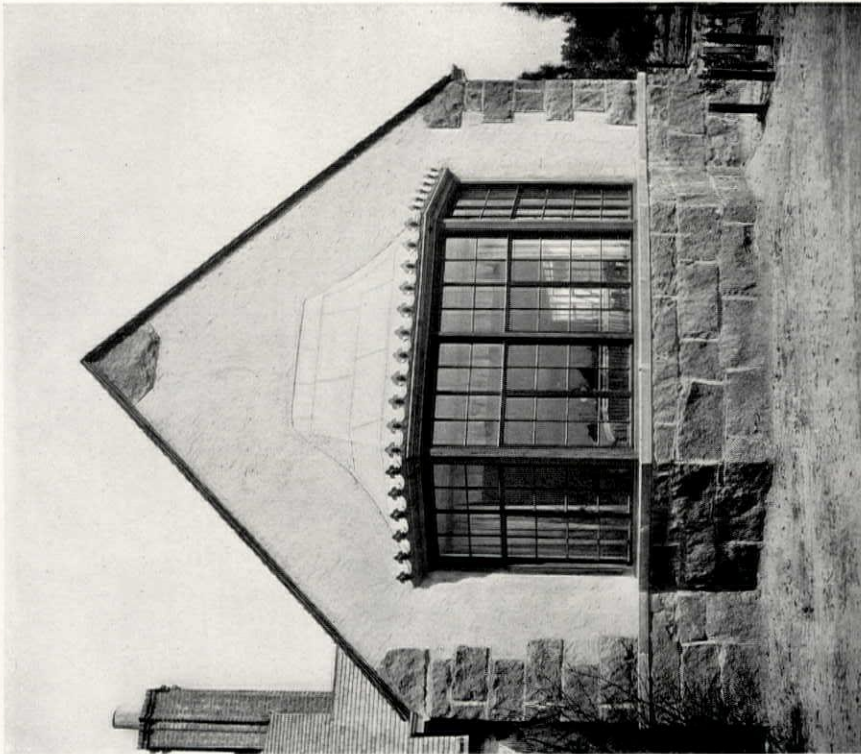
THE SOUTHERN PINES COUNTRY CLUB, SOUTHERN PINES, NORTH CAROLINA
Aymar Embury II, Architect



Porte Cochère

THE SOUTHERN PINES COUNTRY CLUB, SOUTHERN PINES, NORTH CAROLINA

Aymar Embury II, Architect



Card Room Gable

lieve that this is the loveliest small clubhouse in America. In reality, the building is even more charming than in the photographs, for to the stunning mass of the structure is added a lovely color scheme which gives to the club an air of joyousness which even the barren site cannot subdue. The stucco is a sandy buff color, relieved at various points by red sandstone and brick. The amusing metal cornices and chéneaux, the tin roof of the bay window and the doors are blue with a light glaze of green over them. The blinds are of a strong but quiet green, the woodwork is stained brownish gray and the roof is mottled brown, blue and gray. So daring a color scheme needed a good piece of design to carry it, and a skillful superintendent to see that just the proper

values were obtained; these needs were satisfied, and we agree with Mr. Embury in thinking this his best piece of work.

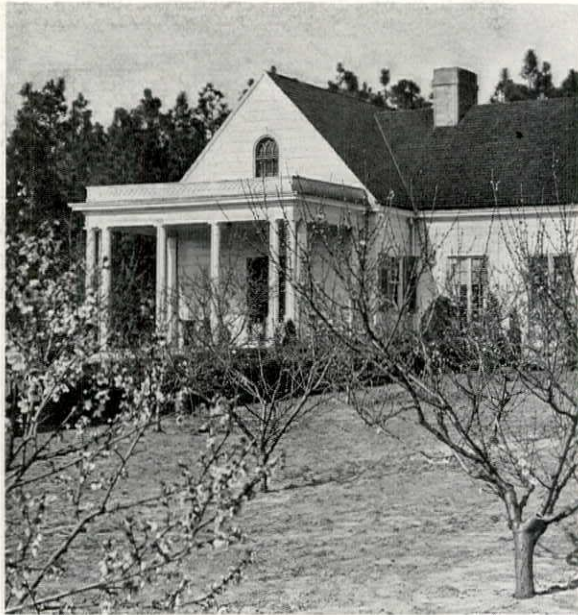
It is interesting to see what a vigorous designer can do outside what is usually considered his field. To each problem he has brought freshness of viewpoint and mastery of the essentials, not only of plan and construction, but also of aesthetic requirements. His work in the Sand Hills looks as though it belonged there, and yet each building looks what it is. These structures are neither country houses masquerading as something else, nor transplanted city buildings bewildered and forlorn in incongruous settings. There is a happy accuracy in the design of every one; none is pretentious, none misunderstood.

My dear Mr. Whitehead:

When you write your article about my work in the Sand Hills of North Carolina, I wish you would say something about the remarkable group of men who have made that desolate country into the prosperous and delightful community that it now is; who lifted it by its own bootstraps, as it were, and among whom are many of my clients, and good friends, most of them you have met and liked; such men as the late John V. Boyd, Leonard Tufts, T. A. Kelley, the Page family, Henry and Robert and Ralph and Henry, Jr., Claude Hayes, A. S. Newcomb, A. S. Creamer and S. B. Richardson—they are architects indeed, not of a few buildings of brick and pine and plaster, but of a whole region, which they have brought from hopeless poverty and squalor to prosperity and health.

Very faithfully yours,

AYMAR EMBURY II.



THE JOHN C. PUSHEE HOUSE, SOUTHERN PINES, N. C.
Aymar Embury II, Architect

ANDALUSIAN GARDENS AND PATIOS



By

Mildred Stapley and Arthur Byne
Photographs and Drawings made expressly by the Authors

PART VII

The Alhambra, Granada

THE ALHAMBRA HAVING been both fortress and palace its gardens did not pass beyond the ramparts but took the form of a series of patios within the palace precincts. It is, therefore, a hilltop, not a hillside, example—the acropolis leveled, and the sides of the mountain left wild and unterraced. The plan shows the same succession of rectangular units, some open to the sky, others ceiled, that made up the Moorish flat garden and palace. It is necessarily incomplete, for what is seen to-day is only a fraction of the original scheme.

Most of the vast royal residence that fell to the Catholic Sovereigns dated from the reigns of Yusuf I and Mohammed V—the fourteenth century. Ferdinand and Isabella gave orders for its restoration and upkeep; also they made a few alterations. Their grandson, Charles V, while he rebuked the canons of Córdoba for tearing out the center of the great mosque in order to install the Renaissance high altar and choir, did not hesitate to demolish a large part of the Alhambra group, structures and gardens, to make room for his never-to-be-completed Renaissance palace. His minor demolitions are less regrettable since he replaced them by something more harmonious than the Italian palace—we refer to the series of rooms and patios which were prepared for his residence pending the new construction. With these intrusions the Alhambra gardens as they stand to-day are a combination of Moorish, early Spanish interpretation of Moorish, and Spanish Renaissance—this last in the *Jardin de*

los Adarves which Charles V laid out down on the ramparts, to the left of the modern entrance. Most of their *cinquecento* motifs and sculpture have disappeared, but the box hedges and the rampart walls covered with vines seem to do quite well without them.

Dominating the plan is the long Moorish patio, one hundred and twenty feet by seventy-five—*El Patio de los Arrayanes* (myrtle) or, to give it its Arab name, *de la Alberca* (pool). First to be entered, it gives the impression of a golden glow everywhere, warm yellow arched walls, their reflection in the pool heightened by the myriads of goldfish that dart about. Of planting, nothing more than the myrtle hedge; of embellishment, nothing but the marble pavement and the low basin at each end of the pool; this may sound *paucire* but it must be borne in mind that such walls would make, in themselves, any enclosure beautiful. Specially graceful are the arcades at each end, supported on slender marble colonnettes with delicate capitals, that to the south surmounted by a beautiful little triforium gallery.

The only other large patio left is that of the *Leones* on opposite axes to that just described. It was laid out in 1377, and measures ninety-two feet by fifty-two. Its planting, said to have been all of dwarf orange-trees, has disappeared—nothing but gravel takes its place. As far as the garden part is concerned only the famous—the over-famous—fountain remains, along with eight shallow basins at the ends, connected by little canals



The Architectural Record

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Fountain in the Patio de Daraxa, with faceted Moorish tazza and Renaissance lower basin
THE ALHAMBRA PALACE AND GARDENS, GRANADA



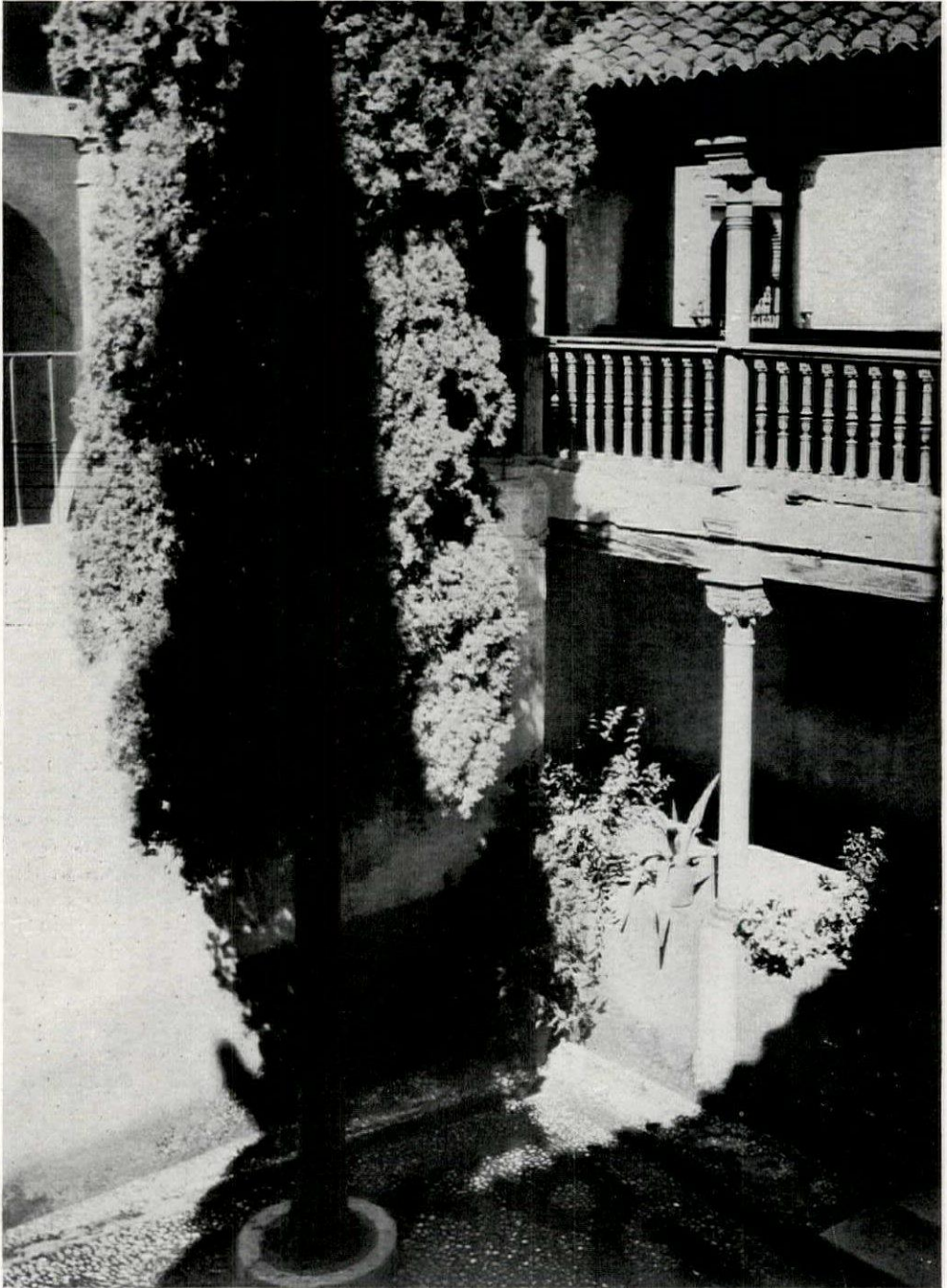
Fountain in the Court or Patio de los Leones
THE ALHAMBRA PALACE AND GARDENS, GRANADA

with the central overflow. The Fountain of Lions, standing out as it now does without the kindly proximity of trees or shrubs, does not seem to merit the praise generally bestowed on it. The noble beast is conventionalized even beyond heraldic recognition, and the spout protruding from his mouth hardly adds dignity. More admirable is the basin the lions support, mellowed into most beautiful color. All four sides of this patio are arcaded, making a splendid display of slender marble columns and capitals. At each end is a pavilion with a wooden dome of typical Moorish carpentry.

The two patios just described are the most genuinely oriental of the Alhambra; beautiful though they are in their way, it is rather the smaller Christian (by way of apposition) enclosures that offer the modern garden-builder greater inspiration. Among these, either remodeled or created by the destruction of Moorish portions, are the *Patio de Daraxa* and the *Patio de la Reja* which deserve special attention. In the former, dating from the time of Charles V, is a

beautiful stone fountain, consisting of an upper Moorish basin brought from the Mexuar Patio and mounted on a Renaissance base. Here we see the ancient practice of scoring and faceting the edges and underside of the upper basin so that the thousand little high-lights thus created may be reflected and magnified in the pool below. Planting is entirely green—clipped box and cypress trees. Washington Irving, who had lodgings in the abandoned Alhambra, was specially fond of this spot. "Here," he wrote, "the twittering martlet, the only bird sacred and unmolested in Spain because it is believed to have plucked the thorns from Our Saviour's crown as He hung on the cross, builds his nest and breaks the silence of these sequestered courts which were made for oriental enjoyment."

The other patio buried in the heart of the building is that of the Reja, on the north side; very diminutive, built in 1654. Its name refers to a window grille through which the imprisoned Jane the Mad (*Juana la Loca*) is said to have looked out during her enforced residence



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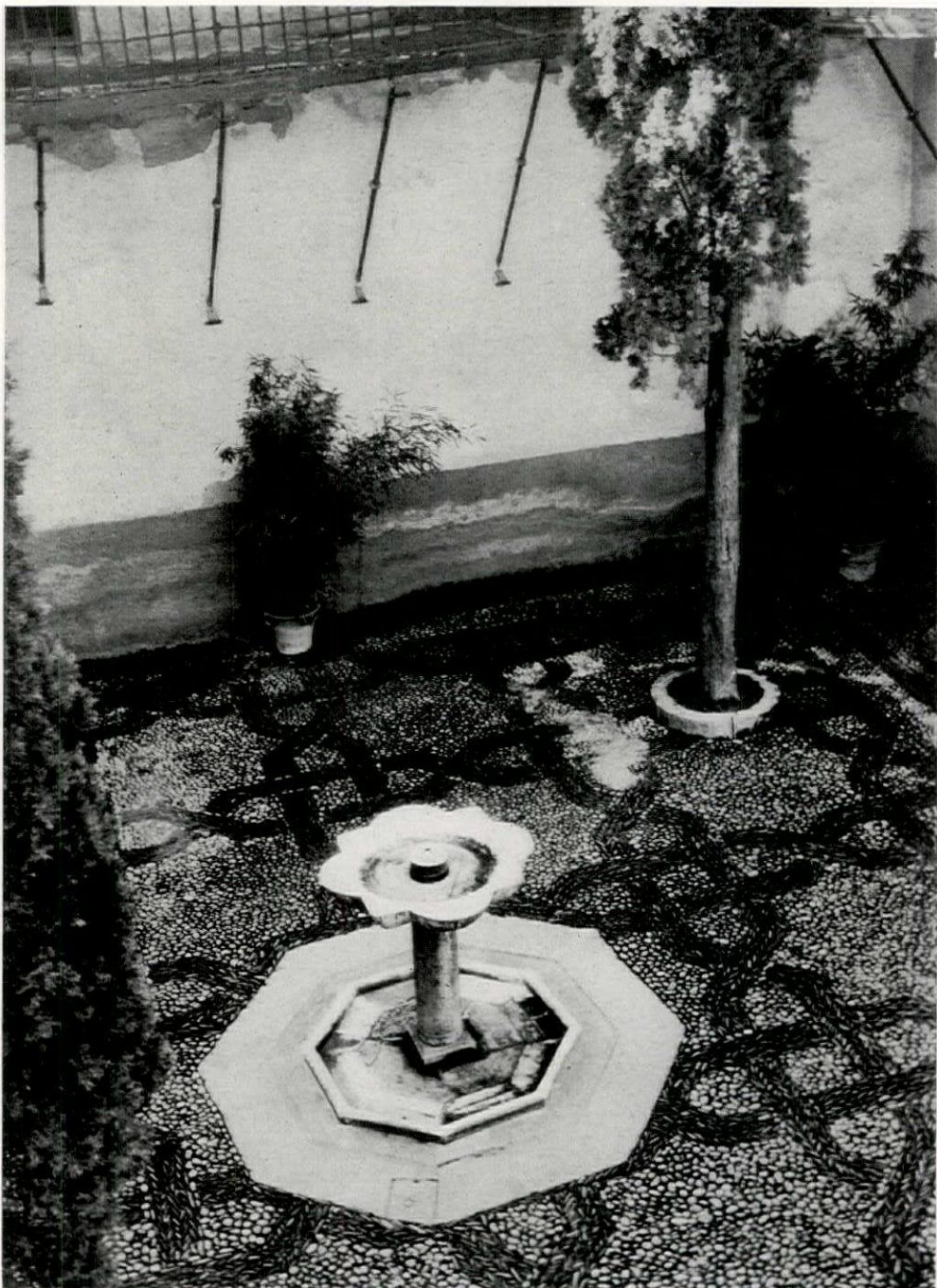
Upper and lower galleries along the north side of the Patio de la Reja
THE ALHAMBRA PALACE AND GARDENS, GRANADA



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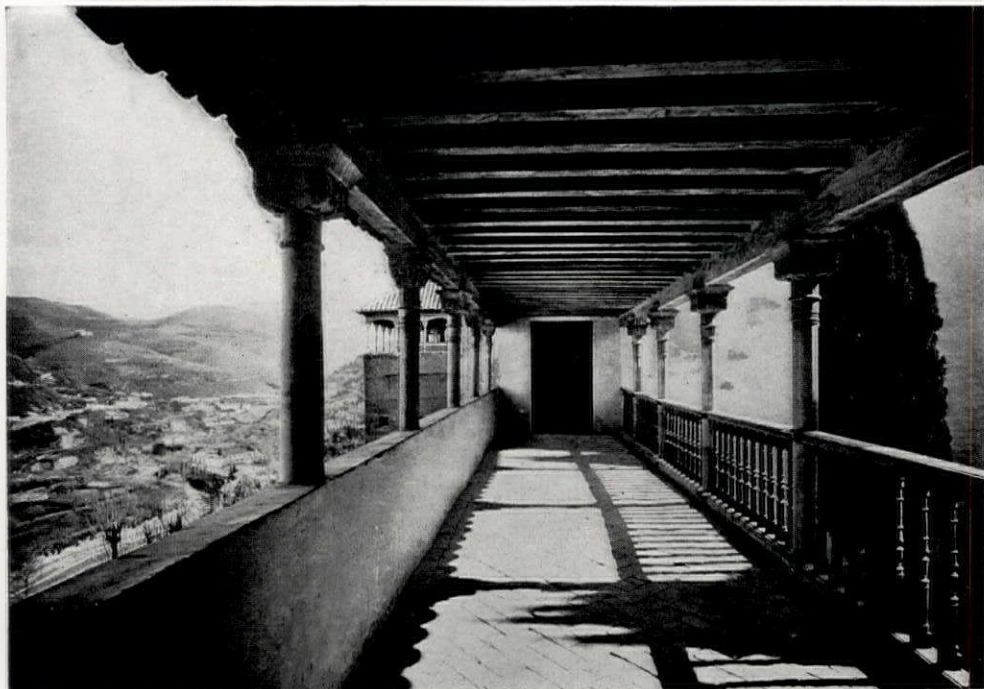
Lower Entrance to the Patio de la Reja (or of Joan the Mad), with typical wooden spindle doors
THE ALHAMBRA PALACE AND GARDENS, GRANADA



The Architectural Record

June, 1924

Pavement of the Patio de la Reja seen from an upper gallery
THE ALHAMBRA PALACE AND GARDENS, GRANADA

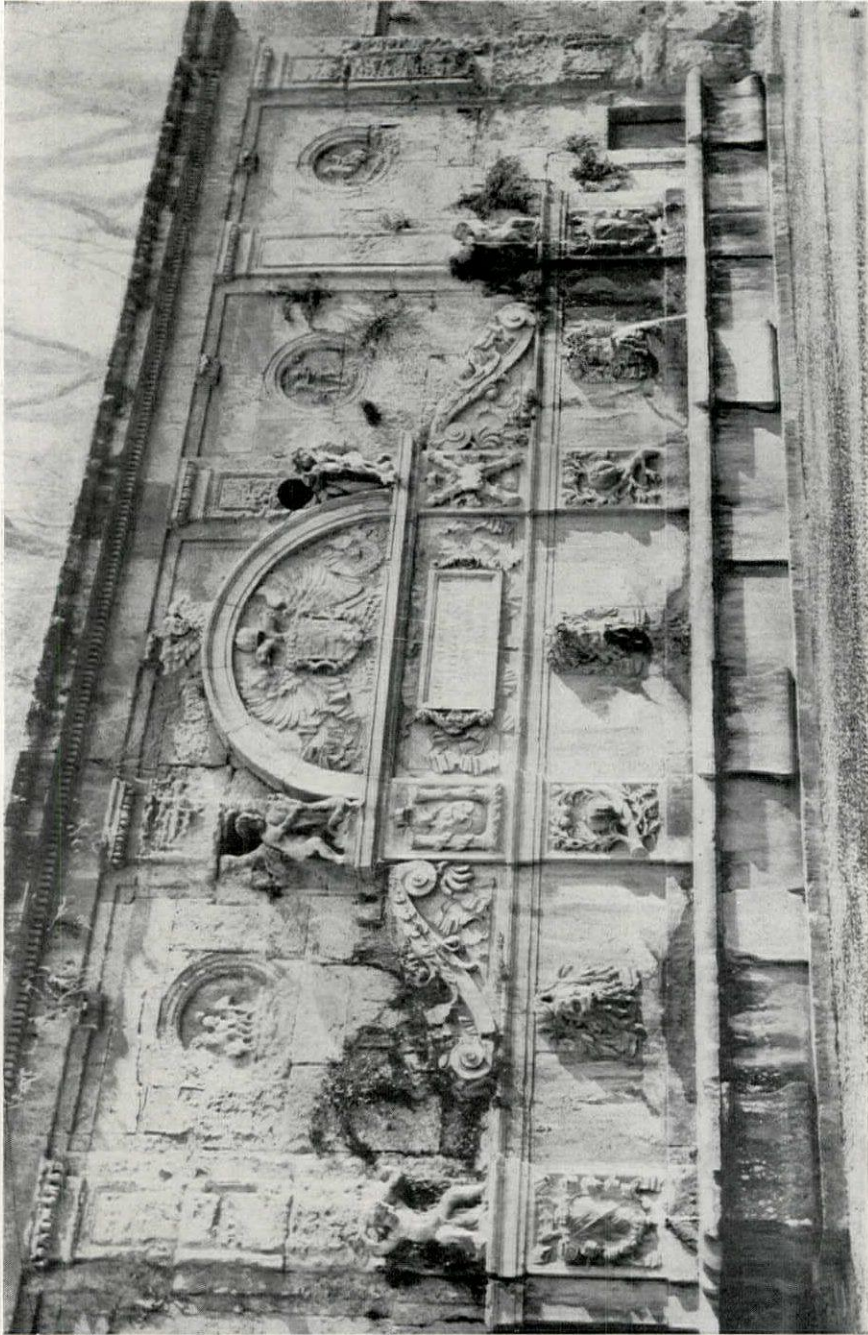


Upper gallery commanding a little garden on one side and the city on the other
THE ALHAMBRA PALACE AND GARDENS, GRANADA

in the Alhambra. The pavement of patterned stone is specially beautiful. In the corners are circles of earth from which rise lofty cypresses; additional green is supplied by potted bamboo plants. Off to one side and thus placed in order to be visible from the adjacent patios, is the marble fountain. Further interest is supplied by the wooden spindled gates which connect with the ground-floor chambers of the palace. These gates are a very Spanish feature—an economical interpretation of forged iron and found in gardens and in the poorer churches. Enclosing the north side of this little patio and at second-story level is an open gallery commanding a sweeping view over the Albaicin Hill. For its construction, Moorish columns and capitals were brought from demolished courts. Spaniards never missed an opportunity for introducing this sort of promenade gallery, attractive in itself and open to both the garden and the distant landscape.

Of the Alhambra palace we say noth-

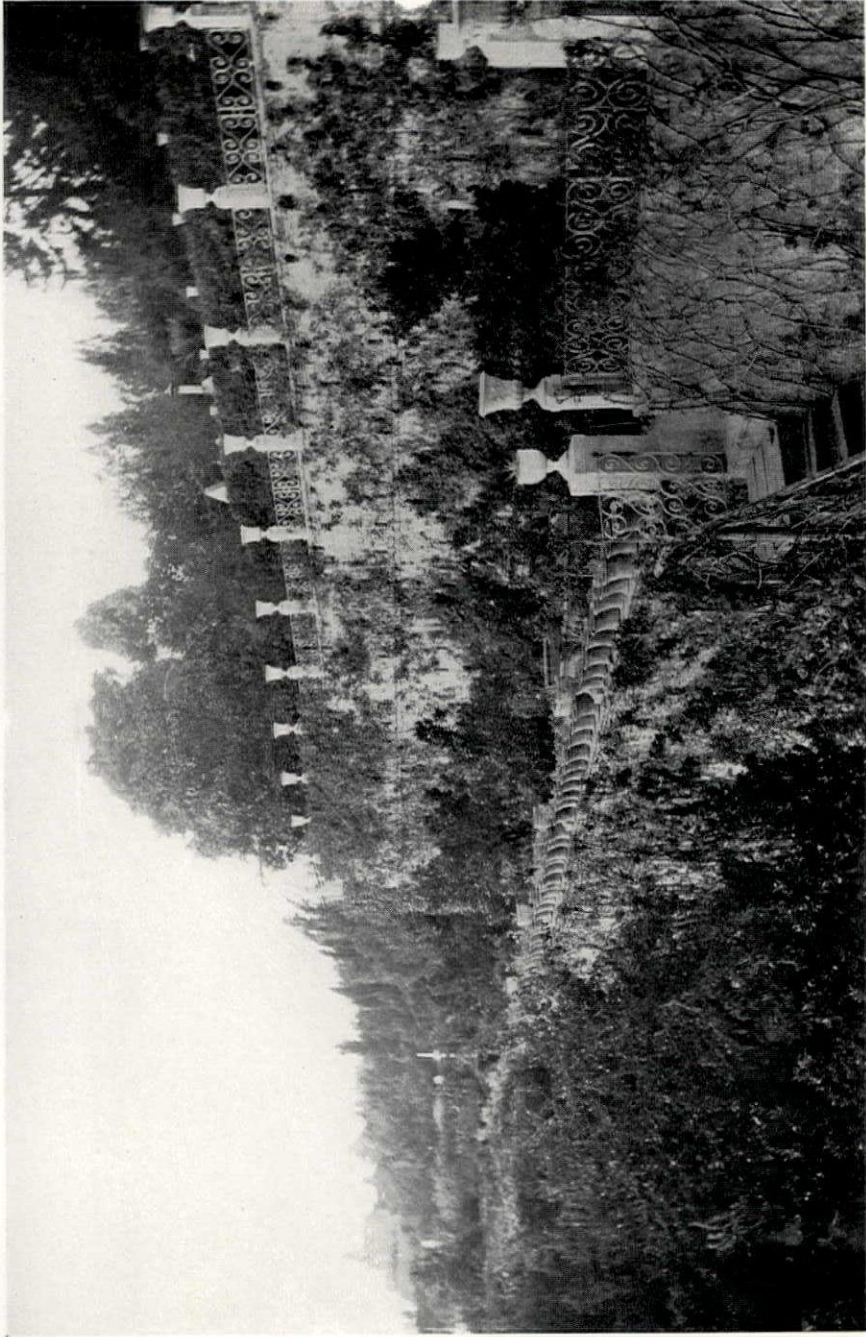
ing. As a Moorish monument in a European country it is interesting and even beautiful, but the majority of Europeans (we use the word in reference to race as opposed to Asiatics) feel no sympathy with the much cusped arches, the never-ending wainscots of polychrome tile all in the prescribed Mohammedan patterns of interlacings and arabesques, and the highly colored plasterwork of the walls repeating these same interminable geometric designs. Somehow it does not appeal to our more sober northern taste. Its ready adaptability to café and dance-hall decoration puts us who are essentially domestic by instinct out of sorts with it. It represents the artistic decadence of the race that built it. Had the Christian régime in Córdoba and Seville, which were won two and a half centuries before Granada, left us a single untampered relic of the earlier Moorish period when azulejos were used with restraint and yesería was probably not painted at all, we might feel more in harmony with it.



The Architectural Record

Fountain of Charles V Designed by the Italian-trained architect Machuca
THE ALHAMBRA PARK, OR ALAMEDA, GRANADA

June, 1924



The Architectural Record

CAMPO DE LOS MARTIRES, GRANADA. A SERIES OF WALLED TERRACES

June, 1924



The Architectural Record

June, 1924

THE ACOSTA GARDEN, A STUDY IN RETAINING WALLS

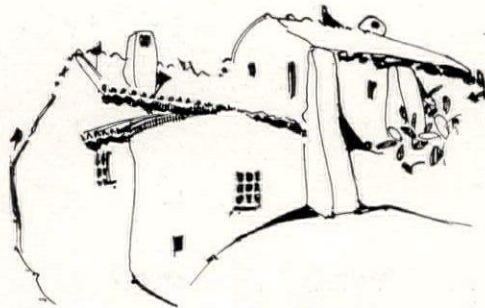
The Acosta Garden, Granada

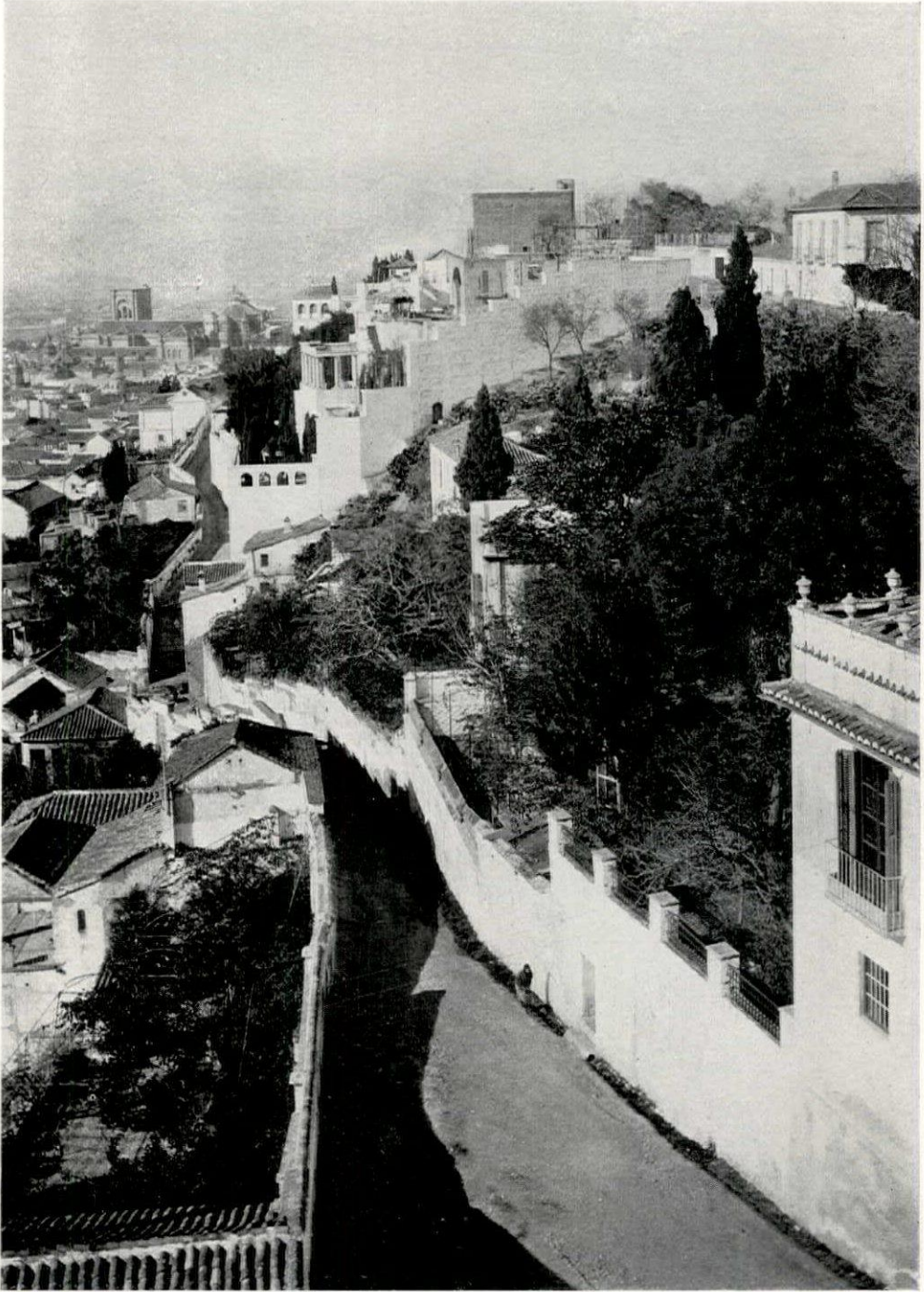
WE ARE FORTUNATE in being able to illustrate one new Granada garden, not only for its beauty but also because it shows how happily the old Andalusian type may be combined with certain features of European gardens in general. It is the creation of the painter, Don José Rodríguez Acosta. Admiration of antique sculpture has led Señor Acosta to study how it could best be introduced into the typical local setting. He chose his site on the precipitous southern slope of the Monte Mauror, close to the Alhambra. This was the ancient *Campo de los Martires*, legend making it the scene of early Christian persecutions, and, later, of the dungeons where were thrown at night the Christian captives who worked on the Alhambra.

Structurally the garden is Andalusian. Great stepped retaining walls follow down the hillside, garden courts are enclosed by arcaded walls similar to those already described in the Generalife, and parts of the garden lie in the embrace of the house itself, as at the Alhambra; but all this is much more architectural than in the prototypes, displaying, indeed, an extraordinary appreciation of ancient

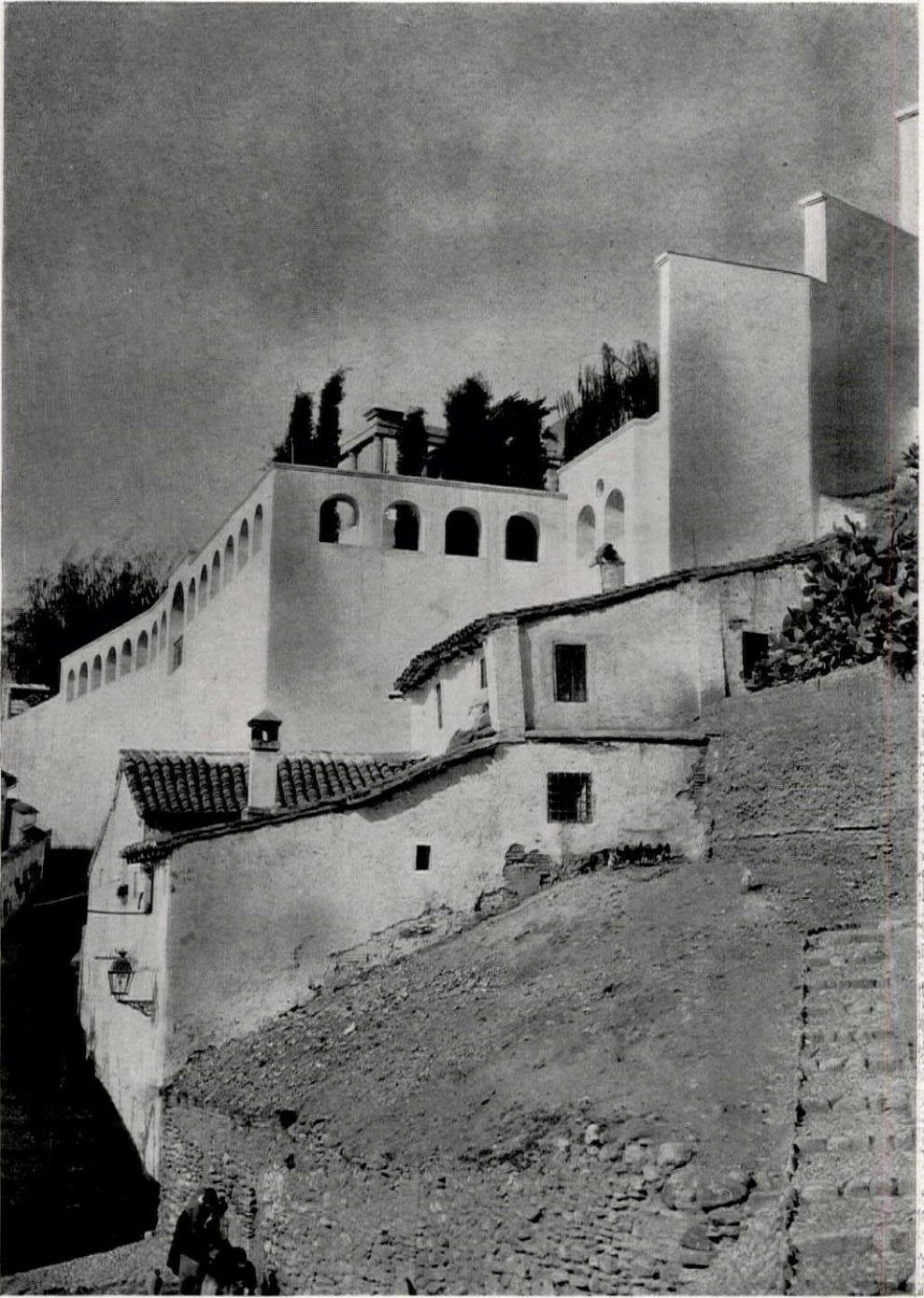
Roman building principles. Andalusian tradition is departed from by the introduction of garden sculpture, a columnar exedra, and a general use of the orders. There are no polychrome tiles and in truth their introduction would seem trivial in the monumental scale of things. The planting is wholly green, cypress and box. Water is not running and rippling in the more Spanish fashion but lies in quiet pools, and the only color these reflect besides white and green is the deep blue of the southern sky. As this garden is still unfinished it is somewhat unfair to the owner to illustrate it; at the same time it is too promising and too inspiring to be omitted.

Further along this same southern slope is a villa or *Carmen* with a fine terraced garden, known as the *Carmen de los Martires*. It is a mid-Victorian interpretation of Andalusian, most interesting for its orange terraces and the use of potted plants along the parapets. In recent years it has become quite overgrown and formless, but many beautiful little spots can still be found.

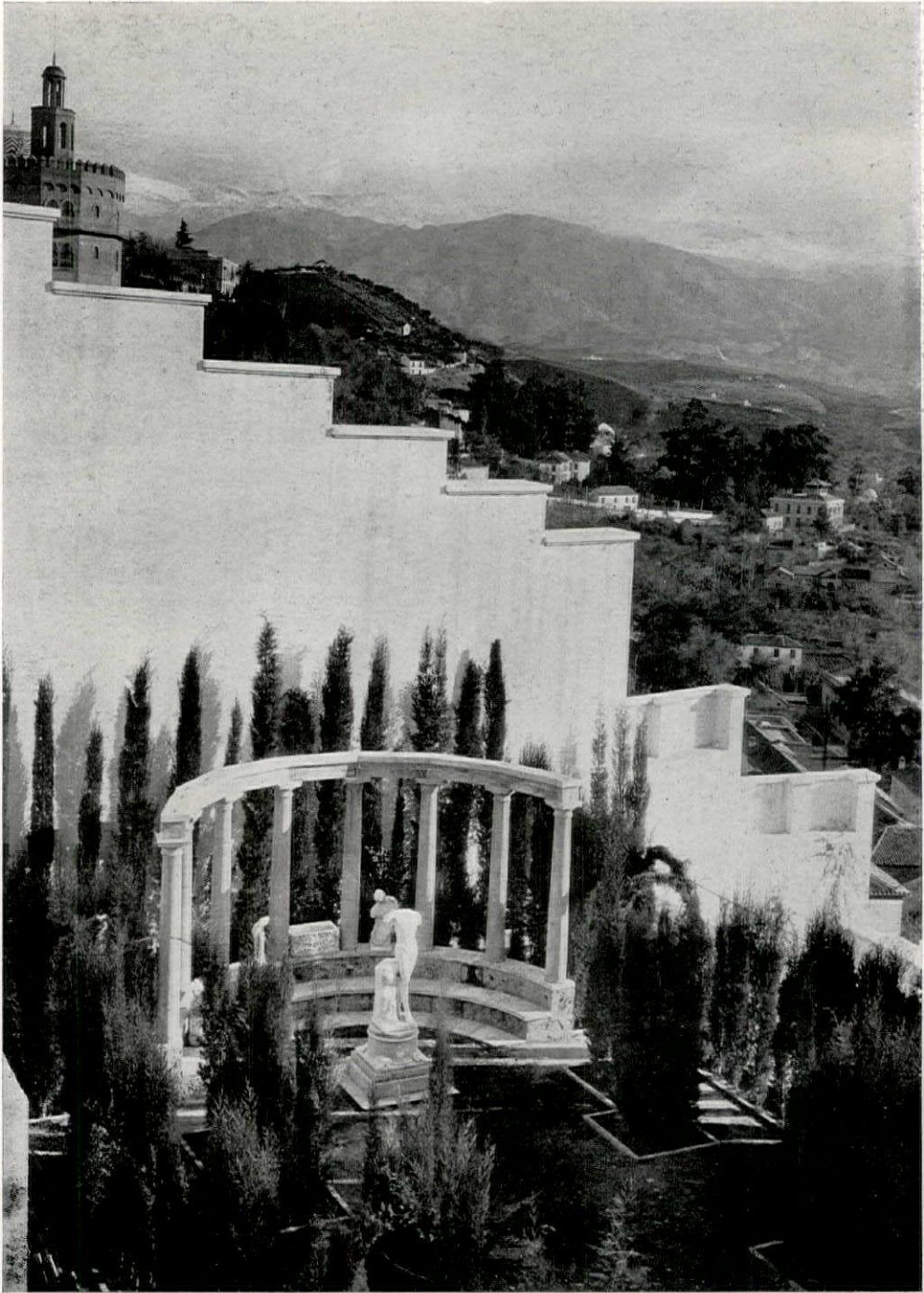




View from the Street of the Massive Wall Enclosing the Garden of Don José Acosta on the Slopes of Monte Mauror, Granada



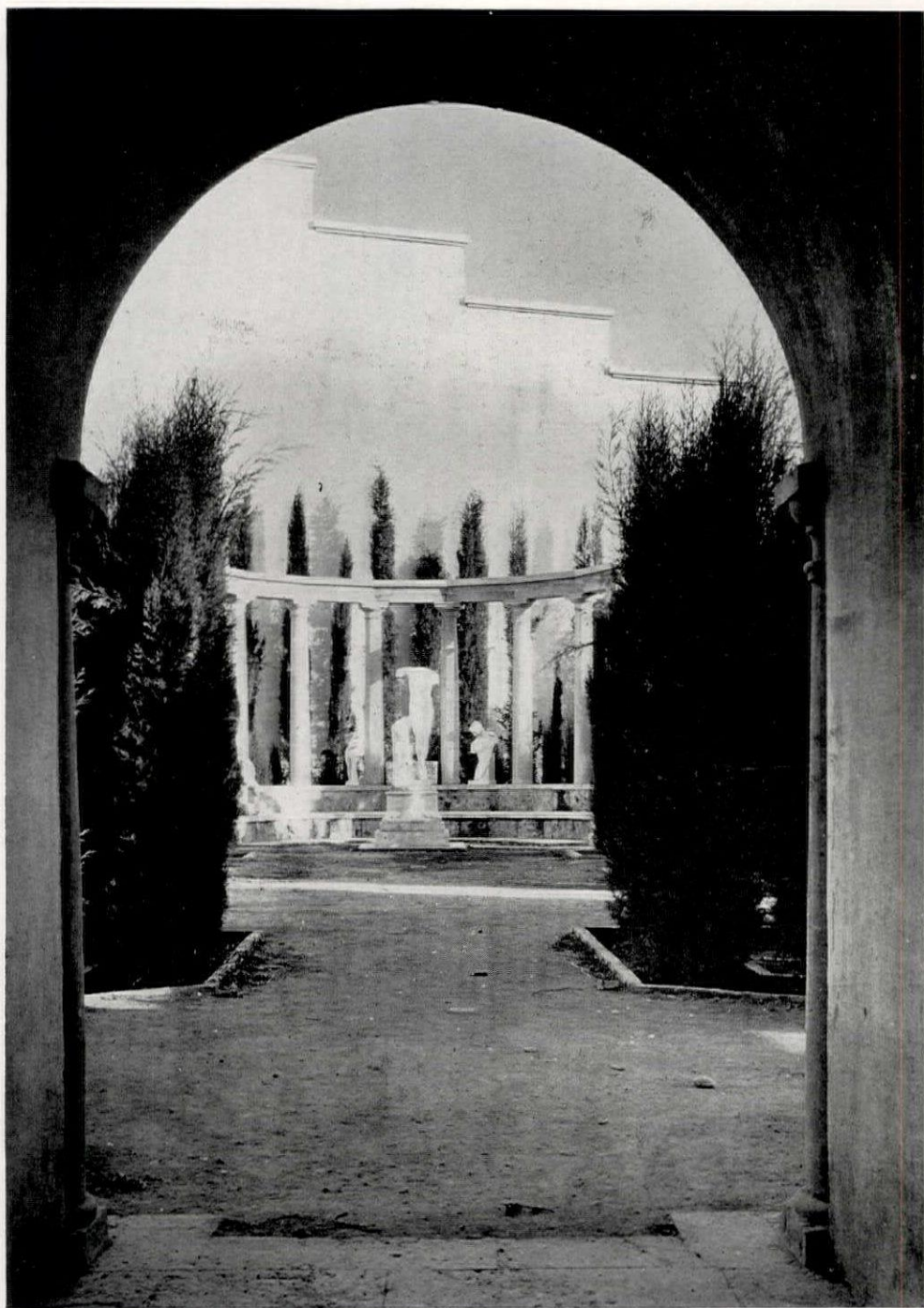
The Arcade Wall of the Acosta Garden Seen from the Street



The Architectural Record

June, 1924

The Acosta Garden. The Stepped Wall and the Sierra Nevada Beyond



The Architectural Record

June, 1924

The Acosta Garden Departs from the Andalusian Tradition by Introducing Classic Accessories



The Acosta Garden. Temple and Archway Overlooking Granada

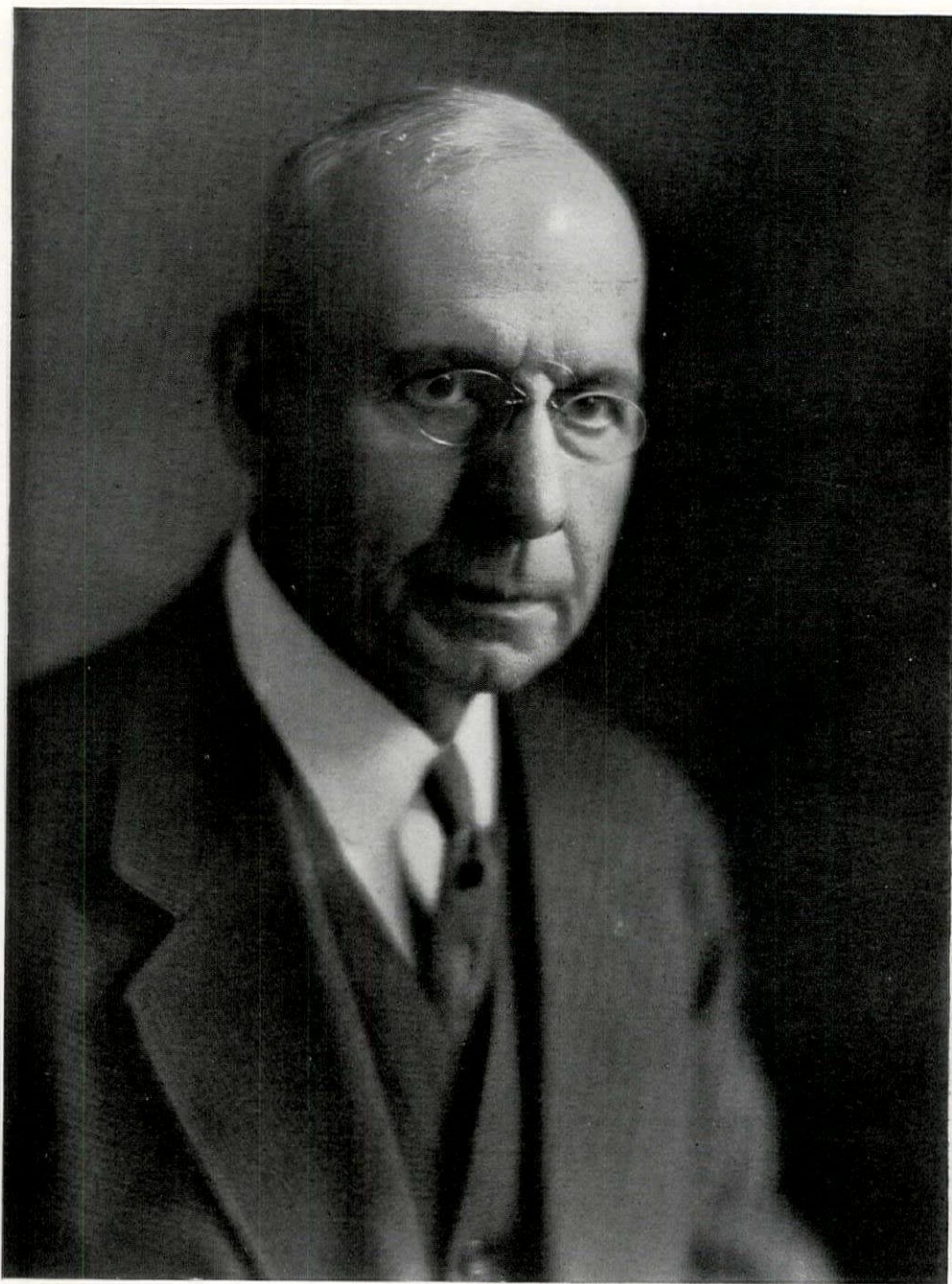


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Pool in the Acosta Garden

The lofty wall is perforated by arches to diminish the heaviness



LOUIS H. SULLIVAN

(1856-1924)

LOUIS H. SULLIVAN

(1856-1924)

Louis H. Sullivan passed away quietly on Monday, April 14, 1924, after a week's illness, of heart failure. As far as the material world is concerned, he ceased to exist some fifteen years ago. The last years of his life were spent in writing and in executing small commissions for appreciative clients.

His article on the Tribune competition, which appeared in the RECORD, expressed his creed in words which have stirred the souls of dreamers through the ages. "The craving for beauty," said Sullivan, "is imbued with romance; with that high romance; which is the essence, the vital impulse, that inheres in all the great works of man in all places and all times, that vibrates in his loftiest thoughts, his heroic deeds, his otherwise inexplicable sacrifices, and which forms the halo of his great compassions, and of the tragedy within the depths of his sorrows. So deeply seated, so persistent, so perennial in the heart of humanity is this ineffable presence that, suppressed in us, we decay and die. For man is not born to trouble as the sparks fly upward; he is born to hope and to achieve."

For the past two years Sullivan devoted himself almost entirely to writing. "The Autobiography of an Idea" appeared serially in *The Journal* of the American Institute of Architects, and has only just been published in book form. In addition to this "A System of Architectural Ornament," containing a group of exquisite drawings showing the evolution of that inimitable Sullivanesque ornament, was recently completed, proofs of which were shown to him on his deathbed. Thus, the Ornament and the Life of Sullivan have been left to us as a record for all time.

He lived long enough to see most of his buildings demolished or altered by others. Buildings are for a little while, but the idea remains forever.

In the *Musée Des Arts Décoratifs*, in Paris, there is a full size plaster cast of his doorway to the famous Getty Tomb. This doorway found its way to Paris as an exhibit in 1900, and was placed in the Museum to form a feature of the permanent collection of the world's works of decorative art. The French were appreciative of Sullivan's genius as far back as the Columbian Exposition, when the medal of honor for the best building at the "Great World's Fair" was awarded the Transportation Building. In Bannister Fletcher's *History of Architecture* is given a reproduction of the Schiller Building, now known as the Garrick Theatre, Chicago, as an example of American skyscraper architecture.

These few tokens of appreciation, coming as they do from unbiased architectural opinion, show the high place in which the works of Sullivan were held outside of America.

Sullivan's battle through life was a continuous struggle against the *idée fixe*. He learned too often that the world is organized to knock down the man who lifts his head above the multitude, and yet his great courage and determination, backed by a tremendous brain and ability, which we call genius, kept forever rising again to carry on to the very end.

His remarks on Saarinen's skyscraper design prophesied "a time to come, and not so far away, when the wretched and the yearning, the sordid and the fierce, shall escape the bondage and the mania of fixed ideas."

Mr. Sullivan was born in Boston, September 3, 1856, and came to Chicago in 1880. He was buried in Graceland Cemetery, about a stone's throw from the Getty Tomb.

A. N. REBORI.

The LOW-RENTAL APARTMENT - AN ECONOMIC FALLACY -

By

Frank Chouteau Brown

PART II

LAST MONTH WE WERE concerned principally with analyzing the newest attempt to solve the economic problem of low-rental housing accommodations in New York City. In the course of our investigations it became clear that it had only been possible to make this attempt under so exceptional a financial basis as was made possible by the large cash resources at the disposal of the Metropolitan Life Insurance Company. We are forced to the conclusion that, in showing this case to be possible under certain conditions, it has been proved impossible upon any ordinary investment or realty improvement basis.

While the company concerned expects to receive a net six per cent return on the money invested, and probably two to three per cent additional for amortization, they have shown conclusively that, without an amount of money on hand so large as to be quite beyond the bounds of probability on the part of any individual investor or real estate speculator, the scheme would not possibly have worked out successfully. If it had not been for the "tax exemption" law the present financial basis of return also would not have been possible.

This particular venture has also a great advantage in having been developed successfully against the uncertain conditions prevailing in the building industry over the last two or three years, aided by the exceptionally intelligent coöperation of all the individual contractors and others concerned, animated in large part by their altruistic interests.

New York, as well as other American cities, has seen previous experiments along these same lines, on a smaller scale. The principal difference is that they were all undertaken and carried out at a time when

the costs of building and labor were not nearly so high and uncertain as is the case today. And as our investigations have demonstrated that present building prices cannot get much, if any, lower than they are now, we can only make useful comparison with these earlier experiments by allowing for the economic differences in the building industry existing then and now.

It is, of course, neither scientific nor absolutely exact, but, given the date of construction, there are few experienced in building but are capable of making a shrewd enough guess at the variability of cost, and its probable relation to the building costs of today. We already have comprehended pretty well the causes for variation in the past, and there exist some fairly exact tabulations of the factors of this cost as they have varied in different localities; but of the immediate future, we are not so sure. During the construction of a building operation of any substantial size today, we may suddenly discover that a radically different set of conditions is governing progress and costs. It is this uncertainty that is at the root of much of the expense of building under contract today.

But we are at the present moment concerned with the problem of building small apartments available for rental at a low cost to the needy and lower salaried American worker in our larger cities. We will also assume that we are still to be concerned with buildings to be erected on city property of some considerable value, for the problem opens out along different lines if we move its location to suburban or lower cost land areas. Therefore let us return to the definite consideration of the plan of the apartment similar in gen-

eral conditions to those illustrated last month, especially the use of such a plan in a building aggregating a number of these dwelling units, constructed on city land of considerable realty value.

There are a few general considerations to which we might advantageously give some thought. The rental basis is largely governed by the cost per room; that is, a three-room apartment will bring in 50 per cent more than a two-room, and a four-room about double. As a matter of fact, there is a variation in even this factor, the two-room generally affording a proportionately larger rental, and the four-room a proportionately smaller rental, per room. The reasons are obvious. If the bath is only used by two rooms, it costs twice as much per room to include it, and the same amount of hallway and staircase space is required to reach the two-room apartment as is necessary for the four-room apartment.

Again as a practical matter, a family in a two-room apartment, without children, is probably better able to pay more; and the total rental of the two rooms comes to a much smaller proportion of the probable income of the occupants than is the case of a four-room apartment, with a larger family and more expense of living—while from the sociological point of view, it is undoubtedly more worth while to help the larger rather than the smaller family unit, in any structure of this kind.

As to the plan itself. Granting the necessity of a small number of rooms, the pressure that naturally follows on their use is increasingly greater the smaller the number involved. The bathroom is not generally included as a room in these enumerations, yet it occupies space that is valuable and is a considerable item of expense, both in the construction and the maintenance of the property. The area of a full size bath, containing three fixtures of the usual type, can hardly be less than 35 square feet, while it needs only 100 square feet to make a legally acceptable sleeping room.

Various expedients are employed to save this space. Sometimes a small square tub is used, recessed at one end of the space, and a toilet seat at the other, occu-

pying only about 22 square feet, leaving the kitchen sink to be used as a lavatory. Sometimes a shower is all that is provided for body washing purposes, outside the kitchen sink and laundry tray unit that is customary. Sometimes the shower is also omitted, leaving only a toilet in the smallest possible space, about 15 square feet, and the kitchen sink and tray for the apartment's entire plumbing facilities. In the lowest rental type of two-room apartment this is often all that can be managed. And from here the steps upward are gradual, and often correspond with the increase in number of rooms and the rental price of the apartment. Three rooms has a shower and toilet compartment in the lower priced suites, and a bath in connection with three rooms easily commands a somewhat higher total rental than is the case with the simpler and less costly arrangement.

The four-room apartment again will generally be found to have a full three-piece bathroom, even though the floor space may still be restricted to the minimum area. Of course, where there is a general policy toward the omission of bathroom facilities in the building, showers and tubs for the general use of the tenants are always installed, either in some central point upon the basement or first floors, or, less usually, off the central hall on each floor or staircase landing.

The other possible simplification can only be in the space required for cooking purposes. In the two-room suite, it is of course necessary to combine the kitchen with the dining space, leaving the same room to be used also as living room, or the living and sleeping rooms may be combined, according to the individual preferences of the occupants. In the planning, it is possible to so arrange matters that the tenants can use the apartment in either way they prefer.

The three-room apartment can also be so planned that the tenants can use the kitchen either as a kitchen and living and dining room—when a larger area should be set aside for these combined purposes—or for cooking only, a second room being intended for living and dining, leaving only one room available for bedroom.

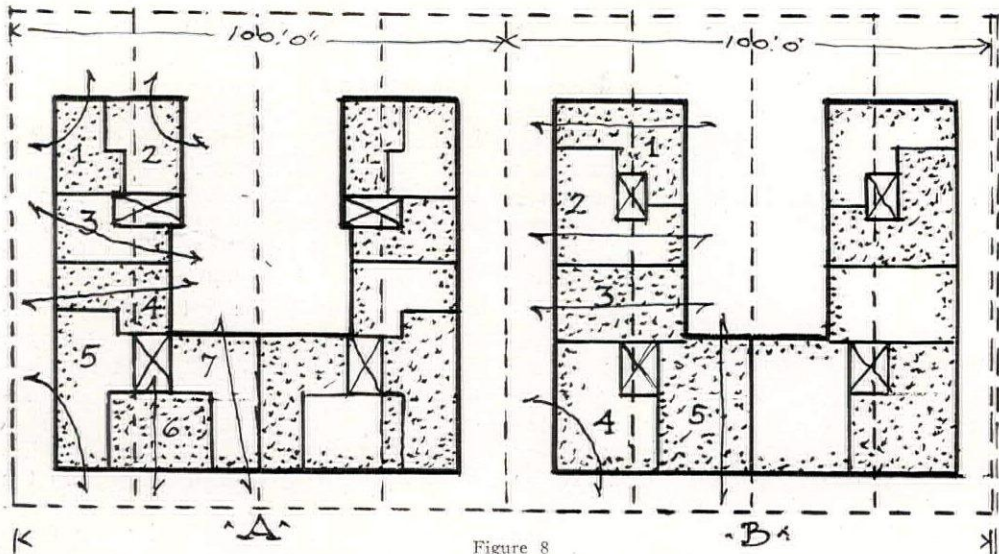


Figure 8

Key Plans Illustrating "Cross Ventilation" of Apartments of the Typical U-shape "Open Court" Plan

Of course, this does not preclude using the living room at night for sleeping, by furnishing it with a cot bed, but it is generally considered as preferable to inculcate habits of living in a room separate from that used for sleeping, so that social considerations generally point toward the larger kitchen as preferable for both cooking and eating purposes in low rental structures. This also means that entrance from the hall to the apartment must be made through this room, and consequently it becomes more difficult to keep the halls and stairways free from the smells and odors of cooking. This is one argument, and a fairly logical one, for the "Open Stair" type of plan.

With the four-room suite the same considerations have still to be borne in mind. In the plan shown last month, of course, the Pullman dining alcove was a new way of separating the floor space, without incurring large waste area. In these days, when the kitchenette has come to be a generally accepted institution, and the Pullman nook or breakfast recess has shown a similar tendency, we may be inclined to wonder what influence both will have on the development of the apartment plan. It may be considerable, but it will be upon a different type of plan than the one that we are now specially considering,

and for the following reasons: First, the kitchenette is now limited, by law, in many cities, and the average minimum of area is between 45 and 50 square feet, generally with a minimum width of six feet, making an average workable size of perhaps six by eight feet. The breakfast nook is limited only by its practical considerations. With a table 30 inches wide the alcove should be about 5 ft. 6 in. The length is a more variable figure, but for four persons it should be at least 6 ft., making a total area of 33 ft. Added to the area of the kitchenette this makes a total of only 80 ft.; but, with so small a kitchen, it will be found difficult to use one side to open out on this table space, so that, actually, the two will have to total very nearly 100 ft. of area. This is practically the size of a full room—a medium size kitchen, in fact—and as the two spaces separately could not be utilized for any other purpose because of their size, if combined without fixed table and benches (additional finish expense in constructing the building, too, by the way) the area is better available for more mixed and convenient use by the tenant at his own discretion.

There is another factor that should be mentioned; the most economical floor arrangement is secured by the elimination

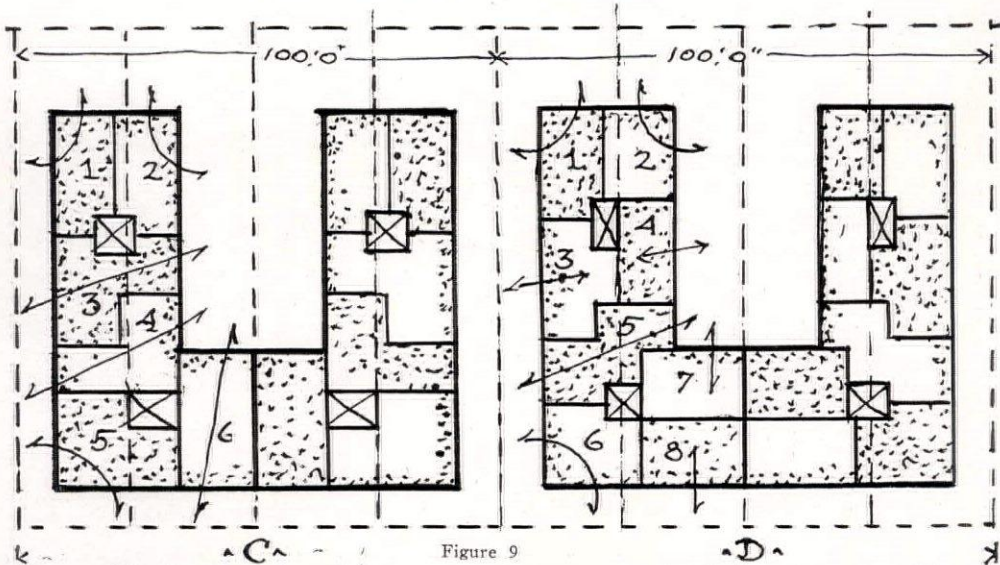


Figure 9
Key Plans Illustrating "Cross Ventilation" of Apartments of the Typical U-shape "Open Court" Plan

of long public corridors, substituting the preferable use of more staircases, and the keeping of these staircases, their accompanying landings and public halls down to the minimum areas.

Of course, this saving can only be made when the building is of the "walk up" type, as the added cost of both installation and operation of a number of elevators would be impracticable in a building of any but great height or larger rental return, and would offset much of the saving of area effected by the elimination of hallways and corridors. Once the country's building laws are revised to recognize the value of fireproof construction for these types of buildings, this stand will have to be materially modified. It should be possible with fireproof construction to obtain a good percentage of return on valuable land from buildings of a greater height, with the use of automatic elevators, serving a larger number of small-unit apartments on each floor, possibly with short connecting corridors, and so we would move into an intermediate zone.

At present the law does not recognize any feasible economy from such a possible form of construction, however, as two means of egress are required from all suites, in any event, and therefore an important possible saving in both area

and construction costs is unavailable. Nowadays, when the matter of cost of construction by means of wood and other combustible materials is nearing every year the point where it will coincide with the cost of using fireproof materials and methods, this matter should be given some consideration,—as it must soon come to be an important factor.

Meanwhile, one important economy in planning is to be effected, by serving as large a number of apartments as is possible by means of a single entrance and stairway. This can only be done, however, by abandoning any attempt to incorporate full cross ventilation for every small apartment.

In figures 8 and 9, for instance, are shown some variations of the plan reproduced last month, in illustration of this point. Allowing that a right angular cross draft in apartments occupying external angles in the plan is acceptable. (A in Fig. 8) a total of fourteen apartments would be possible on a U-shaped plan, with four staircases, and only two apartments (No. 6) lacking in cross draft. Even here it could be obtained by making the staircase of the "open" type—a consideration we will take up separately a little later. Plan B, in the same figure, shows how somewhat larger apartments could be obtained in the same floor area,

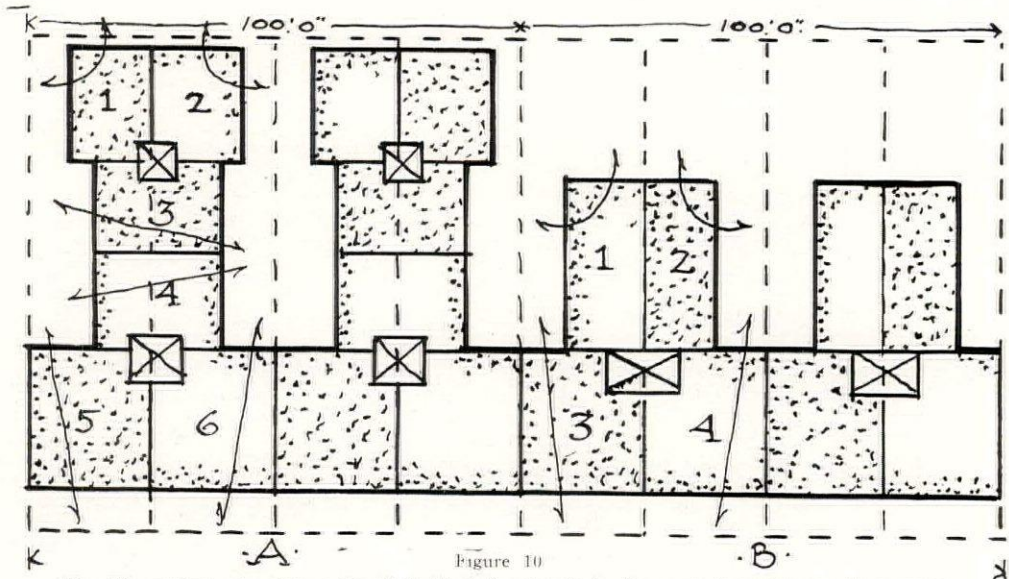


Figure 10
Key Plans Illustrating "Cross Ventilation" of Apartments in Narrower Type Plans, with Rear Ells

with ten suites to the floor, all with direct cross draft.

In Fig. 9 are shown two other key plans of similar shape and size. Here at C we find cross draft obtainable in every apartment, with twelve apartments to the floor arrangement; while in D it is shown how, in increasing the total of apartments on the floor to sixteen, eight fail to obtain the desirable cross draft. Only four staircases are used in all these plans.

Fig. 10 is included to illustrate the obvious advantages of the floor plan of the U shape, when four twenty-five foot city lots are obtainable in one group. In plan A are shown four lots with cross draft, and twelve apartments on each floor grouped in a different way around four staircases. The number per floor could easily be increased to fourteen by adding a small two-room suite in the center of the front (No. 6, Plan A, Fig. 8), but this added apartment would be lacking in cross draft.

At B in Fig. 10, is shown a grouping of eight apartments around two staircases, all with cross draft and this arrangement would be available upon four lots of the same twenty-five foot frontage, but shallower.

In all these examples the usual inside

staircase has been assumed and therefore it would not be possible to increase the pliability of the plan by obtaining cross draft through staircase or hallway. If that would be possible or allowable, it can be seen that these plans would at once become both more comfortable to live in during warm weather, and more economical to construct, as a greater number of apartments could then be obtained, all opening from the same staircase, without sacrificing the needed element of cross draft.

It will be noticed that the apartments shown last month, intended for rental at a low figure, employed many of the peculiarities of the low-rental type, including the omission of a separate back stairs for service, the reason obviously being that in these small apartments there is no use of help. This has nevertheless existed as an element to complicate the plan of many of the apartment buildings shown in the previous series of articles.

In this particular, and in other generalities of the plan, it will be found somewhat similar in form to the "Open Stair" apartments, that have also been developed in New York City and still remain among the best solutions of the problem. The essential peculiarity of

these plans is founded upon the fact that the wall partly surrounding the staircase is utilized for window openings, just as on any other outside wall surface, and thus especially becomes available for the ventilation of plumbing compartments that would otherwise be classed as inside compartments. This arrangement there-

cently "open" to be accepted for purposes of ventilation, is not actually exposed, because of an arrangement of glass louvers that protect the open side of the staircase shaft, and at the same time ensure ample ventilation. It should also be recalled that this arrangement of the staircase, partially outside of the build-

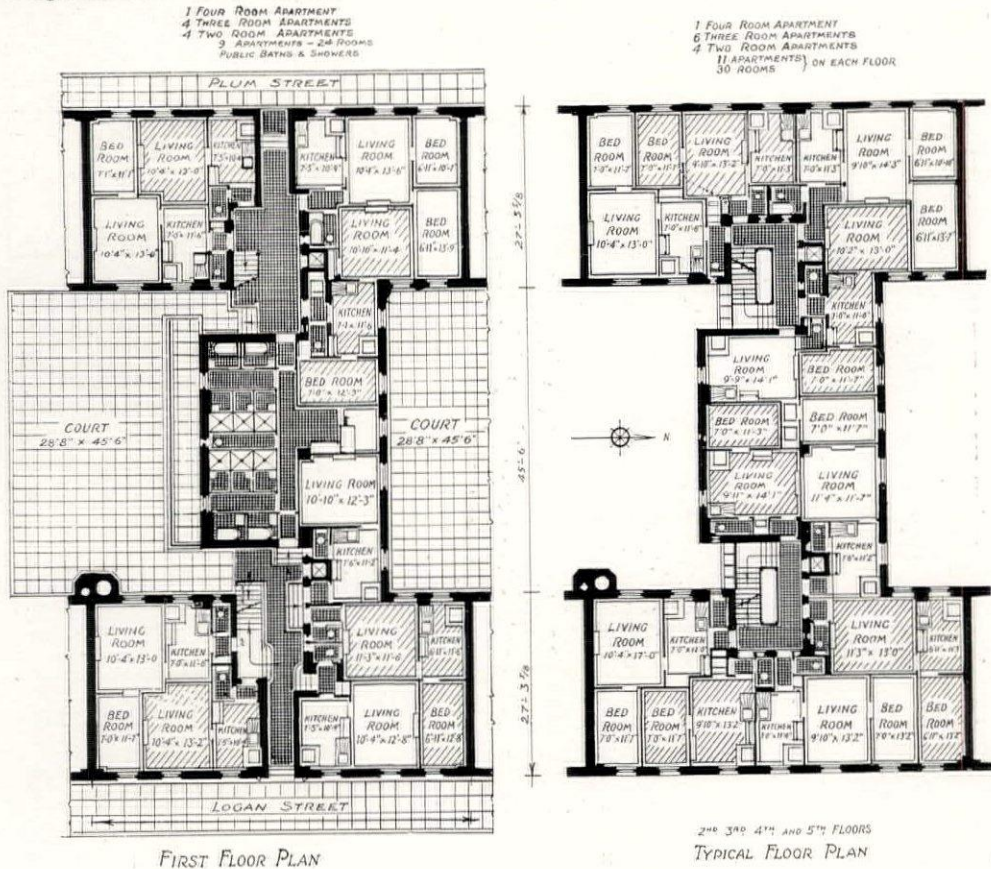


Figure 11
 MODEL FIREPROOF "OPEN STAIR" TENEMENT AT CINCINNATI, OHIO
 William Emerson, Architect

Reprinted from *The American Architect*—2/14/17

fore permits the actual wall frontages of the structure to be given over entirely to rooms other than baths, thus making these rooms used for living purposes more desirable, while a certain condensation of the plan otherwise becomes possible.

The "Open stairs" element is, it is true, considered an objection by some, who claim that it is uncomfortably cold in a northern climate. It is to be noted, however, that this staircase, while suffi-

ing but in an internal angle of the plan, where it is much protected, is nowhere near so exposed as is the case with the outside staircase so generally used for service purposes, for instance, in many Chicago apartments.

Therefore, at the most, if it is found to be actually any great inconvenience in New York City this criticism would certainly not apply to many other locations; let us say, for instance, Philadelphia and

Baltimore, and is even now evidently considered as no great disadvantage in Chicago.

In amplification of this statement, it should further be noted that the accompanying plan for a low rental apartment building in Cincinnati (Fig. 11) where, on a lot practically half the area of the typical land plot shown as a model for New York building conditions (Fig. 13), this same idea for the stair-

the staircase to be used as an outside ventilation and lighting wall for bathrooms and toilets, as well as occasional living rooms.

In this plan of a housing dwelling in Cincinnati, the lot is about fifty-seven feet wide, so that it would require seven of the ordinary twenty-five foot New York City lots to carry three of these unit structures (Fig. 12) in comparison to the eight New York lots necessary

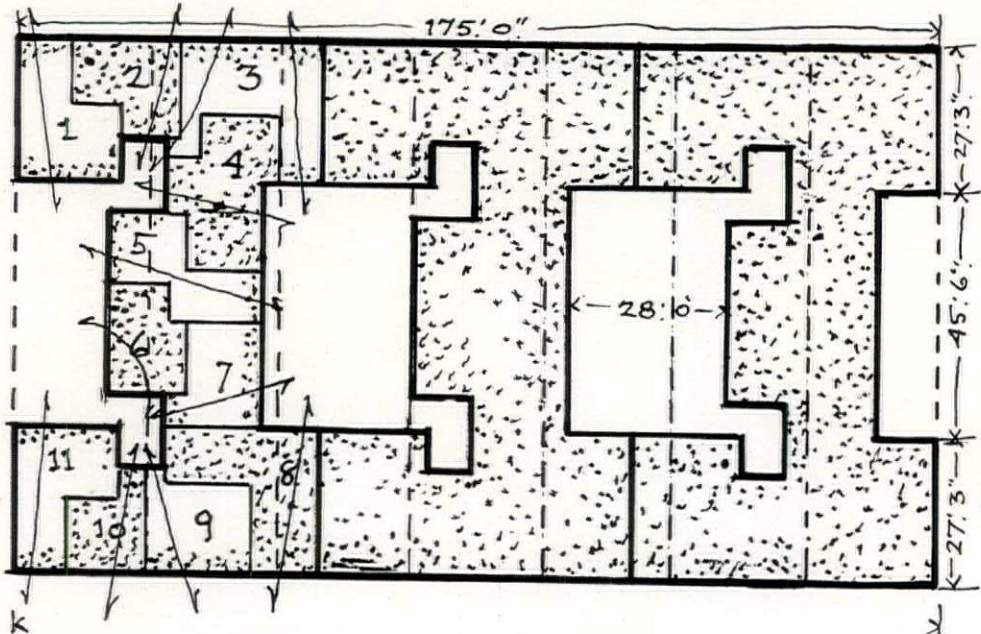


Figure 12
Key Arrangement of Series of Buildings of Plan Shown in Figure 11, Illustrating
"Cross Ventilation" of Apartments

case has been utilized to provide not only ventilation for the plumbing on the various living floors, but for the necessary cross draft in many of the apartments besides. The latter use became necessary because of the fact that these staircases have been used to reach as many as five apartments on each floor, whereas they can otherwise serve no more than two, or at the most three. In place of this total of two or three apartments reached by one staircase, we will find in Fig. 11, how five, and even six apartments can be so served, and without sacrificing the element of cross draft, provided only that the law permits the wall surrounding

for two of the larger U shaped plans such as were used by the Metropolitan Life Insurance Company.

This Cincinnati plan occupied about 78 per cent of the lot (the staircases being for this purpose figured as part of the building area, and only the full courtyard size being deducted from the 5,700 square feet of land required by each unit).

Bathing facilities for the tenants are provided in this structure upon the first floor, and the smaller suites are provided generally with toilets, or toilets and showers, as already has been discussed.

The typical "Open stair" tenement type,

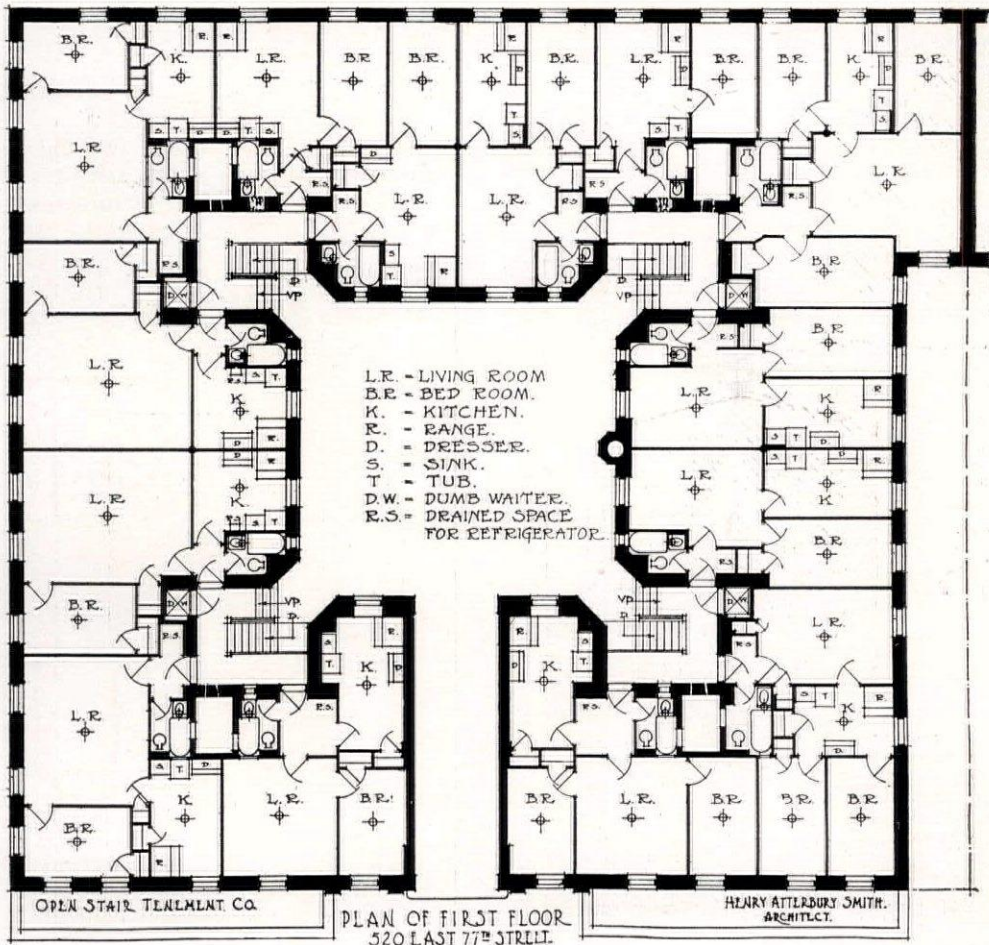


Figure 13
 Typical Floor Plan of "Open Stair" Tenement Type
 520 EAST SEVENTH STREET, NEW YORK CITY
 Henry Atterbury Smith, Architect

Reprinted from *The American Architect*—2/14/17

as it has been developed to fit the conditions obtaining in New York City, is shown in the floor plan reproduced in Fig. 13, including a total of sixteen apartments on the upper floors, arranged around four staircases.

This bringing of open air and ventilation practically to the door of every separate tenement is a distinct health giving advantage that should be recognized by every one interested in this problem, while it has the further advantage of eliminating all interior halls and passageways, thus saving care and upkeep and making better use of the space actually contained within the walls of the building.

The greater use of the plan area made possible by the added wall length available for lighting and ventilation uses, obtained by making the walls around the staircases external walls, has made it possible to construct this building more permanently—using non-burning materials, instead of the wooden joists and studs of the Metropolitan buildings. The result makes for greater security of the occupants, a lower insurance rate, and a permanent lower maintenance charge for the upkeep of the building.

Several dwellings of the "Open Stair" type have been built in New York, some in 1909, others in 1912, and the latest

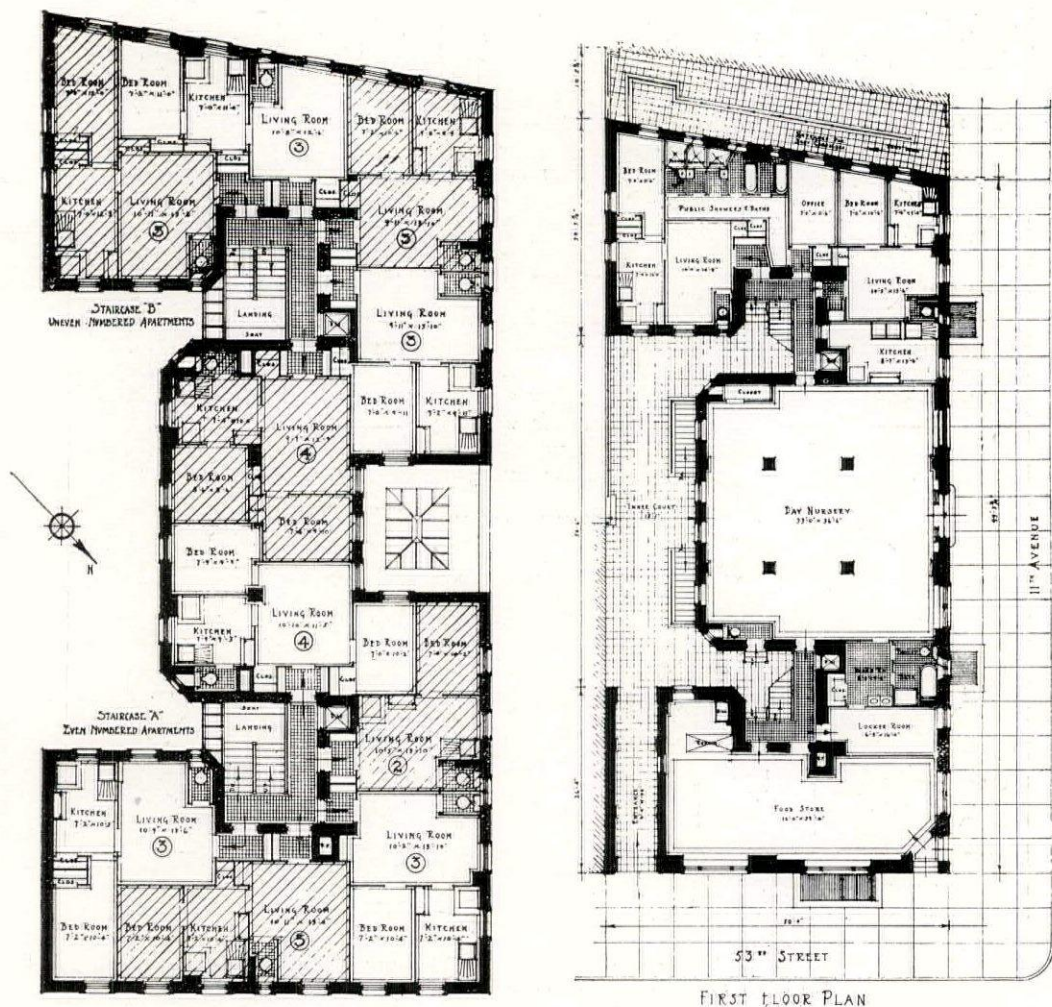


Figure 14
 Model "Open Stair" Fireproof Tenement
 746 ELEVENTH AVENUE, NEW YORK CITY
 William Emerson, Architect

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to be completed before the war, were built in 1917. The two large units built at that time house 216 families, and the total cost above the land was \$305,000. These buildings stand on land worth \$117,000, but occupy only one-third of its area, it being proposed to build later upon at least another third of the property, leaving possibly the last third for a playground between the two lines of buildings. Even in that case the cost of the land allotable to each building would be only \$29,250 and the actual cost to each

family of keeping the third of the property between the buildings free for a playground in perpetuity would be based on a proportionate purchase cost per family of less than \$100, which, placed upon the individual apartments as a rental carrying charge, would be so little that even the poorest family could well afford to pay their share.

The building above referred to was actually constructed in 1917, at the rate of 23½ cents per cubic foot. The identical plans for an apartment house to be built

on the adjoining site in 1921 were estimated in May of that year to cost 52 cents a cubic foot, and at the time of the Phelps Stokes Fund competition for a model tenement house plan, at the beginning of 1922, these plans were again estimated, and the figures came to 46 cents. The cost figures on the plans secured in this housing competition were estimated on the arbitrary price of 35 cents a cubic foot, an obviously too low figure, especially for many of the plans, which were in a number of instances arranged in an uneconomic manner.

The matter can be stated in a simpler if less exact way by saying that the apartments in the buildings above described cost \$1,400 per family without the land, and they were rented for \$8.24 a room per four-room apartment, \$9.32 a room per three-room apartment and \$11.48 a room per two-room apartment. (These were the rentals charged in 1920.) Obviously, if these prices were necessary to bring in a fair return on the investment, based on a building cost price of $23\frac{1}{2}$ cents a cubic foot, to which, of course, must also be added the increased costs of present day fuel and labor charges, they would nevertheless have to be nearly doubled at the present day, in order to bring in the same percentage of income on a cost price of 46 cents, the figure most recently received, estimating the land cost at the same price as was paid some years ago for the property that was then developed.

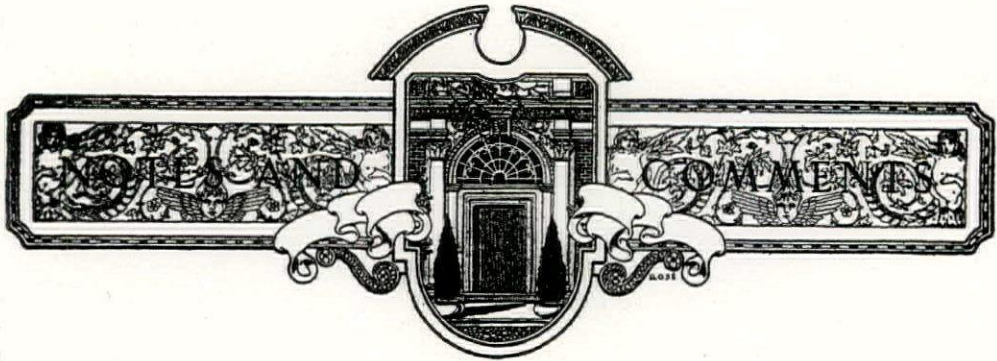
The prices named for rentals were the monthly charges per room, which, in round numbers, would be the practical equivalents of monthly rentals of \$35 for the four room, \$30 for the three room, and \$25 for the two room and bath apartments, certainly reasonable and low rentals for newly built and modernly arranged apartment buildings constructed in New York City.

It is hardly possible nor fair to attempt

exact comparisons of plans so diverse in arrangement. The greater compactness of the scheme shown in Figs. 11 and 12, with its smaller court, necessarily lacks the openness of the U-shape, "Open Courtyard" types of Figs. 8 and 9. The court is so small in area that all planting becomes an impossibility, and it has to be concreted, or otherwise surfaced. Yet this plan—and its companion, Fig. 14—are the logical results of placing an unusual emphasis upon the essential of permanence in construction, and freedom from danger of fire, that was accepted by designers and owners, as a first desideratum.

Aiming toward the utmost of compactness, therefore, the plan secures eleven apartments, or thirty rooms to the floor, arranged around two staircases, on a built-over area of about 4,400 square feet of a 5,700-foot lot, or about 78 per cent. The Metropolitan plan consists of eight apartments to the floor, disposed around four staircases, on an "Open Court" plan, with more outlook and air circulation, or thirty-two rooms besides baths and dining alcoves, on about 5,000 feet of a lot of 10,000 square feet area. It devotes a considerably larger proportion of floor area to baths on apartment floors.

The "Open Stair" plan covers about 7,500 feet of a lot of 11,000 feet area, with sixteen apartments to the floor, around four staircases, and a total of fifty-two rooms, exclusive of baths. These figures include the recesses containing the staircases as within the area covered by the structure itself. Attention should also be called to the possibility of cutting these "Open Stair" "enclosed courtyard" plans apart, leaving a larger "open court" available for planting down the center of the block between them, or otherwise adding the element of "openness" that is a principal point of criticism by those who favor covering a less proportion of the lot area with the building itself.



"THE COST OF REGISTRATION"

It is possible that no law was ever written on the statute books which did not involve some loss of liberty to someone. It would be a strange variation from the rule if registration laws for the architect were an exception.

In many states the laws require that an architect of known competency must file proof of his ability and pay a sum of money to have such proof recorded. His occupation in life may be interstate in its scope, so he has to file evidence in other states and pay more money. He finds that he is confronted with a "menagerie" in his path in interstate transfer and that it costs him another fee to obtain such transfer through the National Council of Architectural Registration Boards which serves as a "clearing house" for those engaged in the practice of architecture. **THE MAN WHO PRACTICES MEDICINE, LAW, PHARMACY and other professions involving human life and liberty HAS TO DO EXACTLY THE SAME THING** except that the architects have intelligently made the accomplishment easier by their central organization.

Every man proficient in his work is disturbed by the limitations placed by law. A small minority rebel and protest, feeling that the law should not apply to them. Granting that they are right as far as they are individually concerned, it does not in the least affect those persons who, lacking the knowledge of the qualifications of such an architect, were unfortunate in their selection of a person who called himself an architect and was not one at all. Then again, an architect in such a frame of mind (no matter what his professions may be in relation to the "raising of the standards of architectural practice") simply negatives all efforts to provide a minimum standard of education essential to competent practice. Such a man has many companions who are entirely in-

competent and yet would practice at the expense and peril of the public; men who are living in an atmosphere of conceit born of ignorance and who are destructive of every ideal in their desperate grasping for business. The theory may be advanced that the survival of the fittest is the true rule. This philosophy may be correct but the shocking suffering in the world in attempts to follow it have shaken the very soul of humanity. It also involves the point of view as to what is the fittest.

The majority who advocate registration laws may be impelled from selfish motives, that is, to shut the other fellow out. Whether he is so inspired or not, the fact remains that at a price of inconvenience perhaps as well as of finances, he demands that his competitor and those who follow must be prepared to enter the occupation of architect with certain qualifications fixed by law. It may be that he is not at all distressed by the possibility of accident leading to suffering or loss of life so long as his incompetence was not the cause, but his attitude actually leads to a reduction in competency in others. Such a man may be the one to cause the adoption of restrictive laws but he willingly pays the price for what he believes to be his own welfare.

There are other architects who pay the "cost" cheerfully and wholeheartedly. These men love mankind notwithstanding their faults. They love architecture as a living spirit placed in the hearts of men that man may live in the presence of and love the beautiful. That places of domicile, work and worship may be better than such places have ever been. They live not for themselves but for others. They pay the "cost" with gladness that the youth who enters the lists of life as an architect may at least have some knowledge of the architecture of the past and of the present. That he may know

how to use and understand language for the acquirement of this knowledge and that he may know enough of mathematics to comprehend the formulae in his studies of stresses. The architect who pays the cost, that all this may be, is happy in his willing sacrifice. Some of the statutes do not meet his good purpose but he labors to the end that some day they will. He looks for aid to all associated with him in his professional organization. He sometimes has to pay an added "cost" in disturbance of mind when his ideal is attacked because of some superficial reason, some passing inconvenience. He asks the aid of every publication to the end that every person who seeks to practice architecture may be known as one having had a liberal preliminary education and subsequently good technical training.

There are many, many such men in our occupation in life and their spirit is the breath of the life of architecture.

WILLIAM P. BANNISTER.

A NATIONAL MUSEUM OF THE FINE ARTS IN WASHINGTON

There is a project now on the march which will interest all American citizens who enjoy or practice any of the plastic arts. The proposal is to build in Washington a Museum of the Fine Arts which can with some reason be called national. At present Washington, although the capital of a country whose inhabitants year by year are showing an increasingly intelligent interest in the arts, does not possess any museum in which a national collection of paintings and sculpture and the allied arts can be housed. The Corcoran Art Gallery contains a collection of pictures which was not very good even at the time it was made and is wholly inadequate today. The Freer collection is unique and fully deserves the gravely and delicately beautiful building which has been erected as its residence and the support which it receives from Congress, but it is a severely limited affair which represents only the fastidious special taste of one man. It is time that the national capital contains a museum in which the government can accumulate and display a collection which can in the course of time become almost representative of every phase in the history of art as the National Gallery in London is of painting.

The federal government is already the owner of many objects of art which it cannot

at the present time either properly display or display at all. If it will build a museum which is large enough to house and exhibit a large and varied collection of fine art, it will unquestionably stimulate and beguile collectors all over the country to bequeath to the nation a certain part of their collections. American millionaires who are also art collectors would for the most part prefer to have their memory perpetuated by the display of their collections in the national capital than by their exhibition in their home towns. Once the museum is started, it could count on receiving a flood of bequests. Indeed, the danger is that these legacies would be too numerous and too miscellaneous. The management of the museum would need to be wholly independent of irrelevant political and social influence which might be exerted in favor of accepting and exhibiting works of art which did not deserve such authoritative endorsement and advertisement. It should also be furnished with a generous income which it could spend every year in increasing and improving the collection. The only sufficient excuse for having a National Museum of Fine Arts is that of providing a home for a collection which would be good enough to form the taste and enlarge the horizon of the millions of Americans from all over the country who would in the course of time visit the galleries.

The project has not as yet marched very far, but it has strong and appropriate backing and its prospects are promising. Its sponsors are the trustees of the Smithsonian Institute who are the custodians of those objects of art which the nation directly or indirectly owns but cannot display. They have already dedicated to the Museum a site on the Mall near the present National Museum which is satisfactory in its location and sufficiently spacious. They have selected as the architect Mr. Charles A. Platt, whose success in endowing the Freer museum with a rare combination of suavity, dignity and elegance entitled him to favorable consideration. After the plans are drawn they propose to ask Congress for an appropriation to construct the building, and they can surely put up a strong argument in favor of a grant of the money. Considering the high position which art occupies in the hierarchy of American cultural values, the lack of a National Museum of Fine Arts in Washington is a sheer anachronism. Sooner or later Congress will surely appropriate the money, and the readers of THE ARCHITECTURAL RECORD will when the time comes surely do what they can to make it sooner rather than later.

HERBERT CROLY.

THE FUTURE OF MANHATTAN

When evils become intolerable, they have a way of righting themselves. Thus congestion of population and of traffic on Manhattan Island are proving to be blessings in disguise.

The greatest obstacle to urban amenity in America a decade ago was each citizen's constitutional right, as Horace McFarland once phrased it, to be a hog three hundred and sixty-five days in the year. It had been believed that the fourth amendment would prevent any such exercise of centralized power as would be necessary to bring about order and harmony. Then the crowding of clothing factories into lower Fifth Avenue, packing the sidewalks at noon, proved to be the last straw. A zoning law, restricting the use, as well as the height, of buildings in various districts could at last be passed in New York; and, once passed, could be upheld by the courts as an exercise of the police power, for the protection of public safety and health. Other states where conditions were not yet so bad, and could never have instigated these invasions of American "freedom," could follow suit. Now, when various beneficent effects can be observed, a hundred new applications and extensions are in progress.

With protection from the invasion of factories and business, has come the possibility of reclaiming whole districts once blighted or threatened with blight. It has permitted the development of Park Avenue, itself made possible by electrification of the railroad; it has presided over the renaissance of Greenwich and Chelsea, and the brilliant reclamation proceeding eastward from the Park to the River. These things are cumulative. Instructed by the enormous economic gains in Park Avenue, the property owners of Sixth Avenue are about to pay for replacing their elevated road by a subway. Who can doubt that the upper Third Avenue elevated will ultimately follow it? The ineradicable belief of the commuter that the elevateds are slower dooms the others, soon or late.

With each new river bridge or tunnel comes a new exodus of the poorer dwellers on Manhattan. While we have been admiring model tenements abroad we have ourselves been making an equal contribution to the housing problem by American rapid transit. Only the poorest now cannot afford the daily dime. With ground rents still rising they may soon be pushed off the island. And when the urban factories once realize that it will be cheaper to move out after them than to raise their wages, then decentralization may

begin to become an accomplished fact.

Traffic conditions seem about to bestow various other civic boons. The greater speed of cars where there are no cross streets is suggesting two great marginal ways, elevated along the docks. New York will have its quais and see its rivers yet.

One sees how little it may take to guide the operation of material and economic forces so that they may work for good and not for evil. It is a realization by its leaders of this opportunity which makes the greatest asset of the Sage Foundation organization for the Plan of New York. It is not vain to hope that in our lifetime we may see Manhattan purge itself of sordidness and squalor, and be glorified as a citadel of the metropolis, retaining only what is strongest and best.

FISKE KIMBALL

**"EIGHT CHAPTERS ON ENGLISH
MIEVEAL ART," BY
PROFESSOR PRIOR**

The majority of architectural books are necessarily of a strictly technical order, with the inevitable result that physical characteristics are described, classified, and analyzed, to the practical exclusion of all consideration of those human circumstances which are in actuality the genesis of stylistic evolution. It must be admitted in extenuation, that the latter form of research appertains more to the science of artistic history than to the statement of artistic fact. Both branches of study are of equal importance to those who aim to cultivate an intelligent appreciation of historic style; in Professor Prior's "Eight Chapters on English Mediaeval Art" we welcome an erudite work in the less frequented field. These Chapters are in substance the Carpenter Lectures as they were given to University College, London, and recast for Cambridge. The purpose of the Lectures is best conveyed in the author's own words: "They aim at being a general review of the Church Building Arts of England. Art-craftsmanship, in its power of recording social and economic history, is unfamiliar to our practice of art which knows only its taste and design. This book ventures to stress the facts which bear on the economy of architecture and are necessary for the understanding of mediaeval records." We are made to comprehend the enormous indebtedness of the arts of the Middle Ages to the great monastic orders of Benedictines and Cistercians, each of which built, not for the people, but for the glory of the order and for the realization of their respective structural ideals. In the personnel of the monastic unit, craftsmen were allotted important and responsible positions.

The Abbot was in many instances a practical builder, personally interested in maintaining ateliers operated with a highly efficient organization with which to carry out his ambitious structural schemes; this condition prevailed throughout the eleventh and twelfth centuries. The author has that unconscious gift of conveying the impression with a simple statement that a great fund of valuable and rare information is but lightly touched. This is the case with his remarks concerning the complete effect of the earlier Benedictine churches. Those broad stretches of rubble concrete or roughly hammered stone which now constitute the structural remains, were originally faced with a thin coat of plaster, upon which the painters of the monastery traced figures of saints and ornamentations after the manner of those with which they illuminated the manuscripts. The interior was a magnificent profusion of polychromy, and as stylistic expression matured, those decorations which were derived from the manuscripts formed the basis for sculptural treatment. The reconstitution of this important phase of artistic evolution could become a subject of the greatest historical interest in the hands of one as well equipped as Professor Prior. He gives us a general idea of the mutual influence of the English and French schools of Gothic architecture. On the subject of masoncraft there is much of interest imparted. Technique is classified into that of the North, West, and East; the identification of treatment with various structural materials is touched upon. The changes which occurred in the fourteenth century as a result of the secular influence are accounted for, and exemplified with the prominence of the heraldic motif. "The circumstances of the fourteenth century engineered this curious relaxation of the religious bond of art. Following the lead of the king at Westminster, great families appropriated projects of church-building. The Augustinian houses were especially annexed, so much that their religious establishments were all of a piece with the baronial. It was indeed a church militant in the fourteenth century—one of warrior bishops, and abbots who had knights in fee. Monasteries were maintained as fashionable retreats, and their guest-houses were counted as the clubs where met a gay society of knights and ladies." When we consider the numerous artist-craftsmen whose work is unsurpassed in aesthetic quality and nobility of conception, who remain anonymous, we cannot but marvel at a social condition which, without destroying initiative, deprived artistic achievement of its human identity. Matthew Paris writes that up to the end of the XIII century all the glory attending the

beauty of a structure was appropriated by the Abbot, to the exclusion of all the actual executants. As one of the foremost English authorities upon Gothic sculpture, Professor Prior does not disappoint our expectations when dealing with sculptural technique, and the various influences which affected the mode of human representation. One of the many interesting points which are made by the author is the disastrous effect of the Black Death upon architecture during the twenty years in which it raged, reducing the population by half, and almost destroying a generation of craftsmen, and their traditions with them. This admirable study is published by the Cambridge University Press, London.

LEON V. SOLON.

THE REVIVAL OF MOSAIC

Mosaic work suffered more from the degeneration of taste in the late Nineteenth Century than any other art. As a result, it is so completely associated in the modern mind with pseudo-Pompeian floors of horrible design that it is difficult for us to appreciate the really great decorative possibilities of the medium for modern buildings. Yet mosaic is not only a very real decorative possibility for the type of public buildings that are being erected today. It is even, from one point of view, the most appropriate decoration.

For these buildings are being made largely, or even in many cases, wholly of concrete. Even the "stone" blocks that are being used to face many of the less expensive structures are actually of a cement character. A cement-like material is the determining factor of modern public architecture, just as basically as wood was the determining material of the Greek building forms, brick of the Roman, and stone vaulting of the mediaeval. Whatever style there is to modern building, or whatever style it may develop, must grow out of the character of its steel and cement construction.

Now any kind of painted decoration, interior or exterior, is utterly irrelevant to the quality of concrete, except possibly that painting in colored cements which is still in its infancy. Similarly, an imitation of carving based on a resemblance to stone is really inappropriate, and is, in the bargain, reprehensible and unsound, as every imitation is reprehensible and unsound. Thus these two established forms of applied architectural ornament are strictly limited in usefulness in the best practice.

Mosaic, on the contrary, is just as perfectly adapted as painting and carving are ill fitted



Courtesy Ravenna Mosaik

An exact copy of the Christ before Pilate from the Santa Apollinare

to most modern building. For the basis of mosaic is cement. The pattern is made by setting small blocks of colored material in some kind of wet cement. With the drying of the cement the cubes or stones are knit into the actual material so completely that they are part of the very structure of the wall.

Most modern mosaic has been decoratively inferior, not only because of the mediocrity or actual ugliness of the designs, but also because of the defects of workmanship. In the first place, the original material available for mosaic has been poor in quality. Colors have been impure and uncertain and shades have been thoroughly unreliable, so that a design after a few years' exposure to the light is badly faded over whole areas, a change which of course disturbs the whole color balance of the decoration. Moreover, many of the manufacturers have made the common mistake of producing too many closely graded tones of each color, so that instead of the clean contrasts and simplified color relations necessary to a broad and carrying effect, the design was broken up and blurred by a multiplicity of shades and color transitions.

Even more serious than these defects of material, however, have been the defects of workmanship. The workmen erred by too rigid a standard of perfection. Mosaic suffered with most of the other decorative arts from the mechanical fallacy. The stones were cut, by machine, four square, and absolutely even in size. When set, the design was rolled with a heavy roller into absolute flatness. No block was left askew. No edge might tilt. The result was an utterly inert and savourless surface.

These defects of material and workmanship were most instructively betrayed in the repairs made of necessity from time to time in the ancient mosaics of Ravenna and Rome. The weak, flat colors, the uneven fading, and the machine deadness of the repairs made them start from the old panels like diseased spots. It was essential to solve the secrets of the old craftsmen in order to preserve their masterpieces. Within the last few years they have been solved, so that at last repairs have been made that are really adequate to the original.

To make these, successful "stones" had to be manufactured, stones that would be pure and vibrant as well as permanent in color

These stones are made of a semi-translucent glass, a coarser form of the pot metal of the mediaeval windows. This means, of course, that the color is made in it. For the golds which are so important an element of the subdued richness of the old Roman work, some shade of white glass is backed with a thin layer of metal foil. The color of the glass through which the metal gleams determines the shade of the gold which can range from a light greenish tone, almost silvery, to the warm orange yellow of pure gold.

This glass is rolled in small sheets about an eighth of an inch thick. It is then cut into strips about a quarter of an inch wide. The artisan laying the design then chips off his squares as he needs them with a dull tool so that the glass breaks according to its grain in slightly irregular pieces.

The stones are not set directly in the wall, which would be awkward, slow and correspondingly expensive, but on a paper cartoon. The design is drawn in complete detail in full size on a heavy manilla paper. The main color areas are indicated, but the details of shading are left, as the detail work in any craft should be, to the worker, who brings to bear, of course, both technical training and experience. Very little work is done in one pure shade. This would make the area monotonous and destroy the flexible scintillation which is the chief asset of the medium. Instead, for a terra cotta robe, for instance, three or four shades are mixed in a box, and the pieces used almost at random as they come to hand, the workman always watching the effect in case accident need be guided by art.

The little pieces are laid and glued face down on the paper. As a matter of fact, there is no front or back in any color except the metals, where the side covered with foil must be left uppermost. They are put very close together, but not absolutely touching. The whole design can be finished in this way, and shipped intact to the place of installation.

In the building where it is to be placed, the wall area to be decorated is covered with wet cement, and while this is still soft the piece of paper with its glued cubes is laid face to the wall and pressed in evenly and firmly into the cement until the paper is flush with the surface of the wall, until, that is, the cubes of glass are completely embedded. It is not, however, rolled. As a result, when it is set and the paper washed off, the mosaic presents a face of slightly tilting surfaces which is very much alive and catches the light at varying angles,



A modern Madonna in Mosaic after a cartoon by Pechstein

creating a glowing and moving area of color.

The main factory for this work is in Germany, though there are now associated companies in other countries including the United States. Much of this work was originally devoted to copying the ancient Roman panels for the repair of which they had first solved the important technical problems. These copies are so successful they have even been bought by museums, since original mosaics of equal artistic value are unobtainable. More recently these factories have expanded their program to include the rendition of cartoons by modernist decorators. Many of these are very interesting, the more so as they are getting away from the traditional religious subjects which have such a limited utility and interpreting contemporary themes in an appropriate style. A charming panel, for instance, shows a very dressy equestrian directing the groom who brings his horse, the whole highly conventionalized.

Sweden has been the first country to have the courage to adopt this mosaic for the

decoration of an important public building. The recently completed City Hall of Stockholm is having a Golden Hall entirely decorated in mosaic interpretations of northern legends in a very modernistic rendition of the Scandinavian style of illustration. The style of this particular use of the medium is much too advanced for the conservative American public, but the medium is not, of course, restricted to any such extreme designs, and so it stands ready to the hand of any architect who has the independence to experiment with the logical form of decoration for buildings of cement construction.

PHYLLIS ACKERMAN.

DATA CONCERNING WREN'S PROFESSIONAL ROUTINE

Those who are professionally interested in the history of any art, experience a constant hunger for personal items concerning the individual peculiarities of temperament and professional routine of its most famous exponents. It is almost equivalent to that form of curiosity which is so active a phase of the "community spirit" in the small township, which causes the watchful eye and alert ear to be directed to the unheralded doings of the fellow resident. In W. Douglas Carøe's excellently compiled and entertaining book on "Tom Tower, Christ Church, Oxford," the architect will find all manner of interesting data upon the procedure of contracting and building in Wren's time, and a good impression of the mutual relations that existed between a successful architect and an influential client. There is so much vagueness upon the latter point, as far as the historic periods are concerned, and so much inherent professional curiosity upon the subject, that such a work must necessarily interest the majority of architects. The author publishes seven letters written by Wren to John Fell, Bishop of Oxford, concerning the building of the tower in the "Gothick" manner. The letters were discovered in the College Treasury, and are printed for the first time. The book also contains a copy of the contract, an estimate of quantities and values, and the receipt for payment for the casting of the great bell. The first letter contains Wren's protest to the Bishop at the manner in which the latter is having the foundations prepared. In the second, he gives his argument for proceeding after a different method, as based upon his experience in mak-

ing additions to ancient buildings. The third explains the various ways in which the contract may be let. The fourth makes another protest against the employment of local workmen whom he considers unfitted for the work in hand. In his next letter Wren appears to have gained his points and his tone becomes more cordial; a new contract is sent, and the Treasurer is warned not to make payments ahead of measurements. The equipment of the Tower is next discussed by the architect in his capacity of professional astronomer. The last letter treats of the vane and ball, and a bronze figure of the king. Rare information is given concerning the sculptor-craftsman-architect Caius Gabriel Cibber, who was recommended for the figure, and also as to the cost of sculpture at that time. There is one particularly interesting item of information which accounts for the existence of so many finely detailed engravings of buildings erected in the eighteenth century. It appears that these served the same practical purpose as the modern blue-print in construction. Wren paid the sum of £232 "For engraving Prospects of ye Fabrick" (St. Paul's), and £10 for two views of the Sheldonian: those for Tom Tower were estimated at £6. The book is well printed and illustrated. It is published by the Oxford University Press.

LEON V. SOLON.

In order to encourage the movement away from the city into the country, and at the same time to promote good country house architecture *Country Life* offers a prize of \$500 for the best design for a country house for a family of moderate means. The competition, which will close October 1, 1924, is open to any architect, draughtsman, student or layman. The judges of the competition are to be Mr. Alexander B. Trowbridge, Architectural Adviser; Mr. John Russell Pope, Architect, and The Editor of *Country Life*. In addition to the prize award there will be three honorable mentions conferred. The sketches for these with the prize winner will be rendered in color by a well-known artist and will be reproduced in full color in a future issue of *Country Life*. The magazine also reserves the right to reproduce any other of the designs in its pages that may be found meritorious by the judges. Details of the competition may be obtained from the office of *Country Life*, Garden City, New York.