



THROUGH THE AGES

OCTOBER, 1925

"There are two duties respecting national architecture . . . the first, to render the architecture of the day, historical; and, the second, to preserve, as the most precious of inheritances, that of past ages."

—*Lamp of Power*: RUSKIN



THROUGH THE AGES



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NO. 6

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"Like some tall palm, the noiseless fabric sprung"

—BISHOP HEBER

The main banking room of the Guardian Savings and Trust Company of Cleveland, Ohio. Walker and Weeks were the architects. Marble from Georgia was freely used in this stately interior.

THROUGH THE AGES

A Monthly Magazine devoted to
the uses of Marble - its universal
adaptability, beauty, permanency
and economy.

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PLANNING BANK INTERIORS

The Reaction of the Public to Beauty Must Be Considered
by Both Banker and Architect

THE problems that arise in connection with bank designing are being solved very happily in this country. It is not the purpose of this article to enter into a general discussion of these problems—such problems as, for instance, the proper height of the room, the relative disposition of the public and working spaces, the lighting, and the larger questions of its shape and style. Current technical literature treats of these things constantly and the architect will find all of these subjects amply discussed in the journals that reach his desk.

It is rather our purpose to touch upon a phase of bank planning which, while not entirely overlooked, yet receives all too frequently a scanty mention not fairly in keeping with its obvious importance. The special phase to which we refer is the study of the reaction of the public to beauty in a building—a reaction that must be considered by the banker as well as the architect. The psychology of the bank patron is not an indefinite, nebulous, complex theory, a something to be talked about in words of five syllables. It is, rather, a very well understood mental process which should be taken

into consideration if the structure is to fulfill its highest destiny.

Harking back some quarter century ago, one remembers the dark and rather dingy banking rooms of our older cities in the east, particularly those of Philadelphia, New York, Baltimore and Boston. The general public had almost a feeling of depression when transacting business with one of these institutions. The officers were inaccessible and the provisions made for bank workers were sadly inadequate. The general air of mustiness and aloofness tended to repel the customer and certainly raised in his breast no feeling of personal satisfaction in his dealings with the bank.

Today all this is changed. Bankers are beginning to realize the value of a building that impresses the public mind with a sense of beauty and dignity. It is fairly obvious that such an impression is intimately associated with stability; it is equally obvious that the average person is filled with pride in having personal relations with such an institution.

Enough money is usually spent on the quarters of a modern bank to insure results



First National Bank, Tulsa, Oklahoma. Weary and Alford Co., architects.
A splendid example of an all-Tavernelle treatment.

that are not commonplace. The question that arises, then, is one of material and design. Mr. F. A. Fairbrother recently, in *The Architectural Forum*, answered this question as follows: "For the walls of a banking room of any pretensions, which implies a reasonable floor area and height, it is natural to consider first marble or stone because of their appearance of strength and the pleasing textures which may be obtained by their use. If care is exercised in the selection of the marble, and if too much elaborate veining is not allowed to confuse the surface and destroy its dignity, it seems that no better material can be found. It is durable without a doubt, its color can be so selected that the surfaces are not tiresome to look at, and it can be kept clean without great difficulty. A fine hone finish will lessen the shine and glints of light which are present where the surface is polished and

will give a soft, even wall surface which is pleasing to the eye.

"Where marbles of rich veining and pronounced color are used they should be placed with care and their use made to count strongly in the design. In the banking room of the New York Trust Company on Broadway the richly veined columns of reddish-purple with bronze capitals contrast strongly with the simpler colored marble on the walls. A highly veined and colored marble on the walls would have impaired the appearance of the room.

* * * * *

"The counter screen is the portion of the banking establishment with which the public comes in closest contact, and is probably examined with a more critical eye than any other portion. Because its position is near the eye, and also because of the time one is often compelled to spend in line at a teller's

wicket, the screen attracts close attention. For this reason it should be of material and workmanship which will bear close inspection. Examples of all possible arrangements of counter screens may be seen in the banks of almost any city. If we examine them all we shall doubtless find that bronze is generally used for the upper parts of the screens with marble in the lower parts. Next in number we shall probably find counter screens with marble below the counter line and marble pilasters and cornices above, with small metal frames or mouldings to hold the glass. We shall also find a few examples of iron used for the upper parts, and some where wood is used for the whole screen. There is not much question but that marble is the most suitable material for the portions of the screen below the level of the counter; neither is there much doubt that bronze is the best material for the upper portions of the screen.

"It is important that the floors of the banking room be well considered in selecting the materials of which they are to be made. Not only are the surfaces subject to severe wear, but in the public portions they may have to bear the added test of being frequently tracked over with muddy footsteps and spotted with water from dripping umbrellas. In the private or working portions of the bank the surface must also, in addition to the normal walking about of employees, stand the wear incident to the trundling around of book or file busses.

"For the public portions of the banking room it is fitting that the floor be made part of the design of the room. The material, of course, does not need to be especially suited to foot comfort or quietness. For purposes of design as well as for wear, marble or stone is most desirable. Marble can be found in suitable colors and tones to secure almost any desired result. For general

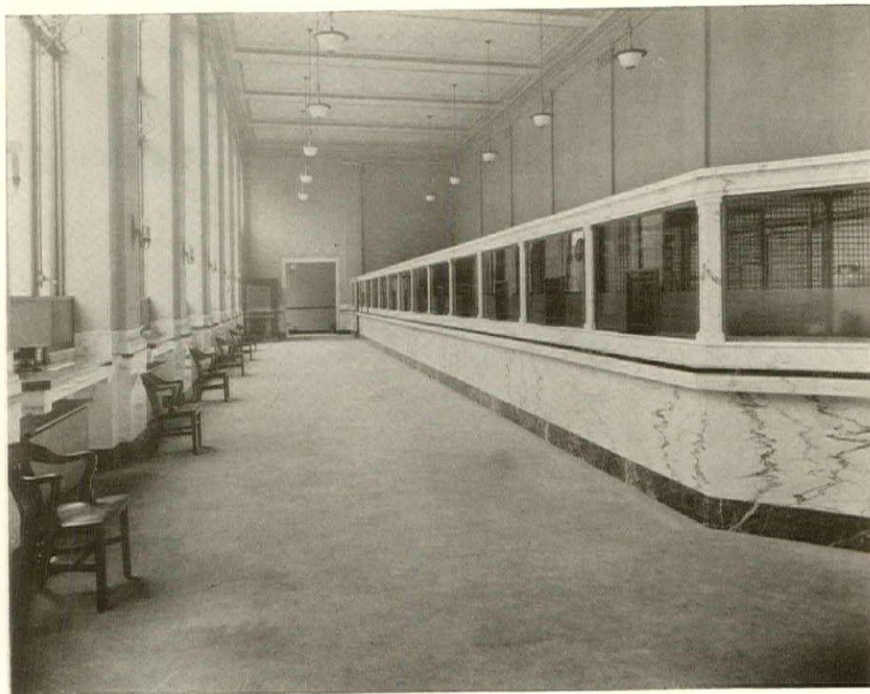


National City Bank, New York City. McKim, Meade & White, architects.
The marbles used were Botticino, Travertine and Tennessee.



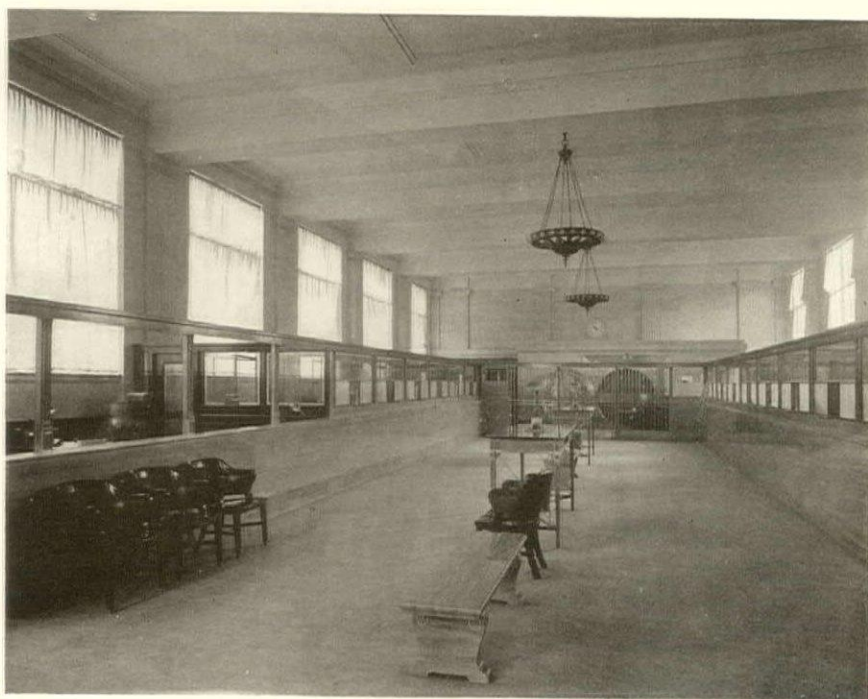
The interior of the Broadway Trust and Savings Bank, in Chicago. The Breche Violette and Black and Gold marbles in the counters and piers are toned down by the Tennessee floor. The marble around the doors is an effective touch.

In the Cleveland Trust Branch Bank, Cleveland, this combination of Madre-Veined Alabama and Verde Antique proved very attractive. A. G. Hall was the architect.





The use of Verde Antique marble in such quantities as this for screen and pilasters is most unusual. Hoggson Brothers, the architects of the Institution of Savings, Springfield, Massachusetts, have achieved a notable success in this interior.



Holmes and Winslow, the architects of the Homestead Bank, Brooklyn, New York, used Napoleon Gray marble exclusively for this quiet treatment.



The National Bank of Commerce, Providence, R.I. Stone, Carpenter & Sheldon, architects. Vermont marbles—Verdosa, Brocadillo, Marine Brocadillo and White Rutland inlays—were specified here.



The Federal Reserve Bank of Atlanta, Ga. A. Ten Eyck Brown, architect. Alabama marble was used for columns, screen, balustrades, wall and floor.



Not all banks need be as ornate as the American Bond and Mortgage Co. of New York. Hauteville, Black and Gold, and Pink and Gray Tennessee were used. C. Howard Crane, architect.

wearing qualities, the best is probably the hard, gray varieties with very little veining. The gray Tennessee is very largely used, and in color and tone gives a desirable surface, lending itself well to combinations with other marbles. The gray is somewhat easier to keep clean than white, and is more restful to the eye. Marble of other colors is often used in forming borders and patterns. The problem in such cases is to find marbles having the imperfections which we call veinings of the proper colors and tone, and at the same time of sufficient hardness to wear evenly with the fields. Some of the heavily veined marbles are rather soft in character, and would not give satisfactory

service where subjected to wear from thousands of feet. There are, however, several kinds of marble suitable for service on floors and still of pleasing colors, so that almost any desired combination may be obtained.

"Foreign marbles have been most extensively used where decorative effect has been desired, but there are many domestic marbles which can be used to advantage and which will give excellent results."

A combination of marble and Travertine has of late enjoyed quite a vogue. Travertine, while not literally a marble, is considered as such by the trade. It has a history that goes back for hundreds of years. Known

by the ancients as Sapis Tiburtinus, it was quarried at Tivoli, from del Barco, and was used in the Temple of Fortuna Virilis, the Appian Way, the Servian Wall, the Colosseum and, later, in the external walls of a great many of the churches of Rome. It is a very porous calcareous deposit which hardens under exposure, with a surface of spongy appearance but of exceeding durability. Usually white or cream color, it can be employed most effectively for stairs, ramps and flooring.

Another material that lends itself to interesting color schemes is marble mosaic. The cost is less than marble and the general appearance is very satisfactory though not as dignified nor impressive as the solid material. It has been used freely with good results both within buildings and in the open, and without confinement to any particular mode of architectural expression. Since the chief function of such a pavement

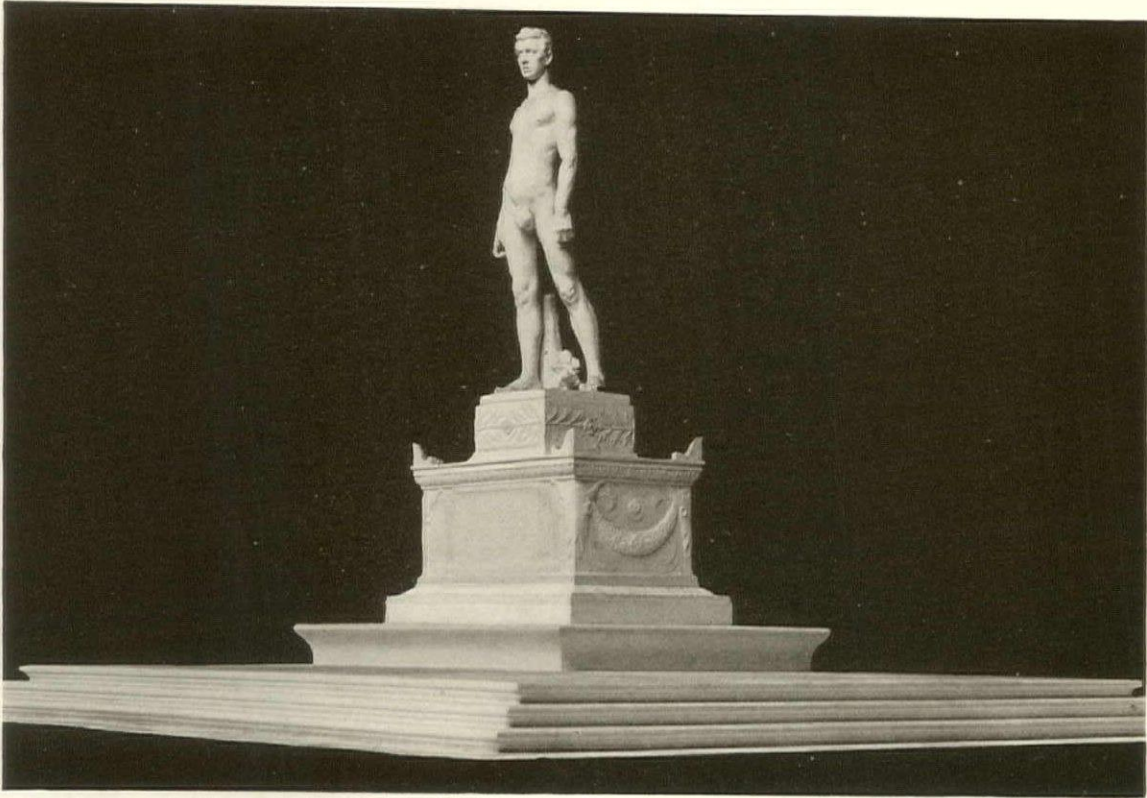
is to lend texture and life to the structural composition of which it forms a part, it is often laid with patterns that supply spots of color that attract the eye. The fact that such mosaic wears very well is an economic factor that deserves consideration.

Another floor surface that is only slightly less costly than either marble or mosaic is Terrazzo, a mixture of marble chips and cement. When properly made it contains relatively coarse pieces of marble, such as pass a $\frac{3}{4}$ -inch or 1-inch ring, mixed with enough finer material to fill the spaces between the larger fragments. When Terrazzo is made entirely of the smaller sizes, the surface will soon wear unevenly, due to some of the pieces of marble being torn loose from the floor.

In a later number of THROUGH THE AGES, there will be an article giving additional information about stone pavements, with a few illustrations of their use.

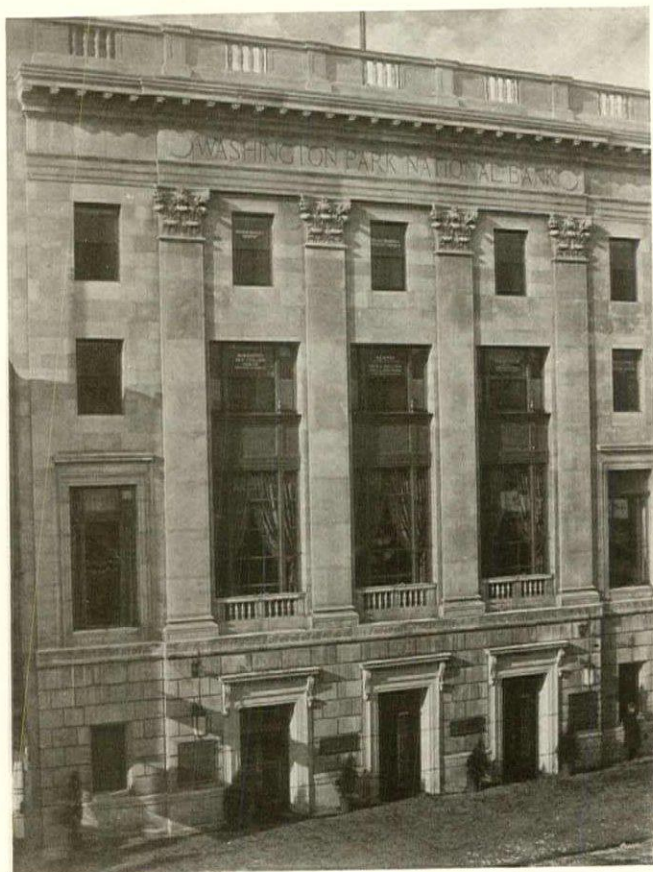


A marble mosaic floor in the National City Bank, Salt Lake City, Utah; W. Moore, architect. Token Alaska marble was used for the screen, with a Verde Antique base.



"Carrying Coals to Newcastle"

THAT American marbles are the equal of any in the world is strikingly evidenced by the fact that "The Boy of the Piave," the monument pictured above—which is to be erected in Rome on the Pincian Hill—will be built entirely of marble from the United States.



THE WASHINGTON PARK NATIONAL BANK

A Chicago South Side Institution That Offers
a Unique Marble Treatment

IT is a distinctive human trait that the story of a success should be absorbingly interesting. Perhaps it is because the spark of ambition burns in every breast, and the tale of another's achievement pricks the imagination and fans the spark to brighter glow.

The history of the Washington Park National Bank is such a story. "Total resources of over eleven million dollars"—these words, used to describe the financial condition of the institution, coldly indicate its present strength and stability; they do not reveal the actual facts behind the figures, the record of continuous adherence to certain

ideals of safe and conservative banking that made the figures possible.

Founded in June, 1907, it had assets of \$25,000 and a firm belief in the future of Chicago's great South Side. It was not by chance that this private bank was located near the corner of 63rd Street and Cottage Grove Avenue; it was foresight that realized this intersection was the hub of a wheel of population that was destined to increase in area and density as the years went by. The soundness of this judgment was shortly confirmed. The Washington Park Race Track, famous among turfmen of a generation ago, gave way to modern buildings. Old struc-

tures were torn down and replaced with new and modern buildings. Homes and stores arose where before footpaths stretched across vacant lots. Hotels, theaters and apartments, stately boulevards and spacious parks appeared. The spirit that was to make Chicago one of the greatest cities in the world was magically at work on the South Side.

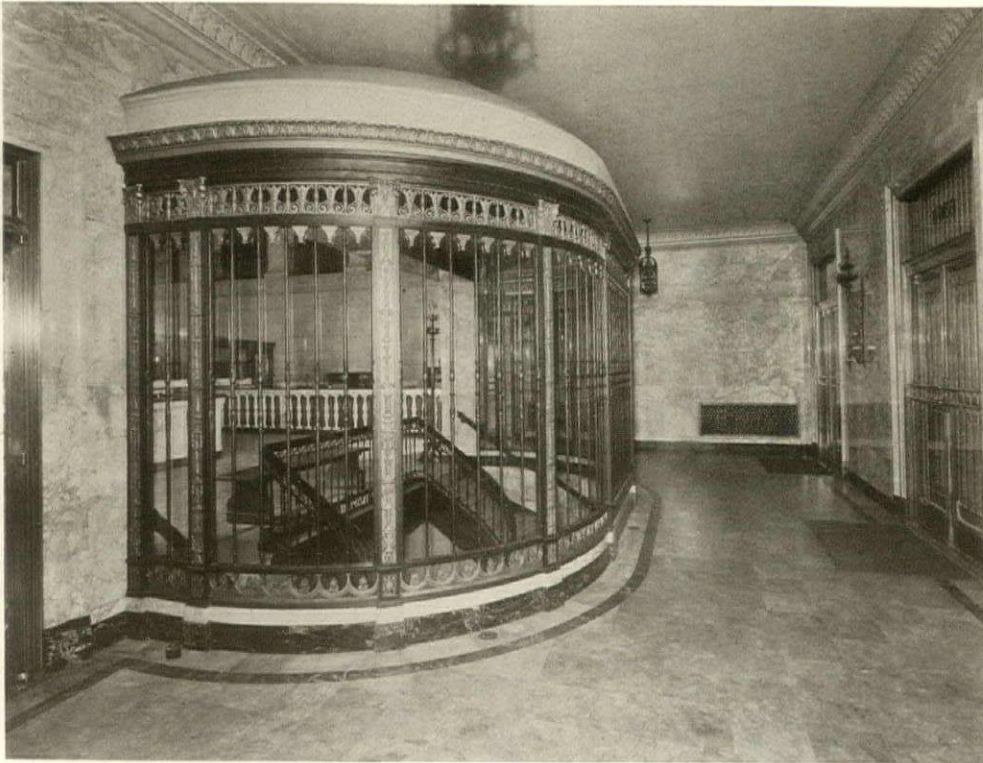
The Washington Park Bank prospered from the beginning. A little less than two years after its inception, it secured a national charter and moved to a new building at the corner of 63rd Street and Evans Avenue, and added the word "National" to its name. The new building seemed at the time a notable example of monumental bank architecture, and easily capable of accommodating a crowd in its great lobby. Here, it was thought, the bank could do business for an almost unlimited number of years.

Time is the great enlightener. The original

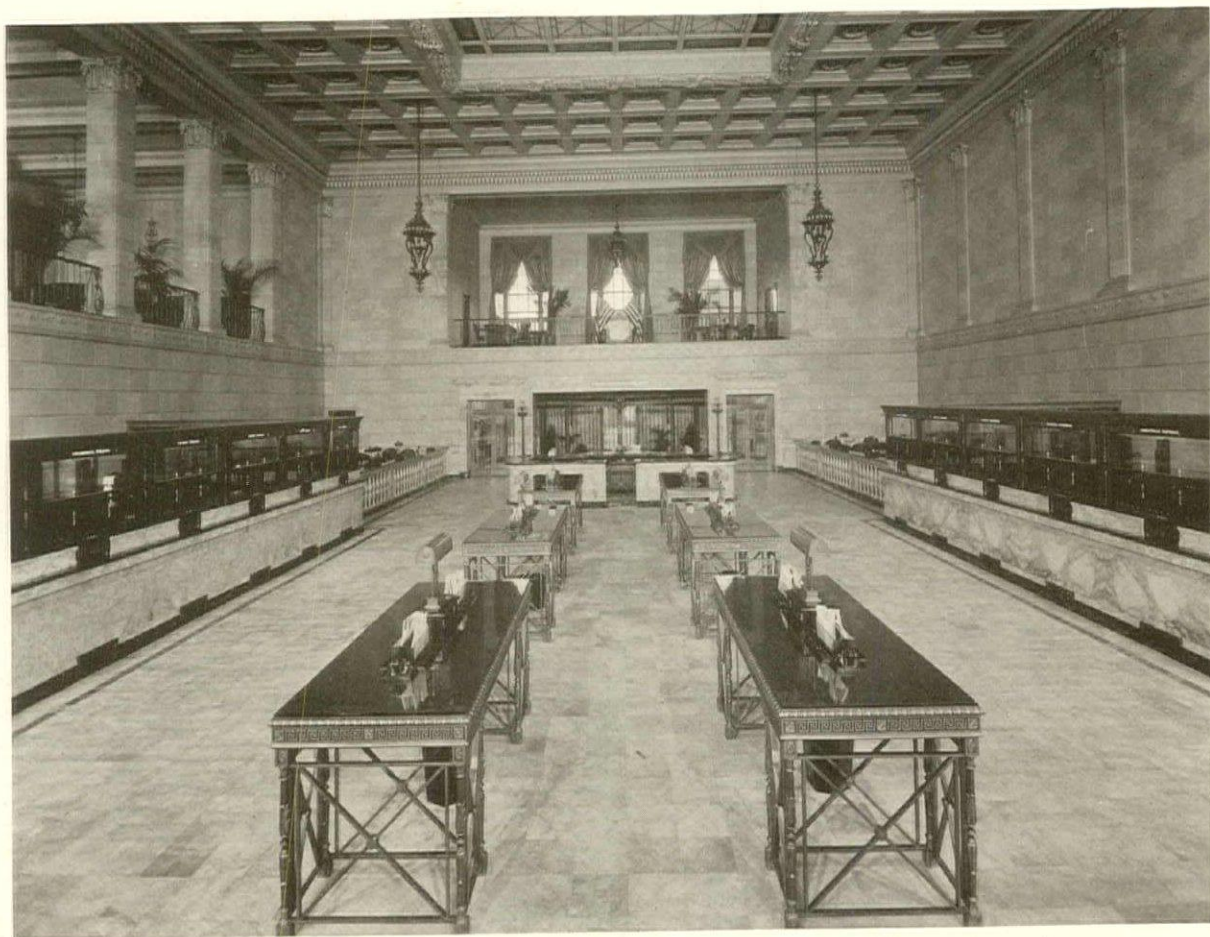
clientele of 500 increased far faster than anticipated by even the most sanguine. When the number approached 30,000 it was seen that only an even more massive home could care for the stream of patrons that flowed daily in and out of the banking room. Arrangements were made in 1923 for the present building, and the lot at Cottage Grove Avenue and 63rd Street acquired.

Mr. Albert A. Schwartz, of Chicago, was the architect of the new home of the Washington Park National Bank. It is a four-story building of fireproof steel and concrete construction. Its exterior is marked by the simplicity of the Roman style of architecture. Four pilasters extending from the second floor level to the frieze distinguish that portion of the façade that contains the entrance to the banking quarters. The remainder of the building is given over to stores and offices.

Entering the building through one of its



The entrance lobby gives a foretaste of the richness within.



General view of the banking room looking toward the main entrance. Most of the marble is Old Convent Siena.

three broad doors, one comes into a foyer of remarkable beauty. From the floor to within a few inches of the ceiling the walls of this foyer are marble. Gray and yellow mixed Old Convent Siena was chosen, on account of its soft colors and striking veining. The floor is of the same material. The base is of Black and Gold marble and a small line border of Black and Gold is set in the floor about a foot from the edges. A circular grill of wrought iron, which screens the stairway leading from the main lobby to the vault floor below, is decorated in a design that continues and elaborates upon the motif contained in the cornices.

Passing into the main banking room, two impressions are immediately predominant.

One is that the architect was not hampered by space limitations—that he took full advantage of the dimensions allotted to this portion of the structure. A lofty coffered ceiling, in which is set a large skylight of cathedral glass bordered by a wide, flowing design of conventionalized oak leaves, sheds a flood of light over the spacious quarters below. To the right, high above the tellers' cages, a mezzanine floor is half hidden by seven square columns with ornate capitals; to the left, the counterpart of these columns is found in the pilasters of the wall, their bases resting on a frieze scroll that is carried completely around the room.

In front is another mezzanine, the wall opening only partly filled by a low graceful



A corner of the banking room looking toward the rear, showing in the foreground the marble inclosure where new accounts are opened.



Entrance to the vaults in the basement. Black marble benches contrast with the lighter tone of the Siena marbles.

metal railing; a background of three wide windows richly draped adds to the sense of spaciousness.

The second impression is that of regal grandeur. In spite of the practical uses to which this room is put, evidences of which are naturally apparent, the beauty and dignity of its appearance almost conceal its utilitarian purposes. Stretching ahead is a splendidly gleaming marble floor, with a bewildering variety of rich tawny colors like a rare oriental rug done in stone. To either side the counters continue the scheme upwards some three or four feet, the only breaks in the continuity of color occurring at the juncture of floor and counter, and in the floor border strip close by.

The material employed is Gray and Yellow mixed Old Convent Siena, with the base and strip above mentioned of Black and Gold—the same marble treatment as in the foyer and one that is very unusual. There is, in fact, no other building in the middle western section of the country, as far as can be

ascertained, that has a similar treatment; this renders the room all the more striking.

On the floor below the main banking room are the investment department, the rest rooms and the safe deposit vaults. A stairway from the foyer leads to this floor, and here, too, Old Convent Siena was chosen as the floor material and for the treads and risers of the stairs. The vaults, notable for their size and impregnability, are entered by a short flight of two broad marble steps. To each side of this entrance are marble benches of Black Belgian, with bases of the Black and Gold marble that appears again in the floor border and wall bases. The contrast of this brown-veined ebony material with the yellowish gray of the floor surface is most pleasing and is only faintly indicated by the illustration on this page. The addition of green growing plants, both here and on the mezzanine floors of the main banking room, is a touch of decorative intelligence that could be profitably copied by other institutions.

THE MARBLE BUSINESS --

A Southern Industry

By COLONEL JOHN STEPHEN SEWELL

(Courtesy *The Southern Banker*)

IT took a long time to build up the necessary organizations of skilled workmen in the marble industry of the South, but it has been done. The time is long past when anyone could fairly question the ability of the southern marble shops to turn out any sort of work, no matter how difficult it might be. Most of the skilled workmen are natives of the South, so this industry is one of the many that have demonstrated that there is no lack of innate mechanical ability among them. All they need is a chance.

When the South, as a whole, awakes to the value of a large and well-paid industrial population consuming locally the local agricultural products, we will be in a way to assist the southern farmer to a degree that lies beyond the power of Congress or of any other agency extraneous to ourselves; but it will involve the abandonment of many deep-seated and time-honored prejudices on economic questions—especially the tariff.

There is one feature about the marble trade—more especially the interior marble trade—that should be of interest to bankers under modern conditions: It requires about a year to complete a large building from the time the old structures, if any, begin to be torn down. It has come to be a sort of unwritten law that not more than one year's rental shall be sacrificed to the exigencies of construction work.

To accomplish this, and to do in one year what used to require five or six, not only are new structural designs and methods necessary (like the steel skeleton building as compared with the old type in which the walls

carried the structure instead of being carried by it), but contracts for all essential parts of the building must be closed and work must begin on the necessary materials as soon as the builder himself begins to tear down the old buildings. In the case of the interior marble, nothing that goes into the building is more important, if serious delays at the finish are to be avoided.

Inasmuch as the interior marble is almost the last thing that goes into place, this results in giving to this trade, as compared with business in general, a "lagging phase" in its periods of prosperity and depression. An oncoming commercial depression finds many buildings under way, with contracts signed and sealed, for everything that goes into them. Very rarely is work suspended on any of them. These contracts generally carry the interior marble trade through the first year of the depression on such a basis that it is often, for them, the best year of the entire cycle. They are running to capacity, money is coming in, no new contracts are being started, so that their working capital rapidly turns into cash. If they are accustomed to borrow from the banks, they pay up in full during the first year of a depression if they never do it at any other time.

On the other hand, the unfilled orders on their books rapidly diminish, and the same causes that make the first year of a general depression their best year, will generally cause the first year of a general recovery to be their worst. However, this condition is nearly always mitigated by a very consider-

able increase in small orders, which begins before the large contracts are all filled. Just why this should be so is not always clear—it is a fact of observation.

The net result is that the interior marble trade never quite attains the utmost peak of prosperity, as compared with other trades but neither does it reach the utmost depths of stagnation. Its highest peak of prosperity coincides with the lowest depths in general business, so it tends to equalize and stabilize the general situation.

It is not extensive enough to have much effect in smoothing out the fluctuations in the curve of general business conditions—but the tendency is there—and it should make of any well-managed interior marble concern a very desirable banking risk, for it should be putting cash into the bank at times when many other lines are in need of additional credit.

Wherever marble was available, civilized man of every race and clime has used it for his monuments and most important structures.

Marble is crystalline limestone; it may be

either calcite or dolomitic. In the first case, it is the result of the crystallization of a pure limestone, properly so called; in the second, it is the result of the crystallization of a magnesian limestone.

So-called Verde Antique marble is, properly speaking, not marble at all, but serpentine with generally some calcite veins or clouding in it. Verde Antique is the name given to only some of the stones which are in the same class with it, and as many of them are used under other names—as Levanto—it would be better, for a generic name, to adopt that used by mineralogists which is Ophiolyte, or Ophicalcite or simply Serpentine. "Verde Antique" is properly applied to the varieties with a ground tone of green—but many serpentinous marbles are red, purple, or nearly black, or mixtures of all of these. However, the main point is that when these stones are reasonably sound and take a good polish, they are used for many of the same purposes as marble, more especially for decorative interior finish of buildings. The marble trade has classed them as marbles. Any other stone with



A typical Southern marble quarry.

similar properties and adapted to the same uses would, no doubt, soon come to be classed, commercially, with the marbles, regardless of its mineralogical classification.

The white calcite marbles, when completely crystalline, *i.e.*, when they consist of a mass of interlocking crystals of calcite (calcium carbonate) with no open spaces and no non-crystalline material between them, are the marbles par excellence, and are adapted to a greater variety of uses than any others. They are obtainable in sound blocks, they are durable, not difficult to work, they are impervious, and they will take any sort of polish from a dull gloss to a brilliant lustre. When fine grained, the most delicate carvings can be executed in them to perfection. When nearly pure white and of the finest texture, they are used for statuary and similar purposes. There is very little real statuary marble anywhere in the world.

The great majority of white marbles contain more or less veining and clouding and exhibit some variations in the tone of the ground mass. When the material is skillfully handled, it presents all the advantages of a pure white material and its natural variations save it from mechanical uniformity. The veining and clouding in what are ordinarily known as white marbles are generally of some shade of gray. There are white marbles which have veins and clouds of rich and brilliant colors, or which have been broken to pieces by earth movements and then reunited by the action of ground waters containing rich and brilliant coloring matters, but these always have special names of their own—Italian Pavonazzo and Breche Violette, for example—and are classed by the trade as fancy marbles. They are not always sound, require some filling and patching and are properly used for decorative purposes where a rich and splendid color scheme is desired, in addition to perfection

of tone and texture.

There are other marbles with a ground tone of some shade of buff, gray, tan, pink, or brown, or a mixture of these. The names of these colors, however, may wholly fail to convey any accurate idea of the appearance of the marbles to which they are applied. Marbles rarely exhibit colors which even approximate any pure prismatic color. To know what is meant by pink Tennessee, one must see it; the same is true of the gray marble produced in the same locality. Even the purest of the gray Tennessee marbles have a suggestion of pink in the ground tone, and the pink ones have a suggestion of brown. In all of the marbles now being discussed, the dominant color is exhibited in a neutral shade.

For this reason, probably, they have been classed as monotones, although the ground mass is never even approximately uniform in color and shade. The variations are on such a small scale, however, that the general effect is probably as well described by the word Monotone, as any other that is available.

There are marbles that are black or bluish black. Sometimes they have white or yellow veins or spots in them. The blue-black marbles are not as attractive as those in which the black is like India ink, or, if diluted, would be brown. Most of the black marbles are dolomitic. White dolomites rarely take a good polish, but the black ones nearly always do.

There are marbles in which the ground mass is red, or yellow, or greenish yellow; but they are rather rare. Nearly all of them contain veins, clouds or spots of a different shade or color from the ground mass. They are all classified by the trade as fancy marbles.

The above brief descriptions fall far short of covering, even in general classes, all the

marbles available in the markets of the world. There are hundreds of kinds of marble, each quite individual and distinct from all others. For every color scheme that can be imagined, there are marbles that are appropriate. At the present time, they are produced in Europe, Africa, North and South America; they are known to exist in Asia, where they were largely used by the Hindoos. Beyond doubt, they are to be found in all large areas where mountain-building by deformation of the earth's crust has ever prevailed.

The marble trade in the United States has never, until recently, done any general advertising at all. Within the last few years, some concerns have done a little; within less than two years, the principal association in the trade has made a beginning—a very good one—but still only a beginning. Of course, everyone in the trade has tried to reach special and limited classes of customers, but practically nothing in the way of information has been disseminated among the general public. It is therefore not surprising that few average citizens know anything about marble at all.

In particular, the public in the South is not generally aware of the extent and importance of this industry in their part of the country. Unless conditions have changed recently, Vermont is still the leading state in the production of marble, and is the home state of the largest marble company that has ever existed. But the South, as a whole, probably produces more than 50 per cent of all the marble produced in the United States.

Marble is produced at the present time in the southern states of Alabama, Georgia, Missouri, North Carolina and Tennessee. It has been produced in Arizona, New Mexico, Oklahoma and Texas. Maryland has been an important marble-producing state and

will probably become so again.

Further discussion of marbles will be confined chiefly to the varieties produced in those states where the industry is of commercial importance at the present time.

ALABAMA

There is a belt of white marble extending in a general northeast and southwest direction through Talladega County, Alabama. The marble is fine-grained, completely crystalline, with a ground mass which is of a warm creamy white. Sometimes it turns blue or has blue streaks through it, but the blue marble forms, at most places, only a small part of the deposit. The deposit is nearly always found under the floor of what is known as the Marble Valley, at a depth ranging from 10 or 15 to 50 feet or more. In a few cases, isolated "fault blocks" are found cropping out on the sides of hills.

Within the last twenty years, eight different quarries have been opened at various points along the strike of the deposit. Two have been successful; this is an unusually high percentage.

As early as 1845, several quarries were opened and operated for a time for the production of tombstones; there were some seven or eight of these old quarries, but they all went out of business many years ago, and it was not until about 1905 that development began on a really commercial scale. Since then, Alabama marble has been sold in all parts of the United States, in Canada, in Cuba and in South America.

It has been more extensively used for interior work than for other purposes, but it has been quite extensively used also for exterior work in buildings and for grave-stones and other monuments.

It is a calcitic marble, its percentage of calcium carbonate running as high as 99½ and rarely falling as low as 98. It is as hard



A Western store built of Southern marbles: Alabama for counters and walls; Napoleon Gray for the trim.

as any marble of equal purity, and it is not surpassed by any marble in durability when exposed to the weather. Its working and carving qualities are of the best, and it will take and hold the most brilliant polish. It is quite translucent, so that a polished surface does not reflect the light in a glare as from a glassy surface. The light penetrates the marble to some depth and is then diffused from the small crystal faces. Consequently, it is admirably adapted for making the most of the light that is available without any unpleasant effects. The polished surfaces are, to all intents and purposes, impervious and are very easy to keep clean.

All of these qualities make Alabama marble especially desirable for interior work. Because of this fact, and not because it is not well adapted for exterior work, the producers of this material have found it more profitable to exploit it for interior work. There are other white marbles well adapted for exterior work and which are less expensive; the Alabama producers have generally left the exterior field to these other marbles, but besides a number of fine exteriors in

more northerly locations, the exterior of the post office at Mobile, Alabama, and the marble facing of the lower part of the original building of the Atlantic National Bank at Jacksonville, Florida, are notable examples of Alabama exteriors.

In the lower part of the interior of the Washington Monument are a number of stones furnished by different states. There are two pieces of white marble from Gantt's Quarry, Alabama. They are very fine samples—like creamy white statuary marble—and it is said that at first those in charge of the monument declined to receive them on the ground that marble of such fine quality was not known to exist in the United States, and that they did not believe that it really was produced in Alabama.

The only finishing plant in the Alabama marble belt is that at Gantt's Quarry. This plant has furnished millions of feet of interior marble finish for important buildings all over the country—most of it having been finished ready to set at the plant in Alabama.

The different grades of Alabama marble

vary from a creamy white fine-grained marble, almost free of coloring matter of any kind, practically of statuary quality, and available only in small quantities and in pieces of moderate size, through two or three grades with creamy-white background and moderate to face veining or clouding of a grayish tone (available for jobs of any size), to two or three grades of fancy marbles, with veining or clouding, or both, of pink, orange, yellow, gray, greenish and black. The fancy grades are available in moderate amounts.

GEORGIA

In the northwest part of Georgia, mainly in Pickens County and in the vicinity of Tate, are produced several varieties of rather coarsely crystalline calcitic marble. They vary in color from a practically pure white of a considerably warmer tone than the ground mass of most of the white Italian marbles, through varieties with a white background and with veins and clouds of blackish gray and blue, to varieties in which the blackish veins and clouds become dominant.

In some varieties, the background becomes grayish white and in one it is pink. These marbles are widely used for exterior and monumental work, for which they are specially well adapted.

The grade which is quite or nearly pure white has been used for colossal statues; most of the grades are widely used for gravestones, mausoleums, etc., and all of them are used for exterior building work. A very fine example of an average grade of the clouded white is in the recent addition to the Stock Exchange in New York. The exterior of the Federal Reserve Bank at Cleveland, Ohio, is made of the variety with a pink background. It gives a softness of tone, combined with a suggestion of durability and strength, which, together with the ex-

cellence of the design, makes this a really notable example among American buildings. This grade of Georgia marble possesses, in a high degree, many qualities which are much sought after by architects at the present time. But to one who has not made a special study of materials from the standpoint of tone and texture when used in large masses, this fact would not be apparent from the examination of a small sample.

In many cases, where a small sample seems to be just what is wanted, the effect, in a large mass, is quite different, and *vice versa*. Many disappointments in the final effect of a finished building are due to a failure to visualize the actual effect of a large mass of a given material from the examination of a small sample. This particular grade of Georgia marble has probably been less used than any other, and yet where a certain neutral ground tone combined with agreeable texture is a principal object in view, it is one of the most desirable of them all.

Georgia probably comes next to Vermont in the amount of marble produced. The use of Georgia marble is country wide; it has been used in many of the most important buildings in almost every section of the United States.

In recent years, the tendency in Georgia, as in other marble-producing sections, has been to finish a larger percentage of the total production at or near the quarries, and to ship a smaller percentage in unfinished form. This, of course, greatly increases the value of the industry to its own state and locality.

It is said that in the early days, pieces, and even blocks, of Georgia marble were sent as far as Philadelphia by means of ox teams. This may be romance or legend, but even in those early days, the material found a surprisingly wide distribution. The mar-

ble industry of Georgia may now be regarded as an established and stable institution of which the people of the state may well be proud.

TENNESSEE

The marbles at present produced in Tennessee all come from comparatively near Knoxville; they are all monotones; they vary in shade from a very uniform light silvery gray—with just a suggestion of pink in the background—through various shades of pinkish gray and grayish pink, brownish pink (sometimes almost red) to chocolate brown. The Tennessee marbles are all calcitic. They consist of a mass of more or less fragmental fossil remains, in which the calcite has crystallized without destroying the organic forms, imbedded in a mass of finer material, which is either non-crystalline or else what the mineralogist calls crypto-crystalline, *i.e.*, the crystals are too small to be seen as such except under high magnifying power. The coloring matter in Tennessee marble seems to be distributed over the surfaces of the crystals. It is very small in amount—the percentage of calcite in these marbles being nearly always in excess of 98 and often reaching 99½.

These marbles all saw and work easily, take a high polish, and are impervious to an unusual degree; rank very high among the monotones from the standpoint of texture and color; all of them have beauty of tone and texture, but as in the case of all other marbles, some are more beautiful than others. Tennessee marbles have one great advantage over most of the imported monotones—in that they require no waxing, filling or patching; hence, they are adapted to uses where sanitary qualities are a prime consideration and also for exterior and monumental work.

Tennessee tiles make a most excellent floor; they wear well and evenly; and be-

cause of their neutral tone, they do not show the mud and dirt tracked in on a rainy day as much as most other marbles, and because of their imperviousness, they are easily cleaned. For the floors of entrance lobbies where traffic is dense, there is no better floor finish than Tennessee marble. But it is not simply for its utilitarian qualities that Tennessee marble is highly prized; where certain neutral color effects are desired, as they often are, its decorative qualities give it a very high rank. It is interesting—and typical of the marble industry generally—that those varieties of Tennessee marble which have the greatest decorative value, were, for a long time, neglected by the producers as being "off-shade." It requires an innate sixth sense—and often long study and experience besides—to estimate correctly the value and true place of a marble in the list of decorative building materials.

In many marble and stone producing centers, the choicest and most valuable material was for a long time thrown on the dump, until someone with a real feeling for material recognized its value, had the courage to use—and thus set a new fashion.

Tennessee is a very large producer of marble. The blocks are purchased by manufacturers everywhere, but in Tennessee, as in other producing centers, the tendency is to increase the percentage of the total product finished locally.

The marble industry in Tennessee, as elsewhere, has had its ups and downs, its failures and successes, its comedies and its tragedies, but it has become an established industry which will continue to bring wealth to the state and to the South long after many other natural resources are exhausted.

MISSOURI

In the southwestern part of Missouri, there is a geological formation known as

the Burlington Limestone. It is highly developed near Carthage and Phenix, and probably at other localities. Certain strata in the Burlington formation are finely crystalline or crypto-crystalline and take a high polish. In recent years, this stone, which is of a gray or buff-gray appearance, has been largely used as marble; it is, in fact, a monotone marble, as that term is used in the trade.

It is much used for interior work; some parts of the formation yield an excellent exterior building stone, which is not specially adapted for interior work. Probably this formation was not completely crystallized, so that only some of its members are real marbles.

The use of the marbles from the Burlington formation has grown very greatly in recent years; here also the tendency is to finish more and more of the stone locally, but the sale of blocks is on a large scale. Here is another southern marble industry which has come to stay.

NORTH CAROLINA

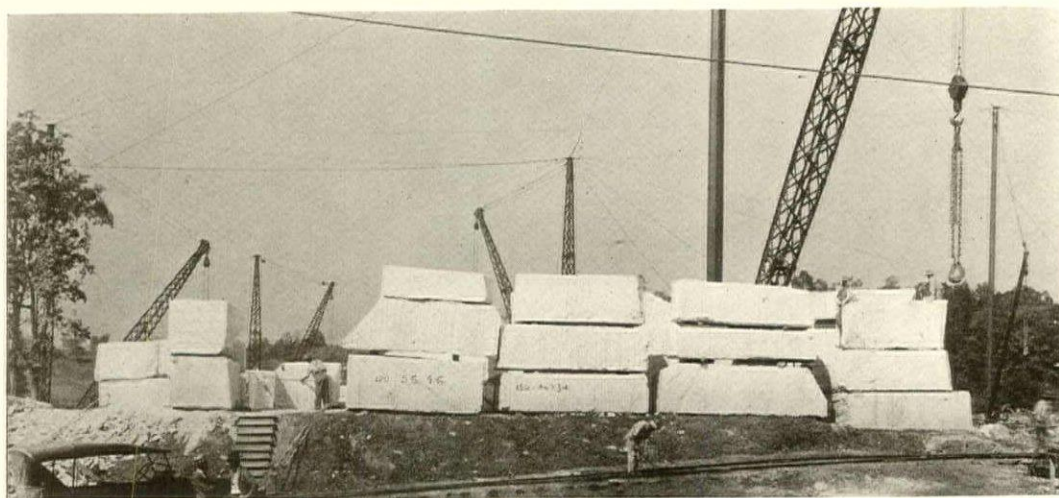
In southwestern North Carolina are considerable marble deposits; the stone is often blue and often dolomitic. So far as the

writer is aware, the only marble produced there at the present time is blue and is used mainly for cemetery purposes. The geological reports on the North Carolina marbles do not lend much encouragement to the idea of development on a large scale, but that may come to pass, nevertheless. The only sure test of a marble deposit is to open and operate quarries, and that has not yet been done on a sufficient scale to be decisive.

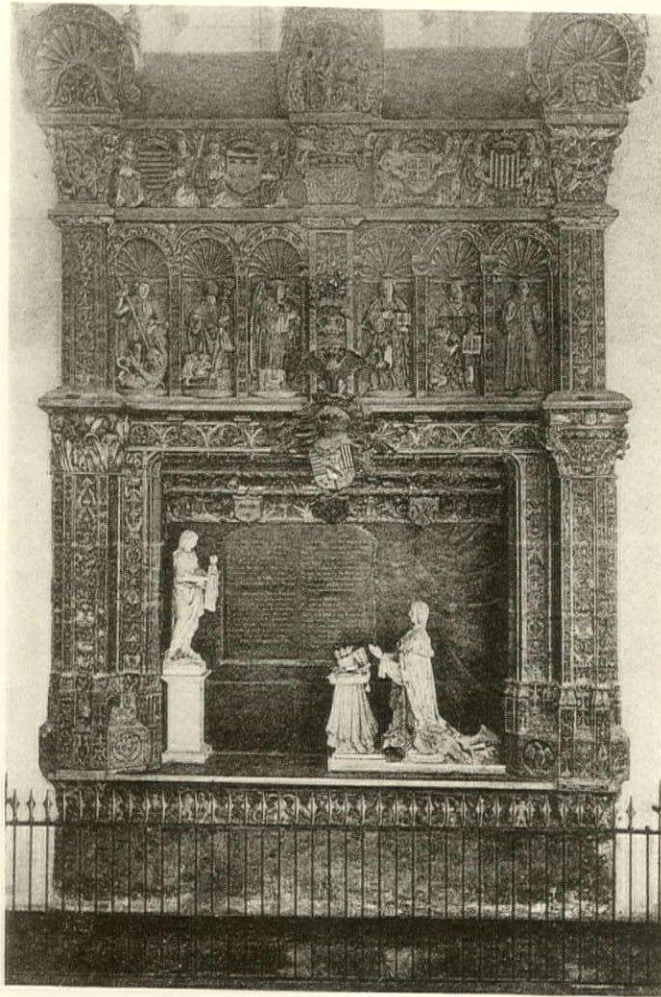
OTHER SOUTHERN STATES

Marble is known to exist in the other southern and southwestern states already mentioned. No doubt, many of these deposits will some day be exploited on a permanent and successful basis. But even now, the states that are producing put the South in the forefront in the marble industry.

Of course, any industry is of the greatest possible value to its own locality when the raw material is worked into finished form at or near the point of production, because this results in a maximum of local disbursements for all purposes. From this point of view, the marble industry is already an important factor in bringing new wealth into the South, and will become more important as time goes on.



Blocks of Tennessee marble ready for shipment.



Tomb of René II at Nancy, by Mansuy-Gauvain.

THE EARLY RENAISSANCE IN FRANCE

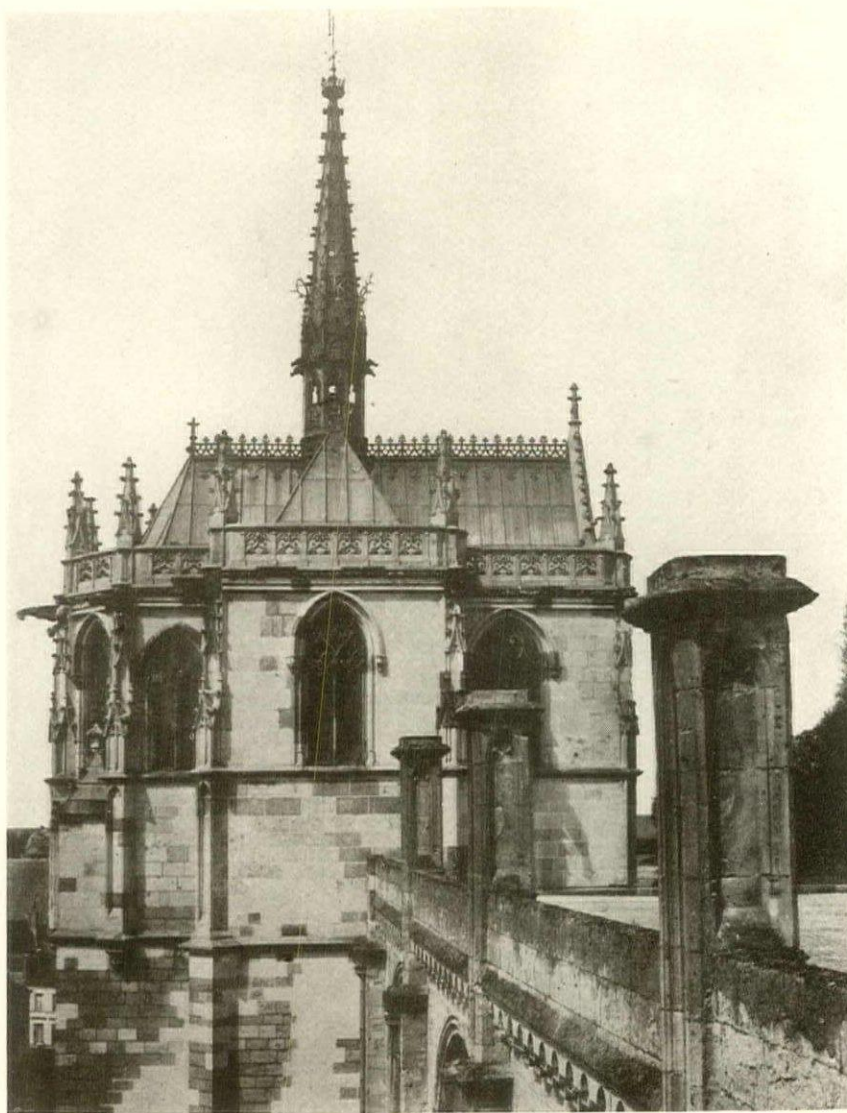
The Transition Period is Characterized by a Picturesque Mixture
of Classic Details With Gothic Conceptions

ITALY and France were the two main arteries through which the Renaissance flowed. In Italy the effort to clothe structures adapted to the requirements of a later age in a dress derived from the forms and proportions of antiquity, met with scant resistance. The readiness with which the national styles were transformed into a semblance of the classical was to be expected

since there had persisted throughout Italian Mediæval architecture the Roman and Greek methods of wall and space composition, as well as of detail. Moreover, the abundance on every hand of antique models served as a constant reminder of the glories of Ancient Rome.

In France, on the contrary, "the vitality and richness of the Gothic Style, even in its

Illustrations courtesy Thomas Machen, architect, Baltimore, Md.



Chapel of Château d'Amboise, built by Charles VIII
after his return from Italy.

decline in the fifteenth century, long stood in the way of any general introduction of classic forms" (Hamlin). This style was an almost direct antithesis of its distant origin. It was only the weakened condition of the national artistic mind, as betrayed by the feeble spirit and extravagance of the Flamboyant period, coupled with the demoralization and disorganization during the Hundred Years War, that finally made it possible for the Renaissance to gain its first foothold.

With the cessation of feudal turmoil in 1461 there set in a high tide of prosperity and peace. Building activity followed close on the heels of material wealth. An Indian summer of Gothic art prevailed for the last half of the sixteenth century. "As in the land of the 'Sleeping Beauty,' when the sleepers awoke, the turnspit recommenced turning the spit, the women their weaving, the men their usual vocations." (F. M. Simpson: *A History of Architectural Development*.)

The Holy See at Rome had been, during the latter part of the fifteenth century, in constant touch with the French Church; in addition, there were frequent embassies from Paris to the Italian courts. French eyes

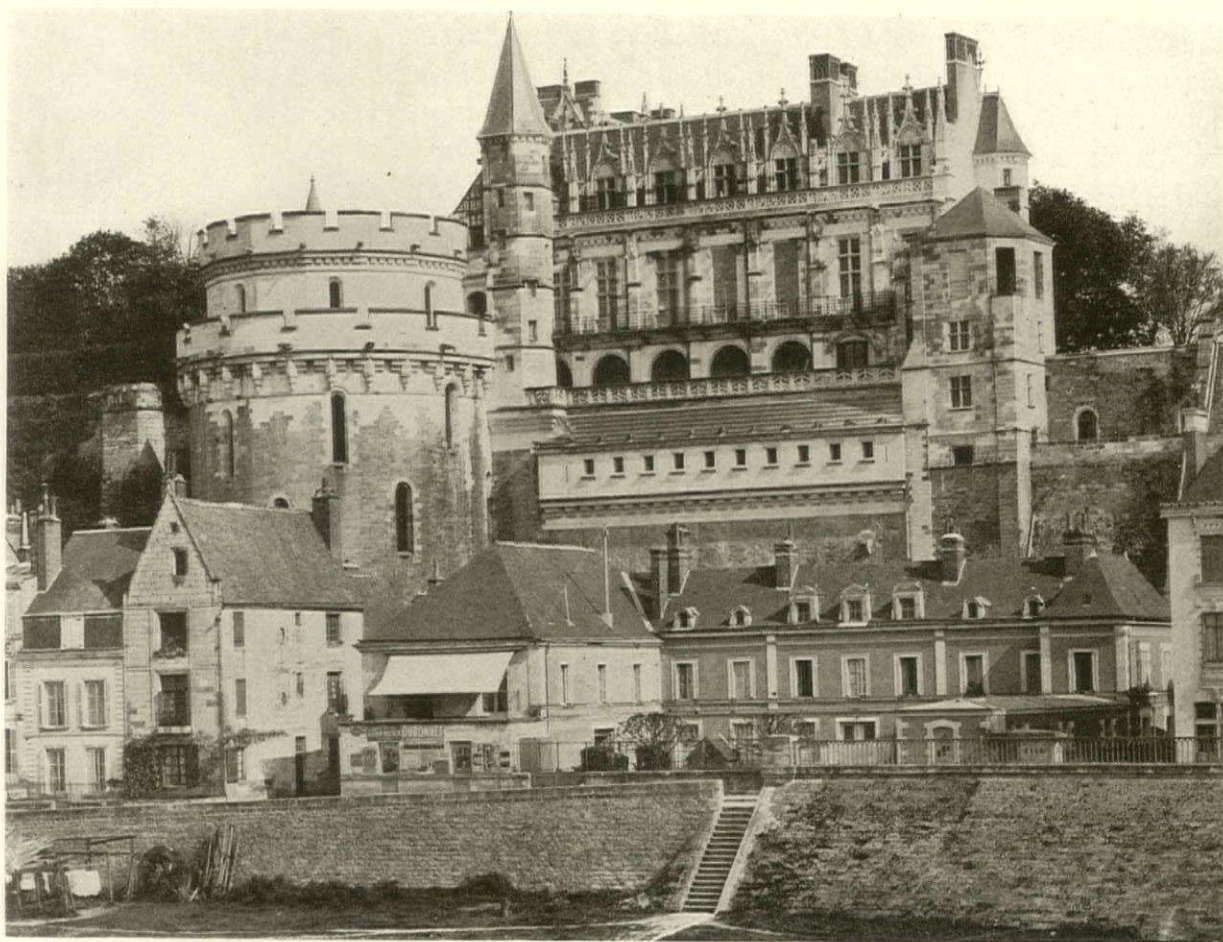
were impressed by Italian art. Philippe de Comines, beholding the Certosa di Pavia, wrote of "this goodly Charterhouse Church, which in very deed is the fairest that ever I saw, for it is all of fine marble." (History of Philippe de Comines: trans. by T. Danet, London, 1601). Articles of Italian workmanship began to appear in France in the wake of these travelers, and "the very fact that Italian quarries were the source of the marble supply necessitated that such larger objects as fountains or tombs, if of marble,

should be Italian made." (W. H. Ward: French Renaissance Architecture.)

There occurred in 1494 an incident that gave to the new style a greater impetus than any it had yet received. This was the remarkable expedition of Charles VIII into Italy to enforce his claim to the crown of Naples. Although a failure politically, it succeeded in providing a revelation to the thousands of men that made up his army. The richness of the buildings at Florence, Rome, Pisa and the other cities entered, their unusual designs and the lavish skill expended on their decorations must have made a powerful impression upon the French. On the other hand, the might of the invaders and their apparent wealth caused

many Italian artisans to venture into France as a field for their activities.

Even before the expedition of Charles VIII, in 1475, the new style had made its appearance in altars, tombs and rood screens, and even small chapels. Francesco Laurana in 1479-81 rebuilt for Duke René the chapel of St. Lazarus in the old Cathedral at Marseilles, and also carried out a reredos, now in the church of St. Didier at Avignon, in which buildings of Italian design occur in the background. The former consisted of a central column and two side pilasters supporting two arches, above which is an entablature crowned by two segmental pediments. The pilaster panels, columns and arches are carved with very



The Château d'Amboise. The round tower has a sloping driveway for horse traffic from the town clustered at its base.

delicate Renaissance detail, more Venetian than Florentine. The same sculptor executed the tomb of Charles of Maine in Le Mans Cathedral (1475), the so-called "Niche of King René," and the tomb of Jean de Cossa at Tarascon. All of these works were comparatively small and purely Italian in character; they were, in fact accomplished by Italians to suit the tastes of patrons who had become fascinated by the new style.

Charles' incursion was followed by others under Louis XII, Francis I and Henry II, all of which tended to the transplanting of the Italian art into France. The real start, according to Simpson, was on the banks of the Loire, the district most favored by the French kings during the end of the fifteenth and first quarter of the sixteenth century. Amboise, Blois, Loches—these places saw the court more often than Paris; Orleans was as important as any town in France. Here were built certain structures in which the Renaissance was introduced. These include the Louis XII wing of the Chateau of Blois, the Hôtel d'Alluye, the original Hôtel de Ville at Orleans, and the tomb of the children of Charles VIII in Tours Cathedral.

To understand these early Renaissance chateaux, it is necessary to bear in mind the plans of the Middle Age feudal castles which preceded them. These old castles were built with defensive towers, high-pitched roofs broken by dormers and chimney stacks; they were placed generally on some rugged site that compelled a picturesque irregularity. Some of these were remodeled later to provide the earlier country homes of the wealthy. Windows were cut in the walls, though the drawbridge and moat were retained as a protection against occasional bands of robbers. Where new buildings were erected, the steep gables, chimneys and dormers continued in the designs, giv-

ing a broken outline even though the plans became more orderly. The French chateau lost the unity of design that was the outstanding feature of French architecture in the Middle Ages. As C. H. Moore expresses it, the composition is "factitious," and not an "outgrowth and expression of natural conditions and actual needs." (The Character of Renaissance Architecture.)

The transition period in France is comprised by the reigns of Charles VIII and Louis XII, and the early years of the reign of Francis I, a period extending from 1483 to about 1520, and marked by a quaint mixture of Gothic Flamboyant conceptions and classic detail. The style, if such it can be called, is generally referred to as that of Louis XII.

In character, the buildings were vertical and comparatively tall, marked by an intricacy of outline in sharp contrast to the orderly masses of earlier years. The chief feature was the treatment of the roof, generally high and steep, with chimneys, ornamental ridges, finials, lanterns and lofty dormers forming a medley of angles and vari-colored surfaces that was at least picturesque and interesting.

"The elevations were broken by buttresses and turrets, canopy work and hanging arches, and finished with battlements, pinnacles, and machicolations. A luxuriant vegetation wreathed its tendrils in the hollows and sprouted on the skyline. Figures with supple bodies and writhing limbs peopled the labyrinthine curves, and wall surfaces were powdered with devices. In arches and openings the prevailing pointed form (which, curiously enough, survived longer in Italy) was replaced with growing frequency by the circular and elliptical, or quasi-elliptical with three or five centers, or by flat lintels, the haunches of which were rounded off. Openings were deeply recessed,



The wing of Louis XII, Château de Blois. The Tower of the Grand Stairway is shown on the left.

often fringed with an order cusping and sheltered under a hood-mould, sometimes of ogee form, carried on corbels set below the springing. Windows were usually two lights wide, with or without transoms, a type which persisted in France till the introduction of wooden frames in the seventeenth century. Ranges of more than two lights are rare. The lights are generally wider than in England, both absolutely and in relation to the height, being sometimes wider than they are high. Bay windows are almost unknown, but oriels are frequent. Piers, where not formed of a group of wave mouldings, were square, set anglewise, or circular and with reticulated or spiral decoration. Capitals were often absent, jamb and pier mouldings running round the arch. In timber construction, many of the above characteristics were equally prevalent and their corbelling, brackets, and barge-boards gave scope for further enrichment." (W. H. Ward: *The Architecture of the Renaissance in France*; Vol. I.)

The above description of the late Gothic is an equally true description of the Transitional period. Italian detail was first introduced into the parts carried and enclosed; the Gothic persisted in the members which carried weight and enclosed spaces. The latter, such as piers, shafts, jambs, plinths and bases, maintained their old forms; the decorations, such as the capitals, panels and hollow mouldings, were Renaissance of the North Italian.

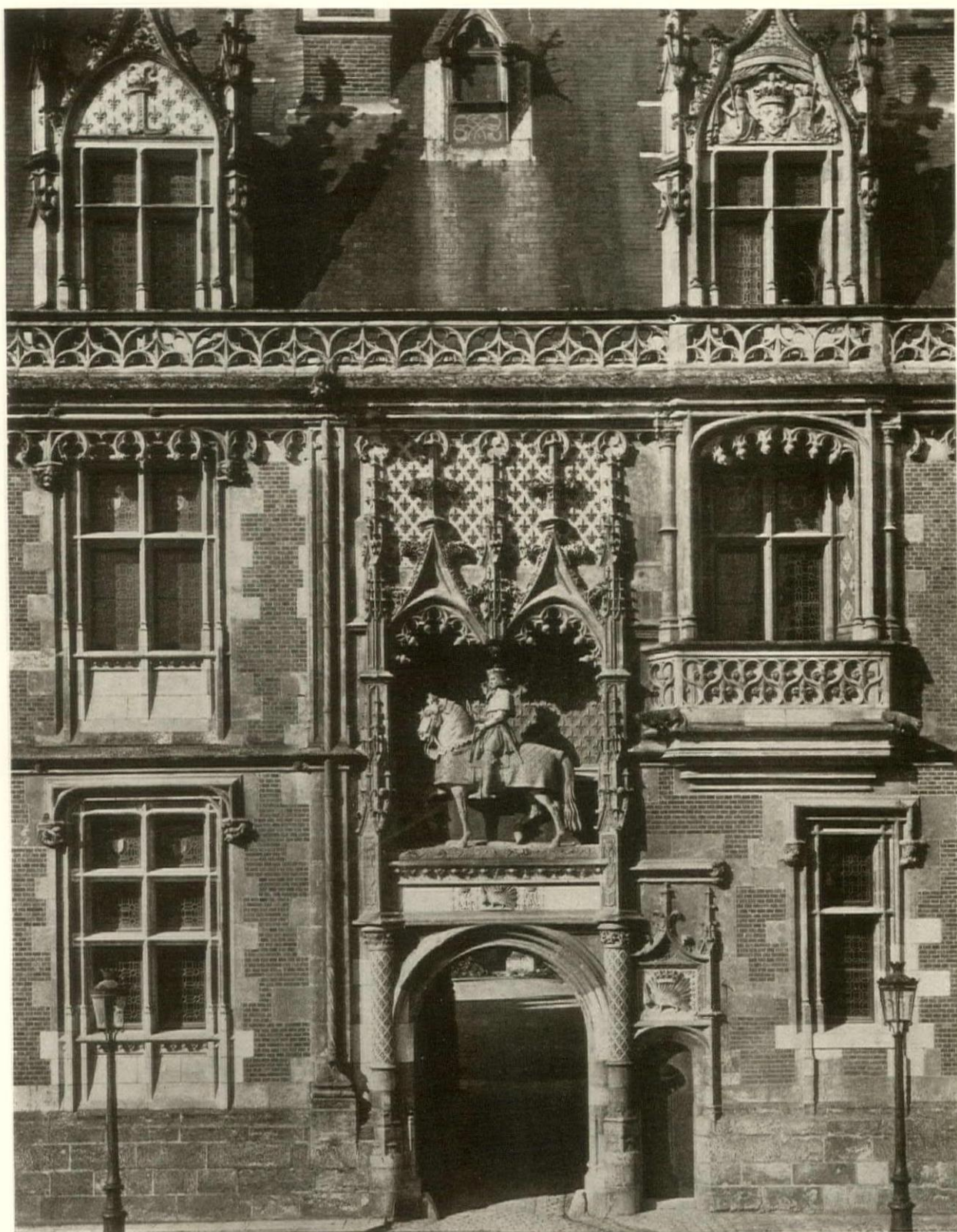
The earliest palatial houses of the period were ornamented with debased Gothic details, with the Renaissance elements introduced sparingly and hardly noticeable. As the invasion of these elements progressed, the houses partook more and more of the spirit of the Italian palaces, but never actually followed their plans, even remotely. Certain efforts were made to secure more

symmetrical spacing, it is true, but this took the form rather of more extensive accommodation. Rooms increased in size and number; terraces, arched galleries, balconies and a multitude of windows were provided, all making for the greater enjoyment of the open air.

Unfortunately, there are no complete chateaux remaining that were built entirely in this period. The palace of Gaillon, erected about 1500 for the Cardinal-Archbishop of Rouen, George of Amboise, was a curious mixture of styles, but one of the most notable buildings outside of the Loire district. Several names are associated with the structure, including Nicolas Biard, Pierre Fain, Guillaume Senault and Fra Giocondo. The old foundations of a castle built half a century before served as the plan, and the irregular moat, drawbridge, round corner towers, turrets and dormers gave it a mediæval appearance. Gothic prevailed in the greater part of the castle, but the cross gallery and the lantern of the chapel were in the Transition Renaissance.

The Chateau of Amboise, transformed by a colony of Italians for Charles VIII after his return from Italy, was the starting point of the movement in that locality. This colony contained, besides Fra Giocondo, Guido Mazzoni, Jerome Passerot, Domenico Bernabei and several intarsia workers. The two large round towers have round-headed windows; in addition to this evidence of Italian influence, there were sloping ways in these towers to enable horse traffic to ascend from the town below into the castle. These ways ran spirally around a hollow newel 25 feet in diameter, circular on the interior but octagonal on the exterior. Dom Pacello laid out a pleasaunce within the ramparts and this was surrounded by a colonnaded cloister.

The Louis XII wing of the chateau of



The effigy of Louis XII above the doorway of the wing to the Château de Blois, built by him.

Bloise, of which mention has already been made, showed the egg and dart scheme on the lower portions of the cornice, while mediæval details appeared elsewhere. This cornice shows a flat lower member against which is a Romanesque corbel-table treated in Flamboyant Gothic, with the small arches splayed and having a tri-centered form. The upper mouldings have profiles of very pure Gothic; above the whole is a parapet of elaborate Flamboyant design. The façades of the east and south wings show the influence of the new movement in the flat, horizontal lines of brick and stone. Commingling with these Renaissance elements are Gothic corbels, gargoyles, traceries and cuspings. The effigy of Louis XII in the niche above the entranceway is typical of the Transitional style. The equestrian statue of the chateau owner was frequently displayed in this fashion; another

example of this conceit is seen in the doorway of the palace at Nancy.

At Chateaudun, the castle begun in 1502 was enlarged by Cardinal Francis of Orleans—Longueville by the addition of a wing which, while its chief features were Gothic, contained certain Renaissance indications. These were visible in the window treatment of the court front, and on the balustraded cornice. The stair tower, too, had an open loggia of coupled arches, elliptical in shape in each of the four stories. The front of this tower was treated in an enriched bay and was set flush with the wall of the façade. The two upper stories reached above the main cornice and were flanked by round turrets overhanging the wall, which was corbelled out to support them. The cornice was a mixture of Classic and Gothic, but the balustrade and internal treatment of the loggias were in the best Italian manner. The



The Town Council House at Compiègne.

stair newel showed an interesting mixture of the styles.

The town homes of the wealthy were known as "hôtels"; those of the middle class were called "maisons." The town hall was usually called the "Hôtel de Ville." Many of these structures built during the end of the fifteenth and beginning of the sixteenth centuries exhibit the influence of the Renaissance in their mouldings, in the introduction of arcaded loggias, Italian gardens, vases, medallions and friezes of dolphins. The Hôtel d'Alluye at Blois, built about 1512 by Florimond Robertet, a minister of Louis XII, showed an interior enriched with Italian ornamentation. The town council house at Compiègne, showed a quaint intrusion of Renaissance in the window treatment and friezes. The Hôtel de Ville at Orleans, by Viart, built early in the reign of Louis XII, shows a complete fusion of the two styles.

Unlike in the Middle Ages, when religious building played the most prominent architectural part, we find, beginning with the sixteenth century, that secular construction supplanted church construction both in importance and initiative.

The reason for the change was to be found in the diminishing power wielded by the religious leaders. The clergy were becoming more worldly, taking part in political and social life to a far greater degree than ever before, and losing, consequently, much of their spiritual influence. Then, too, the churches erected during the preceding years were fully sufficient, both in number and capacity, to accommodate the ecclesiastical demands of the time, whereas the secular structures built in Mediæval days were scanty and unsuited to the new standards of life.

The influence of the Renaissance was felt at first in the minor works, such as

chapels, tombs, and smaller churches, and even here it was confined mostly to details and to such church fittings as altars, screens, and the like. The completion of the more ambitious projects begun in Gothic times was carried out usually in the original style. Senlis, Beauvais and Sens, for example, are purely Gothic. Even the Cathedral of Orleans, begun under Henry IV, was finished under Louis XV without the adoption of the new principles.

At Avignon, there were used in the west front of the church of St. Pierre several Renaissance details. In the wall surface are two wreaths bound by ribbons, evidently copies of Italian prototypes; and the two round turret lights have carved architraves of the same origin.

The Chapel of the Castle at Ussé, built about 1510, has a front that is even more wholly Renaissance. The tracery is in the form of a pierced shell and the pinnacles of tapering candelabra. Even here the effect of the lines is the vertical of the Flamboyant, more especially because of the grouping of the entrance and the window above into one tall mass accentuated by the pointed arch crowned by the canopy.

"Such is the early Renaissance architecture of France. Notwithstanding its factitiousness, and its ornamental incongruities, it still has, as I have said, a distinctly French expression, though it has not the reasonable character of the native art of the Middle Ages in its integrity. But the departure from their own ideals and traditions was destined to be carried further, and at length to reach results which should still more profoundly contradict the true native spirit." (Charles H. Moore: *Character of Renaissance Architecture*.) In our next number we will treat of some of these results as they appeared during the reign of Francis I.



THE WRIGLEY BUILDING

One of the Dominant Structures of Down-town Chicago's Skyline

MARRIED at the age of twenty on a salary of \$10 a week; the possessor of only \$32 capital at the age of thirty; today one of the biggest and most successful advertisers in the world—such is the brief outline of William Wrigley Jr.'s history. The business that he founded had its profits three times swept away by reverses; twice his buildings were destroyed by fire; and yet his four factories now turn out more chewing gum than all the others combined, and the annual turnover is over \$30,000,000.

In Chicago there stand two comparatively

new buildings that are finely representative of this tremendous achievement. They are the two Wrigley Buildings, and they occupy a conspicuous site just north of the Chicago River and facing the new Bridge Plaza. In February of 1920 the William Wrigley Jr. Company acquired an irregularly shaped block of property bounded by the north bank of the river, North Water Street, Rush Street and Michigan Boulevard. It was seen from the map that this spot would put any structure erected on the lot in a position that appeared to be at the head of the street from the viewpoint of travelers on the

boulevard from Park Row to the river; and, also, the river would serve as a break in the line of the city and give the structure a most unusual prominence. It was, to say the least, a strategic, conspicuous location, with no equal in Chicago.

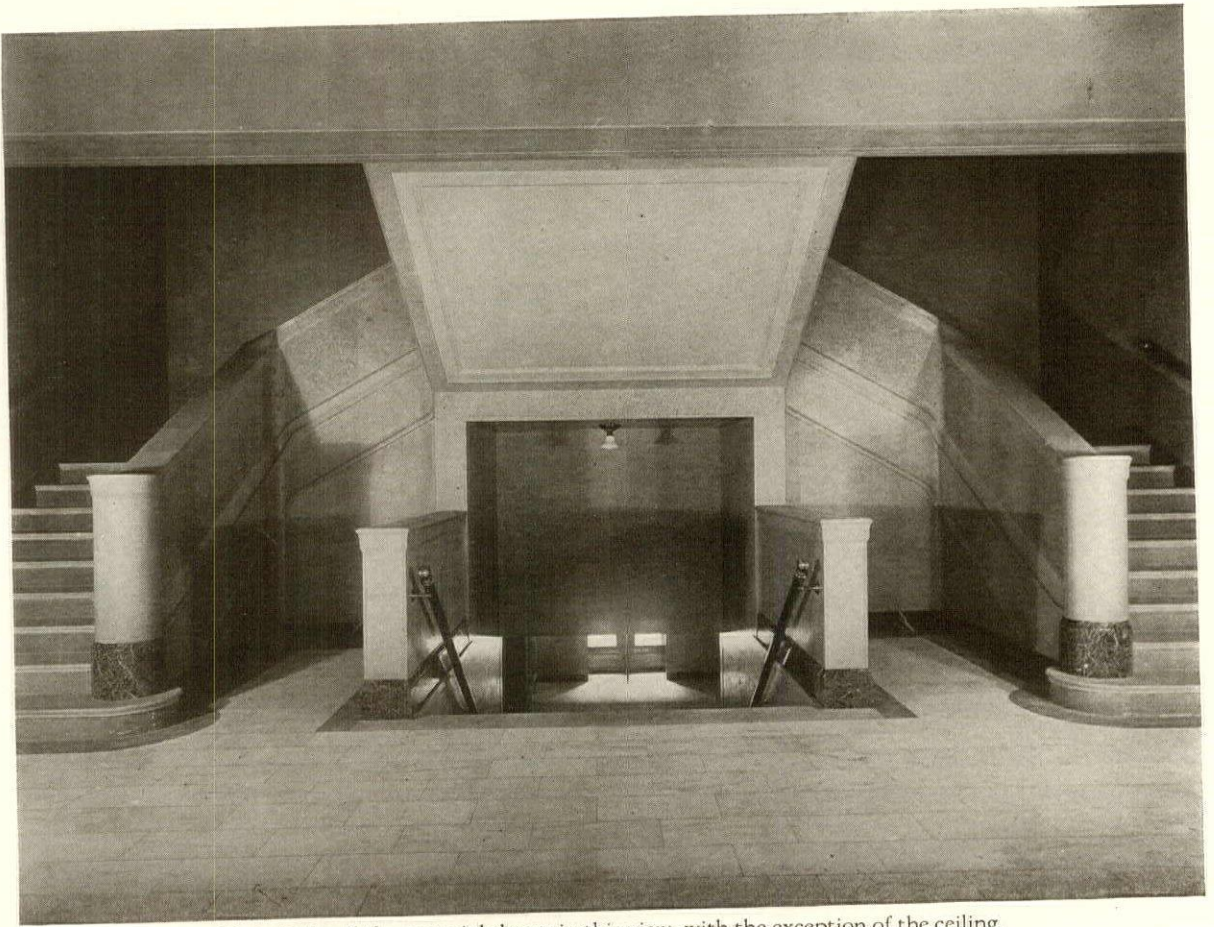
The area of the property was a trifle over 11,000 square feet and none of the corners were right angles. On account of the shape and because one side was greatly elongated, it was possible to develop the structure so that 15 per cent of the gross lot area was

represented by a net rentable area on each floor.

The architects, Graham, Anderson, Probst and White, have expressed the wishes and ideals of the owner in a way to do credit to Chicago. The tower of the south building, which was the first portion erected, rises to a height of 436 feet above the lake level, though the actual top of the clock tower is 468 feet above the water's edge. This tower is marked by a large lantern surmounted by a silvered spike 32 feet in height.



All the standing marble in the lobby is Verdello. This includes wainscoting, pilasters and columns, as well as the caps.



Practically all the material shown in this view, with the exception of the ceiling, is marble—floor, stairway, walls and bases.

The exterior material of both buildings—the north and south structures—is in harmony; they stand upon a base of stone intended to conform in design to the adjoining bridge abutments, the mass of the buildings being of light-colored terra cotta grading down from cream color at the top to a grayish tone at the ground floor where it joins the stone. The great height produces an effect of verticality which has been emphasized by the architectural lines, which are those of the French Renaissance of the period of Francis I. This style gives emphasis to such lines as those outlining the tower, and allows of much figure and detail work in decorative portions of the exterior.

On account of the outstanding position of the two structures, it was considered highly

desirable to illuminate them at night by means of flood lights and they are therefore clearly visible at all times. The unusual shape and advantageous position make them remarkably picturesque to the onlooker, and this is enhanced by the powerful revolving searchlight placed in the lantern, which serves as a beacon to the mariners on the lake as well as to the navigators of the air.

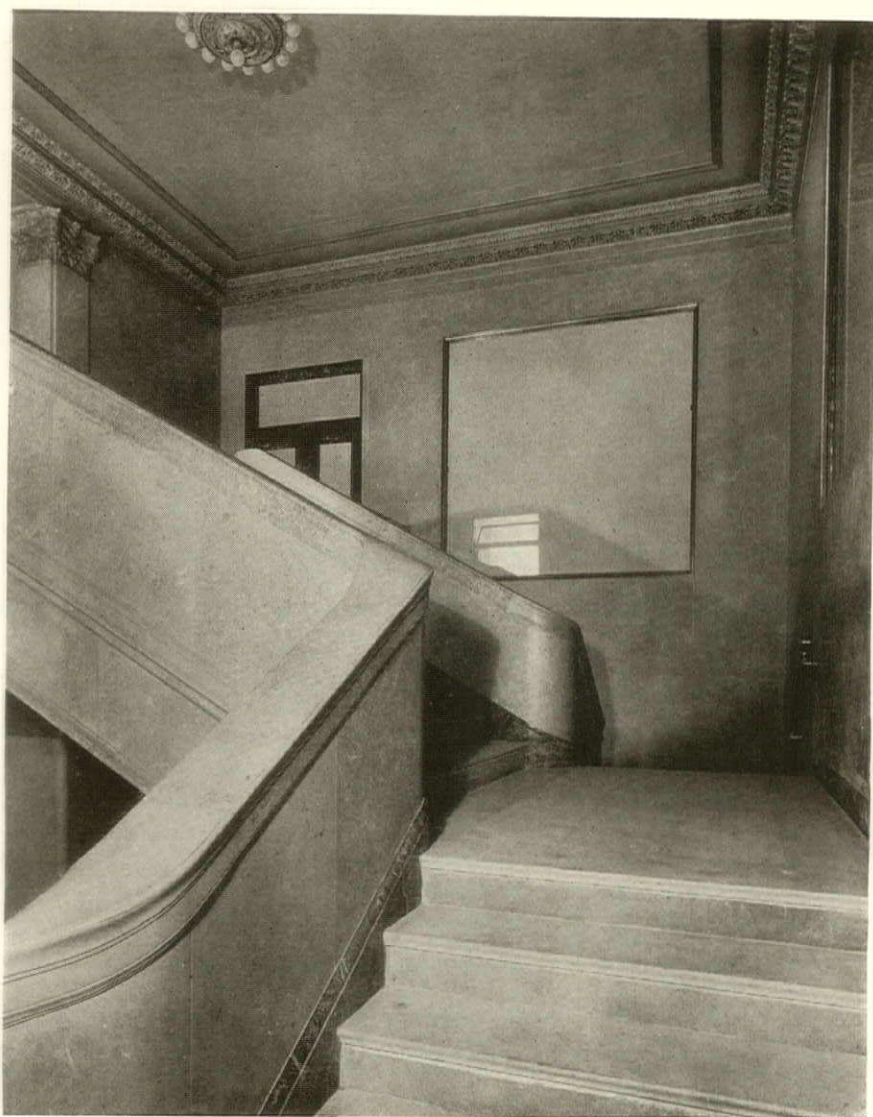
The south or tower building contains the Boulevard Bridge Bank on the Michigan Avenue level and the north section contains Grayling's Restaurant and a number of fine shops. The floors above are laid out as modern offices with the most complete appointments. The general offices of William Wrigley Jr. Company are located in the

tower building, and numerous corporations of national importance are housed in the two buildings.

One of the chief features of the interior of the Wrigley Building is the extensive marble treatment. The floors of the entrance vestibule, lobbies and elevator halls of both sections are of Clear Face Carthage marble, and the wall wainscoting, pilasters and columns, including the marble caps, are of Verdello marble. The corridors throughout the south section are of selected White Alabama with Verde Antique border and

base and Madri Vein wainscoting to a height of 7 feet 7½ inches. The toilet rooms throughout the south section have Alabama floors and Alabama wainscoting and double "C" partitions. In the north section the floors of the corridors are of Alabama with Tinos No. 3 borders and the wainscot is made up of a 6-inch Tinos No. 3 base and Clear Face Italian marble wainscoting to a height of 7 feet 7½ inches.

To realize more clearly the amount of marble used in the corridors, it may be stated that more than 11,000 lineal feet of

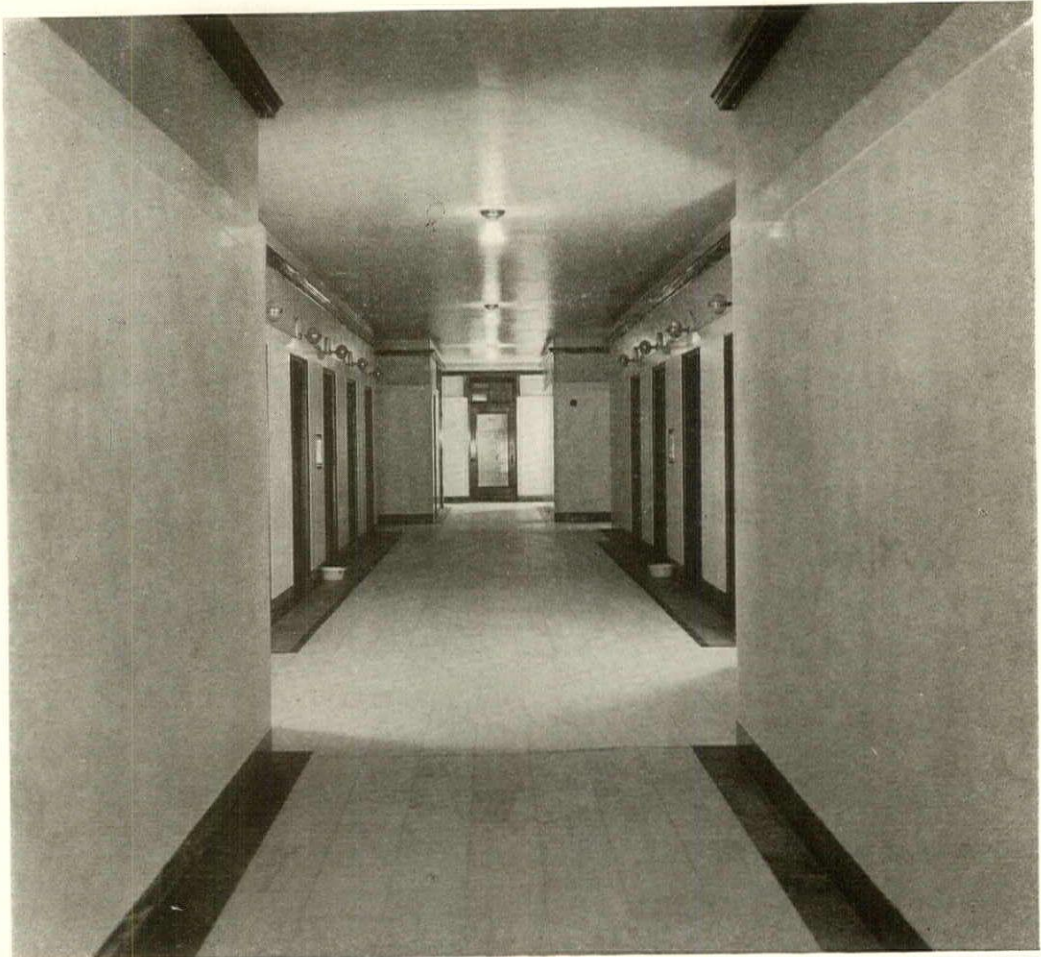


Details of stair shown on opposite page.

slabs 7 feet 7½ inches high were required, or in excess of two miles. Throughout the building there are a number of public toilet rooms and fourteen private ones with shower compartments. All the toilets are of White Italian marble floors with Clear Face Italian first-grade wainscot and double "C" partitions. The marble contractors claim that no other building in the United States contains a quantity that equals in square feet or cubic contents the amount of first quality Clear Face Italian marble that has been used here. The standard of excellence required in these materials was duplicated in the workmanship throughout the double structure and is characteristic of the busi-

ness methods and ideals of the owners.

A great number of users of marble work feel and believe that after the contract has been completed and paid for, they are through with it for all time and that it needs no further attention. As a matter of fact they are then in exactly the same position as the man who buys a good pair of shoes and fails periodically to have them shined. The Wrigley Building enterprises realized this fact. They have, consequently, arranged to employ two marble men, who continually repoint the joints, repolish and finish the exposed surfaces as required. As a result, the marble work is at all times in splendid repair and presents a new, fresh appearance.



A typical upper corridor in the Wrigley Building. The wainscoting is F. M. English Vein Italian; the floor is Tennessee.

A LIST OF THE WORLD'S MARBLES

By J. J. McClymont

Note—In a past issue, Mr. McClymont proposed, for the sake of convenience, to divide the different marbles into four groups. These arbitrary groupings were as follows:

GROUP A—Any marble or stone sold to the trade in fair-sized slabs or blocks of commercial size, rectangular shape and guaranteed by the seller to be sound, free from natural defects, that can be finished at a minimum cost, and sold to the consumer as sound marble.

GROUP B—Any marble or stone sold to the trade in slabs or blocks of fair or medium size, generally rectangular shape, guaranteed to be sound and free from natural defects, the finishing of which, because of texture, the size of slabs, the shape and size of blocks, is somewhat more expensive than those in Group A.

GROUP C—Any marble or stone that cannot be sold as sound but contains a minimum amount of natural defects, such as dry seams, old fractures, partially or completely healed surface voids, etc., to be treated by the manufacturer in the most approved manner, reinforced where necessary by liners on back or metal inlays and sold to the consumer as semi-sound marble.

GROUP D—All marble, stone and so-called serpentine marbles, and Onyx, which, by their peculiar formation are known to be fragile, such as Breccias and nearly all highly colored marbles and serpentines, and that are sold to the trade in irregular shaped blocks or slabs without a guarantee as to their soundness, treated by the manufacturer in the most approved manner, reinforced where necessary by liners on back or metal inlays and sold to the consumer as unsound marble.

Mysore—See Black Dolerite, Green Felsite, and Quartzite.

Namur

For marbles listed from Namur, Belgium, see—

Bleu Belge	Noir Fin
Bleu St. Remy	Noir Veine
Breche Du Nord	Rouge De Flandre
Breche De Waulsort	Rouge Fleuri
Breche Francaise	Rouge Griotte
Grand Courtil	Rouge Imperial
Griotte St. Remy	Rouge Royal
Heer Marble	Rouge Royal Vif
Noir Belge	Royal St. Remy

St. Anne

Nanquin Coquiler

Quarried at Mentious, in the Upper Garonne, France.

Warm whitish-brown containing small fossils. (Blagrove.)

Napoleon

Quarried in the Heureuse Valley, near Boulogne-sur-Mer, France.

Medium gray, veined with light red and brown.

Another variety is pink or rose and the third variety is of a rose fleur or fine ruddy brown.

Napoleon des Vosges

Quarried at Schirmeck, in Vosges, France. Various brown tints with veins of white, gray and auburn.

Napoleon Gray—Group A.

Quarried at Phenix, Missouri.

Dark gray with shades of pinkish glow and with bluish veins at regular intervals.

Napoleonite

Quarried in Corsica.

Dark gray, marked with orbicular light gray spots.

Napoleon Marbles

In addition to those prefixed Napoleon see Marquise.

Napoleon Pink

Same as Knox Pink (Tennessee).

Nassau Marble—See Famosa.

Natal—See Port Shepstone.

Navarra Province—See Blanco Rosado and Verde Moulin.

Naxos Marble or Naxian Marble.

Quarried on the Island of Naxos, one of the Cyclades.

Coarse grained white statuary.

A narrow channel divides Naxos from Paros, both islands are included under the name of Paronaxia. Some writers have confused Naxian Marble with Parian and they are similar in many respects.

Nebo Golden Travis or Mt. Nebo Golden

Travis or Bird's Eye—Group D.

Quarried on Thistle Mountain, Utah.

Brown variegated with yellowish-brown.

Takes a high polish.

Nebresina Quarries—See Dark Roman.

Negato—See White Negato.

Negropont—See Greek Cippolino.

Nehden—See Alma and Goldedar.

Nephrite

Same as Jade.

Nero Antico or Black Antique and Noir.

An ancient marble believed to have been quarried near the promontory of Taenarium, now Cape Natapan, Laconia, Greece. (Watson.)

Brindley in 1895 confirms this.

Blagrove in 1888 says the quarries have been lost.

Inasmuch as Nero Antico was used by the

Romans and perhaps named by them and at the same time called Marmar Taenarium, it seems clear that the location as given must be approximately correct.

Jet black with faint streaks of clear white or dusky black with grayish bands.

Nero—Black.

Nero Bigiastro

This is probably a variation of Nero Antico.

Ebony black with bands of mottled white, brown and gray.

Nero Strisciato

Sometimes called Nero Antico, which is probably modern.

Black with streaks of white.

Nestier—See Bise African, Bise Rose and Bise Violet.

Netler Dale—See Bird's-Eye (Derbyshire).

Neustadt

Kunzendorf, a small town where the Gray Kunzendorfer Marbles are quarried, is about five miles west of Neustadt.

Neuville

Same as Bleu de Neuville.

Nevada

It is reported that marble of a great variety of colors occurs in the Tempiute Mountains in the southeastern part of the state. We have no record of any attempts to quarry this stone.

Nevicarr—Snow.

New England—Group C

Quarried at Stainton, near Barrow-in-Furness, Lancashire, England.

One variety is light fawn colored without much veining. Another is darker with purple and brown markings. (Blagrove.) Dapple Limestone and White Limestone from the Newton Quarries near Dalton-in-Furness, Lancashire, England, are sometimes known locally as New England Marble and inasmuch as Dalton and Barrow are both near Stainton, the above stones are probably from the Newton Quarries.

New Haven

According to Professor C. V. Shepard, 1837, a marble described as gray or dove colored clouded with greenish-yellow serpentine, the latter containing black grains and sheets of magnetic iron ore, was quarried shortly after 1811 at a point $2\frac{1}{2}$ miles west of New Haven, Connecticut. Operations were abandoned a few years later.

New Jersey—See Jersey Green.

The only quarry reported as being in operation at present is the Lizzie Clay Quarry at Marble Hill, Phillipsburg.

New Mexico—See Alamora Golden Fleuri, Alamora Gray Fleuri and Alamora Gray Veine.

The Alamora Quarry at Alamagordo, Otero County, is the only marble quarry (as far as we know) now in operation.

New Montaranti—See Siena Montaranti.

Newton Abbot—See Bradley Woods, Gray Ogwell and Red Ogwell.

New Pedrara Onyx—See Onyx Pedrara.

Newton Bushell—See Devonshire Marbles.

Newton Quarries—See Dapple Limestone and White Limestone.

New York Marbles

According to the U.S. Geological Survey Stone, 1921, the only active marble quarries in New York producing building stone were:

Lepanta Quarries at Plattsburg, Clinton County.

The Dover Quarries at Wingdale, Dutchess County.

The Gouverneur Quarries at Gouverneur, St. Lawrence County.

The Glenn Falls Black Quarries, at Glen Falls, Warren County.

New Zealand Jade or Greenstone.

Quarried at Milford Sound, Otago, New Zealand.

According to Watson, most of the varieties are highly translucent, more so than any other variety of this mineral except the rare Emerald Green Jade of Burma.

New Zealand Marbles

According to Watson large undeveloped deposits of marble are found in the neighborhood of Milford Sound on the west coast of South Island, New Zealand.

Niccolo

This ancient Agate from unknown source is described by Pullen as white with rings of reddish-brown.

Nieder Lindewiese—See Lindewiese.

Nievre—See Jaune de La Nievre.

Niggerhead—See Gabbro.

Is a name applied to rounded boulders of black color.

Nile Alabaster or Nile Onyx.

Same as Egyptian Onyx.

Nimes

Near Alais, from the Alais Quarries, about twenty miles northwest of Nimes, in Gard, France, Lanquedoc is quarried.

Nippon Island Marbles—See Black and White Marble, Black Marble (Serpentine), and White Negato.

Nivelles

Feluy-Arquenne is quarried near Nivelles and is sometimes known as Nivelles Marble.

Nivernais

Quarried at Champ—Robert, Nievre, France.

Bluish-gray. (Blagrove.)

Nivernais Orange—See Orange du Nivernais.

Nizhne Tagilsk—See Russian Malachite.

Noble Serpentine or Precious Serpentine.

These are stones among the serpentines which possess a certain degree of transparency.

Noiratre—Blackish.

Noir Antique—Group B

Quarried at St. Crepin, in the Upper Alps. Uniform jet black. (Blagrove.)

Noir Belge or Tournai Marble—Group B.

Quarried near Basecles, Hainault, Belgium.

Black marble sold in four grades:

No. 1—Or best. No. 3—Common.

No. 2—Second best. No. 4—Inferior.

Noir Belge—Group B.

Quarried near the left bank of the Meuse, a little north of Mazy and Golzennes. Black.

Noir de Castres

Quarried at Castres, Tarn, France. Deep black of medium quality.

Noir de Sable—Group B.

Port Etroit Quarries at Juigne near Sable, Sarth, France.

Fine black with well defined white veins and few fossils.

Noire—Black.

Noir Fin—Generally known as Belgium Black—Group B.

Quarried near St. Denis, Namur, Belgium. Brownish jet black.

No. 1 blocks are seldom more than 11 inches thick.

Noir Francais—Group B.

From numerous quarries near Houdain, Pas de Calais, France.

Black but not as fine in texture or deep in color as the Belgian Black. Some varieties have small spots of white.

Noir Jurassique

Quarried in Jura, France. Pure Black. (Blagrove.)

Noir Sable

Same as Noir de Sable.

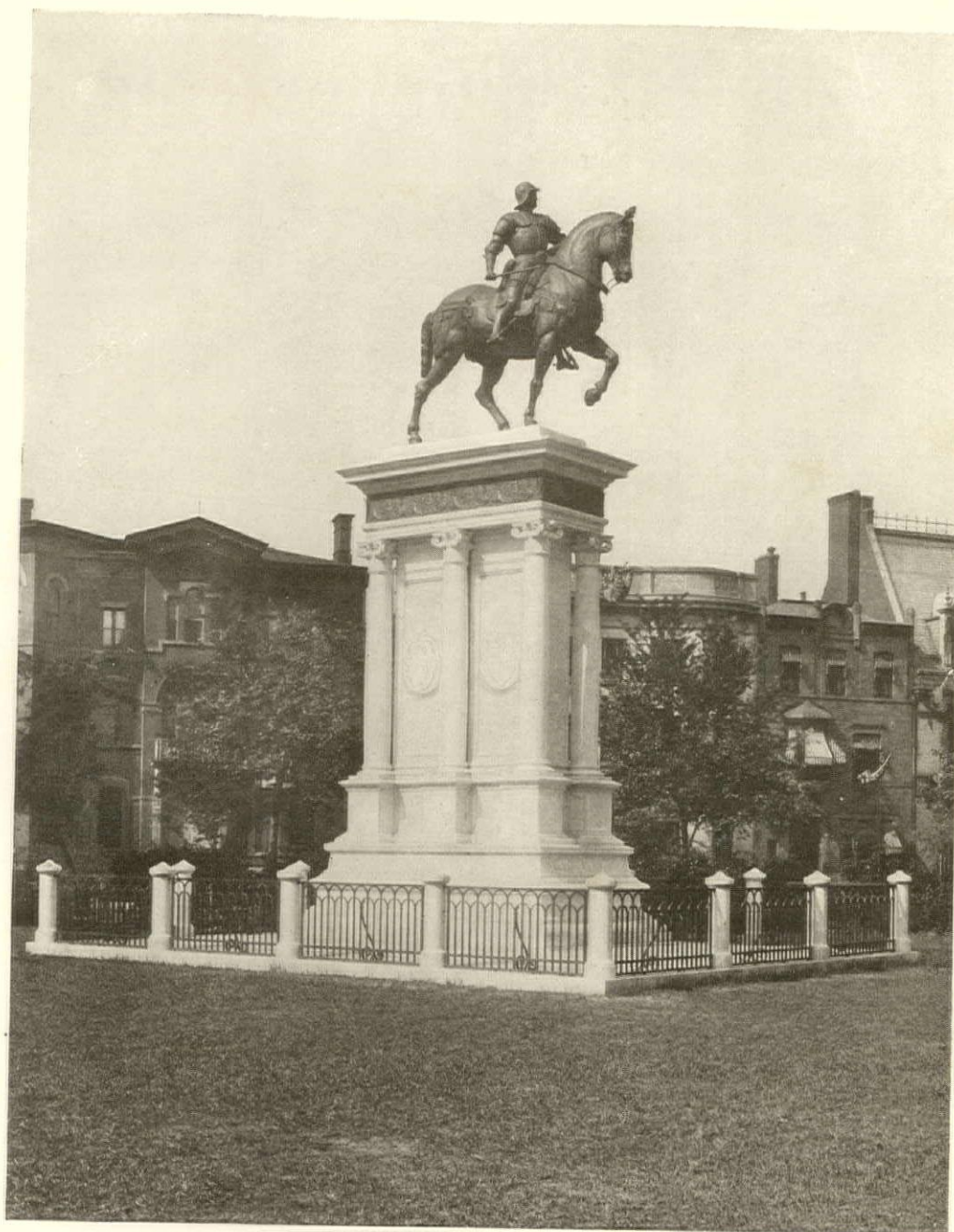
Noir Veine—Group C.

Quarried at St. Aubin, Florennes, Namur, Belgium.

Dark blue black with slender white markings.

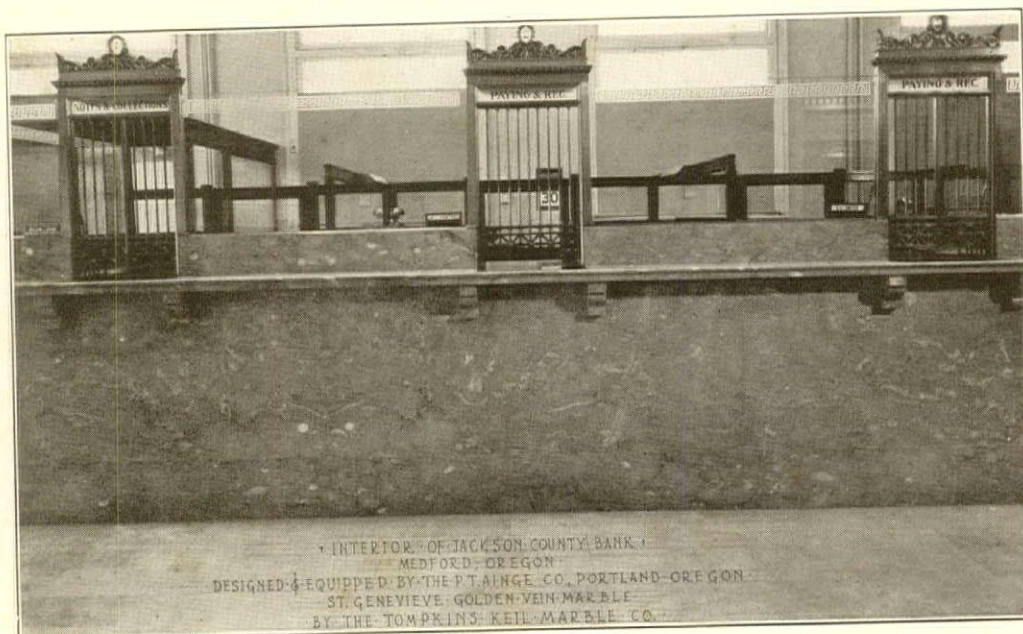
This marble is practically the same as Bleu Belge.

Takes good polish.



This Colleoni Monument, at Newark, New Jersey, is a masterful reproduction of one of the most famous sculptures in the world. The original statue was erected in Venice, in 1493, a year after the discovery of America. The Florentine, Andrea Verrocchio, conceived the design, but died before the work was completed, and Alessandro Leopardi was chosen by the Venetians to erect the pedestal and cast the bronze for the mounted figure. Ruskin wrote of the great masterpiece: "I do not believe there is a more glorious work of sculpture existing in the world than the equestrian statue of Bartolomeo Colleoni." The Newark Colleoni is the only full-sized marble and bronze copy of this statue in the world. It is 45 feet high over all. The base was carved from Georgia Cherokee marble. The sculptor was J. Massey Rhind, who was also the author of Newark's statue of Washington.

ST. GENEVIEVE GOLDEN VEIN



A Little Incident of a Big Business

It was the heart of winter several years ago. The whole country was sheeted in ice. Quarrying of all kinds was at a standstill. Although the stocks of block marble in our various yards were low, we were secure in the knowledge that all immediate requirements were cared for.

Suddenly came a call for one more block of a certain marble to finish a bank in a Mid-West City on schedule date.

Not a piece could be found. The quarry could not budge. Our reputation for resourcefulness was at stake.

At 3 o'clock one black morning one of our executives phoned to another.

Lying awake thinking, he had remembered that included in a general slow rail shipment to replenish one of our Southern Yards, was a piece of the particular marble needed.

A special messenger left New York at daylight to overtake the shipment and divert the particular piece North to where it was needed.

He rode with the piece until it reached the job several days later, but in time to save a costly tie-up of the building.

A small incident? True. But one of the small things that has made ours a large business.

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY



CHICAGO
SAN FRANCISCO
SYLACAUGA, ALA.
KNOXVILLE, TENN.