

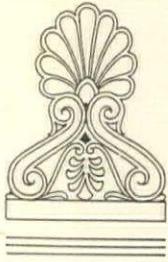


THROUGH THE AGES

MARCH, 1924

"I hardly know that association of shaft or tracery, for which I would exchange the warm sleep of sunshine on some smooth, broad, human-like front of marble."

—*Lamp of Power*: RUSKIN.



THROUGH THE AGES



VOL. I

MARCH, 1924

NO. 11

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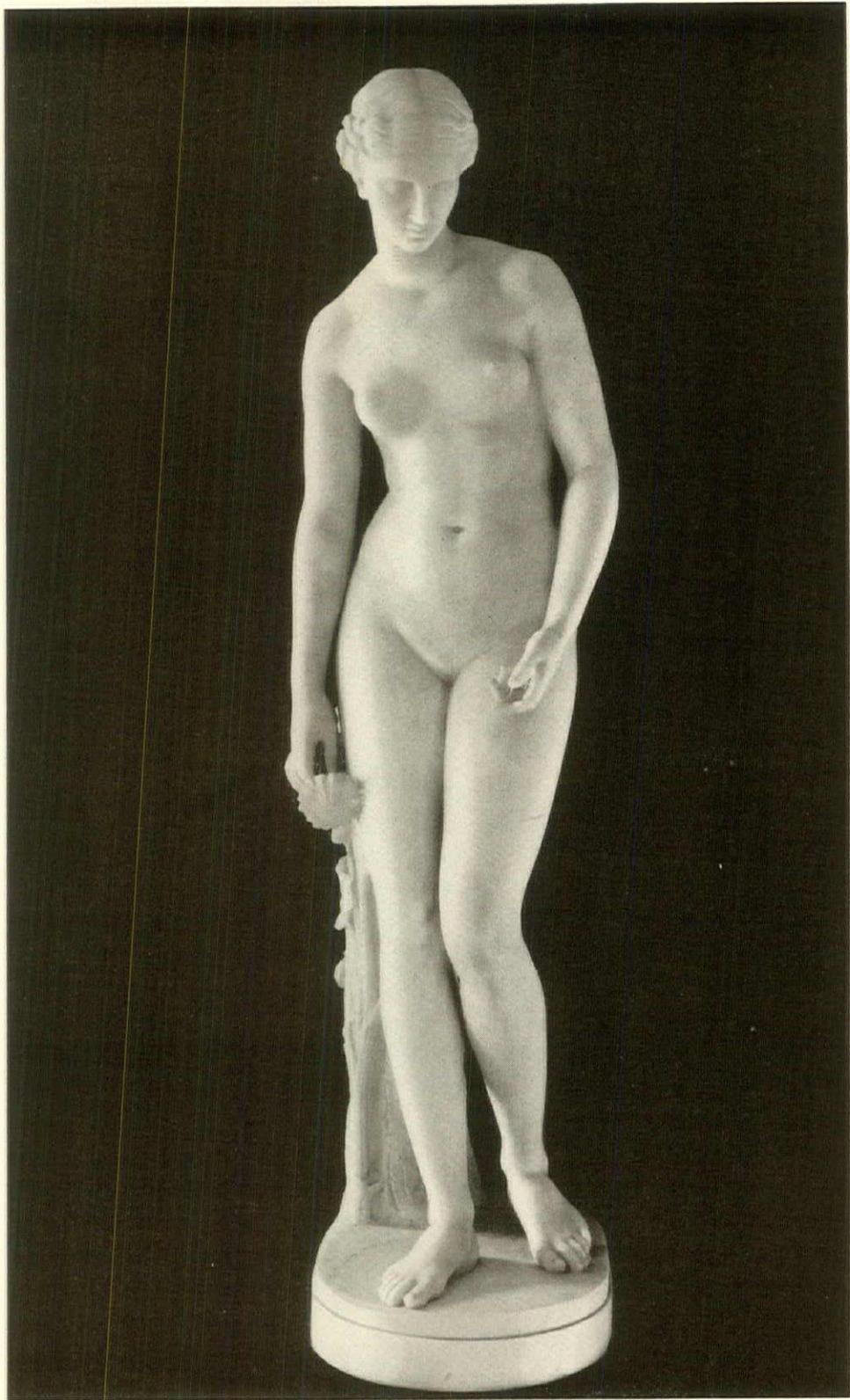
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"CLYTIE," considered the masterpiece of Wm. Henry Rinehart, the famous Maryland sculptor, who died in 1876. This Carrara marble statue is owned by the Peabody Institute, of Baltimore.

THROUGH THE AGES

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

VOL. 1

MARCH, 1924

NO. 11

ORPHEUM THEATRE

A Boston Playhouse that Makes Good Use of
Marble for Ornamentation and Attractiveness

THEATRES used to rely almost wholly on stucco work with wood and mirror effects. It is only within recent years that the owners and lessees have begun to realize the additional value that is derived from the use of interior marble. The Loew interests were among the first to see that the theatre-going public appreciates the finer, the more beautiful and substantial manner of treatment that marble yields. One of their recent structures is the Orpheum Theatre in Boston and it is well worth a study. The Hoffman Company and Thomas W. Lamb were the architects and they effected a noteworthy result through the adoption of a warm color scheme that is both striking and attractive. Marble itself plays a strong part in this splendidly interpreted picture. Moreover, it gives to the complete interior a solid and substantial effect that could be secured in no other way.

The Main Entrance Lobby, as the chief interior architectural feature, was treated with special elaboration. Here the vase and pediment effects are obtained through the use of deep rich Gravina marble from Alaska. The column shafts are Marine Broca-

dillo, a marble with light green background marked by striking and irregular splashes of white and pink. These columns were chosen and erected regardless of any matching among them and it is the wild irregularity that enhances the artistic effect.

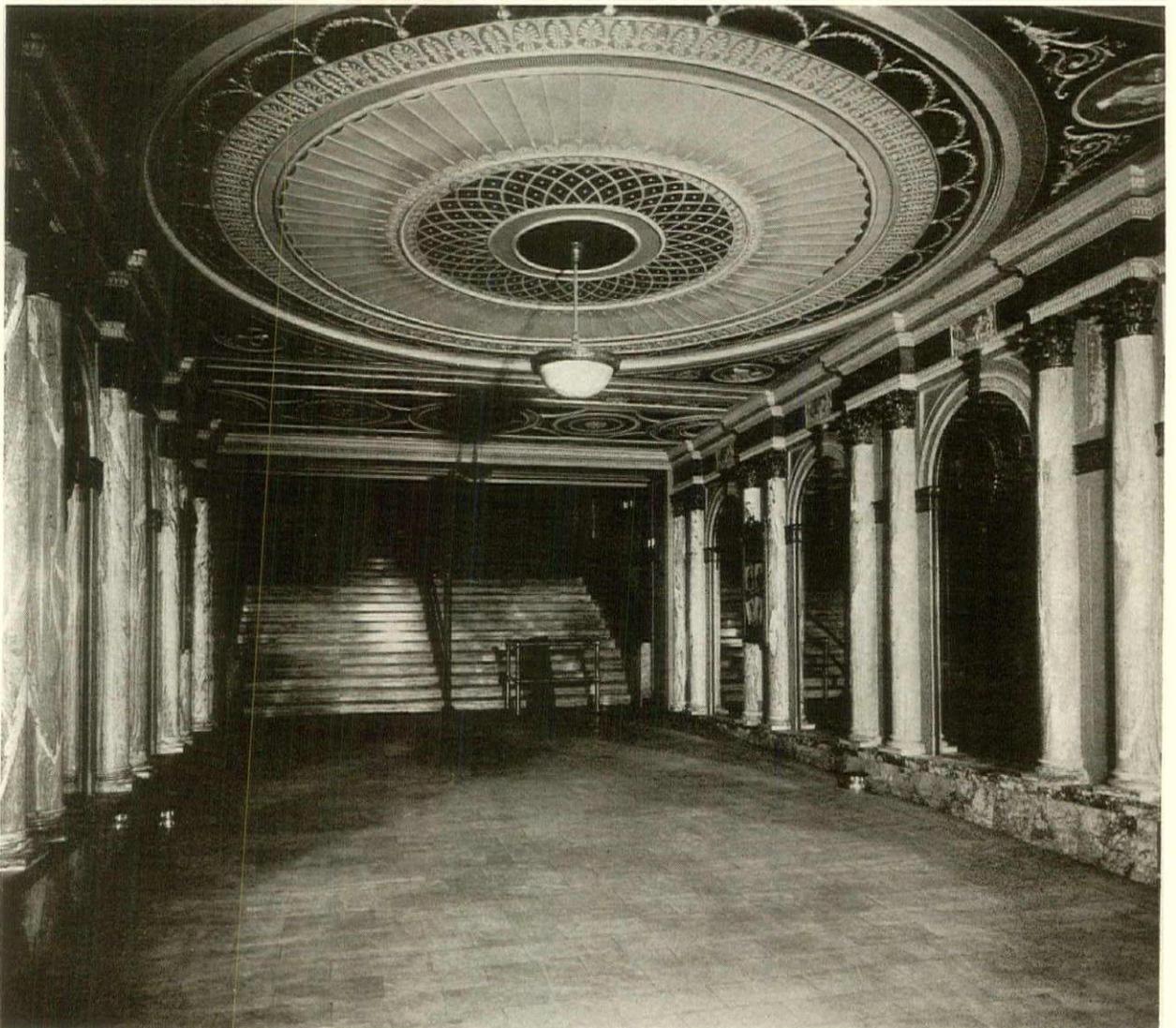
The stairway treatment of the ramp and twist is made up of Gravina and Tokeen marble from Alaska. The particular feature here is the wainscot paneling. This is of Marine Brocadillo, and the name "Marine" applies with peculiar aptness, for the colors with their green and white hues can well be taken to represent a storm at sea.

Around the well hole in the mezzanine floor is a marble balustrade, while beyond one gets a glimpse of the wainscot and pilasters on the side wall. A balustrade when well designed is of itself a thing of beauty, and in this case its good qualities are enhanced by a beautiful blend of Gravina and Brocadillo.

In the foyer of the mezzanine are also found columns of Marine Brocadillo, with its wild dashes of color. The general color scheme is of a soft restful effect and the marble lends just the touch of life that is needed.

A building of this kind proves that "it pays" to use marble for decorative effects, and that, for certain purposes, marble has a commercial as well as an artistic value. People will pay something for the privilege of being entertained in such a building. They demand more than the cheapness of a large plain auditorium. They want to be entertained in a building that is artistically and yet substantially treated and they are willing to spend more for this satisfaction.

That this is true is borne out by the experiences of amusement enterprises in many parts of the country. The Tired Business Man is never too tired to be stimulated by beautiful surroundings. Such theatres as the McVickers in Chicago; the Majestic at Portland; the Rialto and the Orpheum at Omaha; Loew's at Montreal and Quebec; the Lyric at Birmingham and the Majestic and Orpheum in Seattle have all received ample returns from the money spent on them.



The Main Entrance Lobby of the Orpheum Theatre, Boston, Massachusetts.
The columns are Marine Brocadillo, with bases and pediments of Gravina (Alaska) marble.



A NEW YORK CHURCH

THIS building, erected for the Second Church of Christ, Scientist, is opposite Central Park, on Central Park West, at Sixty-eighth Street, New York City, and occupies a rectangular area about 106 by 127 feet, with a total height of 110 feet. The exterior is designed in the architectural style of French Renaissance, and this same style has been brought out in all parts of the interior detail. The exterior base of the building, including the entire basement to the top of the water table, is faced with white Concord, N.H., granite. The remaining upper part of the entire four sides is faced with white South Dover, N.Y., marble. The exterior of the dome above the roof is finished with copper, and the roof is covered with black slate.

The floors and roof are constructed with

steel beams, which support the wire lath and concrete. The roof is carried on steel trusses, the two main trusses 94 feet long and 18 feet deep, and spaced 40 feet on centers. These main trusses support small cross trusses and trussed purlins. The roof dome is about 19 feet above the inside ceiling dome, and is 42 feet in diameter, and has sixteen segmental steel ribs 11 feet rise. It is paneled on the exterior with copper, and glazed with alternate oval and rectangular windows of white hammered glass. In the lantern surmounting the dome, and each of the four pinnacles, there is a circular vent opening, closed by light horizontal steel doors operated by chains from the first story.

With the exception of a few small windows of the exterior, which have wood frames and sash, all main windows which are glazed



The Main Entrance.

with art glass have copper frames. The casings and all mouldings show the same design both inside and outside. It is a well-known fact that in church work, where a large surface is glazed with art glass, that on account of the difference in temperature inside and outside of the building, water condenses on the inside of the glass and runs down on the window-sill, therefore it is of special interest to note the arrangement for collecting this water and carrying it to the outside of the building.

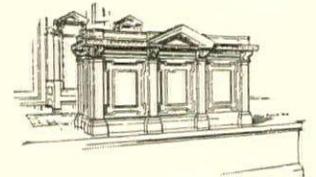
The detail calls for a continuous gutter on the inside of the copper casing, and from this through the metal window-sill, one-half inch copper tubes are located, which drain on the outer window-sills. As the large windows are glazed double—that is, the art glass is on the inside of the window, then a space of about two inches, and the outside glazed with hammered plate glass—to allow for any further condensation, an inside gutter is between the glass, and this also is drained into the metal tubes already spoken of. The further advantage of this detail is, that by its construction more glass surface is obtained in the openings.

In the design of this building it has been the aim to use as little woodwork as possible, and in bringing out this result many new features of construction have been devised.

On account of the average partition being about two inches thick, when plastered on both sides, the door openings are cased with a special casing about two inches wide. The windows have the sides and head jambs finished with plaster, and all window sills and stools are of Tennessee marble.

The main entrance to the Auditorium is reached by twelve steps, and the two main entrance doors have cast-bronze door frames and jamb, with an ornamental carved head jamb. The doors are a combination of mahogany and bronze, and the panels of doors are glazed with plate glass. The main entrance vestibule is 15 by 70 feet, and at each end is a marble stairway to the gallery which goes across the entire rear of Auditorium over this main vestibule. In the gallery the stair hall is enclosed with a metal frame and plate glass, so that the noise from the main vestibule and outside can not reach direct the Auditorium.

The platforms for seats in gallery are raised, and are entirely formed of Tennessee marble.



The Reader's Desk.

The floor is laid with marble mosaic of different shades, in a special design, introducing the scheme of decoration. The floor base is of black and gold marble, while the wainscot, door casings, and entire stairs to gallery are formed of black and white marbles from Italy.

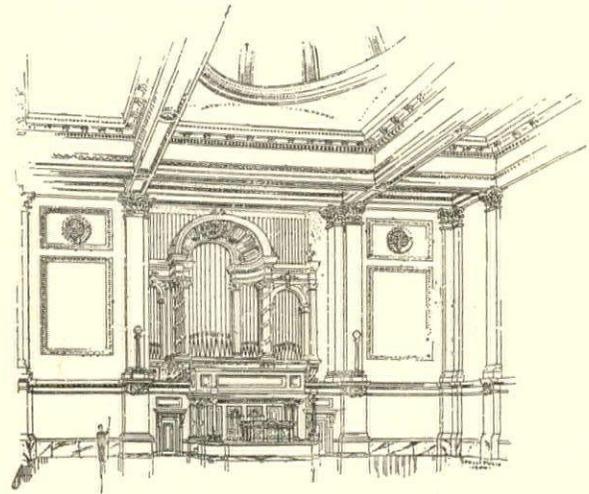
In the design of the stairs the balustrade is formed of marble with the panels filled with cast-bronze ornaments, and upon each newel post is a bronze lamp with five globes.

In a recess at each side of the exterior doors are located large steam radiators, and this recess is enclosed with a cast-bronze grille of open design, and the opening is cased with marble.

The ceiling of the vestibule is groined with plaster arches, beams, etc., and in the small panels of the beams are electric lights, forming the centers of plaster floral ornaments. The decoration scheme is of light old rose and ivory, with a slight blending of green and browns.

The Auditorium, which has a seating arrangement of 1500, is 76 by 80 feet on the floor and 80 by 108 feet on the ceiling, and is 58 feet high to the flat panels of ceiling and 72 feet to top of dome. The dome is 36 feet in diameter, and has a flat segmental curve with a 10-foot rise. It is glazed with amber-colored cathedral glass of fish-scale pattern, and is paneled with deep plaster ribs.

At each side of the room are large windows, each 24 feet wide and 30 feet high. At the



View of the Auditorium.

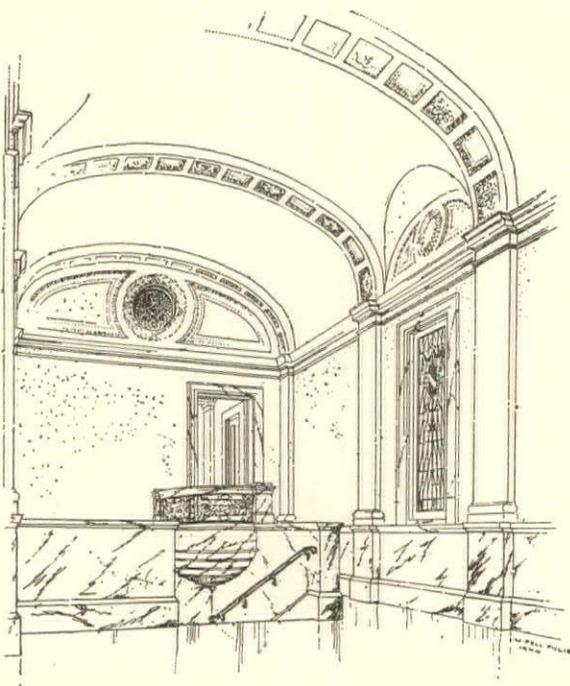
front the window is 22 by 24 feet. These openings are filled with colored art glass set in copper frames.

The Auditorium floor inclines about two feet from the rear to front, and the base at floor, which averages about 3 feet high, is formed with dark red Numidian mosaic.

The Office and Reception Room of the First Reader is on the same level as the Auditorium, and also opens directly off the main entrance on Sixty-eighth Street. The Reception Room is about 17 by 42 feet, and is finished in mahogany and white enamel, and the side walls hung with shades of brown tapestry.

Opening directly off the Reception Room is the Private Office for the First Reader; this is finished in mahogany and the side walls in green tapestry. This room has a mantel and gas-log fireplace, and a small coat-closet with washbasin.

The main entrance to the Reading Room is from Sixty-eighth Street, and this Hall, as well as the entire stairs to the Basement, is finished in dark red Numidian marble. The Basement, about 12 feet high, extends under the whole building, and is accessible by stairways in three corners. The Reading Room is about 50 by 54 feet, and has large



The Sixty-eighth Street Entrance.

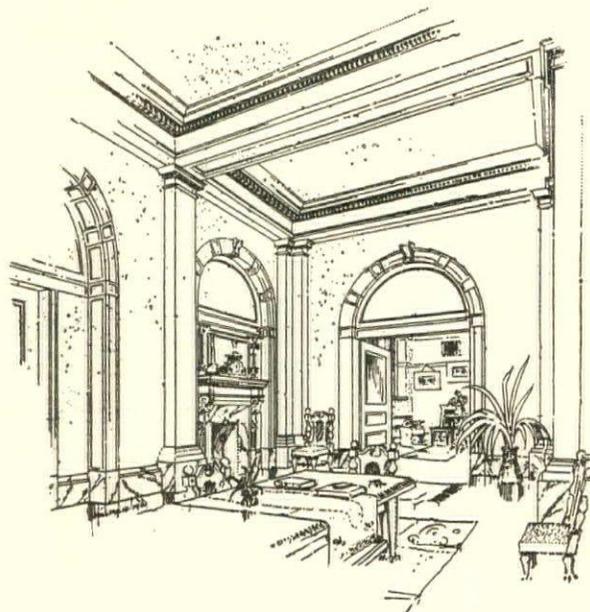
area windows opening on Sixty-eighth Street. A Library, 8 by 26 feet, communicates with the Reading Room by an archway on one side, and with the front stair hall, or corridor, on the opposite side. On the corridor side it is fitted with sliding windows and counters for the sale of literature before or after church services.

At one end of this corridor there is a large Office Room, with art glass windows opening on Central Park West. This Office Room is used by the Second Reader of the church, and the large corridor serves as the Reception Room for this Office. The floor of the Reading Room and Offices are of quartered oak; all the remaining floors of Basement are of white marble mosaic with a Tennessee marble base. The partitions in all the Toilet Rooms, also the wainscoting, is of polished Tennessee marble.

The heating and ventilation system of the building is of special importance, and the layout of the entire work was given very careful study. The fresh air is brought in at

the south area through specially constructed ducts, and this fresh air is screened clean, and drawn through the heating stack of about a mile and a half of pipe. The fan is located inside the boiler room, and is operated by an electric motor, and forces the air through the heating ducts which run under the entire Basement floor of the church, some of these ducts being five feet square. The warm air is taken from these ducts into various rooms and corridors and let into these rooms about eight feet from the floor. In the Auditorium the hot air inlets and pipes are located one at each corner near the ceiling. Each pipe, and also each division of the building, is controlled by valves and dampers.

In connection with the architectural work, the organ case, platform furniture, marble work, floors, bronze work, hardware, lighting scheme and fixtures, art glass, decorations, etc., were executed from special designs prepared by the architect, F. R. Comstock, of New York City.



The Second Reader's Reception Room.



The Springfield Institution for Savings, Springfield, Massachusetts.
The bank screen and pilasters are of Verde Antique.

BANK INTERIORS

Why Marble Offers Unusual Advantages in Securing the Necessary Effects

By WILLIAM W. EMMART, *Architect*, Baltimore, Md.

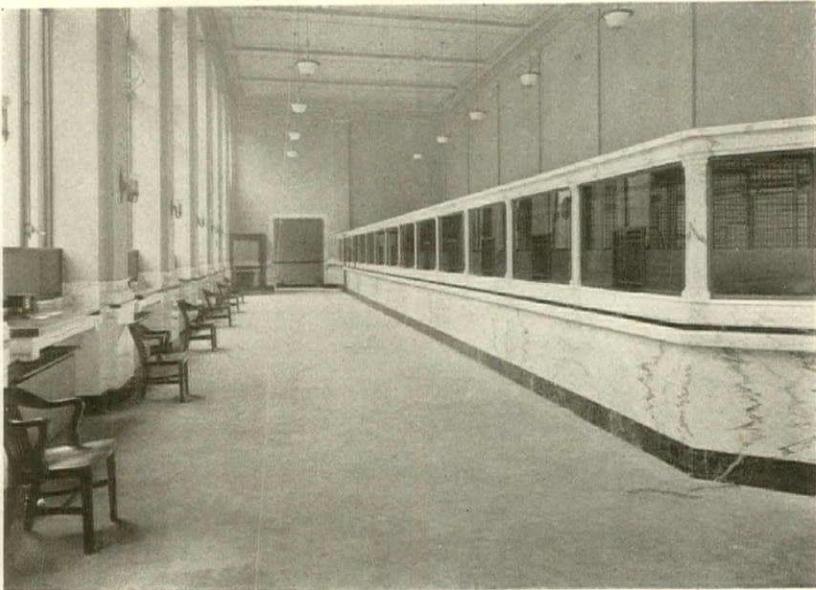
ARCHITECTURAL composition can never be brought down to rigid and fixed formulæ—each problem that the architect must solve has its own limitations as to space and cost, and its relation to the setting and surroundings. His duty is to work out a practical and efficient solution of each problem presented to him, and at the same time clothe the result with beauty and æsthetic fitness, which *is* beauty.

The architect, then, is never a worker in the abstract, a creator of mere beauty alone. The painter is able to portray at will such

phases of nature as may appeal to him, and the sculptor, too, may choose his subject, but the architect must always be limited in his designing by the necessity of solving the demands and requirements of others.

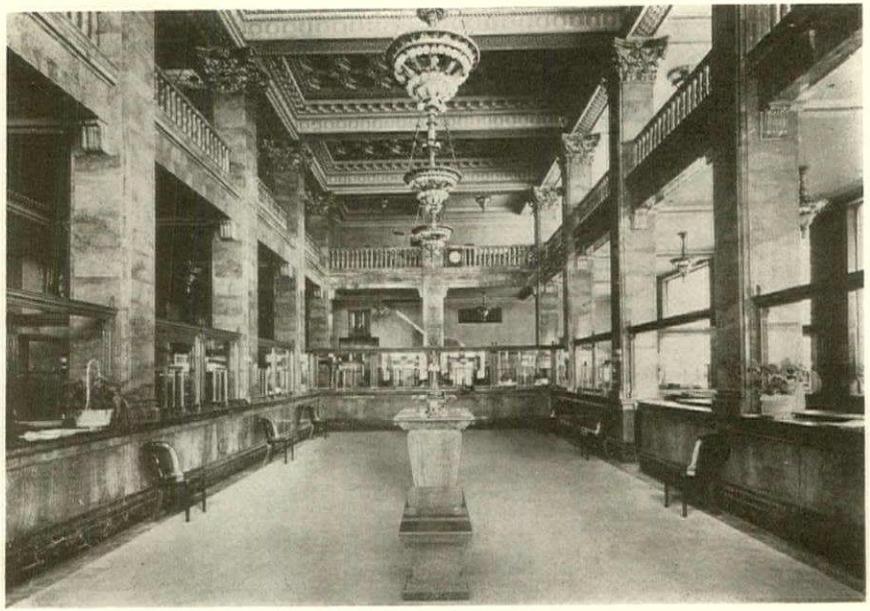
The designing of a bank requires, first, the practical creation of a plan that shall provide for all the highly specialized activities of that business; and this plan must provide for these in a way that shall be fitting with the importance and significance of such an institution to community and state.

THROUGH THE AGES



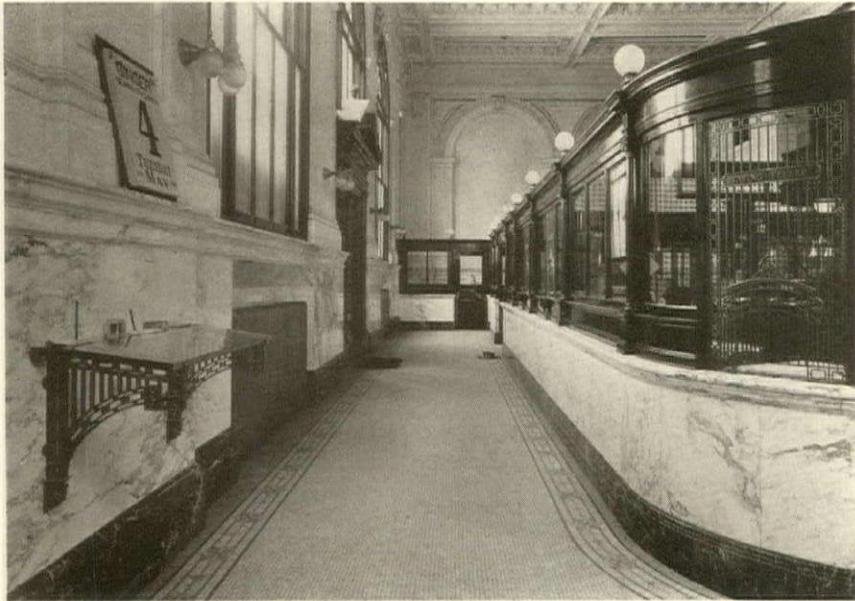
Cleveland Trust Branch Bank, Cleveland, Ohio; Alfred G. Hall, Architect. Madre Veined Alabama and Imported Verde Antique marbles were used here.

The Deseret National Bank at Salt Lake City, Utah, has bases and counters of Dark Utah Golden Travise, with the Light variety used in the dies, rails, columns and balustrade.



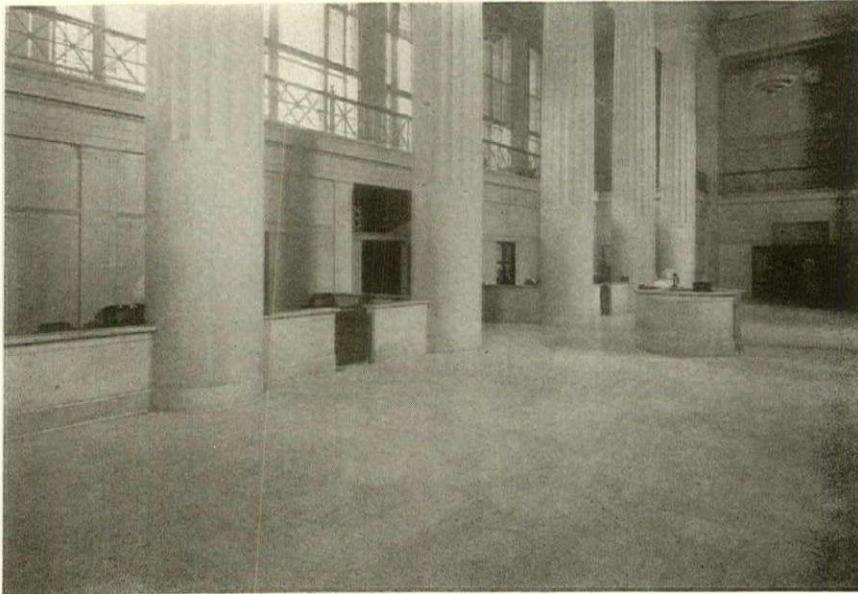
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Holmes and Winslow, the Architects of the First National Bank of South Amboy, New Jersey, chose Napoleon Gray marble for this effect.



The Market Street Title and Trust Company's banking room shows an excellent treatment of American Pavonazzo and Verde Antique.

THROUGH THE AGES

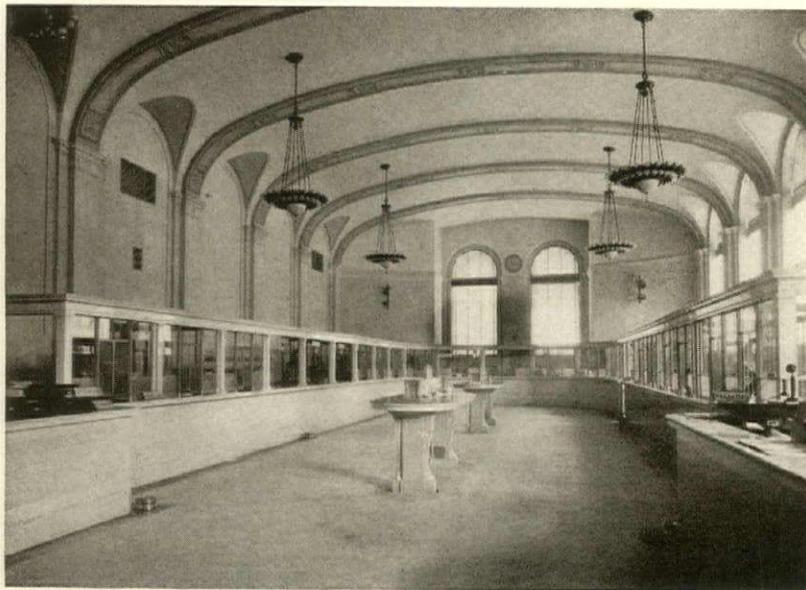


This massive dignity of the Kansas City Federal Reserve Bank is augmented by the use of San Saba marble for half-columns, desks and die.

These beautiful panels of American Pavonazzo contrast vividly with the white of the Second Statuary used in the walls and columns of the First National Bank of Pittsburgh.



The National Bank of Tacoma, Washington State, makes excellent use of San Saba Texas marble in this well-designed room.



Another interesting combination of American Pavonazzo and Verde Antique marbles is found in this bank at Hazelton, Pennsylvania—the First National.



American Bond and Mortgage Company, New York; G. Howard Crane, Architect.
 French Hauteville, Black and Gold and Tennessee (Pink and Gray) marbles
 were used in this remarkably handsome interior.

Dignity, fidelity and security are therefore requisites in the design and a proper selection of materials is vital if these qualities are to be given proper expression. Design is always dependent upon texture and color, as well as beauty of line and proportion, and where these qualities are sought no materials can ever replace marbles.

In the interior treatment of the bank there is a wide range of marbles of varying textures and colors to choose from. These are qualities that are well fitted for whatever phase of design and use is involved. Moreover, there is as wide a range in cost,

and cost is again an ever-present limitation upon the architect, as with no other worker in the arts.

The fine grain and close texture of marble particularly lends itself to the proper expression of detail and carving. Flat surfaces give opportunity for the use of a wealth of color and veining. The misuse of the latter and the too free use of high polish have often worked to the detriment of the final results; yet, in the hands of the skilled, sensitive designer, no material can ever supplant marble, nor so well contrast with the iron or bronze of gate and grille.



A SEATTLE COURT HOUSE

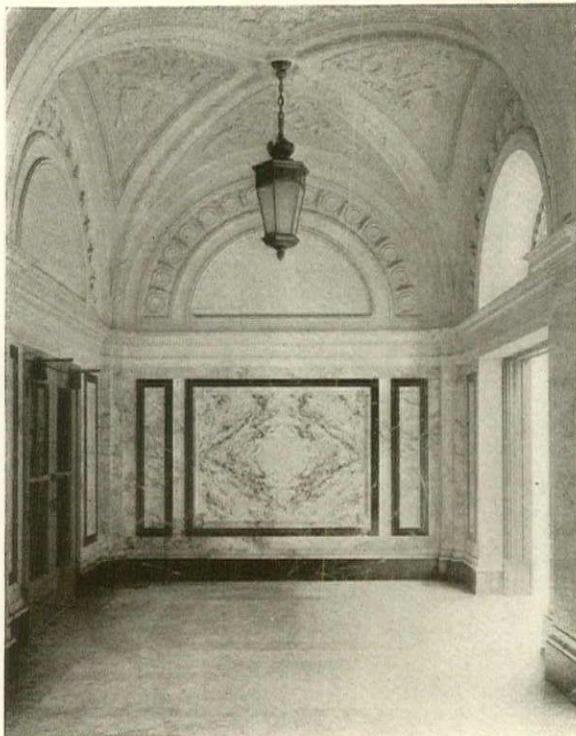
THE King County Court House in Seattle, Washington, was built in 1915.

The architect was A. Warren Gould. It presents an imposing appearance and is one of the largest and finest of Seattle's public buildings, covering one entire block facing the City Hall Park.

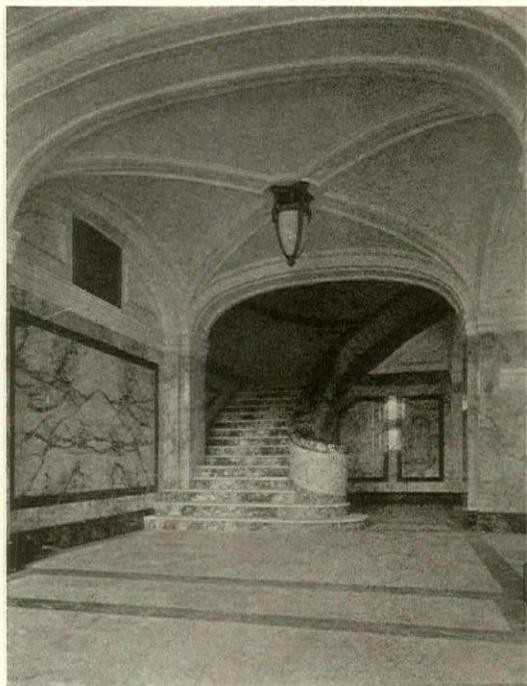
The marble is a very prominent, decorative feature in this building. Alaska marble was used throughout with the exception of

some green marble from Vermont of the kind called Verde Antique, which was used for base and panel trim in the wainscoting and floor borders. This is really a serpentine and takes a very fine polish.

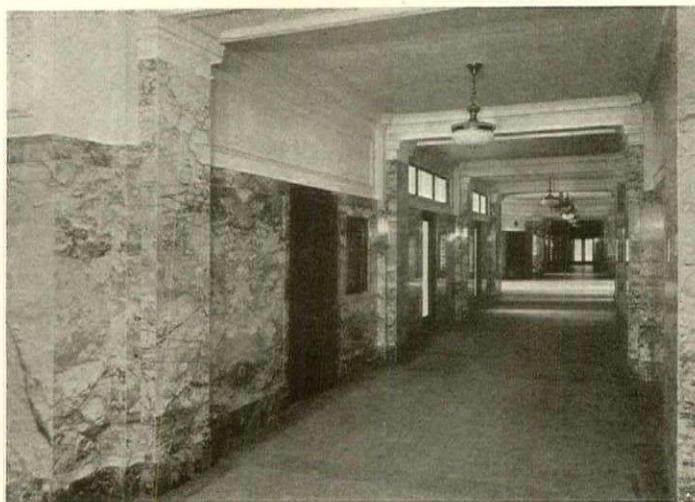
The main entrance hall opening off City Hall Park is noticeable for its fine well-matched panels on the walls, on either side, and its graceful arched ceiling supported by massive square columns. From either side



One of the matched panels set off by a border of darker marble at the east end of the second floor corridor.



Floors, stairway and wainscoting are all made of domestic marbles from Alaska and Vermont.



The striking appearance of the richly veined marble used on the third floor.

of the entrance hall a curved stairway leads to the first floor, and the light marble blends well with the dark trim and makes a most attractive appearance.

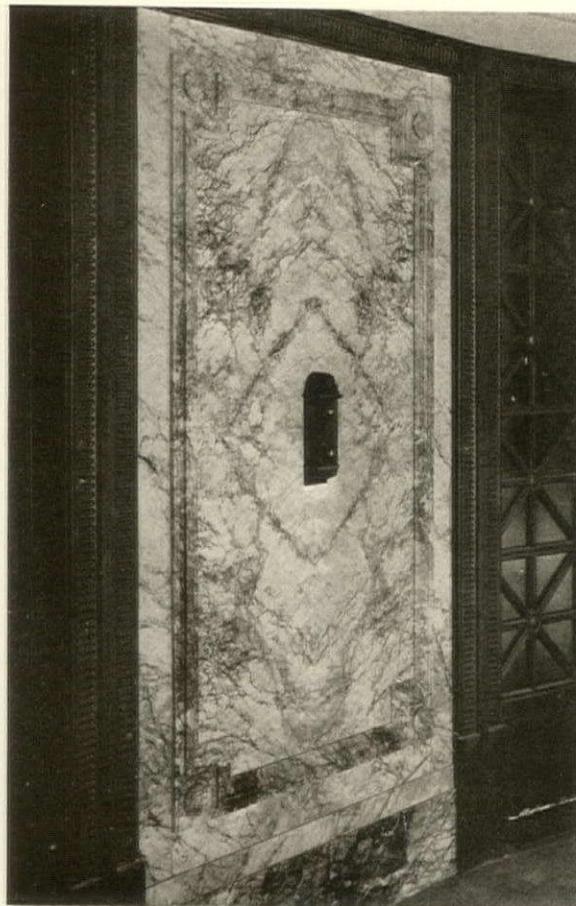
All of the corridors above the first floor are wainscoted with marble to the height of the doors. The long stretches of wall space in these corridors afford an unusual opportunity for displaying the striking veining of the Alaska marble. The matching, or book- ing, of the several slabs at the joints forms figures and patterns that have caused much favorable comment.

The marble on the pilasters of the ground floor extends to the height of the pilaster caps. The prominent feature of this floor is the arrangement of the panels between the

elevators, which are made up of four slabs carefully matched, and set off by trim of dark Alaska marble.

All of the floors and corridors in the building are made of contrasting light and dark Alaska marbles. In the large center rotunda in front of the elevators, there are elliptical and circular marble patterns on the floor.

The wainscot on all the floors except the third is of light Alaska marble with dark base, cap and door trim. The third floor wainscot stands out prominently in contrast with the other floors because the dark, heavily veined marble lends itself to various pattern combinations with good effect; and this, by some, has been more admired than the light wainscoting on the other floors.



One of the marble panels between the elevators, showing the care used in matching.

MEMORANDA ABOUT MARBLE

With Special Reference to Southern Marbles

By JOHN STEPHEN SEWELL, President of the Alabama Marble Co.

(Reprinted in part through the courtesy of The Southern Banker)

MARBLE is crystalline limestone. Most of the limestones of the world are believed to have originated from the accumulation of the calcareous remains of marine animals, such as corals and crinoids, on the bottom of the sea. This material accumulated through long ages, and in great thicknesses. In many cases they have been subsequently consolidated into limestones and then through earth stresses, under suitable conditions, compelled to crystallize into marble. Most of the marbles of the world belong to the Paleozoic era, the earliest of the geological eras in which there is an abundant record of life. Considering the extent to which modern civilization is dependent upon coal, iron ore and limestone, it is interesting to note that the more important deposits of all three of these materials are referred to the same era. They are all believed to owe their accumulation to organic agencies, either vegetable or animal. It is a theme for philosophical reflection that these three rocks, as the geologist calls them, which are so necessary to modern civilization, were accumulated ages ago by more primitive forms of life, which, so far as we know, flourished and disappeared before the human animal appeared upon the scene.

Marble occurs in endless variety and great abundance. The successful development of a marble deposit is, however, a slow and expensive proposition, and the available supply is dependent upon developed quarries, and not upon the great extent and abundance of deposits. The same agencies which

made of marble the most beautiful of all the stones available for building purposes, also made it erratic in many ways so that there is always great waste in producing it, especially in the more desirable kinds and grades, and often no commercially suitable stone is obtained until after a great deal of development work has been done. This makes it intrinsically more expensive than many other building stones, but it is a product which is never sold at an exorbitant margin of profit, and it is worth all it costs and more. Possibly if it were less expensive to produce, it might also be less highly prized, notwithstanding its intrinsic beauty.

Marbles in an endless variety of color and texture are produced in Italy, Greece, Africa, France, Spain, Belgium, Norway, Germany and Switzerland in the Old World. The Greek and Italian deposits were worked long before the Christian era.

It is interesting to note in Pliny's letters that in the days of the Romans marble was sawed into thin slabs by the same method which is used today; that is, by a strip of iron moved back and forth, using sand and water as an abrasive to wear the sawcut slowly through the marble. Today we have gangs of saws and mechanical feed for the sand and water, so that whereas the Romans sawed off one slab at a time, we can have as many as seventy-five or eighty saw blades working in the same block of marble at the same time. Pliny indignantly condemned the use of marble for the interior of buildings as an unjustifiable waste of money. He

also remarked that the Gods having placed marbles up in the tops of the mountains (as they actually did around the Carrara district), it was impious for man to presume to invade the mountain fastnesses and undo the work of the Gods. Notwithstanding his economical and religious objections to this use of marble, he described in a very practical manner how it is sawed, and strongly censures those contractors who delivered for the purpose of sawing the marble, sand of such a coarse grain that the sawcut was made unduly wide and wasted much material in which money was already tied up. Pliny's condemnation of the use of such a rich and expensive material for the interior finish of buildings was no doubt a good advertisement in those days for the material itself. Just as condemnation of the automobile in these days probably only serves to increase the use of automobiles. Human nature seems to have been much the same in all ages.

In the United States, marbles have been produced in Vermont, Massachusetts, New York, Pennsylvania, Maryland, Tennessee, Georgia, Alabama, Missouri, Oklahoma, Texas, New Mexico, Nevada, Arizona, Colorado, California, Minnesota and Alaska. Marbles are also now being produced from Central America and South America.

Marbles vary in color from white to black through almost every color and shade of the spectrum. Sometimes they are coarsely crystalline, and sometimes finely crystalline. Almost any marble which can be produced in merchantable form finds its appropriate use somewhere in the market. As a rule, coarsely crystalline marbles are not as attractive as others for polished interior work. On the other hand, many of them are unsurpassed for exterior building work, and for monumental work. To a large extent, the marbles of the United States and of the

entire world, for that matter, supplement each other so as to make available any sort of complete scheme that the architect may have in mind. Differences in crystallization gives him a great choice in the matter of texture; differences in coloring and in distribution of coloring makes it possible for him to have almost any color scheme that the mind of man can conceive.

In Vermont are produced a considerable variety of marbles varying from fine crystals to those which have crystals of moderate size. There may be coarsely crystalline marbles in Vermont, but so far as known, none are being produced at the present time. Among the Vermont marbles are many grades of white marbles, that is, marbles in which the background is white even though there may be considerable veining and clouding. Among the white marbles a certain portion are very free of color; that is, almost pure white and eminently suitable for all the purposes for which such marbles are desired. The veined and clouded marbles are suitable for interior finish as well as for exterior and monumental work. Vermont also produces a very desirable variety of Verde Antique, which, while classified as a marble, is not a crystalline limestone, but is really a rock constituted largely of serpentine. Vermont also produces a number of so-called fancy marbles. That is, those which are rich and variegated in color and suitable for highly decorative work. The leading marble company in Vermont is believed to be the largest marble concern in the world. The history of its inception and growth is one of the romances of a business which, if viewed from the proper angle, is never free of its romantic side.

In Massachusetts and New York have been produced marbles which would all be classed as white, although they contain generally, more or less clouding and veining. They have found extensive use for the ex-

teriors of buildings. The same is true of marbles produced in Maryland and Pennsylvania, although Maryland has produced a small amount of fine grained white marble which has been used for interior work.

In Tennessee are produced a great variety of marbles of excellent quality. Their ground tone varies from a light warm gray and various shades of pink and brownish pink to a dark chocolate. All grades and kinds of Tennessee marble have more or less of the characteristic pinkish hue which distinguishes them. Sometimes it is barely perceptible, at other times it is the outstanding characteristic of the marble itself. In size of crystals, Tennessee marble occupies a medium position, but the crystallization is never coarse enough to disqualify it for interior work. Tennessee marble is also interesting from the fact that the traces of the marine animals whose remains were the raw material of which it was made, have not in all cases been wholly destroyed, but can be recognized very easily by a close examination of the stone. The fact that some of these forms have been perpetuated in the crystallization of the stone lends beauty and interest to the stone itself. Where white marble is not desired and a rich variegated effect is also not desired, but where agreeable color, richness of texture and quiet dignity are desired, Tennessee marble is without any superior for interior work. It is also the best floor marble for floors that are subjected to very heavy foot traffic. It is nearly always sawed across the grain, and marble, like wood, always wears better under traffic if the grain stands on edge or on end instead of being parallel to the exposed surface.

The Georgia marbles are coarsely crystalline. This is their only drawback for interior work, and even this would not be a drawback but for the fact that finer grained marbles with the same color value are avail-

able. Most of the Georgia marbles have a white or light gray background, but some of them have such an amount of heavy black clouding that becomes the distinguishing characteristic. There is also one variety which has a pink background with the other clouding, which is characteristic of Georgia marbles generally. As an exterior building stone, Georgia marble is unsurpassed. Selected grades have a beauty and character all their own for monumental work, which makes their standing in this field secure for all times. The variety which has a pink background with a good deal of gray and black veining and clouding has been used in the Federal Reserve Bank Building at Cleveland, Ohio, and has produced a wonderful effect of soft texture combined with strength and massiveness. It is a variety of Georgia marble which in the past has not been sufficiently appreciated, possibly because its best sphere of usefulness has only recently been found.

Alabama contains a number of different kinds of marble. At the present time, the only variety of marble actually produced in Alabama is a fine grained white marble, generally containing more or less veining and clouding but occasionally yielding pieces of moderate size which are practically of statuary quality. Alabama marble has found its best use in the interior finish of buildings where white marble is desired. There has been no difficulty in selling the output of all of the active quarries for this purpose. Both the finer grades of Vermont marble and all grades of Alabama marbles have a background which is distinctly warm or creamy in tone as compared with the white marble imported from Italy. This has made them especially desirable in cases where this particular effect is desired, but it has been a cause for preference of Italian marbles in cases where the opposite effect is desired. In

addition to the white marbles Alabama has large deposits of marbles of a gray or buff gray tone and agreeable texture. It also has deposits of red and white variegated marbles and of various kinds of black marble, one of which seems to be really black Verde Antique. None of the Alabama marbles, however, except the white, have so far been commercially exploited. At the present time, the only places in the United States proper where fine grained white marble suitable for interior use can be obtained are Vermont and Alabama, but marbles of this type are also produced in Alaska and find a ready market on the Pacific Coast.

Missouri produces a variety of marbles generally of a gray or buff gray tone, which take a good polish, and have found a ready market where marble is desired and cost is a vital consideration. They are generally somewhat less expensive than other marbles of the same general character, and are very satisfactory, although ordinarily some of the imported marbles or some of the Tennessee marbles would be considered somewhat more attractive. Even here, however, there are cases where marbles like the Missouri marbles are more suitable from every point of view than other marbles. So that each variety of marble finds its own sphere of usefulness in which it stands at the head of the list. Of course, there is more or less overlapping, but it is interesting to note that the southern states which are now producing marbles really produce a number of varieties which supplement each other and which are not really competitive, at least not for those uses to which each is best adapted.

So far as known the quarries in Oklahoma, Texas, Nevada, New Mexico and Colorado are not, at the present time, operating; or if they are, they have only recently started up.

It is probable that more than one-half of the marble produced in the United States,

at the present time, for all purposes, is produced in the South, so that the marble business has become a very important southern industry. Where marble is finished at the point of production, there is no business which brings a larger percentage of the final value of finished product into the state where it is produced than marble.

While the marble business is not a large one as compared with steel, cement, coal, etc., it is, considering the volume of the business, a highly important factor in the industrial upbuilding of any state where the industry is maintained.

While marble is not the least expensive in first cost, it is at least as permanent and satisfactory in use as any finishing material available. The cost of maintaining it is very small, and in high-class buildings when first cost and the cost of maintenance are considered together, marble is of all finishing materials available, the most economical. It resists stains and discolorations, at least as well as anything available. It is very easy to clean and keep clean. Properly cared for, it will retain its polish or other finish practically as long as the building stands, but, if desired, the finish can be removed or changed without prohibitive cost. The owners and managers of buildings in which the interiors are finished with marble should be warned about certain things:

First: Ordinarily the best way to clean marble is to use clean water and clean rags, and nothing else.

Second: Sometimes the film of dust that settles upon finished surfaces in large cities contains a little grease. Under such circumstances, a little ammonia or diluted alkali added to the water will produce satisfactory results. Alkalis will not injure the marble. As marble is limestone, acids will injure it, therefore, they should never be used.

Third: Under no circumstances should

soap be used in cleaning marble. There is always some uncombined fat in soap. This will leave a slight film on the surface and will ultimately cause a disagreeable yellowish oily appearance in white or delicately colored marbles. This can be removed by the use of alkali, but it is much better to avoid the use of soap, then the discoloration will not occur. This discoloration due to soap only makes its appearance after a long time, and after the persistent use of soap or cleansing powders containing soap, but a weak alkaline solution is better than the soap to begin with, therefore, soap should never be used.

Fourth: Cleaning marble floors the same precaution should be observed, but in this case gritty material carried on the feet of the people who walk on the floor may grind itself into the surface of the marble slightly, which would be somewhat difficult to remove by ordinary effort. Where the traffic is light, this is entirely negligible. Where it is heavy this may become a matter of consequence. In any case, it is always well in maintaining marble floors to have them

gone over occasionally with the floor rubbing machines with which they were finished in the beginning. On the upper floors of an office building, this will be necessary only once in many years. In places where the traffic is extremely heavy, it may be necessary to do this several times a year.

Fifth: It rarely happens that any discoloration will make its appearance in marble which cannot be effectively removed or prevented, if the precautions above stated are observed. In the rare cases where such things do occur, the trouble can nearly always be corrected by the use of javel water, a preparation of bicarbonate of soda and of chloride of lime, which can be obtained from any druggist. The chloride of lime is a bleaching agent and it will not injure the marble, since the chloride in it already has all the calcium it can combine with. Iron rust is the one staining agent which is able to penetrate and which cannot be removed. Therefore, in setting marble, care should be taken to prevent it from being in contact with any steel or iron which might be subject to rust.



Loading Marble in a Southern Quarry.



Famous & Barr Co., of St. Louis, Missouri.

MARBLE FLOORS FOR DEPARTMENT STORES

By FRED Z. SALOMON, General Manager

May Department Stores Company

THE May Department Stores Co. is one of the largest retailers in the United States, operating stores in Akron, Cleveland, Denver, Los Angeles and St. Louis. Naturally, where great crowds of people are constantly passing through a store, the question of maintenance is quite a serious one. Fixtures have to be repaired and replaced, walls must constantly be

painted and cleaned, and a small army of people have to be constantly employed making replacements to keep up the appearance of the establishments.

One of the most serious problems had always been the maintenance of floors in a first-class condition. For years it had been our custom to use wooden floors, just as thousands of other stores all over the coun-



Marble blocks in the main floor.

try had been doing. We had given a great deal of thought to the care of these floors, but had never really thought much about the flooring material itself. Our experience with them was very unsatisfactory, especially where traffic was heaviest, and it finally was forced upon us that we would have to find some other material that would be more suitable to our needs. Good business logic suggested that we use a floor covering that was economical in first costs, easy to maintain and safe to walk upon.

The whole matter of floor covering received our serious consideration from every angle. Any change, if not satisfactory, would prove a serious expense. After investigating all mater-

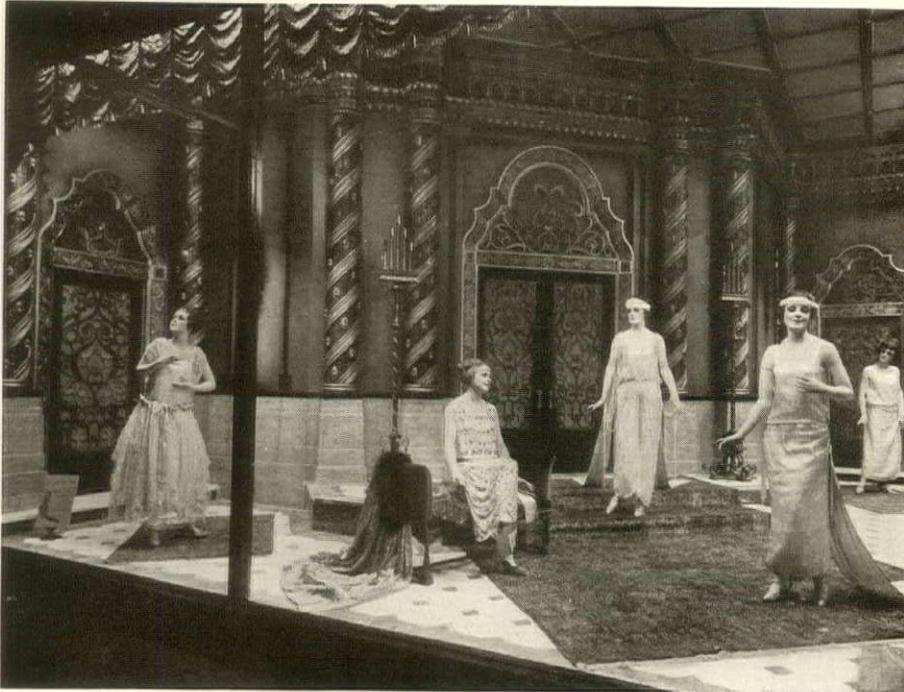
ials suggested and comparing their merits and costs, we finally decided on marble. This was especially necessary in those areas where it was to be subjected to the greatest wear. It meant, it is true, quite an investment, as all the stores were to have the same treatment. The store in St. Louis alone required in the neighborhood of fifty thousand square feet.

As soon as we had decided that marble was the material best suited

to our requirements, plans were made to make the change at once, and the work was quickly completed. The deciding factors in our choice were: First Cost, Appearance, Cleanliness, Economy, Quietness, Safety and Health. We are convinced that we



Here the marble is set in herring-bone style.



One of the display windows in the May Department Store.

have made a wise decision, and selected the material that best complies with the requirements and meets the exactions most fully.

The First Cost of marble is not prohibitive. As a matter of fact, when we took into consideration the lasting qualities of this material, we found it to be one of the least expensive materials we could have used. The wooden floor had to be replaced every three or four years—an inconvenience as well as an expense—whereas the durability of marble is practically unlimited.

The marble floors add more to the Appearance of the store than any other improvement of equal cost, not only in themselves, but because they enhance the appearance of fixtures and merchandise as nothing else can do.

The floors not only look Cleaner, but are cleaner, because both employees and customers respect their appearance and do not throw paper and trash on them, as they do

on wooden or carpeted floors. Furthermore, it is easier to remove dirt as well as staining liquids from marble. We have never had a stain on our marble floors that we have not been able to remove without injuring the appearance of the marble. These stains include red and black ink, shoe blacking, patent medicine, fruit juices and flavoring syrups.

When we scrubbed our wood floors by hand, it required thirty women working twelve hours to finish the job, and we could only do it once a week. When we scrubbed the floor nightly by machine, it required ten men, two machines and four and a half hours each night. Since installing the marble floors, two men do the work every night and do the job *well*. So much for their Economy.

The noise of thousands of footsteps is subdued on marble floors. They make a Quiet store.

People do not slip and fall on marble

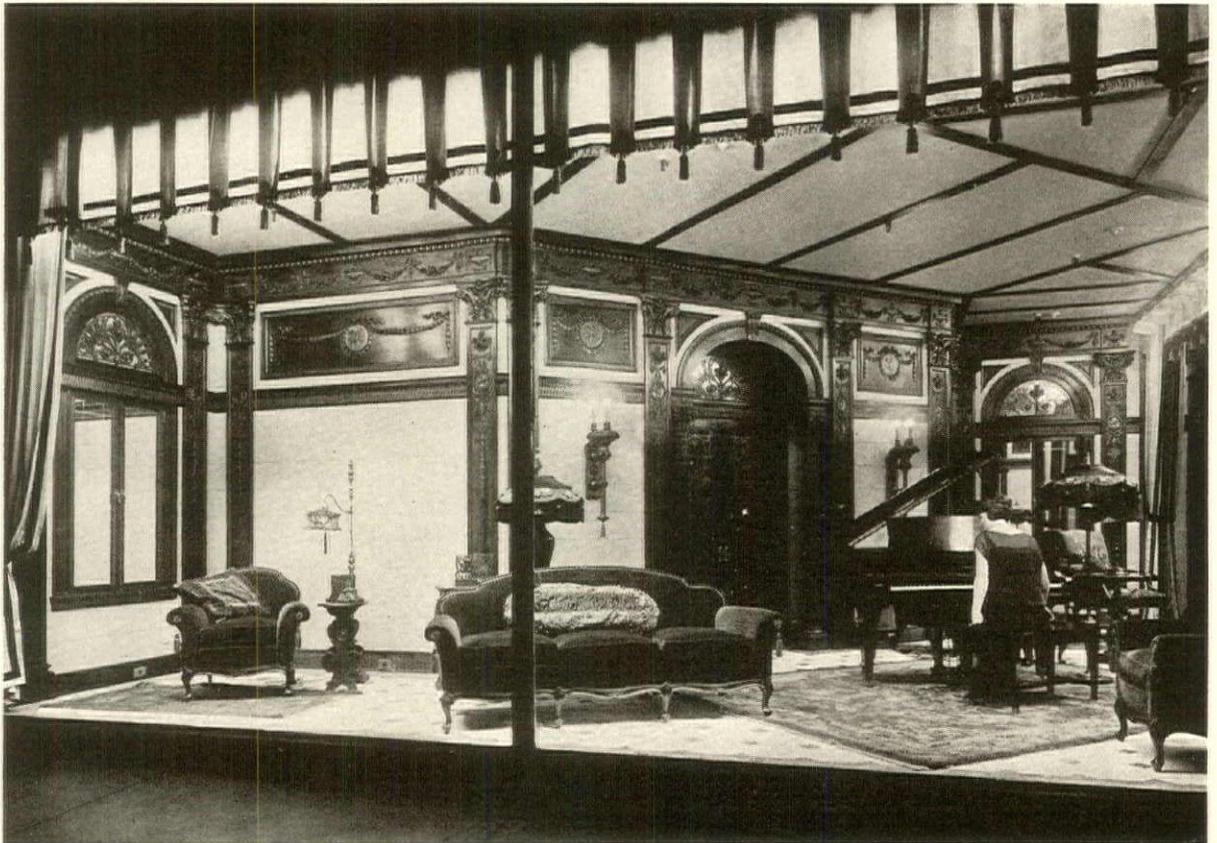
floors when rain and slush are tracked in. They are Safe floors.

We notice that the lighting fixtures, inverted bowls, etc., do not need to be cleaned oftener than every three or four weeks now that marble is used. Formerly they were not cleaned often enough when we cleaned them every week. This is fairly evident proof that the amount of dust in the air has been materially reduced. This probably has a direct bearing on the general Health of our employees, in particular, and perhaps of our customers also.

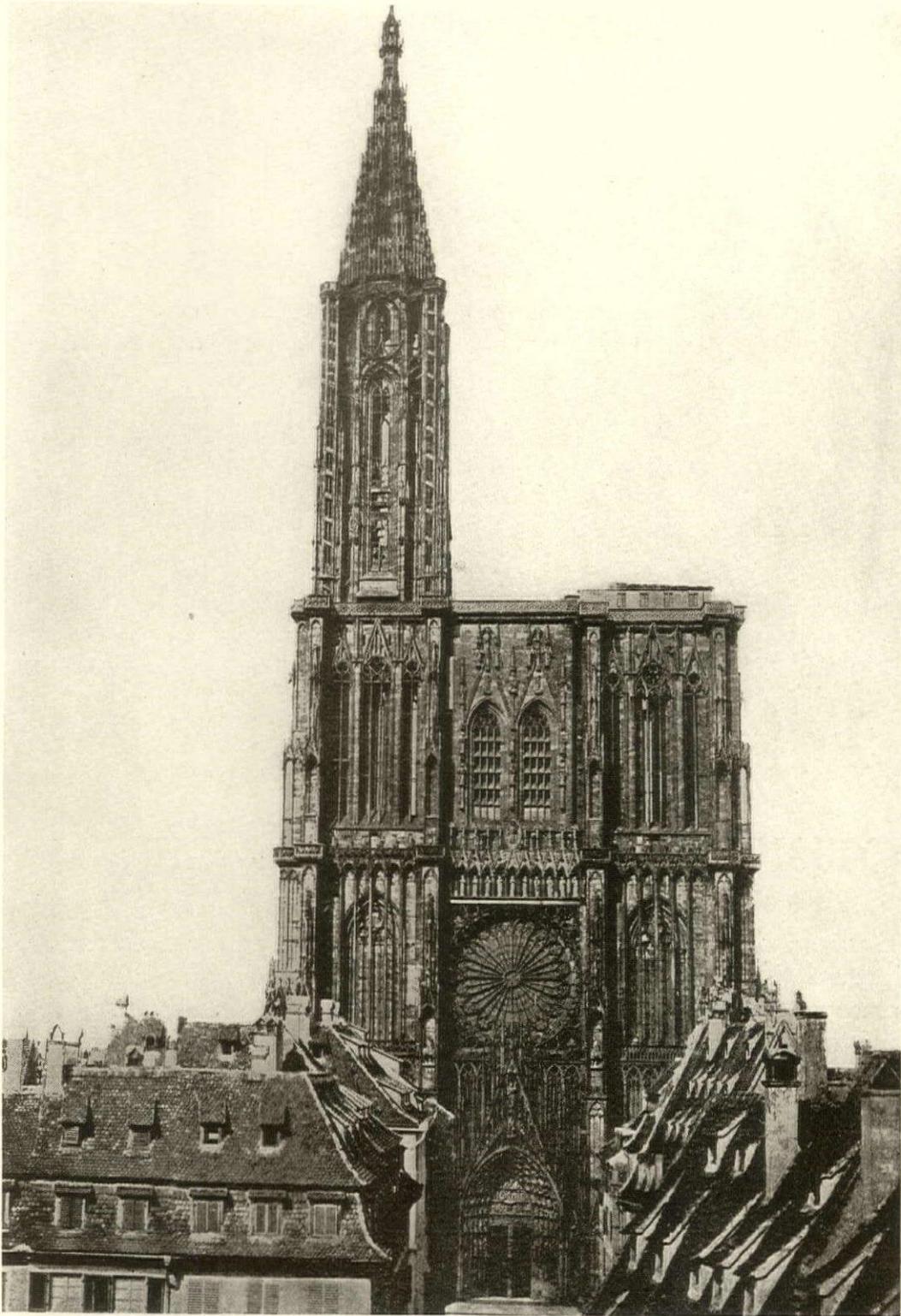
In addition to these advantages, there are two others worth mentioning. We had noted that it was almost impossible to make dust-proof the partitions between our show windows and general store. We have discovered that since putting in the marble floors that

our show windows are much cleaner than they were when we had the old wooden floors, due to the fact that no dust remains on the marble to be stirred up and forced through the partitions into the store. Besides this, we have found that marble adds very much to the appearance of our show windows, and in our St. Louis store we have used marble in some of our more conspicuous windows to enhance their appearance and to display our goods to the best advantage. On the same principle, we have also used marble bases on fixtures quite extensively within the store.

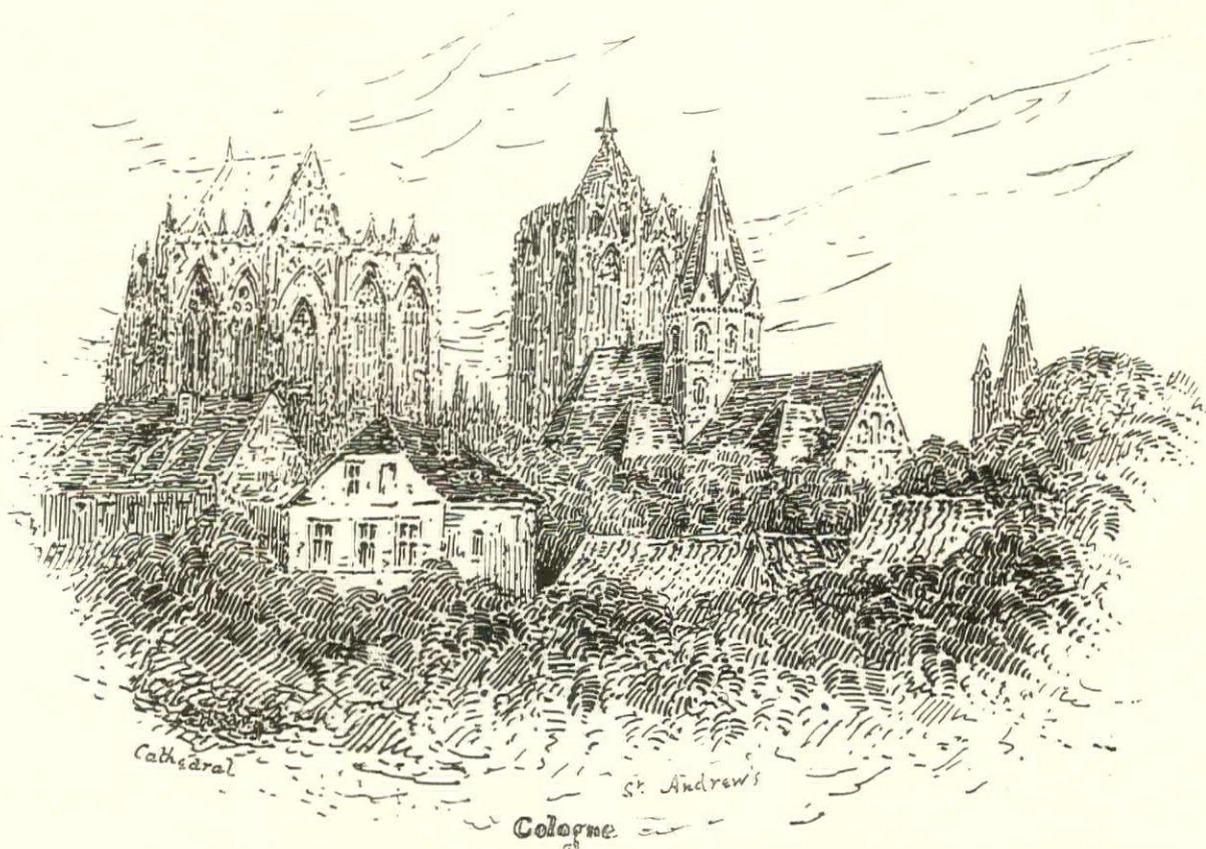
Since our highly satisfactory experience with them, we would have no hesitation in recommending marble to any concern that is interested in securing the maximum of advantages in flooring.



The use of marble floors in the show windows insures cleanliness and adds much to the effect.



West Front of Strasburg, built by Erwin, of Steinbach, and his sons. It has been through successive fires, earthquakes and bombardments. There are countless statues and bas-reliefs, blackened by the storm, heat and smoke of centuries.



GOTHIC ARCHITECTURE IN GERMANY

THE Gothic of Germany is not nearly of equal importance with that of France or Great Britain, nor is it as interesting to the student. Statham says of it that it "consists of inferior variations on the central type, coloured by racial or national influences." Furthermore, it was introduced at a later time, and its development was much slower than in the neighboring countries. We find fewer buildings of real merit in the Gothic style, and certainly those that are worthy of remark lack any strong national individuality such as is characteristic of the French and English structures. There is a provincialism about them that is not found in the imposing

buildings previously created by German Romanesque, nor in the picturesque Renaissance types that followed.

Because the conservative Teutons were slow to abandon their Romanesque churches, we find a transitional period of fifty years or more in which are mingled Romanesque and Gothic forms; and even when the pointed arch and vault had been generally accepted, we still see the Romanesque plan and method of construction in use. The pointed style was adopted from France by a deliberate imitative choice, not by any gradual evolution.

The earliest example of its use, according to Statham, is perhaps the nave of St. Ger-

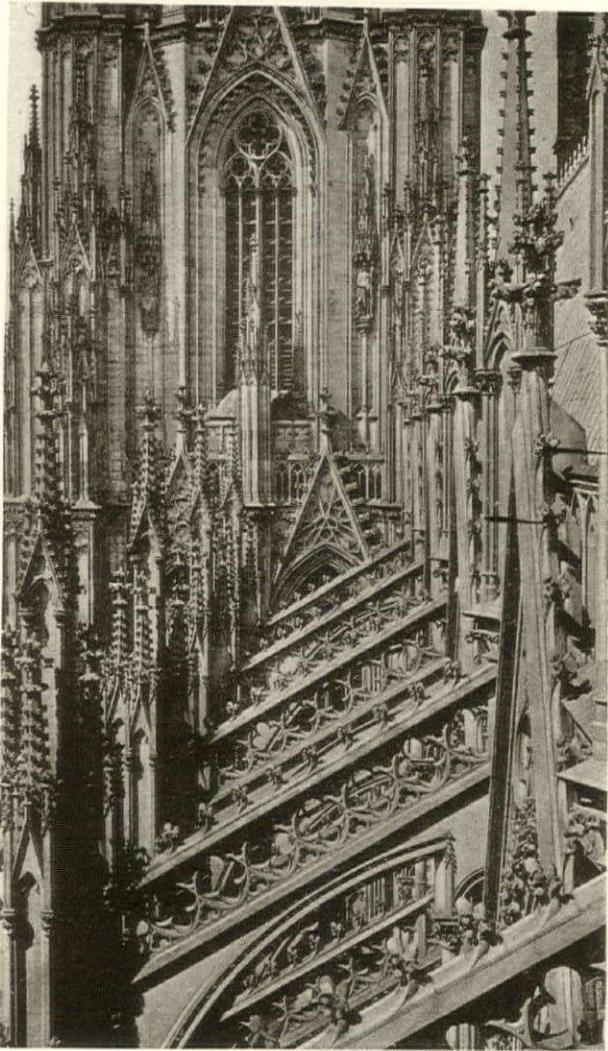


Photo courtesy Edw. H. Glidden, Architect, Balto., Md.

Details of the tower and flying buttresses, Cologne Cathedral.

eon at Cologne, which was built about 1200 A.D. This is an elliptical pointed-arch nave added to a long narrow Romanesque choir. The roof is an elliptical dome with ribs, but these ribs have no structural value. There is a main arcade giving access to a series of deeply recessed chapels, a triforium gallery and two tiers of clerestory windows.

There is about the early German Gothic buildings, it is true, a certain originality, as is to be expected when we consider that they represent a reminder of German Romanesque combined with a liberal use of French Gothic detail. The pointed vaults and arches

and the mouldings of the cathedrals of Bamberg, Naumberg, Münster and other churches of about the same date show Gothic character, while the German plans differ from each other in the usual Romanesque way.

The influence of foreign models, especially the great French cathedrals, was not to be denied, and it was not long before foreign architects were employed, and the Gothic styles were dominant. Unfortunately, the early conservatism was replaced by an exaggerated ostentation, that shortly found expression in such curious traceries as we discover in the churches and houses of Nuremberg; such complicated decorations as exhibited by the tall spire of Strasburg; and such unreasonable proportions as we find in the slender mullions of Ulm.

German Gothic may be divided most simply into four periods that correspond in sequence to similar periods elsewhere, though the dates are quite different. The Transitional period lasted from about 1170 to 1225. The Early Gothic followed, and this was succeeded by the Decorated period in 1275. This in turn developed into the Florid, sometime about the middle of the fourteenth century. The last period continued until 1530. The divisions are not at all clearly defined, since the progress and development in the different provinces was not uniform.

The first purely Gothic church was that at Trèves, built between 1227 and 1243 (this according to Kimball and Edgell), and it was a faithful copy of the church of Saint Yved at Braisne. This was followed by the minsters of Strasburg and Freiburg, both fashioned after the abbey of Saint Denis. The cathedral of Cologne, about which we shall speak in more detail latter, reproduced the system used in Amiens, though differing from it in many minor details. In spite of this, it is the most imitative of all the German Gothic buildings.

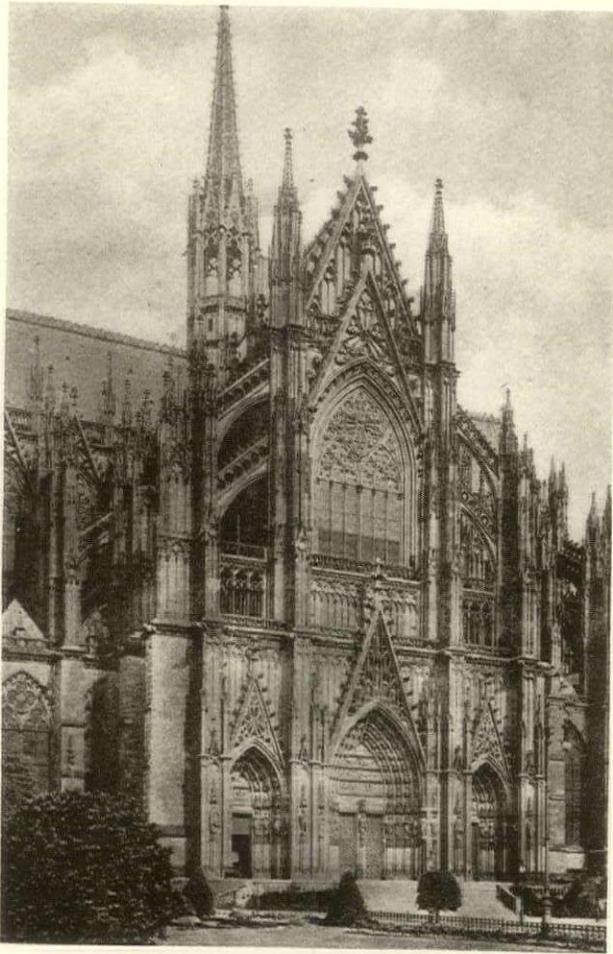


The nave of the five-aisled cathedral of Cologne, impressive though imitative to the highest degree.

The hall churches, or Hallenkirchen, were the most original in Germany. These were three-aisled, domically-vaulted buildings with the side-aisle vaults having an equal height to that of the central aisle. They were somewhat like the churches of the same type in southwestern France and the latter may have been the source of inspiration. In appearance, they resembled a great hall, usually with a polygonal apse as wide as the aisleless choir, and transepts of the same size with polygonal sides, as in St. Elizabeth at Marburg, the Wiesenkirche at Soest, St. Martin's at Landshut (1404) and St. George at Nördlingen. Brick was the favorite material employed in their construction. The clerestory disappeared and the central aisle

no longer dominated the edifice. The pier arches and side walls being greatly increased in height, flying buttresses were no longer needed.

Generally speaking, there was more variety in plans in Germany than in any other part of Europe except Italy. Some of these plans retained the short choir and second western apse of the Romanesque. Naumburg was an example of such a type. Others, generally the Cistercian churches, had square east ends, and still others had no ambulatory attached to the polygonal eastern apse, as in the cathedrals of Ratisbon and Vienna, and the minster at Ulm. Magdeburg Cathedral (1208-11) had a chevet with a single ambulatory and radiating chapels, as did



The South Door of the Cologne Cathedral is finely proportioned.

also Altenburg, Lübeck, Zwettl, Cologne, Freiburg, Prague and St. Francis at Salzburg. The cathedrals of Lübeck, Munich, Prague and Zwettl showed side chapels to the nave or choir. The church of Our Lady (Liebfrauenkirch, 1227-43) at Trèves had a circular plan produced by polygonal chapels on the axis of each of five aisles and the whole doubled on either side of the transverse axis.

Cologne cathedral is easily the largest and most important of all the Gothic German structures, and the most magnificent as well. It is to Gothic what St. Peter's is to Renaissance. There is no expansion of the choir; it is a five-aisled church of the same

width throughout, except at the transept; it has complete double aisles in both nave and choir, three-aisled transepts, radial chevet-chapels and twin western towers. There are no lateral chapels, and the east end is semi-circular. The design is typical of the latter part of the thirteenth century, though a great part of the building was finished in modern times from the original drawings. The prevailing weaknesses of German Gothic are strikingly shown in its exaggerated height, the unnecessary multiplication of detail, the total lack of repose. For example, the enormous crocketed finials at the apex of the spires are architecturally vulgar and dwarf the whole front. Similarly, the absurdly long windows of the church at Soest, and the vast openwork spires of Freiburg and Ulm portray the tendency to abnormal verticality. Strasbourg, with its one completed tower, is far more refined in general design and detail, but even here hundreds of iron ties and cramps were used to secure what is at best a risky piece of masonic construction.

"Broad wall-surfaces with small windows and a general massiveness and lowness of proportions were long preferred to the more slender and lofty forms of true Gothic design." So speaks Hamlin, in his *History of Architecture*. The tenacity of Romanesque constructive methods, as already mentioned, is seen in many German Gothic buildings. The large vaulting-bays that covered two aisle-bays persisted, and the ribbed vault was never developed as in France and England. When French methods became dominant in the second half of the thirteenth century, vaulting in oblong bays was generally used, influenced no doubt by such designs as Freiburg, Cologne, Ratisbon and St. Catherine at Oppenheim. The Germans used multiplied decorated ribs in the fourteenth century, but they were em-

ployed purely as decorative features and not as structural factors. Examples of such use are seen in the cathedrals of Freiburg, Ulm, Prague and at Vienna, but we fail to find any such ceilings as are constantly met with in the chapter-house vaulting of England.

The most skillful exhibition of the builder's art in Germany is seen in the transition from the simple square tower below to the eight-sided belfry and spire above. Some strikingly beautiful spires are found in which openwork tracery took the place of the previous solid stone pyramids. The spire of Strasburg, built by Juncker of Cologne in 1429, extends upwards to a height of 468 feet; those of Cologne are 500 feet high, while those of Ratisbon and Ulm are worthy of comment.

Not the least of the faults found in German Gothic is the window-tracery, especially in the hall-churches. We see a mechanical awkwardness due to over-slenderness of shafts and mullions, which developed in the fifteenth century and later into a stone caricature of rustic-work representing boughs and twigs, with bark and knots, and known as branch-tracery. The designs were poor, although the execution was very fine.

The most desirable examples are to be found in those buildings where the patterns were closely copied from the French, though even here the height of the window was excessive in proportion to the width. The carving of intersecting mouldings, as well as foliage in capitals and finials is not characterized by any special originality, being merely the modified imitation of French technique.

The French influence is observable as early as the first part of the thirteenth century in the cathedral of Magdeburg (1212), which follows the choir plans of Soissons, and it may be traced to its maximum in the cathedral of Cologne. We find it in Alsace in

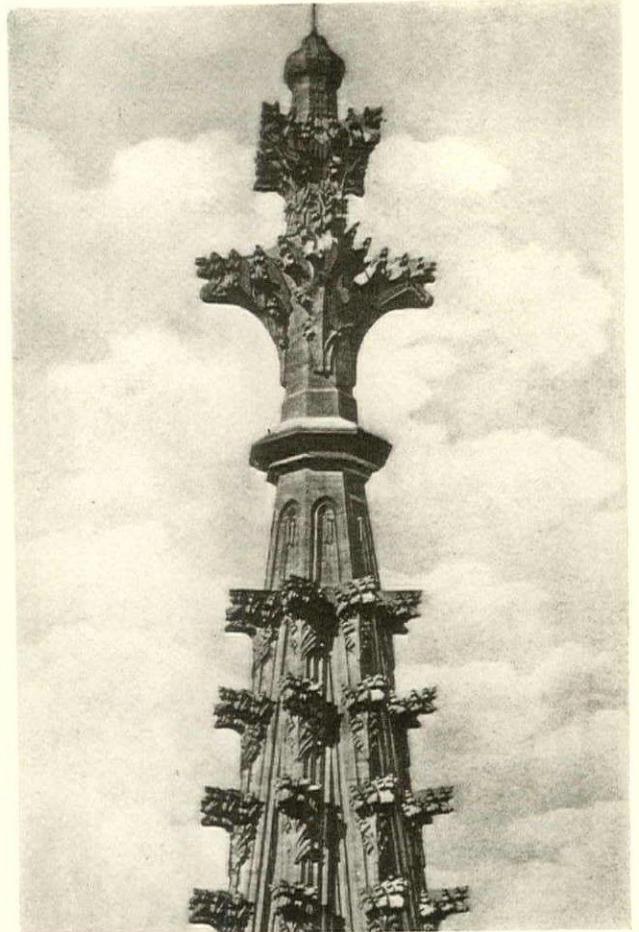
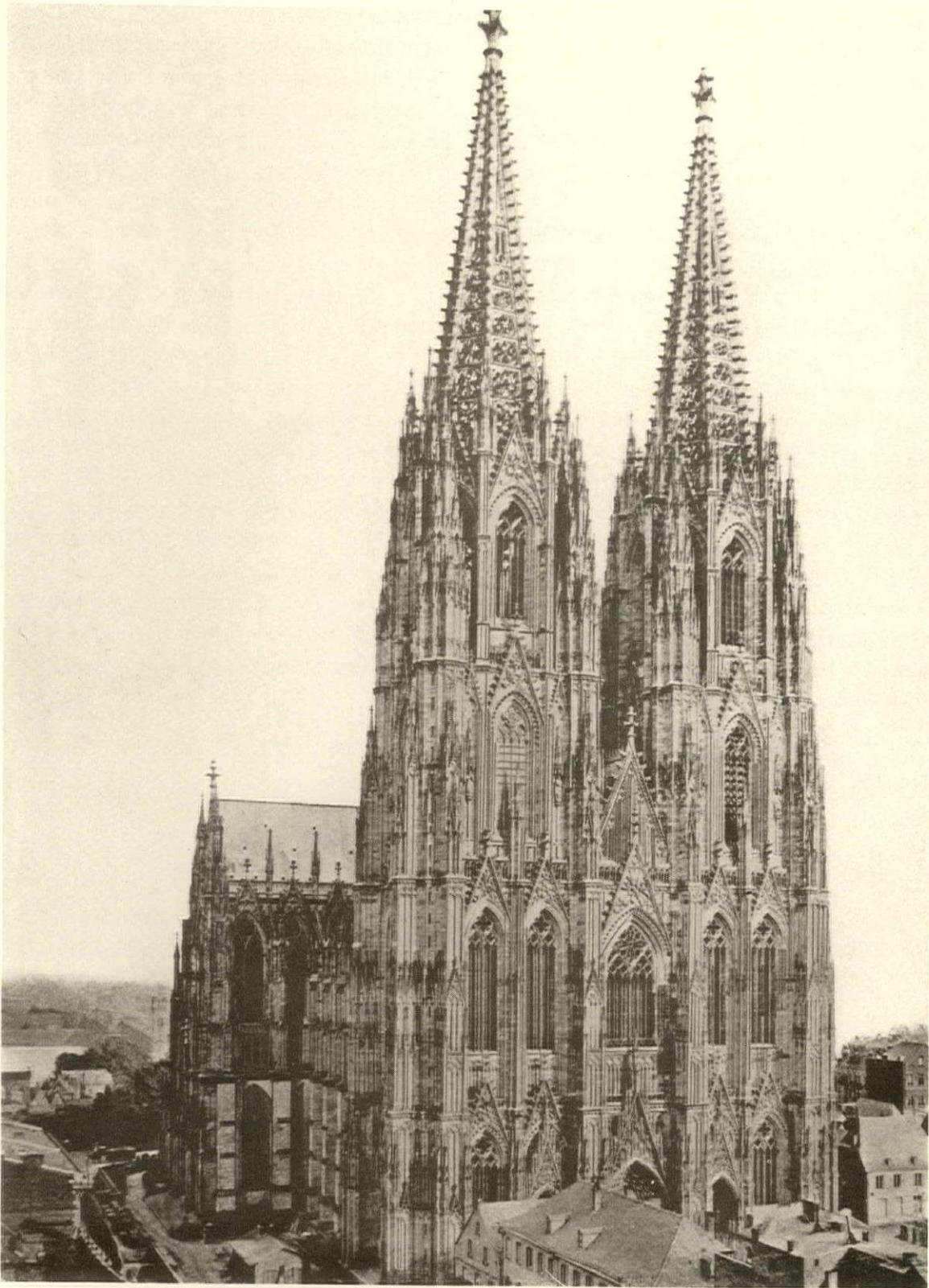


Photo courtesy Edw. H. Glidden, Architect, Balto., Md.

The spire finial of Cologne Cathedral,
513 feet high.

the nave of Strasburg; in Baden in the nave of Freiburg; in Bohemia in the Prague; and in the south in Ratisbon, the most dignified as well as one of the most beautiful of all the Gothic German churches. Ratisbon is almost completely French in its execution, but German in its plans.

In north Germany, where stone was hard to procure, are brick churches that were distinctly individual. They had flat walls, square towers and they abounded with colored tiles and brick. St. Godehard and St. Catherine at Brandenburg, Tängermünde and Königsberg at Prentzlau, and St. Mary and St. Catherine at Lübeck are the best examples of this type of exterior simplicity.

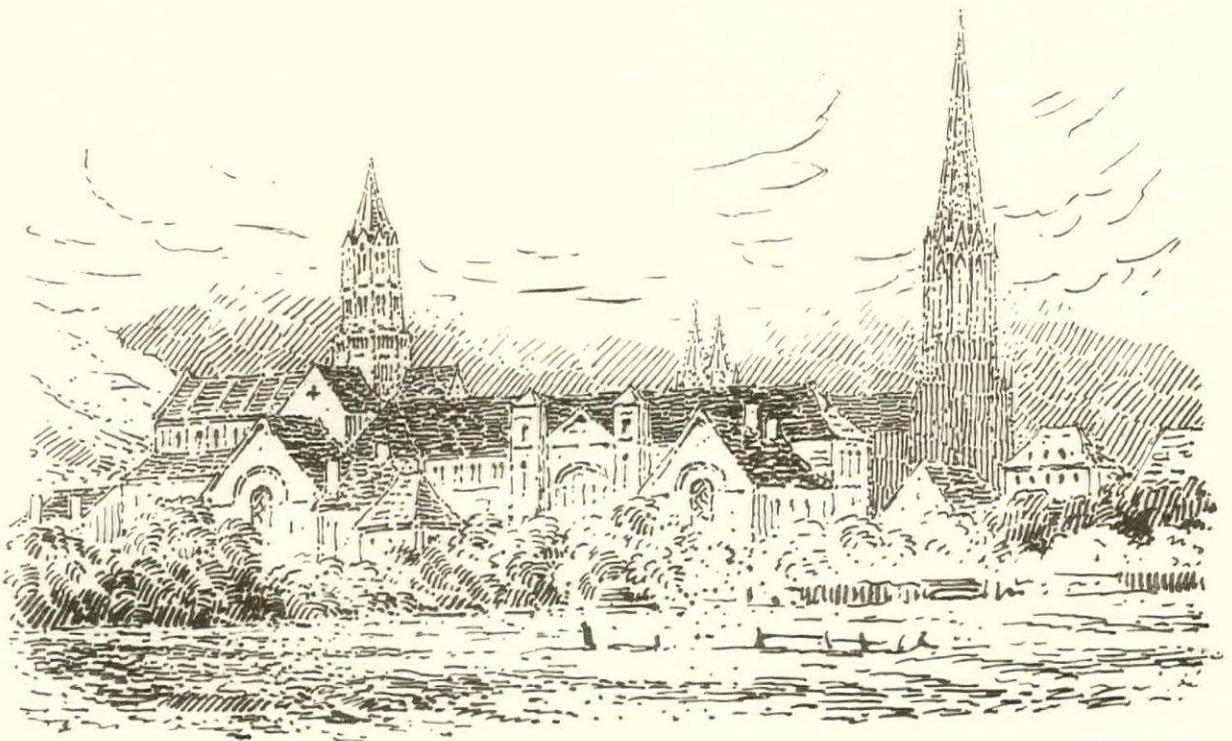


West front of Cologne Cathedral. In spite of its great bulk, the multitude of ornaments, small turrets, galleries and decorations rob it of weight and give an impression of magnificence without gloom, of airy serenity.

Following the thirteenth century, we find, as in France and England, a cessation of activity in laying the foundations of new churches. The fourteenth and fifteenth centuries are notable more for the completion and reconstruction of existing structures, though there were many fine town halls, guild halls and dwelling houses built during this period. Many of the churches were, up to this time, still without naves, and the complicated ribbed vaults were also a work of this late Gothic period. The erection of spires became general, as well as the habit of overloading the façade with traceries and minute detail. The buildings at Nuremberg are examples of this exaggerated treatment, as seen in St. Sebald and St. Lorenz; while such structures as St. Stephen at Vienna (1359-1433), the Cathedral of Kaschau in Hungary and Chemnitz Cathedral show the same characteristics.

As mentioned before, Germany has to her

credit many Gothic buildings of a secular nature. At Marienburg in Prussia there was completed near the end of the fourteenth century a castle that was begun in 1280. This shows vaulting of the most complicated type, very beautiful in spite of the multiplicity of the ribbing. The plan consists of two courts, one forming a closed square containing the chapel and chapter-house of the Order of the German Knights; the other containing the Great Hall of the Order. At Karlstein in Bohemia (1347); at Marienwerder in Heilsberg, East Prussia; and at Meissen in Saxony (1471-83), are other notable castles, though the last of these is perhaps of the most importance. The city gates of Basle, Cologne, Ingolstadt and Lucerne are quaint specimens of the German Gothic. At Nuremberg is found the Rathhäuse or Council House, built in 1340. Similar buildings were constructed at Brunswick (1393) and Cologne (1407-15).



Freyburg in Breisgau

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.

Clarendon Dark Cloud—See Dark Cloud Clarendon.

Clarendon Light Cloud—See Light Cloud Clarendon.

Clarendon Valley Gray—Group B.
Quarry located in the Clarendon Valley, near Clarendon, Vermont.
Very light bluish gray with bands of dark gray.

Clarendon White—Group A.
Quarried in the Clarendon Valley, near Clarendon, Vermont.
Bluish white with few gray streaks.

Claret
Quarried at Claret in the Lower Alps.
White and gray speckled with black.

Cleopatra's Needles
It is of interest to know that the one now standing on the Thames Embankment was finished at least 4,000 years ago and that, according to Elsdon and Howe, "Stones of London," page 126, the material from which this particular Cleopatra's needle was formed is not a true syenite but a hornblende granite and came

from the quarry at Assouan, near Syene, which was worked by the Old Empire about 2830 to 2850 B.C. From this it would seem as if Egypt is the original home of the granite industry.

Clerhane—See Irish Gray.

Clifden—See Connemara.

Clonford—See Galway Gray.

Clonlonan Barony—See Irish Gray.

Cloud—See Freedley Cloud.

Clouded Calcite Marble

This would apply to any one of the large number of marbles which contain clouded calcite.

Clouded Yellow

Quarried near Plymouth, Devonshire, England.

Light pink, with yellow mottling, and network of veins.

Cluny

Quarry near Cluny, Saone-et-Loire, France.
White.

Cluse—See La Cluse.

Coade's Stone

An English artificial stone.

Coarlou

Quarried at Coarlou, Cote d'Or, France.
Ashy gray with buff markings.
Not available.

Cobdar Blanco

Quarried near Cobdar, Sierra De Las
Filabres, Almeria, Spain.
Bluish white.
Used chiefly for monumental work.

Cockeysville—See Beaver Dam and Cockeysville Dolomite.

Cockeysville Dolomite

Quarried in the Green Spring Valley, near
Cockeysville, Maryland.
White, with light brown wavy veins and
floral markings.
Takes medium polish.

Coirochatachan—Similar to Skye Marble.

Colonial Gray—See Carthage Colonial Gray
Veined and Veinless.

Colorado Amazonite—See Amazonite.

Colorado Marbles

The best known marble deposits are
found in Gunnison County on the Yule
Creek about four miles above the point
where it joins the Crystal River at Mar-
ble, Colorado.

The deposits have been opened at various
points by several different companies.
The most extensive operations were con-
ducted by the Colorado Yule Marble
Company, who were succeeded by the
Yule Marble Company and the Carrara
Yule Marble Company. The former owns
the mill and finishing plant; the latter the
quarry.

Another deposit, same region, was opened
by the Crystal River Marble Company,
but the production up to date is limited.
In Pueblo County, about thirty miles
from Pueblo, near Canon City, occur ex-
tensive deposits of variegated marbles,
some of which have been partially devel-
oped. This material is described by Mr.
J. G. Kerr as a "reddish brown marble
very similar to Numidian, but very flinty."
A Lava Stone called Travertine is being
quarried by the Colorado Marble and
Stone Company in Fremont County,
three-quarters of a mile from the main
line of the D. & R.G.W.R.R. See Trav-
ertine (Colorado).

See Amazonite, Beulah Red, Colorado
Yule Golden Vein, Colorado Yule White,
Crystal River.

Colorado Onyx

Undeveloped Onyx deposits are reported
from Colorado.

Colorado Travertine—See Travertine Col-
orado.

Colorado Yule Golden Vein or Golden Vein
Colorado Yule.

Quarried on Yule Creek, near Marble,
Gunnison County, Colorado.

White, with veins of a creamish yellow
light clouding.

Colorado Yule White or White Colorado
Yule.

Quarried on Yule Creek, near Marble,
Gunnison County, Colorado.

White, with streaks of bluish tint and
traces of clouding.

Colored Statuary Pyrenees—See Gris De St.
Beat.

Colors of Marble

The chief coloring matter in Marble is iron, which exists either in chemical combination with other elements, as in Mica and Hornblende, or as free oxides or sulphides.

Free oxides of iron impart a brownish or reddish hue; the carbonates or sulphides a bluish or gray hue.

Carbonaceous matter generally produces blue and black.

If a marble is formed without contact with any coloring matter it is of a very light color or white.

The varying shades are due to the scarcity of, or the mixture of, various coloring matter.

Coltshill

One of the Swansea Marbles is quarried at Coltshill.

Columbia Dark Blue

Columbia Quarries, Tuolumne County, California.

Dark variety of blue gray.

Columbia Light Blue—See Light Blue California.

Columbia Light Marble—See Light Columbia.

Columbia Marbles—See Dark Blue Columbia, Dark Columbia, Light Blue Columbia, Light Columbia, Portola, White Columbia.

Columbian

Columbian Quarry near Proctor, Vermont. White clouded.

Takes medium polish.

Columbia White—See White Columbia.

Comblanchain or Comblanchian or Comblanchien.

Quarried at Corgoloin, Cote d'Or, France. Light buff with fragments of fossils.

Takes high polish.

Conglomerates or Puddingstones.

Differ from Breccias in the shape of the various fragments in the conglomerates.

The fragments are rounded while those of the Breccias are angular.

Connecticut Marble

"In the northern part of Litchfield County near the Massachusetts line, in the towns of Canaan, East Canaan and Falls Village, there occur massive beds of a coarsely crystalline white dolomite, which have in years past furnished valuable building marbles, though recently they have been but little worked." (Merrill)

It is of interest to note that at Marble Dale, Milford, Connecticut, the first marble quarry was operated and as late as 1830 fifteen or more quarries were being operated in this vicinity, none of which are now being worked.

Connecticut Serpentine

This was quarried near Milford and New Haven shortly after 1811, but work was abandoned a few years later. One reason for its lack of success is attributed by one writer to the fact of its having been marketed as Verde Antique, Antique being a term used in European countries to designate any ancient marble, the source of which is unknown.

Connemara or Galway Green, Galway Serpentine, Irish Green and Irish serpentine—Group C.

Ballynachinch Quarries, Galway County, Ireland.

Bright sap green semi-translucent with few irregular veins.

Takes high polish.

A serpentine marble with considerable calcite.

Lissoughter Quarries, near Reces, Galway County, Ireland.

Watson describes three varieties from this quarry.

(a)—Veinings are more regular, otherwise similar to the last mentioned marble. Takes high polish.

(b)—Both light and dark Green Serpentineous veinings on sap green background.

Takes high polish.

(c)—Sap green background mixed with a greenish gray.

Takes high polish.

Connemara Black—Group D.

Lissoughter Quarries, Galway County, Ireland.

A dark close grained Hornblende, practically black.

Connemara (Dark)—Group D.

Streamstown Quarries, near Clifden, Galway County, Ireland.

Winding bands of dark green to yellow with occasional bands of gray.

Takes high polish.

Connemara Green—See *Connemara*, *Connemara (Dark)*, *Connemara (Light)*.

Connemara Green St. Vein—See *Connemara*, Lissoughter Quarries, Variety A.

Connemara Irish Green

Lissoughter Quarries, Galway County, Ireland.

Green with gray mixture.

Takes high polish.

Connemara Light—Group D. (A serpentine crystalline limestone or Ophicalcite.)

Streamstown Quarries, near Clifden, Galway County, Ireland.

Twisted and interlacing bands of green, varying from a deep sap green shade to a translucent pale yellowish green with veins of white calcite or crystalline dolomite. Occasionally a few black veins appear with the white. (Watson)

Takes high polish.

Connemara White—See *Pinka Crenna*.

Consolidated Gray—Group A.

Consolidated Quarry, near Knoxville, Tennessee.

Gray to light pinkish gray with occasional veins.

Takes high polish.

Convent of Arrabida

This convent formerly owned the Arrabida Quarries, which produce Arrabida Marble.

Convent Siena—See *Siena Old Convent*.

Convent De Siena—See *Siena Old Convent*.

Convent De Montarenti—See *Siena Old Convent*.

Coolham—See *Sussex*.

Coping

A term used in marble plants; breaking to size.

Coquina

Spanish name for a limestone composed simply of shells cemented together which was formerly quarried on Anastasia Island about two miles from St. Augustine, Florida. This quarry was opened upwards of 240 years ago.

Coral Marble—See Madre Pore Marble.

Any marble containing Coral Fossils.

Corallian Rocks

Rocks assigned by English geologists to the Jurassic System, corresponding with the middle cretaceous group established by the U.S. Geological Survey.

Corallo or Vidraco

A Portuguese fossiliferous marble. Quarried at Pedro, Pinheiro, near Libson. Light red without prominent markings.

Corbigny—See Bourbonnais.

Cordoba—See Calera.

Corgoloin—Group C.

Quarried at Corgoloin, twelve miles north of Dijon, Cote d'Or, France.

Light buff with few fossil markings.

Takes high polish.

Note—Comblanchien comes from the same quarry and is sometimes called Corgoloin Marble.

Cork County Marbles—See Churchtown, Cork Red, Middleton, Victoria Red.

Cork Red—Group D.

Middleton Quarries, on the River Ballincurra, seven miles northeast of Queens-town, Cork County, Ireland.

Variegated with mottles of pink, red and brown, with few white spots.

Takes good polish.

Cornac

In the neighborhood of Cornac, Lot, France, are quarried red marbles with white and greenish gray veins.

Cornish Serpentine—Group D.

This is produced by various quarries

nearly all of which are located on the Peninsula of Lizard, Cornwall, England. The following list is from Watson:

Balk Quarry—Dark olive green and black with small white dots.

Carn Kennack Quarry—Red and black mottled.

Takes good polish.

Quarry near Carn Spermic—Chocolate red with dark green spots to purplish brown and green.

Takes good polish.

Gew Gaze Quarries (partially brecciated)—Light grayish cream-colored filler or paste cementing the dark green fragments, running to a greenish gray serpentine with white veins.

Takes good polish.

Good Castol Quarries—Lion Rock—Dark olive green and black with veins of violet.

Takes good polish.

Gwendreath Quarries near Carleon Cove—Yellowish shade with brown specks and mottles with occasional green veins and white spots.

Holestrow Quarries, Kynance Cove—Dark green and purple with broad cream-colored veins.

Takes good polish.

Quarry near Kennack Cove—Light green and red with white spots and fairly parallel veins.

Takes good polish.

Quarries near Poltesco Cove—Mottled reddish green with slight white veins.

Takes high polish.

Pengersick Quarries—Red and green with occasional white markings.

Takes high polish.

Kildown Point Quarries—Dark green and purplish background with cream-

colored veining winding through the mass.
Takes high polish.

Cornwall (Malachite)

"Sometimes found in Cornwall, England, but not pure enough or in sufficiently large quantities to be used commercially."
(Watson)

Cornwall Peridotite—Same as Polyfant Stone.

Cornwall Serpentine—See Cornish Serpentine.

Corsehill Stone—A red sandstone from Dumfries, Scotland.

Corsham Down Stone

Fine Grained Monk's Park Stone. (From another Quarry, same locality, is similar.) Quarried near Bath, Somersetshire, England.
Pale light brown (Freestone). (Eldsen and Howe).

Cosne

Quarried at Cosne, Nièvre, France.
Red with white spots.
Takes high polish.

Cote d'Or—See Comblanchien, Corgoloin, Marbre De Villars, Rose Liseron, Rose St. George.

Cosuale di Mugnione (Breccia)—Group D.

Quarried near Mugnione, Tuscany, Italy.
Green filler with spots of reddish yellow crossed with veins of darker shade.

Cotham Stone—See Landscape Marble.

Cotonello

One of the ancient red variegated from unknown quarry.

Cottian Alps (Serpentine)—Same as Vert Maurin.

Coublevie Commune—See Rose Des Alps, Roche De Ratz.

Cousance—Same as Le Cousance.

Craigg Pink—Group A.

Quarried near Knoxville, Tennessee.
Reddish pink with few fine veins or crow feet.
Takes high polish.

Crastaler

Quarried near Lake Worth and Town of Klacenfurt, Carinthia, Austria-Hungary.
Light colored mottled with white and light gray. (Watson)

Cream Antique or Middlebury Cream.

Quarried at Brandon, Vermont.
Creamy white slightly mottled.
Not available.

Cream Lauville

C. M. Company's Quarry, Clarendon, Vermont.
Cream White crossed by numerous not very distinct veins of a grayish, bluish, or yellowish tint. (Vermont State Geological Survey.)
Takes medium polish.

Cream Pavonazzo—See Middlebury Pavonazzo—Group B.

Quarried at Brandon, Vermont.
Cream background with veins of varying shade.
Not available.

Cream Statuary—Group B.

Eastman's Quarry, West Rutland, Vermont.
Delicate cream-color with very pale brown

minutely placated waves up to one inch wide.

Takes medium polish.

Creole Dark—Group A.

Tate Quarry, Pickens County, Georgia. Bluish markings over large portion of white background.

Takes high polish.

Creole Georgia or *Georgia Creole*—Group A.

Tate Quarry, Pickens County, Georgia. Bluish black and white mottled.

Takes high polish.

Crestola—Group A.

Quarried near Carrara, Italy.

Creamish white.

Takes high polish.

Blagrove rates this as scarcely inferior to Falcovaia Statuary Crestola Poggio-Silvestro, Torano and Miseglia.

Cretaceous

A period assigned by English geologists, which corresponds with the upper or Atlantic and Gulf area of cretaceous period as arranged by the U.S. Geological Survey.

Croset—See *Le Croset*.

Crystalline Limestone—See *Marble*.

Crystal River

Quarries on Yule Creek about four miles from its junction with the Crystal River at Marble, Gunnison County, Colorado. White with light yellowish veins.

Although several openings have been made the marble has never reached the market.

Cubian Marble

The only marble on record is from the U.S. Geological Survey Stone in 1918, page 1248.

Mention is made of white marble in large blocks being quarried on the Isle of Pines.

Cuenca—See *Jaune De Cuenca*.

Cumberland (Gypsum)—See *Alabaster English*.

Cumberland Marble—See *Alston*.

Cunard Pink (American name for an Italian Marble)—Group B.

Quarried near Chiampo, Venetia Province, Italy.

Reddish pink with flat veins of light yellowish pink and few fine veins of dark shade.

Cuneo Marble

Near the village of Valdieri a few miles from Cuno in Piedmont, Italy, the *Veine Dore Marble* is quarried.

Cuneo Onyx—See *Italian Onyx*.

Curley Gray Tennessee—Group A.

Ross Republic Quarry, near Knoxville, Tennessee.

Medium pink with wavy veins of darker shade.

Takes high polish.

Cyclades

Name given to a group of islands in the Ægean Sea. See *Parian* and *Tinos*.

Cyzican

Marble from the Island of Marmora was used extensively in the ancient town of Cyzicus on a peninsula then called by the same name, but now known as *Kapa Dag*. The town was destroyed by an earthquake in 1072 and marble from its ruins is still known as *Cyzicus*.

For marbles from Marmora Island see *Marmora* and *Rose d'Orient*.

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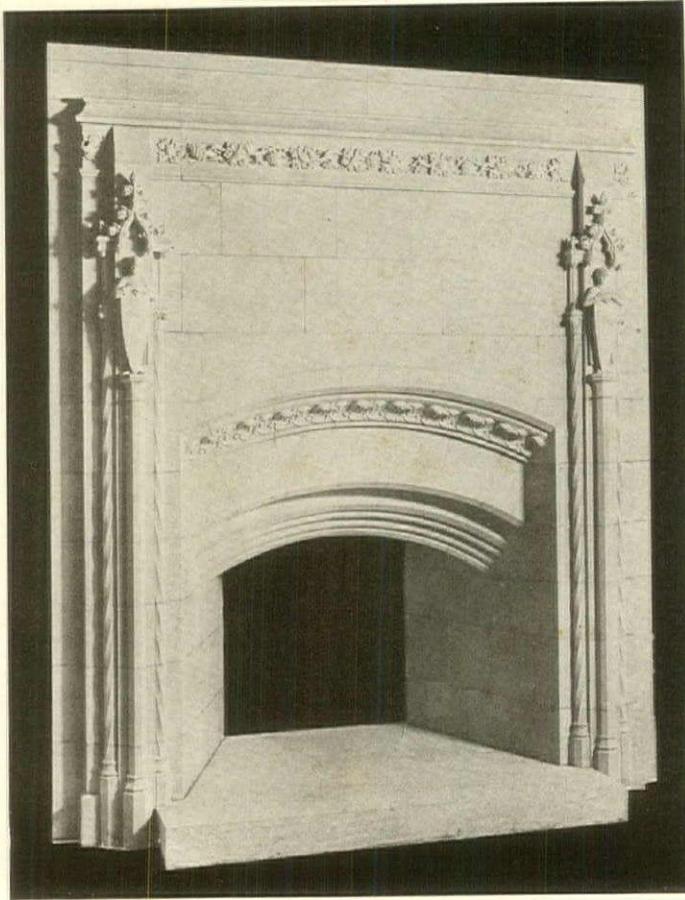
<i>City and State</i>	<i>Company</i>	<i>Representative</i>
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Atlanta, Ga.	Reeves Marble Company	Alex. Reeves
Baltimore, Md.	Hilgartner Marble Company	A. H. Hilgartner
Baltimore, Md.	Jos. B. Dunn & Sons, Inc.	Chas. Scheidt
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Buffalo, N.Y.	Geo. W. Maltby & Son Company	Wm. C. Maltby
Buffalo, N.Y.	Lautz Marble Corporation	R. K. Glass
Carthage, Mo.	Arnosti Marble Co.	A. Arnosti
Carthage, Mo.	Carthage Marble and White Lime Co.	Geo. S. Beimdiek
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Chicago, Ill.	C. N. Marthens Marble Company	C. N. Marthens
Chicago, Ill.	Corley-Meservey Marble Company	B. F. Meservey
Chicago, Ill.	Davia Bros. Marble Company	Humbert Davia
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Cleveland, Ohio	Interior Marble and Stone Co.	E. M. Fritz
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Dallas, Texas	Southwest Marble Company	J. Desco
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Denver, Col.	Des Moines Marble and Mantel Co.	W. D. Watson
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Detroit, Mich.	Detroit Marble Company	E. L. Leavenworth
Detroit, Mich.		B. L. Cummins

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Milwaukee, Wis.	Breidster Marble Company	Fred. W. Breidster
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Minneapolis, Minn.	Twin City Tile and Marble Co.	F. O. Streed
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St. Louis, Mo.	Union Marble and Tile Company	W. C. Fox
St. Louis, Mo.	Weis & Jennett Marble Company	Joseph Weis
St. Paul, Minn.	Drake Marble and Tile Company	W. E. Andrews
Tate, Ga.	Georgia Marble Company	Sam Tate
Wichita, Kan.	Hawkins Interior Marble Company	M. K. Hawkins
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This striking Gothic mantel of Hauteville marble was made for the residence of D. S. Blossom, Cleveland, Ohio. It was designed by the architect, Abram Garfield, of Cleveland, and fabricated in this plant.

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