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IN THE WEST.

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The Columbian Museum and Archæological Research.

The opportunity for an educational department of archæology at the Field Columbian Museum in Chicago is such as has never before been realized in America. There is no such thing on this continent as a classified illustration of the history of all past civilized nations shown in its monuments. The Metropolitan Museum at New York, through the Willard bequest, some contributions by Richard M. Hunt and others, has a department of architecture, illustrated mainly by casts of famous remains and restorations. The Art Institute of Chicago has acquired a large collection of casts from the museum at the Trocadero in Paris, many of which might form part of an archæological collection. But both of these are mainly valuable as affording studies for architects in special lines. Neither of them, however, can be called an archæological collection. The only approach to such is found in the British Museum. The study of archæology is not alone for architects. It is for all students of history and all interested investigators. The history of nations in the most remote periods has been brought down to us by their monuments, which antedate all written history. Of the truth of the latter we find collateral evidences in what has been discovered in the shape of buildings, statuary, bronzes, pottery and the like. The study of them associates the history of art with civil and sacred history, and helps to make clear many of the curious developments of ethnological research. Thus there come down to us from many prehistoric sources and diverse localities streams of knowledge emanating from the study of monuments of all kinds, which, combined, have contributed in no small degree to form what we call modern civilization. For while in ancient times there was the civilization of Assyria and the civilization of Egypt, later the civilizations of Greece and the far East, then the civilization of Rome, which included all, we have after this the civilizations of the Saracens of the Eastern Empire and of the Franks and Teutons diverging from the Roman; then that of the middle ages, followed by the renaissance of learning and art in Europe. All of these afford a boundless field for investigation and study in connection with contemporary monuments. But in modern times, through the influence of universal intercommunication, we have but one civilization of Europe and America. With the means at hand, the Field Museum can now only illustrate one extremity of this chain. This, the modern end, was fairly represented by the architecture and sculpture of the Columbian Exposition itself, which can now be preserved in concrete form. Among the contributions already made to it there are some scattered links, such as the Central American remains, that were exhibited in the Anthropological building, and the models of Aztec habitations. The whole subject can be illustrated temporarily by photographs, charts and books until these evidences are enlarged by casts and actual remains. Thus the collection can be used to illustrate lectures to classes of students from the university, as well as popular assemblies. Thousands who know nothing of this subject will be interested through having at first regarded the exhibits only as curiosities, and will soon find a world of knowledge that has been hidden for

centuries revealed again for their everlasting benefit. The grand project of preserving sections and details of the more important architectural features of the great buildings of the Fair should not be lost sight of, as in this way only can these temporary works be preserved for future study.

Death of Cesar Daly, Architect, of France.

Cesar Daly, architect, and for years editor of *La Revue Générale de L'Architecture*, died at Paris, January 12, at the age of eighty-three years. M. Daly was born at Verdun, July 19, 1811, his father being Irish and his mother French. He was educated in England until his sixteenth year, when he returned to France and entered the college of Douai. A year later he entered the preparatory section of the École Polytechnique, and at seventeen took first prize in drawing. Entering the office of M. Mallet at Douai he progressed rapidly and continued his mathematical studies under Professor Avegron of the Polytechnique. When about twenty years old he went to Paris and entered the studio of M. Duban, acquiring a superior knowledge of architecture and construction through close study. In 1839 M. Daly established the *Revue Générale de l'Architecture*. In 1843, was appointed diocesan architect of Alby, which position he held for twenty-five years, during which his restoration of the cathedral and the influence he exercised upon the constructive methods of the period earned for him the decoration of the Legion of Honor in 1861. He was the first to organize a society of industrial and decorative artists and insist upon their recognition by the societies representing the fine arts. He also about this time organized a meeting of architects, painters, sculptors, poets, etc., but he found it impossible to conciliate these into united action, and though elected president of the architects' section he refused to serve. M. Daly was an original member of the council of architecture which was founded by the government in 1848 for the purpose of inspecting and approving the construction of ecclesiastical buildings, and was the architectural representative of the Mexican commission established by Napoleon III during the Mexican war. From 1848 to 1869 he was almost constantly traveling and visited almost the entire known world in his archæological researches, spending three years in the western hemisphere, and in 1856 published notes upon the remains of Central American cities, which was the first exploration made of those interesting remains. In 1892 he was presented with the royal medal by Queen Victoria. Though his professional writings are numerous and important, no separate work of his travels has been published. His life was probably the most productive, both in his works and writings, of any architect, and his death is regretted by the profession throughout the world.

Sequel to the Milwaukee Library Competition.

As a sequel to the competition for a library and museum for the city of Milwaukee, which has occupied the attention of some seventy-four practitioners intimately and the profession in general for some time comes an injunction suit instituted by a defeated competitor. As an injunction the document is very funny reading. The charges are that the joint board of the Museum and Library trustees was illegal; that the successful architects submitted supplementary plans — though the document does not state at what "stage of the game." It calls Mr. Ware an "alleged expert" and charges collusion by him with the successful architect and the trustees; that none of the five premiated plans except the plaintiff, H. C. Koch's, were suitable; that one set of plans was two days late and one was for a two instead of a three-story building as specified, etc. Several charges referring to the legality of the trustees disbursing funds without order from the city council, etc., are not considered here. But that Professor Ware should be charged, and by an architect, with incompetency and with collusion, or that he would lend himself to anything that could be so construed is funny—simply funny. Then the plaintiff, after stating his belief in the unreliability of Professor Ware, affirms that had not supplementary plans been submitted by Ferry & Clas he would have been awarded the prize. This is also funny. As the injunction has been dissolved in part and the council is about to take action in regard to the legal phases of the matter the ill-advised action of Mr. Koch will soon be forgotten and his standing as an architect may not suffer thereby. The Milwaukee competition might have been a very different affair, but the joint board was composed of honest and educated men, who wished to give to their city the best building possible. They selected as their expert the one man in whom all architects have the most explicit confidence both in his judgment and probity, and as the result was reached without the disgraceful political work that characterizes so many public competitions, all architects, even those who feel their defeat the keenest, should shake hands with the successful competitor and not, like the unsuccessful neophyte in gambling, call "foul" because the lottery did not go his way.

Report of the Supervising Architect.

In the light of the committee of the American Institute of Architects visiting Washington to urge the adoption of the method for securing designs for public buildings, outlined in the law passed last year, the report of the supervising architect, just issued, is interesting. The contract obligations for the year amount to over four million dollars, and the outstanding contract obligations to over three and one-quarter millions. There are sixty buildings in course of erection and thirty-eight more ordered by congress, but not commenced. The appropriation of $200,000 for the expenses of the office admits the use of but forty-five draftsmen and of the payment of small salaries, making it impossible for the supervising architect to procure the best draftsmen and experts. The business work of the office and necessary absences by the supervising architect makes his chief clerk the supervising architect *de facto*. This office force is divided into ten sections composed of one hundred and forty-six persons, forty-nine of whom are females. There are, in addition to this force, one hundred and thirty-four superintendents, etc., scattered over the country, and the supervising architect is expected to employ as cheap help as he can, reduce expenses to a minimum, and get as much work done as possible for the money appropriated by congress. It is not strange, therefore, that Mr. O'Rouke has found no time for carrying into effect the act passed last year. It is incomprehensible that public officers should allow such a state of affairs to exist, and that it is the architects of the country who are obliged to spend their time and money at the capital in their endeavor to show the government how wasteful, inadequate, even childish, is the present method of securing the designs and construction of public buildings.

THE CONSTRUCTIONAL WOODS OF THE UNITED STATES AND THEIR DISTRIBUTION.

BY T. E. KIDDER.

WHILE iron and steel have taken the place of timber in the construction of large and costly buildings, especially those for mercantile or public use, still the larger proportion of the buildings of this country depend upon wood for their interior construction, at least, and such is likely to be the case for a number of years to come. There are also cases in which wood appears to be a more suitable material than steel or iron. It is, therefore, important that the architect should be acquainted with the qualities of the different woods, and the uses for which they are best adapted. As architects are also often called upon to design buildings in different parts of the country, it is necessary for them to know the available woods of each different locality. The following article aims, in a measure, to furnish the information above indicated:

The woods used for constructional purposes in the United States are the pines, firs, spruce, hemlock, redwood, and some oak for special purposes. Of these varieties, the pines and firs probably furnish seven-eighths of the framing lumber, outside finish and boarding.

There are some thirteen or fourteen varieties of pine that are used for building purposes, and of these the white, yellow and southern pines are the principal varieties.

THE WHITE PINE (*Pinus strobus*), formerly grew in great abundance throughout New England and Canada, and in the states bordering the great lakes. The supply has now been so far exhausted that this wood is no longer used for framing timber except in the northwest, and to some extent in the Rocky Mountain region.

White pine lumber of a good quality is creamy white in color, soft and straight grained, light in weight, and is very easily cut. It contains very little resin, and is durable only in dry air. In transverse strength it is the weakest of all woods used in building. It also swells or shrinks seriously when the hygrometric state of the atmosphere changes greatly. White pine, however, possesses the advantages of being very straight grained, free from knots, and very easily worked. Its most valuable characteristic, however, is its freedom from warping and cracking in seasoning. It probably stays in place (stands) better than any other wood, and is the best wood to use for solid doors, sash, or light framing of any kind. It is also the best base for veneered work, and is remarkably well adapted to patternmaker's use. It is the best of all the northern woods for outside finish, when protected by paint, and is the most desirable wood for all kinds of joiner's work that is to be painted. The best qualities are so expensive, however, that white wood and other woods are now often used as a substitute.

NORTHERN YELLOW PINE or short-leaved pine (*Pinus mitis, Pinus variabilis*) is found throughout the country, in dry sandy soils, from New England to Georgia. "It attains a height of sixty feet and a diameter of eighteen inches. The trunk is straight and slender. Its cones are small, its leaves are in groups of three, and from three to five inches long. The heartwood is fine grained, moderately resinous, strong and durable. The sapwood is poor in quality and decays rapidly."* It is a valuable wood for framing and flooring, but not equal to the white pine for finish.

Varieties of the yellow pine also grow in New Mexico and the Rocky Mountains, and are used in New Mexico and the Rocky Mountain region for ordinary framing lumber. That grown in the mountains is fit for nothing else, and warps very badly. The *Mexican pine*, as it is called, is of a better quality and is often used for finish lumber in cheap buildings and for fences, etc.

There are two other varieties of pine which grow in the northern states, and are used in building.

THE CANADIAN RED PINE (*Pinus resinosa*) is found from Canada to the Pacific coast, but does not reach far south in the United States. In Canada and the northwestern states, it is very commonly called Norway pine. It attains a height of from seventy to eighty feet, with a diameter of two feet at the base, the trunk continuing of uniform diameter for two-thirds of its length. The wood is fine grained and white with a reddish tinge, somewhat soft, but quite strong and durable, its strength being about a mean between that of white and pitch pine. It is the most valuable framing timber grown in the North, east of Oregon.

OREGON PINE (*Abies Douglaisi*).— This tree is not a true pine, but a fir, but as it is generally known as pine, it is classed with them here. It is a noble tree, attaining a height of 250 feet, and forming immense forests in the extreme northwest of America. The timber is heavy, firm and particularly valuable for long framing timbers. It is largely used in the northwest for posts, girders, and for heavy floor joist, or for joist exceeding twenty-four feet span. From tests made in San Francisco on the strength and stiffness of this lumber, it seems to be somewhat stiffer than the Georgia or long-leaved pine, and stronger in a post. It is not as resinous as the long-leaved pine, and consequently not as heavy, but the fibers are strong and hard, and it is a first-class timber for constructional purposes. It is practically impossible to obtain this timber more than one season old. A considerable quantity of this wood is now manufactured in the state of Washington, and is sold in the northwest under the name of Washington red fir.

SOUTHERN, OR HARD PINES.—There are ten varieties of pine which grow in the southern states, and which are popularly known as yellow pine, hard pine, pitch pine and Georgia pine. All of these varieties contain a considerable quantity of pitch, and all are heavier than the northern pines. Of the ten varieties above mentioned, but two are manufactured into lumber to any extent. These are the long-leaved pine and the short-leaved pine.

GEORGIA PINE, or long-leaved southern yellow pine (*Pinus australis, Pinus palustris*).— This is the wood generally referred to when "yellow pine" or "Georgia pine" is specified. It is the most valuable of all the southern pines, both on account of its superior strength and durability and also on account of its large size, which enables very long timbers to be cut from it. This tree sometimes attains a height of 150 feet and a diameter of four feet. It has but little sapwood, and the heartwood is of very uniform quality, its resinous matter being very regularly distributed, and the grain of the wood being very fine and close. Though not so tough and elastic as white oak, the long-leaved pine, especially that from Georgia, successfully rivals it in stiffness. "If a beam of each kind of timber, equal in dimensions, be supported at the ends, the oak beam will depart most from its 'mold,' but will break under about the same load."

This variety of pine is principally obtained from the states of Virginia, North Carolina and Georgia. It is almost the only wood used for building purposes in those localities, and is largely used throughout the eastern and middle states for heavy framing timbers, posts and girders. The wood is also much used for interior finish, for which purpose, however, it should be finished in varnish or hard oil, as it contains too much pitch to take paint well.

THE PITCH PINE, or short-leaved pine (*Pinus rigida*), is abundant in all the Atlantic states south of Chesapeake Bay. The best qualities come from Florida. It is distinguished by peculiarly rough, dark bark, and by the abundance of its resin. The wood is more dense than the long-leaved pine, is close-grained, heavy, free from knots, elastic, quite strong, and very durable. It is said to be a softer wood than the long-leaved variety, and is more easily worked. It is well adapted for housework, and is largely used by cabinetmakers.

EFFECT OF TAPPING PITCH PINES.—It has been generally believed, and is often found stated in books, that the tapping of pitch pine for turpentine was injurious to the strength of the timber. Recent tests made by the Forestry Division of the United States Department of Agriculture, however, have shown conclusively that this belief was erroneous. Not only is the strength not affected by tapping, but the chemical qualities are not changed, so that there is no reason whatever to believe that tapping in any way affects the durability of the lumber. Furthermore the agent of the division, who had charge of the work, was unable to find a single person who could readily discern any difference between bled and unbled timber.

THE CYPRESS is a tree of the pine family, having a trunk sometimes ten or even twelve feet in diameter, and attaining a height of from 120 to 130 feet. The tree is found from the Hudson to the Gulf of Mexico, and flourishes best in the swamps of the South, where the soil is a deep, rich, black and wet mud. The wood is soft, light, straight grained, free from knots, and easily worked, and is imperishable where covered with water. Its color is somewhat like that of olive wood, though it is not as fine grained nor as handsome. It makes a very pretty finish, however, when varnished and rubbed down. This wood is especially adapted for use in damp situations, such as for shingles, eaves troughs, or gutters, water tables, sills, sleepers, etc. It appears to be less injuriously affected by damp than any other wood except redwood or cedar. It also possesses the quality of not warping to

* "Materials of Construction."—Thurston.

any extent, and a solid cypress door will stand nearly, if not fully, as well as one of white pine. It can be obtained in wide, clear boards, and is excellent for pantry fittings, etc. If it were not for its softness, it would make one of the best of finishing woods. It is cheaper than clear pine, except in the very northern and western states.

FIRS.—While resembling the pines very closely, there is really considerable difference both in the appearance of the tree and in the quality of the wood. The fir has straight, short leaves, which come off singly from the stalks. The trunk tapers more than that of the pine, and the shape of the tree is more pyramidal. The wood is of a much lighter color than pine, and has more knots and is not as durable. The varieties of fir used for building purposes in the United States are the spruce and hemlock, and the Oregon fir already described.

SPRUCE.—There are three varieties of spruce used for building purposes in the United States. They are all sold under the same name, however, and there is but very little difference in the wood.

The White Spruce (*Abies alba*) is the variety generally found in the lumber yards of New England. It is a very white tough wood, and furnishes the larger part of the framing timber used in New England. It is intermediate in strength and stiffness between the white pine and the southern yellow pine. It warps and twists much more than pine, and is on that account not a good timber for posts, girders and truss timbers. It is also largely used for flooring and for making clapboards; also for dressed sheathing.

Next to the southern hard pines and the Oregon and Norway pines the writer considers the spruce the best framing timber that we have.

The Black Spruce (*Abies nigra*) grows principally in lower Canada and the rougher portions of the northern states. Its wood has the same appearance as that of the white spruce, the difference in color being only in the bark and leaves. The black spruce is said to produce the largest and best timber.

THE RED SPRUCE (*Abies rubra*) or Newfoundland red pine, as it is sometimes called, grows in the northeast portions of North America, and furnishes a timber of about the same quality and size as the black spruce.

THE HEMLOCK (*Abies canadensis*) is a variety of spruce or fir found all along the northern boundary of the United States and in Canada. A great deal of hemlock is used in New England. In the Puget Sound region it is sold as "Alaska pine." The wood much resembles that of white spruce, but it has little cohesion between the annual rings, so that it is very liable to cup shakes, which greatly injures it for framing timber. It is also said to be very perishable in moist situations, or where subject to alternate wet and dry conditions. Its principal use for building purposes is for rough boarding, or sheathing and light joist. Its bark is used for tanning leather.

REDWOOD (*Sequòia*).—The sequòia or redwood tree is a native of California and the Sierra Nevada mountains, where it grows to an immense size. It belongs to the pine family and has a thick fibrous bark. A great amount of redwood timber is manufactured in California. The wood is very straight grained, free from knots and can be obtained in very wide pieces. It is also a very handsome wood when finished in oil and varnish, but on account of its softness, which is about the same as that of white pine, it is not equal to the hardwoods for inside finish. This wood possesses two very distinct peculiarities, which make it very valuable for certain purposes. The most important of these is its fire-resisting qualities. It will not burn readily and requires a very good draft to make it burn at all. For this reason about ninety-five per cent of all the outside walls of all the ordinary buildings in San Francisco are sheathed with redwood, and the district bounded by the fire limits of that city is smaller than that of any other city of its size in the country. The other peculiar characteristic of redwood is that it shrinks and swells less than any other building wood, and seems to last longer in wet and damp places than other woods. In San Francisco it is used for the foundations of houses, being much less expensive than brickwork, and is used for the basement and sub-basement of five or six-story buildings of wood, of which the city is largely composed.

Outside of California redwood is used in the shape of shingles, for which it is probably the best material we have, considering all its qualities of durability, fire resistance and beauty, and also occasionally for inside finish and cabinet work.

OAK.—Two varieties of oak are used in this country for building purposes. The White Oak (*Quercus alba*) grows throughout the United States and Canada, but most abundantly in the middle states. Those trees which grow near the seashore or along the borders of the great lakes, appear to furnish the most durable timber. The wood is light-straw colored, with a tinge of red, and is very tough, strong, durable, elastic and pliable, with strong lateral cohesion. It is, however, very liable to warp and crack in seasoning, and must be seasoned with great care. Its high cost prevents its use as timber, except for a few purposes, such as posts and bolsters. It is also extensively used for inside finishing, furniture, etc. When used for doors it should be in veneers, not exceeding $\frac{3}{16}$-inch thick, glued to a pine core. It is also largely used for finished flooring in dwellings, for which purpose it should be quarter sawed. The "silver grain" in oak is obtained in this way. Oak should never be used for inside finish until it has been thoroughly seasoned and kiln-dried. Next to the live oak, which is too costly to use for building purposes, the white oak is the most durable of all building timber. It is also one of the heaviest of building timbers, weighing from forty pounds when dry to seventy pounds when green, per cubic foot, and is very hard to work.

Red Oak (*Quercus rubra*) is a Canadian tree which grows with considerable greater rapidity than the white oak. It is usually smaller, but attains a height of 100 feet. It derives its name from its leaves, which change to a red color before falling in autumn. The wood also has a reddish tinge, particularly when filled and varnished. The wood is coarse grained, light and spongy, and is not a durable wood for constructional purposes. For inside finish, however, it answers equally as well as the white variety, and many persons prefer it to the white oak, on account of its warm color.

CEDAR.—Posts of white cedar (*Cupressus thyoides*) are sometimes used for constructional purposes, particularly when they are to be set in the ground. This tree also furnishes a large proportion of the shingles used in the United States. The white cedar grows all along the Atlantic Coast from Maine to Georgia, wherever the soil is wet. "It is the principal inhabitant of the interior swamps of New Jersey and of Virginia, and trunks are often found of large size, sound and merchantable, lying far below the surface, embedded in mud and peat."* The average size of the tree is about ten or twelve inches in diameter and fifty feet high, although it grows to a height of eighty feet and to a diameter of three feet. The wood is odorous, soft, fine grained, light and easy working, taking a red tint when seasoned. It resists the action of the weather better than any other wood, except cypress and redwood, and will last a long time when set in the ground. A very fine quality of white cedar grows in Oregon, from which excellent shingles are made, furnishing three-fourths of the shingles used in the extreme western states.

The Virginia "Red Cedar" (*Juniperous virginiana*) is a smaller tree, and is found on dry, sterile, rough country. The color of the heartwood is red, while that of the sapwood is white. The wood has a strong characteristic odor, and a bitter taste, which preserves it from the attack of insects, and on this account is used in fitting up linen chests and closets, drawers, etc. It is a very expensive wood, and is generally used in thin boards. It is extensively used for lead pencils, and is sometimes called "Pencil Cedar."

THE POPLAR, or "Whitewood," as it is often called, although not used for framing timber, except occasionally for turned posts, and in the sections in which it grows, for small timbers, is so extensively used in interior work that a description of the wood will not be out of place. Most of the whitewood found in the markets of the United States comes from the states of Virginia, Tennessee and Kentucky. The tree is very abundant in that section, and the wood is cheaper than clear pine in nearly all cities east of the Missouri river. The wood is remarkably free from knots, has a very compact, fine grain, and is very light in color. It is a very little harder, and somewhat heavier than white pine. On account of its close grain it is well adapted for carving and also for staining. It can be stained to imitate cherry very successfully.

The wood shrinks considerably in seasoning, and warps badly. A solid door of whitewood is quite sure to warp, or spring, unless made of thoroughly seasoned and kiln-dried lumber.

Whitewood should not be confounded with basswood, as it is an entirely different wood, although much resembling it. Basswood comes from the Linden or Lime tree.

* "Materials of Construction."—Thurston.

SELECTION OF TIMBER FOR SPECIAL PURPOSES.

For light framing, for dwellings, tenement houses, etc.: Spruce, white pine and northern yellow pine give good satisfaction and are generally used on account of their cheapness.

For posts, girders, truss timbers and heavy framing: Georgia pine, Oregon pine or white oak, are to be preferred. Next to these are the short-leaved southern pine, Canadian red pine, or Norway pine, as it is often called, and the best qualities of spruce.

Where exposed to the weather or in damp situations: Redwood, cypress or white cedar should be used.

Posts set in the ground: White cedar, chestnut, redwood, cypress.

For piles and cribbage: Oak, elm, southern hard pine, Norway pine, spruce, white pine and hemlock, in the order given, only the first three should be used in salt water.

For sash, solid doors (as a base for veneers), and all joiners' work that is to be painted, clear white pine gives the best satisfaction, although poplar (whitewood) is often used on account of economy.

For thresholds and floors, or wherever hardness and resistance to wearing is required: White oak, maple, Georgia pine, all quarter sawed.

For linen chests and closets: Virginia red cedar.

For interior finish: Any of the hardwoods are suitable. They are generally selected to please the especial taste of the owner, and all are sufficiently durable. Every hardwood needs to be thoroughly seasoned and kiln-dried, and all hardwood doors or sash should have a core of pine, covered with a $\frac{3}{16}$-inch veneer of hardwood.

DISTRIBUTION OF BUILDING WOODS.

The following list has been prepared to show the varieties of woods that are used for framing in different sections of the country, and their comparative cost. It is believed to be quite reliable:

NEW ENGLAND, INCLUDING BOSTON.—For common framing, white spruce, hemlock is sometimes used in cheap buildings. Heavy framing, Georgia pine, white oak sometimes used for posts. Prices: Hemlock, $13 to $15; spruce, $15.50 to $18; Georgia pine, $22 to $35.

NEW YORK.— The same woods are used in New York that are used in Boston, but a less proportion of hemlock and spruce, and a larger proportion of Georgia pine is used. Prices: Hemlock, $15; spruce, $18; Georgia pine, $18 to $21.

PHILADELPHIA.—In houses less than $10,000, hemlock; for long spans in dwellings, spruce; for heavy framing, Georgia pine; white pine sometimes used where weight is a consideration. Prices: Hemlock, $13 to $17; spruce, $16 to $18; white pine, $25 to $37; Georgia pine, $22 to $28.

LOUISVILLE, KY.—For small scantlings, poplar; for joist and heavy framing, Georgia pine; oak is also used for posts and timbers. Prices: Poplar, $18 to $20; oak, $19 to $28; Georgia pine, average, $18.

MINNEAPOLIS AND ST. PAUL.—Common framing timber, Minnesota white pine; heavy framing, Georgia pine and Washington red fir, principally. Norway pine, white oak and red oak occasionally, Prices not known.

CHICAGO.— Common framing timber, Michigan white pine; heavy framing, Georgia pine and Norway pine. Prices, Michigan pine, $16 to $18; Georgia pine, $21 to $22; Norway pine, $15 to $16.

KANSAS CITY, MO.—Georgia pine is used for both light and heavy framing, although white pine is used for light framing to a limited extent. Prices: Georgia pine, average, $20; white pine, average, $21.

DENVER, COLO.— Common framing lumber, Colorado white pine and spruce, and Mexican yellow (soft) pine; for heavy framing, Texas pine and Oregon pine; oak occasionally for posts and bolsters. Prices: Mexican and Colorado lumber, average, $21; Texas pine, $25; Oregon pine, $35.

DALLAS, TEXAS.—Texas pine (short-leaved, hard or pitch pine) is practically the only wood used for constructional purposes, and is almost the only wood used about most of the buildings, the exceptions being in the case of hardwood finish. Price of Texas pine, $15.

SALT LAKE CITY, UTAH.—For cheap class of work, native fir, as it is called, is used, and for all the better class of work, Oregon pine, or Oregon fir, as it is called there. Price not known.

SAN FRANCISCO.—Oregon pine is used for all constructional purposes, except for foundations and in damp situations; in such places redwood is used. Prices: Oregon pine, now, $13; two years ago, $16; redwood, now, $15; two years ago, $18.

STAFF AND SCULPTURE WORK OF THE WORLD'S FAIR.

BY S. T. JACOBS.

IN "writing up" a history of any important work or event, especially to one unaccustomed to it, even though familiar with all the facts, there are many obstacles to overcome. Thoughts crowd in upon you in jumbled confusion, and need to be presented to the reader in order.

However, as this article is intended only for a correct history of that part of the work accomplished for the World's Columbian Exposition coming directly under the supervision of Mr. W. D. Richardson, as superintendent of exterior covering, and is an abstract from a memorandum written more for my own use than for any other purpose, it probably will not make much difference, so long as the main facts are presented.

My connection with Mr. Richardson began on September 24, 1891. At that time, nothing of any importance had been done so far as construction of the buildings was concerned. A part of the framework of the Woman's building had been erected, but beyond this the entire grounds were still in possession of the grading and landscape departments. I well remember the long and tedious daily walks necessary in getting the different contractors for the exterior covering located in the grounds and delivering to them the models, etc., for the ornamental part of the work.

I wish first to state how the Exposition authorities came to a decision to use what is called "staff" for the exterior finish of the buildings; then how staff is made, etc.

Early in 1891, Mr. Richardson, who was then in Buenos Ayres, returned to America and came to Chicago to confer with the Exposition officials in regard to this work. The question of what to use for the exterior decorations of the buildings, which would best harmonize with the landscape designing, painting, sculpture work, etc., was thoroughly discussed. Mr. Richardson had traveled extensively and had taken careful note of the way buildings were constructed in different countries. He told the officials of buildings seen in Lisbon, ornamented with stucco or plaster which had endured for a century. On the pediments, clay was first molded and plaster cast over it; in Brazil, the plaster was put on canvas. Algiers is largely built of adobe, covered with stucco, and almost the entire city of Montevideo is of the latter. Throughout Paraguay it is spread over sun-dried brick. In this latter place, Mr. Richardson says, the women make the building materials and also put up the structures.

Mr. Richardson observed all the uses of stucco or plaster of paris, and told the Exposition people that, strengthened with fiber, such as sisal or hemp, it would make a splendid material to use for the covering of the buildings. Experiments were made, and after numerous trials it was finally voted a success and "staff" was adopted, with what success the beautiful effects obtained on the buildings attest.

As to why this material is called "staff." There is really no explanation for this. In Mr. Richardson's own language: "In the American language, words creep in rather peculiarly. We give a sort of 'nickname' to places and things, and why we do so is hard to explain. The word 'staff' was applied to this material when we first commenced to make it and I presume it will always retain that name."

The process of making staff is very simple. Anyone familiar with ordinary stucco work will easily understand it. It really is stucco, with the exception of the addition of the fiber. This is made from sisal or hemp, and is beaten until it is in a feathery state and is then mixed in with the plaster, which has first been reduced to a liquid state. The fiber gives the material the required strength on the same plan exactly as our paper money, which has silken threads through it, to strengthen it.

In preparing what is called the "gelatine mold" process, i. e., where a large number of casts are to be taken from an original model, the first step is to have the sculptor or designer furnish the model for the design. I would here make the distinction between what is called architectural modeling and sculptural modeling. The architectural modeling refers to all models of cornices, friezes, panels, etc., while the sculptural modeling refers to figures, groups,

etc., or in other words, the "art work," not really necessary to the building, but simply to further embellish it.

After the models are furnished, they are covered with a "case" made of wood to conform to their general outline, with a space of about one inch between the case and the model. Into this space is poured hot glue or gelatine, which fills up the space and enters into every detail of the model, producing a perfect impression of it on the glue. This glue, being flexible after it becomes cooled, enables the molders to produce an almost unlimited number of casts, as for instance on the large buildings, thousands of casts were necessary of the same pattern to finish the cornices, etc., around the entire building.

When the gelatine mold is ready for use, a coating of pure plaster of paris, perhaps an eighth of an inch thick, is thrown over it. This is for the purpose of giving the outside of the cast a perfectly clean and smooth appearance; when this is done, the fiber is mixed in with the plaster and poured into the mold until it is filled; the back is then scraped off evenly so that it has the appearance as of a board when it comes from the saw. The cast is then removed from the mold and allowed to harden, after which it can be nailed up the same as a board. Where the work is to be exposed to water, as it is around the lagoons at Jackson Park, about one-fourth Portland cement is added to the plaster.

Of course, this process was used simply for what is called the ornamental part of the buildings, all of the plain surfaces being put on the same as ordinary plaster work, with a trowel.

Our records show that upward of 500,000 pieces of ornamental staff were cast in order to complete the work simply on the main buildings, and not including all the state and foreign buildings; it might also be proper to state that on account of the enormous quantities of plaster and fiber necessary for this work the entire country was cleaned out, more than one million barrels of plaster being used, and so many carloads of fiber that Mexico was depleted, and we had to send to Australia and New Zealand for hemp. It is such details as this which assist one to a conception of the immensity of the buildings.

As to the sculptural modeling: In the contracts entered into with the various prominent sculptors, they were called upon to furnish what are called "sketches" of the sculptural decorations, i. e., the models were to be about one-sixth of the full-size work. From these models the Exposition's force of sculptors enlarged the work to full size, by simply making all outlines six times the size of the sketch.

Wherever more than one of the same group or figure was needed, the "gelatine mold" process was used, i. e., the sculptors would model the figures in clay and then reproduce them in plaster by casting, the same as was done with the architectural models. Where only one copy was necessary, instead of using the gelatine mold process, a skeleton work would be built up, of iron and wood, covered with wire cloth, and the sculptors would cover this skeleton work with plaster and chisel out the forms of the figures. This process was known as work "built in place."

Of the sculptural works the following were built in this way: All groups and figures on Administration building, all the work on the Colonnade, all the work on the Horticultural building, the Statue of the Republic, the "Quadriga" on the Peristyle.

All of the balance of the sculptural work was done by the casting process on account of duplicates being required.

So far as the work of exterior covering on the different buildings is concerned, this work was all let by contract, and the duties of Mr. Richardson and myself in this connection consisted in seeing that the contractors promptly and satisfactorily carried out the terms of the contract, furnished the proper models for the ornamental work, made a sufficient number of casts and placed the finished work upon the buildings.

This, of course, caused an immense amount of detail work, as the contracts for this work alone reached the not insignificant total of over one million and a half dollars.

As previously stated, many long and tedious tramps were necessary to get all this work systemized, but finally roadways were laid out, so we could get around with horse and buggy.

As to the sculptural work: It might be well to mention here that the credit of this part of the work has in a great measure been given to Mr. Frank D. Millett, who was later appointed Director of Decorations. Nothing was known of Mr. Millett in connection with the Exposition work until all but a few of the sculptural pieces were completed. He was brought to Jackson Park more for the execution of the painting and mural decorations, and certainly no better selection could have been made for that work, and he very creditably filled the position.

In looking back over the work accomplished in this department, I cannot help but think of the story of the man who, by lifting a calf every day from its birth, was able to lift it when it grew to be an ox. I well remember the 15th day of February, 1892, the day on which the colossal studio in the Forestry building was opened and the sculptural work commenced under Mr. Richardson's charge. A number of "sketches" had been completed by Mr. Carl Bitter and Mr. Philip Martiny, contractors for the work on the Administration and Agricultural buildings respectively, and shipped here for enlargement, and four sculptors were started to work on Bitter's figures and two on Martiny's figures.

From this small beginning the work grew until we were carrying some six hundred men on the pay-rolls, men earning salaries from $5 to $25 per day. Mr. Richardson was obliged to scour the country to get enough sculptors to hurry the work to completion in time, and such a conglomeration of nationalities as was brought together I do not believe has ever been equaled — no, not even by the now famous Midway Plaisance! It was a veritable "Babel." We were fortunate in getting a few among them who seemed able to speak all known languages, and these were often pressed into service as interpreters, to straighten out questions pertaining to the work, etc.

However, all matters were amicably arranged, and by hard work and continual crowding the great task was completed in time, May 1, 1893. Many of the privileged visitors who were admitted to the studios expressed doubts that such a vast confusion of arms, bodies, heads, legs, etc., which seemed to be scattered everywhere, could be gotten together and put in shape upon the buildings; but, as stated, the task was accomplished and everything entirely completed in time for the opening, with the exception of some minor pieces of sculpture work, which were contracted for too late to finish on time.

INIGO JONES AND WREN.*

BY P. B. WIGHT.

TIME was when American architects and amateurs were greatly interested in all English architectural movements, and Mr. Loftie's book is a plea for the revival of Palladian architecture (so called) in England, and is mainly of local interest in that country. Our colonial traditions were always English, and during the early days of the republic American architectural practice, such as it was, was but a reflex of the current thought on the same subject in England. It is only during the last thirty years that we have been also subject to French influences, and now that the French system has been adopted in most of our schools of instruction, it may be said to be predominant. Except from those two countries very few other foreign ideas seem to have taken root here. The great influx of Germans, who have been mainly employed as draftsmen, has left its mark to only a slight extent, and inasmuch as the mass of them have been men of inferior abilities, it has not been with good results. It is only within the last twenty years that we have begun to make for ourselves an architectural history, and even now the mass of our best work is only eclectic.

Any contribution, therefore, to the philosophy of architecture, like Mr. Loftie's book, is calculated to set us thinking and to do good in the end, however narrow his own views may be. He is an enthusiast in a field where enthusiasm has heretofore been lacking. His excellent account of Jones and Wren and their works serves only as a text for elucidating his ideas, and gives him the opportunity for anathema against that which he hates, for he hates what he calls the "recent Gothic revival" in England "with a perfect hatred," and claims with an air of triumph that it has come to an end. He thinks that the times are ripe for going back to old models, and that we should begin where the successors of Jones and Wren left off.

He takes the curious ground that all architecture up to that time had been progressive. He sees nothing but progress in the Gothic up to the last days of its decadence. He finds its highest manifestation in the Elizabethan period, while all other scholars have regarded it as the transition period, during which many details from Italian Renaissance were attached to Gothic buildings, and mixed with the Gothic style that had been last in vogue — the late Perpendicular. All that remained was for Inigo Jones to go to Italy and import what he calls the Palladian style to carry out the natural steps in architectural progress. It is needless to say that the mass of scholars do not agree with him. The Renaissance was bound to get into England through force of circumstances, and did get there through numerous channels, mainly through the importation of Italian workmen, whose impress had

* Inigo Jones and Wren; or the Rise and Decline of Modern Architecture in England. By W. J. Loftie. New York: Macmillan & Co., 1893. Sold by A. C. McClurg & Co., Chicago. Price, $4.50.

long been seen during the Elizabethan period, and to whom were due many of the altogether artistic works of that period which followed the dry bones of Perpendicular Gothic. Gothic architecture died a natural death. Its vitality had been going out from the beginning of the fifteenth century, and from a noble art of building it had been degenerating into a field for invention of new forms and meaningless details. Tricks of construction like the roof of Henry VII Chapel were combined with lace-like frippery in decoration. If some great genius had arisen in the sixteenth century to advocate the rejection of every example that had been set after the thirteenth century, and a return to the stern and truthful forms of that period, there would have been some hope for the Gothic, in England at least. But when it died and people were tired of the Elizabethan no-style, beautiful and picturesque as it may have been in some instances, the field was open for the Italian innovation.

Inigo Jones introduced the five orders of Palladio in England not so much by his example, but by his official position as surveyor-general of works, which was a royal appointment, almost equal to that of Minister of Fine Arts in France. Wren, after an interim, was his successor. Jones went to Italy and saw the buildings that Palladio had designed. With these he was as much pleased as with the five orders that Palladio had *invented*. We say "invented" because it is well known, through more thorough modern investigation and measurements, that they had no foundation or authority in the remains of buildings in Greece and very little in those of Rome, which were the work of imported Greek architects or builders. Palladian architecture, according to the author, was that in which *proportion* was the crowning feature, and detail was subordinate; in fact detail, and more especially ornament, were of little or no importance, and the less ornament the better. Jones does not seem to have been impressed with the beauty of the early Italian Renaissance, in which Gothic proportions had been retained and classic details introduced. These details, and especially the carvings, had been executed by men who had not lost the traditions of Gothic carving, which had been well preserved in Italy, though they had been lost during the "Perpendicular" period in England. It was a long time before the carving of ornament degenerated in Italy, and when it did it was during the Renaissance period. What Mr. Loftie means by "proportion" he never once explains; but from the examples he gives it looks as if he refers to symmetry. For in his fulsome praise of the works of Jones and Wren he constantly admires the "proportions" of both exteriors and interiors that vary greatly in their actual proportions. This would not be worth considering here but for the fact that he claims that all recent architecture is deficient in proportion, and that detail has been made predominant; therefore, that all detail is worthless if proportion has been neglected.

The book gives us an excellent account of the state of the art when Jones came upon the field, and is an admirable condensation of the professional lives of those who form the subject of his essay. Many lives have already been written of Christopher Wren, but less of Jones. Here we have a most particular account of the works of both — not only those executed, but those not executed— from one who has taken great pains in investigation such as no other than an enthusiast could; and as such the book is of great value for reference. It develops the fact that Inigo Jones was the first professional architect in England, and that he established the profession as such. He was the first man that made complete drawings and working drawings of buildings in all their parts, as is now done. A large number of his drawings is still preserved. A great many of them were for works that were never executed, and of the few that were executed but little remains.

But of Wren the experience was different. He lived a long and busy life, and yet it may be said that the profession was thrust upon him. He was a graduate of Cambridge, an astronomer of recognized ability, a professor at Oxford, and a doctor of laws before he was called to the position of surveyor-general of works. But he must have also studied architecture as an amateur, and he certainly had practiced it to some extent, for, before he was called to the office, he had designed the chapel of Pembroke College, at Cambridge. The facts of his life are too well known for repetition here. Inigo Jones was born July 15, 1573, and died June 21, 1652. Christopher Wren was born in 1632, became surveyor-general about 1664, was dismissed from the office in 1718, and died in 1723. The year of the great plague which devastated London was 1665. Wren improved the time by visiting Paris, the only place on the continent to which he ever went. He was engaged on a design for remodeling old St. Paul's, to which a west portico had been built in the Palladian style by Jones, when, in 1666, occurred the great fire of London. This, as is well known, destroyed old St. Paul's, with Jones' new west front, and a large part of the city. Here opened the great opportunity which occurs but rarely in the history of the world. New St. Paul's was commenced and finished in his lifetime, occupying thirty-five years in its erection. During his long life he designed about forty other London churches, besides many public and private buildings that would make a large catalogue. Perhaps no other architect through all time ever had such a large practice, both in a public and private capacity. For his office made him practically the government architect, both for civil and ecclesiastical buildings, and at the same time he undertook every kind of private work. No architect that ever lived had such an opportunity to found and perpetuate a style of architecture, and to stamp his individuality and influence upon works that were to stand for centuries. No other architect ever saw a cathedral of the first class and of his own design commenced and finished. All of these buildings were in what our author calls the Palladian style, except a few churches in which he attempted to repeat the long-dead Gothic, and with results too sad to contemplate. But there is no earthly reason for classing them with the designs of Inigo Jones, or claiming that Wren was in any way his disciple or follower. They are unmistakably the work of a man who stood alone, who exhausted every source from which knowledge necessary for the prosecution of his work could be drawn. They are in the classic Renaissance style of Christopher Wren, who was to England alone what a galaxy of contemporaries was to France, and what Sansovino and Bramante were to Italy. Nor was Wren dependent upon Palladio, or Vignola, or Scamozzi, or any other Italian for his knowledge of the orders of architecture, which all three of them invented. The author speaks of his love for the Tuscan order (one of Palladio's inventions), which he used sometimes. But in St. Paul's he used the Corinthian capital, and that modification of it called "composite" everywhere, and did not follow the rules laid down by the Italian doctors of architecture anywhere. A great many fanciful and foolish things have been said about Wren. Among others, he was said to be a civil engineer. But there is no record that he performed any engineering work, except such as were incidental and necessary to his profession as an architect. He was certainly one of the greatest men of modern times, and even though we may not admire all that he did, we can honor and respect his name and well-earned reputation. His influence lasted for about a century after his death, and still exists to a large extent in his own country, the English colonies and the United States. Two of the chapels of Trinity church, in New York, St. Paul's and St. John's, are excellent examples of the style of Wren in his superb church architecture.

The introductory chapter, and chapter second, on "The Decay of Gothic," have little or nothing to do with Jones or Wren, they only serve to give the author an opportunity to launch out his invectives against all nineteenth century architecture, and the Gothic revival in particular. He seems to have been so full of it that it was necessary to get it off before approaching his subject. This modern Don Quixote has thus, to his own satisfaction, demolished in advance all the obstacles that might be in the way of presenting the subject in its best light, and, as a consequence, the reader, having completed the chapters on Wren and his works and the successors of Wren, and being brought down to the beginning of the present century, where the book ends, will not have his mind disturbed by any architectural works that have been conceived and executed in this century, but has only to send for a copy of Palladio's "Five Orders," and "Loftie on Proportions," and take up the subject where the successors of Wren left it. These chapters require a great deal of patience in the reader and are not calculated to put him in a good frame of mind for digesting the really valuable historical matters that follow. The author is not satisfied to deal in generalities, but strikes at once against the modern architects of greatest reputation. He has no mercy for any of them. All the works of Scott, Street and Waterhouse come in one category, and that is the worst. He calls their work "Mock Gothic." He even pronounces Scott to be a failure in his Renaissance work on the Foreign Offices, because he was a known Gothic man. He says modern Gothic is a failure, because in it detail is everything and proportion nothing. But the detail and ornamentation are bad, and therefore all is bad. Even Waterhouse's Natural History Museum is singled out as one of the buildings without "proportion." To the author it was no crime to move Jones' Palladian reredos from Whitehall to Westminster Abbey, but a grievous offense for George Gilbert Scott to tear it down and design one in harmony with the building, which Mr. Loftie characterizes as an "unsightly and poverty-stricken erection." Where all modern Gothic work is condemned, of course, no discrimination is attempted between the good and bad work. But some idea of his faculty for appreciation is shown by such assertions as that the best modern Gothic is to be found at Windsor Castle (excepting, of course, the work done there by Scott) and in the Houses of Parliament.

In concluding this wonderful introductory chapter the author thus defies the critics: "I know that what I have said may not be well received by the ordinary modern architect. I shall be told that I am flippant and ignorant, as I have often been told before. Of this kind of criticism I can accept any amount with equanimity. As to my ignorance it is my own concern. As to flippancy I can honestly assure anyone who does me the honor to read these pages that, so far from that, I am moved sometimes almost to tears when I think of what is being done in all directions under the name of architecture."

THE Institute of Building Arts, at 93 and 95 Washington street, Chicago, owned and managed by the Illinois Chapter of the American Institute of Architects, continues to grow in extent and usefulness. The Chapter trustees have installed the library in a new bookcase and have ordered copies of many rare photographs that were exhibited at the Exposition for the permanent collection. Among these are the photographs of the French Commission for public monuments, the publications of the Photogrammetric Society of Germany, and Ougania's streets and canals of Venice. The Central Society of Architects of France has presented to the Chapter the memorial tablet to its presidents, and the manuscript book of lives of its presidents that were exhibited in the Fine Arts building at the Exposition. The former is an artistic arrangement of wood, marble and bronze. They have been placed in the meeting room of the Chapter.

FROM CHICAGO TO THE HALIFAX RIVER.

BY ROBERT CRAIK MCLEAN.

SEA NYMPHS.

THERE are not as many people going to Florida this year as usual," is a common remark of late, but the records of the railway passenger departments show the contrary. In fact, the facilities for travel to the land of sun, sea air, oranges and flowers all day long have been largely increased both in character of the accommodations and the number of railroads making a specialty of carrying tourists to the South. If you pass through Cincinnati, there is the "Big Four" and the "Monon," each with peculiar conveniences and advantages provided expressly for the southern journey. The Evansville Route will take you to Nashville, the most beautiful city of the South, and on to the point of Florida or to the City of Mexico.

But it is not of the railways, but of the scenery and the necessity of the journey that is most important in speaking of a winter trip to Florida. Important because in no other way can the effects of the year's work and the insidious attacks of our northern climate upon systems sapped of their nerve force be counteracted. It brings renewed vitality in two ways. First, by the change of climate, changing the work of the system from that of resistance to that of passive action. Second, by the change of scene and consequent change of thought. An architect may say that he has no need to go to St. Augustine to see the architecture, old and new, that makes the place celebrated. He has drawings and photographs of every detail. But he needs to forget drawings and details, and under that warm, blue sky and the shadows of the palmetto trees sit and enjoy the coloring and mass from a new and much more enjoyable standpoint. But be he architect, artist

"BEFORE BREAKFAST."

or only the plain everyday tourist, he does not go to that sunny land to study anything. He packs his grip with summer clothes. He takes a "Hawkeye," if a camera fiend; his fishing tackle, if a fishing ditto, or his sketching materials, and reaching Chattanooga by one of the three routes mentioned from Chicago, or the great Queen & Crescent route from Cincinnati, he spends a few hours or days on Lookout Mountain. The E. T. V. & G. Railway service is the best and most direct south of there, and in twelve hours of rapid traveling through the piney woods of Georgia and the cotton farms of northern Florida the traveler finds himself in Jacksonville. Don't stay there. There is nothing to see, and unless you go to the St. James Hotel your time will be lost in vexation of spirit. Take the Jacksonville & Halifax River road and stop at St. Augustine. It is a busy, crowded and fashionable place, but pays for a days' sojourn. It will make you glad, too, when you go farther south to the quiet spots on the sea at Ormond-on-the-Halifax, Daytona, or still farther south on the Indian river, that you have got away from the crowd and can fish, bathe, sit in the sun and imagine yourself a doodle bug or a chameleon and it's

HOTEL AND BRIDGE AT ORMOND-ON-THE-HALIFAX.

nobody's business. Clothes become the least of your cares, and the sound of your reel buzzing to the rush of a sea bass or trout, the morning air from the ocean with the plunge in the surf, that soon seems a necessity, are your chiefest joys.

NEW PUBLICATIONS.

KING'S HANDBOOK OF NEW YORK CITY. Moses King, editor and publisher, Boston, Massachusetts. Price $2.

Last year Moses King, of Boston, the publisher of the well-known series of "King's Handbooks," published "King's Handbook of New York City." He made ten thousand copies, on the supposition that so large an edition would last for ten or twelve months anyway. As a matter of fact, in four weeks' time the whole ten thousand copies were sold. A second edition is now announced. It comprises twenty thousand copies, half of which are needed to fill advance orders. The new edition is not a reprint of the old book, but is, in fact, a new book, showing New York in 1893. Everybody admits that this is the most thorough presentation of the greatness of New York city that has ever been made. It contains one thousand and eight handsome pages, more than one thousand new photographic illustrations. It is a book so good that every New Yorker, and anyone who has any interest in New York, will be pleased to own a copy. It is so cheap that everyone can easily afford to obtain it. Besides being practically exhaustive, decidedly pictorial, exceptionally handsome, remarkably cheap, it is also virtually authentic; for more than three thousand New Yorkers have revised such parts of it as they were directly interested in. By the aid of "King's Handbook of New York City" anyone can easily know everything that is generally worth knowing about the foremost city of the western hemisphere.

THE THEORY AND PRACTICE OF MODERN FRAMED STRUCTURES. Designed for the use of schools and for engineers in professional practice, by J. B. Johnson, C. E., Professor of Civil Engineering in Washington University, St. Louis, and C. W. Bryan, C. E., Engineer of the Edgemoor Bridge Works, Wilmington, Del., and F. E. Turneaure, C. E., Professor in the University of Wisconsin. John Wiley & Sons, New York, 1893. Quarto, cloth, $10.

"The Theory and Practice of Modern Framed Structures," by Profs. J. B. Johnson, C. W. Bryan and F. E. Turneaure, is a handsome quarto of over five hundred pages, illustrated by two hundred and fifty cuts. This work, intended both as a text-book for schools and as a handbook for practicing engineers, is the most important contribution to the oft-attempted subject of truss analysis and design which has appeared for many years. It has the rare merit, among others, of being prepared by authors who are at the same time practical men, as distinguished from theorists, and yet professional men and instructors as distinguished from the mere practitioner, and are as able to explain their processes as to execute them. The value of the work is increased by contributions from other experts besides the editors named, such as Mr. J. W. Schaub, chief engineer of the Detroit Bridge Company, and for many years assistant to C. Shaler Smith; also Mr. C. T. Purdy, who has designed much of the steel skeleton work in the tall buildings of Chicago; Professor Green, of the University of Michigan; Professor Eddy, of Rose Polytechnic Institute; Professor Crandall, of Cornell; Professor Swain, of Boston, and others have also had a share in the preparation of this book. Both graphic and analytic methods are used.

The work is divided into twenty-nine chapters, which treat of trusses in all their forms, both for bridges and for roofs, with fixed and moving loads, all of which is treated in minute detail precisely as it is studied by educated engineers in practice, with copious explanations and illustrations for the benefit of students. Arch bridges, suspension bridges, cantilevers, swing bridges, continuous girders and columns are treated in order; also the practical details of rivet and pin connections, sway bracing, camber, etc. Among the novel features are a chapter on elevated railroads, another on

standpipes and elevated tanks, one by Mr. C. T. Purdy, of Chicago, on iron and steel construction in tall buildings, one on the construction of iron and steel mills, and one on the esthetic design of bridges.

MOSAICS.

RICHARD M. HUNT, of New York, has been elected an associate member of the Academy des Beaux Arts of the Institute of France. It is a distinction enjoyed by no other American and but few Frenchmen. He was elected to fill the vacancy made by the death of M. Malejko.

AT the January meeting of the Washington Chapter of the American Institute of Architects, the following officers were elected: President, Glen Brown; vice-president, Robert Stead; secretary, Leon Dessez; treasurer, C. A. Didden. Committee on admissions, J. Rush Marshall, J. G. Hall and J. C. Hornblower. The officers and committee on admissions constitute the executive committee.

FLANAGAN & BIEDENWEG had one of the finest exhibits in stained glass, glass mosaics, etc., at the World's Fair and received five different awards. They again show their enterprise by sending even a still finer exhibit to the Midwinter Fair at San Francisco. Their business has far outgrown their present quarters at 208 and 210 East Kinzie street and hence they will move March 1 to their new premises at Nos. 57, 59, 61 and 63 Illinois street, where their facilities will be increased threefold.

OUR ILLUSTRATIONS.

Residence. Manly N. Cutter, architect, New York.

McKinnon Building, Toronto. Beaumont Jarvis, architect.

Residence. J. A. Schweinfurth, architect, Boston, Massachusetts.

Summer Home of Dr. W. L. Fiske, Westhampton, Long Island. Frank T. Cornell, architect, New York.

Residence for W. D. Gates, Hinsdale, Illinois. W. L. B. Jenney, W. B. Mundie, architects, Chicago.

Competitive Design for Milwaukee Library and Museum. Submitted by Ernest Flagg, architect, New York.

Competitive Design for Milwaukee Library and Museum. Submitted by Patton & Fisher, architects, Chicago.

Sectional View, Accepted Design, Milwaukee Library and Museum Competition. Ferry & Clas, architects.

Premiated Design, Milwaukee Library and Museum Competition. Submitted by Boring & Tilton, architects, New York.

Premiated Design, Milwaukee Library and Museum Competition. Submitted by Nettleton & Kahn, architects, Detroit, Michigan.

Premiated Design, Milwaukee Library and Museum Competition. Submitted by Andrews, Jaques & Rantoul, architects, Boston.

Photogravure Plate: Store Building, Philadelphia; Wilson Eyre, Jr., architect. Residence of Dr. Starr, Philadelphia; Wilson Eyre, Jr., architect.

PHOTOGRAVURE PLATES.

Issued only with the Photogravure edition.

Residence of C. B. Moore, Philadelphia. Wilson Eyre, Jr., architect.

Residence of A. Manson, St. Louis, Mo. Peabody, Stearns & Furber, architects.

Residence of L. Z. Leiter, Dupont Circle, Washington, District of Columbia. T. P. Chandler, architect, Philadelphia.

Front View, Residence of Craig Herbertson, Camp Hill Station, Pennsylvania. Wilson Eyre, Jr., architect. Rear view also is given.

Front View, Residence of A. J. Drexel, Jr., Lansdown Station, Philadelphia, Pennsylvania. Wilson Eyre, Jr., architect. A plate showing rear view is given also.

BUILDING OUTLOOK.

OFFICE OF THE INLAND ARCHITECT,
CHICAGO, February 10, 1894.

The second month of the year opens with better promise of improvement. The depression is by no means over, but business men are now better able to judge of future probabilities and discount them than thirty or sixty days ago. The worst is over, and we have now to do mainly with consequences. Legislative deliberations have somewhat to do with the hesitancy to push forward in business circles, but apart altogether from this more or less deceptive agency there are causes at work which will continue to act until they exhaust themselves; and when exhausted, the resulting or following improvement will come. Years of extravagance and unfair management have brought their fruits. Inflated and abnormal values have prevailed until a reaction came, and we are now in it. The corrective agencies have already done much good. The ground is being cleared of rubbish, and when cleared the country will be on a safer foundation. Wages and cost of material have declined, but this fact does not make an early improvement possible. The volume of idle money is increasing, but this is only a result of conditions last year. We are not suffering from any blight — the foundations on which we have builded are sound. There is money, brain, energy enough to make up for past slothfulness, and the reaction will come in its own time. While there is distress and complaint and apprehension everywhere, there is yet a spirit of faith and confidence, and even determination to overcome what has crowded us down. Capitalists and investors are waiting for spring. Builders do not doubt but that there will be even more building this year than last, especially as the cost of general construction has declined, perhaps, twenty-five per cent. Stores, warehouses, factories everywhere have scant stocks, and bank obligations of borrowers have been scaled down within safe limits. There are fair prospects for an increase in railroad building and of largely increased expenditures in equipments. Electricians are crowded with details relating to prospective enterprises, involving large outlays of capital. The readjustment of values and the equalization between cost and selling prices have done vast good for all, and makes possible a prolonged period of profitable activity, the setting in of which cannot be very much longer delayed.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than $5,000 are not published.

Chicago, Ill.—Architects Kley & Lang: For Fritz Hutze, on Van Buren street near Whipple street, a three-story and basement store and flat building, 23 by 70 feet in size; to have a front of buff Bedford stone, hardwood interior finish and mantels, open plumbing, etc. Also making plans for a three-story and basement flat building, 25 by 82 feet in size; to be erected on Lincoln street near Division street; to be of pressed brick and stone front, have mantels and all improvements.

Architect De Witt Taylor Kennard: For R. W. Wilber, at 4323 Forestville avenue, a three-story and basement flat building, 25 by 60 feet in size; to have a front of buff Bedford stone, hardwood finish, steam heating, electric light, etc. For C. S. Dorn & Co., made drawings for remodeling the Columbian Central Hotel, at Sixty-second street and the Illinois Central Railroad; will put in hardwood finish and mantels, the best of modern plumbing, steam heating, electric light and all the modern conveniences; it will be converted into a modern apartment house, containing twenty-four suites of seven room apartments. Also making plans for remodeling the Hotel Montreal, situated at Madison avenue and Sixty-third street, for the same owners; it will have all the modern plumbing, hardwood finish, steam heating, etc., put in and will be made into a first-class modern apartment house to contain sixteen suites of seven room apartments. Also for same owners, made drawings for converting into a modern apartment, similar to above, the Hotel Western Reserve; it is on Wharton avenue near Sixty-third street; all improvements will be put in, steam heating, electric light, etc.; the cost of these improvements will be upward of $100,000.

Architect W. M. Walter: For W. C. Dodge, at Argyle Park, a two-story attic and basement residence, 24 by 60 feet in size; to have a stone front, hardwood finish, mantels, all open plumbing, steam heating, electric light.

Architect William Ohlhaber: For Herman Herold, at 1774 Lincoln avenue, a two-story and basement flat building, 21 by 50 feet in size; to have a front of pressed brick and stone, the sanitary plumbing, mantels, etc. For John Bahron, on North avenue and Centralia street, a two-story and basement store and flat building, 23 by 72 feet in size; to be of pressed brick and stone front, have plumbing, mantels, bells, speaking tubes, etc. For John Rzepka, on Ashland avenue near Blackhawk street, a four-story and basement store and flat building, 36 by 58 feet in size; to have a handsome front of rock-faced stone; the interior to be hardwood finish, have mantels, the open sanitary plumbing, etc.

Architects Crowen & Richards: For F. S. Mitchell, at Edison Park, a two-story residence, 25 by 42 feet in size; to be of frame construction with stone basement, have hardwood interior finish and mantels, the best of plumbing, gas fixtures, electric wiring, etc.

Architects Ostling Brothers: For A. Anderson, at 1844 Reta street, Lake View, a four-story and basement flat building, 22 by 58 feet in size; to have a front of pressed brick and stone; partly hardwood finish, all open plumbing, gas fixtures, mantels, etc. For Henry Schroeder, at 191 Larrabee street, a four-story store and flat building, 25 by 88 feet in size; to have a front of pressed brick and stone, the sanitary and modern conveniences, mantels, gas fixtures, etc.

Architects I. K. and A. B. Pond: For A. A. Spear, remodeling building situate at Michigan avenue near Twenty-fifth street; it will be made into a modern three-story and basement apartment house, 24 by 120 feet in size; all the modern sanitary improvements, hardwood finish, mantels, heating, etc. For J. L. Ball, at Highland Park, a two-story basement and attic residence, 36 by 56 feet in size; to be of frame construction, with brick basement, have hardwood finish, electric light, etc. For George L. Wrenn, at Highland Park, a two-story basement and attic residence, 30 by 54 feet in size; to be of brick basement, with frame superstructure, hardwood interior finish, etc.

Architect J. C. Morrison: For C. E. Brown, at Forty-first street west of Cottage Grove avenue, a three-story and basement apartment house; to have a front of pressed brick and terra cotta, hardwood interior finish, mantels, electric light and gas fixtures, heating, the modern open plumbing, etc. For A. Floersheim, at Forty-third street near Calumet avenue, three two-story basement and attic residences, 50 by 60 feet in size; to have stone fronts, all the modern sanitary plumbing and conveniences, hardwood interior finish and mantels, electric and gas fixtures, etc.

Architects Lamson & Newman: For Mrs. Sarah S. Potter, at 1100 to 1102 Washington boulevard, a three-story and basement flat building, 36 by 74 feet in size; to be of Bedford stone front, hardwood interior finish and mantels, electric and gas fixtures, the best of modern plumbing, steam heating, electric wiring, etc. Also made plans for a three-story building, 25 by 67 feet in size, to be erected at West Adams street; to have a stone front, all the sanitary plumbing, electric and gas fixtures, hardwood interior finish and mantels, steam heating. Also made plans for remodeling and repairing building recently damaged by fire, at 153, 155 and 157 West Madison street, for the Eureka Laundry Company; will put in modern plumbing, gas fixtures, steam heating, etc.

Architect Simeon B. Eisendrath: For Mandel Brothers, a four-story and basement apartment house, 66 by 60 feet in size; to be erected at Thirty-seventh street and Rhodes avenue; to have a handsome stone front, hardwood interior finish, mantels, electric light, steam heating, laundries, etc.

Architect Robert C. Berlin: For J. M. Strom, at 1449 Newport avenue, a three-story flat building, to have a stone front, all sanitary improvements, etc.

Architect C. M. Palmer: For H. M. Alfonso, a three-story-and-basement apartment house, 50 by 70 feet in size; to be erected at the south side of Boulevard place, west of Grand boulevard; it will have a neatly designed front of stone, hardwood interior finish, and mantels, all the sanitary and modern conveniences, electric and gas fixtures, steam heating, etc.

Architect E. E. Snyder: For Holmgren & Carlson, a three-story apartment house, 25 by 60 feet in size, to be erected at Forty-eighth street; it will have a pressed brick and stone front, all the sanitary plumbing, gas fixtures, hardwood finish and mantels.

Architect Gottfried Thiel: For David Goldberg, at the northwest corner of Clinton and Wilson streets, a four-story and basement store and flat building, 34 by 82 feet in size; to have a pressed brick and stone front, electric and gas fixtures, modern plumbing, steam heating, etc.

Architects Handy & Cady: For T. G. Dickenson, a two-story and basement store and flat building, 65 by 50 feet in size; to be erected at 6307 to 6311 Cottage Grove avenue; to be of pressed brick and stone front, have all the sanitary improvements, gas fixtures, mantels, etc. For Mrs. J. Anderson, a two-story store and flat building; to be erected on Indiana avenue; to be of common brick, have plumbing, etc.

Architects Willett & Pashley: For A. F. Kissen & Co., a seven story and basement factory, 90 by 240 feet in size; to be erected at Polk and Ewing streets; to be of pressed brick and terra cotta front, have steam heating, electric light, etc.

Architects Patton & Fisher: For I. C. Griffin, a four-story flat building, 46 by 160 feet in size; to be erected at Indiana avenue and Forty-eighth street; to be of pressed brick and stone, have hardwood interior finish and mantels, steam heating, electric light, all the best of modern conveniences. For J. F. Mendsen, on Washington boulevard, near Hoyne avenue, a two-story residence, 40 by 65 feet in size; to be of pressed brick and stone, have all hardwood

interior finish, electric and gas fixtures, hot-water heating, the best of modern plumbing, etc. For Mrs. Sherman Hall, a two-story residence; to be erected at Birchwood Beach; it will be of frame, with stone basement, have hardwood finish, gas and electric fixtures, furnace, etc.

Architect W. J. Van Keuren: For I. Irving, at Ridgeland, two two-story residences, 30 by 50 feet each; to have stone basements and frame superstructures, all modern sanitary plumbing, hardwood interior finish, and mantels, electric and gas fixtures, heating, etc.

Architect W. L. Klewer: For W. J. Hawther, at Roscoe street, near Evanston avenue, a three-story and basement flat building, 28 by 64 feet in size; to be of pressed brick and stone front, have electric and gas fixtures, mantels, etc. For Sebastian Farchon, at Center street, a two-story flat building, 23 by 55 feet in size; to be of frame, with brick basement, have the modern plumbing, mantels, etc.

Architect C. M. Almquist: For M. Johnson, on Robey street near Van Buren, a four-story and basement apartment house, 24 by 82 feet in size; to be of pressed brick and stone front, have hardwood finish and mantels; the best of plumbing, gas fixtures, etc. For H. Johnson, on Sheffield avenue near School street, a four-story factory, 28 by 50 feet in size; to be of common brick front, have steam heating, electric light, modern plumbing conveniences, etc.; to be used for a clothing manufactory. Also preparing drawings for a two-story flat building, 22 by 50 feet in size; to be erected at Dania avenue, for H. P. Lau; to be of pressed brick and stone front, have modern plumbing, mantels, gas fixtures, etc.

Architect George S. Kingsley: For Mrs. Martha Cordes, a two-story flat building, 22 by 50 feet in size; to be erected at Wilson and Wright streets; to be of pressed brick and stone front, have mantels, the modern plumbing, gas fixtures, etc.

Architect D. A. Blythe: For John Van Allen, a two-story flat building, 25 by 81 feet in size; to be erected on Forty-sixth street near Calumet avenue, to be of stone front, have mantels, hardwood finish, modern plumbing, steam heating.

Architects Fry & Cunningham: For Charles Hubbard, a three-story and basement apartment house, 50 by 86 feet in size; to be erected at Indiana avenue near Forty-fourth street; the first story will be of rock-faced stone, and above this of light colored pressed brick and Spanish tile roof; the interior will be finished in hardwood and have mantels, electric and gas fixtures, the best of plumbing, heating, etc. For Mrs. Travis they are preparing plans for two two-story and basement residences, size 25 by 54 feet each; to be erected at Lexington avenue near Fifty-sixth street; they will have handsome stone fronts, the interior to be finished in oak, have mantels, all the modern sanitary improvements, electric and gas fixtures, heating, etc.

Architect D. A. Lapointe has just commenced work on a two-story flat building, 24 by 56 feet in size; to be built at 1064 Wilcox avenue, for R. J. Thomazin; it will have a stone front, all the modern plumbing, gas fixtures, furnaces, etc. Also, will begin work at once on a double two-story frame flat building with brick basement, plumbing, etc., at Green street between Seventy-third and Seventy-fourth streets, for Louis Bastian.

Architect Albert Lang: For G. H. Harris, at Austin, a three-story flat building, 25 by 90 feet in size; to have a stone front, hardwood interior finish and mantels, the modern open sanitary plumbing, electric lighting, laundries, furnaces, electric bells, speaking tubes, etc.

Architect William Strippleman: Made plans for the building to be erected at Palos Springs for the Sharpshooters' Park Association; it will be of a very picturesque design, two-story basement and attic; 76 by 42 feet in size; to be constructed of pressed brick and stone, have hardwood interior finish, and all the improvements.

Architect Martin Carr: For P. J. Bush, a three-story and basement apartment house, 42 by 72 feet in size; to be erected at Forest avenue near Thirty-sixth street; it will have a stone front, hardwood finish, mantels, all the sanitary plumbing, electric and gas fixtures, steam heating, etc.

Architect R. T. Newberry: For E. C. Nichols, a three-story and basement apartment house, 50 by 50 feet in size; to be erected on State and Thirty-sixth streets; the front will be of pressed brick with stone trimmings, the interior to be finished in hardwood, have mantels, the modern plumbing, heating, etc. For R. McCrary, two three-story and basement residences, to be erected on Erie street; one to be of pressed brick and stone front, and the other all stone; the interiors to be finished in hardwood, have mantels, the best of sanitary improvements, electric and gas fixtures, heating, etc. For Walter C. Newberry, on Kinzie street, a one-story and basement warehouse, 40 by 100 feet in size; to be of pressed brick and stone front.

Architect C. W. Nothnagel: For C. C. Minas, a three-story store and flat building, 50 by 100 feet in size; to be erected at Hammond, Indiana; it will be of stone front, have gravel roof, hardwood interior finish, plumbing, etc.

Architects Marston & Hotchkins: For C. L. Wilder, a two-story basement and attic residence, 25 by 50 feet in size; to be erected at Sheridan Park; it will be of frame with stone basement, have hardwood interior, mantels, the best of plumbing, electric and gas fixtures, furnace. For J. P. Bowes, at Fifty-fifth street and Prairie avenue, a three-story flat building, 50 by 65 feet in size; to be of stone front, have hardwood finish and mantels, electric and gas fixtures, steam heating.

Architect Arthur W. Cole: For Mrs. Paisley, at Hillsboro, Illinois, a two-story residence, 22 by 42 feet in size; to be of frame with brick basement, have hardwood finish, the modern plumbing, mantels, electric light, etc. For W. H. North, at Hillsboro, a two-story basement and attic residence, 32 by 40 feet in size; to be of stone basement and frame superstructure, have the modern sanitary conveniences, heating, etc. For J. W. Sharp, two two-story flat buildings, 44 by 50 feet in size; to be erected near the Northwestern Car Shops on the West Side; to be of pressed brick and stone fronts, have all the modern plumbing arrangements, mantels, gas fixtures, etc. For Mrs. Wells, a two-story basement and attic frame residence, to be erected at Ravenswood; to have stone basement, mantels, all the plumbing specialties, gas and electric fixtures, etc.

Architects Cowles & Ohrenstein: For William Zeuch, at 50 to 52 Florence avenue, a three-story and basement apartment house, 50 by 70 feet in size; to be of cut stone front, have hardwood interior finish and mantels, the best of sanitary plumbing, electric and gas fixtures, steam heating, etc.

Architect Franklin P. Burnham: For T. F. Andrews, a four-story apartment house, 50 by 100 feet in size; to be erected at Rhodes avenue and University place; the first story will be of stone and the remainder of pressed brick and stone with flat roof; the interior will be finished in oak and have fine hardwood mantels, the best of sanitary conveniences, gas fixtures, ranges and fireplaces, laundries and driers, freight elevator, cement floors, etc.

Architect A. Druiding made plans for a Catholic church, 50 by 120 feet in size; to be erected at Harrietsville, Noble county, Ohio; it will be a handsome Gothic edifice of stone construction, have plain pine interior finish, pews, stained glass windows, slate roof, gas fixtures, heating, etc.

William Kent is erecting, at Calumet avenue and Forty-third street, a four-story and basement apartment, store and office building, 100 by 130 feet in size; the first story to be of stone and the remainder of pressed brick and stone; the interior will be finished in hardwoods, have mantels, marble and tilework, gas and electric fixtures, steam heating, electric light and the best of sanitary improvements; the plans were prepared by Messrs. Flagg & Chambers, of New York.

Architect Thomas Kissack made plans for a block of four two-story residences, 75 by 51 feet in size; to be erected at the southwest corner of Pine avenue and Randolph street, Austin; they will have pressed brick and stone fronts, the interiors being finished in Georgia pine, the best of sanitary plumbing, mantels, electric and gas fixtures, furnaces, etc.

Cincinnati, Ohio.—Reported by Lawrence Mendenhall.

As noted by the daily press, times are slowly improving, and people are beginning to experience that much to be desired and necessary symptom of recovery—mutual confidence. The world is full of pessimists, but even they are compelled to acknowledge an improvement. While it is, perhaps, a little early to prognosticate as to what the spring will bring forth, yet a tour of the architects' offices encourages me to say that there will be a vast improvement over last year's building operations. There will be new schoolhouses, warehouses, churches and residences projected and built in Cincinnati and suburbs. I also hope to announce, before many months, that our Cincinnati will take a step forward and become a "University City." The competition is now open, but I am sure that our architects will "do themselves proud" and carry off the prize. I do not believe labor troubles will figure in this season's work, and if they do occur, arbitration will probably be resorted to. The National Association of Builders has done much to bring about this means of settlement, and the various builders' exchanges are not slow in making it operative.

Architects Des Jardins & Hayward have drawn plans for a dwelling for J. G. Montgomery at Cynthiana, Kentucky; materials: pressed brick, stone trimmings, furnace, stained glass, grates, mantels, etc.; cost $10,000.

Architect Gustave W. Drach is busy on drawings for a fine residence for J. W. Brewster, 227 Main street, Cincinnati; materials: broken ashlar freestone, slate roof, furnace, grates, mantels, stained glass, blinds, laundry fixtures, etc.; cost $18,000.

Architects Samuel Hannaford & Sons have prepared plans for the completion of stone building for Methodist Book Concern, 30 by 90 feet and eight stories high; materials: pressed brick, terra cotta, asphalt roof, steam heat, plate glass, gas, plumbing; cost $40,000.

Architects Crapsey & Brown report: Plans for the English Lutheran church, Race street above Twelfth, Cincinnati; materials: stone, tin roof, skylights, furnace, frescoing, pews, hardwood finish, etc.; cost, $50,000. Flat for W. W. Smith, 45 Vine street, Cincinnati; materials: pressed brick, iron fronts, tin roof, grates, mantels, gas, plumbing, plate glass, blinds, etc.; cost, $20,000. Also an addition to the courthouse, at Richmond, Kentucky; the interior alterations will be rather extensive, and the improvement will cost in the neighborhood of $15,000. Also for the Universalist church, Woodstock, Ohio (C. P. Kimball), a church edifice; materials: brick, slate roof, pews, stained glass, organ, tiling, etc.; cost $8,000.

Architect H. E. Siter has finished plans for a large warehouse, 89 by 105 feet, ten stories high, for the Farmers' & Shippers' Tobacco Warehouse Company; it will be complete in all its details and construction; cost about $35,000.

Theodore Richter, Jr., and George Wessling, Jr., have formed a partnership to practice their chosen profession—architecture—in all its branches, so well begun by Mr. Richter. "Good luck to you, boys!"

Architect A. O. Elzner has drawn plans for an eight-story flat building; materials: pressed brick, steam heat, tin roof, grates, mantels, gas, plumbing, tiling, etc.; size about 30 by 90 feet; cost $30,000.

Architect William Martin Aiken is doing fine work with his architectural classes in the Art Museum, recently inaugurated under the control of the School of Design. He has prepared plans for an elegant frame residence for Mr. D. W. Langdon, at Loup Creek, West Virginia; it will contain all the improvements, but the cost is not given.

Architect George W. Rapp is quite busy on his Cincinnati Gas Company's contract.

Architects Boll & Taylor report as follows: For Messrs. Mack & Vorhees (A. L. Vorhees, Third and Race streets), twenty-four houses of various designs, and containing different materials; they will be good houses, and cost about $6,000 each. They also have on the boards plans for a flat and store building, 34 by 97 feet, five stories high; materials: pressed brick, tin roof, heat undecided, gas, plumbing, etc.; cost $15,000. For B. W. Campbell, Delhi, Ohio, two houses; materials: frame, slate roof, gas, furnace, plumbing, blinds, grates, mantels, etc.; cost $7,000.

Cleveland, Ohio.—Architect S. R. Badgley reports: A stone residence for Charles Babcock, at the corner of Euclid avenue and Brookfield street, 75 by 80 feet; slate roof, hardwood throughout, equipped with electricity, tiled bathrooms, billiard room, hot-water heat; cost $20,000.

Architect George H. Steffens reports: A frame three-story store and tenement building for F. C. Emde, at the corner of East Prospect and Watkins streets, three stores below, 40 by 65 feet in size; slate roof, furnace heat, stores finished in hardwood, plumbing; cost $6,000.

Architect J. W. Russell reports: A new residence for William M. Lottridge, on Bolton avenue, and additions and alterations to a house for same; new house to frame, slate roof, hardwood, electricity, furnace; cost $3,500; cost of alterations, $1,000.

Detroit, Mich.—Architect R. E. Raseman has prepared plans of a four-story pressed brick store and flat building at 131 Monroe avenue, to be 65 by 60 feet in size, and will cost $12,000. Has also prepared plans of a two-story frame residence for Thomas S. McGraw, to be 33 by 50 feet in size, and to cost $5,500. Has also prepared plans for Theodore H. Eaton, No. 28 Woodward avenue, a frame residence; 33 by 50 feet; two stories high, and to cost $5,000.

Architects Malcombson & Higginbotham have prepared plans for block of frame residences for T. W. Dickson, to be 31 by 40 feet in size, and to cost $5,000.

Architect Harry J. Rill has prepared plans for J. G. Affeld, at 274 Twenty-first street; to be two stories high, of brick; 40 by 80 feet in size, and to cost $6,000.

Architects A. C. Varney & Co. have prepared plans of a block of three brick and stone dwellings for V. P. Bagley, No. 50 East High street; to cost $10,000. For Fred Evens, 70 Linden street, a two-story brick and stone residence, with slate roof; to cost $5,500. For John Alley, No. 86 West Forest avenue, a pressed brick and stone residence; to be two stories high; 24 by 62 feet in size, and to cost $6,000. For John A. Habercorn, of Redford, Michigan, a two-and-one-half-story brick residence, to be 32 by 44 feet in size, and to cost $5,500.

Architects Jenney & Mundie, of Chicago, have prepared plans of a large stone residence for J. Harrington Walker, to be built on Jefferson avenue; building to be 100 by 50 feet and three stories high, and to cost $150,000.

Architects Spier & Rohns have prepared plans of a residence for William O. Strong, No. 41 Fort street west; to be two and one-half stories high and 65 by 72 feet in size, and to cost $11,000.

Pittsburgh, Pa.—Architect A. E. Linkenheimer: For T. H. Howard, a block of two houses, brick and stone; to cost $6,000.

Architects Neal & Hopkins, for the Colored Orphans' Home, Allegheny, a three-story brick building; to cost $20,000.

Architect W. S. Fraser is preparing plans for the new Normal School building at Indiana, Pennsylvania.

Architects Longfellow, Alden & Harlow are preparing plans for W. C. Stewart for a block of three residences; to cost $30,000.

Black & Baird are having plans prepared for a large business block; to cost $500,000; the building is to go up in the early spring.

Rochester, N. Y.—Architect H. L. Larzelere has prepared plans for the Cornhill Methodist Episcopal church, to be built on Edinburgh street; materials are to be brick with stone trimmings, slate roof, stained glass windows and finished in hardwood; cost about $30,000. House for B. C. Montgomery, 36 by 60 feet; finished in oak and chestnut; to cost $8,500. Residence for Chief J. C. Hayden, on Augustine street; first story partly stone, remainder framework, finished in oak and chestnut; mantels, stained glass windows, tile and oak floors, hot-water heat. Residence for Mr. Davis, on Portsmouth Terrace; first story and piazza of Ohio sandstone, plate glass windows and oak finish; cost $10,000.

Architects A. J. Warner & Co. have prepared plans and begun building operations for the Auburn Theological Seminary and Willard Memorial Chapel, at Auburn, New York; the material is Cayuga stone, with Lake Superior stone trimming; finished in hardwood and to be of fireproof construction; cost about $100,000.

St. Louis, Mo.—Architects L. C. & W. M. Bulkley: For B. B. Graham, a two-story brick and stone warehouse; size 81 by 88 feet; to cost $7,000.

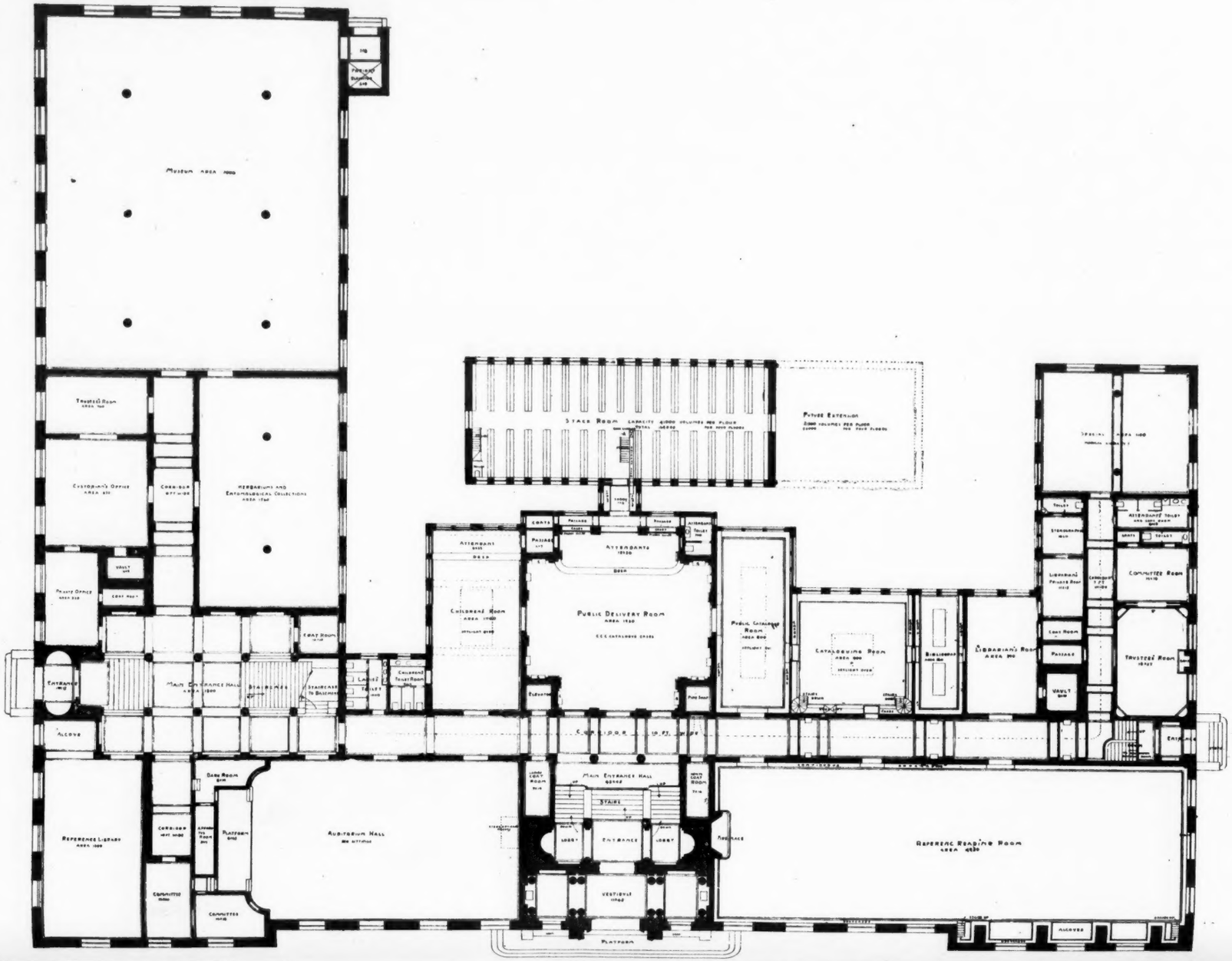
Architects Matthews & Clark: For Garden City Realty Company, four three-story residences; brick and stone; size 35 by 60 feet; cost $40,000.

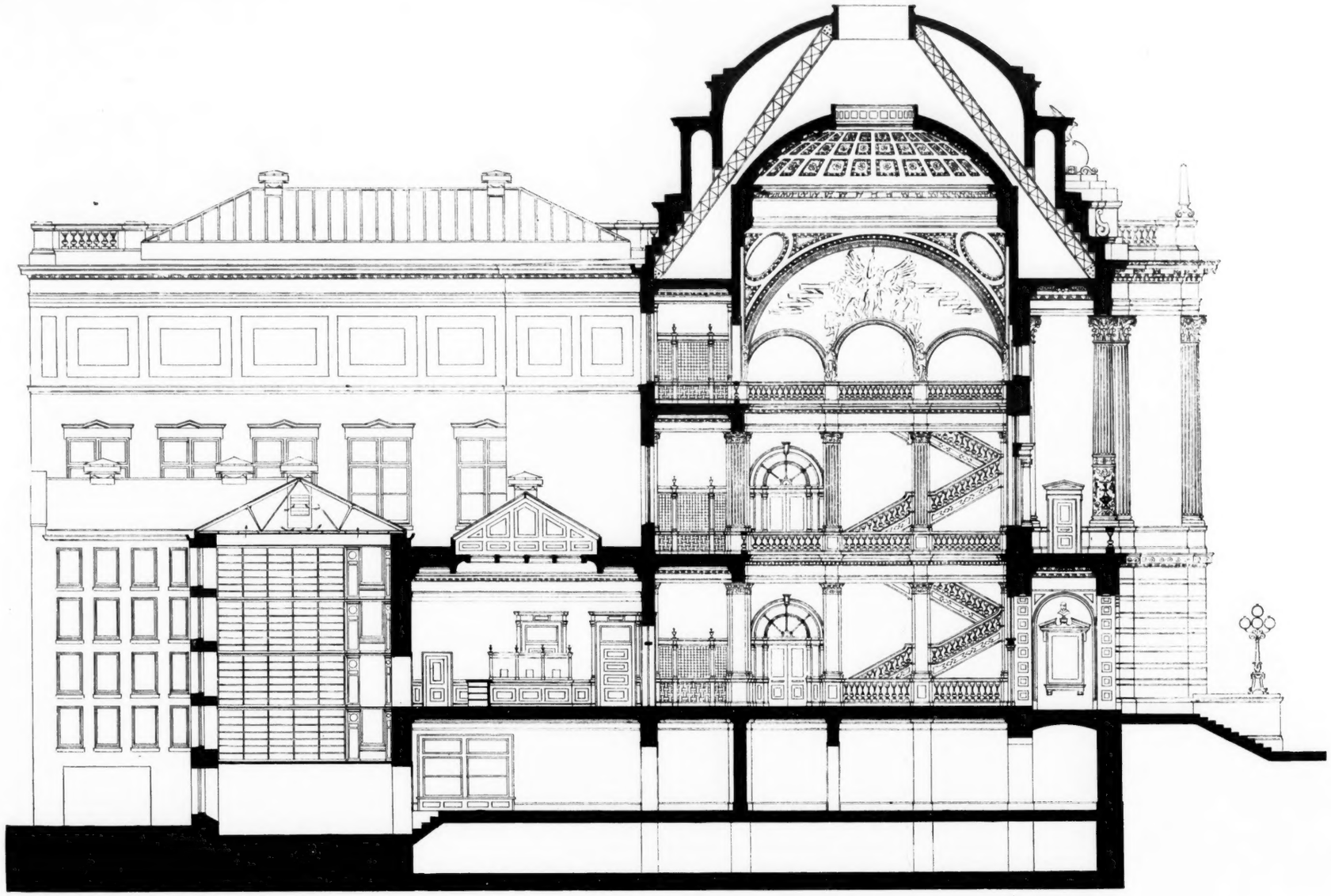
Architect Charles F. May: For E. H. Brinkmeyer, a two-story brick residence; size 25 by 47 feet; cost $6,000.

Architect W. B. Ittner: A three-story apartment building; size 30 by 46 feet; brick and stone; to cost $5,000.

Architect Theodore Rapp: A three-story store and flat building, for H. W. Volkenning; size 23 by 73 feet; brick and stone; cost $5,000.

Architect J. G. Cairns: For Gleny & O'Brien, a two-story flat building; size 122 by 54 feet; brick; to cost $20,000.


Museum
Trustees' Room
Custodian's Office
Corridor
Herbarium and Entomological Collections
Private Office
Vault
Coat Room
Entrance
Main Entrance Hall
Stairs
Stairs to Basement
Alcove
Reference Library
Corridor
Committee
Dark Room
Platform
Auditorium Hall
Committee
Stack Room
Future Extension
Attendants
Attendants
Children's Room
Public Delivery Room
Public Catalogue Room
Catalogue Room
Bibliography
Librarian's Room
Librarian's Private Room
Committee Room
Trustees' Room
Coat Room
Passage
Vault
Elevator
Corridor
Main Entrance Hall
Stairs
Lobby
Entrance
Lobby
Vestibule
Platform
Reference Reading Room
Alcoves

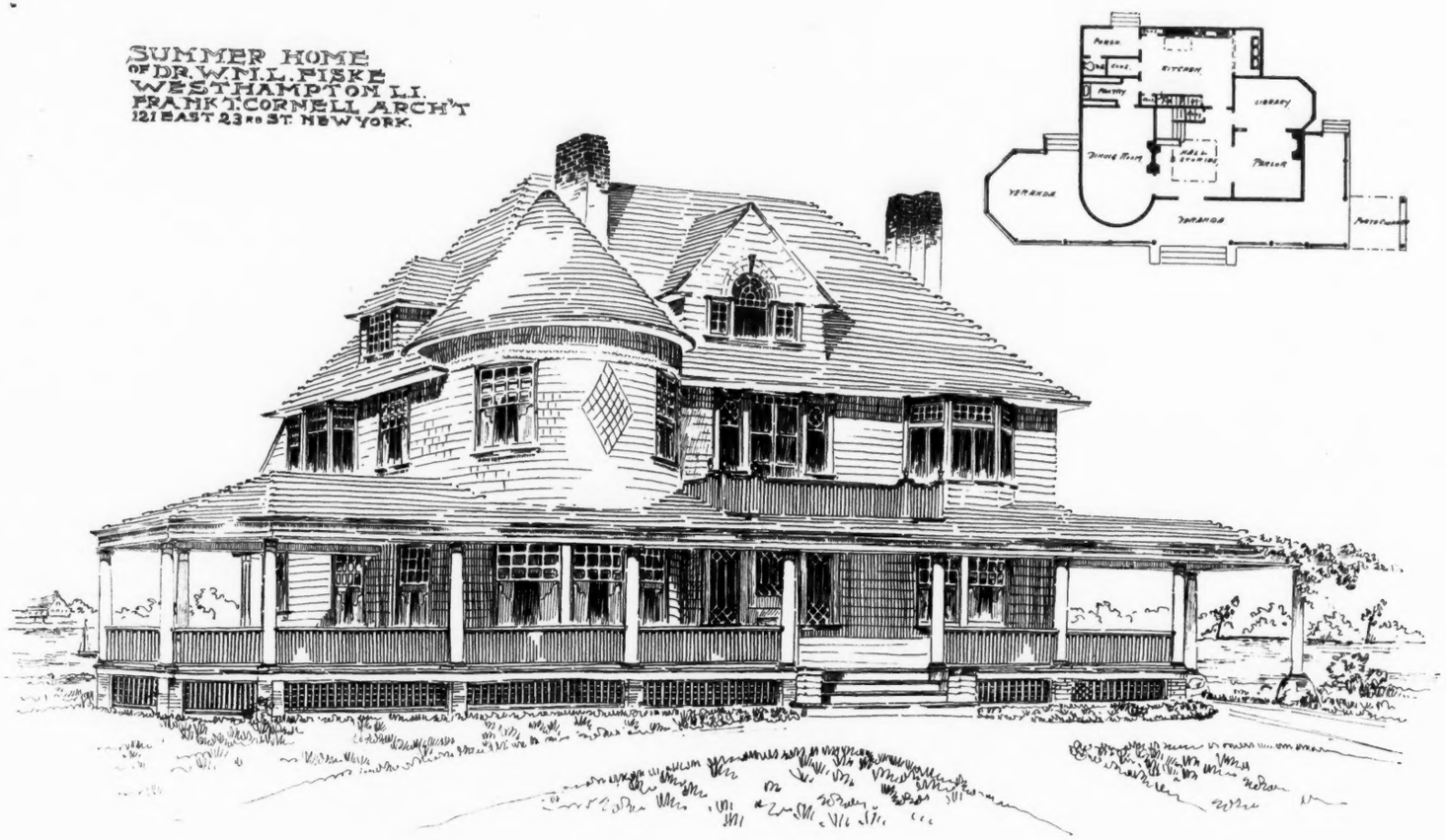


SECTION.

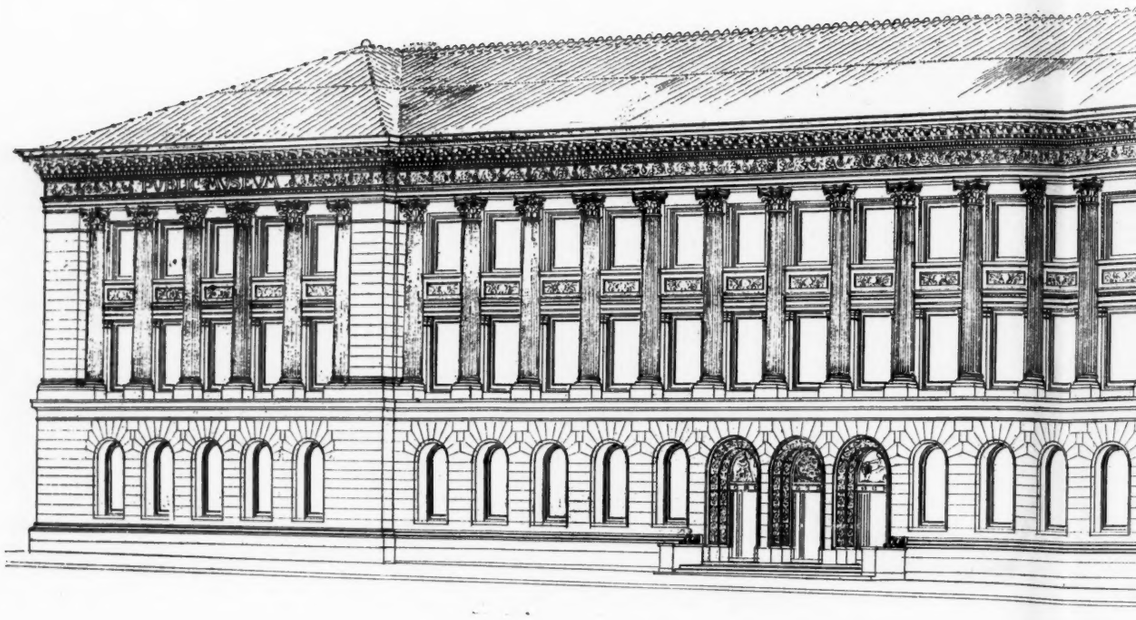
ACCEPTED DESIGN, MILWAUKEE LIBRARY AND MUSEUM COMPETITION.

FERRY & CLAS, ARCHITECTS.

SUMMER HOME
OF DR. W. H. L. FISKE
WEST HAMPTON L.I.
FRANK T. CORNELL ARCH'T
121 EAST 23RD ST. NEW YORK.



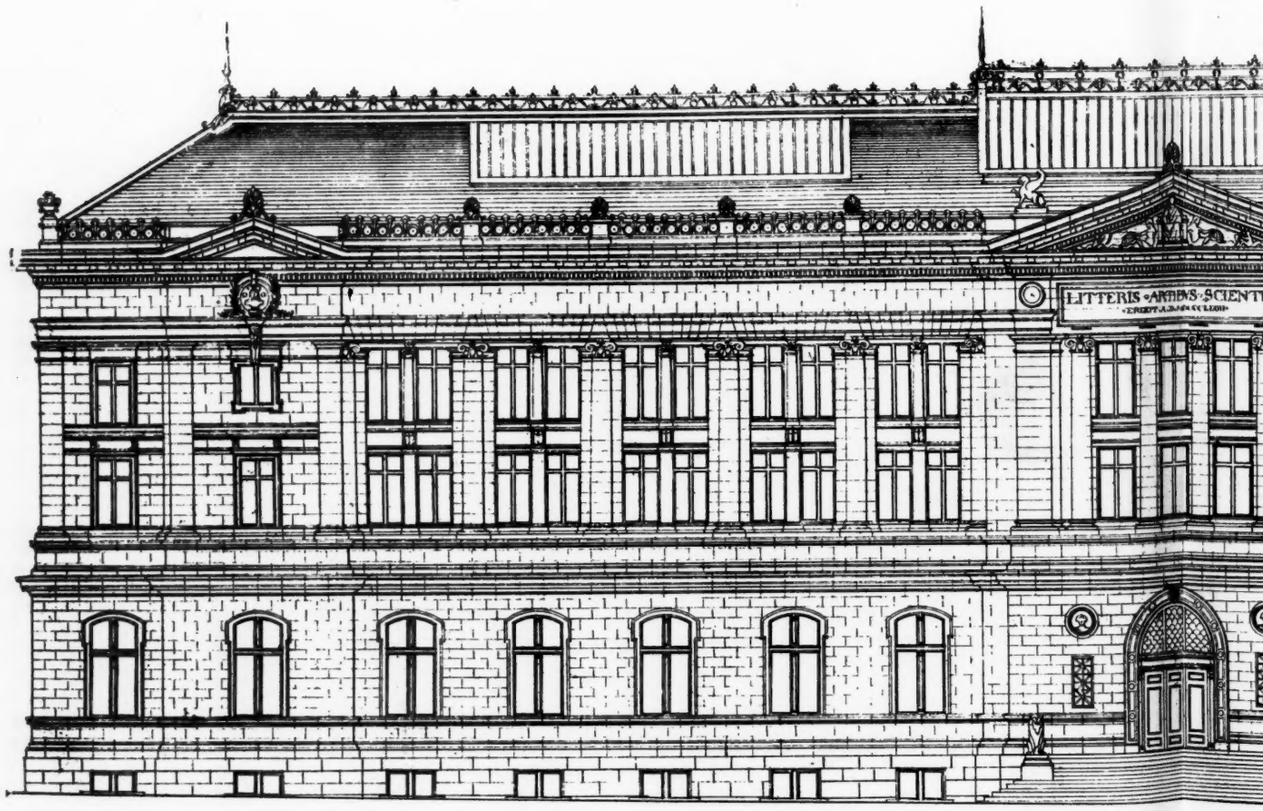
McKinnon Building
Toronto
Beaumont Jarvis
Architect Toronto



PERSPECTIVE.

COMPETITIVE DESIGN FOR MILWAUKE

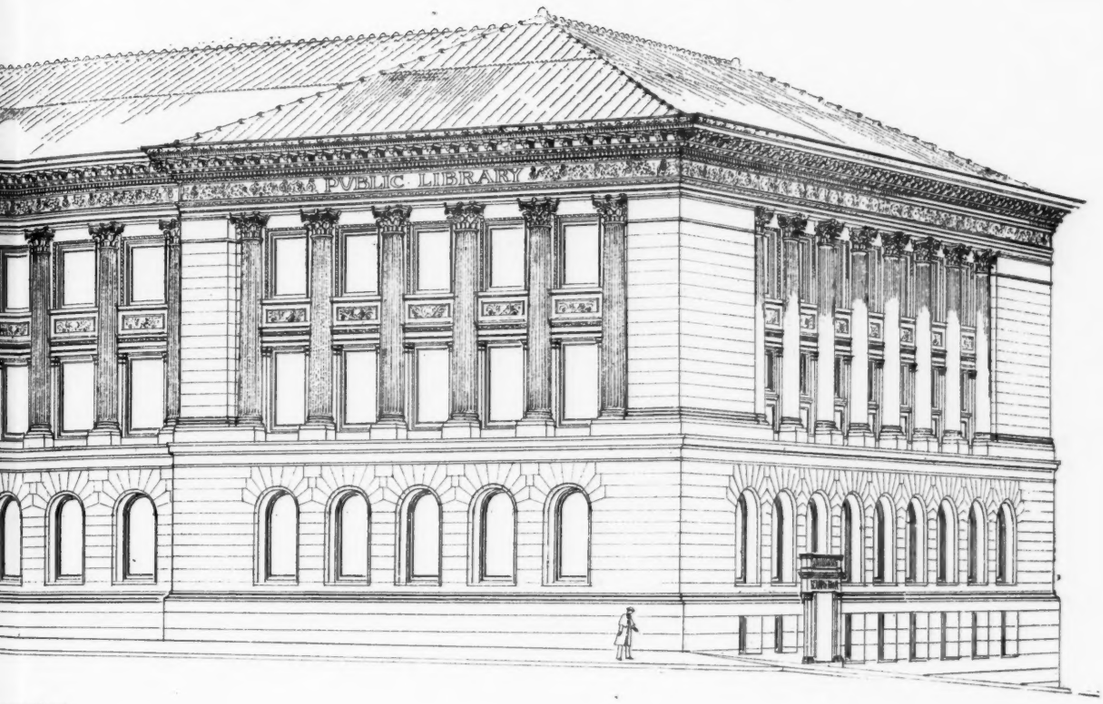
SUBMITTED BY PATTON & FISHER, A



ELEVATION.

PREMIATED DESIGN, MILWAUKEE LIBRARY

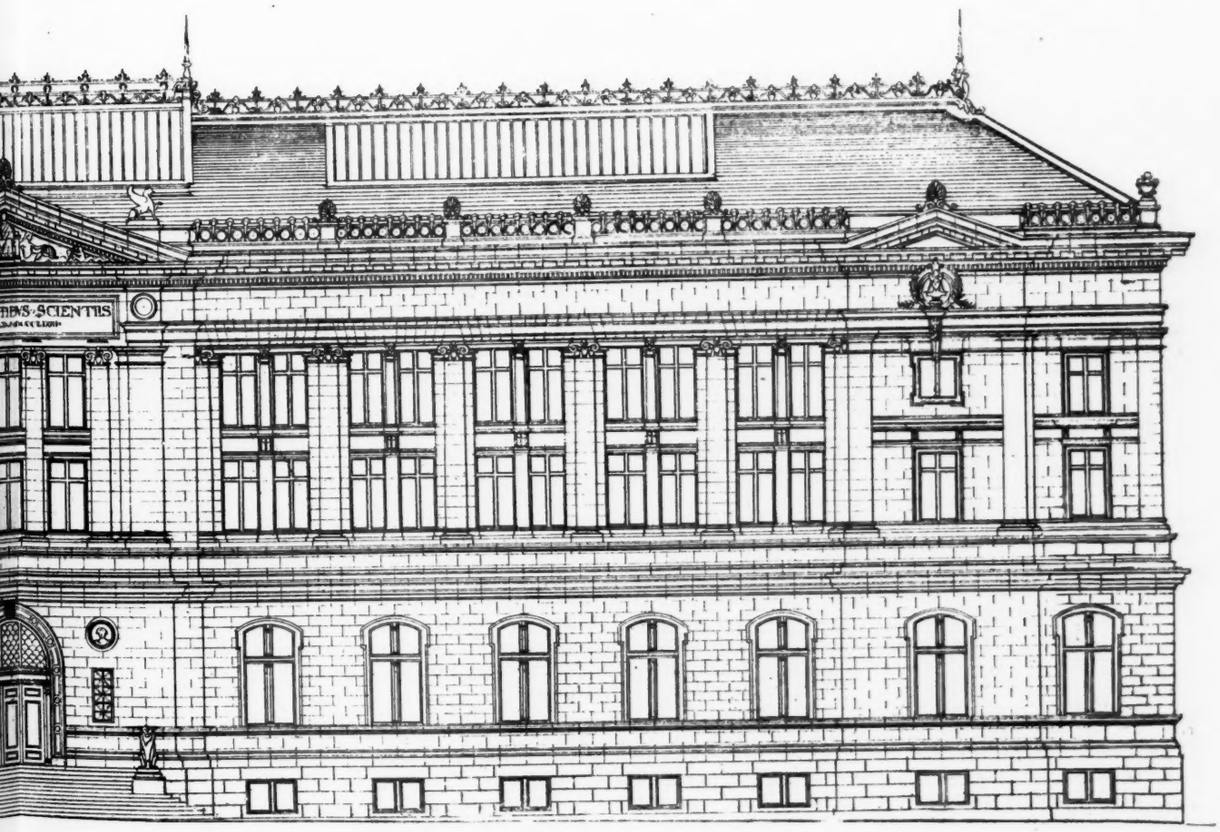
SUBMITTED BY BORING & TILTON, ARCH



RSPECTIVE.

LWAUKEE LIBRARY AND MUSEUM.

FISHER, ARCHITECTS, CHICAGO.



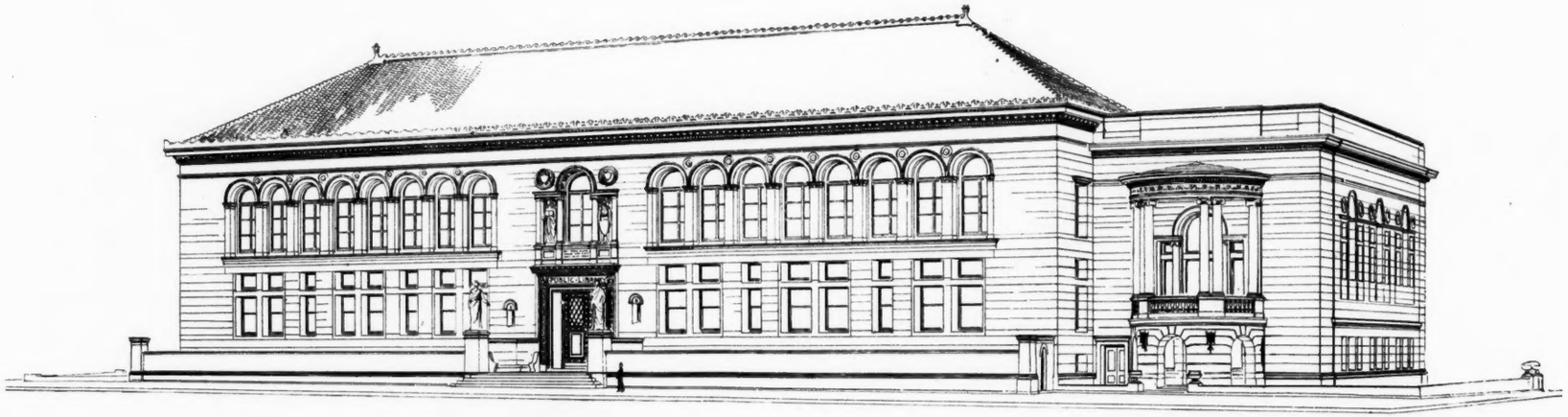
LEVATION.

LIBRARY AND MUSEUM COMPETITION.

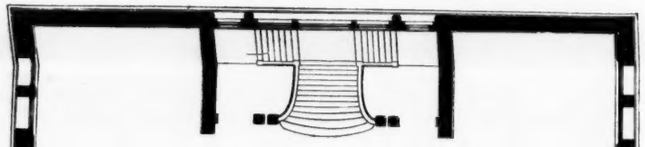
TILTON, ARCHITECTS, NEW YORK.

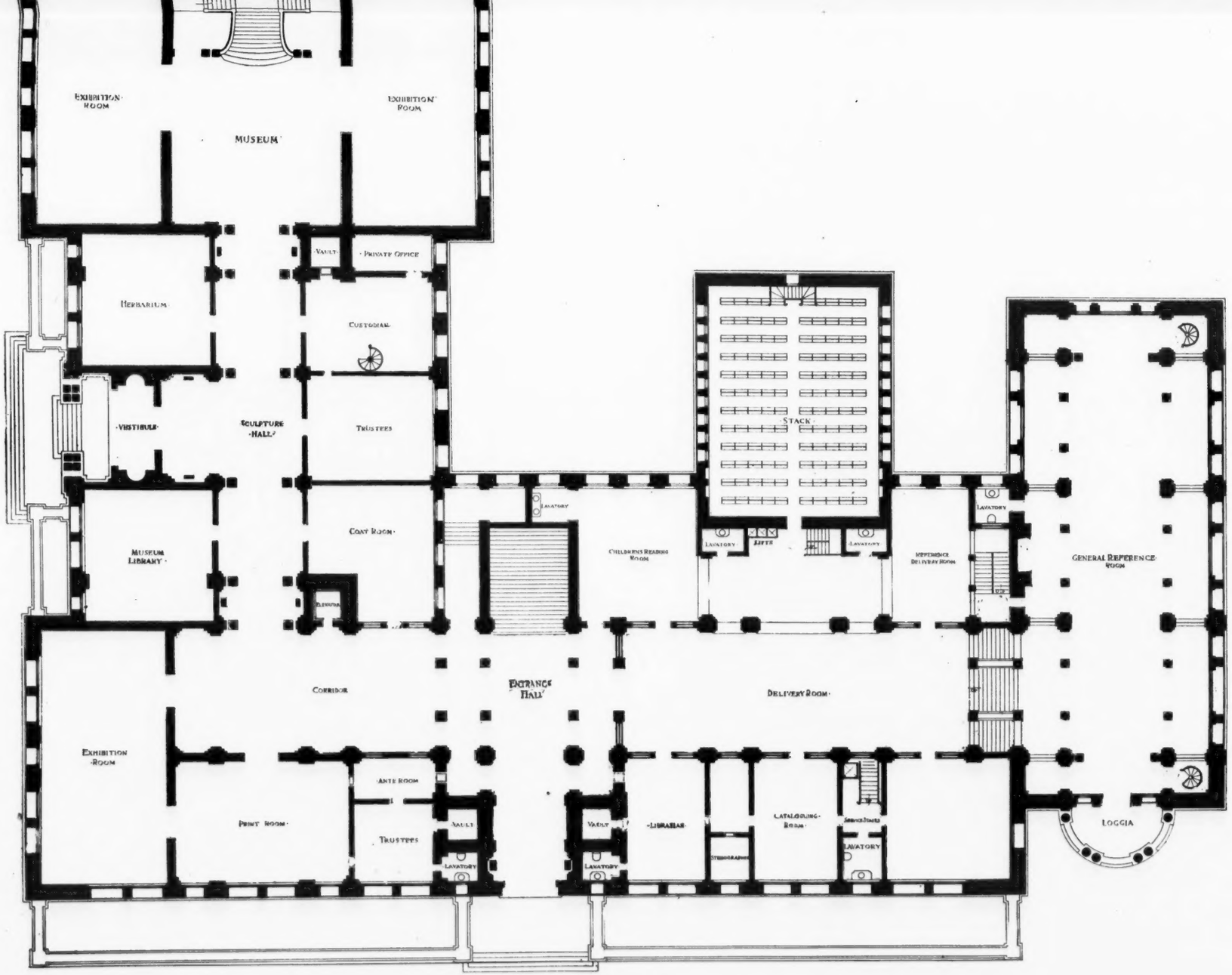
GRAND STAIRCASE AT LIBRARY ENTRANCE.

DELIVERY DESK AND APPROACH TO REFERENCE LIBRARY.



FRONT PERSPECTIVE.

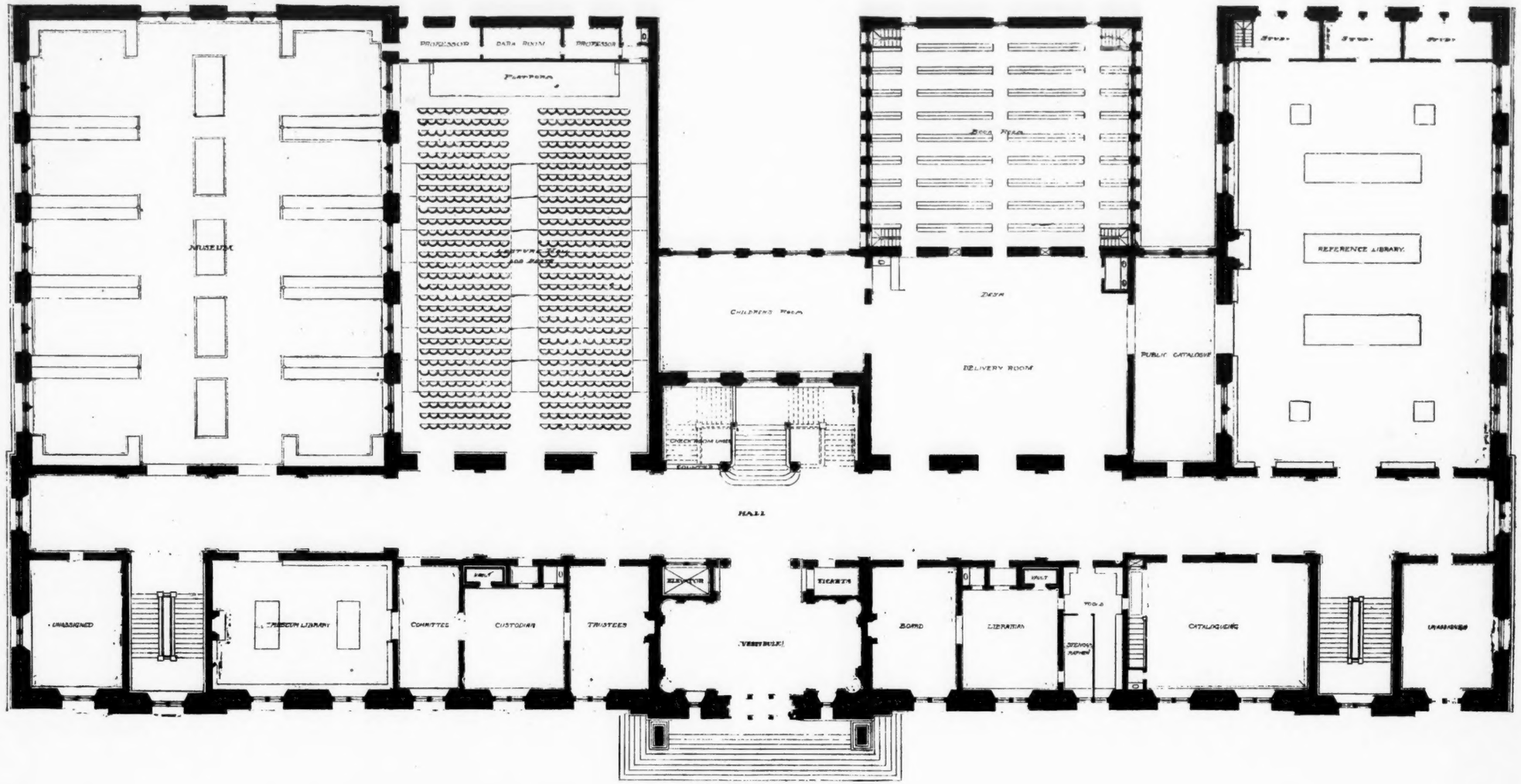




MAIN FLOOR PLAN.

PREMIATED DESIGN, MILWAUKEE LIBRARY AND MUSEUM COMPETITION.

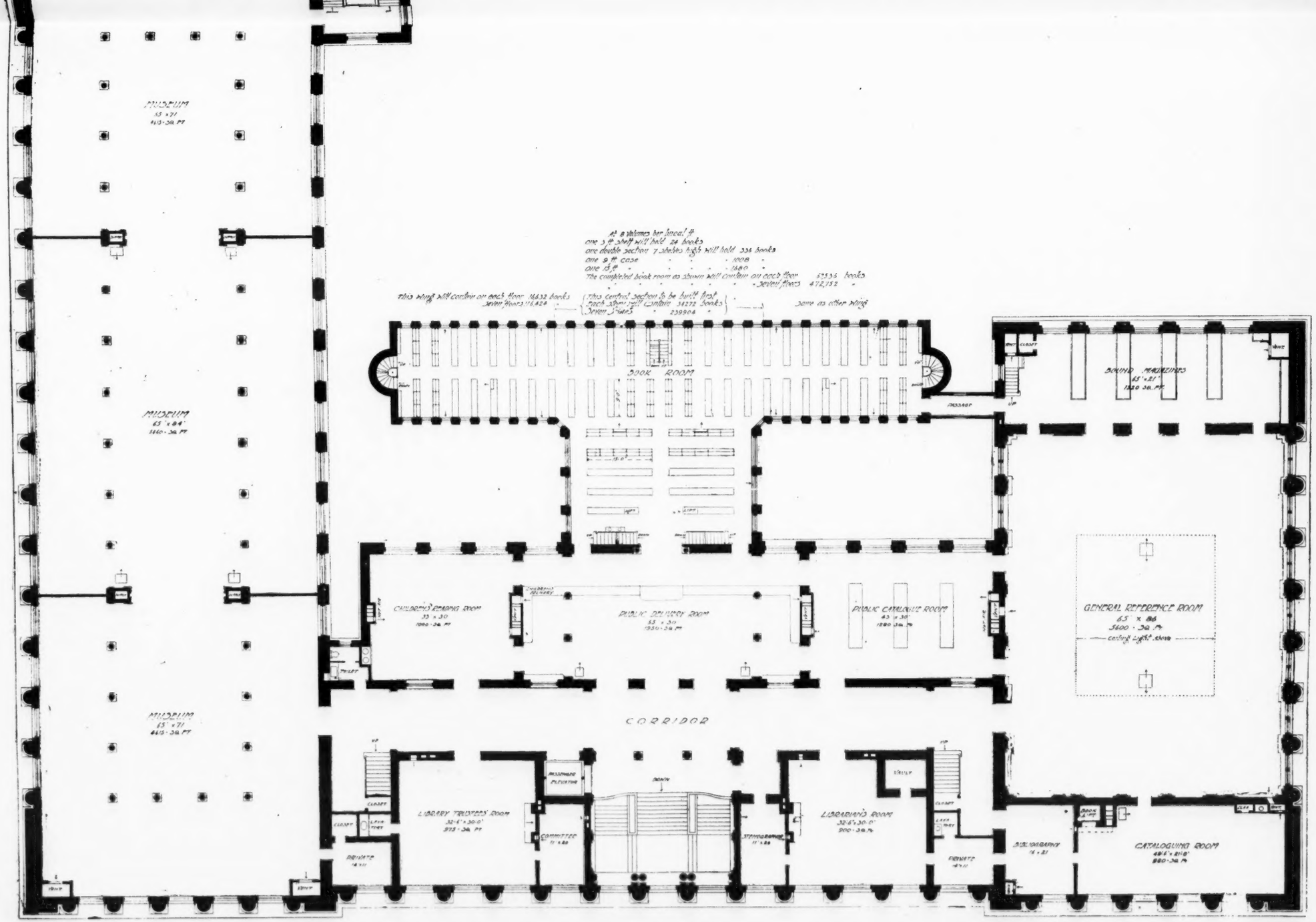
SUBMITTED BY ANDREWS, JAQUES & RANTOUL, ARCHITECTS, BOSTON.



PRINCIPAL FLOOR PLAN.

COMPETITION FOR MILWAUKEE LIBRARY AND MUSEUM.

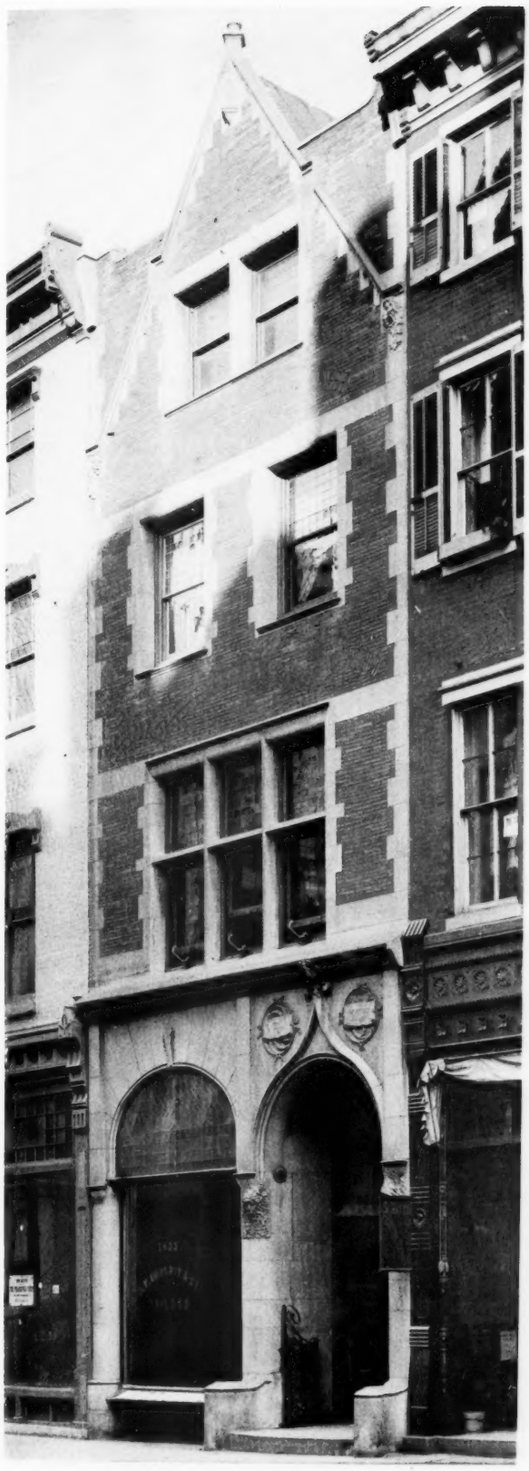
PREMIATED DESIGN, SUBMITTED BY BORING & TILTON, ARCHITECTS, NEW YORK.



SECOND FLOOR PLAN.

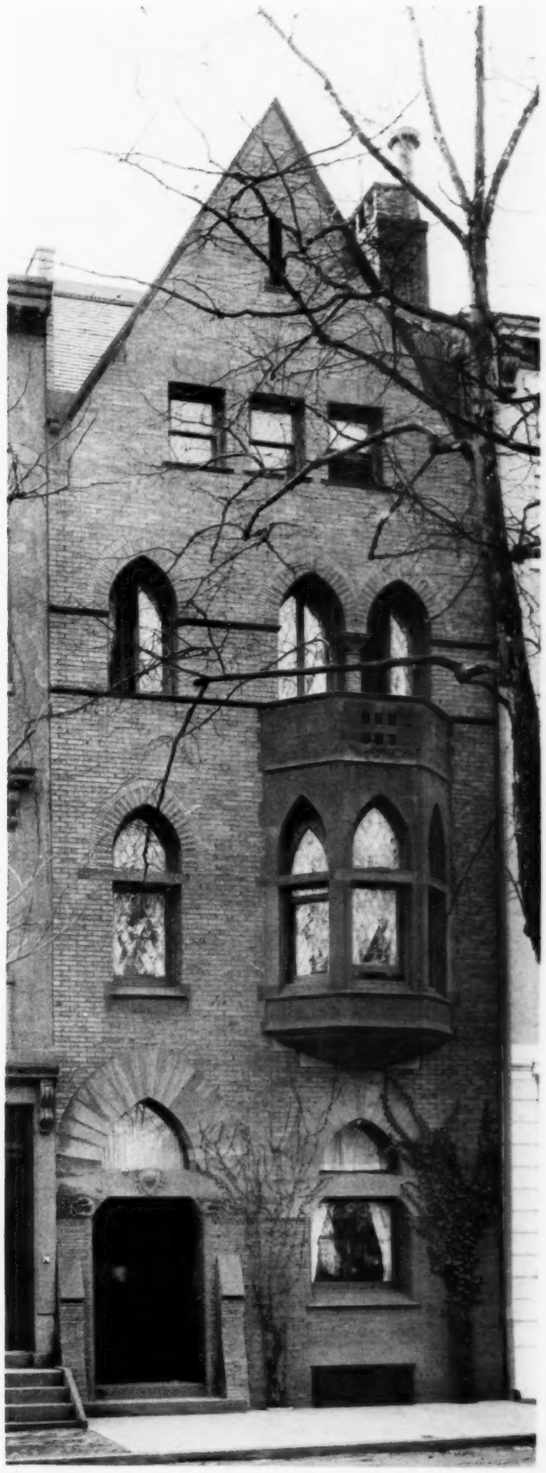
COMPETITION FOR MILWAUKEE LIBRARY AND MUSEUM.

SUBMITTED BY PATTON & FISHER, ARCHITECTS, CHICAGO.



STORE BUILDING, PHILADELPHIA.

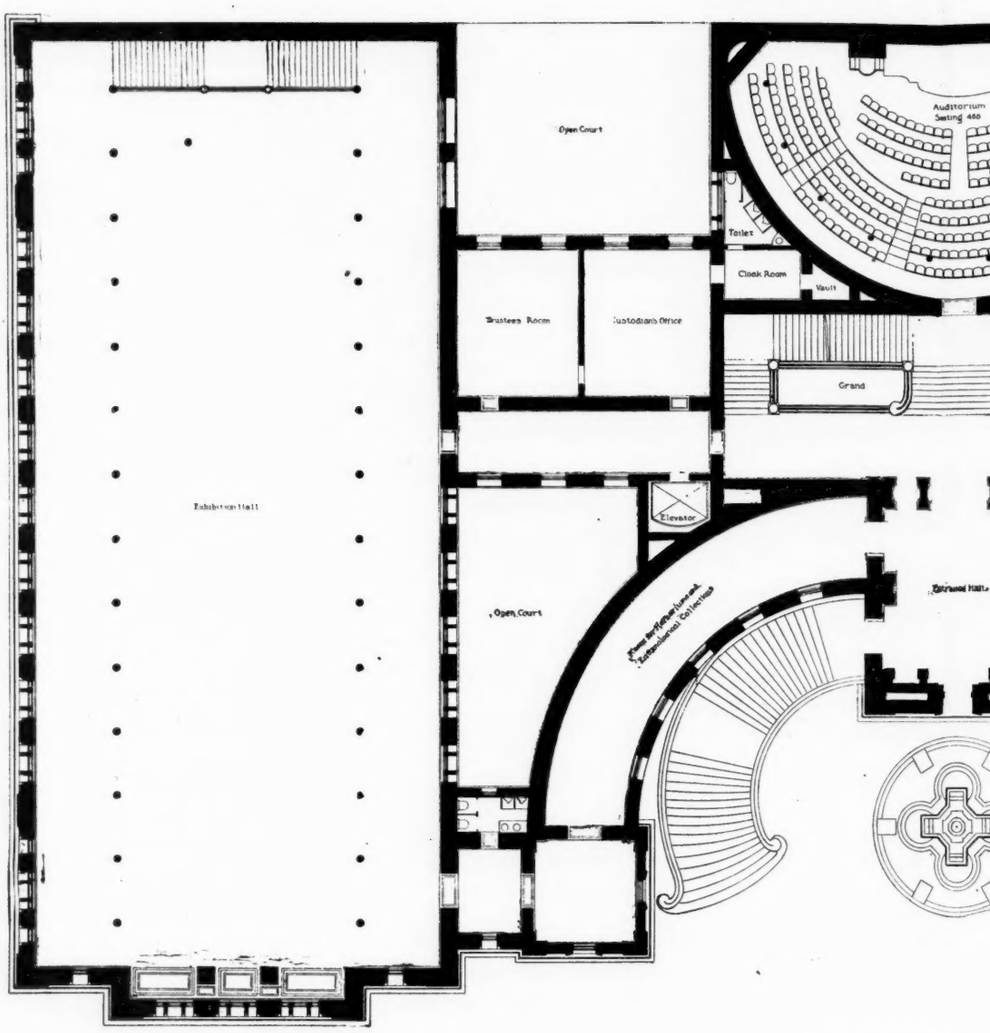
WILSON EYRE, JR., ARCHITECT.



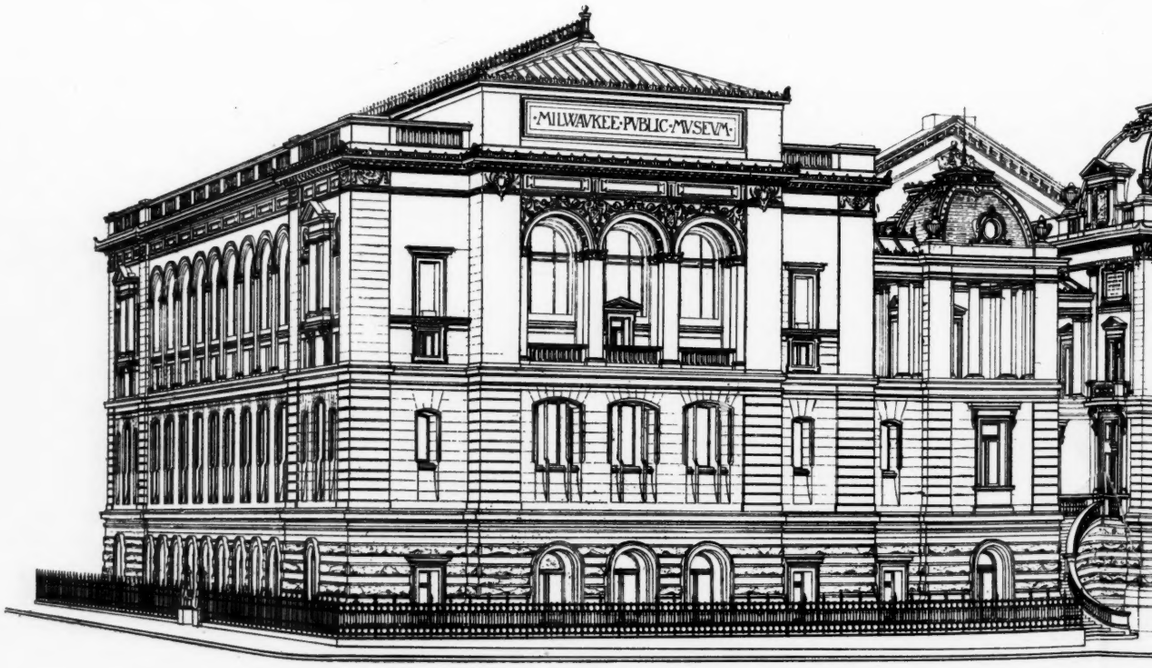
INLAND ARCHITECT PRESS.

RESIDENCE OF DR. STARR, PHILADELPHIA.

WILSON EYRE, JR., ARCHITECT.



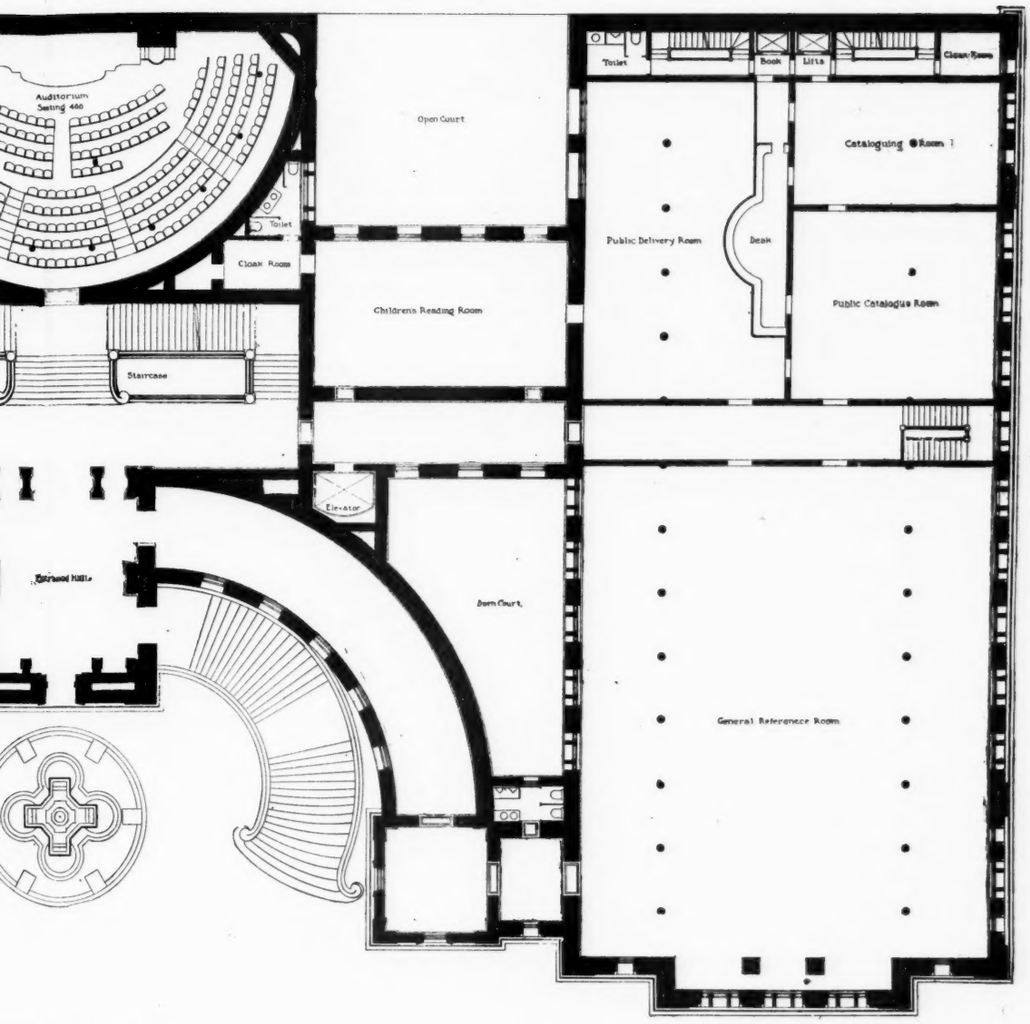
PRINCIPAL FLOO



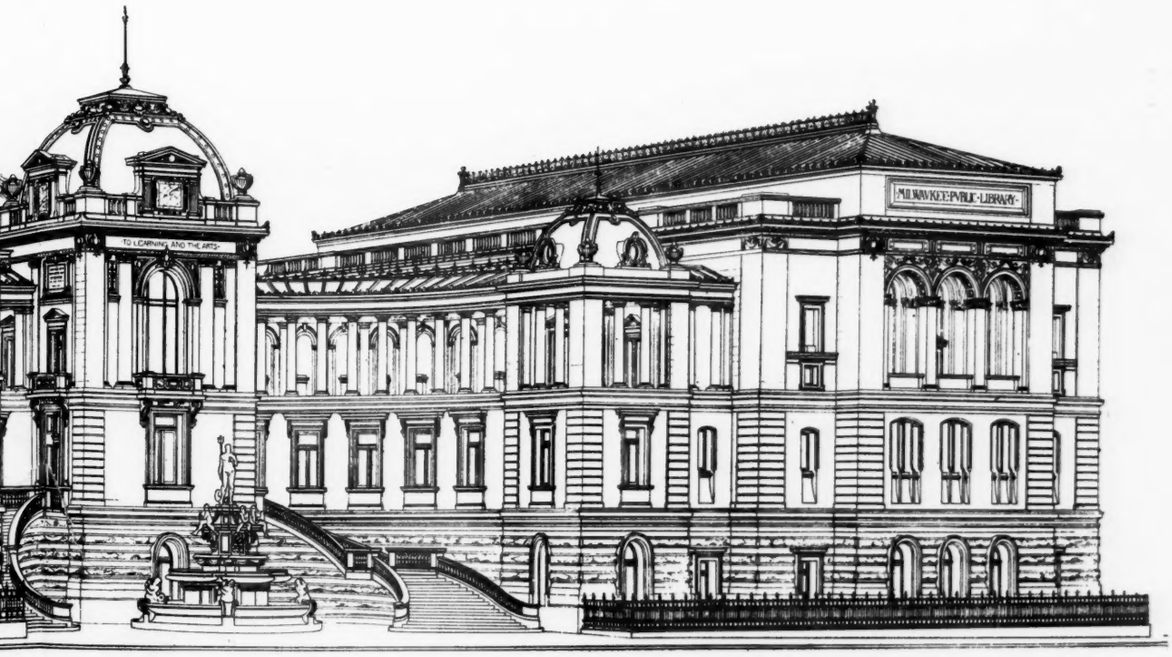
PERSPECTIV

COMPETITIVE DESIGN FOR MILWAU

SUBMITTED BY ERNEST FLAGG,



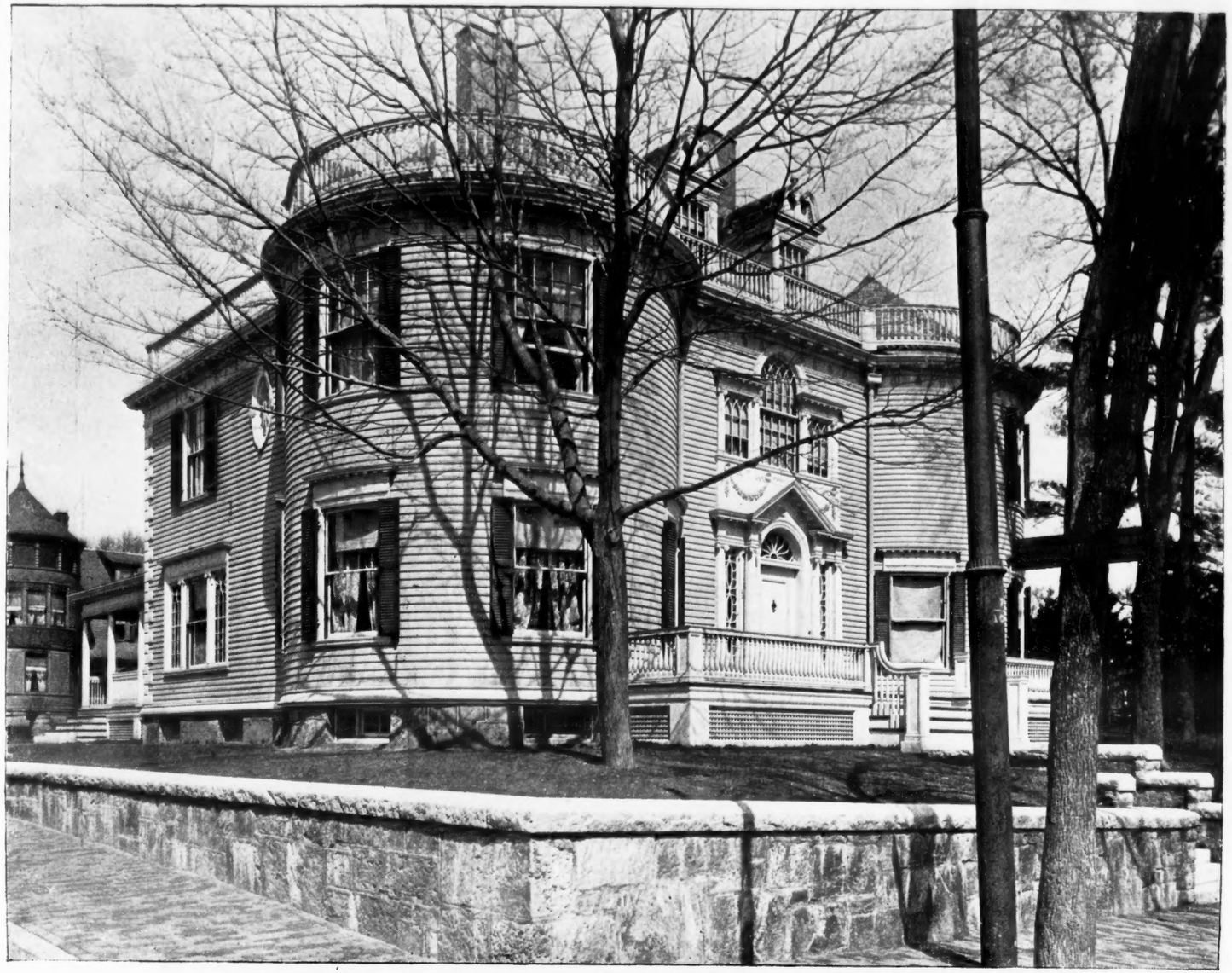
CIPAL FLOOR PLAN.



PERSPECTIVE.

MILWAUKEE LIBRARY AND MUSEUM.

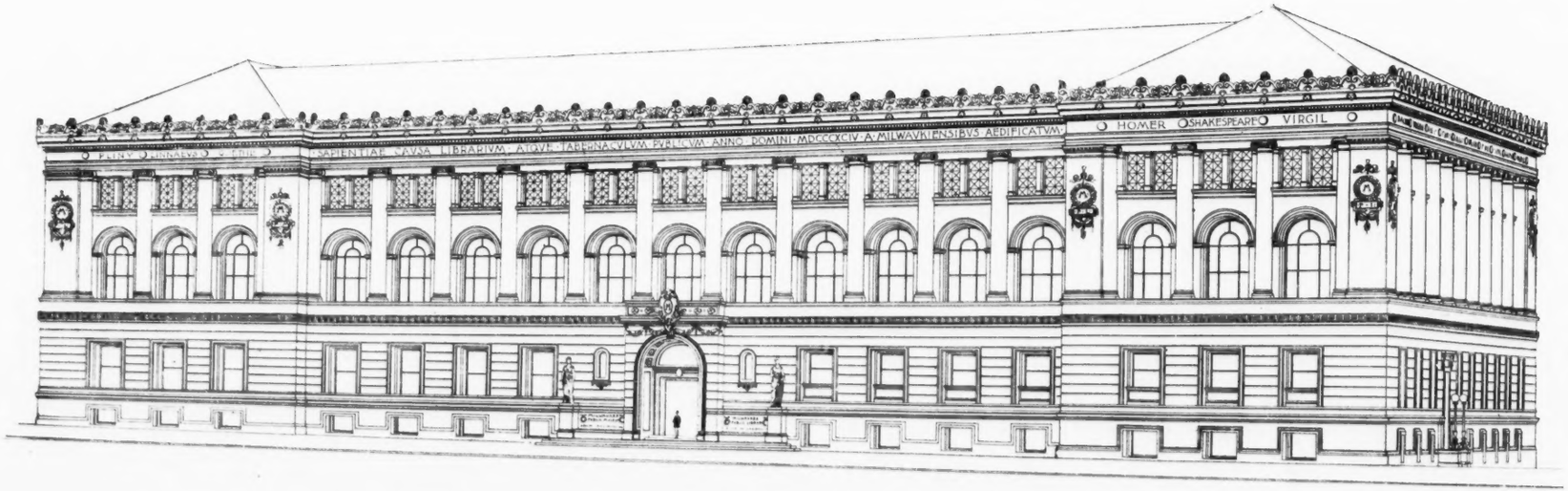
ST FLAGG, ARCHITECT, NEW YORK.



RESIDENCE, J. A. SCHWEINFURTH, ARCHITECT, BOSTON, MASS.

Second Floor Plan
First Floor Plan
J.C.Eagles, Del.
Manly N. Cutter, Archt.
203 Broadway N.Y. City.

·RESIDENCE · FOR · Mr · W · D · GATES · HINSDALE · ILL · W·L·B·JENNEY · W·B·MUNDIE · ARCHITECTS · CHICAGO·ILL ·



PREMIATED DESIGN, MILWAUKEE LIBRARY AND MUSEUM COMPETITION.

SUBMITTED BY NETTLETON & KAHN, ARCHITECTS, DETROIT, MICH.