

Indianapolis Postoffice, Rankin & Kellogg, Architects
"An Architect's Services and Remuneration" by Glenn Brown

GENERAL LIBRARY,
UNIV. OF MICH.
SEP 15 1935



IRVING K. POND, DES.

LORADO TAFT, SCULPT.

AUGUST, 1906



Entered at the Postoffice at Chicago as second-class matter, June 1, 1905.

CONTENTS

EDITORIAL	1
Inadequate Compensation to Architects—Ingenious Credit to Architects—Building on the Percentage Basis—Penalties for Delay Avoided—International Congress of Architects—	
AN ARCHITECT'S SERVICES AND REMUNERATION.....	3
By Glenn Brown, Architect, Secretary A. I. A.	
PARKS AND GARDENS OF SOUTHERN CALIFORNIA.....	5
By W. L. B. Jenney, Architect.	
THE PLANNING OF HOSPITALS, PART XI.....	6
By T. M. Clark, Architect.	
MUNICIPAL IMPROVEMENTS, PART XII.....	9
By Albert Kelsey, Architect.	
SANITARY ENGINEERING, PART XIII.....	10
By J. Pickering Putnam, Architect.	
OUR ILLUSTRATIONS	12
ASSOCIATION NOTES	xi, xii

NORTH-WESTERN TERRA COTTA CO.

WORKS AND OFFICE:
Clybourn and Wrightwood Avenues.

BRANCH OFFICE: 1415 Railway Exchange Building
CHICAGO.

J. W. TAYLOR

MONON BLDG., 324 Dearborn St.

Telephone 1500 Harrison

ARCHITECTURAL PHOTOGRAPHS,
BUILDINGS, INTERIORS, DETAILS, ETC.

Promise to purchase two dozen from the lot at \$4.00 per dozen, unmounted, and I will send 200 from which to make the selection.

HOW TO JUDGE ARCHITECTURE

By RUSSELL STURGIS

- ¶ A Popular Guide to the Appreciation of Buildings.
- ¶ No attempt is made to set up absolute standards, but the reader is enabled to form bases for his own opinion, and to learn the fundamentals of good and bad buildings.
- ¶ Eighty-four Illustrations. Price, \$1.50. Postage, 15c.

Porter, Taylor & Co.

358 Dearborn Street :: :: CHICAGO

OTIS ELEVATOR COMPANY

NEW YORK

CHICAGO

Passenger
and Freight

ELEVATORS

"THE STANDARD OF THE WORLD"

Chicago Office: Railway Exchange Building, 9 Jackson Boul.

Mural
Decorations
Special Furniture
Interior Cabinet Work
Wall Hangings
Draperies
Lace Curtains
Special Carpets
Leaded Glass and
Mosaic

JOSEPH F. STURDY

Formerly

Crossman & Sturdy

287 Michigan Avenue
CHICAGO

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

The Largest re-inforced concrete warehouse in the United States is built according to the Kahn System of Re-inforced Concrete.

The largest—that means something—it means a building having over 450,000 square feet, in nine stories, of floor space. It means that the Kahn System met the exacting requirements of the owners, Messrs. Farwell, Ozmun, Kirk & Co. of St. Paul; of Mr. George J. Grant, the General Contractor; of Mr. Louis Lockwood, of St. Paul, the Architect, and overcame all objections.

One whole panel was tested by piling pig iron to a height of eight feet over the entire surface of the panel—giving the remarkable load of 1500 lbs. to the square foot, and using enough iron for forty-one horse loads. There was absolutely no appreciable deflection. That means something.



Wholesale Concrete Warehouse of Farwell, Ozmun, Kirk & Co., St. Paul, Minn.

Mr. Grant, the Contractor, was impressed with the wonderful simplicity of the Kahn System—its wonderful safety and economy. We feel safe in saying that any contractor with even average experience in building can use the Kahn System successfully—he can save money in class of labor—he can save time.

In this building the entire interior construction is of concrete, re-inforced by the Kahn Trussed Bar—including such structural members as column footings, wall footings, columns, girders, beams and floor slabs.

We will be glad to send to any Engineer, Architect or Builder pictures showing some of the details in the construction of this building. The drawings for the engineering part of the work were made in our Engineering Department—a service that we cheerfully offer any of our customers.



The Kahn Trussed Bar.

Over 1000 tons of this material used in above building.

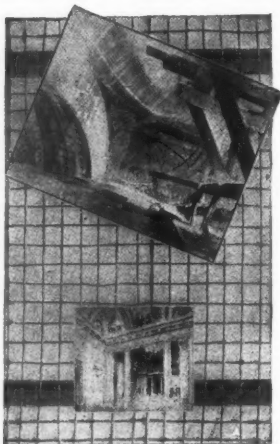
Ask for "TESTS"—A 160 pp. book about "construction"—"results."
IT IS FREE.

Trussed Concrete Steel Company

15 West Congress Street

Detroit, Michigan, U. S. A.

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.



Interior of the Maine Memorial Chapel, and method used in applying the Clinton Wire Lath.

The Clinton Wire Lath

is used throughout the new buildings of the United States Naval Academy, Annapolis, Md.

¶ The Architect who specifies Clinton Wire Lath avails himself of a material which insures absolutely fire-proof walls and ceilings.

¶ The only system in which no metal is exposed is the wire lath system.

¶ On application we will mail a copy of Clinton Chronicle No. 1 containing an account of the Clinton Wire Lath System as applied to the Naval Academy

CLINTON WIRE CLOTH CO.

CLINTON, MASS.

Fire Proofing Department

ALBERT OLIVER

150 Nassau St., New York

St. Louis Office: Hunkins-Willis Lime & Cement Co., South End 18th St. Bridge

San Francisco Office: L. A. Norris, 227 Crossley Building

Seattle Office: L. A. Norris, 909 Alaska Building

¶ The backgrounds of the illustrations are photographic reproductions of the Clinton Wire Lath.
 ¶ Sweet's Index, pages 96 to 103, contains a description of the Clinton Fire-Proofing System.



Maine Memorial Chapel, U. S. Naval Academy

THE COUNTRY WATER PROBLEM SOLVED



There is no longer any good reason why the man living in the country cannot have a water supply equally as good as the man living in the city.

The *Kewanee System* is easily explained. Water is pumped from the well or cistern into an air-tight Kewanee Tank. The air, having no escape, becomes compressed. Under ordinary conditions, when the tank is half full, a pressure of 30 pounds will be exerted on the water. This will raise the water approximately 60 feet. Of course, by pumping more water into the tank, a greater pressure may be attained.

A Kewanee Pneumatic Tank

buried in the ground or placed in the cellar, enables the man in the country to enjoy all the benefits of a regular city water supply without paying a penny for water tax.

Sufficient pressure may readily be created to deliver water to the plumbing fixtures in the house, to outside hydrants, garden, to the stable—to wherever it is needed.

The *Kewanee Pneumatic Tank* replaces the old style elevated tank. The elevated tank and tower has always been an "eyesore," marring the natural beauty of a country home. On account of the elevation necessary to produce fair pressure, the elevated tank is expensive, unsightly and unsafe.

The *Kewanee System* displaces the old-fashioned leaky attic tank. Attic tanks are always giving trouble on account of leaking, cracking the plastering, flooding the house—in fact you never can tell what they are going to do next. One "flood" from an attic tank will be more costly than the price of a Kewanee Pneumatic Tank—which rests on solid ground where it can do no damage.

And the *Kewanee System* affords splendid fire protection, often effecting a substantial reduction in insurance rates.

5,000 satisfied customers, everywhere, appreciate the "*Kewanee*" service, and architects are regularly specifying *Kewanee Outfits* in their plans for suburban and country homes.

We would like to send you our 40 page illustrated catalogue No. 11, fully explaining the *Kewanee System*. It is free for the asking if you mention the Inland Architect.

KEWANEE WATER SUPPLY CO., Drawer N., KEWANEE, ILL.

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

ANNOUNCEMENT

1906 Catalogue Edition

Corrugated Bars for Reinforced Concrete

WILL BE SENT TO ENGINEERS AND ARCHITECTS INTERESTED
UPON REQUEST

Expanded Metal & Corrugated Bar Co.

Formerly St. Louis Expanded Metal Fireproofing Co.

Frisco Building

St. Louis, Mo.

BOOKS FOR ARCHITECTS

IMPRESSIONS OF JAPANESE ARCHITECTURE AND THE ALLIED ARTS

By
RALPH ADAMS CRAM

Everywhere students of Japanese Art, Architecture and History have welcomed the book as the first sympathetic Occidental treatment of Oriental Architecture.

FIFTY-THREE FULL PAGE ILLUSTRATIONS
Price \$2.00. Postage 20c.

A HANDBOOK FOR SUPERINTENDENTS

By
H. G. RICHEY
Superintendent of Construction U. S. Public Buildings

An every day help to anyone engaged in building construction

SEVEN HUNDRED AND FORTY-TWO PAGES
THREE HUNDRED AND FIFTY-SEVEN ILLUSTRATIONS
Price \$4.00

CONCRETE PLAIN AND REINFORCED

By
FREDERICK W. TAYLOR, M. E.
Vice-President American Society Mechanical Engineers,

and
Sanford E. Thompson, S. B.,
with chapters by
R. Feret, William B. Fuller and Spencer B. Newberry
All of the authors are INTERNATIONAL AUTHORITIES on this paramount subject.

FIVE HUNDRED AND EIGHTY-FIVE PAGES
ONE HUNDRED AND SEVENTY-SIX ILLUSTRATIONS
Cloth \$5.00

ARCHITECTS' AND BUILDERS' POCKET BOOK

By
FRANK E. KIDDER, C. E., Ph. D.

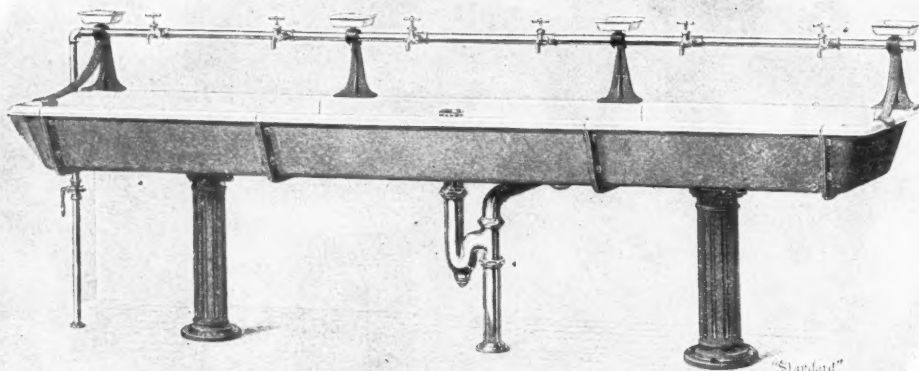
Entirely New Edition Brought Up-to-date

SIXTEEN HUNDRED AND FIFTY-SIX PAGES
ILLUSTRATED WITH ONE THOUSAND ENGRAVINGS
Morocco \$5.00

All orders promptly filled by PORTER, TAYLOR & CO., 358 Dearborn Street, Chicago, Ill.

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

With the Public **"Standard"** means BEST



"Standard" Porcelain Enameled Roll Rim Sectional Wash Sink on Iron Standards, with Brass Supply Pipe on Supports at back of Sink, Compression Bibbs, Brass Standpipe and Overflow in Center Section, Brass Vented "S" Trap and Soap Cups.

"Standard" Fixtures are preferred by officials of Hospitals, Factories, Public Institutions and Schools, because **they know** of the superior sanitation and durability of **"Standard"** goods. To officials the mere specification of **"Standard"** Porcelain Enameled Ware is a **guarantee of good faith** on the part of the Architect or Plumber in charge.

WRITE AT ONCE FOR OUR CATALOGUE
"MODERN SANITARY APPLIANCES"

Standard Sanitary Mfg. Co. PITTSBURGH, PA.
U. S. A.

AMONG the orders recently booked by the undersigned is one for six Revolving Doors for installation in the entrances of the

U. S. CAPITOL BUILDING

WASHINGTON, D. C.

VAN KANNEL REVOLVING DOOR CO.,

General Offices and Plant: 524-534 E. 134th St., New York

Western Branch and Plant: 118-128 N. May St., Chicago

The SODERLUND ADJUSTABLE POP-UP BASIN WASTE

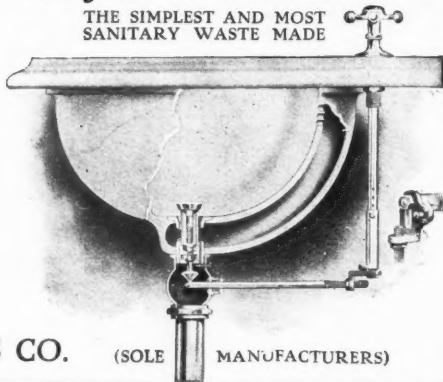
Patented
AUGUST 16, 1904

Suitable for Marble, Enamel, Vitreous and Solid Porcelain Lavatories.

Fitted with 4-Arm Cross or China Lever Handle, stamped "Waste."

Catalogue of "Soderlund" Specialties sent to any address upon request.

THE SIMPLEST AND MOST
SANITARY WASTE MADE



CRANE COMPANY
Selling Agents.

Philadelphia	St. Paul
Baltimore	Minneapolis
Cincinnati	Duluth
Birmingham	Salt Lake City
St. Louis	Spokane
Memphis	Seattle
Dallas	Portland, Ore.
Kansas City	San Francisco
Omaha	Oakland
Sioux City	Los Angeles

See Condensed Catalog
Pages 458-459 "Sweet's" Index.

UNION BRASS WORKS CO.

(SOLE

MANUFACTURERS)

CHARLESTOWN, MASS.

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

Stanley's Ball Bearing Hinges

In Wrought Bronze and Steel

NEVER WEAR DOWN
NEVER CREAK
NEVER REQUIRE OILING

The improved washer protects the balls against moisture and dust.

For sale by leading hardware dealers.
 Artistic booklet free.

The STANLEY WORKS
 New Britain, Conn. New York Chicago

National Fire Proofing Company

Manufacturers

All Kinds of Hollow Building Tile

also

Engineers and Contractors for
 the Fireproofing of Buildings

Our engineering department
 is at your service for the preparation
 of complete plans
 and details for fireproof work



Annual Capacity **1,600,000 tons**
 Factories located near
 all the large cities

For data and more detailed information, write us at either
 of the following addresses:

NEW YORK, N. Y., 170 Broadway CHICAGO, ILL., Hartford, Building
 BOSTON, MASS., 840 Old South Bldg. WASHINGTON, D. C., Colorado Bldg.
 PHILADELPHIA, PA., Land Title Bldg. MINNEAPOLIS, MINN., Lumber Exch.
 PITTSBURG, PA., Bessemer Building BALTIMORE, MD., Calvert Building



TRINITY BUILDING, NEW YORK CITY

"Giant"
 AND
**"Red
 Metal"**
 Sash
 Chains

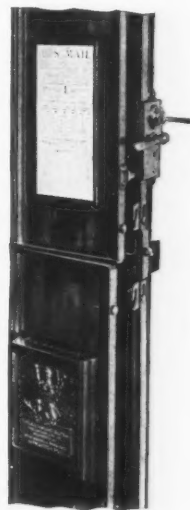
This cut illustrates one of many high class buildings in which our chains are used. We are the originators of SASH Chain as a substitute for cord. Our Chains are "STANDARD" and are acknowledged as such by the leading architects and are specified by them.

SAMPLES OF CHAINS ON APPLICATION

The Smith & Egge Mfg. Co.
 BRIDGEPORT, :: :: :: CONN.

THE CUTLER MAILING SYSTEM

IS EXPLICITLY AUTHORIZED BY THE POST OFFICE DEPARTMENT UNDER PROVISION OF A SPECIAL ACT OF CONGRESS AND SHOULD BE SPECIFIED WHERE THE STANDARD AUTHORIZED MAIL CHUTE EQUIPMENT IS DESIRED.



DESIGNATE "MODEL C" IF THE VERY LATEST AND BEST FORM AS ILLUSTRATED HERewith IS REQUIRED. INTERIOR UNDER GOVERNMENT LOCK BUT INSTANTLY ACCESSIBLE TO AUTHORIZED PERSONS.

INSTALLED IN CONNECTION WITH THE U. S. FREE COLLECTION SERVICE UNDER THE CUTLER SERIES OF MAIL CHUTE PATENTS ONLY BY THE SOLE MAKERS,

THE CUTLER MANUFACTURING CO.
 CUTLER BUILDINGS, ROCHESTER, NEW YORK.



Bronze Entrance Doors Safe Deposit & Trust Co.
 Baltimore, Md.

BALDWIN & PENNINGTON, Architects

The Winslow Bros. Company
 Chicago - New York
 ORNAMENTAL IRON AND BRONZE



Copyright, 1905, by M. HERBERT
CHAS. M. SCHWAB'S \$5,000,000 RESIDENCE

AD-EL-ITE

TRADE MARK
REGISTERED

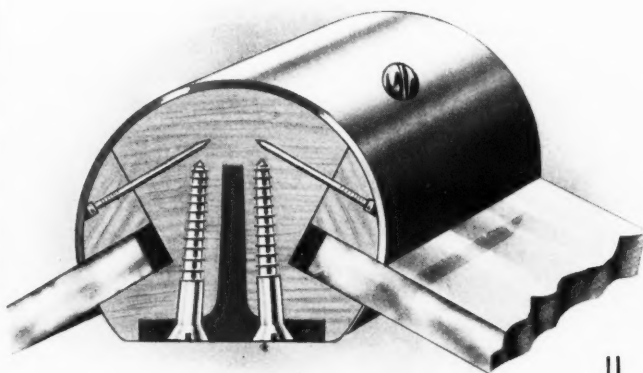
MISSION FINISHES, ENAMELS and INTERIOR FINISHES
WERE USED IN
SCHWAB'S NEW HOME :: :: :: The Finest in America
OUR FINISHES WERE USED
BECAUSE

1. They can be relied upon to produce uniform shades.
2. They are high class goods that are economical in their longevity.
3. They are used in thousands of dwellings and always satisfy the owner.
4. They are the product of a company that is the pioneer in wood finishes.

We make everything in the wood finishing and paint specialty line and can match up to any sample.
Our "Architect's Standard Stains" booklet shows our finishes on real wood panels all the new and standard finishes—FREE ON APPLICATION.

Adams & Elting Co.

THE AD-EL-ITE PEOPLE (DEPT. AB.) CHICAGO



The COULSON PATENT STORE FRONT CONSTRUCTION.

makes the most practical, complete and modern store front, and enables the merchant to display his goods to the best advantage.

It is specified by the leading architects for both new and remodeled store fronts, and recommended by Plate Glass Insurance Companies.

WRITE FOR ILLUSTRATED CATALOGUE D. 300

J. W. COULSON & CO.,

Sole Owners and Manufacturers.

Main Office
96-98 North Third St.,
Columbus, Ohio.

Branch Office
1123 Broadway
New York.

THE WINKLE TERRA GOTTA CO.

MANUFACTURERS OF

Architectural Terra Cotta

IN ALL COLORS.

OFFICE:

Rooms 502 and 503, Century Building,
ST. LOUIS, MO.

Works: CHELTENHAM, ST. LOUIS.

VIGNOLA

The Five Orders of Architecture

REVISED EDITION INCLUDING THE GREEK ORDERS
FROM THE FRENCH OF PIERRE ESQUIE.

The formulation of the proportions of the Classic Orders by Vignola has for many years been accepted as a basis upon which the study and practice of architectural design in the Classic and Renaissance styles is founded. All architects require a knowledge of these proportions; they are found in most convenient form for study and reference in Vignola. Vignola has thus become at once the Bible and the primer of architecture.

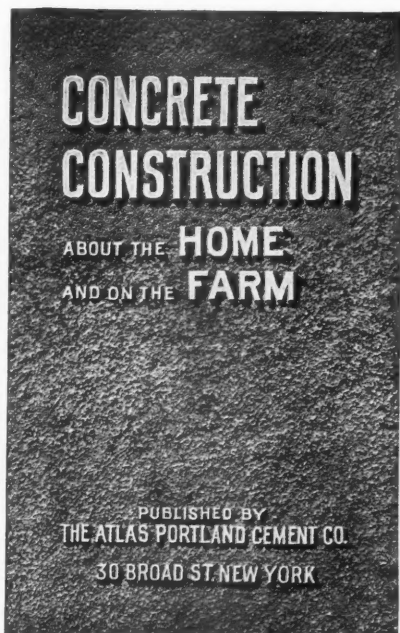
The present edition has been arranged with special regard for application to modern buildings by M. Pierre Esquie, French Government architect, and former member of the French Academy at Rome. New plates have been added for the Greek orders, and many of the old ones entirely redrawn. The explanations of the plates have been accurately translated into English, and numerous notes, together with a glossary of French terms with their English equivalents, have been added.

The book contains 78 plates, 10 by 12 in., mounted on muslin guards and substantially bound in cloth. This is the most complete, authoritative, accurate, and latest work upon the Orders and Elements of Architecture.

Price, Postpaid, \$5.00

Porter, Taylor & Company
358 Dearborn Street, Chicago

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.



THE ABOVE BOOK SENT FREE
ON REQUEST TO DEPT. I

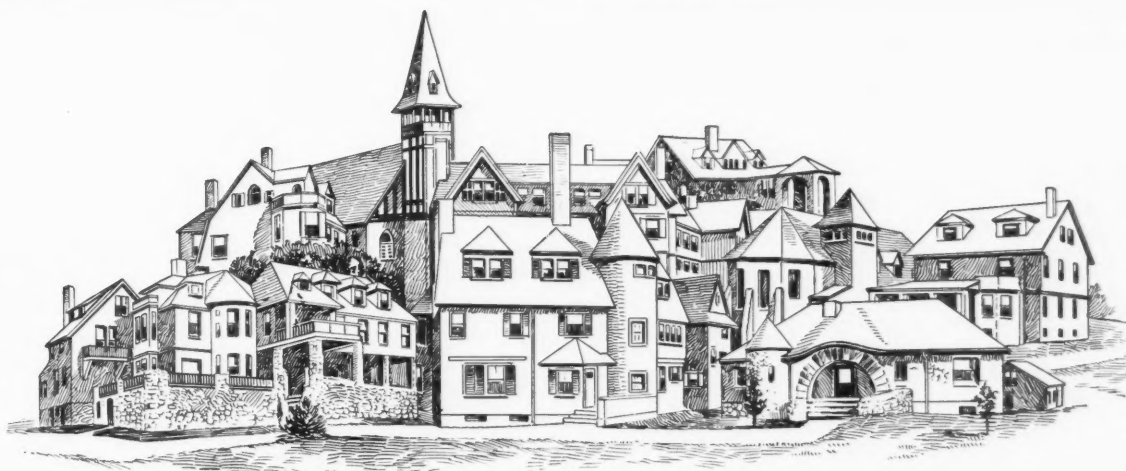
THE STANDARD AMERICAN BRAND

ATLAS PORTLAND CEMENT

ALWAYS UNIFORM

Output for 1906 Over 12,000,000 Bbls.

THE ATLAS PORTLAND CEMENT CO.
30 BROAD STREET, N. Y.



COUNTLESS HOUSES

are being stained daily with

Dexter Brothers' English Shingle Stains

Made in all colors from the most delicate grays to the darkest greens.

Samples may be seen at the

H. M. HOOKER CO., 57 W. Randolph St., CHICAGO

or will be sent by

DEXTER BROTHERS COMPANY

103-105-107 Broad St., Boston

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.



THE result of many years of studied effort to create a Dead-Flat Oil Paint. It is now in use in many public buildings, office buildings, etc. It is restful to the eyes, absolutely non-poisonous and is the best working paint on the market. Color cards and working samples upon application to the manufacturers.

The MURALO CO.

New Brighton, Staten Island



BEAUTIFULLY DESIGNED
AND MADE

LAMP SHADES

Art Glass and Glass Mosaics
FOR THE FINEST BUILDINGS

DESIGNS SUBMITTED

D. L. NEUHAUSER

DESIGNER AND MAKER
10 Fifth Avenue, CHICAGO

School of Architecture, University of Pennsylvania

THE FOUR YEAR COURSE. Offers full professional training with an option in Architectural Engineering; leading to the degree of B. S. in Arch.

THE GRADUATE YEAR. Affords opportunity for advanced work in design and other subjects, leading to the degree of M. S. in Arch.

THE TWO YEAR SPECIAL COURSE. For qualified draughtsmen, offers advanced technical training, yielding a certificate of proficiency.

THE UNIVERSITY. Also grants advanced standing to college graduates, offers a combination of liberal and technical courses whereby the degrees of A. B. and B. S. in Arch. can be taken in six years, and conducts a Summer School in which architectural studies may be taken.

FOR FULL INFORMATION Address DR. J. H. PENNIMAN, Dean,
College Hall, University of Pennsylvania, Philadelphia, Pa.

**Thomas' Acme Air Purifying
and Cooling System**

PATENTED

Cleanses Air—Governs Humidity—Cools Air

HEATING, COOLING AND VENTILATING
BUILDINGS, RAILWAY COACHES, STEAMSHIPS

THOMAS & SMITH

Designers and Builders

General Offices

17-19 South Carpenter St.

CHICAGO

DISTRICT OFFICES

New York, 288 Hudson St., Cleveland, Hickox Bldg.,
Cincinnati, Mercantile Library Bldg., Detroit, Majestic Bldg.,
St. Paul, Endicott Bldg., St. Louis, Chemical Bldg., Kansas City,
REPRESENTATIVES IN ALL LARGE CITIES Postal Bldg.



Life is Precious

Have you the Life of Human
Beings in your care? If so

**Specify the Kirker-Bender
PATENT FIRE ESCAPE**

It is practically perfect. The lame, blind, sick, women and children all come down through it with equal ease and safety. Over one hundred in use on the Public Schools, Hospitals and Factories of Chicago, Louisville and St. Louis. Catalog.

Dow Wire & Iron Works

Louisville, Ky.



A. H. ABBOTT & CO.

Drawing Supplies,

Instruments, Tracing Cloth, Papers, Colors
Scales, Levels, Transits, Etc.

BLUE-PRINTS.

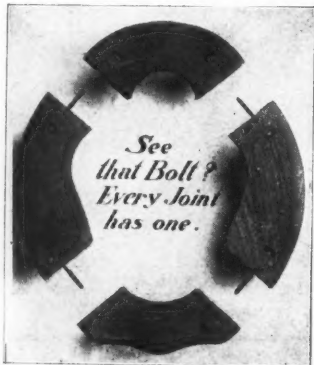
151 Wabash Ave., CHICAGO

**THE ROEBLING SYSTEM
OF FIREPROOFING**

The Roebling Construction Co.

Send for Catalogue

906 Tribune Building, Chicago.



See
that Bolt &
Every Joint
has one.

The Property Owner

Will appreciate the seat that has every joint bolted. Architects should specify Never Split Seats because they never warp, split or give annoyance. Made only by the

NEVER SPLIT SEAT CO.

EVANSVILLE, IND.

CATALOG

THE INLAND ARCHITECT AND NEWS RECORD

VOL. XLVIII

AUGUST, 1906

No. 1



A Monthly Journal Devoted to

ARCHITECTURE

CONSTRUCTION, DECORATION AND FURNISHING

ISSUED ON THE 15TH OF EACH MONTH

PUBLISHED BY PORTER, TAYLOR & CO.

PONTIAC BUILDING, CHICAGO, ILL.

Entered at Chicago, Ill., Postoffice as second-class matter.

NEW YORK OFFICE: 320 Broadway, Phone 636 Franklin.

SUBSCRIPTION, \$10.00 a year in advance. Single copies, \$1.00

All communications intended for The Inland Architect should be addressed to Porter, Taylor & Co., 505 Pontiac Building.

AMERICAN INSTITUTE OF ARCHITECTS

PRESIDENT	FRANK MILES DAY, Philadelphia.
FIRST VICE-PRESIDENT	CASS GILBERT, New York.
SECOND VICE-PRESIDENT	WILLIAM B. MUNDIE, Chicago.
SECRETARY AND TREASURER	GLENN BROWN, Washington, D. C.
AUDITORS	{ JAMES G. HILL, Washington, D. C. ROBERT STEAD, Washington, D. C.

BOARD OF DIRECTORS FOR 1906.

For Three Years.—Alfred Stone, Providence; Irving K. Pond, Chicago; Ralph Adams Cram, Boston.

For Two Years.—W. A. Boring, New York; J. M. Donaldson, Detroit; Merritt J. Reid, San Francisco.

For One Year.—Charles F. McKim, New York; Geo. B. Post, New York; R. D. Andrews, Boston, Mass.

THE ARCHITECTURAL LEAGUE OF AMERICA

(ORGANIZED 1899.)

The Architectural League of New York.	The Architect's Club, U. of Ill.
The T Square Club, Philadelphia.	The Toledo Architectural Club.
The Cleveland Architectural Club.	The Milwaukee Architectural Club.
The Toronto Architectural Club.	The San Francisco Architectural Club.
The Pittsburg Architectural Club.	The George Washington University Club.
The Cincinnati Chapter A. I. A.	The Twin City Architectural Club.
The Brooklyn Chapter A. I. A.	The National Sculpture Society.
The Chicago Architectural Club.	The National Society of Mural Painters.
The Detroit Architectural Club.	
The St. Louis Architectural Club.	
The Washington Architectural Club.	

OFFICERS.

President	Ernest John Russell, St. Louis.
Vice-President	Frederick M. Mann, St. Louis.
Corresponding Secretary	Wm. B. Ittner, St. Louis.
Recording Secretary	Ernest Helfensteller, Jr., St. Louis.
Treasurer	John C. Stephens, St. Louis.

The Executive Board consists of the officers and Samuel L. Sherer and Jesse N. Watson.

NEXT CONVENTION AT WASHINGTON, D. C., 1907.

Inadequate Compensation to Architects.

Perhaps the most important contribution of the year to architectural literature, the one that will appeal most closely to the welfare of the architect, is the paper commenced in this number on "An Architect's Services and Remuneration." The author, Glenn Brown, secretary of the American Institute of Architects, has dealt with the subject in his usual thorough and comprehensive manner. His facts have been gathered not only here but abroad, and the paper presents valuable contrasts between the services and remuneration that prevail in the various countries. It is shown that in the United States the architect renders more service for less compensation than is the rule abroad. It is to the personal interest of every architect that the facts of Mr. Brown's paper be brought forcibly to the attention of clients, the press and the public. The time would seem opportune for the associations of architects to make a concerted movement to establish a scale of commissions that would afford the profession a more just remuneration for their services.

An architect whose practice is very large stated recently that for the past ten years all contracts awarded by him had been on a percentage basis, figured on the actual cost of all material and labor that went into the work. The results of his long and large experience have convinced him that this method is much more satisfactory than to let contracts for a given sum. He finds that while the owner has no contract in advance for the completion of the building at a fixed price, the expenditure is always within his control, and verification is possible whenever desired. Itemized bills for material and labor are rendered from time to time, and he has the satisfaction of knowing the amount and kind of supplies that are being used in his building. The always annoying item of extras is eliminated, and changes required during the progress of the work are made with the least possible expense. The owner feels throughout that his interests and his alone are paramount. There is no temptation on the part of the contractor to use cheaper materials than are specified, nor to slight the work, as he is assured of a fair profit.

Penalties for Delay Avoided.

The contractor by the percentage plan is not liable for unexpected advances in prices, nor for penalties for delay. There are avoided all the uncertainties and risks that are ever present with a lump sum contract, and the contractor is free in mind to push the work at every point in furtherance of the quick completion of the building and the best interests of the owner. The contractor would not likely attempt to manipulate vouchers to show fictitious cost prices as, if he were so disposed, the knowledge of the architect would be a certain check upon such practices. The architect mentioned has encountered opposition at first from the owner who has the natural desire to know his full obligation at the start, but this has been overcome in every case when the owner has had brought to his attention the probable saving in cost and the many

substantial advantages to him from the percentage basis. The contractor by such an arrangement becomes, in a degree, the agent of the owner, and harmony between all parties to the construction is fostered. The usual position of the architect as a buffer between the owner and the contractor ceases.

**Ingenious
Credit to
Architects.**

The natural desire of architects to obtain just credit for their buildings has developed considerable ingenuity in the attainment of this object. The method employed has often defeated the credit sought. All will recollect the acrostic spelling on an eastern library building in which the names of its architects were introduced; and the chiselling that followed to obliterate this credit. Today there is much commotion over the bronze doors of a State capitol building that contain portraits not only of the architect, but of others connected with the building construction, as well as of a number of politicians. The architect is said to defend his course by quoting the precedent of a prominent church in New York City, the doors of which are decorated with the heads of the architect, contractor and others identified with the construction. At the best the public is none too willing to bestow due credit upon architects for their creations, and are quick to resent the effort to secure credit by such ingenious methods as those mentioned. From the sentiments expressed in answer to the wide-spread inquiry of *THE INLAND ARCHITECT*, all architects desire proper credit in connection with the buildings designed by them, but wish to secure this in a straightforward, dignified manner. We look forward to some action being taken in this direction by the next convention of the American Institute of Architects.

**International
Congress
of Architects.**

The seventh International Congress of Architects at London was largely attended. At the inaugural meeting, held at Guild Hall, the opening address was delivered by President John Belcher, of the Royal Institute of British Architects. The influence of climate upon architecture was recalled by the expression of the speaker that the severe and somber type of English architecture was due largely to the dull gray atmosphere that usually prevailed. This was contrasted with the bright, warm conditions of the South, that favored the productive fancy of the artist. The modern English domestic buildings were justly praised as a development peculiar to that country. The public buildings of London, it was stated, were at a disadvantage through the lack of stately approaches that enhanced the buildings of other great cities. The growing tendency toward a greater interest in architecture by the educated public was noted and the interesting statement made by President Belcher that action had been taken to furnish the public with simple data that would aid to a correct judgment of the architecture of buildings. This movement is similar to that in progress in America in which Russell Sturgis is the preceptor.

**Reinforced
Concrete
Considered.**

The one construction subject specially considered by the congress was Steel and Reinforced Concrete. In this discussion delegates from most of the countries represented took part. Nothing especially novel was advanced. It was stated that while the material does not lend itself readily to architectural effect, an improvement in this direction

was probable. A further observation was that sculpture and molded relief work for ornamentation will give place in concrete work to superficial painting which will afford an enlarged field for the artist. The paper by Peter B. Wight on the "Use of Burned Clay in Building Construction" was of unusual interest, especially to the European hearers. Regarding Architecture and Salaried Officials, the opinion was expressed that "The artistic gifts of an artist oppressed by the yoke of office can never undergo the necessary development"; an opposing view given was that numerous instances might be cited where most excellent work had been achieved by official architects, which is doubtless true. The question of salaried officials has had earnest consideration for several years, both in English and German architectural societies. In England the opinion prevails that an official architect can not give the time necessary for large work. In Germany an effort was made to refuse the salaried official admission to the architectural societies, the hope being that all important public work would be open to all architects.

**Many
Resolutions
Passed.**

The following resolution was passed by the Congress, but not without opposition: "Resolved, that in future in the interest of the administrations and of the public, and in the highest interests of the art of architecture, public administrations, whether governmental, provincial or municipal, should entrust important works of architecture only to professional qualified architects, either by competition or by other means." On the subject of the Architect-Craftsman this pregnant thought was expressed: "It is essential to keep before the student the ultimate end of all his training—viz., skill not in draftsmanship or craftsmanship, but in architecture." The opinion that quite generally prevailed was that the architect would find of great advantage the theoretical knowledge of every trade and of the qualities of the materials that he uses; but that it is not necessary that he should have the manual skill of the various trades. The sentiment regarding the Ownership of Drawings was expressed in this terse resolution: "That this congress is of opinion that the architect is employed to produce a building, and that all drawings and papers prepared by him to that end are undoubtedly his." The discussion of The Conservation of National Monuments resulted in the resolution, "That the governments should be empowered whenever occasion arises to expropriate a monument which is historical, archaeological or artistic." In addition to the remarks by President Belcher, above mentioned, on the subject of the Education of the Public in Architecture, the interest in the topic was evidenced by the reading of numerous papers expressing the sentiments of the several countries. The question of the architect's control was met by the resolution: "That the architect in the construction of a building should be given absolute power over the co-operating craftsmen, but in a special manner over the co-operating artists." A resolution likely to have much influence on the future status of the architect was expressed in few words—viz.: "That it is desirable in the interests of the public of all nations and of the profession of architecture that all practitioners should have a statutory qualification." The Congress was in the nature of an international clearing house for architectural ideas, and important results were expressed in brief and direct resolutions. Vienna was awarded the honor of the next Congress.

AN ARCHITECT'S SERVICES AND REMUNERATION

BY GLENN BROWN, ARCHITECT

SECRETARY THE AMERICAN INSTITUTE OF ARCHITECTS

FEW appreciate the time, labor and skill expended by the architect in the preparation of drawings for a building, while a smaller number are aware that an artistic sense, a broad education, long training, special knowledge in the history of art and construction, together with business knowledge and executive ability are necessary to produce artistic and lasting results. To attain artistic expression in a building the architect must have full charge from the beginning to the completion of the structure, as the life-giving qualities which make a work of art require the solicitous care and guidance of the artist.

Upon receiving a commission or entering a competition, before commencing the drawings, the architect must study the site and surroundings with reference to its artistic possibilities and its utilitarian relations to street traffic and existing buildings. He must then investigate and understand the various branches and methods of the business which the building is to house. When these investigations have been systematized, he is ready to make preliminary drawings. Only an architect is aware of the drawing after drawing which is made, discarded and destroyed during this, the most important step, where the highest skill and the best judgment is required in the erection of a building. Having arrived at a satisfactory solution of the plan, the architect must obtain an artistic expression of the plan in elevation and perspective, an expression that will enhance and dignify the landscape, and be in harmony with the surroundings or the proposed surroundings of the contemplated structure. The solution of this portion of the problem requires the artist. Again, drawing after drawing is made, studied, discarded and destroyed before a satisfactory solution is reached. The plan and design are evolved during these preliminary stages; the fundamental steps in the problem if it is to be a commercial success and a work of art.

The preparation of the scale or working drawings and specifications follow in natural sequence. Foundations, natural and artificial, must be investigated, tested, studied, altered and calculated. The various materials must be selected with reference to durability, strength, color, fitness, price, character of the building and the desired expression. Unknown materials and conditions must be tested chemically or physically. During the progress of this branch of the work innumerable questions of detail are considered and decided. Plans are prepared for drainage, heating, electricity, structural iron, masonry and carpentry during the preparation of the working drawings. The skill of the economist, constructor and of the artist is required in adjusting the rights of the various claimants to space in the construction. The architect must be vigilantly on guard that no one branch shall monopolize the area which more beneficially belongs to another, that no one or combination of interest shall detrimentally affect the scheme or artistic expression as laid out in the preliminary solution.

In the preparation of the working drawings the elevations are drawn to a larger scale, artistic details of interior and exterior are more clearly and definitely shown, while all structural features are carefully calculated and their dimensions marked. While the second stage of an architect's service is more mechanical than the preliminary stage, it requires a knowledge of architectural engineering

and construction, which includes a knowledge of material, a knowledge of mechanical engineering in heating and electrical or mechanical installation, a knowledge of sanitary engineering in drainage and water supply as well as a knowledge of artistic expression to guide the whole. The architect or his assistants must have this knowledge, even if experts are employed in different branches, otherwise he will soon discover that some one department will monopolize space that will destroy more important features.

The third stage is receiving tenders or bids, and the letting of contracts. Here the business qualifications of the office are called into play. Systematic and methodical business methods of no mean order are required to organize and execute this portion of the work on a monumental building. Contemporaneous with this period of the work and throughout the progress of the construction full size detail drawings are being prepared. The drawings require constant attention, both from the structural and the artistic side of the architect. First, they must be joined, built or constructed to stand, to resist weather, decay, water, fire, expansion, contraction, shrinkage and the various strains of dead and live loads, which have all been previously considered in the scale drawings, but the ultimate stability of which often depends upon the final details which cannot be shown on small drawings.

A slight deviation in a full size molding, modillion, pilaster, cornice or other ornamental feature which an ordinary man would consider an exact interpretation of the scale drawing means the difference between something artistic and beautiful or something crude and ugly.

As soon as the contracts are let the supervision of the work begins. The question of supervision is an important one. It appears to be the accepted opinion that when the drawings are prepared, any one familiar or even unfamiliar with construction can erect the building in a satisfactory manner. This might be the fact if the architect and his assistants made drawings so perfect that no alteration would better them, and if it were possible for the superintendent, contractors and various sub-contractors to carry out the intention of perfect drawings without deviation.

Unfortunately, architects, superintendents and contractors are as fallible as other men. According to their ability, they do not produce the best results on the first or second effort. From the inception to the completion of the building, daily arise questions of interpretation, questions of variation, questions for consideration on which depend convenience or inconvenience, economy or wastefulness, refinement or crudity, harmony or discord, a building that will be a work of art or one that will be aberration.

With an architect of capacity in charge, who has presented a good scheme, and with contractors and other subordinates desirous of producing the best results, no one is as well fitted to weigh and decide such questions as the man who devises the scheme.

It is to be regretted that with the most carefully studied drawings, superintendents do not hesitate to make what they consider slight changes or alterations which they consider improvements. The contractors have a financial temptation, as they can save money by slight changes in detail, method of construction, substitution of a material

or device which is (according to statement) as good as or better than the one specified. In the opinion of the majority of superintendents, such changes are immaterial, as they do not appreciate the importance of the artistic idea. All deviations of this character, whether made by a superintendent or contractor, with the best intention, are with few exceptions detrimental to the building.

When the progress of the building reaches the final stage of color and decoration, no one is so well fitted to pass judgment upon what will properly enhance and express the architecture of the building as the designer of the scheme. The architect must experiment on the actual work so as to determine what is best, as no man can determine, except on the premises, the effect of shades, shadows and reflections on tones and tints, or the effect of one color on the other under the varying conditions which exist in every building.

To produce the best results (only the best results should be considered in connection with monumental work), an architect of training and capacity must be in charge from inception to completion.

The selection of an architect: Although it is considered best for large work to select an architect who has demonstrated his capacity as an executive, constructor and artist in executed work, municipal and national governments usually make the selection by some form of competition.

Competitions as conducted in this country have often failed in producing the result which they aimed to attain, that is, the best arranged structure for the uses intended and the most artistic building for the site and surroundings. Competitions are not a certain means of securing the best building and it is even doubtful if they secure the best design or scheme. Men who have proved themselves capable, are usually busy men and can not afford to spend time and thought on problems where the outcome is so uncertain. A competition in which the competitors have been selected for their known ability, and paid a small sum to partially cover expenses, is the only certain method of securing competent competitors.

A brilliant designer does not necessarily insure a good building. In case the designer's capacity as an executive is unknown, provision should be made to associate him with an architect of known ability. An engineer can not from his education fill such a position on the artistic side of the problem.

To secure the results desired by the client, government, community or the profession, a scheme for competition should be drawn up by a professional expert. It should be a paid competition, the selection should be by a professional jury, and the successful architect should be awarded the work, at the full commission, with a guarantee that the competitor will have charge of the execution of the work.

The competitions for government work, conducted by the Treasury Department, under the Tarsney Act, have proved very satisfactory. The scheme for the competitions have been drawn by Mr. J. K. Taylor, supervising architect. The competitors are selected. The awards have been made by a jury of three or more experts. The decisions of these juries have met the approbation of the profession after the various drawings submitted have been published or exhibited. The programs being drawn by an architectural expert have fulfilled the various conditions necessary to make the preparation of drawings the least bur-

densome, and so as to secure a selection purely upon the merit of the scheme.

One important feature has been unfortunately and unjustly eliminated in these competitions, the payment of each competitor for the actual expense of making sketches. The work in each case has been awarded to the successful competitor, who has been paid 5 per cent on the cost of the building for architectural service with one exception.

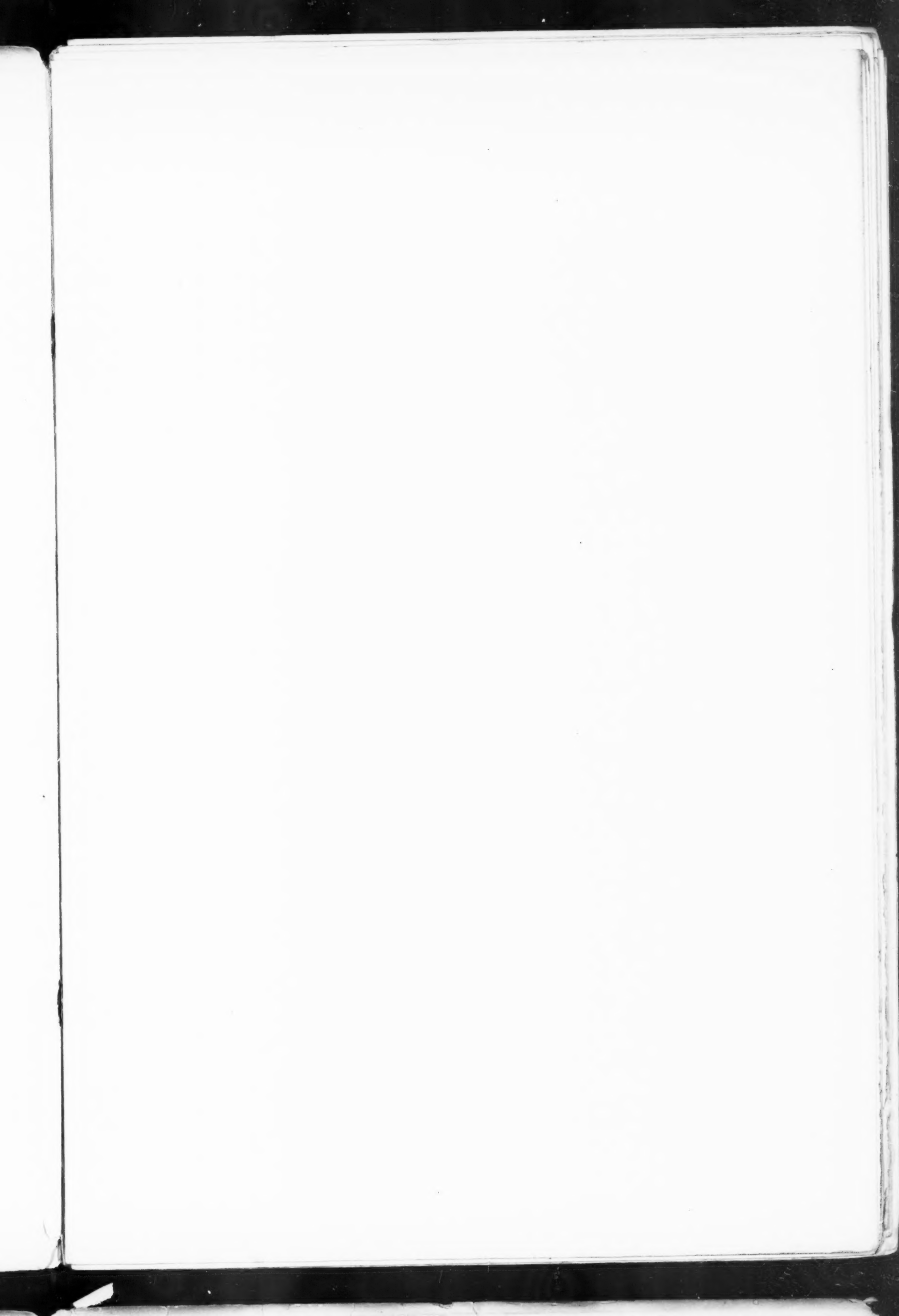
The system adopted by the Treasury Department has been the cause of other government buildings being given out by competition, conducted on similar equitable lines. The Municipal building of the District of Columbia, in which each competitor was paid \$500, the Agricultural building, the Municipal Hospital for the District of Columbia, the building for the insane asylum, and the group scheme for the War Department at West Point. In the latter competition each competitor was paid \$2,000, while the average expense or cash outlay of each architect was \$3,000.

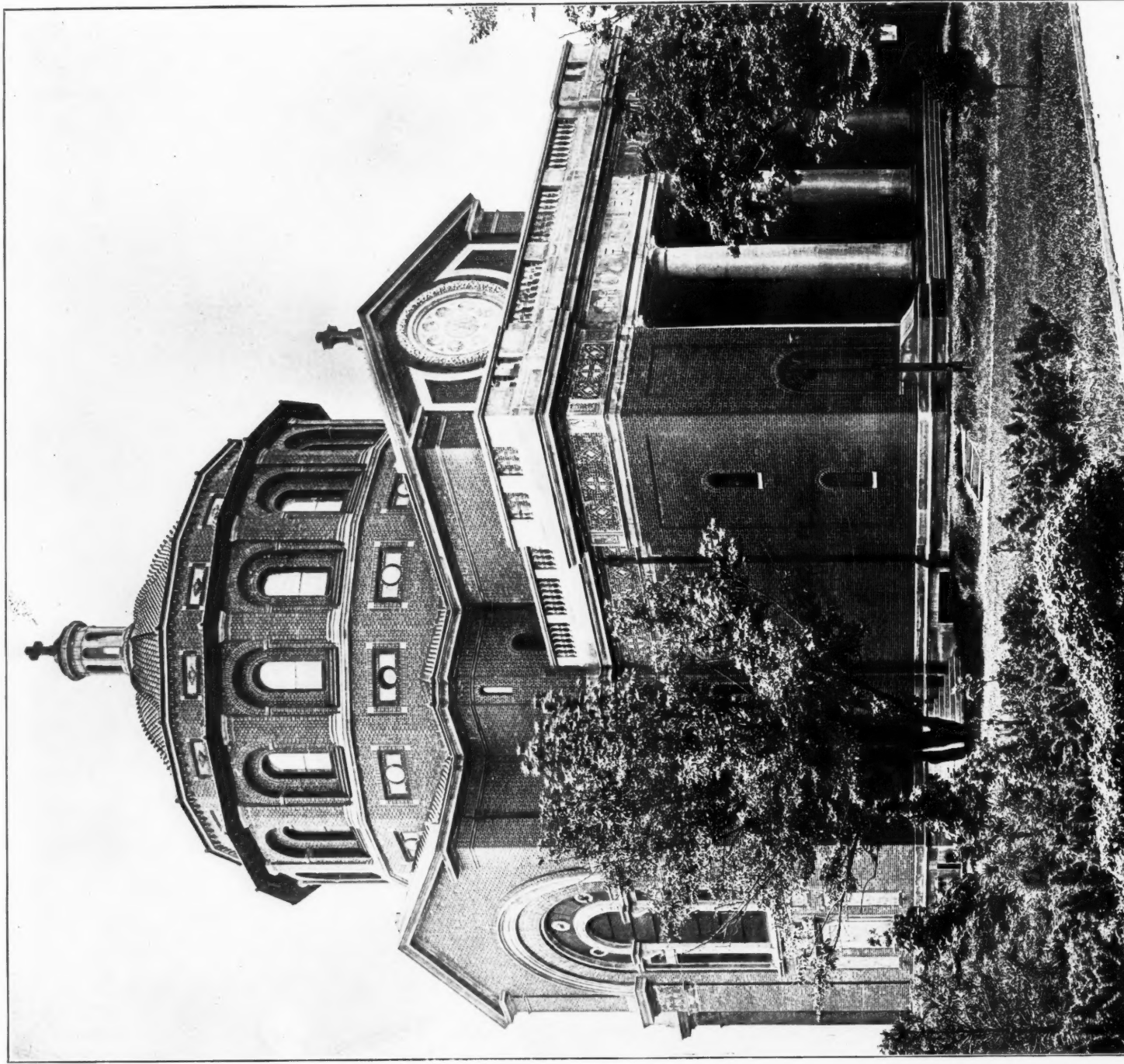
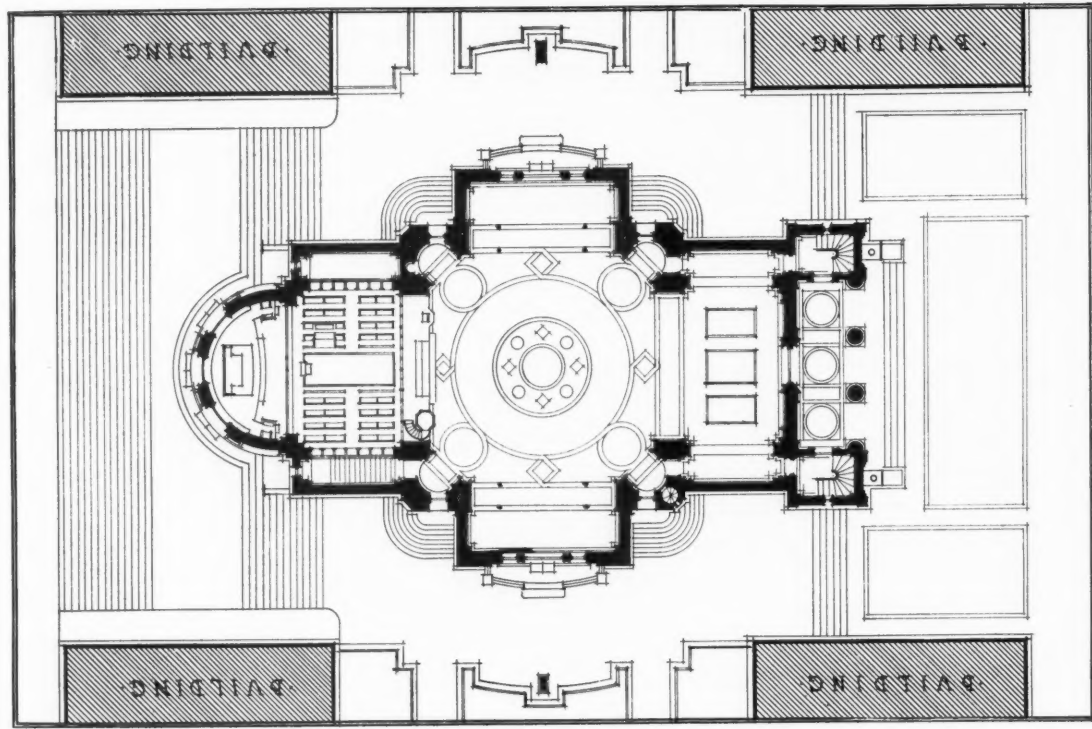
The result of the competition for the Agricultural Department was satisfactory, but, unfortunately, after the award was made the Secretary of Agriculture removed the architects and appointed others, because of a dispute over the amount of service to be rendered by the architects, the Secretary being determined to limit their service to the preparation of plans, and the architects claiming a contract to have full charge. This decision has been very unfortunate for the community and for the art interest of the country, as only the best results can be obtained by the architect superintending as well as designing.

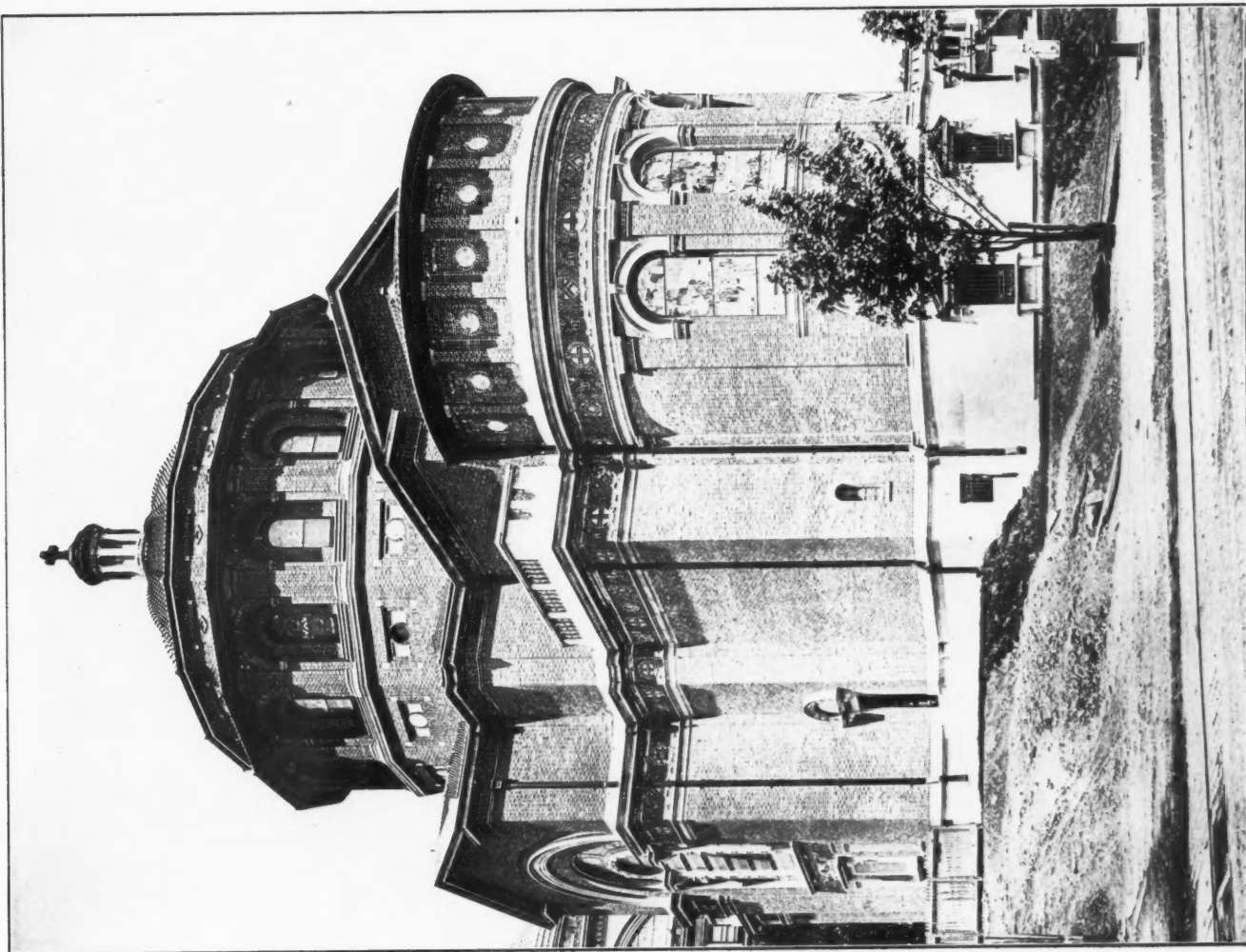
In France, where the subject of both art and economy has been most thoroughly studied and where they have had the advantage of a long accumulated experience, architects are selected on definite and well considered lines. The government has a technical body of experienced men, in which architects predominate, called a building council, to whom all questions relating to government buildings are referred. This council employs the architects who have won the Prix de Rome after their four years' sojourn and study in Rome in the position of auditors and examining experts. After testing their capacity the government selects from these highly educated and capable artists as vacancies occur the architects for municipal, national and historic buildings. Architects for gothic work are selected from men who have proved their fitness in ecclesiastical work.

The council may select an architect for special qualifications adapted to the work, or a secretary of a department may appoint an architect on the approval of the council, who thus protects himself from outside pressure and political intrigue. Before the work commences the plans must be approved by the council. The council also has charge of selection by competition. The men who have won the Prix de Rome have almost, without exception, proved successful in the competitions for large government buildings, while the council of architects protects the government interest.

Each Russian ministry has its technical council, who are entrusted with questions of building and who must approve all designs. They select for their more ordinary buildings architects who have passed a course of study in a government school of architecture and are known as court or palace architects. The technical committee conducts competitions and selects designs or makes direct selection, according to the fitness of the architects for the work to be undertaken. [To be continued.]

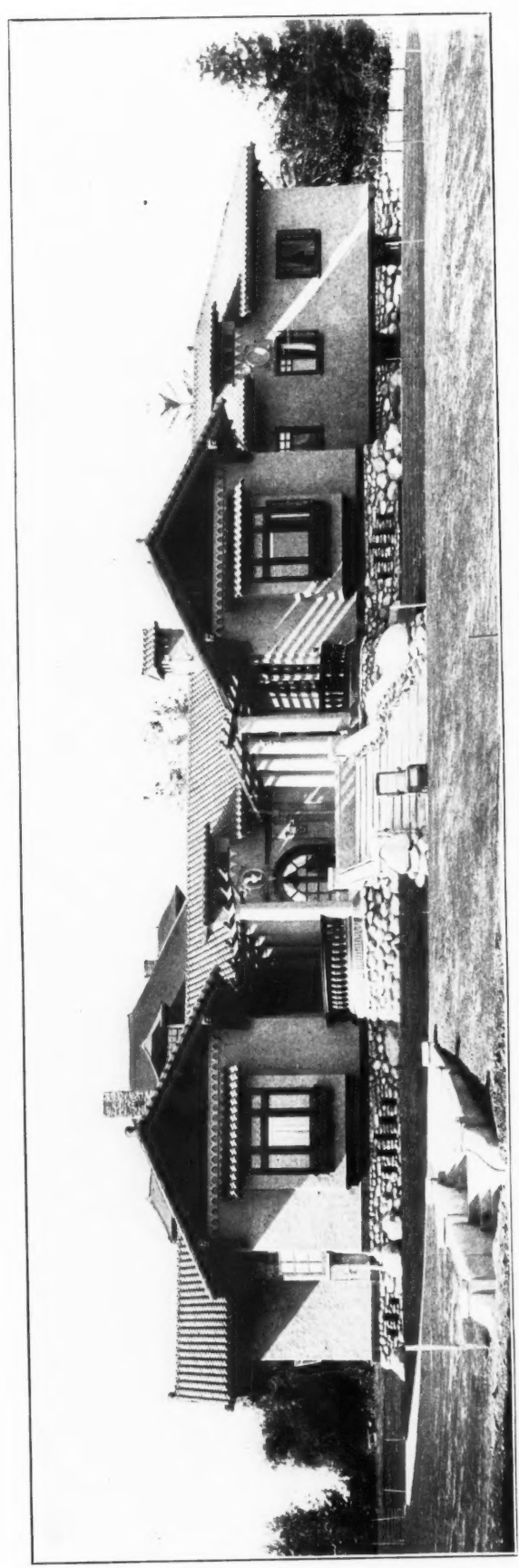




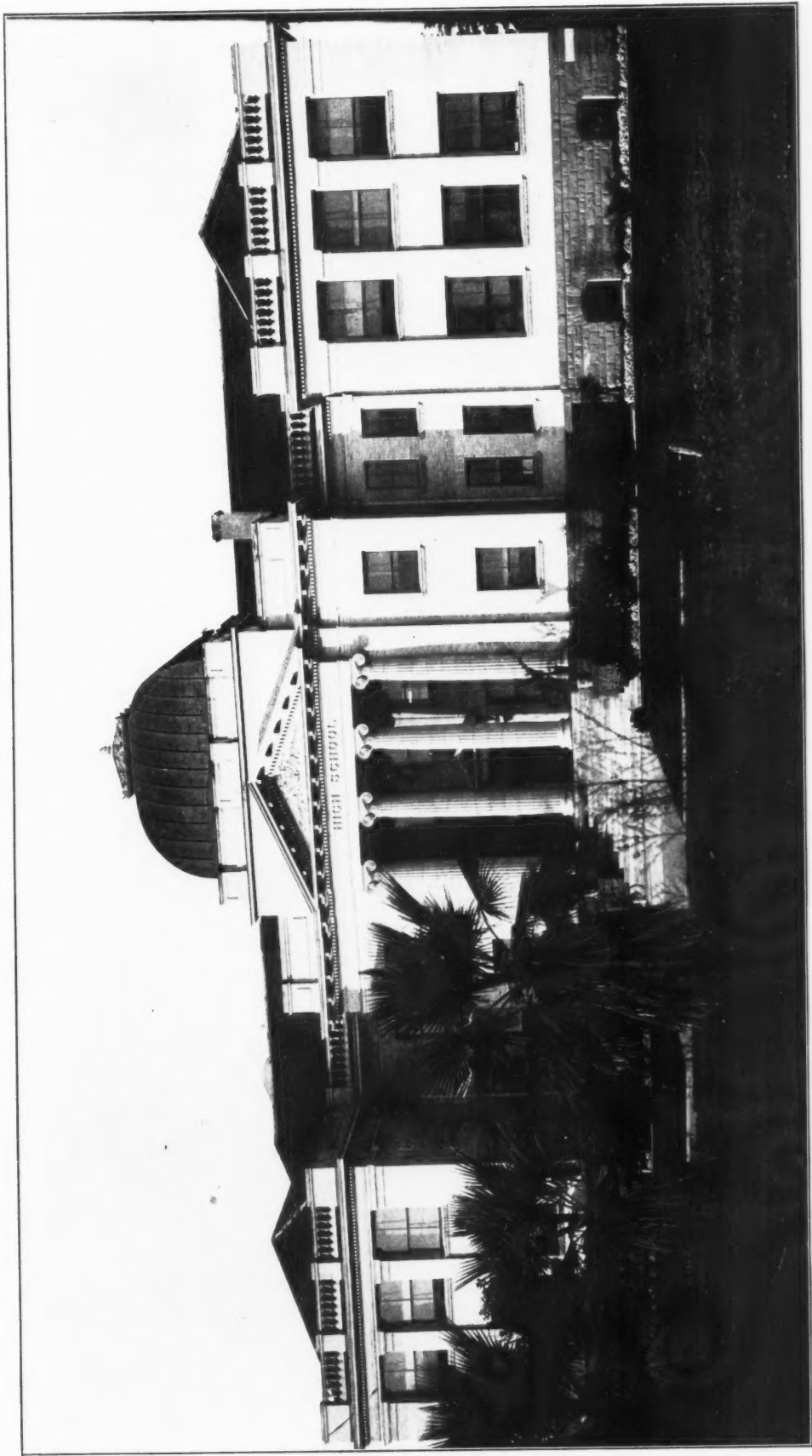


CHAPEL, COLUMBIA UNIVERSITY, NEW YORK.
HOWELLS & STOKES, ARCHITECTS.





RESIDENCE OF CLAYTON GARVEY, PASADENA, CAL.
F. L. ROETRIG, ARCHITECT.



HIGH SCHOOL BUILDING, PASADENA, CAL.
STONE & SMITH, ARCHITECTS.



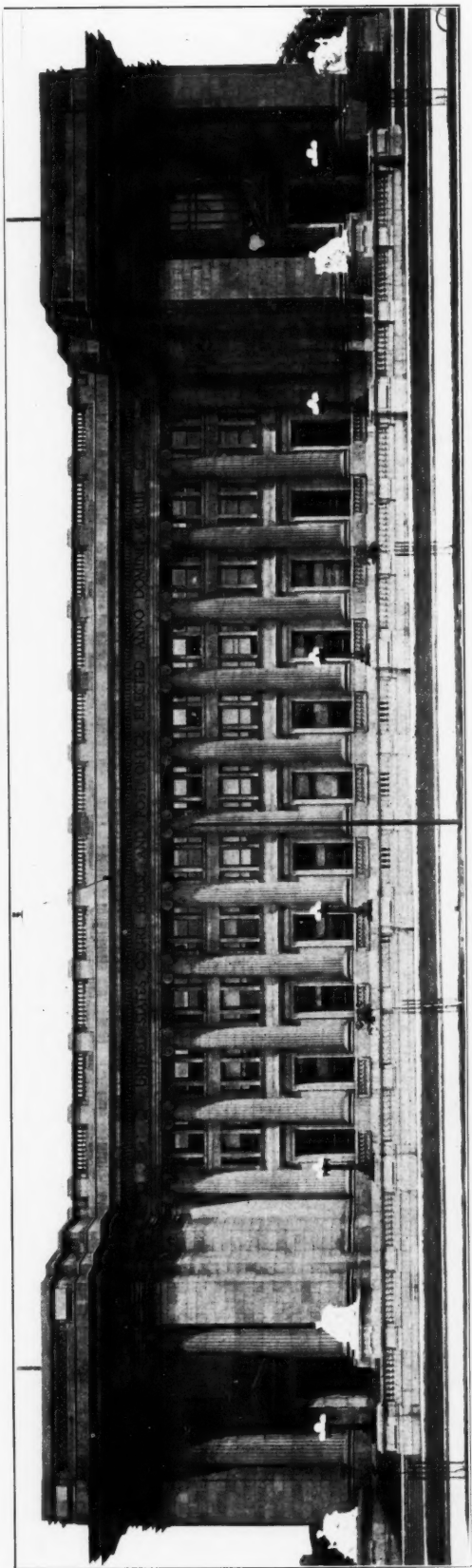
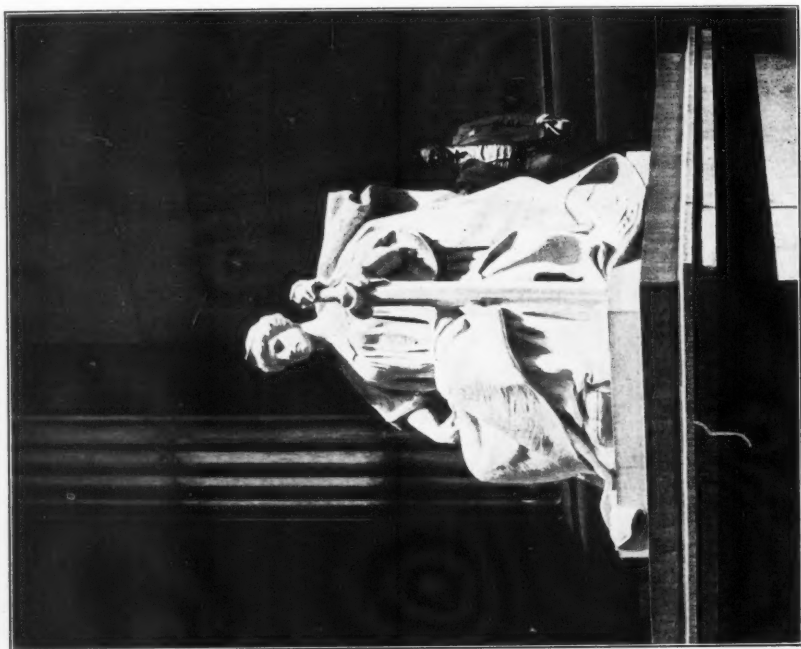
VIEW IN CORRIDOR, MAIN FLOOR.

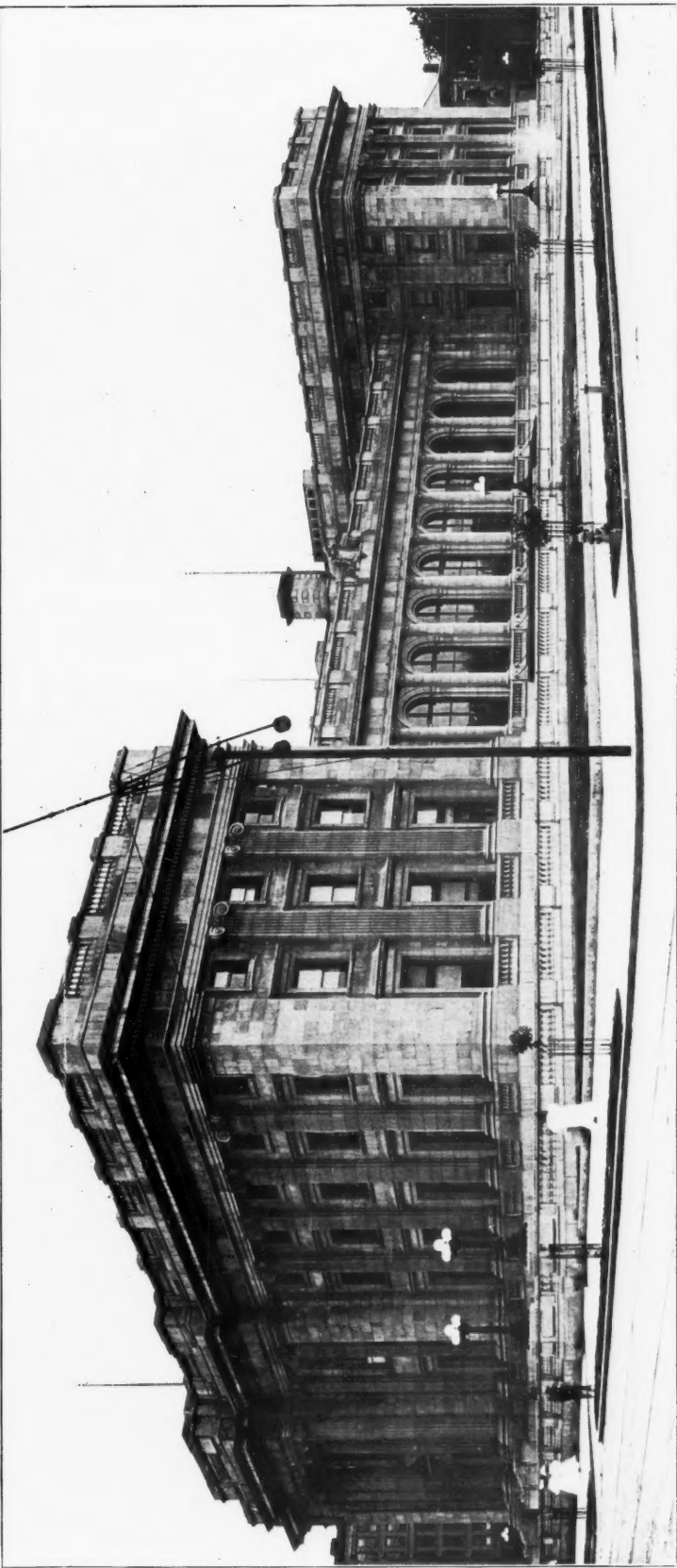


VIEW IN LIBRARY.

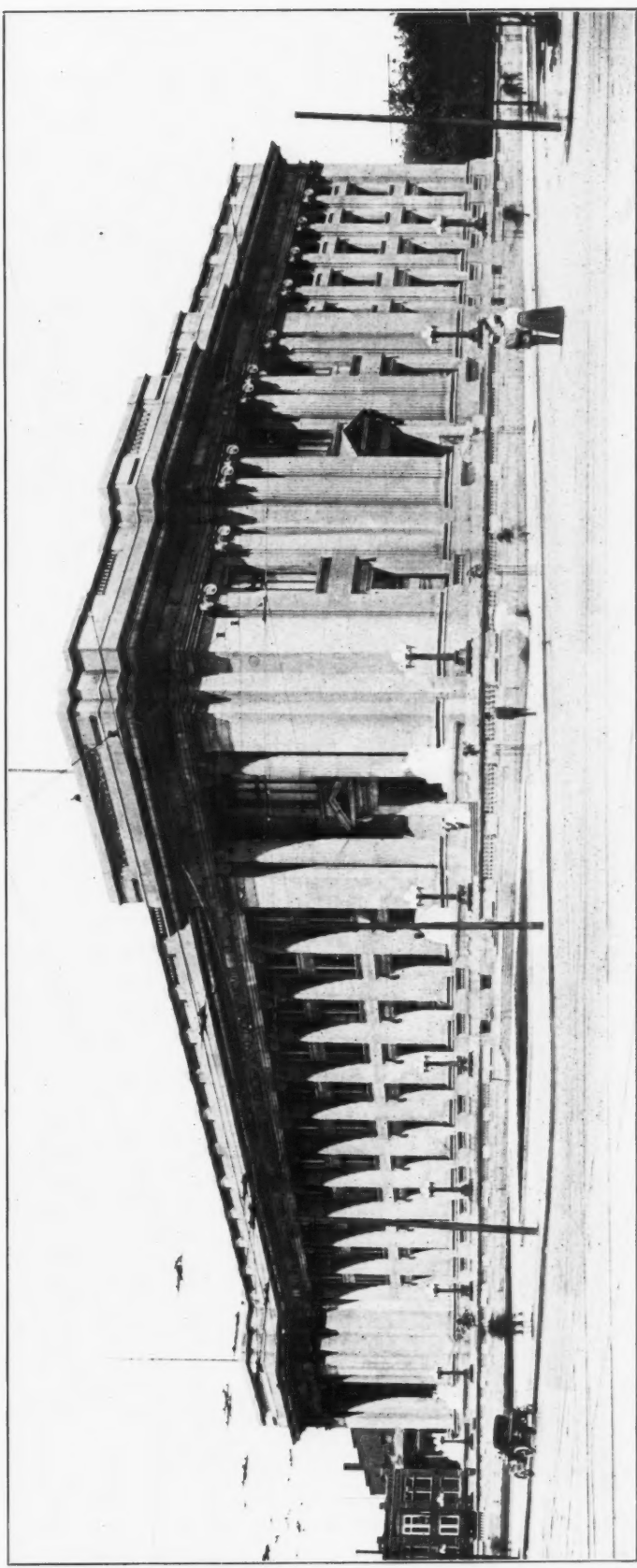


VIEW IN COURT ROOM.



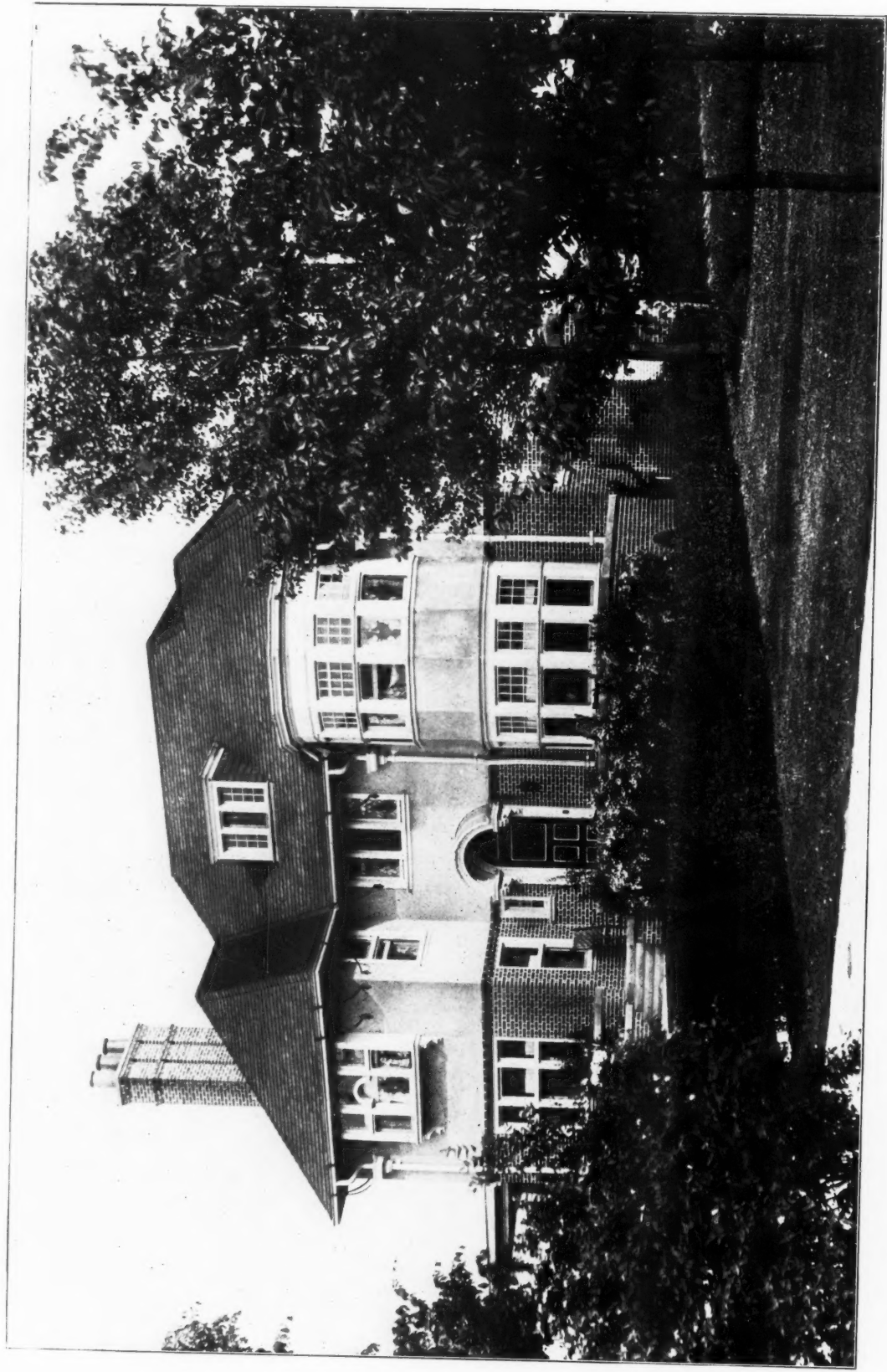


REAR VIEW.

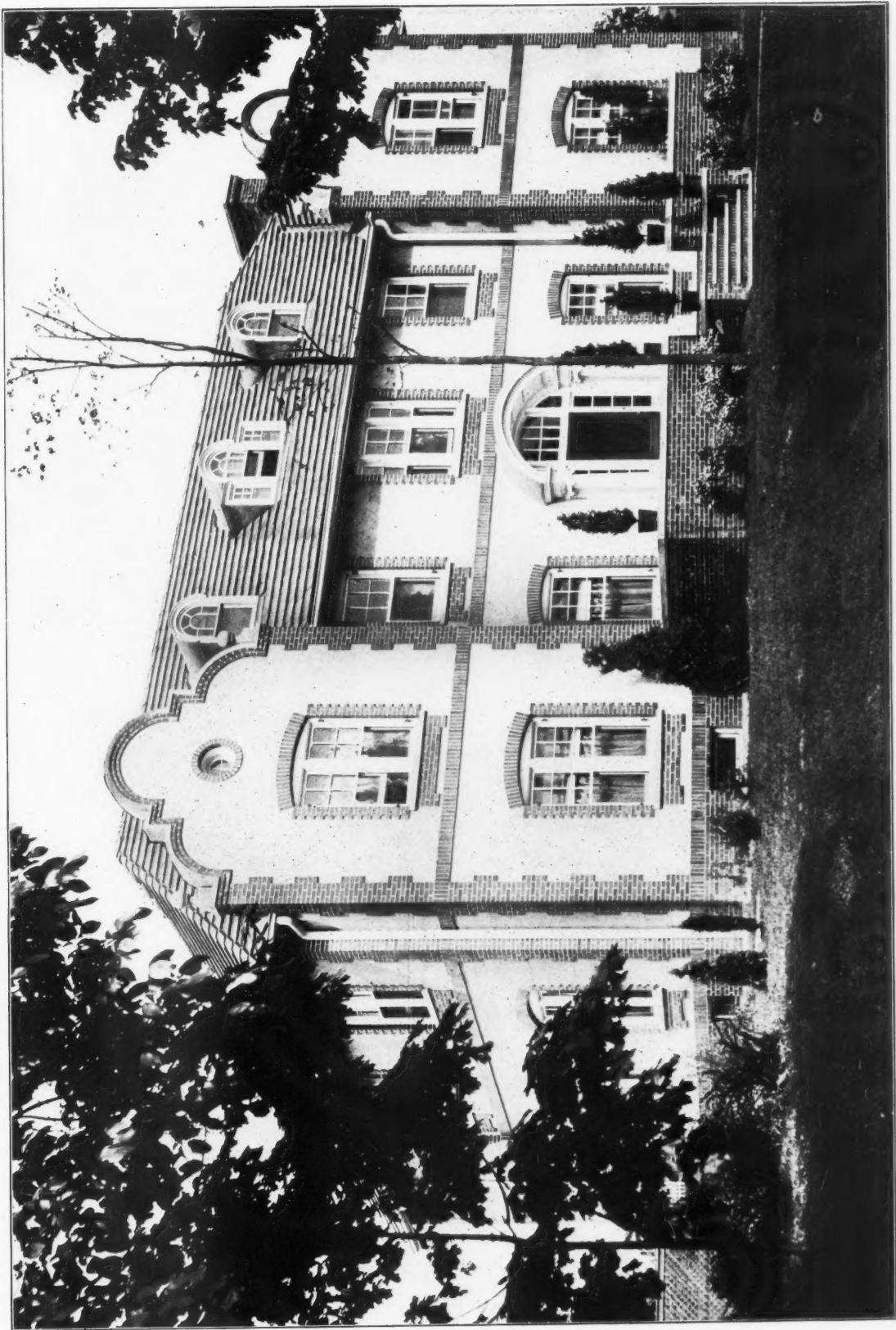


FRONT VIEW.

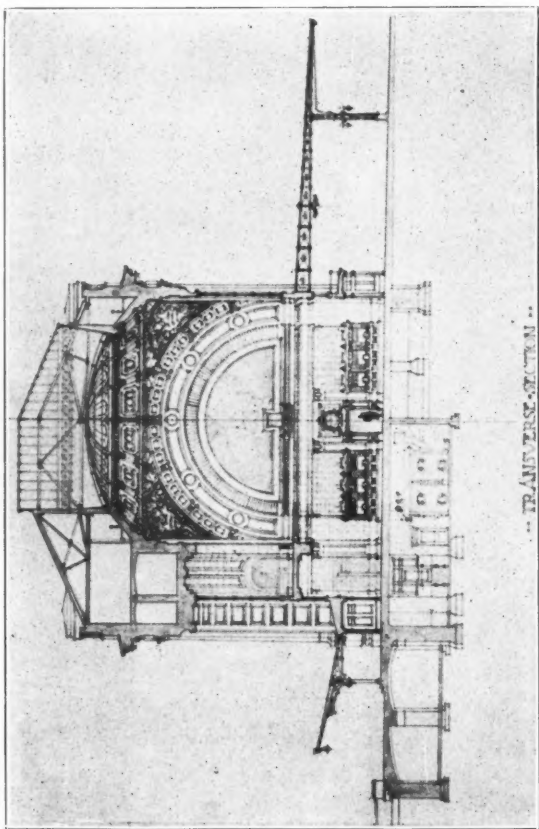
UNITED STATES COURT HOUSE AND POST OFFICE, INDIANAPOLIS, IND.
 RANKIN & KELLOGG, ARCHITECTS, PHILADELPHIA.
 STATUARY BY J. MASSEY RHIND, NEW YORK.



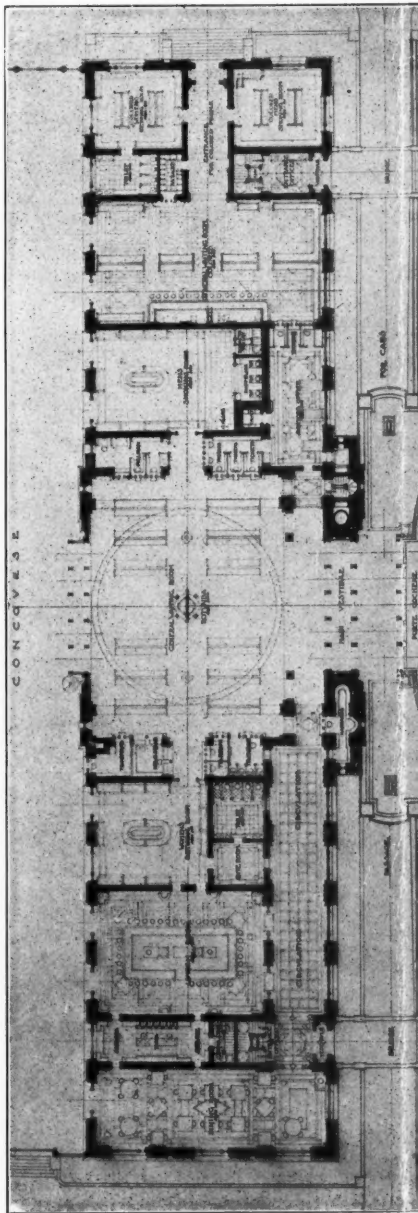
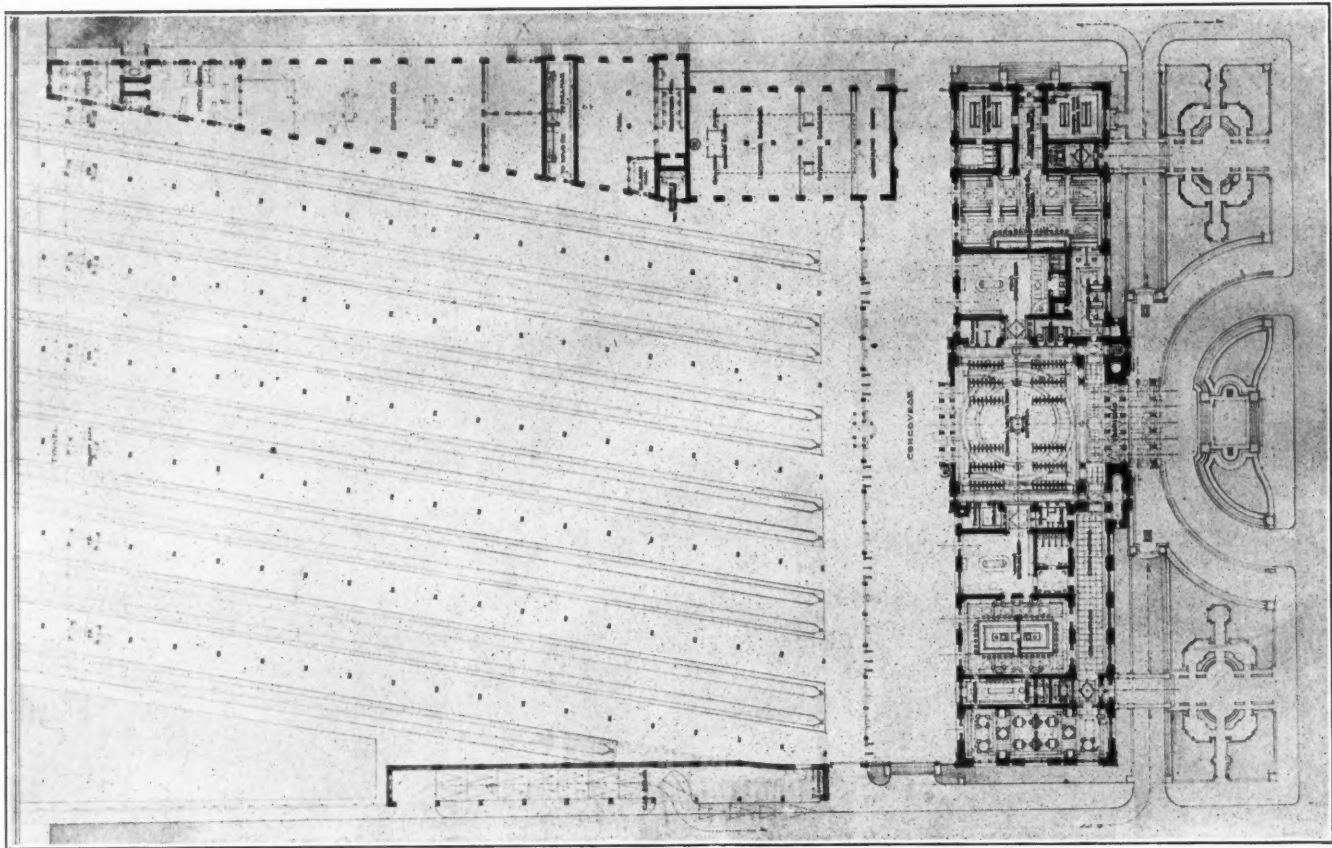
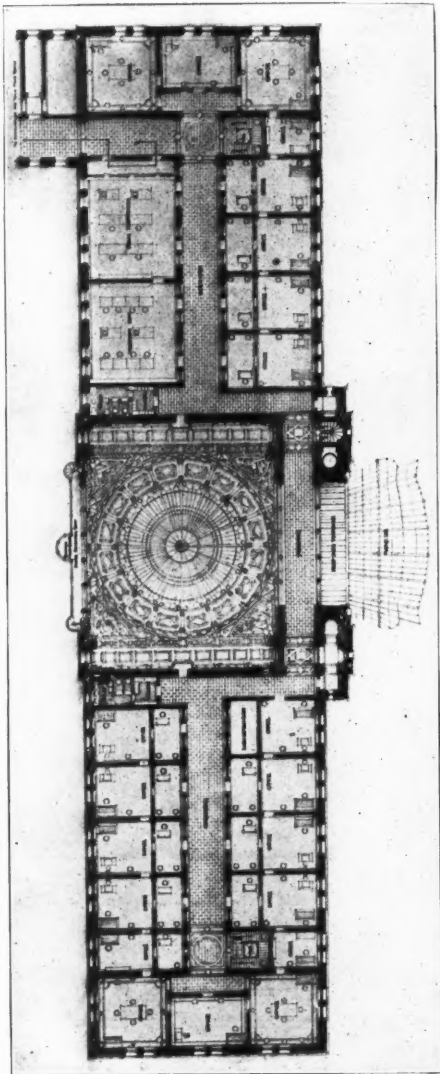
RESIDENCE OF F. H. HOLTZ, DETROIT, MICH.
ALBERT KAHN, ARCHITECT.

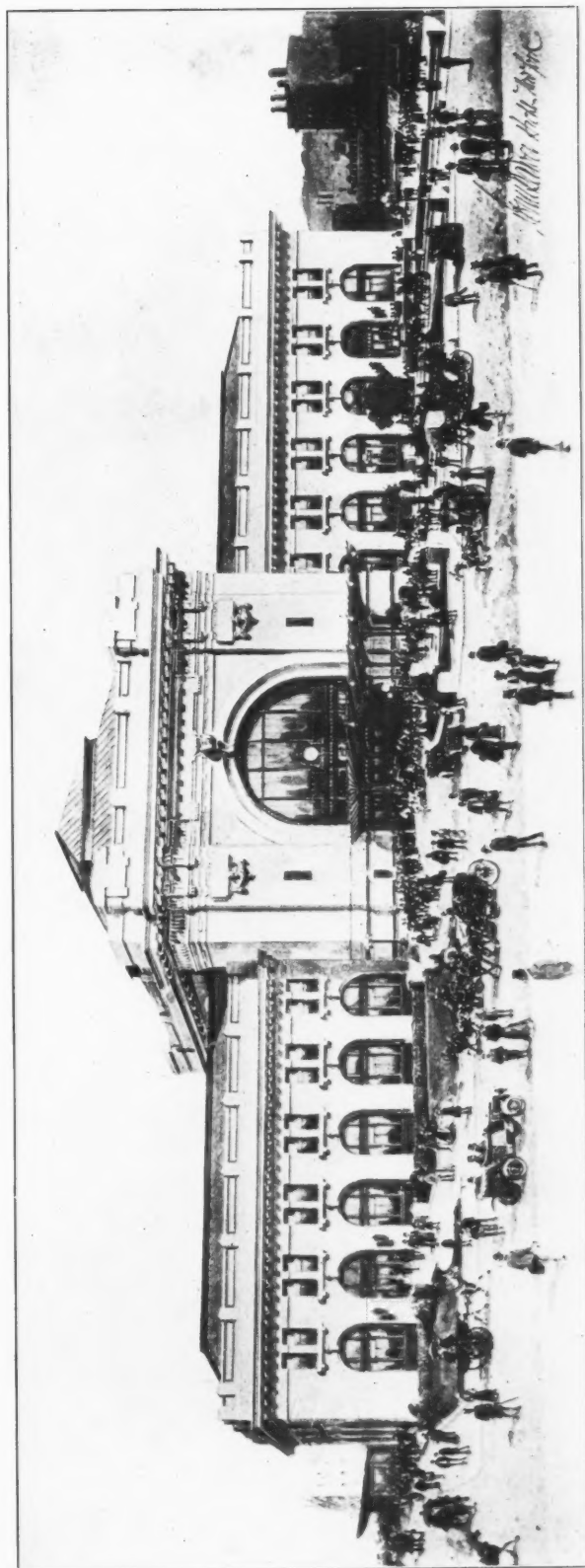
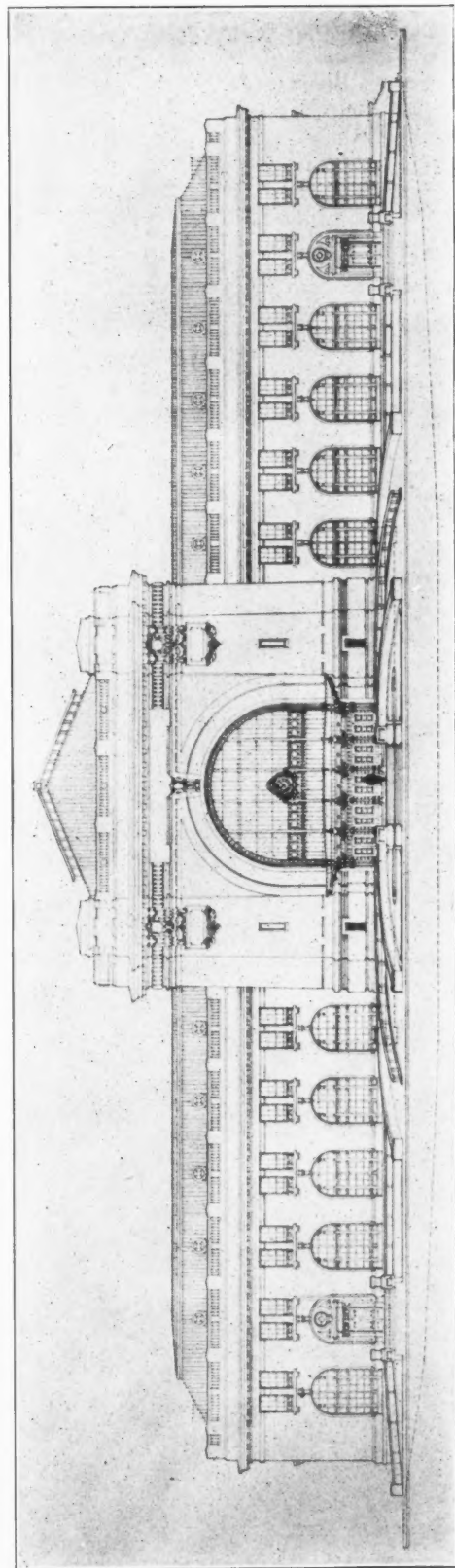
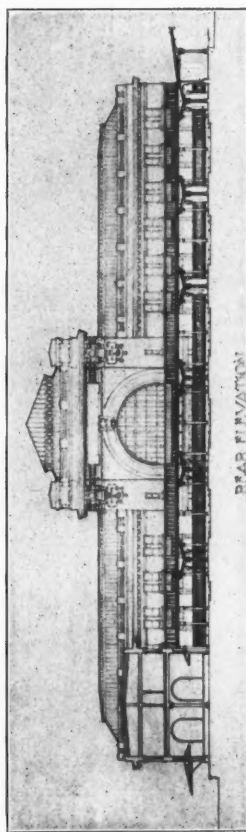
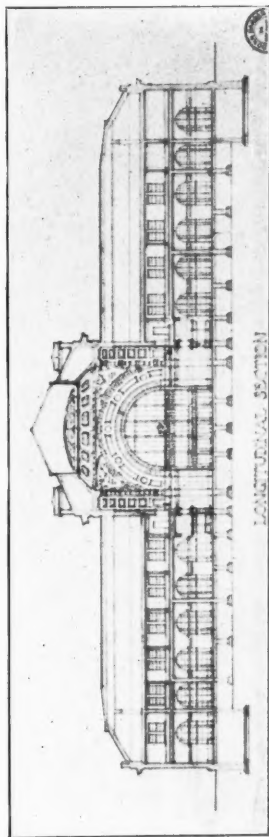
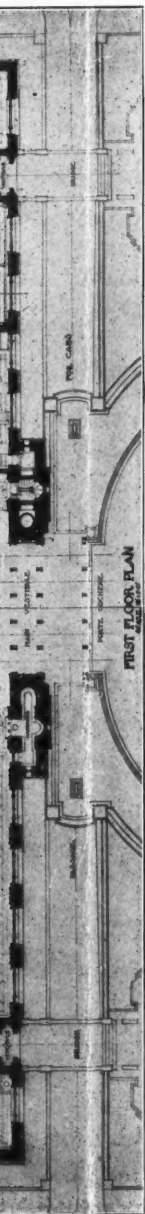


RESIDENCE OF JULIUS HAAS, DETROIT, MICH.
A. W. CHITTENDEN, ARCHITECT.



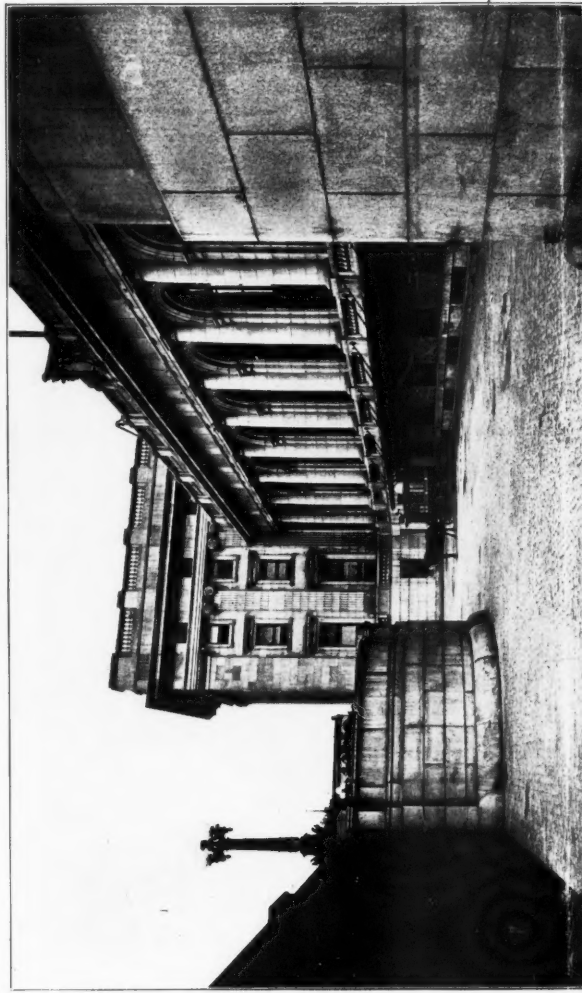
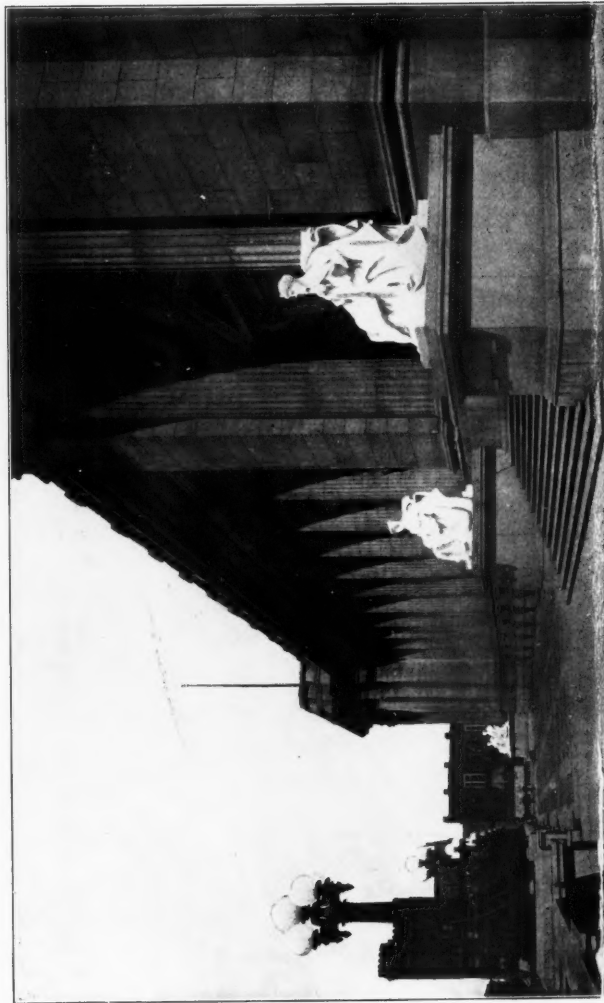
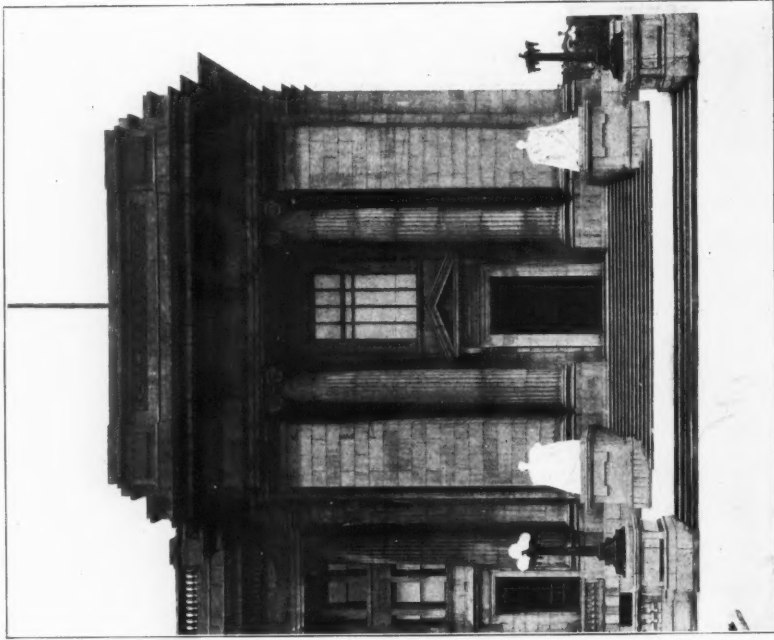
TRANSVERSE SECTION





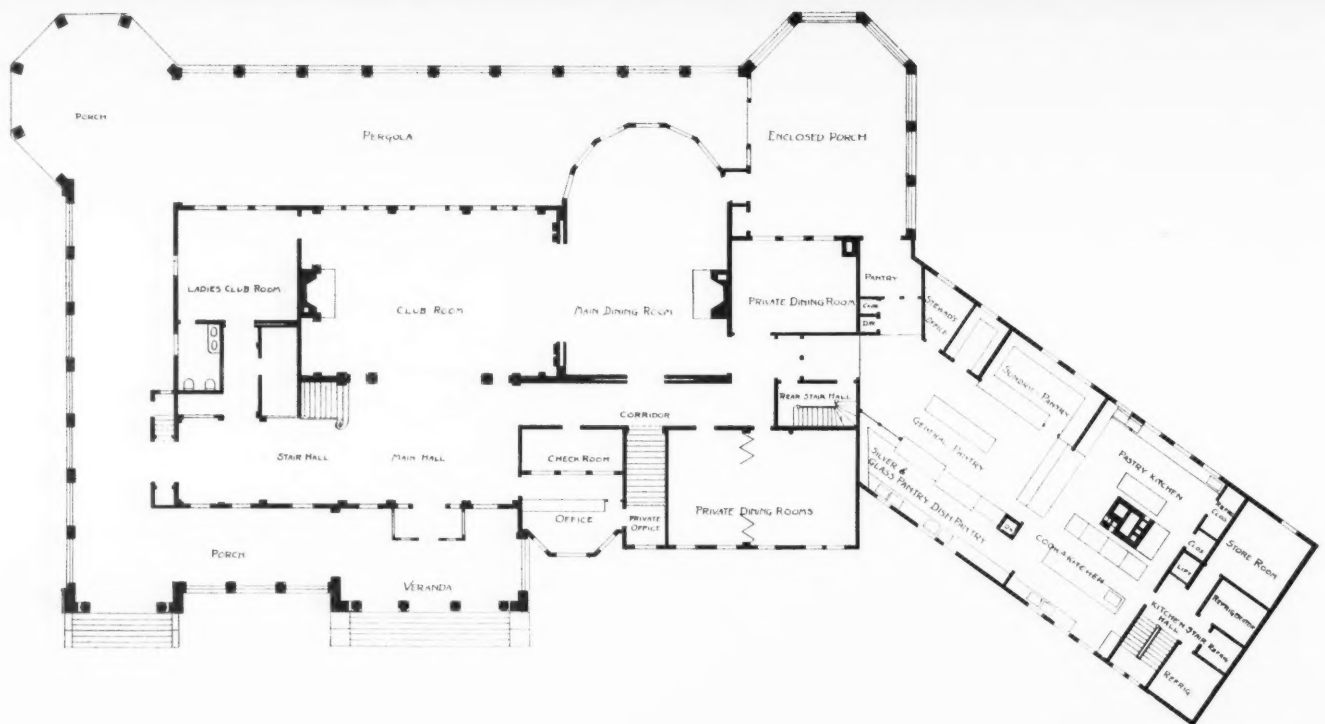
SUCCESSFUL COMPETITION DESIGN FOR RAILWAY STATION, CHATTANOOGA, TENN.

DONN BARBER, ARCHITECT, NEW YORK.

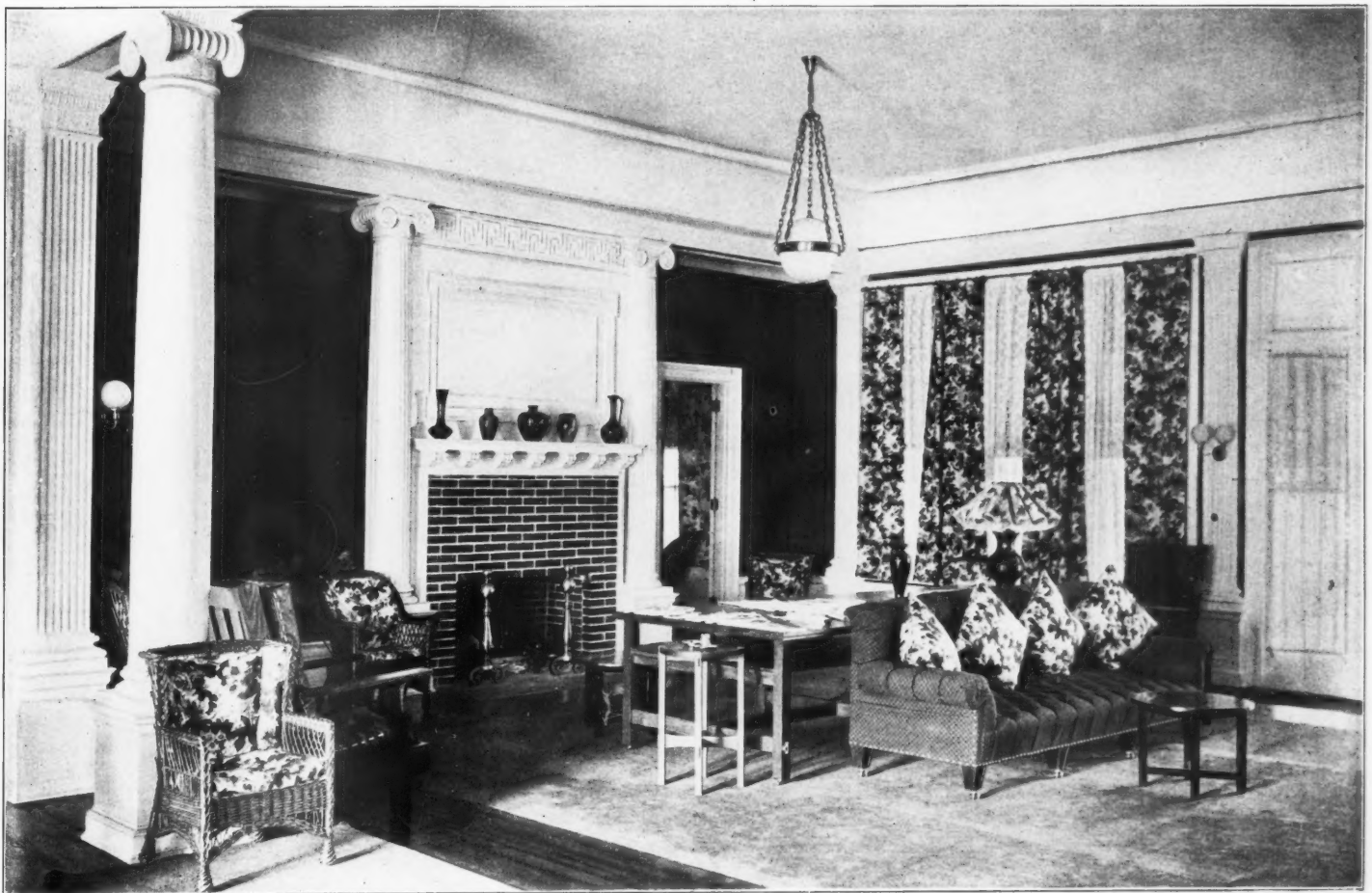




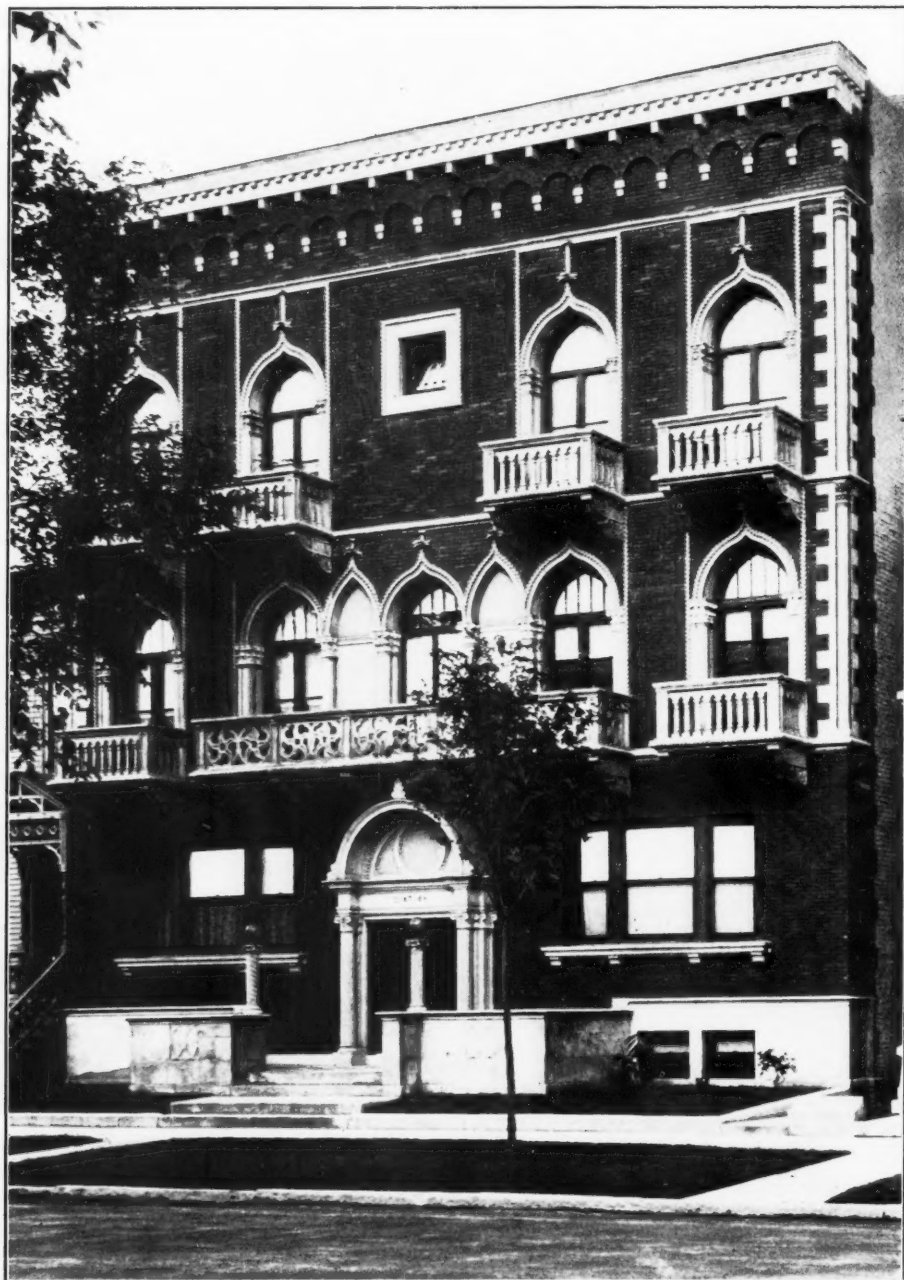
UNITED STATES COURT HOUSE AND POST OFFICE, INDIANAPOLIS, IND.
RANKIN & KELLOGG, ARCHITECTS, PHILADELPHIA.



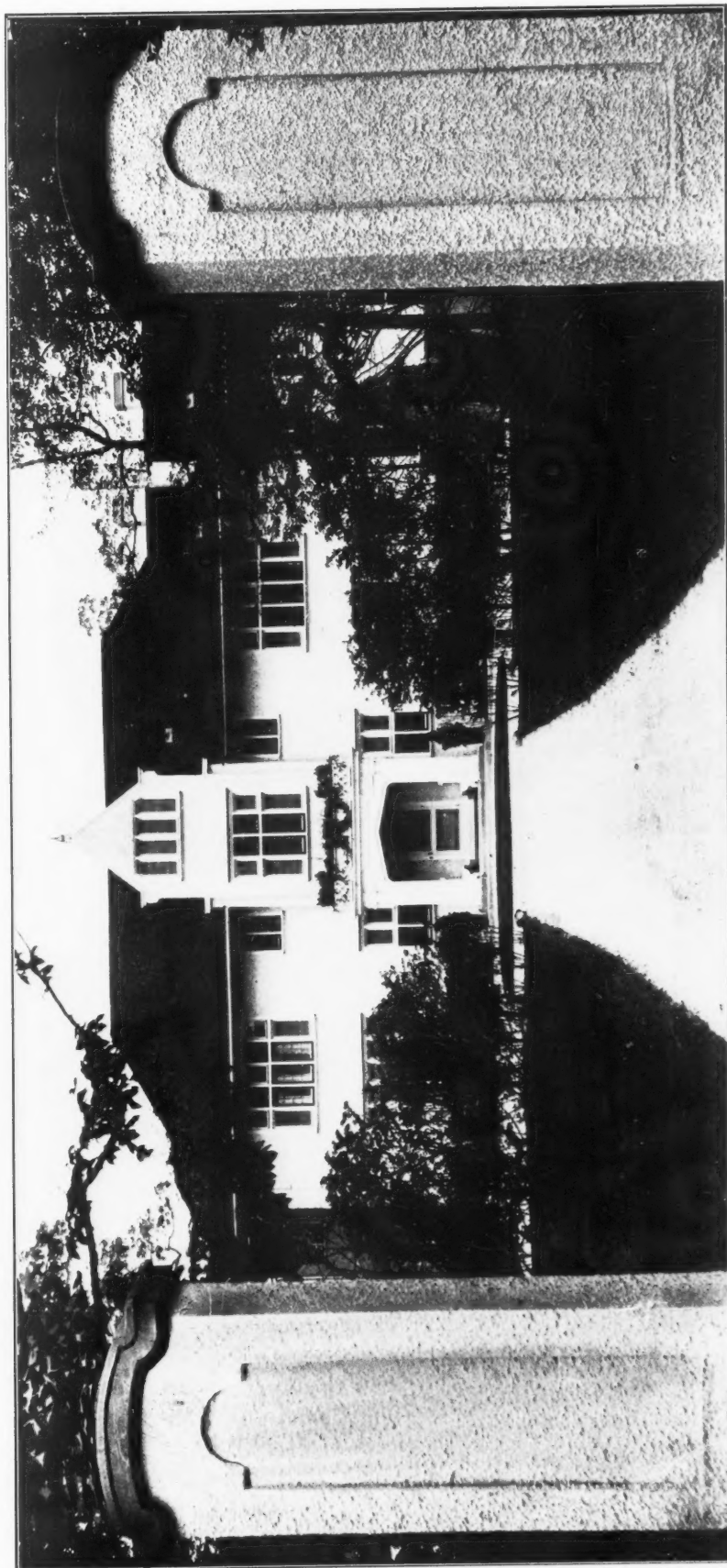
COUNTRY CLUB HOUSE, E. WALN
ELZNER & ANDERSON



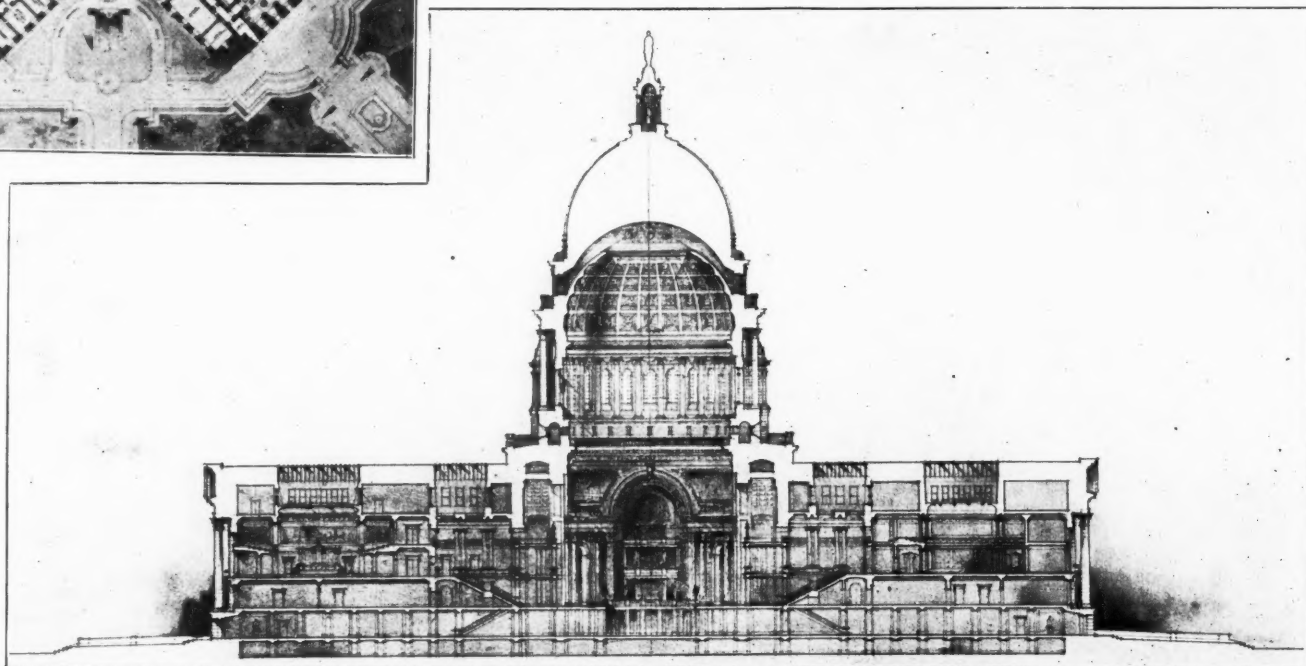
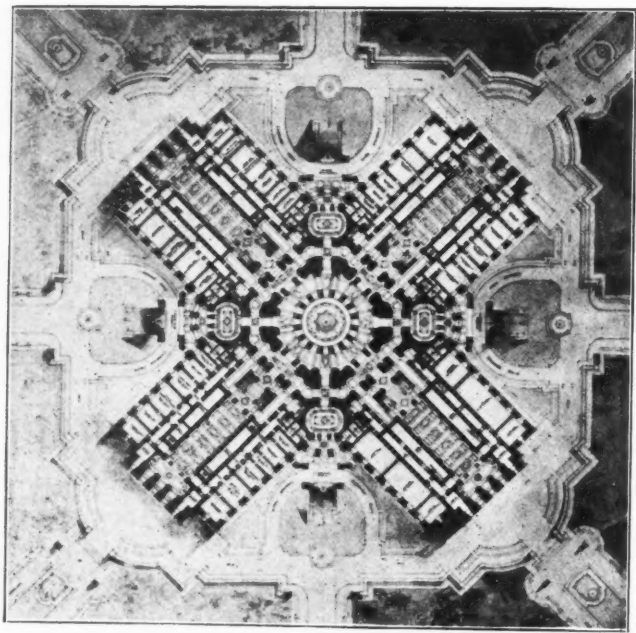
E. WALNUT HILLS, CINCINNATI, OHIO.
& ANDERSON, ARCHITECTS.



APARTMENT BUILDING, CHICAGO.

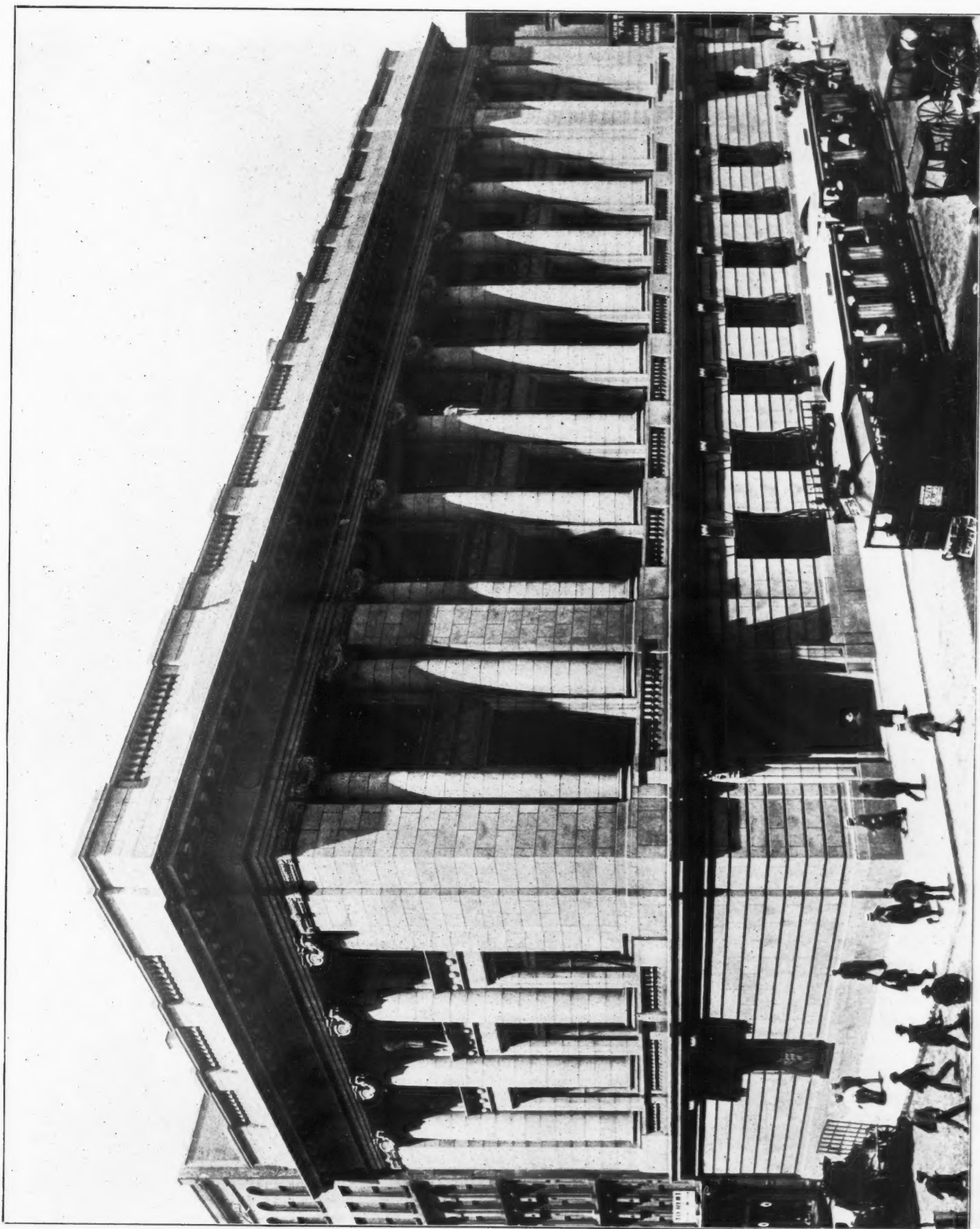


RESIDENCE OF C. B. PIKE, LAKE FOREST, ILL.
ARTHUR HEUN, ARCHITECT, CHICAGO.



SUCCESSFUL COMPETITION DESIGN FOR WISCONSIN CAPITOL, MADISON, WIS.

GEORGE B. POST & SONS, ARCHITECTS, NEW YORK.



BUILDING FOR NORTHERN TRUST CO., CHICAGO.
FROST & GRANGER, ARCHITECTS.



PARKS AND GARDENS OF SOUTHERN CALIFORNIA

BY W. L. B. JENNEY, ARCHITECT

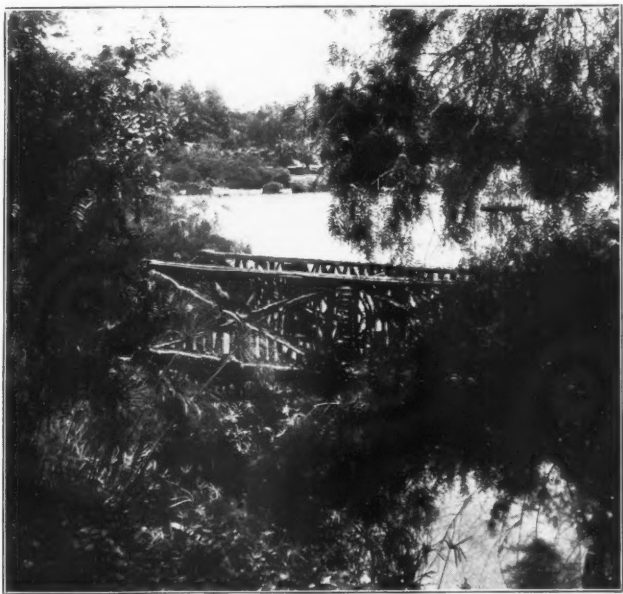
WEST LAKE PARK, LOS ANGELES, CONTINUED

AGAIN we rush on, beautiful cottages on either side of the track, most of them with a garden located on a lot sloping up from the railroad track, with tall hills beyond and to the North the mountains still more in the distance. The hills are very pretty. Depressions on the hill sides



IN THE CENTER IS A PRETTY LAKE

and the entrance to the canyon are dotted with cottages grouped amid the trees. The tall cyprus, the graceful pepper, and bunches of the handsome live-oak often becoming extensive groves and giving a rich, deep green to the hill side. We crossed the Arroyo Seco, which is soon to become a beautiful park, crossed or bordered by the Pasadena and Los Angeles boulevard.



OVER A BRANCH OF THE LAKE IS A RUSTIC FOOT BRIDGE

Los Angeles is truly a city of cottages in its residence quarter. They are much varied in design, pleasingly painted and always surrounded by a garden, which often is very pretty. In these gardens, between the house and the street, are frequently some exceedingly fine trees, palms and the magnolia granda flora, with its great beautiful white flowers and other flowering trees, almost unknown in the East.

By the side of the Arroyo, which is already a natural park and a very pretty one, is the little ostrich farm, where 250 gigantic birds are advertised. Its park-like entrance, bordered by palms and large trees is strikingly pretty. Just beyond is Lincoln Park, a residence quarter, with the Mon-

terey Road at the foot of the live-oak hills, on which is being built the Wentworth Hotel. Although a modern and very fine hotel, it is not of the palatial type, cold and magnificent, but cosy, easy and home-like, rich and warm in color, reminding one of the pleasing country hotels one admires so much in parts of Germany and Switzerland.

As we pass on toward Los Angeles, again we find the sloping lot covered with pretty cottages and gardens. When the road rises, or the hills depress, the mountains to the North in the extreme distance come more into view, Mount Lowe, Mount Wilson, Old Baldy, which usually in winter is snow-capped, often contrasting so forcibly with the warm weather in Pasadena. Then there is seen in the



THERE ARE SOME VERY GOOD TREES WITHIN THE PARK

extreme distance the romantic Mount Fernando, just to the south of Camulos, now famous as the home of Ramona, much frequented by tourists.

Our two friends agreed to explore the Arroyo Seco Valley at an early date, get horses and climb well up toward its source. It is so beautiful in its natural state that they anticipated a delightful trip and trust that the park will be put in able hands.

We stopped at the Alexandria Hotel, at the famous Mission Indian Grill Room, a cool restful spot. The light, coming through the ceiling in beautiful ornamental glass panels from powerful electric lights in reflectors, no light is visible.



TALL WATER-GRASS PLANTED IN THE WATER

Everything connected with this grill room is rather remarkable, quite as much so as the Grill Room of the old Palace Hotel of San Francisco, that so many of us remember so well.

[To be continued.]

THE PLANNING OF HOSPITALS.

BY T. M. CLARK, ARCHITECT.

PART XI.

AS a hospital establishment increases in size and complexity, the number of nurses employed in it increases in still greater ratio, and these highly-trained, patient and devoted women should have their comfort and health provided for, either by setting apart a portion of the administration building for their use or by giving them a house of their own in some pleasant part of the hospital grounds, where, during their hours of rest, they may not be reminded of their difficult and trying duties. Many large hospitals not only employ but train nurses, and, where this is done, at least one lecture room must be provided, in which anatomy, physiology and hygiene can be taught, as well as a library and a model kitchen, where students can learn by practice the important art of cooking for the sick, and a workroom for instruction in preparing bandages and similar duties.

Even before the nurses, the servants should be removed, in a large hospital, to a building by themselves, both to keep them out of the way of the nurses, and to avoid the panics which contact with the sick often excites in them. Usually the servants' building will contain the kitchen, which is the scene of their principal avocations, as well as the accessory store rooms, and it should be under easy surveillance from the administration building, to prevent surreptitious removal of supplies. The laundry, which must be large enough to accommodate the necessary machinery, may be connected with the kitchen, or, if the hospital is an extensive one, may occupy a separate building. In this case, however, it is best to have the laundry maids sleep in the kitchen building, and to have the laundry itself only one story high, the steam and dampness from it being unfavorable to the comfort and wholesomeness of bedrooms above. A mortuary house must occupy a secluded corner of the hospital grounds, and with this are usually connected one or more autopsy rooms. Whether an ambulance stable should be provided within the hospital enclosure will depend upon circumstances; but, even without this, there will be men servants, who must have their own quarters.

A large hospital group generally comprises two or more infectious wards, to which can be taken patients from the general wards in whom an infectious disease has declared itself, as well as patients from outside. Such wards are usually made only one story high, and should be isolated from the general wards, without, however, being so separated from the main group as to make it difficult to supply them with fresh air and cooked provisions from the common source, or to give them proper supervision. As the nurses and physicians must pass between them and the administration building, it is desirable to arrange a disinfecting room, where they and their clothing can be quickly purified, as they leave the infectious wards on their way to other duties. The best form of disinfecting room for this purpose consists really of two small dressing rooms, a bathroom and an airtight closet. The bathroom opens into both the dressing rooms, and the nurse, coming from the infectious ward, enters the first dressing room and, leaving her clothes there, passes to the bathroom for a bath in water to which she may

add corrosive sublimate solution. While she is in the bath her clothes are put into the airtight closet by an attendant, and fumigated with vapor of formaldehyde; and, on leaving the bathroom, she enters the second dressing room, where she finds her clothes, thoroughly disinfected, awaiting her.

BUILDINGS FOR TUBERCULOUS PATIENTS.

Tuberculosis of the lungs, or consumption, is now generally regarded as an infectious disease, and for this reason tuberculous sufferers are, as a rule, excluded from the general wards of hospitals; yet, as the infectious character of their disease is not very strongly marked, they are not allowed to occupy contagious wards, or free hospitals, which may at any time be needed for cases of diphtheria or smallpox, which require immediate and complete isolation; and the result is that those attacked by the most prevalent of all dangerous maladies, the great majority of whom are refined and delicate persons, are very commonly obliged either to seek refuge in a pauper institution or to endure at home, through many months and amid unfavorable surroundings, the sufferings of a slow and painful disease, which might have been cured if properly treated in the early stages. Of late years the unfortunate position of consumptives in this respect has been recognized, and hospitals and sanatoria intended especially for them are being built in many places; but the number is still far too small to accommodate even the most urgent cases of a disease which in this country destroys one-fifth of all who die; and such hospitals as are provided are not always so well arranged as they might be for the treatment of those who are to occupy them.

No persons are so dependent upon the arrangement of the buildings in which they live as sufferers from tubercular affections. A patient with incipient tuberculosis will often recover perfectly under certain conditions of habitation and surroundings, without medical treatment, where the same patient would get worse and die under different conditions; and the study of the circumstances which experience has shown to be favorable in such cases is of great interest and importance.

It is now known that tuberculosis, whether in the lungs, the joints, the glands or elsewhere, is caused by microscopic organisms, probably of vegetable nature, which, if received into the lungs under suitable conditions, grow and reproduce themselves with great rapidity, very much as the germs of blood-poisoning grow and multiply in a wound, or those of yellow fever in the blood. The tubercle bacillus, which is a tiny rod, about one six-thousandth of an inch in length, is of less robust vitality than some other germs, but it is very virulent in its action, and prepares the way for other organisms, with which it acts to break down the tissues into ulcerous matter, at the same time that it generates a poison which affects the nervous system.

When matter containing the bacilli of tuberculosis falls upon the floors, walls or furniture of a room, and dries there, the germs are set free by the drying of the moisture, and, if disturbed, float in the air, ready to be

drawn by the act of inhalation into the lungs of a fresh victim, where a single germ, if the subject is in a susceptible condition, may start fatal tuberculosis. Moreover, it is agreed by physicians in charge of hospitals for consumptives that patients with tuberculosis are, in certain stages of the disease, very liable to reinfection, and that a fresh infection is likely to have serious consequences. It is, therefore, of the first importance, not only to consumptives themselves, but to the community, that the tubercle germs which they produce should be kept from doing harm.

The tubercle bacillus belongs to the class known to bacteriologists as anaerobic, flourishing most in dark, close places, away from currents of air and from light. In such places it is extremely tenacious of life, retaining its vitality and power of infection for months, and probably for years, even though completely dried; and while protected by a coating of mucus, resisting for a long time the action of powerful chemicals, and even boiling. On the other hand, many experiments have shown that the bacillus, if exposed to sunlight, with free access of air, dies in from ten to thirty minutes, and that even diffused daylight or currents of fresh air in darkness, slowly destroy it.

Under these circumstances it is obvious that tuberculous patients, in order that the germs from their lungs, which, even with the greatest care, can not be wholly prevented from falling on the walls, floors and furniture of the rooms inhabited by them, may not infect either themselves or other people, should be kept as constantly as possible in the sunshine and fresh air, which have been proved to be the only efficient antidote to the poison generated in them.

The importance of sun and air in the treatment of tuberculosis is now generally recognized, but the art of arranging rooms and buildings so as to secure for tuberculous patients the maximum amount of these remedial influences, under the most favorable conditions, has not by any means reached its full development. Most hospitals for consumptives have some rooms, usually those in which the patients sleep, which are exposed to the sun during at least a part of the day; but connected with these we are likely to find corridors, bathrooms, and even more important apartments, which are very imperfectly ventilated, and hardly receive sufficient daylight, much less any sunshine. As the patients are obliged to use these corridors and auxiliary rooms, it is evident that they are exposed in doing so to danger from germs which find these conditions favorable to their development, and which the most assiduous cleaning may not wholly remove.

In addition, however, to presenting in all portions conditions as little favorable as possible to the development of the tubercle bacillus, buildings for the use of consumptive patients may be, and should be, designed with a view to assisting the powers of resistance to infection from the germ, if it should be present. It is to be remembered that the tubercle germ, dangerous and fatal as it is, affects only those who are susceptible to its action.

Medical science has not yet thoroughly investigated the causes and characteristics of this condition of susceptibility, but it is known that dampness from a water-soaked soil, deficient light, the breathing of vitiated air, even if free from contagious germs, and, in general, conditions which depress the vital powers, such as defective nutrition, nervous exhaustion, and, possibly, hereditary tendency,

favor the development of tubercular disease from accidental infection; and it is quite practicable, without the sacrifice of other indispensable requisites, to secure in buildings for consumptives, not only a dry soil and dry walls, but pleasant prospects from the windows, attractive dining-rooms and verandas, and an agreeable disposition of the grounds, which, by interesting and cheering the patients, may assist materially in fortifying them, mentally and physically against renewed attacks of their disease.

Consumptives, unlike the inmates of general hospitals, make great use of the public rooms and of the grounds surrounding the establishment. In most sanatoria the great majority of the patients go regularly to the dining-room for their meals, and spend a large part of their time in the verandas or on the grounds, so that there is a special necessity for providing agreeably for them.

The ideal habitation for a tuberculous subject is, therefore, one which, besides being situated in a dry, pleasant and sheltered place, is exposed to the sunshine and fresh air all day long. In such a place no germs, outside of the patient, are to be found, and those which are at work within him are constantly subjected to the most powerful curative agencies known to medical science. On a small scale this ideal can be realized, but where many patients must, for the sake of economy in administration, be collected under one roof, and must be fed, nursed and watched, the problem is not so easy of solution.

Where single patients are to be treated under the modern system, it is very common to set up tents for them, in a garden or on a lawn, or even on the flat roof of a city house, where they can sleep and spend, perhaps, a portion of their waking hours. These tents have undoubtedly been the means of saving the lives of many tuberculous persons, but they are not all that could be desired. The best of them have the upper portion made separately, so as to afford ventilation between the two portions. Where this is not done, the atmosphere in a small tent may become quite foul, as air passes very slowly through thick cotton material, and any tent, unless the whole front is made to throw back, keeps out the sunshine.

It is true that the patients who sleep in tents usually come out into the open air in the daytime, and this probably accounts for much of the benefit which they derive from the treatment; but it is still better to have them spend the night, as well as the day, in a place exposed as much as possible to the sun. Such a place is best provided by some sort of shed. A mere platform, open to the sky, would give the airiest of all bedrooms, and many persons have, under skilful care, been cured of tuberculosis in its early stages by sleeping regularly on flat roofs, or on platforms of this sort built for the purpose in connection with their dwelling-houses. In these cases, however, while an awning could be used to keep off light rain or snow, a severe storm or the winter's cold will oblige the patient to take refuge in the house; and for those who can not well be treated at home, or who need treatment in winter as well as in summer, some permanent shelter is required, which will keep out rain and snow, but not sunshine or air.

One of the simplest and best forms of shed or "shack" for this purpose consists of an enclosure, about twelve feet square, inside, made with studding, covered with boarding and shingles or clapboards, facing south and provided with a roof, covered with shingles, sloping toward the back at an angle of $26\frac{1}{2}^\circ$, which is known to car-

penters as "quarter pitch." The roof in this case, being in a single slope, rises one-half the span, so that the front of the "shack" is six feet higher than the back wall, or about thirteen feet in all.

As the sun at noon on the twentieth day of December, in the latitude of Boston, is $23\frac{1}{2}^{\circ}$ above the horizon, the whole of the back wall of the "shack," if the windows are carried up as high as the construction will allow, is, at this season, in sunshine in the middle of the day, together with nearly all the underside of the roof, the whole of the side walls, and all the floor except a strip at the front which is shaded by the wall below the sills of the windows, if these are raised above the floor. As the sun rises higher by the advance of the season, whatever shaded strip there may be on the floor in front diminishes in width, at the same time that the floor and back wall receive less and less sunshine; but the light reflected upon them becomes at the same time more intense, and windows are placed in the east and west sides of the shack, through which the sun reaches the greater portion of the side walls and all parts of the floor. The front sashes, which are double or triple hung, and are closed only in severe southerly storms, are removed in summer, leaving the south side of the building entirely open.

The side windows are at that season also kept open or removed, as are small windows in the north wall, provided for the sake of securing a current of air through the room in all directions. As it may be desirable to shade the upper part of the front opening in the hottest weather, by awnings or otherwise, independent ventilation of the highest portion of the shack, into which the warmest air rises, is provided by means of a few blind slats in the upper corner of each side wall, immediately under the roof. The floor is raised about five feet above the ground, and the room is reached by outside steps and a door or casement window in the side.

The effect of the ample provision of sunshine in keeping such shacks comfortable in winter is remarkable. Without any means whatever for warming them artificially they can be occupied, as experience has shown, through the coldest winters without complaint and with great advantage to the patients, who, of their own choice keep their front windows open, and often the side ones also, when the thermometer outside stands at zero Fahrenheit or below.

A different type of shack has no front windows, the south wall consisting simply of a range of posts, like those of a piazza, while the side walls are often hinged, so that they can be swung open. Where this form is adopted it is necessary to keep the roof low in front and to overhang it considerably, to keep out storms, or to provide heavy curtains, which can be let down for the same purpose. In either case the sunshine is kept out, so that, although the piazza shack is successfully used through the coldest winter weather, there are advantages in the other form.

In both cases the construction is of planed timbers, exposed inside without plastering. There are, of course, plenty of lodging-places for dust in the joints of the timbering and boarding which are inaccessible for cleaning; but the aeration is so abundant, and the sunning, in the first type, so complete, that this does not seem to be a serious matter, especially with establishments in the country, removed from extraneous sources of noxious dust.

Experienced physicians generally agree that if all tuberculous patients could be treated in shacks of this sort

their recovery would be greatly promoted; but as no lavatories or proper toilet appliances can be used in winter, in the Northern States, without artificial heat, it is necessary to arrange warmed bath and toilet rooms within easy reach.

Such a toilet and bathroom, warmed by a stove and opening, by a door in the rear wall, into a piazza shack for eight patients, has been very successfully used at the Loomis Sanatorium, and a somewhat similar arrangement, for a larger number of patients, is adopted at the Sanatorium of the Boston Children's Hospital, at Wellesley, Mass. Where the shacks are arranged for single patients, as at the Millet Sanatorium, an outside platform connects them and gives access to the necessary toilet rooms. In all these cases the dining-room, doctor's office and other rooms connected with the administration of the establishment are in a separate building near by, the patients finding no inconvenience in walking to them through the open air in any weather.

Where a large number of patients must be provided for, and where it is desired to receive all curable cases of tuberculosis and to treat them with reasonable economy of administration, it is necessary, not only to have warmed toilet rooms within their reach, but to arrange sheltered passageways, through which the nurses and maids can pass to and from the patients' rooms without unnecessary exposure to snow and storms, and by which the feeble patients can reach under cover the dining-room, the medical bath, doctor's office, throat room, matron's office, reception room, and other portions of the administration department.

If the patients' rooms face south, as they should, it follows that the corridor or passageway by which they are reached must be on the north, and it will therefore be shaded during the greater part of the day. Some sanatoria are built with the wings containing the patients' rooms curved, or set at an angle with each other. This gives a little more sun in the corridors, but subtracts materially from that in the patients' rooms, while it cuts off a certain amount of air, so that for sanatoria for consumptives a straight front facing due south, so that all the bedrooms receive the full sun at midday, is to be preferred.

Although the corridor, by this arrangement, has its main outside wall facing due north, so that, except in summer, it receives sunshine only through the end windows, it is quite practicable in a one-story building to place skylights over the corridor, or to raise its ceiling so as to give room for vertical windows on the south side, above the roof of the patients' rooms. Such sashes can be more freely opened in showery weather than skylights and admit quite as much sunlight, besides giving better cross ventilation in connection with the windows in the north wall of the corridor, and heating the corridor less in summer.

In most cases, however, sanatoria for a considerable number of patients are built two stories high, for economy in construction and administration, and, as we shall see, the roof, even of a one-story building, is frequently utilized to advantage in other ways, so that a corridor with south windows, although entirely practicable and often desirable, especially for patients who are too feeble to walk out of doors, but need a little exercise and change of scene, seems not to have been actually attempted in any existing sanatorium.

[To be continued.]

MUNICIPAL IMPROVEMENTS.

BY ALBERT KELSEY, ARCHITECT.

CHAIRMAN OF COMMITTEE OF EXPERTS OF THE ART FEDERATION OF PHILADELPHIA.

PART XII

THIS is so with Woodward avenue in Detroit, Smithfield street in Pittsburg, and in fact with most of our cities, and it is because it is so, because nearly the whole length of all our water-fronts are so remote and detached that they remain unimproved and become such an easy prey to the railroads.

The clipping quoted would have been laughed at by the denizens of Algiers, LeHavre, Rouen, Quebec, Antwerp, Boulogne, Genoa, Palermo, Naples, Marseilles, etc., if it had been printed in one of their papers, but to us it is actually a reminder that there is a port with miles and miles of water-side property within the city limits. The people of those cities see and enjoy their harbors daily;

considerations, such as the topography, the seration of the shore, and the nature of the commerce to be handled, determine their individuality, their possibilities, their limitations. Of course the easiest and most direct communication is called for: to provide which they must be interwoven with the general arterial system to be productive of the greatest usefulness as perimeters of distribution. Steep streets leading to them are to be avoided, and the thoroughfare itself (part roadway, part railway, part parkway) must be level, broad and paved for the heaviest traffic.

Leading from it, where the shore is steep, low grade zigzag roads, or curved ramped streets gently rising to the



LUGGERO.

they find not only unrestrained commercial opportunity on a continuous line of publicly owned docks, but recreation as well. It is there, by or above the busy shipping, that as a matter of course, the most refreshing promenades are found, and it is upon these that abutting streets discharge their weary populace for a breath of pure fresh air. There, idlers find delight at all times; there fashion airs itself during the afternoons; there congregate the poor after the day's work is over; and to them as a relief to life in dull and congested neighborhoods it proves an effective counterpoise. Indeed, to those residing in all nearby settlements, it is a place of magnetic attraction, where they are free to dream in the twilight, at the hour when all out of doors is loveliest; when sea and sky is mother of pearl and shipping and shore are ablaze with sunlight, and during dimmer hours when the moonlit harbor is bewitched with a flood of silvery light. Surely for Americans to enjoy such simple pleasures, with comfort and convenience, from a well ordered promenade and from a well placed public bench, is no more than the humblest have a right to demand and expect.

No rules but of the most general character can be laid down for the planning of harbor thoroughfares. Local

upper town cut up the land advantageously, insuring small open spaces and fine view points where public benches and shade trees should be grouped. Where it is too steep for these purposes, the hillside should be made to bloom with a succession of hardy wall plants and shrubs.

The heights at either Duluth, St. Paul or Pittsburg, treated in such a manner, would become convenient resting points of much interest. San Francisco and Portland, Maine, are among the natural harbors of the world that might be made to rival the bay of Naples; while on the Hudson there are landings that could be made as efficient and as pleasing to look upon as any bordering the Swiss lakes, whose treatment everywhere—in every village, town and city—suggests the painstaking work of an honest, intelligent administration seeking only the greatest benefits for the common good.

With as promising natural advantages as any abroad, is it to be doubted that we shall sooner or later study our problems and their treatment with impartiality? Surely it is a matter of impartiality that is required rather than one of intelligence, for were it only a matter of brains the work would have been studied and executed long ago.

[To be continued.]

SANITARY ENGINEERING

BY J. PICKERING PUTNAM, ARCHITECT

PART XIII

THE air of sewers is constantly being filtered of germs of all kinds, and tends to be more and more effectively rid of them in direct proportion as their area of wet surface bears to the volume and direction of the air currents which pass through them.

The earliest researches in this field to which I shall call attention, chiefly on account of their extraordinary interest and importance, are those of Dr. Niel Carmichael, of Scotland.

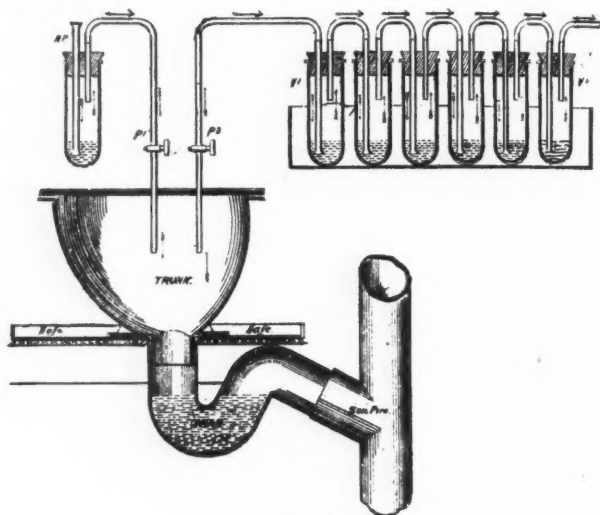


FIG. 50

Figs. 50 and 51 show some of the forms of apparatus used by Dr. Carmichael to ascertain the affinity of water for germs. The first shows a water-closet trap connected with an ordinary soil pipe which was ventilated by a 2-inch vent pipe up to and through the roof. The lower end of the soil pipe passed untrapped and unventilated into the drain. The mouth of the sewer was submerged at high tide so that sewer gases tended to be pressed back toward the houses, presenting as trying conditions as possible.

A glass flask containing a culture solution of hay infusion was connected on the one side with a U-shaped glass trap containing water and on the other with an aspirator as shown. The hay infusion and the water in the U-shaped trap were both sterilized by boiling. The U-shaped trap was connected on its other side with the soil pipe side of the water-closet trap. It will be seen from this arrangement that any germs coming from the soil pipe which passed through the water trap would be carried in the air current over to the infusion and would cause it to putrefy. But no such particles passed through the trap seal for the hay infusion remained perfectly clear, though the experiments were continued for five months. The tests were made both with and without the aspirator, and various kinds of culture liquids were used.

Tests were also made with the U-shaped trap omitted, and in these cases the infusions began to putrefy in a few days, showing that the water trap really prevented the germs from passing.

These experiments seemed conclusive, but lest it might be objected that germs might rise from the liquid of the trap and fail to be carried over, or that an ordinary water closet trap might behave differently from the glass one em-

ployed, Dr. Carmichael made a still more crucial series of tests as follows: Nitrogen bulbs were charged with a strong cultivating liquid called Pasteur's solution and sterilized. The lead water closet trap, connected with the soil pipe, was also sterilized by heating it to 350° to 400° F., and the bulbs were connected with the house side of the trap with an air tight connection. The other end of the bulb vessel was connected with the aspirator. In order to let air into the trap chamber above the water seal a filtering tube was used so that no germs could come to the bulbs unless they passed over the water closet trap seal. The whole apparatus was most carefully and thoroughly sterilized. The filtered air was drawn by the aspirator into the chamber over the trap seal and then bubbled continuously through the liquid in the bulbs for from twenty-four to thirty-six hours, and the bulbs were then allowed to stand in a warm room at 75° to 100° F. for several months, and the experiments were repeated in the most rigorous and careful manner. The liquids in all the tubes and flasks, though kept for from two to five months at cultivation temperature, remained perfectly clear, and even when examined with a most powerful microscope used for germ studies and multiplying 900 diameters, exhibited no trace of life. Dr. Carmichael concludes as follows:

"Water traps are, therefore, for the purpose for which they are employed, that is, for the exclusion from houses

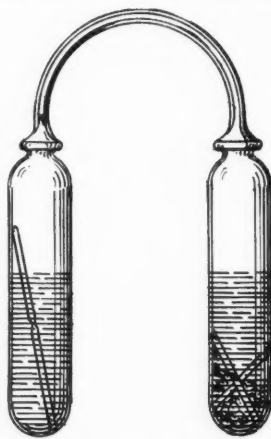


FIG. 51

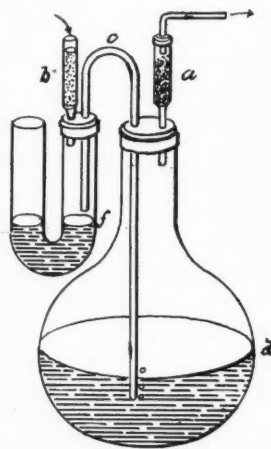


FIG. 52

of injurious substances contained in the soil pipe, perfectly trustworthy. They exclude the soil pipe atmosphere to such an extent that what escapes through the water is so little in amount and so purified by filtration as to be perfectly harmless, and they exclude entirely all germs and particles, including, without doubt, the specific germs or contagia of disease, which, we have already seen, are, so far as known, distinctly particulate."

The two glass vessels shown in Fig. 51 illustrate the experiments made by Dr. Carmichael to see if germs would rise from the surface of water at rest. He placed cultivating liquid in each of the tubes and connected them together at the top by a rubber tube. Into each tube had been placed a small capillary tube filled with a putrid liquid and hermetically sealed at both ends. The cultivating liquid was sterilized in both large tubes. Then one of the small capillary tubes was broken by shaking and its

putrid contents thus mixed with the infusion in its enclosing vessel. The germs did not pass over into the other vessel, even though the test was continued for five years uninterruptedly.

The experiments of Professors Pumpelly and Smyth for the National Board of Health at Washington are extremely interesting and fully corroborate those of Carmichael.

In their first series made to determine whether bacteria or other particulate matter can disentangle themselves from a liquid, water, sewage and putrefied substances suspended in a bent tube over a sterilized beef infusion in a room where the temperature ranged between 20° and 35° Centigrade. The flask containing the infusion was closed air tight by a rubber stopper through which the tube passed which held the sewage in a small bowl or trap at its lower end. The stopper contained also a small asbestos filled filter tube. In this form of the experiments the air around the sewage was in a state of rest.

In another room the apparatus shown in Fig. 52 was used to investigate whether germs could be taken up from a liquid at rest by a current of air. The sewage was placed in a U-shaped tube, which formed the trap and was connected with a flask containing the culture liquid by means of narrow tubing, as shown. This tube passed through rubber stoppers which closed the tops of the flask and one arm of the trap. An aspirator tube packed with an asbestos filter was connected with the flask through its rubber stopper and air was drawn at any desired rapidity through the apparatus, being filtered before entering the trap by an asbestos filter in a small glass tube connecting with the trap through its rubber stopper.

Finally a third form of apparatus was used to see if a liquid can part with germs when bubbling.

The results of these experiments were given in the report as follows:

"At normal summer temperatures no germs were given off from the decomposing liquids whenever their surfaces remained unbroken, even though in some of the experiments the air was continuously conducted over them in a slow current. When the surfaces of the liquids were broken, however, by the bursting of bubbles, germs were invariably given off and the sterilized infusions infected, no matter how slowly the aspiration was conducted."

The experiments of Naegeli, Wernich, Miguel and many others have clearly shown also that under normal conditions of temperature germs are never given off to the surrounding air through the evaporation of a liquid containing them, nor from thoroughly moistened sand or solid matter of any kind.

The recent researches of Laws and Andrewes for the London County Council, and of others, show first that the number of germs of all kinds in sewer air is much smaller than in the air of the streets above them, and that this is due to the fact that the germs come in contact with the sewage and damp walls of the sewer and drain pipes, from which they can not under normal conditions again escape. Second, that the bacteria found in sewer air are of the same kind as those found in the outer air above the sewers, showing that the bacteria come, therefore, not from the sewage, but from the outside air above them. Third, that disease germs are unable to live long in sewage, where myriads of bacteria of decomposition, hostile to them but more pathogenic to

man, abound; and that as a matter of fact disease germs have not been found in the air of sewers in the very careful experiments so far made.

The methods for the study of micro-organic life in air are of comparatively recent date, and are daily being improved. According to Roechling*, up to the time of his writing, in about six sets of investigations into the bacterial flora of sewer-air, have within recent years been made and from them the results are in complete corroboration of other researches made before by less perfect methods and apparatus.

Splashing of sewage, as when a branch sewer enters another or a main sewer with a high fall, may cause a fine state of division of sewage in virtue of which germs may be carried some distance through the air, "even fifty or sixty yards," according to Laws, from which our remedy lies in so arranging the connections as to avoid splashing. If the sewage falls against the inner curved surface of the sewer it may be arranged to do this without splashing even for a considerable height. The experiments of Laws showed that a branch drain emptying its sewage into an egg-shaped sewer 11 feet high by 9 feet wide from about the middle of its height produced practically no effect upon the number of micro-organisms in the sewer air.

The experiments of Laws in London and Ficker in Breslau seem to show that germs can not be given off from the slimy skin which forms on the inner surface of sewers even above the water line. "It is really remarkable," says Laws, "to find that no organisms are given off from the walls of a sewer which has been empty and open to the air at both ends for such a lengthened period as twelve days. The sewage with which the sewer had been kept full for several periods of twenty-four hours would contain no less than three to four millions of organisms per cubic centimeter (about three-eighths in cube), and immense numbers of these must of necessity have been clinging to the walls of the sewer. * * * The velocity of the air current used in the above experiments was 5 feet and 15 feet per second respectively, the latter being far in excess of any current that would normally obtain in a sewer."

Ficker† found that a current of air of several yards a second could not lift up germs from a half moist soil, nor even germs which had dried on several substances and adhered to them.

Hesse‡ experimented to see how far germs could be carried in air currents in pipes and sewers before falling again and adhering to their sides. In one experiment with a pipe a yard long, coated with nutritive gelatine, he found that the air current deposited a large number of bacteria on the first quarter, less on the second, still less on the third, and none at all on the last quarter. Ficker experimented in this direction with 4-inch pipes and found the germs were carried as much as twenty-three feet.

Messrs. Laws and Andrewes went so far as to classify elaborately and comparatively the various kinds of germs found in the outer air, in sewer air, and in the sewage itself, and they found the same kinds in sewer air as in the outer air, but a totally different kind in the sewage. They even go so far as to say that so far as they are aware not

* "Sewer Gas and Its Influence Upon Health," by H. Alfred Roechling C. E., London, 1898.

† "Schadlichkeit der Canelgase," 1896.

‡ "Bemerkungen zur Quantitativen Bestimmung der Mikro-organismen der Luft," 1886.

a single colony of any of the many species which they found predominating in sewage has been isolated from sewer air. To give an idea of the care with which these investigations were carried it is interesting to glance at a small portion of the large list of micro-organisms recorded in them. Those in the outer air were classified as (1) micrococci, (2) molds, (3) bacilli, (4) torulae, and (5) cladotriches. Of each of these classes of germs the several different kinds were recorded as found in the outer air. Those of the micrococci were found.

- (1) *Sarcina lutea*.
- (2) *Micrococcus aurantiacus*.
- (3) *Micrococcus candidus*.
- (4) *Diplococcus citreus conglomeratus*.
- (5) *Diplococcus roseus*.
- (6) *Sarcina rosea*.
- (7) *Pediococcus acidi lactici*.
- (8) *Micrococcus acidi lactici*.
- (9) *Micrococcus flavus desidens*.
- (10) *Diplococcus flavus liquefaciens tardus*.

[To be continued.]

OUR ILLUSTRATIONS.

- Apartment house, Chicago.
- High school, Pasadena, Cal. Stone & Smith, architects.
- Residence of Clayton Garvey, Pasadena, Cal. F. L. Roehrig, architect.
- Residence for F. H. Holtz, Detroit, Mich. Albert Kahn, architect.
- Residence for Julius Haas, Detroit, Mich. A. W. Chittenden, architect.
- Residence of Mr. Pike, Lake Forest, Ill. Arthur Heun, architect, Chicago.
- Building for Northern Trust Company, Chicago. Frost & Granger, architects.
- Successful competition design for Chattanooga (Tenn.) railway station. Donn Barber, architect, New York.
- Chapel, Columbia University, New York. Howells & Stokes, architects. Three exterior views and plan are given.
- Cincinnati Country Club, E. Walnut Hills, Cincinnati. Elzner & Anderson, architects. Two exterior, two interior views and plan are shown.
- United States Postoffice and Custom House, Indianapolis, Ind. Rankin & Kellogg, architects, Philadelphia. Numerous exterior, interior and detail views are shown. Exterior statuary by J. Massey Rhind, sculptor, New York.
- Successful competition design for Wisconsin Capitol, Madison, Wis. George B. Post & Sons, architects, New York. The program under which this competition was held was prepared by Architect Lew. F. Porter, secretary of the Capitol Commission. The competition was instituted for the purpose of selecting an architect to prepare "a complete and harmonious plan for a state capitol building, including a dome, to be erected section by section as the needs of the state from time to time may require and the legislature direct." Five competitors were invited to submit plans. Each received \$1,200. In the case of the successful competitor this payment is to apply on account of his commission of 5 per cent on the cost of construction. The program contained arbitrary conditions as to general ground plan, style of dome, etc. The design of George B. Post & Sons was found to meet most nearly the requirements, and the firm was selected as architects for the building. No limit of cost is stated in the program.

Among the improvements to be made in the United States Capitol building at Washington, for which appropriations were made at the last congressional session, is the equipment of the principal entrances with six revolving doors. The revolving doors will be installed in the fall of this year.

GLASS MOSAIC.

THE most vigorous—the most lasting form of mural decoration and the one best fitted for the complement of the monumental treatment of stone porticos, vaulted passages, tombs, etc., must certainly be that form which is most nearly akin to the stone in its nature, that is, mosaic.

Fresco, even when handled in a large enough and strong enough manner to make it fit company for the stone, is temporary and unstable, at best, in the climate of our country.

Marble mosaic is familiar to everyone as floor and wall decoration, but the fact that most of the mosaic in this country is carried out under the direction of a master mechanic makes owners and architects unwilling to risk any departure from the stereotyped designs which are reproduced with machine-like accuracy and have the advantage that they can be depended upon to be just what is expected of them. In the comparatively few instances in this country where the design or workmanship of marble mosaic attracts notice as being characteristic of the material, it does so because the architect, either from having made a specialty of its study or in desperation at the prospect of having his wall spaces appear to be covered with oilcloth, has taken the matter in hand and supplied the knowledge (or backed it in someone else) which is lacking in the ordinary product.

Through being less familiar, glass mosaic is not so likely to be passed by unnoticed. Possibly the greater variety of colors and the glitter of the gold help to force the uncertain exclamation from the would-be critic and attract the attention, whether he approve or not, of the student. The fact that it so surely does attract attention, proves the importance of having it handled by those learned in its possibilities for good. High explosives and poison are useful and safe when in the hands of those who have made a life study of them. A realization of the dangers in glass mosaic colors is undoubtedly accountable for the weakness of the modern glass mosaics.

Who would think of the tinted naturalism and portraiture of the present accepted form of glass mosaic as being made of the same materials as the noble, dignified, vigorous decoration of the crypts at Ravenna, and the vestibule of St. John Latterain (which latter has lost much of its force through restoration.)

Ruskin says in his "Stones of Venice," "There are two means of delight in all productions of art—color and form. The most vivid conditions of color obtainable by human art are those works in glass and enamel." And, of the St. Mark's mosaics, "a vast illuminated missal, written within and without in letters of enamel and gold." But we expect to get all this today at an expense of time and money so ridiculously limited that the master who really appreciates the vital qualities necessary to securing similar results, must retire from the field, as the supply of intelligent assistants is positively limited. For, from practical experience, the trained modern Italian mosaic setter has the crimes of his craft so deeply rooted that it is easier to get the proper work from a novice of clever hand and adaptable mental faculties. This, however, means slow work or time and expense. For these reasons such works as are shown in our illustrations of glass mosaic in the Federal building of Indianapolis, which are by the New York firm of Heinigke & Bowen, mean much to this country and add another proof of deep study and insight into the mysteries of ancient art lore.

In this, as in all forms of decoration, the most powerful enemy of good results is commercialism. A contract is not considered complete today without a bond being signed for a money forfeit, in case the work be not completed by a specified time. This alone, is enough to discourage an artist, if he has not already succumbed to the news that, if he can not underbid every master mechanic with an organized factory, he will have labored in vain on his designs and samples, which have cost so much in thought, labor and research. The exception to this rule was the notable contract in which the late czar was allowed, as a mark of special favor, to pay the Vatican \$400.00 per square foot for glass mosaic installed in St. Petersburg.

If such conditions had prevailed when our standards were created and the masters had been forced to divide their attention between the real work and the petty annoyances incident to keeping up to schedule, would our standards have been so high? Possibly they would, but it is safe to be thankful that Rome was not built in a day, or even under a modern contract bond, and that the master decorators of those days were not forced to compete with master mechanics for the large decorating contracts.



THE UNITED STATES
GOVERNMENT USES
THE VERY BEST OF
EVERYTHING, ESPECI-
ALLY IN BUILDING
MATERIALS 

THE NEW POST OFFICE BUILDING, INDIANAPOLIS, IND., IS FURNISHED
WITH

Federal Company's Plumbing Fixtures

Leading Architects and the U. S. Government Specify
FEDERAL COMPANY'S PLUMBING FIXTURES
Because they are of the
HIGHEST STANDARD OF EXCELLENCY.

FEDERAL COMPANY

Catalogue

231 WASHINGTON ST., CHICAGO

Specially Designed
**Gas, Electric and
Combination Fixtures**
ART GLASS WORK
TIETGEN, FALK & CO., 79-81 W. Van Buren St. CHICAGO

WANTED Thoroughly experienced draughtsman for gen-
eral office work. Must be competent in details
of Fire Proof construction, and first class work.

ALSO a thoroughly experienced designer for general office work.
Must be competent in the use of colors and perspective. Liberal salaries.

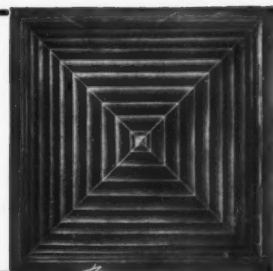
Address W. M., Care The Inland Architect, Chicago



SPECIFY THE MATHIS AIR DIFFUSERS FOR WALLS AND CEILINGS

They give more free area for the air delivery than
the common style register and prevent draft.
SPECIAL STYLES of DIFFUSERS for
delivery of air to right or left and upwards or
downwards also made.

THE MATHIS BROS. CO.
25th PLACE and STEWART AVE., - CHICAGO



COMPETITION, UNION THEOLOGICAL SEMINARY.

THERE has been issued the program of a competition for the selection of an architect and the procuring of a general plan for the Union Theological Seminary in the city of New York. The plan is for a new group of buildings which the seminary proposes to build at One Hundred and Twentieth street and Broadway, adjoining Columbia University. Four architects have accepted the invitation to submit designs, namely: Cram, Goodhue & Ferguson; Cass Gilbert, Lord & Hewlett and Palmer & Hornbostel. The committee desires also designs from other competent architects. Blank forms are provided for the application of such architects as wish to enter the competition. The forms may be obtained from Wm. M. Kingsley, 700 Park avenue, New York City. The four invited architects and four others will each be paid a fee of \$800. The architect selected will receive the commission to execute the buildings. Prof. Warren P. Laird is the professional adviser. Judgment will be rendered

by a jury composed of the adviser and Walter Cook and Robert S. Peabody.

ASSOCIATION NOTES.

T SQUARE CLUB OF PHILADELPHIA.

The club proposes to hold a joint exhibition with the Pennsylvania Academy of the Fine Arts in the galleries of the Academy during the month of December next. The exhibition will cover the field of architecture in its broadest sense, and will include all the allied arts, of which she is the mother. As in the twelve previous annual T Square Club exhibitions, the department of architectural design will dominate. It will include not only the technical drawings of the most distinguished American and European architects produced during the last year, but will also include a large number of models and photographs of finished work. The department of mural painting will be conducted with the co-operation of the National Society of Mural

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

Are You Furnishing Your Home?

TAKE ADVICE!

It will save you money!

The right thing in wall treatments, furniture, draperies, like the right thing in personal dress, gives pleasure and satisfaction if appropriate. You need

"Interior Decoration"

the only magazine devoted exclusively to the furnishing, decoration and management of the home.

Profusely illustrated. 10 cents by the month. \$1.00 a year.
Specimen copies sent upon application.

Clifford & Lawton, 19 Union Square, New York

ASSOCIATION NOTES—Continued.

Painters. This will include a large number of mural paintings by the foremost members of the profession. Photographs of executed work too large to be hung in the galleries, and a large collection of preliminary sketches and cartoons. The department of architectural sculpture will be conducted with the co-operation of the National Sculpture Society, and will include full size and sketch models of the most important work of the year. The department of landscape architecture will be conducted with the co-operation of the American Society of Landscape Architects, including models, photographs and drawings. The department of arts and crafts will be divided as follows:

Art metal work, wrought and cast iron, bronze work, lighting fixtures, hardware, lead work. Terra cotta, architectural details, garden pottery, tiles. Architectural woodwork, cabinet work. Stained and leaded glass. Interior decorations, drawings. Garden decorations, in all materials, shrubs and flowers. The juries of selection will admit only works of the first importance. Juries of award, composed of the most distinguished workers in the several departments, will be appointed at the opening of the exhibition, but not announced until after the awards are made. It has not been determined as yet, what form these awards will take. Believing that the intrinsic value of an award bears little relation to its importance, the award may consist only of a public announcement and a personal notification. All inquiries in regard to this exhibition may be addressed to either of the undersigned. T. Square Club, C. L. Borie, Jr., secretary, 251 South Fourth street, Philadelphia, Pa. The Pennsylvania Academy of the Fine Arts, John E. D. Trask, Secretary, corner Broad and Cherry streets, Philadelphia, Pa.

NEW YORK CHAPTER, A. I. A.

At a special meeting of the executive committees of the New York Chapter of the American Institute of Architects, the Society of Beaux Arts Architects, and the Architectural League of New York, the following resolutions were unanimously adopted, and the secretary was instructed to forward a copy of them to Mrs. Stanford White, Messrs McKim, Mead &

White, the architectural periodicals and the Associated Press:

Resolved, That the executive committees of the New York Chapter of the American Institute of Architects, the Society of Beaux Arts Architects, and the Architectural League of New York desire, in the name of their respective societies, to express their sense of the great loss which the profession and the art of architecture have sustained in the death of Stanford White. His quick and generous appreciation of all that is beautiful, even beyond the field of his immediate profession, was so genuine that the influence of his work will long continue to be a stimulus to the artistic development of this country. Only those of us who have been closely associated with him professionally can fully appreciate the love and enthusiasm with which he devoted himself to art. His was a commanding personality, and whatever he produced had the touch of genius.

CHICAGO ARCHITECTURAL CLUB.

At a meeting of the executive committee of the club, held July 23, 1906, the following officers were elected: Melville P. White, second vice-president, to fill unexpired term of Paul V. Hyland, resigned; Walter G. Kohfeldt, secretary, to fill unexpired term of Joe W. Wilson, resigned.

THE SIGNING OF BUILDINGS.

St. Paul, Minn.

Answering your favor as to whether it is desirable for architect's names to be publicly associated with their buildings, and if so how can this best be accomplished, would say in my opinion it is as proper and appropriate for the name of the architect to be attached to his work as that of the sculptor or painter, particularly in connection with important work, and that the name of the architect of a public building should be inscribed on a tablet properly placed in the interior of the building or if the building is of masonry construction, incised on a tablet properly located on the exterior.

WANTED.—Experienced draftsman to take charge of office; competent in designing and construction of first-class work; also experienced in coloring and perspective work. Address E. J. Eckel, architect, F. A. I. A., St. Joseph, Mo.

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

Architects' Specification Reminders

Air Diffusers. Mathis Bros. Co., Chicago.	Fire Escapes. Dow Wire & Iron Works, Louisville, Ky.	Recording Instruments. Bristol Co., Waterbury, Ct.
Air Purifying and Cooling System. Thomas & Smith, Chicago.	Fireproofing. Columbian Fireproofing Co., New York, Pittsburg and Chicago. Illinois Terra Cotta Lumber Co., Chicago. National Fireproofing Co., Chicago. The Roebbling Construction Co., New York.	Reinforced Concrete Construction. Expanded Metal & Corrugated Bar Co., St. Louis, Mo. Trussed Concrete Steel Co., Detroit, Mich.
Architectural Iron Works. The Winslow Bros. Co., Chicago.	Floor Polish. Butcher Polish Co., Boston, Mass.	Revolving Doors. Van Kannel Revolving Door Co., New York
Architectural Photographers. Taylor, J. W., Chicago.	Gas and Electric Fixtures. Tietgen, Falk & Co., Chicago.	Roofing Tin. Follansbee Bros. Co., Pittsburg, Pa.
Architectural Schools. University of Pennsylvania, Philadelphia, Pa.	Hardware. The Yale & Towne Mfg. Co., New York.	Sanitary Appliances. Cudell, F. E., Cleveland, O. Standard Sanitary Mfg. Co., Pittsburg, Pa.
Architectural Views. Taylor, J. W., Chicago.	Hollow Block. National Fireproofing Co., Chicago.	Sanitary Woodwork. Never Split Seat Co., Evansville, Ind. Standard Sanitary Mfg. Co., Pittsburg, Pa.
Bath Cocks (Combination). Union Brass Works Co., Boston, Mass.	Interior Decoration. A Monthly Publication, New York.	Sash Cords and Chains. Smith & Egge Mfg. Co., Bridgeport, Ct. Samson Cordage Works, Boston, Mass.
Bath Room Fixtures. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Interior Finishes. Adams & Elting Co., Chicago.	Shingle Stain. Dexter Bros., Boston, Mass.
Bath Tubs. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Lamps. Neuhausner, D.	Showers, Permanent and Portable. Standard Sanitary Mfg. Co., Pittsburg, Pa.
Brass Goods (Plumbers). Standard Sanitary Mfg. Co., Pittsburg, Pa.	Laundry Tubs. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Sinks, Porcelain Enameled. Standard Sanitary Mfg. Co., Pittsburg, Pa.
Builders' Hardware. The Stanley Works, New Britain, Ct. The Yale & Towne Mfg. Co., New York.	Lavatories. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Spring Hinges. Smith & Egge Mfg. Co., Bridgeport, Ct.
Builders' Sundries. The Stanley Works, New Britain, Ct. The Yale & Towne Mfg. Co., New York.	Lead Pipe. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Store Front Construction. J. W. Coulson & Co., Columbus, O.
Building Directory. Tablet & Ticket Co., Chicago.	Locks. The Yale & Towne Mfg. Co., New York.	Terra Cotta. Northwestern Terra Cotta Works, Chicago. Winkle Terra Cotta Co., St. Louis, Mo.
Carpets and Rugs.	Mail Chutes. Cutler Manufacturing Co., Rochester, N. Y.	Trees. Peterson Nursery, Chicago.
Cements. French, S. H. & Co., Philadelphia. Atlas Portland Cement Co., New York.	Marble. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Urinals, Porcelain Enameled. Standard Sanitary Mfg. Co., Pittsburg, Pa.
Concrete Steel Frame. Expanded Metal & Corrugated Bar Co., St. Louis, Mo. Trussed Concrete Steel Co., Detroit, Mich.	Metal Ceilings. Berger Mfg. Co., Canton, O.	Valve (Anti-scalding Shower). Union Brass Works Co., Boston, Mass.
Conduit. National Fireproofing Co., Chicago.	Mortar Colors. French, S. H. & Co., Philadelphia, Pa.	Valves and Fittings. Union Brass Works Co., Boston, Mass.
Cordage. Samson Cordage Works, Boston, Mass.	Paints, Oils and Varnishes. Adams & Elting Co., Chicago. Joseph Dixon Crucible Co., Jersey City, N. J. Muralo Co., New Brighton, Staten Island. New Jersey Zinc Co., New York. Smith, Edward & Co., New York.	Vinometers. Standard Sanitary Mfg. Co., Pittsburg, Pa.
Decorators. Sturdy, Jos. F., Chicago.	Pencils. Joseph Dixon Crucible Co., Jersey City, N. J.	Waste (Basin). Union Brass Works Co., Boston, Mass.
Drawing Material and Implements. Abbott, A. H. & Co., Chicago.	Plumbers' Fittings. Federal Co., Chicago. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Water Supply. Kewanee Water Supply Co., Kewanee, Ill.
Drinking Fountains. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Plumbers' Ware, Porcelain Enameled. Federal Co., Chicago. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Window Lines. Samson Cordage Works, Boston, Mass.
Elevators. The J. W. Reedy Elevator Co., Chicago. Otis Elevator Co., Chicago.	Railroads. Chicago & Alton Ry. Denver & Rio Grande R. R. Missouri Pacific Ry. Northern Pacific Line. Santa Fe Ry.	Wire Cloth. Clinton Wire Cloth Co., Clinton, Mass.
Enameled Iron (Plumbers' Ware). Standard Sanitary Mfg. Co., Pittsburg, Pa.	Range Closets. Standard Sanitary Mfg. Co., Pittsburg, Pa.	Wrought Iron Railings and Grilles. Winslow Bros. Co., Chicago.

Alphabetical Index of Advertisers

	Page		Page		Page		Page
Abbott, A. H. & Co.	X	Dow Wire & Iron Works	X	Northern Pacific Line	XIV	Stanley Works	VII
Adams & Elting Co.	VIII	Expanded Metal & Corrugated Bar Co.	V	Northwestern Terra Cotta Co.	II	Sturdy, Jos. F.	II
Atlas Portland Cement Co.	IX	Federal Co.	XI	Otis Elevator Co.	II	Taylor, J. W.	II
Berger Mfg. Co.	XV	Follansbee Bros. Co.	XVI	Peterson Nursery	XV	Tablet & Ticket Co.	XIV
Bristol Co.	XVI	Foundation Co.	VIII	Porter, Taylor & Co.	X	Thomas & Smith	X
Butcher Polish Co.	XV	French, S. H. & Co.	XV			Tietgen, Falk & Co.	XI
Chicago & Alton Ry.	XIV	Illinois Terra Cotta Lumber Co.	XV			Trussed Concrete Steel Co.	III
Clifford & Lawton	XII	Kewanee Water Supply Co.	IV			Union Brass Works Co.	VI
Clinton Wire Cloth Co.	IV	Mathis Bros. Co.	XI	Reedy, J. W., Elevator Co.	XV	University of Pennsylvania	X
Columbian Fireproofing Co.	XVI	Missouri Pacific Ry.	XIV	Roebbling Construction Co.	X		
Coulson, J. W. & Co.	VIII	Muralo Co.	X			Van Kannel Revolving Door Co.	VI
Cudell, F. E.	XV	National Fireproofing Co.	VII	Samson Cordage Works	XVI		
Cutler Mfg. Co.	VII	Never Split Seat Co.	X	Santa Fe Ry.	XIV	Winkle Terra Cotta Co.	VIII
Denver & Rio Grande R. R.	XIV	New Jersey Zinc Co.	XV	Smith, E. & Co.	XVI	Winslow Bros. Co.	VII
Dexter Bros.	IX	Neuhausner, D.	X	Smith & Egge Mfg. Co.	VII		
Dixon, Jos. Crucible Co.	XIV			Standard Sanitary Mfg. Co.	VI	Yale & Towne Mfg. Co.	XVI

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.



BETWEEN

THROUGH PULLMAN SERVICE
BETWEEN CHICAGO AND

IF YOU ARE CONTEMPLATING A TRIP, ANY PORTION OF WHICH CAN BE MADE OVER THE CHICAGO & ALTON, IT WILL PAY YOU TO WRITE TO THE UNDERSIGNED FOR RATES, MAPS, TIME-TABLES, ETC.

GEO. J. CHARLTON,
GENERAL PASSENGER AGENT,
CHICAGO, ILL.

Wilson's
Changeable and Alphabetical
Building Directory

PATENTED



THE TABLET AND TICKET CO.

SOLE MANUFACTURERS
381-3 Broadway, New York
87-89 Franklin St., Chicago
843 Golden Gate Ave., San Francisco

SEND FOR CATALOGUE

HOT SPRINGS ARKANSAS

THE GREATEST ALL-YEAR-ROUND

Health and Pleasure Resort
IN THE COUNTRY.

FIVE DAILY TRAINS FROM ST. LOUIS.
DOUBLE DAILY SERVICE FROM MEMPHIS.

Hot Springs Special

12 HOURS FROM ST. LOUIS 12
VIA THE

IRON MOUNTAIN ROUTE

For Descriptive and Illustrated Pamphlets, address

H. C. TOWNSEND, GEN'L. PASS'G. AND TKT. AGENT.
ST. LOUIS.

"THROUGH FRISCO'S FURNACE" EDITION DE LUXE

Illustrations of seven modern steel frame buildings at San Francisco, that withstood the earthquakes and fire of April 18th, 1906, with reports on the rust-resisting qualities of Dixon's Silica-Graphite Paint on the steelwork.

WRITE FOR A FREE COPY OF BOOK NO. B-62

JOSEPH DIXON CRUCIBLE CO., - JERSEY CITY, U. S. A.

DRAUGHTSMEN WANTED

I need two first-class Draughtsmen, one for preliminary work, including perspectives, the other for general working drawings. Permanent positions for the parties.

R. H. HUNT, Chattanooga, Tenn.

LOW COLONIST RATES

TO

Colorado, Utah, California
and the Northwest

Through Tourist Cars from all principal points via

THE DENVER and RIO GRANDE SYSTEM



"The Scenic Line of the World"

Traverses all the world-famed points of interest in the Rocky Mountain region and you should see that your ticket reads via this route in order to make your trip most enjoyable.

Write for free illustrated literature.

R. C. NICHOL, Genl. Agt.,
S. K. HOOPER, 242 Clark Street,
G. P. T. A., Denver. Chicago

YELLOWSTONE NATIONAL PARK

VIA

AND THE

Gardiner Gateway

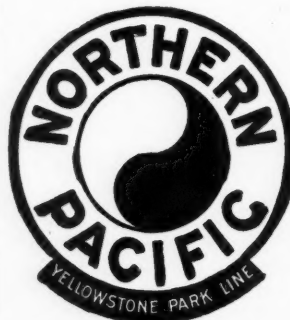
Unexcelled in its scenic attractions; its natural phenomena are wonderful. Fine hotels; the most delightful coaching trip in America; a constant panorama of Splendid Scenery. It's an ideal place for a summer outing of a week, a month, or the season. Write A. M. Cleland, General Passenger Agent, St. Paul, Minn., for full information.

"Wonderland 1906"

Tells about it. Sent for six cents

NORTHERN PACIFIC
RAILWAY

For details of low rates write C. A. MATTHEWS, G. A. P. D.
208 South Clark St., Chicago, Ill.



Go this Summer Colorado



Very low excursion
rates on the Santa Fe

When vacation time comes, pack your grip and go to cool Colorado for an outing in the Rockies. Take the Colorado Flyer.

Ask Santa Fe Agent at
119 Adams St., Chicago,
for "A Colorado
Summer" booklet.

Please mention THE INLAND ARCHITECT when corresponding with Advertisers.

THE J. W. REEDY ELEVATOR CO.

Passenger and Freight

ELEVATORS.82 to 91 Illinois Street,
CHICAGO.31-33 Tenth Avenue,
NEW YORK CITY.**Butcher's
Boston Polish***Is the best finish made for
FLOORS, Interior Wood-
work and Furniture*

Not brittle; will neither scratch nor deface, like shellac or varnish. Is not soft and sticky, like beeswax. Perfectly transparent, preserving the natural color and beauty of the wood. Without doubt the most economical and satisfactory POLISH known for HARDWOOD FLOORS.

For Sale by Dealers in Paints, Hardware and House Furnishings.
Send for our FREE BOOKLET, telling of the many advantages of BUTCHER'S BOSTON POLISH.

THE BUTCHER POLISH CO.,
356 Atlantic Avenue, Boston, Mass.
Our No. 3 Reviver is a superior finish for kitchen and piazza floors.



We make more than 200 Steel Ceiling designs, finely illustrated in our 148-page Catalogue. Write for copy if you are interested. Awarded the only Gold Medal at St. Louis.

BERGER'S**"Classik" Steel
Ceilings**

We also make Roofing, Siding, Metal Shingles, Cornices, Finials, Skylights, Metal Lath, and Fireproofing Specialties. Send us your plans.

THE BERGER MFG. CO., Canton, Ohio
I. A. 10-5

**Acclimated Nursery
Stock**

We sell Trees, Shrubs, Vines, Fruits and Herbaceous Plants. All home grown stock for use in giving immediate effect. Our landscape department employs an efficient corps of engineers who are at the service of architects with whom they will co-operate in landscape work in order to obtain best effect.

Peterson Nursery

Room 1301, 108 La Salle St., CHICAGO

**THE SANITATION OF
A COUNTRY HOUSE**

By Dr. Harvey B. Bashore.

CONTENTS: The Location: House: Water Supply: Disposal of Waste: The Surroundings: Summer Camp. 102 pages: 16 full-page illustrations. Cloth, price \$1.00.

Porter, Taylor & Co., 358 Dearborn St., Chicago

**The Paint
Paddle**

is as far behind the times as the warming pan. The painter who mixes and tints lead by hand charges for the time wasted in performing an ill-done task. His materials are antiquated and his methods mediaeval. High-grade ready mixed paint is the logical up-to-date material and being based largely on OXIDE OF ZINC, will cost less, look better and last longer than rule-of-thumb shop-mixed paints.

**The New Jersey
Zinc Co.**

71 Broadway, New York

FREE

Our Practical Pamphlets:

"The Paint Question"
"Paint: Why, How, and When"
"Paints in Architecture"
"Specifications for Architects"
"French Government Decrees"

We do not grind zinc in oil. Lists of manufacturers of Oxide of Zinc Paints will be furnished on request.

PEERLESS MORTAR COLORS

Black, Red, Brown, Buff, French Gray, and
special colors to

PLEASE ARCHITECTS

They are the original and standard
colors for mortar

SAMUEL H. FRENCH & CO., Philadelphia
Established 1844

Advance News

INDICATING

Chances to Sell

PLANS, FIXTURES,
MATERIALS, FURNITURE,
MACHINERY,

May be secured with promptness, accuracy and thoroughness, and at reasonable rates, from

THE PRESS CLIPPING BUREAU,

ROBERT AND LINN LUCH,

26 Vesey St., NEW YORK.

68 Devonshire St., BOSTON.

206 E. Fourth St., CINCINNATI.

Railroad Bldg., DENVER.

Put into the White House by the U. S. Government.



F. E. CUDELL'S

Patent Sewer-Gas and Backwater Trap

For Wash-Bowls, Sinks, Bath and Wash Tubs,

CLEVELAND, OHIO.

POROUS FIREPROOFING**Illinois Terra Cotta Lumber Co.**

Manufacturers and Contractors for the Fireproofing of Buildings

OFFICE

439 "The Rookery," CHICAGO

Telephone, HARRISON 1705

WORKS AT FULLMAN

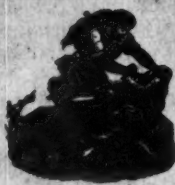
FOLLANSBEE BROTHERS CO.

OF PITTSBURGH

MAKERS OF

"SCOTT'S EXTRA COATED" ROOFING TIN

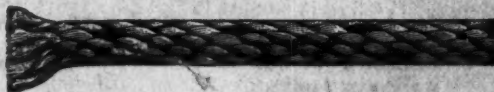
HAVE BEEN SELLING IT
THE COUNTRY OVER FOR
NEARLY A QUARTER OF A
CENTURY. IT IS ALWAYS
GOOD AND RELIABLE.



Linen Shoe Thread Sash Cord
Italian Hemp Sash Cord
India Hemp Sash Cord
and Samson Spot Cord

WE LIKE TO SEND SAMPLES.

Samson Cordage Works
Boston, Mass.



Matte Finish—Expedites—Saves



If other manufacturers had been successful in furnishing a satisfactory article along this line perhaps we would not be offering one; our line is big enough, but from the many inquiries we have had we are taking it for granted they have not. Here is a dandy, contains no wax, is elastic and durable, and it dries right, representing a perfectly rubbed surface, thus avoiding the expense of rubbing down. Seventy-eight years in the business tells you a few things.

Our I. X. L. FINISHES for Walls, Trim and Floors,
as well as SPAR COATING, head the list.

EDWARD SMITH & COMPANY
Varnish Makers and Color Grinders
59 Market St., Chicago 45 Broadway, New York



THE difference between a good lock and a poor one may be in design, in the material of which it is constructed, and in the workmanship. The YALE LOCK is the standard in all these.

YALE is the word that is a guarantee in lockdom.

"The Key to a Good Thing" shows how a YALE LOCK works and tells why it is the best lock made.

THE YALE & TOWNE MFG. CO.

9 Murray Street, :: :: :: NEW YORK

Chicago Office, 88 Lake Street

26 W. 26th ST., NEW YORK.

TIMES BLDG., PITTSBURG.

Columbian Fireproofing Co.

ENGINEERS and CONTRACTORS

for

Structures of Reinforced Concrete

and

OWNERS OF THE "COLUMBIAN SYSTEM."

All floors and roofs of the Federal Building at Indianapolis were constructed by us. Catalogue sent upon request.



BRISTOL'S Recording Instruments

For Pressure, Temperature
and Electricity

should be specified in all up-to-date dwellings and buildings.

Bristol's Thermometer-Thermometers show exact temperature of a room and give alarm or set regulating devices into operation if it changes from the desired point.

Every Instrument Guaranteed.
Gold Medal St. Louis Exposition.

Send for Circular P.

The BRISTOL COMPANY

Waterbury, Conn.

New York Branch, 114 Liberty Street.