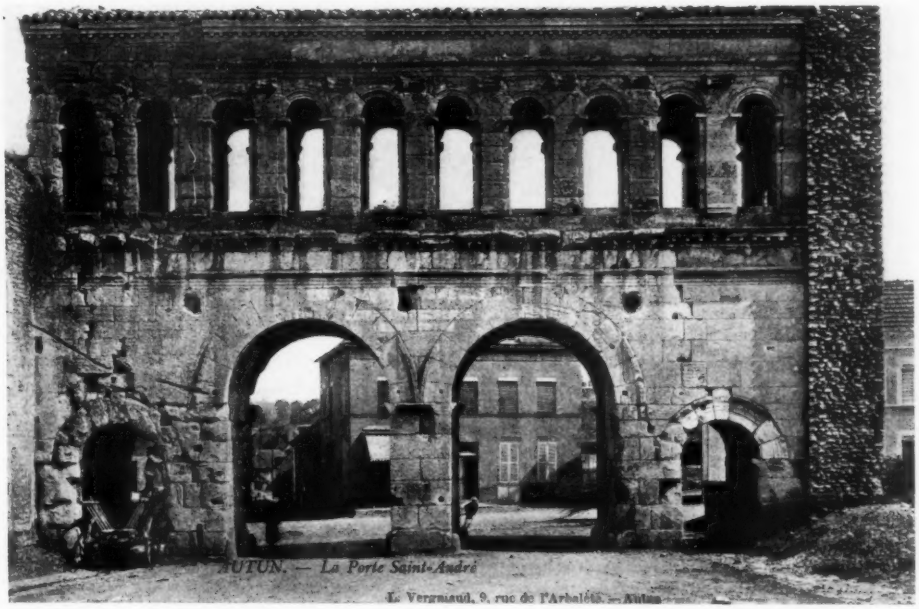
THE AMERICAN ARCHITECT

VOL. CXII WEDNESDAY, OCTOBER 3, 1917 NUMBER 2180



LA PORTE SAINT-ANDRE, AUTUN

Art in the Eastern Roman Empire from the Time of Constantine

BY CLEMENT HEATON

I.—THE DESTRUCTION OF ROMAN TRADITION

A STRANGER in Rome, in the time of Constantine, would have been impressed by the magnificence of its buildings, as strangers are nowadays with Paris or New York. The Building Corporations already described, were then busy on the great Basilica of Constantine, which, by its size and grandeur, surpassed the earlier basilicas. The Mausoleum of Constantia also, with a sumptuous porphyry sarcophagus and triple range of mosaics on the vaults, was as wonderful decoratively as the Basilica was wonderful for size.

And yet, with all this, had those then living foreseen the future, they would have known that it was but a question of a relatively short period before this splendor would disappear.

The Emperor in 317 issued a momentous decree, when he decided to transfer his capital to the East. At first Salonica was considered, ultimately Byzantium was fixed upon. By a stroke of the pen he set thousands at work building a new Rome in place of an insignificant town, for Byzantium was but this.

Such a task might seem chimeric, building a metropolis. The possibility of the attempt is explained by the organization of the *Collegium Structorum*. The Emperor was able to divert the

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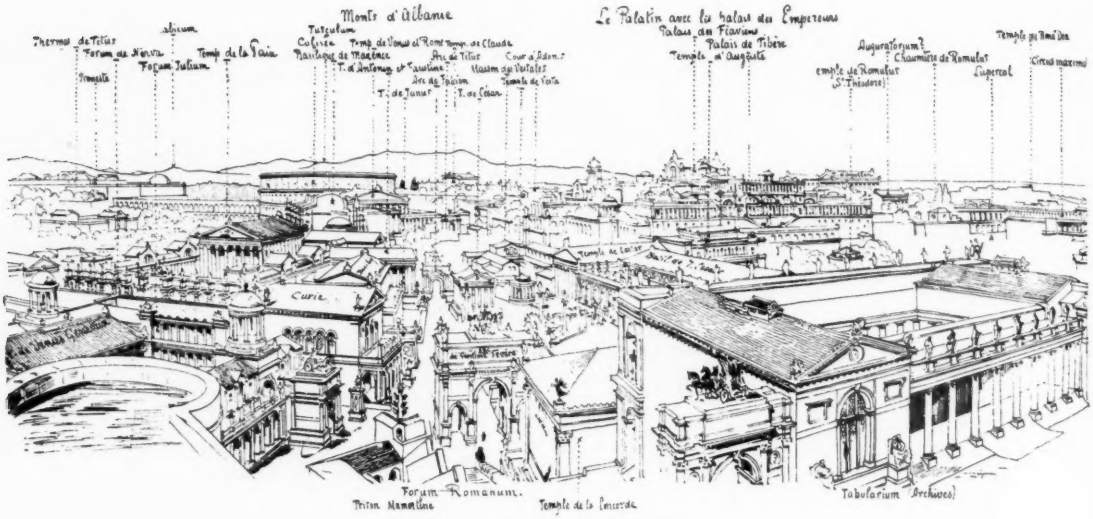
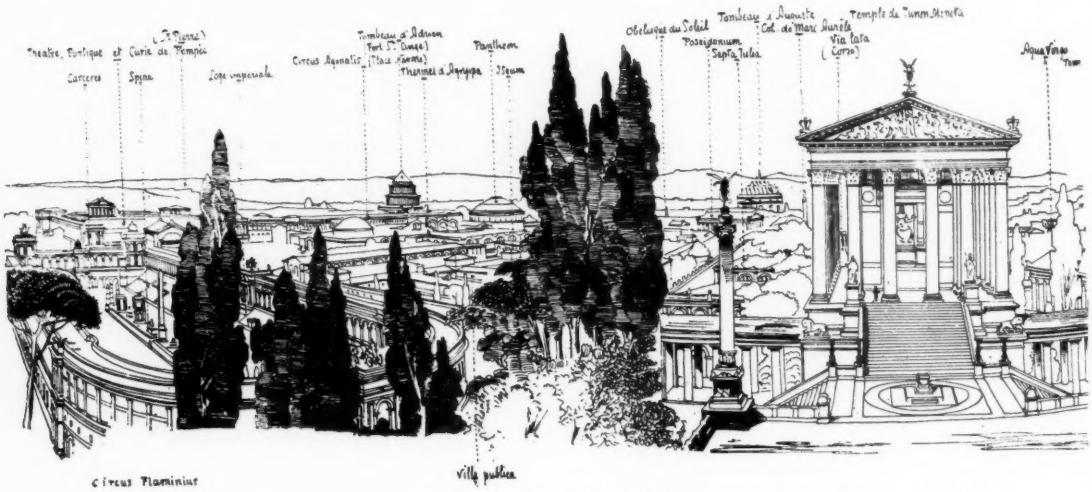


PANORAMA OF ROME

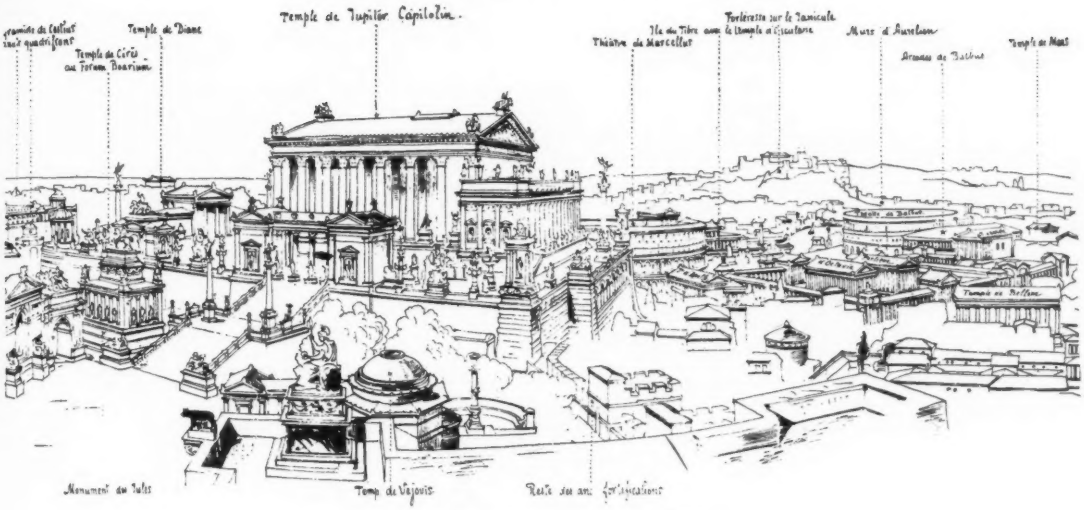
strength of the building crafts to the realization of his project, and he could command the various groups, as an army in number, to journey across the Adriatic. Led by the higher officials, these workers attacked the scheme as the military legions attacked an enemy. What the Emperor failed to do was to see the consequence of his act.

When the artisans and officials left Old Rome they passed through streets outside the walls, bordered with rows of sumptuous tombs; further out, they passed through well kept villas and smiling meadows, such as that which Pliny inhabited and has described. Who among them imagined that in a short time these villas would be made desolate, the meadows become marshes infested with malaria, and the tombs ruins? Yet such was to be the case. Even then, the Roman legions on the Northern frontiers, among the dark pine forests of Helvetia or Switzerland were being driven from station to station by the push of the Germanic tribes. Tiles are found there, made by the same legions, more and more southward as time goes on, as shown by the marks they bear. At this point danger was hovering, but decay in the *Campagna* began at once, when so many senators and rich officials left Italy for Constantinople, transporting thither their wealth and retinue, abandoning their fine estates around Rome.

Pliny's villa at Tusculum is described by Pliny



PANORAMA OF ROME

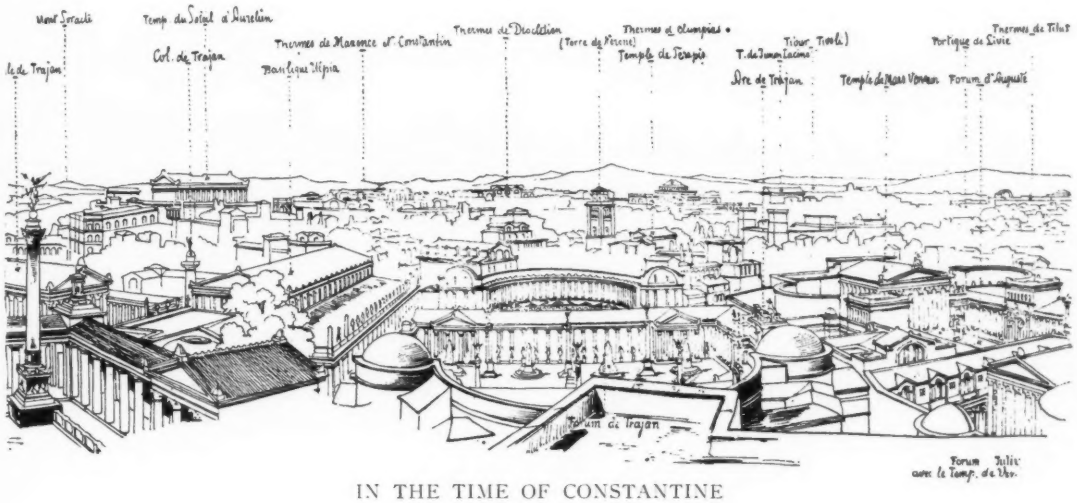


IN THE TIME OF CONSTANTINE

himself. There was a long portico with its atrium, on a terrace with boxtrees and shrubs, "cut into different shapes," such as "animals in box facing each other." Then a well-tended lawn with walks adorned with the luxuriant evergreens of Italy. In the garden was a circus with dwarf trees, around that a wall, completely covered by box, cut into steps all the way up to the top. Outside this stretched a smiling meadow and a plain with copses. Within the house was the large dining room or *Triclinium,* at the end of the *Portico,* the view from the windows extending over garden and meadows, far into the country. This was, of course, enlivened by cattle and attendant slaves. Summer-houses and cool fountains, welling up under magnificent plane trees, invited the guest to repose during the hot summer afternoon, where he could "enjoy constant shade and green," to use Pliny's words. Nor was this less inviting at other times, in a *Solarium,* "extremely warm in winter," built in the garden for use when the leaves had fallen; there were also baths and swimming baths, a tennis court and so on.

Who would have thought that events could affect the serenity of such delightful scenes? Was not the construction of a new Rome an extension of the glorious Old Roman Empire? Was not Roman power to cover the whole earth?

In the city itself a cause already imperilled the buildings. For Constantine, in establishing the



IN THE TIME OF CONSTANTINE

Christian religion, officially issued a writ of potential destruction against the Pagan temples, and all that depended on them. Moreover he himself began to despoil ancient buildings, to use the columns for his own. This meant the eventual destruction of an art which had so long flourished, and the subsequent rise of a new art. For a new epoch admittedly begins here, and new methods of work were destined to replace the ancient system in use by the *Collegii,* which had been in force for over a thousand years.

At first, though diminished, all work was not stopped. From the time of Constantine till the year A.D. 410, when Alaric crossed the Alps and marched to attack the mighty city, life continued much as usual, apart from the palpable decay in the *Campagna.* But when he arrived, many of the artisans took advantage of the confusion to escape, and went wherever they could find work, many, no doubt, to Ravenna. Some sculptors still remained, however, and as the fashionable use of sculptured sarcophagi continued, the production went on, though it was no longer so excellent, as shown by those that remain.

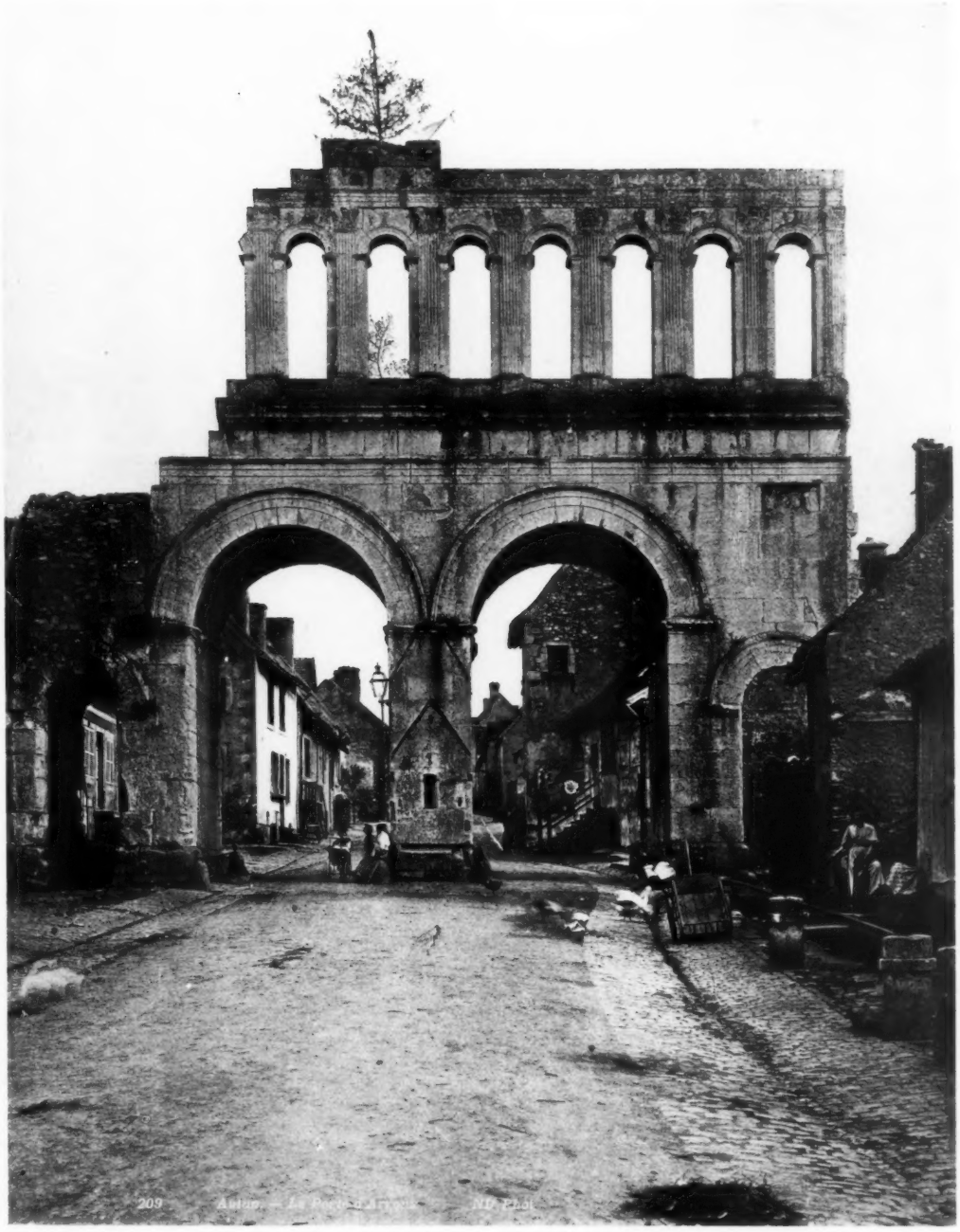
But fifty years later, in 455, another blow fell on Rome, this time by the hand of Genseric. The farms in the *Campagna* that still remained in cultivation, were now completely gutted and destroyed. The gates of the city were forced, thousands of Romans were massacred, the more eminent dragged away captive, and the city was completely sacked.

In the quiet meadows of Avenches, near the lake of Neuchatel in Switzerland, are the remains of a Roman city; for a Roman wall still stands in part, with the ruins of the usual circus and a temple in the center. This wall has towers, turned not outward, but inward. For it was here, at Aventicum, as the Roman city was called, that hordes of slaves from the North were concentrated, the walls were to confine them, and the towers were directed inward against them. As soon as the required number were assembled, they were marched through the Valais to Martigny, then across the snowy Alps along the very road which still remains, along the hot dusty plains of Italy till finally they reached Rome. Here they were sold, and were employed as slaves on estates, as gladiators in the circus, or chained to the benches of the galleys. Such was the mechanism of the "Roman peace," of which we hear so much, a peace in which the seeds of hatred were sowed by cruel oppression. It is recorded that one set of Saxon slaves, shut up in the circus ready to fight as gladiators the next day, killed one another in the night rather than afford pleasure for their captors. These had come along the road as described. When a slave was almost at the end of his strength, he was sent to the corn mill, and the last shred of life was flogged out of him. Haggard crowds toiled in the gloom till they dropped, and other crowds came to take their place till they, too, dropped. More, more, ever more! Julius Caesar alone possessed ten

GROUND PLAN. UPPER PLAN.

PLAN OF PLINY'S TUSCULUM VILLA

As restored by Castell in 1728



ROMAN ARCH IN THE TOWN OF AUTUN, FRANCE

A silent testimony to the Roman Road which was in use until the eighteenth century

thousand slaves. So Aventium was filled and emptied, filled and emptied, and ever again long chains of captives meandered along the narrow Roman road among the Alpine snows, the road we still can see, grass grown, among the gentian flowers around.

But when in 455, Genseric came, he came not as slave, but as conqueror. And then Rome paid the bill of her long exactions, and the true nature of a Roman "peace" was rendered visible. The vast buildings built by oppression were sacked and burnt. Siege and pillage took place again in 472.

In preceding articles the great causes at work producing the grandeur of Rome, were exhibited. Now we can perceive the equally great causes which brought about its destruction. The population were impotent; they had become corrupt, eaten up with self-indulgence, and alien inhabitants from the South and East had come into the city where only Romans once had been, and the effeminate Emperor Heliogabalus set an example for his subjects.

When disaster impended, the Emperors sought safety in flight. First to Milan they went, then to Ravenna on the Adriatic, a city protected by its marshes. There, in the Fifth Century, reigned the celebrated Empress Galla Placidia, and monuments were built which still remain illustrating the last chapter of Roman imperial splendor. The Mausoleum of Galla Placidia is still almost perfect.

So Ravenna became a world-renowned center of art, where ships from Byzantium, Alexandria and Syria brought men and traditions from the East. These mingled here with the men and traditions of the West, and so formed an Orientalized late Roman art; Roman traditions as the basis, colored with what was not Roman. In the early Sixth Century, Theodoric, the Goth, swooped down and seized the weak Roman Government, and reigned at Ravenna over Italy. For many years he governed wisely, both in this city and Rome, retaining and repairing all that was Roman.

But this afforded an occasion for the Eastern Emperor to attack Italy, and by the hands of his two generals, Belisarius and Narses, he overcame Theodoric and added the Italian peninsula to his own dominions, when Italy became a Byzantine dependency. The Church of San Vitale, commenced in the last days of the western emperors, and continued under Theodoric, the Goth, was finished as it now is under Justinian about 540 A.D. The portrait of this Byzantine Emperor with that of the Empress Theodora, is in the chancel, executed in mosaics.

There was nothing unusual in building sumptuous churches at that time, thus to use mosaics. This art was then in constant employment for the decoration of palaces and churches, and a large number of works were done now no longer in existence.

But this was the last of Roman imperial splendor, for in the Seventh Century famine, disease and death not only destroyed the people and artisans, but any remaining wealth. Art in Italy sank to a level of absolute barbarity, and Ravenna became what it is, a monument of the last days of the Empire, because it was eclipsed, and no important changes were made since.

FRAGMENT OF A CORNICE FROM AVENTICUM

The Specifying of Paints and Varnishes

By G. B. Heckel

Secretary of the Paint Manufacturers' Association of the United States

THE editor of The American Architect has requested me to prepare an article on this subject so as "to provide the architect with such technical information as will enable him better to specify paints and varnishes, in order to insure the most dependable goods and to prevent the substitution of inferior brands or the dilution of standard commodities."

That is the contract which, in a moment of weakness or vanity, I have accepted!

A specification presupposes two things: on the part of the specifier, a knowledge of the requirements; on the part of the purveyor, the ability to supply. Neither of these two qualifications is commonly apparent in current paint and varnish specifications. The trouble, as I see it, lies mainly in the fact that the specifier assumes that chemistry will solve all physical problems; and that the purveyor, with the evidence before him in the specification that the specifier does not know what he is talking about, calmly goes ahead and does the best he can.

It is pretty generally understood among technologists that chemical analysis alone will not determine the quality of either paint or varnish; so the specification for a black paint (which I have actually seen) that "the paint shall consist of pure white lead and pure linseed oil, tinted to the required shade with pure tinting colors," works out practically about as well as a minutely detailed chemical specification, unbacked by chemical analysis made by a competent paint chemist.

What the architect requires in either paint or varnish is physical results alone. He wishes to produce certain effects of color or finish with the highest possible protective efficiency. These are not obtainable, I think, through a chemical specification, since the "variables" of materials, surface, physical conditions and workmanship are too numerous for chemical control.

The paint manufacturer and the varnish manufacturer attack the problem from different directions. Accumulated experience has familiarized them with average conditions and the best methods for meeting them, and their products are made on that basis. Even this practice of averaging conditions still leaves the numbers of formulas undesirably large, as anyone may convince himself by looking over the lists of any of the leading manufacturers.

I think I have succeeded in indicating the difficulty in writing reasonable and practicable specifications for these products. The same materials, in different hands, will not yield duplicate products; and the same product used under different conditions will yield contradictory results.

What, then, shall be done to insure the use of satisfactory materials and adequate results? My unhesitating opinion is that the best possible specification is an honest, efficient and up-to-date painter —with emphasis on the last qualification. A painter may be absolutely honest, painstaking and efficient, yet so hampered with precedent and tradition that he is as much out of place in modern industry as Rip Van Winkle.

Beyond the painter as a basis for intelligent specification stands experience. Experience, in this connection, means a knowledge of the results to be expected from given materials. This experience is obtainable only by observation over a sufficient period of time. It would seem imperative, therefore, that the practising architect should have always in progress a series of field tests systematically examined and reported on at regular intervals. The information thus made available would prove a sound basis for specification.

Better still would it be if the American Institute of Architects, for example, through a standing committee should conduct such tests continuously for the benefit of the entire craft, issuing from time to time lists of approved brands or materials. One can easily conceive how such a committee or organization might eventually speak with authority on the entire range of products and materials. There is such an organization now in operation in New York, and, if wisely conducted and developed, it should accomplish much.

This method, of course, involves the use of brand or proprietary titles in specifications—a practice which is open to many valid objections, but, nevertheless, far preferable to the prevailing practice or lack of practice. The plan suggested, moreover, contemplates merely the establishment of lists of products permissible for certain uses, and the specification itself would merely prescribe that selections of the goods to be used should be made within the limits of these lists.

It would also involve continuous re-examination by the committee, since both the paint and the var-

nish industry are in a state of constant flux and readjustment, due to the exhaustion of old and the introduction of new raw materials.

It will be seen from the foregoing that the writer is skeptical towards the possibility of formulating adequate specifications in the sense implied by the title of this paper. In his "Paint Catechism" and "Varnish Catechism" the ground has been covered as well as he is competent to cover it; but the preparation of these left him daunted at the magnitude of the task.

In view of what has been said, consider for a moment the following incomplete array of requirements confronting the specification writer:

The materials offered for coating with paint or varnish include a wide range of woods, all different in their physical and chemical characteristics: steel, copper, galvanized iron, tin, plaster, concrete, etc.; the service required varies from the preservation of a steel bridge to the transparent matt finish on a paneled interior. One prominent varnish manufacturer lists over one hundred and fifty different and distinct varnishes and manufactures at least as many more, each having its specific and important use.

Nothing is impossible, but, in view of the facts, the writing of specifications involving formulas is not a kindergarten task—it had better be left to the technical experts, who may some time reach an agreement on the "a, b, c" of the proposition, thus enabling them to "begin at the beginning."

Take it from me, the routine specification issued from architects' offices is an archaic joke worthy of old Joe Miller himself. It may get what the writer thinks he wants, but the real joke is in his thinking he wants what he thinks he wants in this decade of the Twentieth Century.

The second conundrum propounded by the editor —assurance that simple raw materials specified by the architect shall be furnished without sophistication—is simpler but scarcely easier. It merely involves the employment of a competent paint chemist to make analyses.

The simpler raw materials involved are linseed oil, turpentine or turpentine substitute, white lead, zinc oxide and tinting colors—driers fall into the varnish category and are to be judged from their physical effect rather than their chemical properties.

Doubtless any intelligent man could, in a reasonable time, be taught to take the iodine value of linseed oil, for example; but to set forth the procedure in simple language required, in the one case where the writer essayed it, some two thousand words. Even then the findings of a man, who without precedent knowledge, attempted to follow the procedure would not be worth much. To a trained chemist these things are matters of easy routine, and to him they should be entrusted, with this precaution: a paint chemist only is competent to analyze paint materials and to interpret his findings.

The procedure recommended in the several standard specifications adopted by the American Society for Testing Materials cover practically all ordinary paint materials and may be confidently followed by any analyst, and may be used, with confidence, as the basis for specifications of such materials.

The opinions here advanced may prove distasteful to many readers. If so, I shall welcome criticism, and especially details of successful practice which may serve to controvert these opinions.

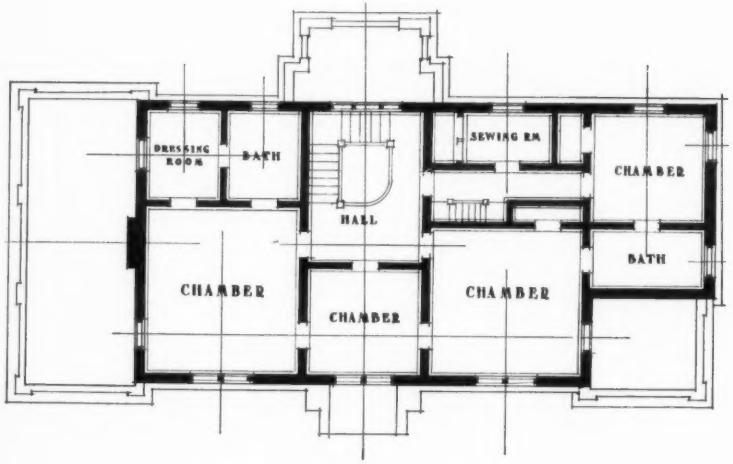
I have had before me during the past two years the task of preparing for an important industry standard varnish specifications along the lines proposed by the editor of THE AMERICAN ARCHITECT. The task is still in the ruminative stage and the suggestions of experience may prove unexpectedly helpful.

PLATE 146

HOUSE OF MRS. E. J. ABBOTT, NEWTON, MASS.

JAMES PURDON, *ARCHITECT*

XUM



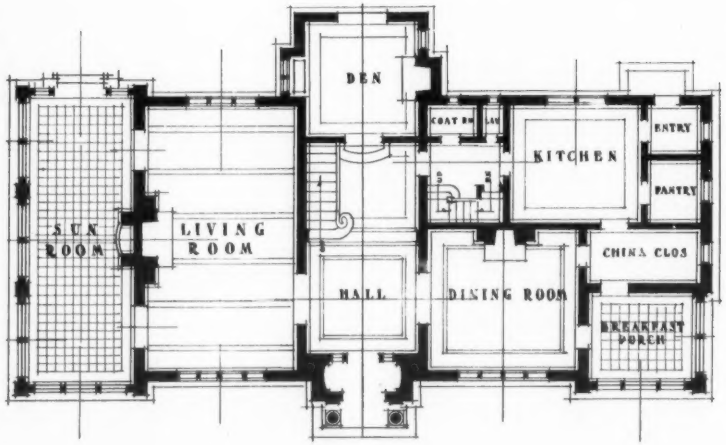


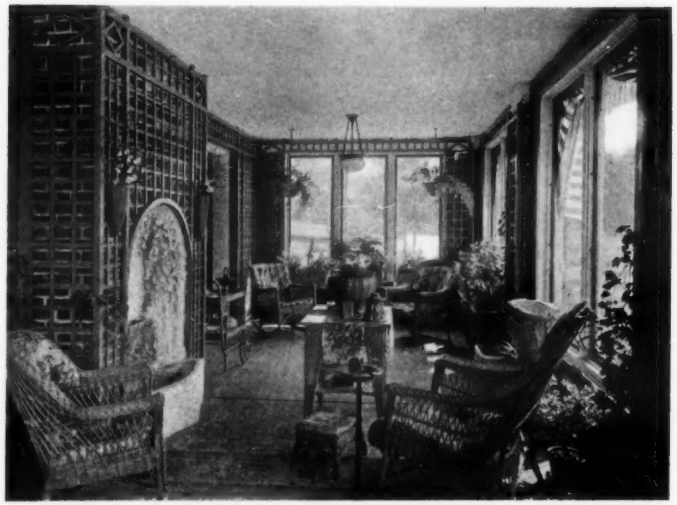
PLATE 147

HOUSE OF MRS. E. J. ABBOTT, NEWTON, MASS.

JAMES PURDON, *ARCHITECT*

XUM

STAIRCASE HALL



SUN PARLOR

LIVING ROOM

DINING ROOM

PLATE 148

HOUSE OF MRS. E. J. ABBOTT, NEWTON, MASS.

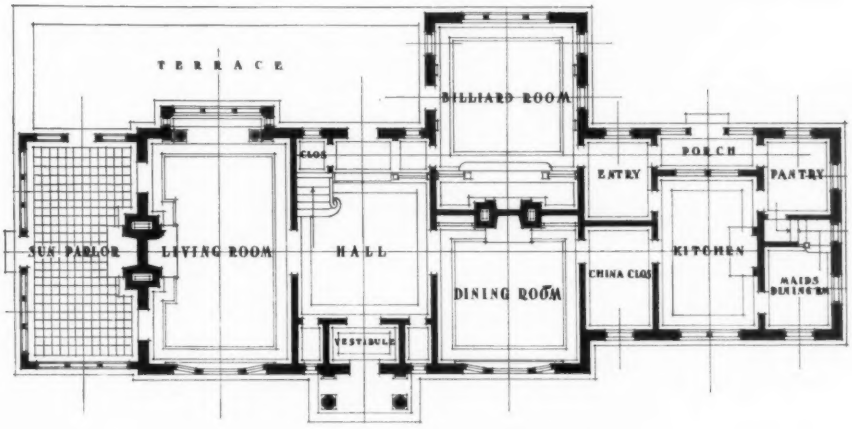
JAMES PURDON, *ARCHITECT*

PLATE 149

HOUSE OF A. E. THAYER, DEDHAM, MASS.

JAMES PURDON, *ARCHITECT*

REAR VIEW



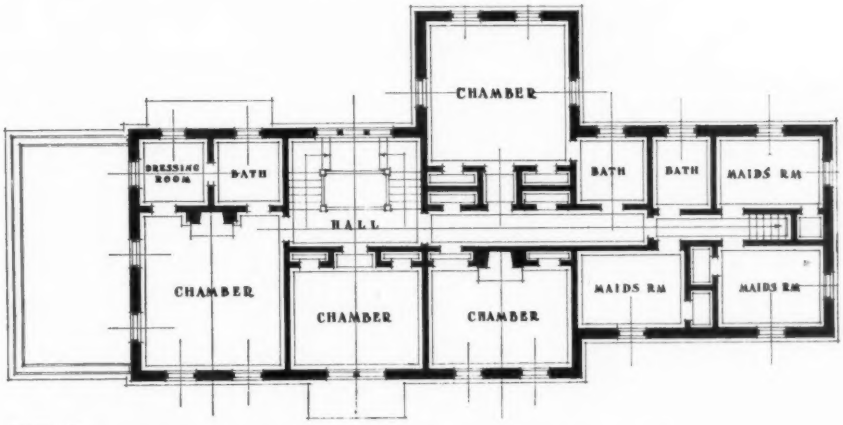


PLATE 150

HOUSE OF A. E. THAYER, DEDHAM, MASS.

JAMES PURDON, *ARCHITECT*

XUM

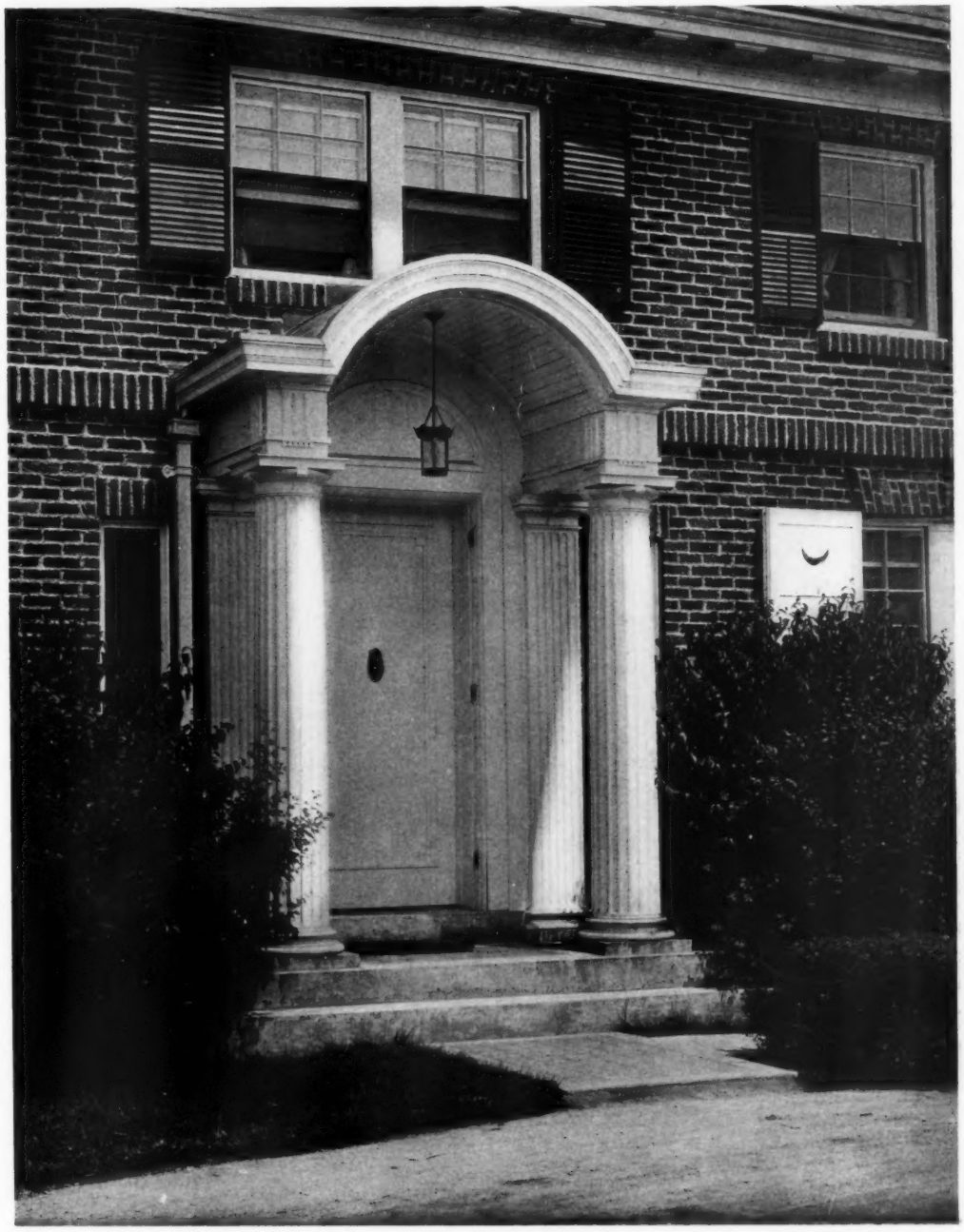


PLATE 151 DETAIL OF MAIN ENTRANCE

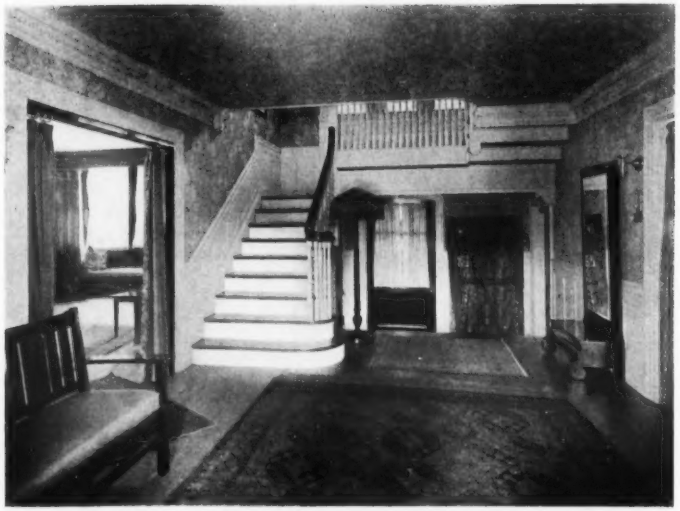
HOUSE OF A. E. THAYER, DEDHAM, MASS.

JAMES PURDON, *ARCHITECT*

XUM

SUN PARLOR

DINING ROOM



STAIRCASE HALL

HOUSE OF A. E. THAYER, DEDHAM, MASS.

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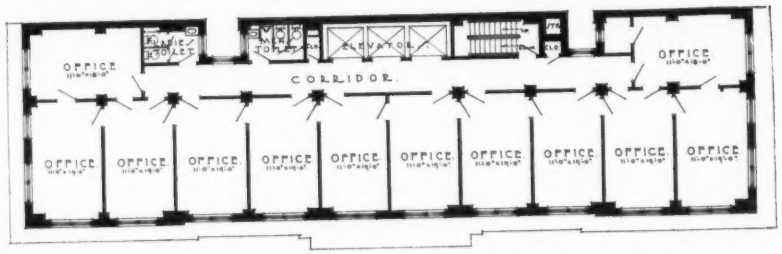

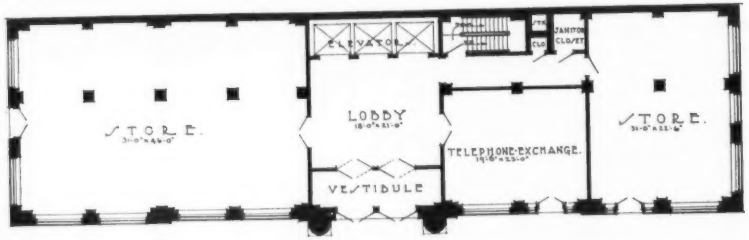

MEDICAL ARTS BUILDING, PHILADELPHIA, PA.

CHARLES E. OELSCHLAGER, *ARCHITECT*

XUM

THE AMERICAN ARCHITECT

Founded 1876

PUBLISHED EVERY WEDNESDAY BY

THE ARCHITECTURAL AND BUILDING PRESS, INC.

No. 243 West Thirty-ninth Street, New York

G. E. SLY, PRESIDENT

E. J. ROSENCRANS, SECRETARY AND TREASURER

JAMES KNOX TAYLOR—WILLIAM H. CROCKER
Editors

Address all communications to "THE AMERICAN ARCHITECT"

SUBSCRIBERS' RATES

In the United States and Possessions (Porto Rico, Hawaii, Philippine Islands and Canal Zone) Mexico and Cuba

TEN DOLLARS YEARLY, POSTAGE PAID

ALL OTHER COUNTRIES . TWELVE DOLLARS

SINGLE COPIES (Regular Issues) 25 CENTS

CHICAGO OFFICE, Mallers Building
Page A. Robinson, *Western Manager*

Owned by United Publishers Corporation—H. M. Swetland, President; Charles G. Phillips, Vice-President; W. H. Taylor, Treasurer; A. C. Pearson, Secretary.

Entered as second-class matter January 6, 1909, at the Post Office at New York, New York, under the Act of March 3, 1879.

VOL. CXII OCTOBER 3, 1917 No. 2180

Publishers' Announcement

FROM this date THE AMERICAN ARCHITECT will be edited by James Knox Taylor, F. A. I. A., and William H. Crocker.

It will not be necessary to refer to Mr. Taylor's long and honored connection with the profession of architecture, or to the valuable services rendered by him while Supervising Architect of the Treasury Department at Washington. His editorial connection with this journal will be of great assistance in the effort to produce a paper that will authoritatively represent every phase of professional practice.

Mr. Crocker will contribute the value of an experience and acquaintance with the needs of architectural publication work gained through a connection with THE AMERICAN ARCHITECT extending over a period of thirteen years.

The publishers believe that with an editorial staff so thoroughly acquainted with architectural practice they will be able to make THE AMERICAN ARCHITECT of constantly increasing value to the profession.

PUBLISHERS, THE AMERICAN ARCHITECT.

A Statement of Policy

IN view of the announcement in the adjoining column, it is deemed apropos at this time to give our readers some idea of what they may expect from this addition to THE AMERICAN ARCHITECT's editorial staff, although we have never believed very strongly in talking beforehand. Results speak much more loudly than words.

There are in the United States several admirable journals devoted to the field of architecture. None of them, it is believed, has realized the high ideals that would enable it to render the most helpful and therefore the most valuable services to the profession. Those associated with this publication are of opinion that there is an opportunity to make this magazine the one that will achieve this purpose, our aim being to aid in every way possible the placing of the profession on a higher plane than it has ever before occupied in this country, and, by combination and co-operation, to do our bit toward securing what individual effort, no matter how earnestly pressed, would fail to accomplish.

Among the objects in our program is the hope that we may be of assistance in encouraging a better understanding and a closer association among those in the profession and in the allied arts and sciences to whom we directly appeal, so that when occasion arises there may be presented a solid front that will command unfailing respect and confidence.

There are always two sides to every question, and usually the real truth lies somewhere between the two extremes. It will be our purpose to investigate and to discuss impartially every question of architectural importance, with the hope of suggesting some basis on which differences can be adjusted in a way that will be satisfactory to all concerned.

It is too early to attempt even an outline of the means whereby these and other objects not here referred to are to be attained, other than to say that it will be the effort to introduce into the paper what—for the want of a better expression—may be called the human element; that alone, it is believed, will go far not only in making it of infinitely greater value to the profession but will also appeal to those outside of the ranks who are interested in architectural matters.

In conclusion, the writer fully realizes the magnitude of the task that he faces, as well as the impossibility of succeeding in it alone, and he therefore asks from his fellow-members of the profession the same co-operation and support in his new field that was so freely given him during his connection with Government work.

JAMES KNOX TAYLOR.

The Problem of Industrial Housing

EVERY industrial center in the United States is now experiencing the pressing need for adequate housing for the large army of workers that have flocked to it. This question of housing becomes vital in our war preparation, and for this reason the problem of its solution becomes the duty of the Government, aided by the various communities where congestion exists.

Our past experiences are identical with those of our Allies, and as we have before us the example of both France and England we should be able to proceed with less delay than have those countries where these difficulties of industrial housing were in a measure unforeseen.

Said Charles Whitaker, editor of the *Journal of the American Institute of Architects,* in an address recently delivered in Cleveland: "The significance [of housing shortage] lies in the fact that war has given a prominence to housing such as peace could not give." Mr. Whitaker drew a parallel between the unpreparedness as to industrial housing by England and the foresighted readiness of Germany.

We are now learning, and at considerable cost, that a modern army is dependent on the industries at home; that war demands more from industry than peace.

Anything that hampers these industries will, of course, retard successful operation by our forces in the field. The lack of industrial housing is therefore a serious menace to our war operations, and it is necessary that the Government give every possible assistance in the great task of providing homes for industrial workers all over the United States.

Conditions have changed, and rapidly, and we have many manufacturing centers whose present industrial population is almost doubled as compared to the period before the war. Whether this large influx will remain after the war is over has no relation to the solving of the present problem, which is one of immediate necessity and must be treated as such.

Ignoring the Commission of Fine Arts

THE efforts by certain members of Congress during the recent debate in the House on the bill authorizing an expenditure of $1,250,000 for an annex building to the Treasury Department, to exclude the Commission of Fine Arts from any consideration of the design and plan of the proposed building, do not reflect credit on the intelligence of the members that opposed the amendment, nor will their remarks be received by either the members of the Commission or the large body of architects with patience.

It is to be regretted that the men forming the Art Commission, each ranking high in his particular branch, and each giving much time to his duties on the Commission without remuneration, should be so poorly rewarded. "Playing politics," ever a favorite pastime in Congress, has in this instance been carried to a point of very serious affront, not only to the present members of the Commission of Fine Arts but to every man who at one time or another has been a member of this Commission.

Fortunately the remarks of Representative Cooper of Wisconsin served to show that there was at least a small minority in the House that realized the dignity and importance of the Commission of Fine Arts, and the great value of their efforts in preventing a repetition of architectural atrocities similar to those that now disfigure Washington, due to the uncontrolled action of Congress in the matter of our public buildings. In the course of the debate, Mr. Cooper stated: "Department 'specialists' erected that 'noble red brick shed' in Judiciary Square, known as the Pension Building. They also erected the old postoffice building on the Avenue, that towering architectural monstrosity, said to be 'a cross between a cathedral and a cotton factory.' These gentlemen department 'specialists' also erected the new Interior Department building in as inconvenient and out-of-the-way place as could be found—a place without relation whatever to the great plan which provides locations for Government buildings with a view to the harmonious development of the city, and then, after locating it, they decided it should be built of red brick. They ignored the Fine Arts Commission entirely, as the act was so worded that they need not consult the Commission."

Mr. Cooper was merely stating the facts, and these facts are well known to every architect who has studied the development of the city of Washington.

It therefore seems desirable that some further legislation be enacted to insure that the Commission of Fine Arts shall have the controlling power in these matters, and that there are no loopholes through which Congress may find a way to evade what is undoubtedly the will of a majority of its constituents.

Book Notes

A HAND BOOK OF ORNAMENT, by Franz Sales Meyer, Professor of School of Applied Art, Karlsruhe. First American edition. Full cloth, 542 pp., size 5½ x 8½ inches. Price $3.60 net, New York, The Architectural Book Publishing Co.

The practical value of this book is mainly in its classification of the great amount of material that covers more than three hundred pages. As any work of this nature is one more of reference than general reading, the facilities for reference will be much appreciated. The illustrations are divided into three main divisions, the elements of decoration, ornament and decorated objects. These divisions are again subdivided, with geometrical motives, natural and artificial objects, the various adaptations of applied ornaments and a classification of the various objects that receive such ornament.

As will be inferred, there is illustrated considerable material that appears in previous works on this subject, but the user of the book will be able to find among the mass furnished just the decorative suggestion he desires with the least possible expenditure of time.

The book will prove a useful one in the architect's working library.

SCIENCE AND LEARNING IN FRANCE. With a survey of opportunities for American students in French Universities. An Appreciation by American Scholars. Full cloth, 420 pages, size 6 x 9½ inches. Published by the Society for American Fellowship in French Universities.

As Paris is the intellectual center of France, so may France be said to represent in her contributions to science in all its many phases, the learning of the civilized world.

At this time when France has "bled white" in a struggle to repel a ruthless invader, her men of science and deep learning have ceased the pursuit of the arts of peace and gone forth each to do his share of the duty that confronts him.

And now, while all France is struggling to accomplish as speedily as possible the high aims that urge her to a patriotic duty, and we as Allies are doing all that we may to help, it is an opportune moment to review the contribution that France has made to the arts of peace, while at the same time we have splendid evidence of her equally great ability in the arts of war.

This book serves more than to direct the attention of the thoughtful reader to these groups of men who, each in their particular field, have contributed to the glory of the French Nation. It makes it possible to learn of the momentous acts of French men in every branch of science and to become imbued with respect for a nation whose versatility in all of the arts has placed her in the front ranks of the nations of the earth.

Perhaps the secret, if there be one, of the eminence of the French in art and science, is in the openmindedness of the French scholar. His love of truth, his progressive and broad view of the entire field, has given him an advantage that isolation of thought would never secure.

The culture of France is deep-rooted. Her refinement in art, her elegance in literature and her contributions to the world of learning have earned our lasting respect.

The present volume puts before the American public the contributions of France in all fields of scientific knowledge. Each chapter briefly reviews a separate field, and each is written by a man whose eminence in a similar field in this country entitles him to speak with authority and his deductions to be received with respect.

To the student who, when peace has once more settled on the world, will go to France to pursue to completion a course of study begun in this country, the book will be of considerable value.

An appendix has been supplied describing the organization of French Universities, the standards of preparation expected of the student and much information that will help to a successful course of study. As is set forth in the preface, the ultimate and cardinal mission of the book will be an act of homage to French science. This purpose has been admirably achieved.

REINFORCED CONCRETE DESIGN TABLES. A handbook for engineers and architects for use in designing. By M. Edgar Thomas and Charles E. Nichols. Full flexible leather, 208 pages, size 4 x 7 inches, price $3.

There has been a pressing need for a handbook that would supply to engineers and architects a work that could be used as generally in the field of concrete designing as are the standard handbooks furnished to the steel designer. This book is practical and helpful in the highest degree. All obsolete or abandoned formulas have been eliminated and there remains an excellently arranged lot of tables that will serve the designer in concrete with accuracy. While most designers have worked out for themselves a set of tables, their value and the confidence with which they may be regarded can be quickly checked by reference to this book. The book will be a valuable addition to the architect's working library.

Effect on Business of Recent Statutes

The Chamber of Commerce of the United States has issued War Bulletin No. 18, which is, in part, as follows:

"During the continuance of the war in which the United States is now engaged the President is authorized, if he finds it necessary for the national defense and security, to direct that such traffic or such shipments of commodities as, in his judgment, may be essential to the national defense and security, shall have preference or priority in transportation by any common carrier by railroad, water, or otherwise."

These are important words for business men. They are in the recent amendment to the Interstate Commerce Act, and create the power which the President has delegated to Robert S. Lovett.

Business men who may at some time apply for preferential shipment under the terms of this Act should bear in mind that preference can be granted only when essential to the national defense and security. When such applications come to be considered it is not unlikely that attention will be given to the manner and extent to which such business men are contributing to the national defense and security.

Thus, when a manufacturer recently applied for preferential shipment of a material of which he was in need, inquiry was made of those branches of the Government served by this manufacturer, to develop how the manufacturer stood on contract deliveries and what his attitude was toward supplying the Government at fair prices.

Business men should not forget the maxim of equity that those asking relief and assistance should come with clean hands.

COMMITTEE ON CO-OPERATION WITH THE
COUNCIL OF NATIONAL DEFENSE,
WADDILL CATCHINGS, *Chairman.*

A New Building in Washington for War and Navy Department

The important feature in Washington building circles is the action of the House of Representatives in appropriating $2,000,000 for a temporary office building, including heating and lighting, for the use of the War and Navy Departments, to contain 1,055,000 square feet, to be erected in Henry Park, reservation No. 4, 6th and B Streets. This appropriation is in the urgent deficiency bill, now before the Senate, and the proposed building will occupy the space at one time the site of the Pennsylvania Railroad station. In spite of rumors, the Commission of Fine Arts has offered no opposition to the erection of this temporary building on the Mall. The building will be composed of a main structure 50 feet wide, with a 10-foot hall and rooms 20 feet wide and running out from it at every 20 feet or 30 feet will be wings so that it will afford the greatest amount of light possible. It is to be a three story structure, without elevators and equipped with a sprinkler system. The building will be constructed in 90 or 100 days.

A Patriotic Firm of Architects

Architects everywhere have promptly responded to the "call to the colors," and in every city many men in the profession have laid aside their professional work and joined one of the various branches of war service.

An example has now come to our notice of a firm of architects composed of three men, who have discontinued practice for the period of the war, closed their office, stored their furniture and enlisted in the aviation corps, where they have successfully passed examinations for commissions.

The firm of Gillespie, Porter & Schreiber of Austin, Tex., has by this action become non-existent until peace is declared.

Monet to Paint Rheims

The report that the French Ministry of the Fine Arts has commissioned Claude Monet to paint the ruins of Rheims Cathedral indicates how far the art world has moved since impressionism was a heterodox cult, says the *Boston Transcript*. Impressionism came into good and regular standing, even if it did not win all suffrages, when the Caillebote bequest was accepted for the Luxembourg Museum. Since that time, so many queerer things have been sighted on the art horizon, impressionism has become gradually more and more like something familiar, and even old-fashioned; everybody has "got used to it," even if they have not learned to love it. We suppose the nomination of M. Monet for this commission came about naturally because of his series of paintings of the Roune Cathedral, many of which have been exhibited in this country. That remarkable series was essentially a series of impressions, and in some respects it was the most interesting and imposing set of paintings due to Monet's brush. Let us hope that the famous master of Giverny will not begin his labors at Rheims until the place is far beyond the range of the hostile artillery.

Re-building France

A chaotic array of individuals and organizations, official and private, having developed in France, more or less concerned with the reconstruction of the war-devastated districts, the Government has now appointed an Executive Commission to co-ordinate the operation of the several ministers concerned. This commission is composed of the Ministers of the Interior, Finance, War, Public Works and Transport, Commerce, Industry, Posts and Telegraphs, Agriculture, Labor and Social Welfare. The commission will be presided over by the president of the inter-ministerial committee. Three controllers will be appointed by the President of the Republic, on the nomination of the Minister of Labor and Social Welfare, and will be specially entrusted with local inquiries; they will also see to the co-ordination of the operations of the various public services. Other officials who may be required to assist these controllers in the exercise of their functions will be appointed by the president of the committee.

Demountable Wooden Houses Needed in France

A letter from Maj. Ernest McCullough, chief engineer of the American Red Cross, in Paris, to *Engineering News-Record* encloses a set of drawings and specifications for temporary wood houses to be built in the destroyed region of France. These projects are in charge of the Ministère de l'Interiure and inquiries regarding them should be addressed to that department in Paris. The single copies of the documents with the drawings can be seen at the office of *Engineering News-Record*.

The Government of France is now preparing for re-occupancy of the districts evacuated by the Germans and, as is well known, practically all of the cities have to be rebuilt. For the temporary shelter of the returning residents, however, small wood frame houses are provided. These are generally of a take-down type which are shipped in cut and fitted pieces to be erected on the site. Such houses, of four different types, are illustrated in detail in the drawings sent, and it is Major McCullough's opinion that American manufacturers may be able to go into the business of making them.

The cost of the houses is about $250 per room delivered at a port in France, from which they will be carried by the Government to their destination. On account of short freight cars the maximum permissible length of any piece is 6 m. or 19.7 ft. Hundreds of houses have been used and thousands will be required. Those now built in France and Switzerland are of green lumber, not always of the best quality. Furthermore, it is extremely difficult now to get timber in France over 5 x 10 in. in section. Anything larger is or has been taken by the armies.

The Society of Friends of England is also engaged in this reconstruction work and has factories where these demountable houses are built.

Cantonment Construction for the New Army

COL. I. W. LITTELL, in charge of the cantonment construction for the United States Government, has authorized the following:

With the arrival of the first contingent of the new National Army at the cantonments today, the status of construction at the various cantonments will undoubtedly be of public interest.

Altogether, sixteen military cities have been built by the Government to house the 687,000 citizen soldiers selected for service by the draft. Of these cities, seven were ready September 5 to receive their entire quota of officers and enlisted men.

Seven other cantonments were ready to receive all the officers and two-thirds or more of their entire quota of enlisted men.

The two remaining National Army cantonments have already received and are taking care of more than their full quota of officers and are ready to receive the number of enlisted men originally ordered there.

An army of approximately 150,000 men was employed in the construction of the sixteen National Army cantonments up to the first of September; since that date the force has been gradually reduced.

There are certain units in connection with each of the cantonments which were added after the original scheme was under way, and which are, in some cases, not complete. These are general hospitals in addition to the regimental hospitals, and re-mount stations to take care of some 12,000 horses each.

A typical layout such as is required for accommodating the officers and men at a cantonment comprises, in round numbers, fifteen hundred separate buildings, requiring approximately thirty million feet of lumber.

Each cantonment requires a complete system of water supply and sewage disposal, the piping alone for which amounts to more than fifty miles. The general warehouses, with necessary trackage, have also been provided. Where the facilities are not available in nearby cities, complete refrigerating and laundry plants have been built.

At each cantonment up to September 1 it has

been necessary to complete on an average of one building per hour, or for all the cantonments an average of one building every four minutes.

In the construction of the cantonments to date over fifty thousand carloads of material have been transported to and delivered at the sites—an enormous tax upon the already over-burdened railroad facilities of the country.

Every National Army Cantonment has required the building and installation of a transmission line for electrical current.

At every cantonment approximately four thousand officers and enlisted men have already arrived.

National Housing Conference

In view of acute conditions arising from housing shortages in almost every American industrial center which has been boomed by war industries, announcement of the Sixth National Conference on Housing in America assumes unusual interest.

The conference will take place in Chicago, Oct. 15, 16 and 17, at the Hotel La Salle, under the auspices of the National Housing Association.

Discussion will center on the various problems of industrial housing, and some of the country's leading experts in this field will contribute papers. Of great interest, too, will be that portion of the program which is to deal with the housing of the new army in the cities which the United States is building. In this connection, as well as in several of the section meetings which will be a feature of the conference, especial emphasis will be laid upon the relation of housing to health, and the part which bad housing has played in the production of the "physically unfit" man.

Testing Building Stones

The effects of freezing and thawing on building stones are to be tested at the U. S. Bureau of Standards by means of an ingenious form of apparatus designed for this purpose. It is well known that all kinds of stone, slate, brick, concrete, etc., will disintegrate in time when exposed to the action of frost, especially in humid climates, like that of the eastern United States, the action being due to the freezing and consequent expansion of water held in the pores of the material. It is obviously very desirable to ascertain the merits of different building materials as to their susceptibility to such damage, and many tests have been carried out for the purpose. The novel feature of the testing apparatus designed at the Bureau is its rapidity of operation. The apparatus will automatically move a charge of stone, concrete or other material back and forth from a freezing chamber to a thawing chamber at the intervals required to completely congeal and thaw the contained moisture. It is expected that by this means eighty to one hundred freezings can be made in one day, whereas such a test formerly required several weeks. Thus it will be possible to determine definitely the number of freezings required to bring about a certain degree of disintegration. Having obtained this information with respect to a given kind and grade of material, it should be possible, on the basis of climatic statistics, to predict approximately the number of years' service it may be expected to give in a specified locality.—*Scientific American.*

Fire Loss High in August

The fire loss in the United States and Canada during the month of August, according to the *Journal of Commerce*, reached a total of $21,751,000, as compared with $16,143,050 in July and $10,745,000 in August of last year. The fire loss for the first eight months of this year is $180,515,875, as compared with $159,535,220 for the same months last year and $111,464,900 for the same eight months in 1915.

Personal

George B. Post & Sons, architects, and Ernest P. Goodrich, engineer, announce that they have become associated professionally in the practice of architecture, engineering and city-planning. The architects' office will be at 101 Park Avenue, New York, and the engineers' at 261 Broadway. The architectural members of this consolidation are William S. Post, J. Otis Post and George B. Ford; the engineering, Ernest P. Goodrich and A. Pearson Hoover.

The object of the closer association between the two organizations is to permit of a wider latitude of practice and more intensive co-operation in the design and execution of engineering and architectural works in general and, in particular, in city-planning, workingmen's housing and industrial developments. The combination will bring together the unique experience of both organizations.

Cecil F. Baker, architect, announces that he has closed his office at 30 North Michigan Avenue, Chicago, to accept the position as head of the Department of Architecture, Kansas State Agricultural College, Manhattan, Kansas.

He will continue a limited practice from his Manhattan office. Address after September 10th Kansas State Agricultural College, Manhattan, Kan.

Erhard Brielmaier Dead

Erhard Brielmaier, architect, died at his home in Milwaukee on August 30. He was 76 years old. Mr. Brielmaier was born in Wurtemberg, Germany, and came to this country at the age of 9 years. He was widely known as an architect of Catholic churches and other ecclesiastical structures.

North Dakota Architects' Association

The annual meeting of the North Dakota Architects' Association was held in Fargo on September 11. George Hancock, Fargo, is president of the association.

North Dakota State Board of Architects

The State Board of Examiners, created by the recently enacted licensing law in North Dakota, has organized and will proceed with the examinations of applicants for permission to practise.

The members of the board are George Hancock, Fargo; W. J. Edwards, Grand Forks, and Arthur A. Van Horn, Bismarck.

Liberty Loan Poster Competition

Burnham Hoyt, architect, New York City, is the winner of the first prize in the competition recently held by the Art Alliance of America for a poster having "the highest artistic qualities, combined with the power to induce people to invest in the Second Liberty Loan of 1917."

Mr. Hoyt is with Bertram G. Goodhue. The second prize was awarded to S. Tama of Cleveland.

Final Report, Zoning Commission, New York

The final report of the Commission on Building Restrictions of the Board of Estimate and Apportionment of the City of New York has now been issued and distributed. It is a voluminous work of 300 pages, bound in cloth and has many photographs and plans.

Cities all over the United States have watched with considerable interest the efforts of New York to effect a zoning law that would serve to correct errors of the city's growth and to check future costly mistakes.

This report reviews the entire proceedings and investigations of the Commission and sets forth its recommendations. Realizing that New York has reached a point beyond which continued unplanned growth invites social and economic disaster, this Commission set out to provide a plan that would check these evils and at the same time involve the least degree of injury to the various properties that would be affected by a zoning law.

Unlike most reports of this nature, this is a readable and entertaining volume. It presents a great many photographs showing existing unsatisfactory conditions, and an equally large number of maps on which are designated the population, its various groupings, and the location of different types of buildings. All these enable the reader to comprehend at a glance the very serious conditions that have been allowed to grow unchecked during the past twenty-five years in New York.

The report will serve to point a way to the correction of all these evils, it will also be of the greatest value to other cities where similar conditions are creating a menace to future expansion.

The Art Commission of New York

The Art Commission of the City of New York has published a booklet containing reports of its work for the years 1914, 1915, and 1916.

The powers and duties of the Commission are described. Under its charter, the jurisdiction of the Commission includes:

(a) All works of art to be acquired by the City of New York.

(b) The removal, relocation or alteration in any way of all works of art already possessed by the city.

(c) All designs of buildings, bridges, approaches, gates, fences, lamps or other structures erected or to be erected upon land belonging to the city and affecting the property of any corporation or private individual as well as the general public.

(d) The selection of art productions, costing not more than $50,000 in any one year, when such appropriation has been made by the Board of Estimate and Apportionment.

A brief history shows clearly the great progress that the Commission has made. In its early years, it was practically a new departure in municipal government, and it was therefore thought wise to be conservative in view of the experimental nature of the scheme. The mandatory provisions of the Act were made at this time only to apply to works of art, and this was so loose an expression that very little was done. Upon the request of the Mayor, influenced, as he would naturally be, by public opin-

ion, the Art Commission was vested with powers regarding every matter that in any way seemed to affect the beauty of the city. The Commission at the outset began to justify itself by well accomplishing the purpose of preventing, as far as possible, the erection of the ugly and unsuitable, and in each case securing the best possible results under the circumstances. In 1901 the Commission passed upon but five matters; the succeeding year the number rose to sixty-four. As the bulk of work increased, facilities were provided to make it as efficient as possible.

These reports describe the process of analyzing the objects upon which the Commission is required to pass judgment, and the impression of sincere and thorough work in this regard is conveyed. Committee appointments, annual changes in membership, and work accomplished also are given space. There are a dozen full-page illustrations of objects approved and disapproved, and one feels convinced that confidence in the Commission is highly deserved.

Industrial Information

The Asbestos Protected Metal Company of Pittsburgh announces the opening of a sales office in the Union Central Building, Cincinnati, under the direction of Mr. J. C. Lathrop.

Electric Clock Systems

Bulletins Nos. 100, 110, 120, 130, 140, 150 and 160 of the Landis Engineering & Mfg. Co., Waynesboro, Pa., are ready for distribution. The subjects covered are too numerous to detail here, but they deal with the Landis company's complete line of electric time and program clock systems for educational and manufacturing establishments, hospitals, hotels, etc., in an exhaustive way. They are clipped into an attractive cover in correct size for filing in the form standardized by the Institute.

Modern Method of Attaching Trim

United States Spot Ground Corporation of Omaha, Neb., manufacturers of "Peds" for attaching trim, are circulating some very live advertising material in series form, setting forth the uses of Peds in a way to interest the architect. It would be worth while for the up-to-date architectural office to have information on Peds in its files. A Ped is described as "a spot ground for attaching trim to walls and sleepers to concrete floors," consisting of a nailing block of wood held in a metal plate. The block is treated to prevent rotting or swelling. The metal plate is a 3⅝-in. thin disk, painted, holding the wood block by means of a circular flange. A ped is applied to any surface by the use of plaster which, besides the direct bond, comes through the ⅜-in. holes in the plate and keys it firmly in place.

Power From Texas Lignite

Texas produces 10,000,000 tons of lignite yearly, valued at about $1 a ton, and the fuel situation has recently led to an investigation of the possibilities of burning this low-grade fuel in a central power plant for generating electricity and at the same time recovering by-products such as tar and tar oils, sulphate ammonia, and solid residue for making briquets. Two methods have been suggested—to distill in retorts or to burn in gas producers, using the gas to generate electricity. It is said that when all the energy and by-products in a ton of lignite can be utilized, the Southwest will not only have cheapened its fuel and power but will have gone a long way toward solving some of its industrial problems.

More Lead Produced in 1917

More than half as much lead was produced during the first six months of this year as during the entire twelve months of 1916, according to figures compiled by C. E. Siebenthal of the U. S. Geological Survey. The increase is due mainly to a marked increase in lead of foreign origin. The domestic output was 276,523 tons, as compared with 276,114 tons, half the corresponding output for 1916. The output from foreign sources, however, was 29,529 tons, as compared with 9,453 tons, half that for 1916. The apparent consumption of lead in this country during the six months was 268,952 tons, as compared with 230,587 tons, half the consumption during 1916. The average outside spot price during the six months' period was 9.9c. per pound, as against 6.9c. in 1916.—*Engineering News-Record.*

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