PENCIL POINTS

Volume VII APRIL, 1926 Number 4

WHAT DO WE OWE EACH OTHER?

WHAT DOES THE ARCHITECT owe to his draftsman? And what does the draftsman owe to the architect for whom he works? The financial side is one which is, or should be, controlled by the law of supply and demand; and at the moment we are not concerned either with the point of view that draftsmen, as a body, are paid less than they are worth, or with the other side of the coin which holds an inscription to the effect that the draftsman is paid more than he should be.

Rather are we concerned with other and, we believe, equally important considerations. Architecture is not a business in the same sense that the manufacture of steel is a business. The practice of architecture has its business side which should be efficiently conducted, but the practice of architecture is, or should be, something more than a business; and it is of this "something more" that we would speak.

Every office which has the word "architect" over the door should be the home of people—whether it be a large or small group—who are striving together harmoniously to produce buildings of all types which will accommodate our present population and serve either as expressions of beauty or of utility, or both, for many generations to come. To secure the best results, relations must be established among all those contributing to the work which will give to each individual and to the office as a whole a free and untrammeled opportunity to express the best there is there in terms, first of ideas, second of drawings, and third of those other steps necessary to create the finished building.

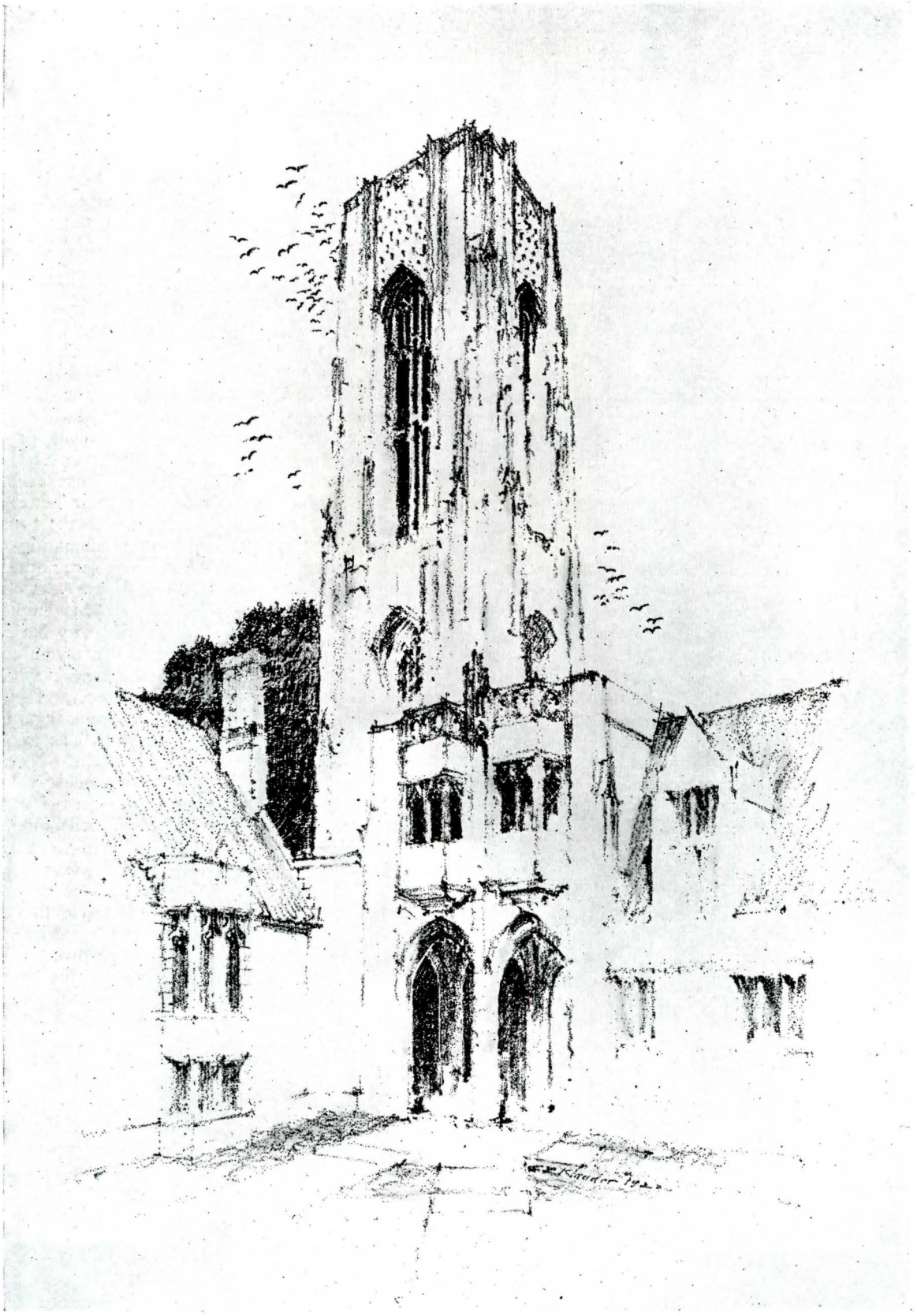
To say that the architect owes to his men and that the men owe to their employer a "square deal" all along the line is to utter a frightful commonplace; so we hasten to ask of just what this "square deal" should consist from both sides. And here is the way we see it. The architect, usually being an older and more experienced man than those working for him, has the greater responsibility and the greater vision by which to steer the office craft. His is a more mature judgment and he should be the leader and the inspiration of the force. He should be fair and patient, realizing the aspirations of his force as well as their limitations; and seeking to develop the latent abilities of those under his roof for the common good of the office as well as for his own financial and spiritual well-being. In the offices where these facts are appreciated and given due weight,—and there are thousands of them,—the family is a happy one; the work goes smoothly in the main; hirings and firings are not daily occurrences; and there is a spirit of loyalty and trust which means still greater success and still more pleasure to be derived from the work from year to year. In so far as possible, depending somewhat upon the size of the organization, the architect should make it a point, by helpful criticism and the display of a genuine personal interest, to assist his men to improve and develop themselves so that they will be fitted for more important tasks within the organization, if opportunities present themselves, or for a larger usefulness elsewhere if the opportunities be limited in that particular office. Those architects who follow this course find that their better men will stick to them rather than listen to the tinkle of an extra five dollars, said tinkle emanating from some other architect's office or from some other line of endeavor.

What does the draftsman owe to his employer? We used the word "loyalty" a little way back, and that just about sums it up. If a draftsman cannot be really loyal to the man for whom he is working, there is something wrong *somewhere,* and he had better go elsewhere and start all over again. A draftsman who is seeking to "get by" as easily as possible and is master of those tricks of evasion with which we are all familiar, is not giving his employer a "square deal". Each step in the work of the office requires conscientious and intelligent performance. If something goes wrong on a drawing it makes a lot of trouble on the job, and while mistakes are inevitable, none should be the result of indifference, carelessness or a desire to deliver less than the full measure—and full measure as we see it is the best there is in you. If a shirk "gets by" for a while he may think he is clever, but when he gets caught he knows, or ought to know, that he has been a fool.

No architect's office can run on a precise schedule. There are times when the impossible has to be done, and when such a situation arises, it is no time to whine at the clock. The chances are the boss puts in more overtime than his men, and he carries a greater responsibility. If the boss happens to be one of the few who never can say a kind word to anybody, (and there are such even in the practice of architecture), there is at least the satisfaction of knowing that one has done a good job and that is worth something to a man even if he gets fired the next day; but he probably won't.

Every draftsman, whatever his ability, his circumstances, or his difficulties, can do his level best. That he owes to his employer, to his fellow draftsmen, and above all to himself.

What does the architect owe to his draftsman? And what does the draftsman owe to the architect? *You* tell us what you think about it.



LITHOGRAPHIC STUDY, CONCORDIA SEMINARY, ST. LOUIS, MO., BY CHARLES Z. KLAUDER

LITHOGRAPHIC RENDERING OF A COUNTRY RESIDENCE, BY HOWARD LEIGH
Walker & Gillette, Architects

ARCHITECTURAL USES FOR LITHOGRAPHY

By Kenneth Reid

IN THESE MODERN DAYS of large buildings and urgent publicity, the architect is confronted with the necessity of furnishing to his client a multiplicity of pictorial representations of his projected structure as it will look when completed. To begin with, a number of copies are needed during the financing operations to show to the banking and financial executives and investors who wish to see what material form their investment is to take. There must be other copies for newspaper and trade journal publication so that the operation may be given suitable advertising. Finally, when the building is an assured project and is actually to be built, a further number of copies of the perspective are needed to put into the hands of the brokers and agents charged with the renting of space. When these needs are summed up in the case of, let us say, a twenty-five story office or apartment building, a hundred or more individual prints must be supplied.

To meet the demand for drawings the architect may choose to have his rendered perspective done in almost any medium,—charcoal, pencil, pen-and-ink, or wash, for monochrome effects, and water-color, pastel, or oil paint if color is desired. In all of these cases duplication is a matter of obtaining photographic prints, or photostats, which may be made larger or smaller than the original drawing.

Lithography has, in recent years, attracted the architect's attention more and more as furnishing a cheap, rapid, and eminently satisfactory method of obtaining multiple prints of architectural perspectives. It possesses several important advantages over other media, though perhaps a few disadvantages.

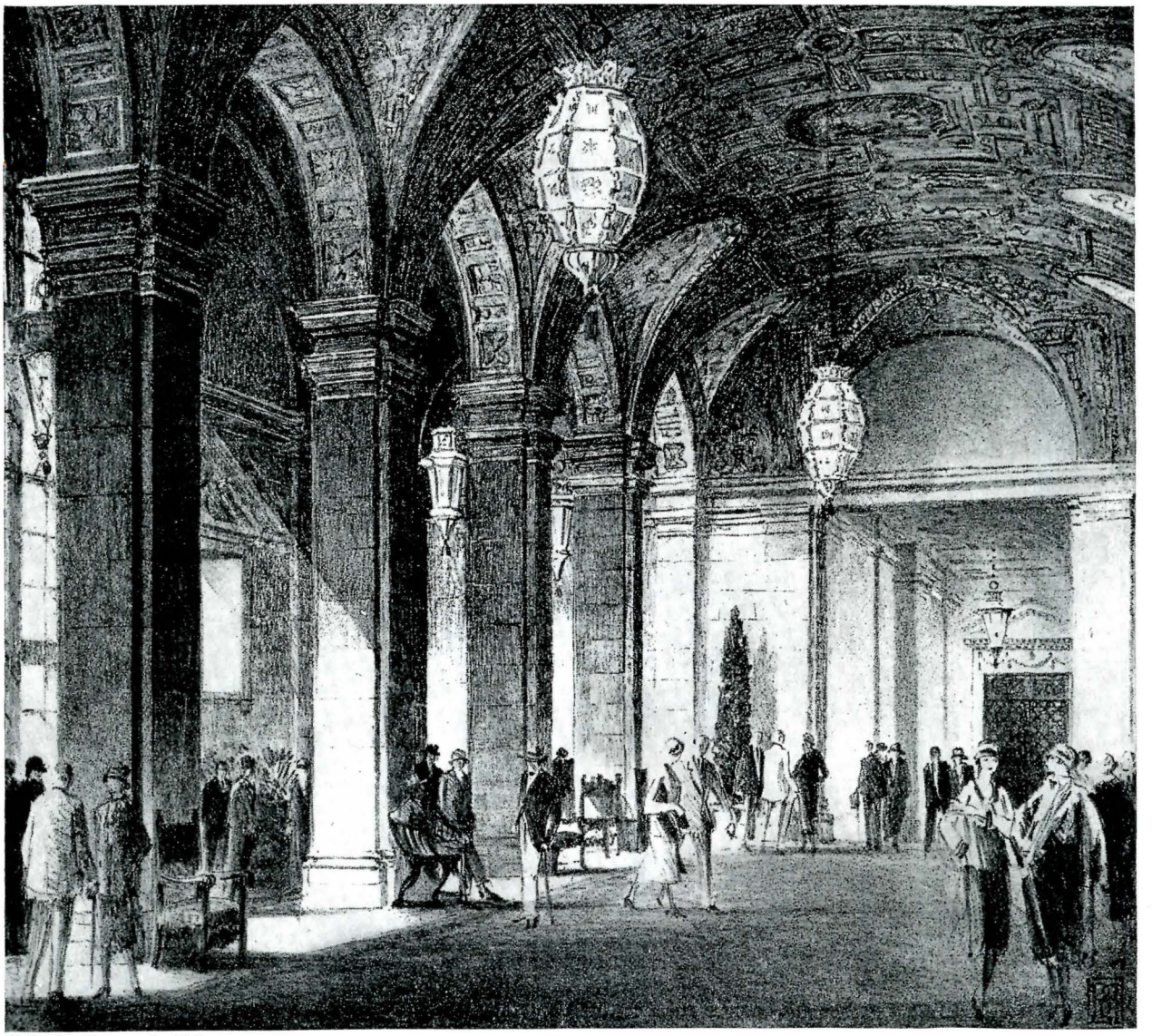
In the first place, every print is an exact duplicate of the original drawing and is actually considered, in the parlance of lithographers, an "original". There is no loss of effect through the intervention of the camera and all values remain the same as when they were set down.

Each recipient of such a print is likely to gain a favorable impression of the architect and of his design, all of which may materially aid in the successful financing of the building. It has been found also that a good lithographic drawing will, in general, make a better subject for newspaper reproduction in line or in half-tone than other types of rendering. A small thing perhaps, but of importance in presenting the design to the public. Whatever advantage there may be in these points in favor of the lithograph is obtained not at increased expense but actually at a substantial saving. The cost, per print, of a lithograph is usually about one fourth of the cost of a photographic print, so it can be readily appreciated that this might mean a difference of many dollars in the course of a year, or even on one job.

There is to be considered also the draftsman's point of view in determining the suitability of the lithographic medium. Most men seem to agree that with the fat, rich black, litho-pencil they can pro-

LITHOGRAPHIC RENDERING OF THE HOTEL STATLER, DETROIT, BY JOHN VINCENT
George B. Post & Sons, Architects

duce very gratifying results, ranging from broad, massy effects to fine detail suggestion. In fact the danger lies upon the side of making the drawing more attractive than the reality. More than one designer has found how deceptive a litho-pencil sketch can be when he comes to translate it into the cold and definite lines of a working drawing. Skillfully handled, the medium is capable of giving drawings which tell the story in a way which is of room for experimentation by the draftsman interested in the development of new styles and the revival of old ones. An evening or two spent in a library looking over the collected works of Boys, or Prout, or Roberts, or Isabey—those early masters of architectural lithography—cannot help but impress the draftsman with the possibilities latent in this art. The work of some of the younger men, notably that of Samuel Chamberlain, has done much



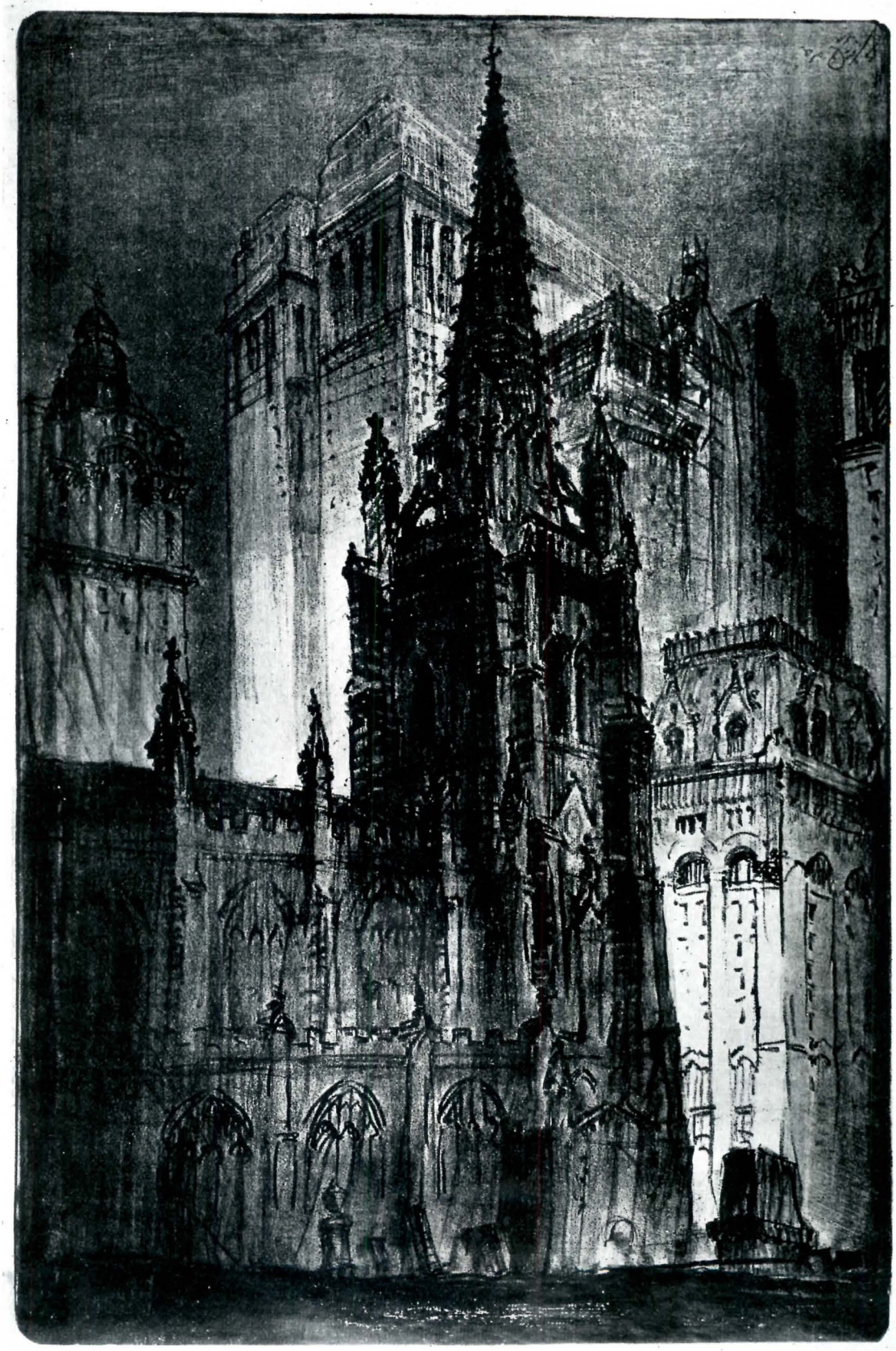
Print by George C. Miller

LITHOGRAPHIC RENDERING OF BREAKERS HOTEL, PALM BEACH, BY BIRCH BURDETTE LONG

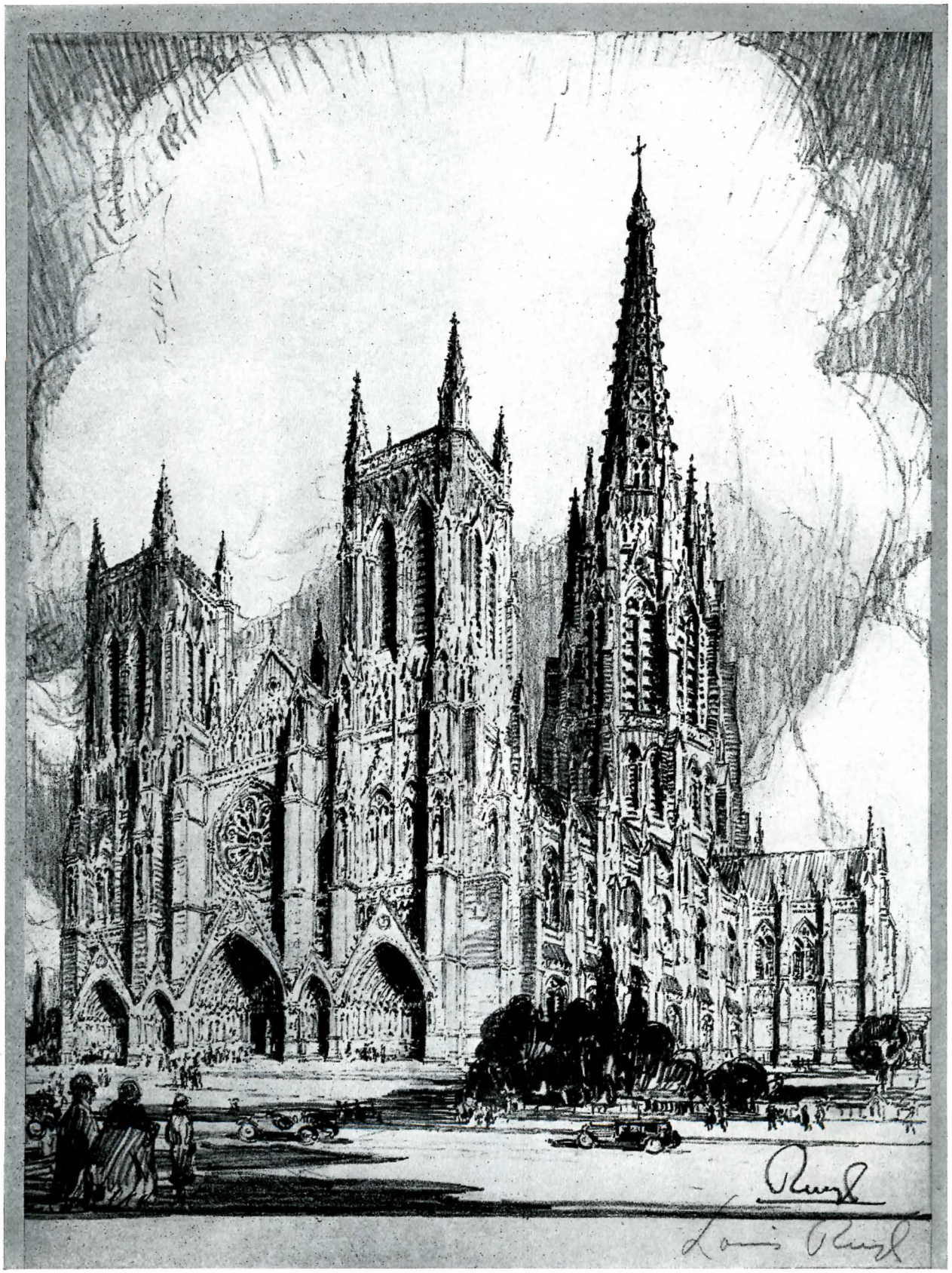
effective, not at all mendacious, and yet artistically excellent.

As may be seen from the illustrations given, the lithographic method is equally applicable to the making of finished renderings and of sketches. Mr. Charles Z. Klauder in particular, who was one of the first, if not the first, among American architects to make extensive use of lithography, has made many delightful architectural studies in the medium. Color may be employed if desired and there is plenty to popularize lithography for architectural sketching.

The bare theory upon which the art of lithography is based may be briefly stated and easily understood. Let us start with the drawing surface,—clean, free from grease, and of a material having equal affinity for grease and water. Now if we make a mark on this surface with a greasy pencil or crayon, such as a lithographer's crayon, and pass a wet sponge over the entire surface, the water will be repelled by the mark but will be accepted by the original bare sur-



LITHOGRAPHIC RENDERING OF TRINITY CHURCH, NEW YORK, BY HOWARD LEIGH
Richard Upjohn, Architect



LITHOGRAPHIC RENDERING OF CATHEDRAL OF ST. JOHN THE DIVINE, BY LOUIS RUYL
Ralph Adams Cram, Architect

Print by George C. Miller *Size of Original* 17½" x 24"

LITHOGRAPHIC RENDERING OF APARTMENT HOUSE, BY JOHN RICHARD ROWE

J. R. Rowe and R. R. Rowe, Architects

face. If a roller charged with oily ink is next passed over the whole, the ink, refused by the moist, clean stone, will adhere only to the mark, which can then be printed off onto a clean sheet of paper by the application of suitable pressure. If the hypothetical mark be expanded into a drawing the principle remains the same, and we can make a print which will be exactly the same as the drawing except that it will be reversed.

In practice it has been found that the best surface upon which to work, and which also yields the most perfect prints, is the grained Kelheim Stone used, curiously enough, by Senefelder, the originator of the process, for his earliest experiments, about 1800. Etching went through a number of stages before copper was hit upon as the best metal upon which to work, but in lithography the ideal material has been in use since the beginning. Any draftsman who has used the medium can testify that there is no other so sympathetic and so susceptible of delicate manipulation. Its fine, creamy, even texture is an inspiration in itself. In the words of Bolton Brown, the well known artist lithographer, "Drawing asks for a flat surface, and the stone is flat, incredibly, beyond any piece of paper ever dreamed of. The surface drawn on must be abrasive, in a way exactly suited to the substance marking it; and the crystalline stone is the very ideal of abrasiveness as the chalk is of the thing to be abrased by it. Every faintest or fiercest pressure or swerve of the hand is ineradicably recorded and goes down the ages in the print."

The surface of the stone, before it is drawn upon, must be given an even grain by grinding it with an abrasive. The usual method is to apply sand or carborundum of any desired degree of fineness, mixed with water, to the stone. A second stone is then placed on top and the grinding proceeds with a combination of rubbing and rotating until the old work is removed and the fine new surface is produced. Incidentally the surface of the grinding stone is prepared at the same time. It should be noted that the grain produced is not the natural grain of the stone but is the grain of the abrasive. It may, therefore, be varied within quite wide limits by employing fine or coarse sand or carborundum.

When washed carefully with clean water and dried, the stone is ready to receive the drawing or to have a drawing made on paper transferred to it. If the drawing is made direct it may be laid out with charcoal, Conté rouge crayon, or some other greaseless medium. Conté rouge is, perhaps, preferable, in that the red color will not be later confused with the lines of the drawing. In working on the stone a piece of light felt will be found convenient both to protect the stone from contact with greasy skin and to protect the arm of the draftsman from the cold stone.

The drawing is made either entirely or partly freehand, employing a straight edge and triangles, however, when necessary. Erasures are possible but not advisable. Scratching with a knife will take out highlights and may be used to lighten passages, but the grain is, in this case, removed along with the crayon and the parts affected may not be drawn on again. It is possible to make erasures and still preserve the grain by using a small piece of lithographic stone together with sand and water rubbed on locally. Small defects can be readily picked out with a fine, sharp, needle.

Crayons and pencils of several makes are to be found on the market, but for ordinary work those made by Korn will be found satisfactory. They come in various degrees of hardness to suit the requirements of the work in hand and the tastes of the draftsman. The paper pencil is probably best for work in the drafting room as it may be easily sharpened and does not become softened by the heat of the hand. The ingredients used in the best crayons are soap, wax, oil, and lampblack, proportioned in accordance with the manufacturer's formula.

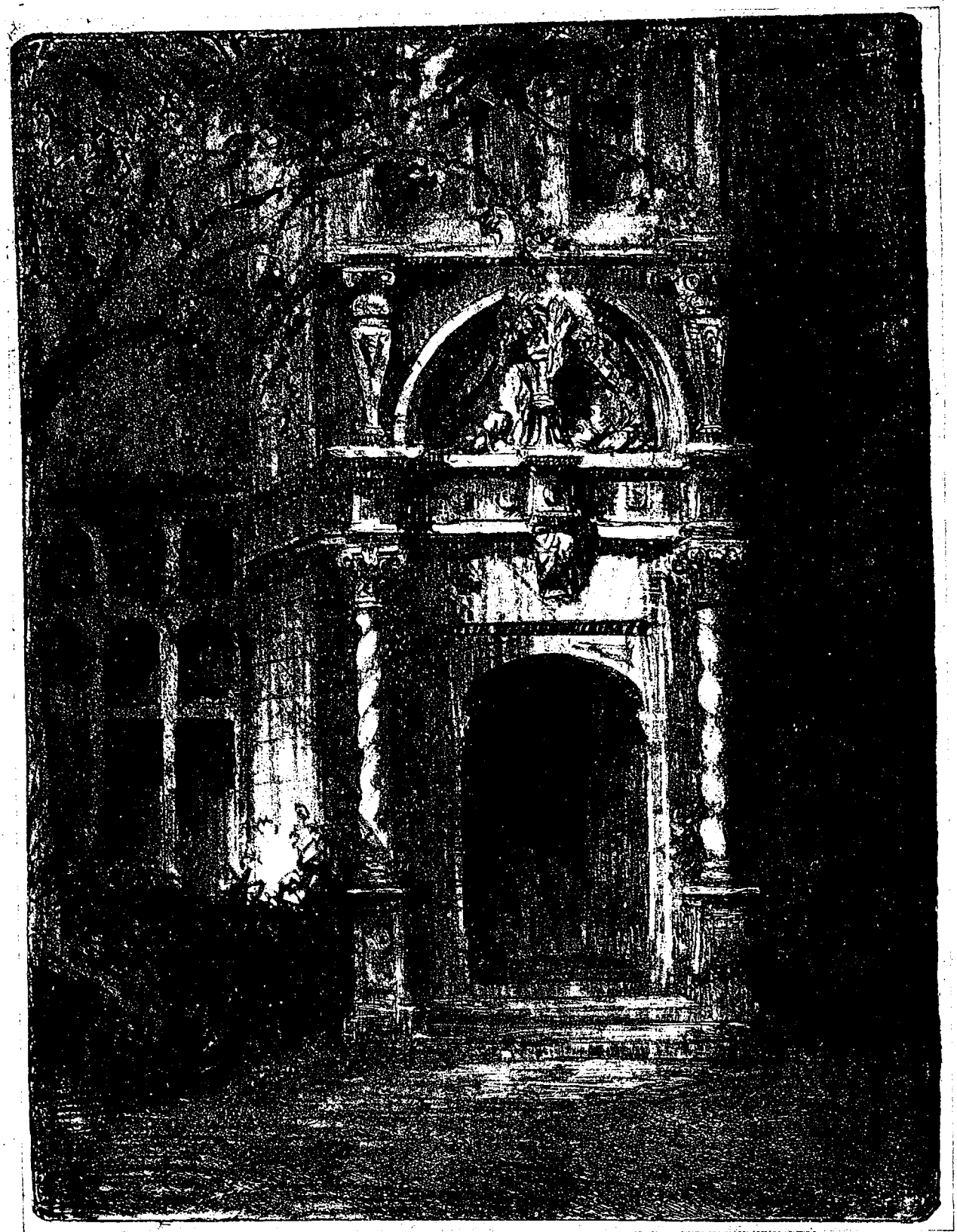
When the drawing is complete on the stone it must be prepared for printing. Of course the draftsman will not, in all probability, have anything to do with this part of the process but it may be of interest to him to know how it is done. Lithographers—and by that term is meant printers of lithographs—vary in the methods they use, each man having his own peculiar procedure. The method described here is that employed by George C. Miller, a well known lithographer in New York, to whom we are indebted for most of the prints herewith reproduced.

First of all a mixture of gum arabic water and weak nitric acid is flowed freely all over the stone. This is known as the "etch", but it is not an etch in the same sense as the etching bath used on copper plate. The acid serves to fix the grease of the drawing on the stone, while the gum arabic fills all the pores of the bare stone and gets down in between the grains where it is drawn upon, "holding the drawing in place" during subsequent treatment. The gum also has a de-sensitizing effect upon the stone so that it will have much less attraction for grease after treatment.

The etch is allowed to dry on the stone, the surface of which is then washed all over with clean water. While it is still moist a pure solution of gum arabic is spread on, wiped down smooth and allowed to dry. This treatment makes certain that all the bare parts of the stone are properly protected with gum arabic, but leaves the drawing itself uncoated, for gum arabic has no affinity for grease.

The next stage is a spectacular one. Turpentine is applied and the drawing apparently dissolves forever in the oleoresinous fluid. When wiped off and rubbed down smooth and dry the stone appears as if never drawn upon. If the artist is inexperienced, and happens to be present at this stage, he cannot avoid the traditional sinking sensation in his stomach, and perhaps his heart skips a beat or two. The labor lovingly spent on his drawing seems all for naught, for has he not with his own eyes seen it disappear? What really has happened is that the coloring matter of the crayon is gone, but most of the grease remains fixed on the stone, ready to take the ink from the roller when it is applied.

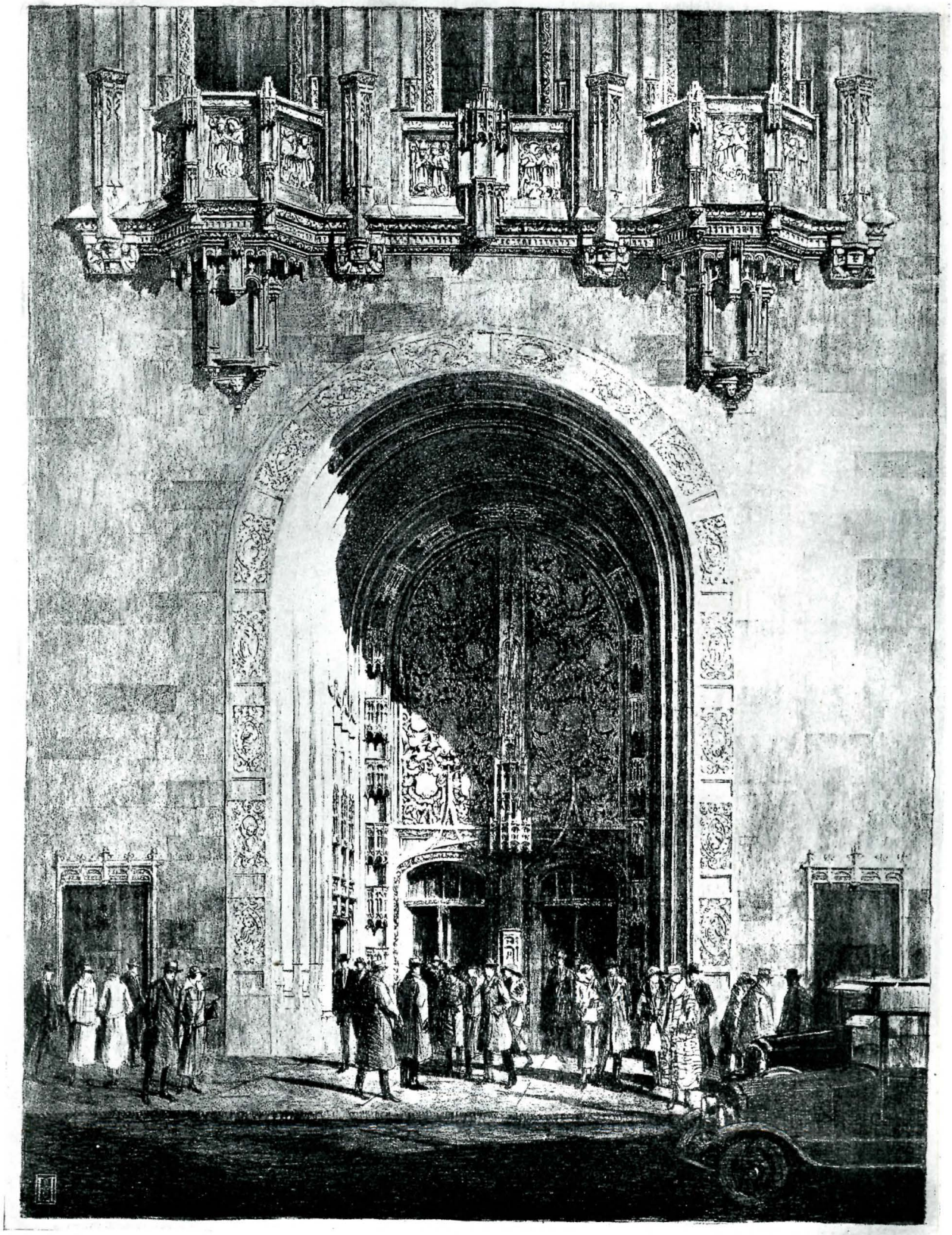
Before applying the ink the stone must, of course, be wet all over with clean water in accordance with our theory, so that the ink will take only upon the



Print by George C. Miller *Size of Original 17½" x 24"*

LITHOGRAPHIC RENDERING OF DOORWAY OF A COUNTRY RESIDENCE, BY HOWARD LEIGH

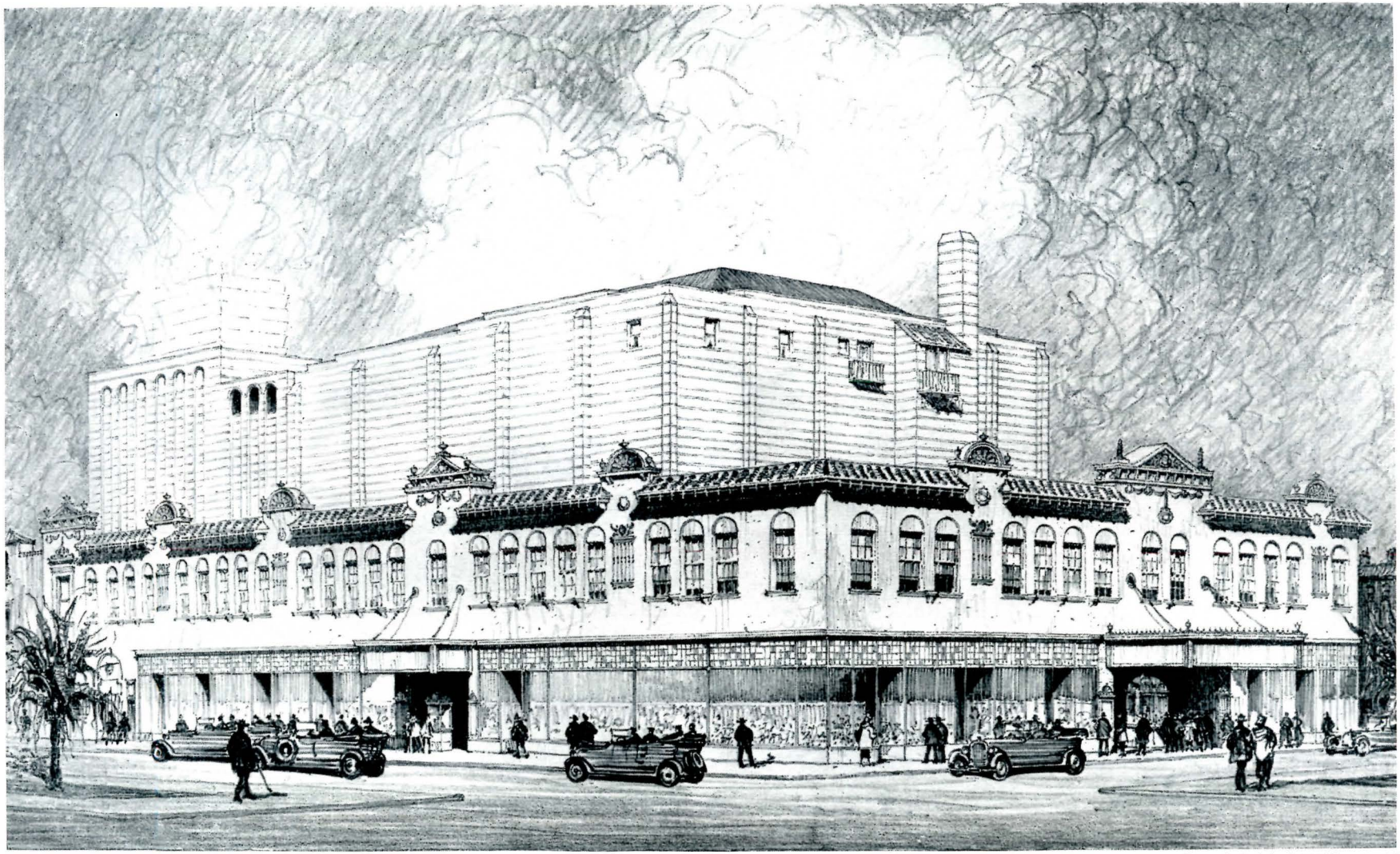
Walker & Gillette, Architects



Print by George C. Miller *Size of Original 22¼" x 29½"*

LITHOGRAPHIC RENDERING, CHICAGO TRIBUNE BUILDING, BY BIRCH BURDETTE LONG

John Mead Howells & Raymond M. Hood, Architects



Print by George C. Miller *Size of Original 23½" x 13½"*

LITHOGRAPHIC RENDERING OF THEATRE BUILDING IN NEW ORLEANS, BY JOHN RICHARD ROWE

Thomas Lamb, Architect

LITHOGRAPHIC STUDY BY CHARLES Z. KLAUDER

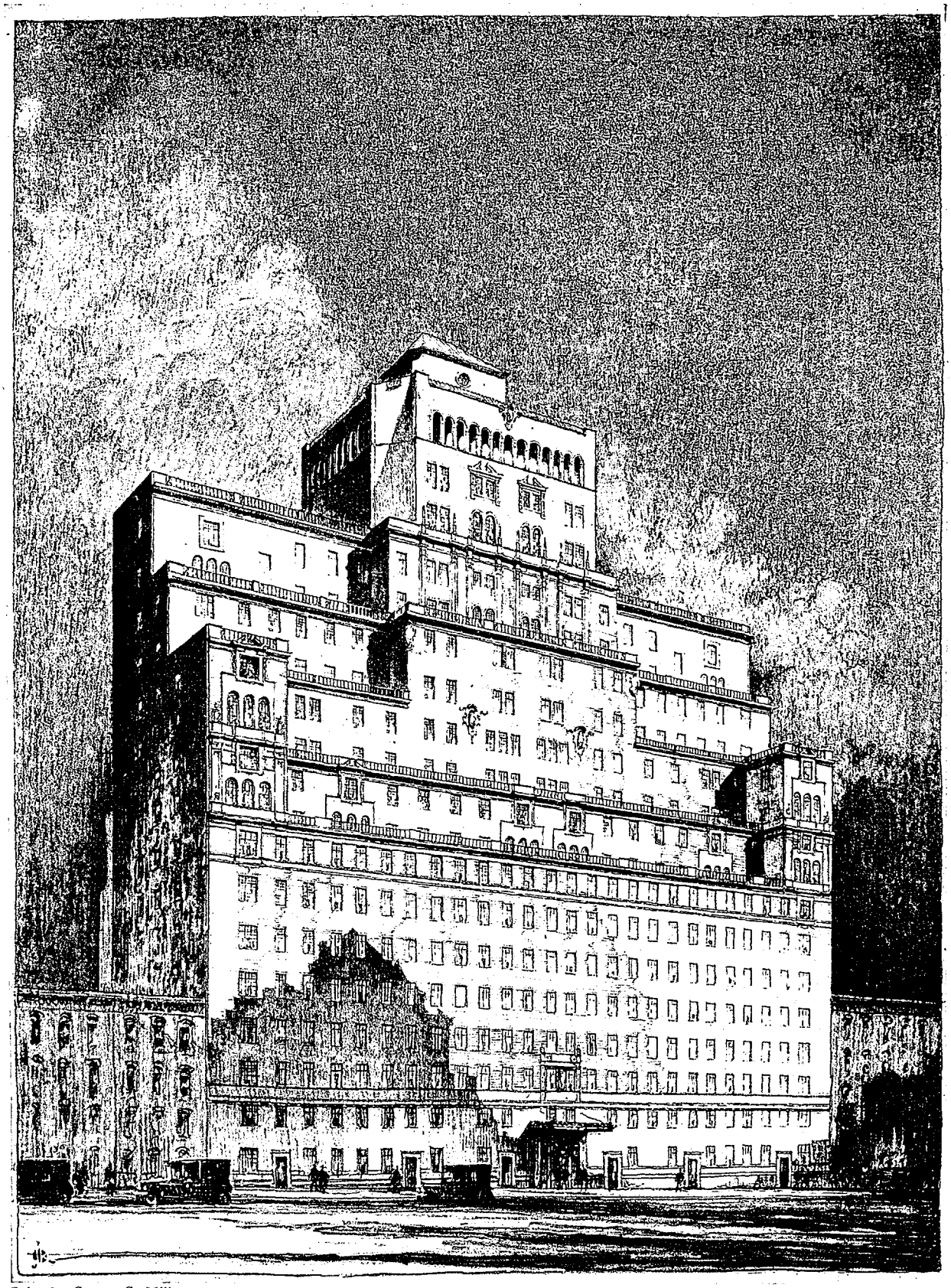
drawing, while the damp, bare stone remains clean. The ink is applied by means of a roller of wood, surfaced with grain leather. This operation, while seemingly simple, demands no little skill on the part of the printer, for the ink must be applied evenly, of the right strength, and with care lest the edge of the roller produce streaks. The stone, during the inking, should rest on the bed of the press ready for printing, so that when the experienced eye of the printer tells him the ink is of sufficient strength, there is no time lost unnecessarily before making the impression. When ready to print, a sheet of clean printing paper, previously moistened if thin, dry if thick, is laid on the stone, backed up with a sheet of dry, soft paper and a large sheet of red press board. The press board is lubricated with grease so that the scraper of the press will pass easily over it when the stone is run through under pressure.

The bed of the press is so mounted that it is capable of being raised or lowered several inches by means of a powerful lever and toggle, and rolled through under the scraper by means of a rack and gear train. When the press board is in place and lubricated, the bed is moved forward until the scraper is over the edge of the stone, but not up to the edge of the drawing. The bed is then raised and the amount of pressure to be given is regulated by means of a hand screw which raises or lowers the arch of the press carrying the scraper. The right amount of pressure is a matter which will be determined by the experience of the printer. When all is ready the lever is thrown over hard and the bed of the press rises, bringing the face of the press board into contact with the scraper. The bed is then run rapidly through, care being taken not to stop until the scraper has passed entirely across the drawing, but not quite to the end of the stone. If the scraper should ever accidentally slip off the edge of the stone while the pressure was still on, it can easily be appreciated that breakage would probably result.

The pressure is now removed, the bed is rolled back to its initial position, the press board and backing paper lifted off, and the proof carefully pulled from the stone. The first few proofs will probably be lacking in strength, but after four or five have been taken the values obtained should be nearly perfect. Printing may be continued as long as desired, but when it is over for the day the stone must be rolled up with ink and gummed down with gum arabic before it is put away. Otherwise the drawing will not "stay in place."

Next to the stone, the best drawing and printing surfaces are zinc or aluminum sheets, which are to be had, already grained, from dealers in lithographic supplies. These sheets are convenient to work on, as they are light in weight and may be easily carried around. They are also much less bulky than the stones and hence easier to store away. Their chief disadvantages as compared to stone are that erasures and changes cannot be made on them and that their gray color makes them harder to work on. After working for awhile on metal, however, the draftsman learns to allow for the difference in color between the drawing surface and the paper to be printed on, so that he can control his values without great difficulty.

The architectural draftsman, working in his office or studio, far from the shop of the professional printer, can make his drawing for lithographic reproduction on practically any of the ordinary drawing papers, provided he uses a greasy pencil or crayon and does not make erasures. On specially prepared transfer papers which are coated with a sizing of



Print by George C. Miller *Size of Original* 18" x 24¼"

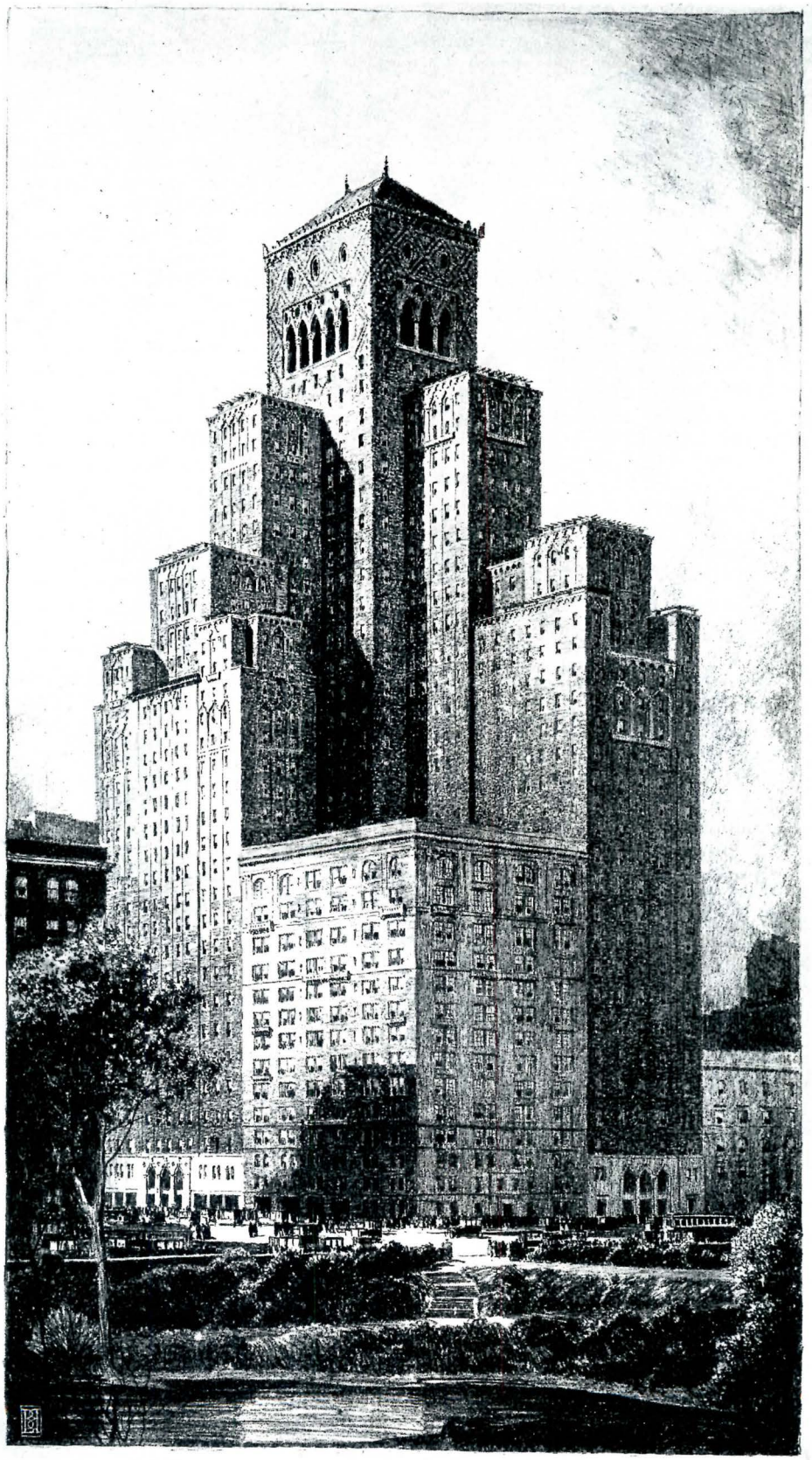
LITHOGRAPHIC RENDERING, DRAKE APARTMENTS, NEW YORK, BY JOHN RICHARD ROWE
Emery Roth, Architect

Print by George C. Miller

Size of Original 11" x 17½"

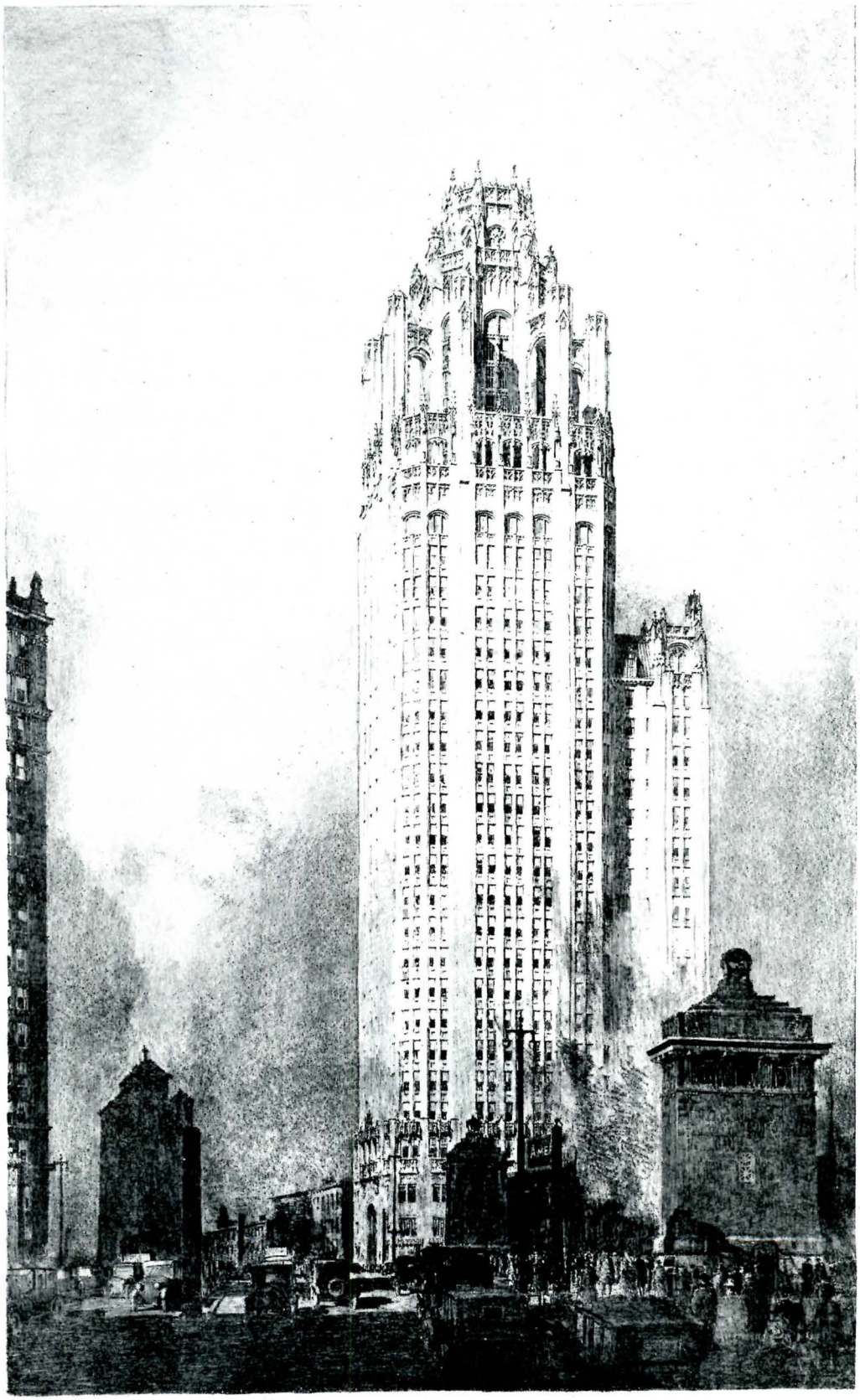
LITHOGRAPHIC RENDERING, STEINWAY BUILDING, BY JOHN R. ROWE

Warren & Wetmore, Architects



Print by George C. Miller *Size of Original* 14" x 25"

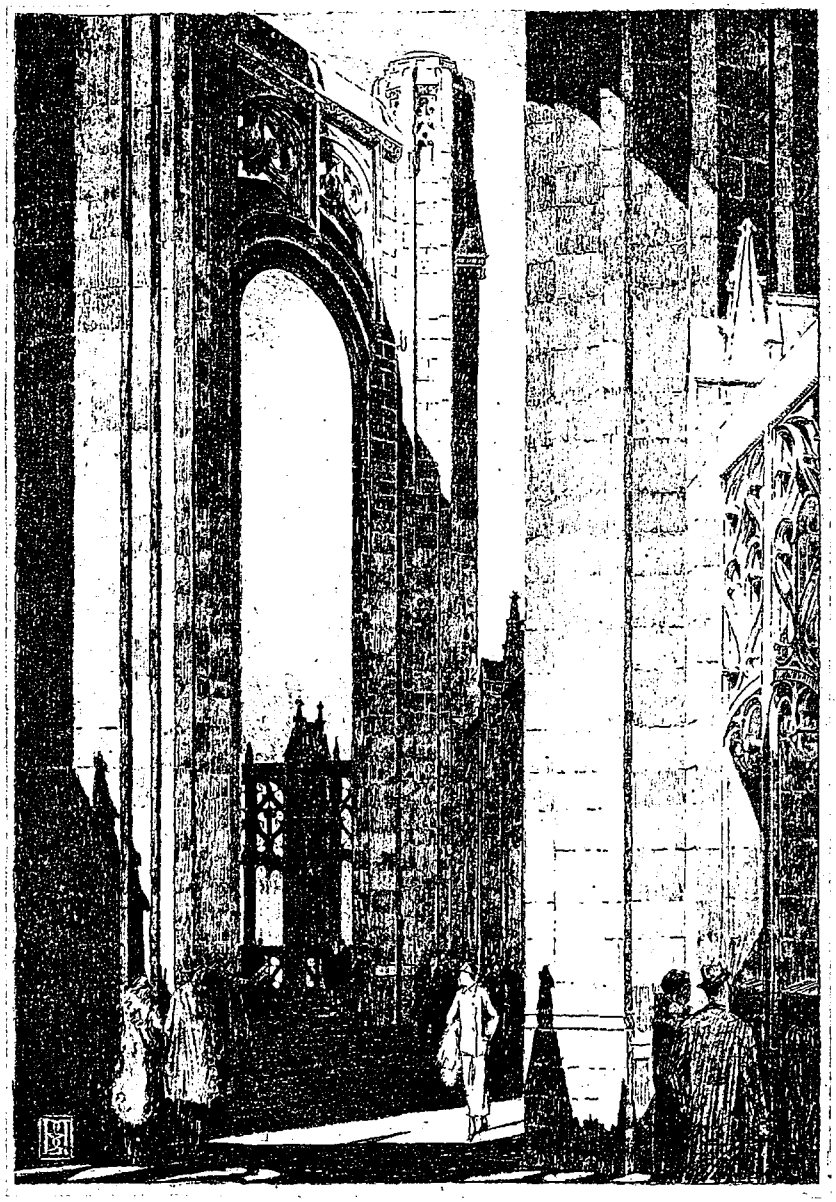
LITHOGRAPHIC RENDERING OF ALLERTON HOUSE, BY BIRCH LONG
59th Street, New York. Murgatroyd & Ogden, Architects



Print by George C. Miller *Size of Original 21" x 34½"*

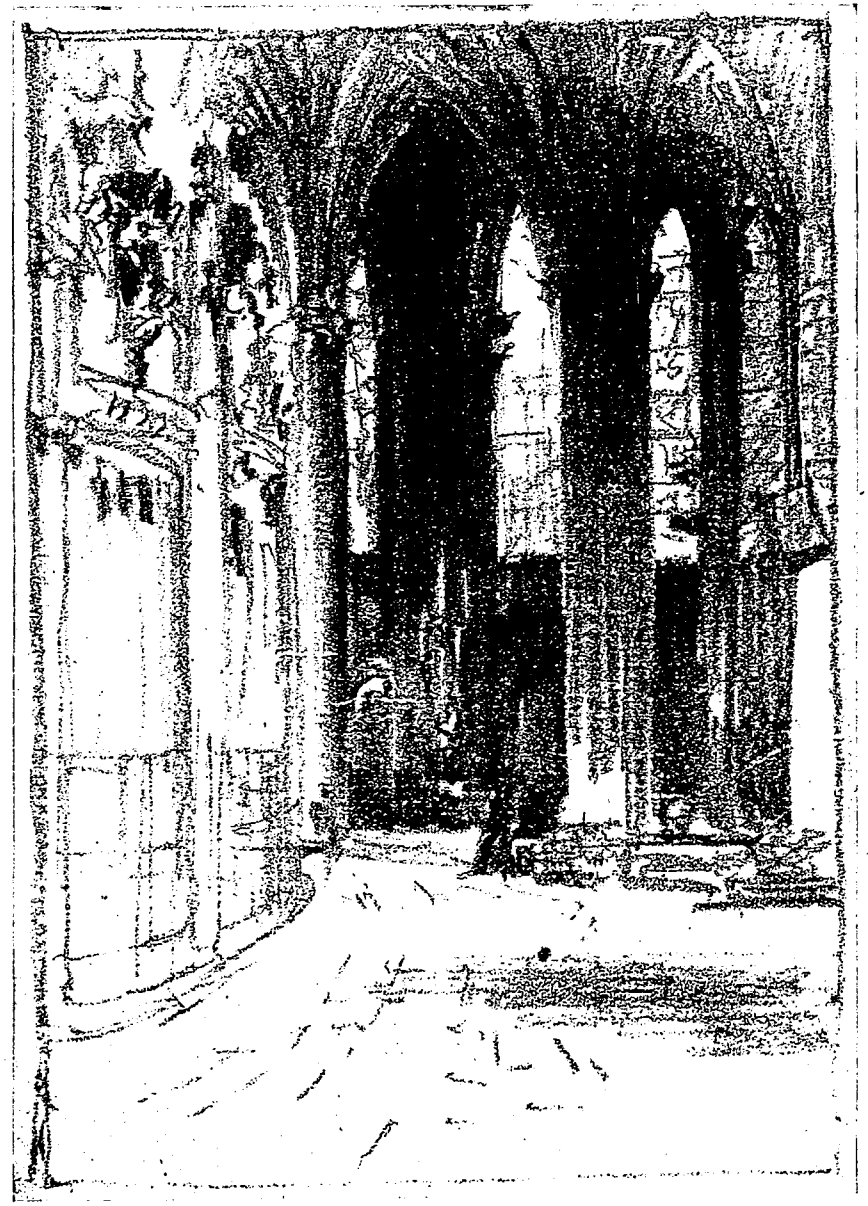
LITHOGRAPHIC RENDERING, CHICAGO TRIBUNE TOWER, BY BIRCH LONG

John Mead Howells & Raymond M. Hood, Architects



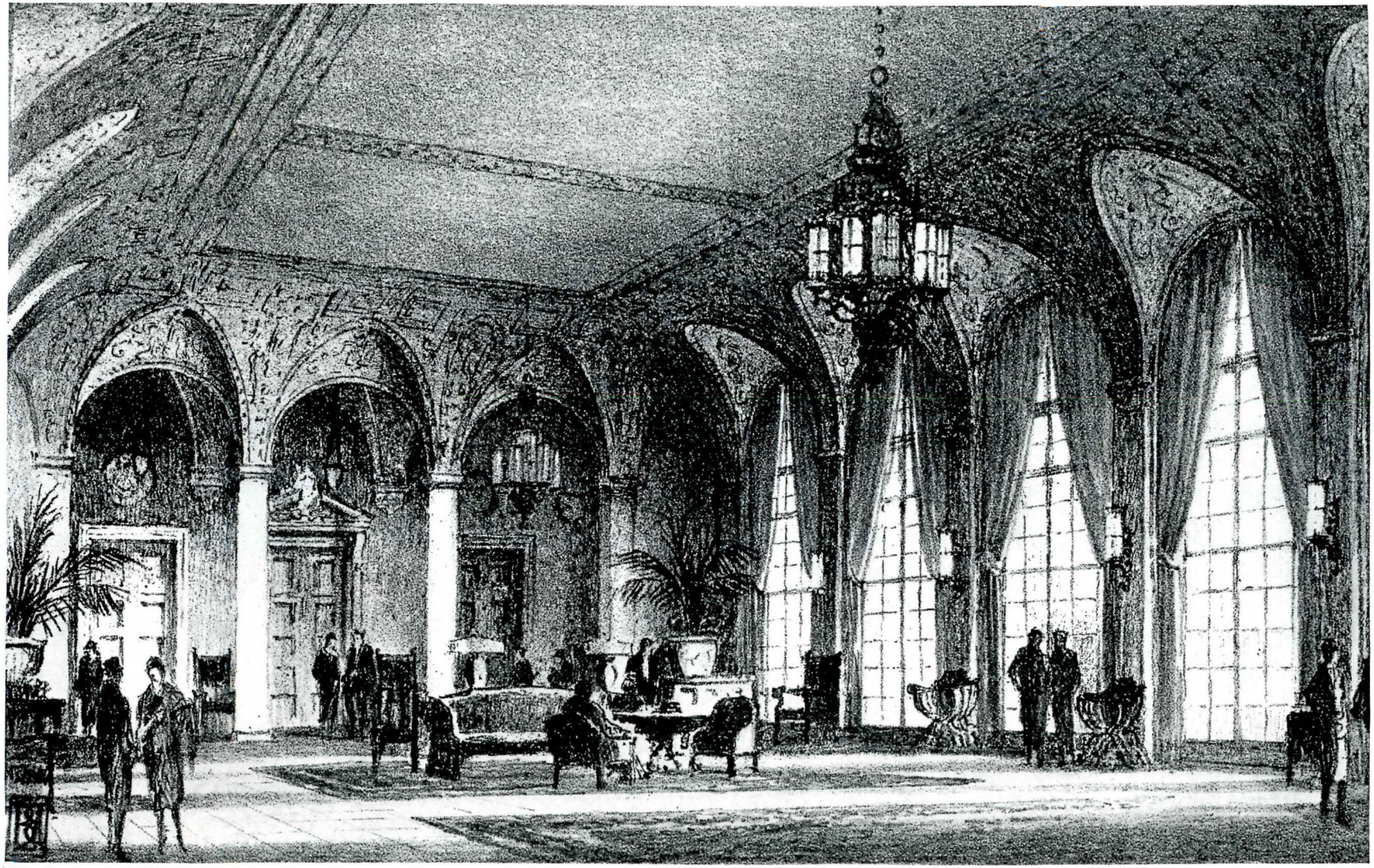
LITHOGRAPH BY BIRCH BURDETTE LONG

Size of Original 12" x 17"



LITHOGRAPHIC STUDY BY CHARLES Z. KLAUDER

Size of Original 6" x 8½"



Print by George C. Miller *Size of Original 12¼" x 7½"*

LITHOGRAPHIC RENDERING OF THE BREAKERS HOTEL, PALM BEACH, BY BIRCH BURDETTE LONG

Schultze and Weaver, Architects

starch, parts of the drawing may be removed by scraping or by applying Chinese white, but these parts should not again be drawn on if perfect prints are desired. The drawing made, it can be sent *rolled* in a mailing tube to a reliable printer of lithographs who will transfer the design to a stone and print off any desired number of copies, each of which is an exact fac-simile of the original. If the printing paper is the same as that drawn upon, the reproduction is absolutely autographic, with no differences detectable by ordinary means.

The limit of the size of drawings which may be made for lithographic printing is controlled by the size of the stone which may be taken in the ordinary press. The largest stones used on these presses are about two feet by three feet, and, since there should be a margin of at least an inch all around on the stone, it is not advisable to exceed twenty-two inches by thirty-four inches for the drawing.

In many cities and towns of this country there may be found commercial lithographers' plants, but it is probable that only a few of these plants could be persuaded to undertake to handle the small number of prints ordinarily needed by the architect. Furthermore the average printer of commercial lithographs is not in entire sympathy with what the architect wants. To get the right sort of prints requires that the work should be done by a skilled craftsman on a hand press. The writer of this article will be glad to furnish, on request, the names and addresses of some printers who have been found satisfactory for this type of work.

SKETCH BY CHARLES Z. KLAUDER

ARCHITECTURAL SUPERINTENDENCE

THE MAN AND HIS WORK

By W. E. Parfitt

Through the courtesy of Mr. Le Roy Barton we are permitted to publish the paper delivered by Mr. Parfitt, Architect, before the Architectural Students' League of Brooklyn in May 1890. We feel that what the author said thirty-six years ago is as applicable to the subject of superintendence today, as when it was delivered—EDITOR'S NOTE.

FOR THE BETTER DISCUSSION of my subject, I propose to divide the subject into The Man, and His Work.

Webster defines a superintendent as one who has the oversight and charge of something, with the power of direction. If he had himself been an architectural superintendent, he would have greatly enlarged on his definition and added: one who must have power and control over himself and over others.

There is no profession which calls for so many qualities of head and heart as a successful architectural superintendent. Aside from a multifarious knowledge of all kinds of materials and ways and means, also of all the known laws of mechanics, health and the *sciences,* he must know men, and how to deal with them; how to impart knowledge; to cultivate that kind of respect which will command a willing compliance with his orders; be familiar in manner, yet reserved; winning, yet forceful; pliant, yet strong; having well-grounded convictions, yet quick to learn, and adjust himself to new or untried environments; possess the tact of learning, yet at the same time teaching the person from whom he is learning.

He must well weigh his decisions, for often great consequences follow his orders. He must be so well grounded in his duties as to call for respect and willing obedience from the contractor, foreman or workman, even from those who may dissent from his opinions; possess that peculiar winning way of inspiring confidence in both client and contractor; be ever ready to patch up quarrels, both petty and large, smoothing out rough and difficult problems which are ever arising under his work.

Have a genius for invention, especially in the working out of difficult problems, and overcoming seeming impossible difficulties, for is he not consulted mainly when the contractor sees no possible way to overcome difficulties which so often present themselves? He must be an artist, a good critic and a mechanic, qualities which seem never to go hand in hand. He must possess a good business training, with a thorough knowledge of finances, for does not his work often call for these traits, as when the man of dollars requires some changes, or a better quality of materials or work than can be construed from the contract? Then he must use that knowledge of finance to convince the contractor that by some change, or in some way unexplainable here, convince him it were best to carry out the new suggestion, at no extra cost; or, on the other hand, he must be ready to estimate costs of extras to his client, and to do it in such a way that the client will be fully convinced it is right, and either require the work, or abandon it and be thoroughly satisfied either way. Woe to him if he be found wanting in this regard or is caught napping, for then will he have lost that respect, without which he will fail of success.

He must know how to lead the good housewife, who feels she only knows what is best about closets, wardrobes, location of windows and doors, gas outlets and spaces for furniture, selections and harmonizing of colors which are best adapted to her tastes or complexion, and inspire her in such a manner that she will be led by him, and not he led by her; for if she ever gets the best of the architectural superintendent, he is lost and had better give up. He must also know how to explain matters in such a way as to convince his client that the job for which he is paying $1,000 is fully half as good as the one for which another paid $6,000.

He must be above all things honest, truthful and frank, above reproach in character and sweet of disposition.

He must possess the rare talent of lovingly compelling men to do right, forcing from them for him their best behavior, however venal they may be, and draw about him and the work in his charge a willing compliance to do right; to draw from all classes the best that in them lies, for do not all men have some good side, even though sometimes it is very small; it is, therefore, his duty and work to keep that side ever to the front, for the work in his charge.

He must know how to cheer the humblest workman, and get his smile and good day from all who shall work under his direction, exercising that magical faculty of harmonizing the selfish interest of the various contractors when there are several working under his care, and get them willingly ready to do the best for him, and smother selfish feelings for the good of the work, for his sake.

He must be an expert in the most difficult, and yet the humblest, work under his care; have a ready knowledge of tools, and how to use them, for in no way will the artisan be won so easily as by a superintendent who can take his tools in hand and execute the work in the manner he requires; for there is no workman or contractor so lost to all respect as to be outdone by a superintendent who knows how to do the task he requires.

His speech should be kind, yet firm, and be ever ready with a pure jest to illustrate his requirement, and thus promote a spirit of cheerfulness and right and well doing so essential to success.

These are only a few of the qualities of head and heart which must be the stock in trade of a successful architectural superintendent; with these he will be invaluable to client, employer, contractor and workman, and without them he will fail to be a success.

To young men I would suggest they cultivate a spirit of love for their fellow men, however humble they are, and thus beget their love which will keep him out of difficulties, which no amount of knowledge can, but by the possession of both, will his usefulness be so much the more enhanced.

So much for the man; don't say I have set his ideal too high. That it is high, I admit, but it is possible, if he will first get full of love, then will he be supplied with the tact and genius to mould men, next get his knowledge and never be too proud to learn, and if he cannot do so without showing it, be honest and acknowledge his ignorance, and friends will rise up on all sides to help if his heart be in the right place.

If I have defined a wide range in the disposition of the man, how much wider must be his knowledge? I can, in a talk of this kind, only touch on a few of his requirements: In the first place, he is expected to know all about the different characters of the soil on which the foundation of a building must rest. If it is yellow clay it were well to excavate below it, and if that be not possible, he should widen the footing of concrete, and make a trench convex to prevent the clay slipping from under it, and see well to it that the ground be properly drained, or fill against the walls as soon as built, to keep away all water which may soften the clay and permit the foundations to sink and force out the clay; for clay, if kept dry, will make a fair foundation for a light building. I never accept the responsibility of resting a building on clay, but explain to my client the possible dangers, and have him decide to accept it.

The most difficult problem about foundations to my mind is a bottom composed in part of hard pan, no matter how good, and in part rock or large boulders, for if these difficulties arise, he must cope with them alone. In such a case, I suggest that he cover the rock or large boulder with a layer of dry sand, varying from two to six inches in thickness, according to the unyielding character of the soil on each side of the rock, and the weight to be borne. The sand will, if skillfully used, afford sufficient yielding to counterbalance the yielding of the ground.

Another difficult problem will be when the ground is in part hard pan, partly rock and partly soft mud, into which he must drive piles; for such a condition of affairs, I suggest sand on the piles as well as the rock, if they be driven home.

Yet another difficulty is when the foundation must be placed on made ground or soft mud, and the character of the building or funds of the client will not allow of piling. In such a case, if there be water, I would suggest laying heavy planking, first crossways of the foundation, and then again parallel with them, and if no water be present, use a very wide course of concrete and railroad iron, or cheap sections of iron in as long lengths as possible, to be embedded in the concrete, the width and thickness of the footing, and quantity of iron required to be computed on the basis of the yielding character of the earth, and weight of the superstructure to rest on it.

If the foundation is to rest wholly on piles, the superintendent must see to it that all piles are driven home, or until a hammer weighing from one to two tons, falling from a height of from twenty to forty feet, rebounds off the head of the pile. Next, he must be sure to cut off the pile true and level below the water line, then excavate to a depth of from ten to fourteen inches below the pile head, and fill up to the top with concrete. On that should be laid either large base stones, covering four or more piles, or heavy planking; planking, however, should never be used, except it be set below the lowest water line. The number of piles, and the size and distance apart, the thickness and size of base, stone or planking must depend on the weight it must bear, and be computed on the rules laid down by experience and common sense, and, if possible, he should consult some work on engineering, or the experience of some well-versed fellow craftsman.

I need not enlarge on his duties if the character of the site be all hard pan, which means earth largely composed of gravel sand and some clay, or all sand, which I deem to be one of the best and easiest of all bottoms to work on, or all rock. In all cases, and under all circumstances, the superintendent should demand and secure as level a surface as possible.

There are other difficulties to be met with, such as providing for extra high walls, towers or shafts, or piers which will carry extra weights, when these are built into or adjoining walls not carrying more or little more than their own weight. In such cases he must see well to it that such heavier parts are not bonded into the lighter work, or cracks will appear and present to the eye seeming weaknesses, which are only the extra yielding of the ground under the heavier weight. The supporting power of the best hard pan below atmospheric influences is computed by Trautwine from two to three tons per square foot. Even with less weight than that I have noted a yielding will occur of from one-quarter to one-half inch. More than that may be safely used providing it is not objectionable, if there be an equal settlement throughout the entire structure, hence the importance of providing for all parts of walls, piers, towers or tall chimneys, being detached or allowed to settle independently of adjoining walls.

Concretes, or cement, next will claim our attention; this may be classed under the following heads: Quick setting, slow setting, or cements which expand in setting, or, on the other hand, contracts in setting. If I have very heavy work, such as, for instance, the building of a massive bridge or the towers for the Brooklyn Bridge, I should use slow setting cements, which would be entirely unfit for the foundation of a good house, hence do not be misled by the statement on some of the Rosendale cement barrels, by the picture of the Brooklyn Bridge and the claim that it was selected for that purpose, because a good quick-setting cement would be unsafe as mortar to lay between very large stones; it would set too quickly and be what is known as lumpy, and cause cracks to appear. In such a place a slow setting cement is the best, as it will spread itself over the entire surface of the joint and fill all the interstices.

The superintendent should use his best judgment in these matters and require a cement suitable to meet the demands of his job. For ordinary good jobs I always use a blue-colored, quick-setting cement, which is commonly called Portland, from a light blue stone found in Portland, England.

Having arranged this matter the superintendent must use the greatest care and demand that the cement or concrete be made up in a clean place with pure, clean sand which will not soil water to be mixed with it, as soil or mud will destroy and render it quite useless. I should like to explain to you the process of what is commonly called the setting of cement, which might be more rightly called the process of crystallization, hence water or moisture is very essential. Concretes or cement mortar should never be allowed to dry out; if it does it is little more than so much mud. The superintendent must know how to test cements and detect poor qualities or slaked cements, that is cements which have been exposed to moisture and air. I will say in passing, that if the cement be hard to get out of the barrel, or be very light, reject it as unfit for use, and test it in cubes to prove its unfitness.

What I have said about cements may also be said of lime. It must not be allowed to dry too quickly or be air slaked, or made up with soil or mud, for a similar process goes on in the crystallizing of the soluble lime.

The superintendent must also learn to know a good brick from a poor one. A brick may be well burned and yet be poor, if it be made in a machine which forces a quantity of air into the clay and turns out a light weight brick. Therefore, a good brick is heavy, gives out a bell-like ring when struck together.

Of the variety of stones, I advise the superintendent to consult works on their crushing character, but this may be said: a first quality building stone shows no laminations or layers, and is what is called liver rock. Simple tests of its tensile or crushing strength may be made by the hands, and may serve all ordinary purposes. I would suggest to refuse all stones which give off a strong smell of sulphur upon wetting, as it then contains more or less of clay. A simple magnifying glass will reveal the good qualities of stone by showing the particles of sand held together by crystals, which is nature's concrete. A good durable stone is bright-looking, and is generally heavy; a poor stone is dull and generally light. The power of absorption of water I do not deem a good test, as the stone may be made of pure sand and crystals half formed; such stone often hardens by exposure and improves by age.

I never allow stone to be laid in the wall off its bed, or to be more explicit, in any other way than it laid when in course of formation.

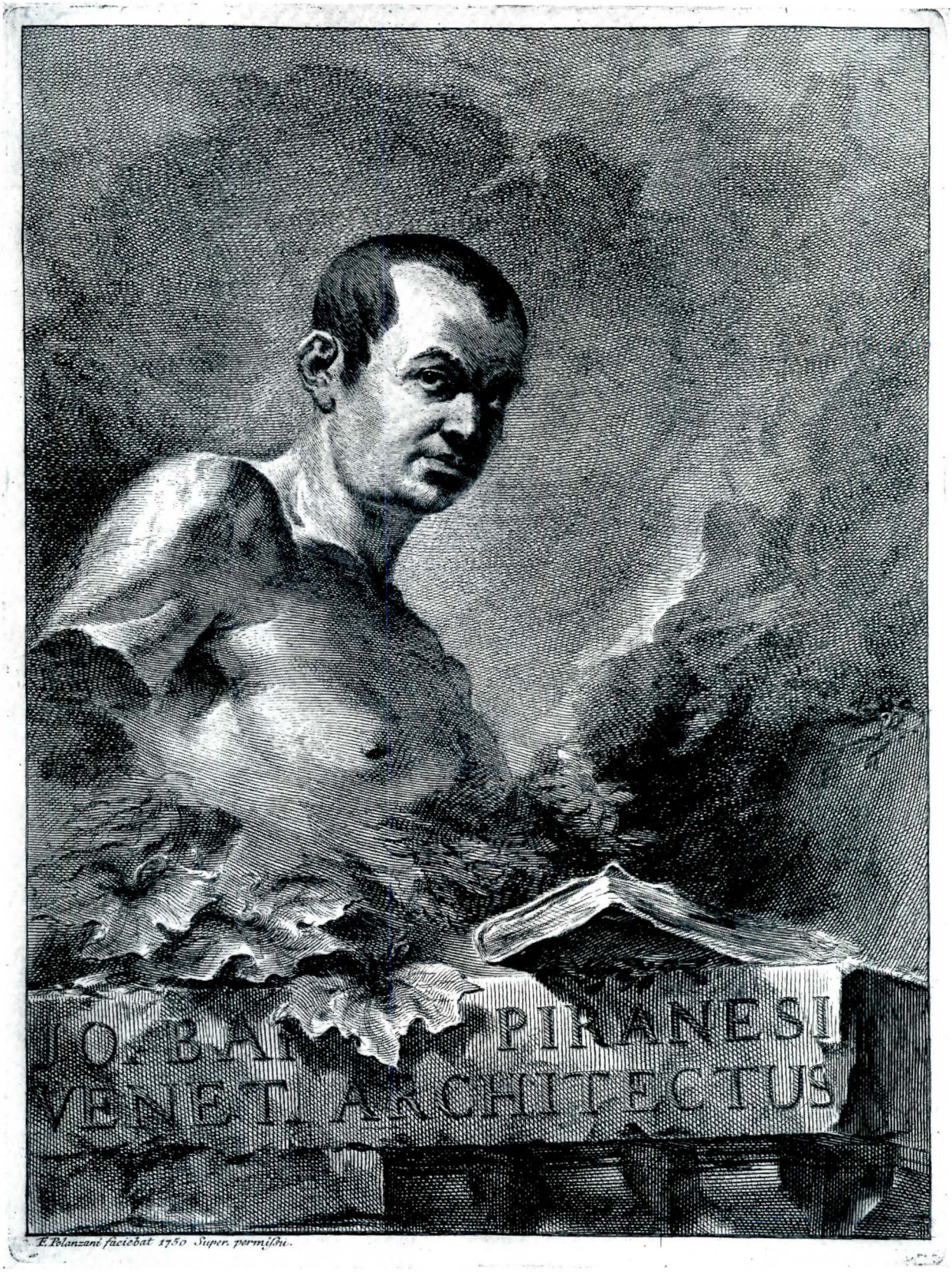
In the matter of granites, the superintendent must be able to detect knots and shakes and reject such, especially stone having the latter, and the former if he does not want an unsightly effect.

The superintendent must know what is bonding, that is, making the wall homogeneous, and when and where to use anchors, and how they be made, their lengths and strengths. Know what constitutes good workmanship and demand it in the particular parts; know how to make mortars, the proportions of cement or lime to be mixed with sand, as this varies with the coarseness of the sand, and requires to be stronger for the parts which will be required to do the most work. He must know all about lathing and the mixing of mortar for plastering, and detect if the proper quantity of hair is used, and if the mortar is forced against the lath with sufficient force to form a clinch at the back of the lath. Know all about the white finishing and how it should be made and applied to insure a hard, firm and smooth surface for plastering.

Such, for instance, the tensile and crushing strengths of the various kinds of wood, the principles of construction, and what constitutes good and safe framing; know the names of all kinds of woods, and their treatment as a finish; have a pretty thorough knowledge of carpenter work, of roofing, and the values and durability of the various metals, and how to use them to prevent any galvanic action; to know the gauge of tin, sheet iron, copper and lead, for they differ in each kind of metal.

He must be an expert in plumbing and sanitary science, know all about paints and varnishes and their proper use; be able to detect errors and how to rectify them in steam heating, both high and low pressure, and a forced or simple return system.

Now from the few points I have just touched upon it can be readily understood that a successful architectural superintendent must be an all-round man, having a good memory, quick perception, a thorough education, a perfect temper (for it will be often tried), be in every respect a thorough architect and gentleman, or to sum up with the words of one of our great poets, be one of God's noblemen.



PORTRAIT OF GIOVANNI BATTISTA PIRANESI

ENGRAVED BY FELICE POLANZANI. ORIGINALLY USED AS FRONTISPIECE TO "OPERE VARIE" (1750) AND "ANTICHITÀ ROMANE". (1756.)

GIOVANNI-BATTISTA PIRANESI

PENCIL POINTS ANNOUNCES THE ACQUISITION OF A COMPLETE SET OF VOLUMES OF THE MASTER'S ENGRAVINGS

THERE IS A GENUINE DELIGHT to be derived from the study, the contemplation, even just contact with the magnificent and venerable works of Giovanni-Battista Piranesi. These delights have been afforded us by the acquisition by PENCIL POINTS of an almost complete collection of fresh and early prints, made before 1778 on thick laid paper, during G. B. Piranesi's lifetime and published in the first Roman editions.

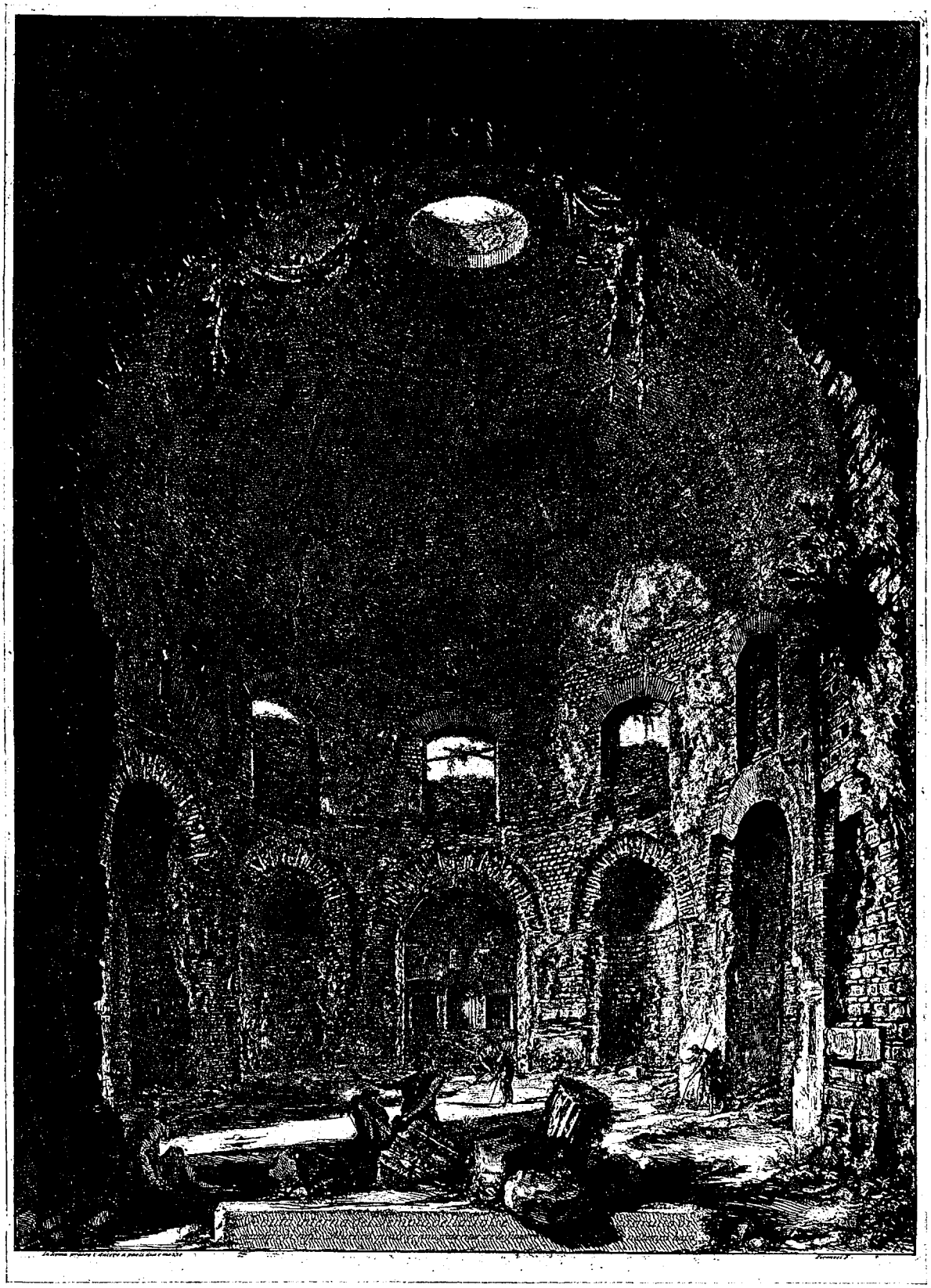
We have always felt the power and wonder of Piranesi's work and we hope to convert those who may not yet be ardent admirers of this master's engravings to our enthusiasm. Our possession of 865 of the total of 991 engravings listed in M. Henri Focillon's *Catalogue Raisonné* of Piranesi's etched plates will make it possible for us to give our readers an opportunity of seeing, if they want to, an almost complete set of Piranesi's works and of possessing reproductions from impressions made while the plates were still lightly etched and before the many re-bitings which were caused by subsequent editions of his works.

There are several posthumous Roman editions, printed after G. B. Piranesi's death in 1778, and a first Paris edition (1800-7) issued by his sons, Francesco and Pietro Piranesi, who were their father's collaborators. Piranesi left an engraving establishment, that is to say a firm of engravers, in full swing at his death. It is pleasant to think that his heirs carried on the task left unfinished by the author and devoted their energies to enriching and clarifying his work in all its branches. Following the first Paris edition, there were intermediate Paris editions published between 1807 and 1835 with new Arabic numbers engraved in the upper or lower right side of the plates. From 1835 to 1839 Firmin-Didot of Paris used the plates for an edition. The plates were transferred to the Calcografia Camerale in 1839. Modern impressions continue to be printed from the plates by the Regia Calgorafia at Rome.

The collection of Piranesi's engravings is much larger than any collection ever before created by one family of artists, and when one endeavors to discriminate as to the ones belonging to each and the exact stage of each impression in the various collections in the museums, and in the libraries of the great English houses, and the scattered prints in private and dealers' collections, the task is bound to be formidable.

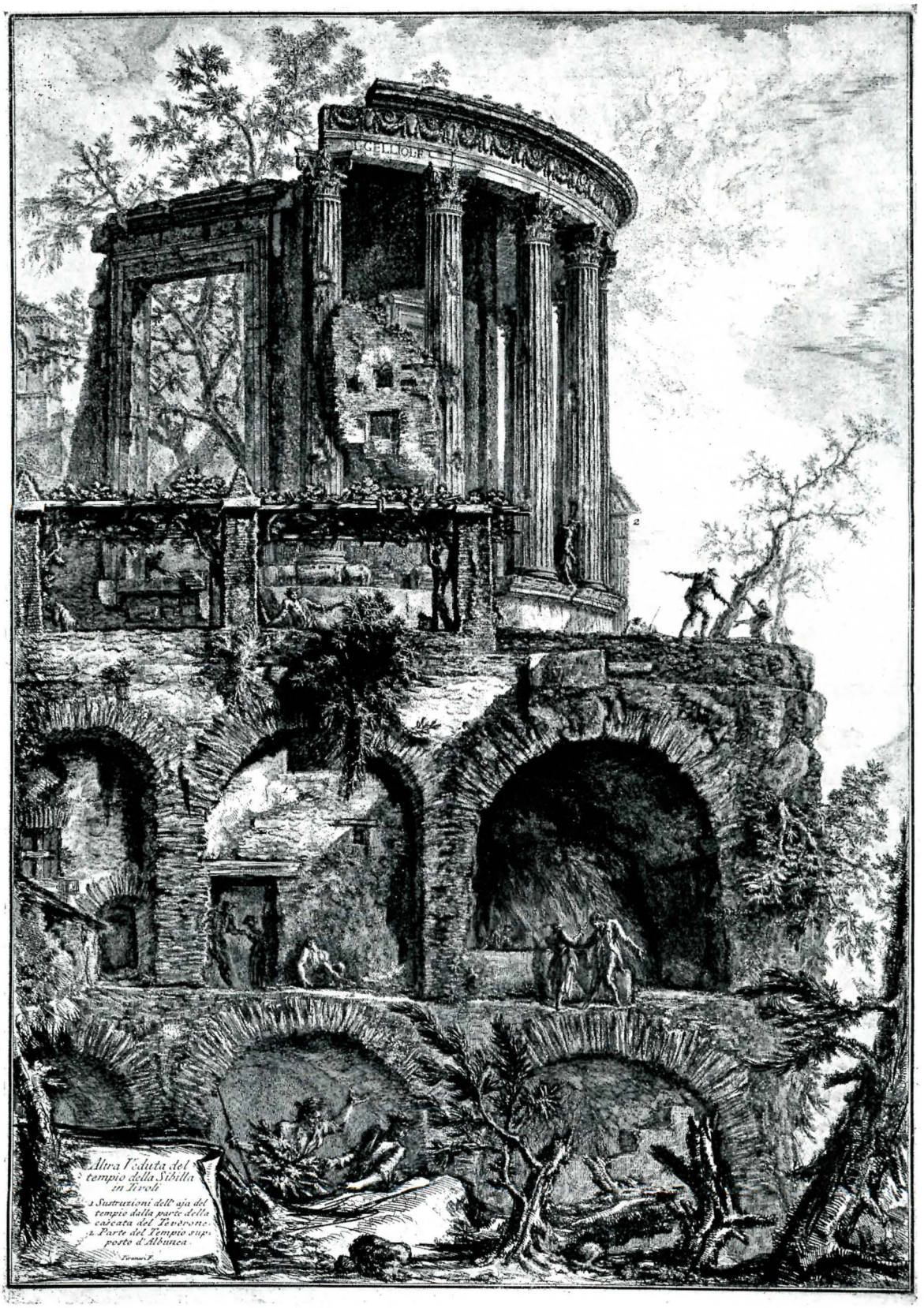
To these difficulties are added the changes made by G. B. Piranesi himself in the various editions of his work. In each work published by G. B. Piranesi, the plates have been classified in several ways, first by the author and afterward by his successors. Roman numerals, Arabic numerals, notes etc., indicate the desire of these various editors for order and clarity. Inversions, repetitions and omissions in the numbering are frequent. The French libraries, which were for a long time the depositaries of the plates, added a new series of Arabic numbers to the original Roman ones.

Piranesi's engraved catalogue of his own works is the first and most valuable of all. Until about 1770 it was a reliable guide in spite of the fact that it mentions plates which appear to be lost, since none of the great museums of Europe nor any of the



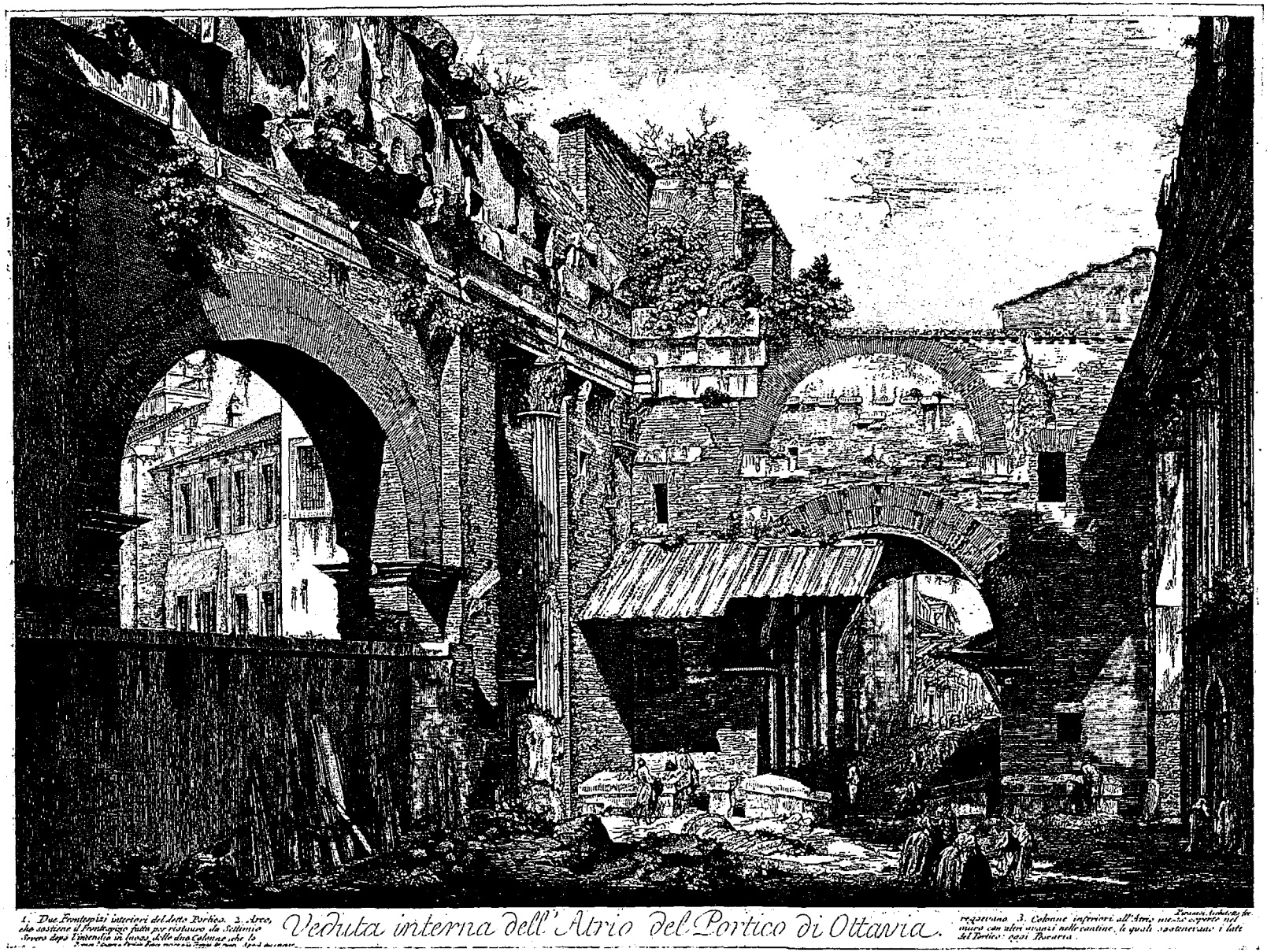
TEMPIO DELLA TOSSE.. PLATE 70 "VEDUTE DI ROMA" BY G. B. PIRANESI, 1764.

Size 18⅛" x 24½"—Second State.



TEMPLE OF THE SIBYL, TIVOLI. PLATE 63 "VEDUTE DI ROMA" BY G. B. PIRANESI, 1761.

Size of Plate 17⅛" x 24¼"—Second State.

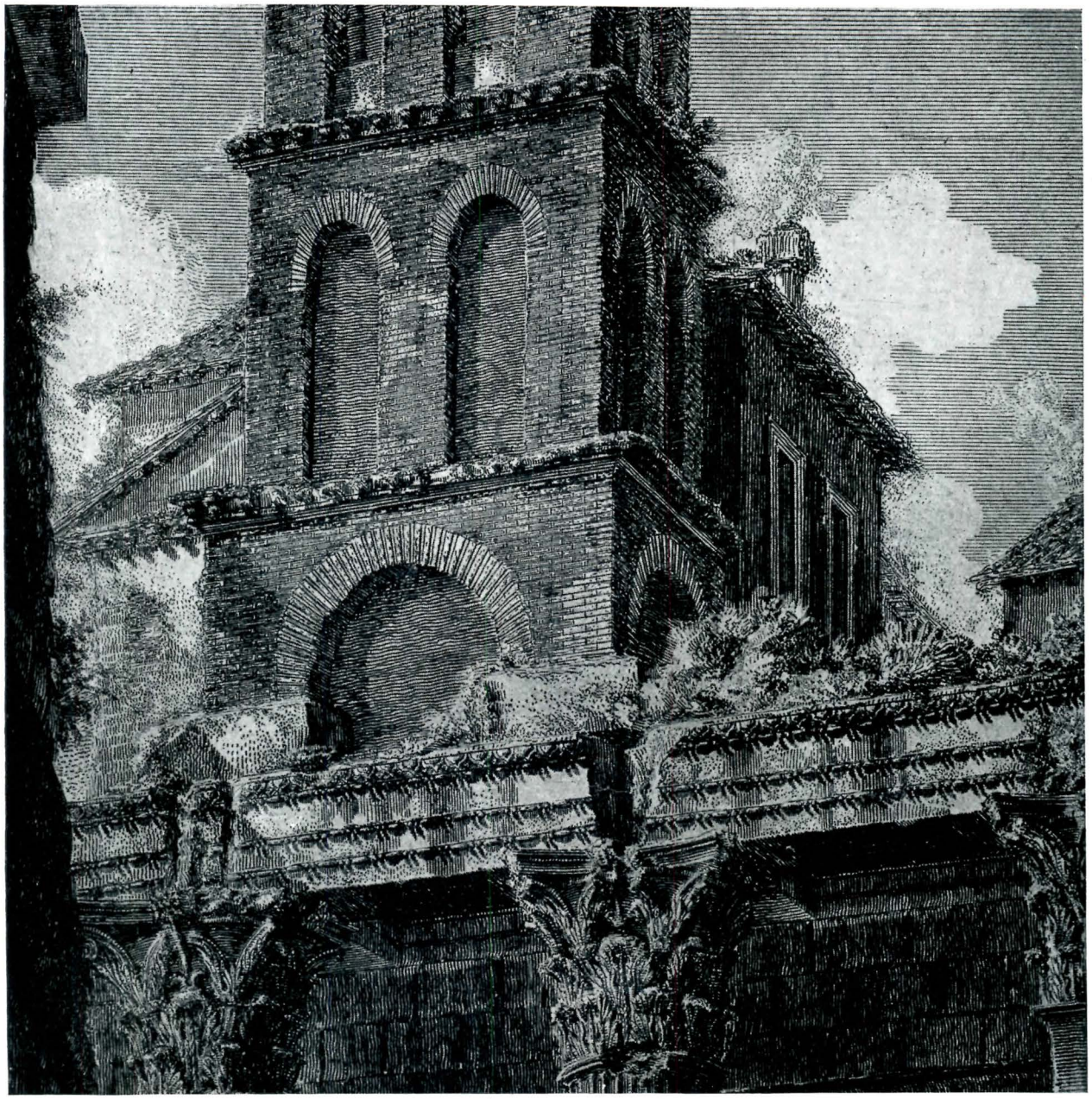


THE PORTICO OF OCTAVIA: INTERIOR OF ENTRANCE PORCH. PLATE 59 "VEDUTE DI ROMA" BY G. B. PIRANESI, 1760.

Size of Plate 21⅝" x 16¼"—Third State.

THE FORUM OF AUGUSTUS. PLATE 42 "VEDUTE DI ROMA" BY G. B. PIRANESI, 1757.

Size of Plate 24⅛" x 15¾"—*Second State.*



DETAIL AT FULL SIZE OF ORIGINAL ENGRAVING SHOWN ON PAGE 231

"The Forum of Augustus" by G. B. Piranesi

private collections that one may study through catalogues have owned them or possess them today. The catalogue, however, which forms the chief basis for a list of the work of G. B. Piranesi and his sons is in the British Museum Print Room, (1792). It shows thirty-two sections, distinguished by Roman numerals. The PENCIL POINTS collection contains all of the various titles and an almost complete number of plates from each series together with many rare numbers.

The general subject of Piranesi's life and works has been carefully studied by Mr. Arthur Samuel, (London, 1910), Mr. Albert Giesecke, (Leipzig, 1911), Mr. Henri Focillon, (Paris, 1918) and Mr. Arthur M. Hind of the British Museum, (London, 1922). Both Mr. Hind and M. Focillon point out that the previous bibliographers have committed many and serious errors which are most disconcerting to the man who has undertaken the laborious business of making the necessary comparisons in a great variety of collections of Piranesi's works with the purpose of continuing the detailed catalogue and of fixing the origins, dates and contents of Piranesi's engravings in relation to existing documents.

The Antichita Romane de' Tempi della Repubblica of 1748 is the earliest dated work in which Piranesi

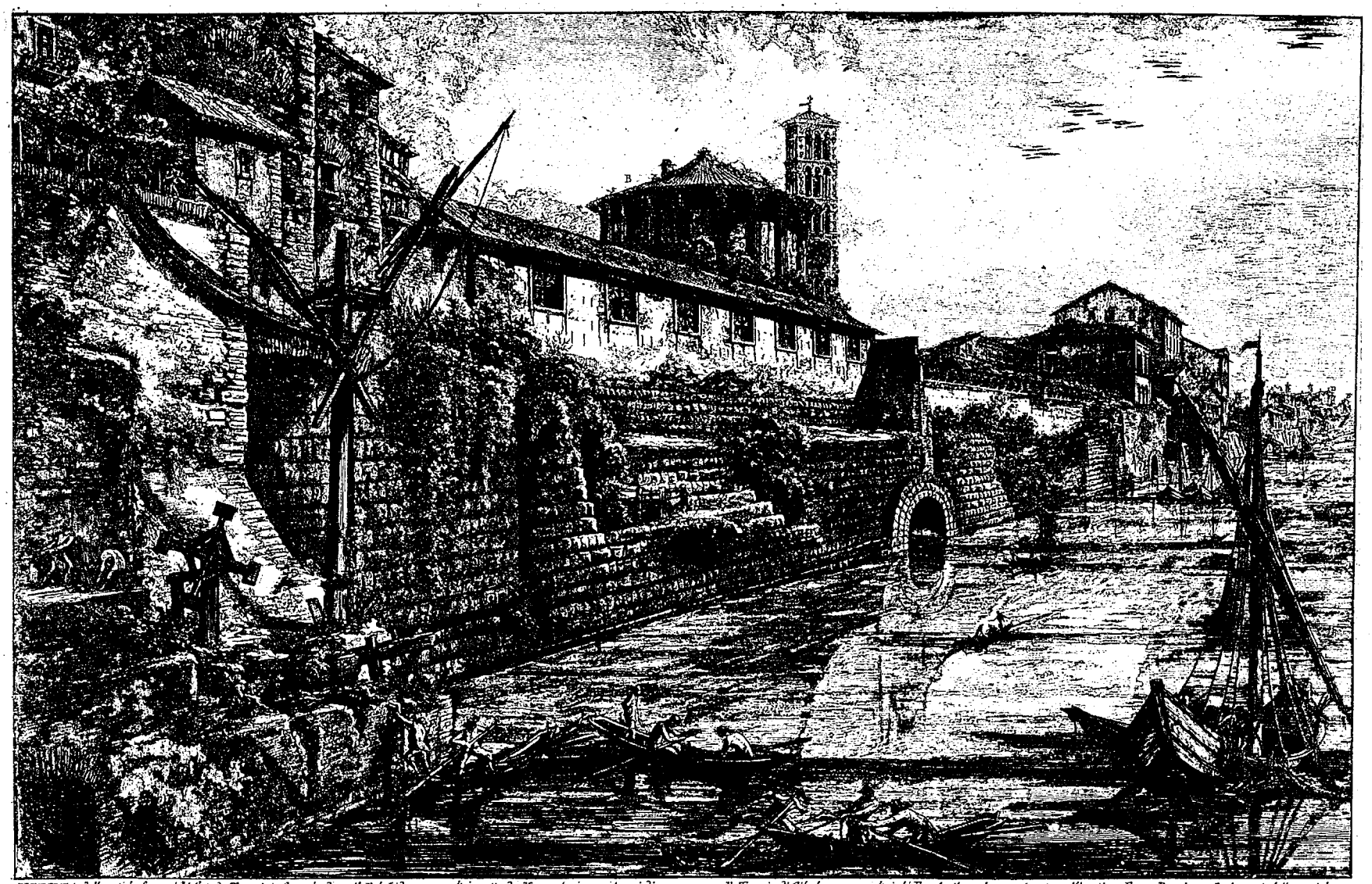
DETAIL AT FULL SIZE OF ORIGINAL ENGRAVING SHOWN ON PAGE 234

Plate 125 *of Vedute di Roma by G. B. Piranesi*

is shown as publisher. The *Opere Varie* and the *Invenzioni Capric de Carceri* are earlier works published in Bouchard's editions. In the *Carceri* Piranesi used etching technique more purely and the pre-eminence of the "Prisons" Series as a work of architectural fancy is due to its remarkable evidence of a genius working at the fever heat of imaginative power.

The largest and probably best known series of Piranesi's etchings are the *Vedute di Roma.* These plates were begun early in his career and he was working on the Series up to the time of his death. There are 137 views; 135 produced by Giovanni-Battista and two by Francesco. The wonderful *Pianta di Roma,* made in 1778 is sometimes included with this series. Mr. Hind is able to refer to impressions from the one plate that was used throughout Piranesi's lifetime, showing thirteen different states,—the new entries being engraved on the plate as the works were published.

In addition to the complete set of the above works, the PENCIL POINTS collection also includes *Trofei di Ottaviano Augusto* (10 plates of the second edition), 1753, *LeAntichita Romane* (218 plates), *LeRovine dell Castello dell' Acqua Giulia* (1761), *LeMagnificenze dell' Architettura Romana,*



VEDUTA delle antiche Sostruzioni fatte da Tarquinio Superbo dette il Bel Lido, o come altri erette da Marco Agrippa a tempi di Augusto, in occasione, ch' Egli fece ripurgare tutte le Cloache fino al Tevere. A. Sbocco della Cloaca Massima al medesimo Fiume. B Tempio di Cibele, o come altri di Vesta, il quale era situato nell'antico Foro Boario. C Avanzi delle antiche Saline. D Monistero e Chiesa di S. Alessio. E Priorato della Sagra Religione di Malta.

THE TIBER AT MOUTH OF THE CLOACA MAXIMA. PLATE 125 "VEDUTE DI ROMA" BY G. B. PIRANESI, 1776.

Size of Plate 26¼" x 17½"—First State.

THE ARCH OF TITUS. PLATE 90 "VEDUTE DI ROMA" BY G. B. PIRANESI, 1760

Size of Plate 24¼" x 15¾"—Second State.

(1761); *Campo di Marti di Roma Antica,* (1762); *Descrizione e disegno dell' Emessario del lago di Albano,* (1762-4); *Anticlita di Albano e di Castel Gandolfo,* (1764); *Antichita di Cora* (1764); *Diverse Maniere di Adornate i Cammini,* (1769); *Vasi e Cnadelabri,* (1778); *Rovine del Tempio di Pesta (Paestum),* (1778-9), etc.

We are indebted to Mr. Hind for the following biographical notes which he has compiled in connection with his critical study and list of G. B. Piranesi's published works.

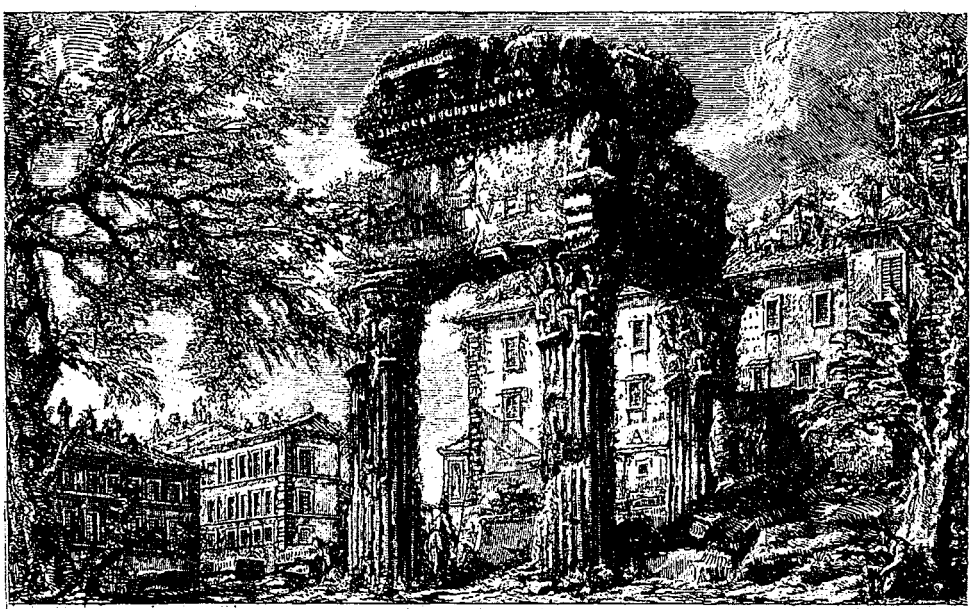
Giovanni Battista Piranesi was born in Venice on the 4th of October, 1720, but most of his life was passed in Rome, etching, writing, publishing and directing a workshop where he restored and sold antiques. He was educated as an architect under his uncle Matteo Lucchesi and under Carlo Zucchi and seems to have been proud of his profession and his birthplace, for many of his works are signed by an appendage of "Architetto Veneziano". Piranesi was twenty years old when he went to Rome. He studied etching under Giuseppe Vasi and worked in several scene painters' studios during the four years of his first unsuccessful stay in Rome.

Through the encouragement of Giuseppe Wagner, a successful engraver and publisher of Venice, Piranesi returned to Rome and founded a similar establishment. From this time on a continuous series of works, illustrating architecture and antiquities, issued from his studio.

There are no proofs of Piranesi's plates in such unfinished state that they show his method of working. The earliest states of which there are proofs are already completed subjects. These early impressions show that a light pure etching was the groundwork of his plates. They do not indicate, however, how he laid out his subject on the plate before etching. Comparatively few Piranesi drawings seem to have been preserved. The collection at the British Museum, Soane Museum and some half dozen drawings in the collection of Prince W. Argoutinsky Dolgoroukoff in Paris are the most noteworthy.

We have selected a few of the finest of the plates, considered from the standpoint of beauty of etching and composition, for publication in this issue. Many of the hundreds of Piranesi's architectural designs and views shows a power of imagination far beyond the immediate demands of the subject to be handled but in spite of his extraordinary faculty of invention he never allowed his topographical and archaeological plates to fall into the false picturesque. In his genius for brilliant effects of light and shade and power of chiaroscuro in the treatment of architecture he had an extraordinary dash and vitality of touch which made him a great draftsman.

Piranesi has been called the "Rembrandt of Architecture" and eminent authorities, among them Mr. Hind, feel that he has every right to the appellation.



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Piranesi Archit. dis. inc.

THE PERMANENCY OF COLOR

By F. W. Weber

Mr. Weber, who is Technical Director of F. Weber Co., Manufacturers of Artists' Colors, writes with authority upon the relative permanency of color of the different pigments used in oil and water color painting. His article should therefore be of interest to all draftsmen and students who have occasion to use color in their work.—EDITOR'S NOTE.

THE STUDY OF THE COMPOSITION and chemistry of Artists' colors, vehicles and varnishes which today is of great importance, is unfortunately only too frequently neglected by the student and Artist. It is not necessary that the Artist become a color chemist, but a practical technical knowledge will aid greatly in assuring permanent and durable results, whereas the lack of it often proves a serious embarrassment, sometimes even during the Artist's own lifetime.

It is only comparatively recently that the manufacture of Artists' colors became an industry. Before this time the painter prepared his own products and no doubt welcomed the commercializing of this phase of his art. This severance of course was inevitable, due to the rapid progress of chemistry as a science, whereby an unlimited number of pigments, etc., began to broaden the Artist's field of selection. Today the student may choose from such a variety, that not to run into difficulties would be almost a miracle.

The Artist of the seventeenth and early eighteenth centuries was undoubtedly the most unfortunate. Chemistry about this time began to develop as a science, and during the ensuing years rapidly produced an exceedingly large number of many brilliant, but unfortunately also many unsafe, colors which during their introduction were usually offered in very impure form. The Artist welcomed the addition of such a variety to his palette and was necessarily forced to select by standards of brilliancy only. We also find that many colors appeared under several names, each manufacturer striving to have the pigment, or a modification of it, appear as a specialty of his own. For example, Prussian Blue, which was discovered by Diesbach in 1704, became known as Paris Blue, Berlin Blue, Bronze Blue, Mineral Blue, Chinese Blue, Milori Blue, and lately also as American Blue.

Pigments, in order to be classed as such, must be permanent to light, air, moisture, and gases. They must also be chemically indifferent toward each other in mixtures and must not suffer calculable alteration of hue in any technique. All durable pigments should also be insoluble in water or alcohol. Being permanent to light pre-supposes that the pigment will be absolutely permanent under ordinary diffused light, and also show complete stability when exposed to direct sunlight.

The student generally supposes light to be the worst enemy of permanence, though usually it is not as serious as climate, variations in temperature and atmospheric influences. A painting is seldom exposed to strong sunlight for any length of time, but impure air, gases and moisture come in constant contact with the majority of pictures even in some of our largest galleries. A great many of the old masterpieces owe their destruction to disintegration, caused by the constant condensation and evaporation of moisture on their surfaces, which, carried on over an indefinite period, together with the action of air contaminated with sulphurous gases, etc., gradually brought about changes, impossible for light alone to have accomplished.

Pigments may be divided into two classes:

Mineral
- *Natural,* such as the Ochres.
- *Artificial,* such as the Cadmium Yellows, Cobalts, Vermilions, Emeraude Green.

Organic
- *Vegetable,* such as Madder Lakes, Gamboge, Indigo.
- *Animal,* such as Sepia, Indian Yellow, Carmine.
- *Artificial,* such as Alizarin Lakes.

The *natural* and *artificial mineral* pigments form the most important group, as it is from this group that the most desirable pigments are obtained. From the natural mineral group the Old Masters obtained most of their colors, but today the colorman selects a large number of his best products from the artificial mineral group.

Of least importance to the Artist are the pigments of *organic* origin, among which the Madder Lakes, Indigo, Gamboge are perhaps the best from vegetable source. The many yellow lakes, such as Italian Pink, Dutch Pink, Brown Pink, etc., derived also from this source, are of little importance owing to their fugitive character and their instability in mixtures with many metallic pigments such as the White Leads, Chrome Yellows, etc.

Sepia, Indian Yellow, and Carmine are the most important pigments from *animal* sources. All three may be easily dispensed with; especially do I wish to warn the Artist against the use of Carmine. This pigment, although of such brilliance and individuality of hue, is very fugitive to light and readily decomposes in mixture with many metallic pigments, such as White Leads, Chrome Yellows, Yellow Ochres, etc. As it is an expensive color, it may be easily replaced by the very desirable Alizarine Madder Lakes.

The *artificial organic* pigments unquestionably furnish a larger number of pigments than all other groups. Since the accidental discovery of Mauve from aniline (a coal-tar derivative) in 1856 by the

English chemist Perkins, forming the starting point for the inconceivable number of dyes developed since then, most of the lake pigments produced with these dyestuffs unfortunately prove far too fugitive for use as Artists' pigments. The exceptions in this instance are the very permanent Alizarine Lakes, derived from anthracene, which is also a coal-tar derivative.

I have found that many artists are of the opinion that the Alizarine Lakes are aniline colors. The fact that aniline and also anthracene are both derivatives of coal-tar should not lead the Artist to believe that the colors obtained from these products are identical in their properties. The aniline derivatives such as Mauve, Magenta, etc., are not desirable owing to their instability and lack of permanence, but the Alizarine Lakes are chemically a different class of compounds and are very desirable, possessing high stability and permanence.

We have spoken above of Lake colors and I think it may be of interest to describe such a product. The derivation of the name lake is said by Pliny in his *Naturalis Historia,* A. D. 77, to be from the lac, or coloring principal, of insect origin, used by the early Italian dyers. In conjunction with compounds of tin and aluminum the dye was precipitated and fixed indelibly on the fabric. During the process of dyeing some of the lac combines with some of the tin and aluminum to form an insoluble compound, which produces a colored scum on top of the dye-vat. This substance, called by the Italian dyers *lacca,* was collected, dried and sold to Artists as a pigment. Soon the natural dyestuffs were found to yield variously colored lacca and methods were soon developed whereby the lakes were obtained direct and not as a residue or scum of the dye-vat. In fact, today the manufacture of lake colors is as important commercially as the dye industry.

A lake pigment is not simply a mechanical mixture of a base with a dyestuff, as this product would "bleed" the dye in water. Only a lake which has the dye fixed indelibly on a neutral base is desirable as a pigment. In practice the neutral base on which the dyestuff is fixed, is usually Alumina, Clay, Barytes, or Paris White.

The earlier lakes were obtained from natural coloring matters, such as lac, cochineal (carmine), Persian berries, Brazil wood, logwood, etc., but today the artificial or synthetic dyestuffs have almost entirely supplanted the natural coloring extracts, yielding innumerable brilliant colors, most of which are only of sufficient permanence to be used by the Artist for commercial work, if at all. Many of these lake colors are often employed to give stronger color to pigments, but their addition yields but temporary brilliance.

The Artist should be in a position to detect roughly at least the addition of harmful admixtures to his colors, as, for instance, the addition of fugitive dyes, or if colors, such as the Cadmium Yellows, have been adulterated with Chrome Yellows, or whether a pigment such as Cobalt, for which he pays a big price, be actually pure Cobalt and not a mixture or cheap substitute, or likewise if Whites be unadulterated with Chalk, Clay, Barytes, etc., and whether a White be Zinc, Lead, etc.

The time has arrived when the Artist must know something of the composition of his materials. The new products appearing yearly tend only to lead into difficulties, unless their use be accompanied with the proper knowledge of their properties. Not only does the student or Artist owe it to himself, but future generations will look back with gratitude when examples of the work of various periods remain durable throughout the ages.

Why in this one profession should the study of the materials employed in the various techniques be so often thought of such little importance? We stand helplessly by and witness the gradual destruction of many of the finest examples of the various periods simply because the respective Artists knew nothing of the dangers of using unstable pigments, oils, etc., or were victims of the alluring, brilliant, unsafe products during their introduction. We may excuse the Artist of former times, but today there is no reason why the student should not reflect on the importance of preserving his work for the future. Sometimes the improper use even of durable materials has caused the Artist considerable trouble.

With a few bottles of reagents tucked away in the studio, the Artist may at any time readily test any color in question, at least for harmful adulterations or impurities.

The Artist should have a small bottle each of
Alcohol—Denatured
Sodium Sulphide
An Acid—Hydrochloric, Nitric or Sulphuric Acid
Ammonia Water or a weak solution of Caustic Lye.

The alcohol may be denatured alcohol, as this serves the purpose for all practical needs. It is used to detect the presence of adulteration with dyes, which, if soluble in alcohol, will color the alcohol. A color when treated with alcohol or water which does not stain these liquids would indicate no water or alcohol soluble dyes being present. Some dyes require a few drops of ammonia water added to the alcohol to draw them from the pigment.

If the pigment be in dry powder form it need only be shaken in a small bottle, or better a test tube, together with a small quantity of alcohol. Usually the color which the Artist examines is either an oil or water color. Seldom do the oils or gums prevent reaction with the above-named reagents. More definite results are, however, obtained by using the pigment in powder form, that is free from oils, or gums, etc. Water colors are easily washed free of these gums. A small quantity of the color is placed in a small container to which sufficient water is added to make a dilute solution. After thorough shaking, and after allowing the pigment to settle, the water should be poured off. It is important to note whether the water has become stained with color; this would indicate a partial solution of the

pigment or the addition of water-soluble dyestuff to the pigment.

Oil colors may be freed from oil or resins by washing in similar manner, using turpentine in place of water and then removing the turpentine by washing with alcohol. If the alcohol or turpentine becomes colored it would indicate adulteration with dyestuffs. Some pigments are in a very fine state of division and would require quite a time to settle, therefore much time may be saved by filtering the pigment from the turpentine or alcohol. In place of turpentine other solvents are often employed, such as benzol, toluol, xylol, ether, chloroform, acetone, amyl-acetate, carbon tetrachloride, benzine, etc.

Certain colors, such as Prussian Blue, have such strong tinting strength that more than one filtration is required to remove the finely divided particles from the solvent, which otherwise may mislead the student into believing that the discoloration is caused by dyes.

Our next reagent consists of a solution of about one ounce sodium sulphide in a pint of water. Sodium sulphide is an inexpensive chemical and is used principally to detect the presence of lead or copper in pigments. Such pigments as the White Leads, Flake White, Cremnitz White, the Chrome Yellows, Naples Yellows, Red Lead, Orange Mineral, Chrome Greens (containing Chrome Yellows), Verdigris, Malachite Green, Emerald Green, or any other pigments containing lead or copper, are rapidly turned black when a drop of sodium sulphide solution is applied to them. For instance, if any Cadmium Yellow becomes blackened by sodium sulphide, we immediately suspect adulteration with Chrome Yellows, as the Cadmiums, when pure, should not become blackened. Cadmium Orange and Cadmium Red may show adulteration with Red Lead or Chrome Orange if blackened; when pure neither is discolored by this reagent. Yellow Ochre should remain unaltered, likewise the genuine Vermilions, if pure, are not blackened by sodium sulphide. Any of the green pigments turning black with this reagent would indicate either Chrome Yellows or Copper Greens to be present. Any color becoming discolored brown or black with sodium sulphide should not be used by the Artist desiring complete stability or durability. The reaction which takes place with this reagent shows exactly what will occur if a painting be hung where sulphurous gases come in contact with the unprotected pigment. Many Artists argue that in their experience the Chrome Yellows, Flake Whites or White Leads have not shown discoloration for a number of years and would no doubt continue to remain unchanged. This may be true in the case of the White Leads, but only under one condition, and that is, that the pigment be properly protected from impure air by an application of varnish or other means. White Leads are perfectly permanent to light and very desirable if properly used. On the other hand, this can not be said of the Chrome Yellows, as we will learn when speaking later of these pigments. The same is also true of the Chrome Greens (not to be confused with the Oxide of Chromium Greens, such as Emeraude Green or Viridian, which are extremely stable pigments), Verdigris, Malachite Green, etc.

A bottle of any acid, such as hydrochloric acid, which I usually prefer, or sulphuric acid or nitric acid, is useful in testing certain colors. Cobalt Blue, Cerulean Blue, Emeraude Green, Viridian, Permalba, Vermilions, Prussian Blue, Cobalt Violets, all Blacks (except Ivory Black, which is partly soluble in acid), are indifferent to dilute acids and any change taking place would indicate the pigment to be impure or adulterated.

A solution of a base, such as caustic lye or ammonia water, serves to determine purity and adulteration of pigments, which should remain unaffected by these alkalies.

The pigment of which the Artist uses a larger amount than of any other, is *White*. The three principal Whites are the *Lead Whites* (*Flake and Cremnitz*), *Zinc White and Permalba*.

The *Lead Whites* (basic lead carbonates) were employed by the Egyptians. There is and always has been, much controversy on the use of these pigments in the Fine Arts.

We only too often wrongly accuse Lead Whites of being undesirable pigments. It must be said in their favor that when used properly the Lead Whites are very durable and permanent pigments. The sensitiveness of the Lead Whites toward sulphur compounds and gases (which tend to convert the lead to black lead sulphide) makes the proper use of these Whites very important. Unfortunately the opacity of the Lead Whites has done much to make these pigments almost too popular. The Artist using Flake, Cremnitz or White Lead for underpainting, could not get a more desirable pigment for this purpose, as here the color is properly protected from impure air contaminated with sulphurous gases. But where these pigments are used and left exposed, it is only a matter of time, depending on how impure the atmosphere in which the painting is placed, before discoloration occurs. An application of varnish will retard this reaction considerably. White Leads also tend to reduce most organic pigments in mixtures and should not be employed together with impure Cadmium Yellows, Vermilions, Ultramarines, etc. The tinting value of the White Leads does not approach that of Zinc Whites or Permalba. White Lead is a cumulative poison. A simple test for White Lead is the black discoloration when treated with sodium sulphide. In most acids White Lead dissolves with strong effervescence. When strongly heated, it turns from yellow to red. In these three latter respects it differs from Zinc White, which dissolves without effervescence in acid and upon heating turns yellow; but upon cooling, again turns white. Nitric acid or acetic acid entirely dissolves White Lead; any insoluble residue would indicate admixture with such materials as clay, barytes, silica, etc. Caustic lyes also dissolve White Leads.

White Leads in oil dry well, yielding an elastic and tough film. Owing to their sensitiveness to impure air White Leads are not practically adaptable to other painting techniques.

A very popular pigment is found in *Zinc White,* the use of which as a pigment dates from the latter part of the eighteenth century. Zinc White is the oxide of the metal zinc and like many other pigments was too severely criticized during the years following its introduction. The impure condition of these Zinc Whites did much to destroy the confidence which should be placed in this desirable pigment when pure. Today the American Zinc Whites can not be excelled for their dependable purity and consequent stability as a pigment. Pure Zinc Whites are very permanent under all ordinary conditions of painting. When ground in oil, they dry more slowly than the Lead Whites and yield a much harder film. In fact, painting Zinc Whites too impasto is to be advised against, the application tending to become horny and friable upon aging. The tinting power of Zinc White is very high. Sodium sulphide solution does not discolor this pigment.

The most important *Red Pigments* are the *Alizarin Madder* and *Genuine Madder Lakes, Genuine Vermilions, Red Ochres* and *Red Iron Oxides.*

The *Alizarin Madder* as well as the genuine Madder Lakes derive their color from Alizarin, which today is prepared from anthracene, a derivative of coal-tar. The ancients obtained this product as an extract from the root of the madder plant, in which it is usually associated with the less permanent and more purple in hue Purpurin. The synthetic product is produced today, so that a very pure and dependable pigment is obtained, equal, and in some instances better, than the natural color extract. The Alizarin Madders or modifications of these colors appear commercially as Alizarin Crimson, Alizarin Madder, Rose Madders, Madder Lakes, Pink Madder, Brown Madder, etc.

The Alizarin Madders are insoluble in water or alcohol, which distinguishes them from most of the ordinary organic dyestuffs, which impart color to these liquids. The Alizarin Madders are best used as overglaze colors and mixture with Chrome Yellows, Lead Whites, Flake White, Yellow Ochre and Raw Earth Colors is best regarded as being of uncertain stability. Mixtures with durable pigments such as the Cadmiums, Permalba, Burnt Ochres, Red Oxides, Emeraude Green, Cobalt Blue, Ultramarine, all Blacks, etc., show high stability.

The *Genuine Vermilions* are compounds of the elements sulphur and mercury (quick-silver), and were known and used 400 B. C. by the Egyptians and the Chinese. Pliny, A. D. 77, refers to them as *minium,* a name now given to Red Lead. In more modern times the Vermilions are often very impure, sometimes containing an excess of sulphur, etc., and these impurities are principally responsible for the bad reputation the Vermilions have. When the Vermilions are pure, no discoloration should take place in mixture with pure Flake Whites. They are very durable in mixtures with other stable pigments and are not affected by impure air, sulphurous gases or sodium sulphide. A black discoloration upon treating Vermilions with the sodium sulphide solution would indicate admixture with Red Lead or Chrome Red or Orange. Alcohol, water, weak acids or alkalies should not react with genuine Vermilions. When strongly heated, Vermilions sublime, leaving but a trace of residue. A large amount of residue would indicate adulteration with red lead, clay, barytes, etc.

For some inexplicable reason some varieties of Vermilions darken somewhat on long exposure to direct sunlight. Especially is this evident with impure Vermilions. Vermilions, when overpainted with Alizarin Madder, have shown greater permanence under prolonged exposure to direct sunlight than when used alone.

The Red Iron Oxides and *Red Ochres,* such as *Indian Red, Venetian Red, Light Red,* etc., receive their color from the oxides of iron, principally *ferric oxide.* The natural and artificial ochres are practically alike in properties, resisting dilute acids and alkalies and showing no discoloration with sodium sulphide solution. These pigments were used in all techniques, from early times.

Most of the modern exceedingly brilliant Red Lakes appearing under many fanciful names, although of considerable value for commercial work, are not desirable for absolute permanency. The Artist had better acquaint himself with the durability of the pigment in question, from the manufacturer of the respective color when desiring to use such as the Geranium Lakes, Scarlet Lakes, Brilliant Lakes, etc.

Carmine need not be discussed as it should not be employed, except for limited durability, as in commercial work.

The most important *yellow pigments* are the *Cadmium Yellows,* which are all compounds of the elements, cadmium and sulphur. When pure, these yellows, ranging from a pale yellow to deep orange, are permanent to light, not affected by sulphurous gases or compounds and are durable in mixtures with other dependable pigments. An exception to this, however, is found with Emerald Green and Cadmium Yellow in mixture. These two colors are not compatible and should never be used together. Chrome Yellows frequently are used to adulterate Cadmium Yellows. Such adulteration is readily detected by treating the color with sodium sulphide, when, if Chrome Yellows are present, the sample will turn brown or black. Pure Cadmium Yellows are not discolored by this reagent. In concentrated hydrochloric acid the Cadmium Yellows should be entirely soluble, leaving no residue.

Chrome Yellows ranging in color from a pale yellow to deep orange are essentially compounds of lead chromate and, like all pigments containing lead, they are very sensitive to sulphurous gases and compounds. Not only are the Chrome Yellows black-

ened by sulphur, but under exposure to direct sunlight they invariably turn brownish; especially is this evident when the pigment is not chemically pure. Chrome Yellows are likewise not compatible in mixtures with most organic and lake colors. There are many Artists using Chrome Yellows who should first apply some of the simple tests for durability before placing undue reliance in their permanency.

Indian Yellow is a transparent color of good permanence and stability in mixture with most durable pigments.

There are several *Yellow Lake* pigments, the coloring principal of which is derived from coal-tar, which are being accepted in place of the genuine Indian Yellow. These colors are also very permanent and especially useful as overglazing colors.

The *Lemon Yellows (Barytes Yellow, Strontian Yellow,* and *Zinc Yellow)* are very useful, and when pure have proven to possess considerable permanence.

Of the *green pigments,* the *Transparent Oxide of Chromium,* also known as *Emeraude Green* and *Viridian,* is unquestionably the most desirable, for it possesses complete stability in all techniques and remains durable together with other pigments in mixtures. Adulterations are readily detected, as the pigment should remain unaffected upon treating with acids, or alkalies, or sodium sulphide. Any discoloration would indicate admixtures. Water or alcohol will extract any dyestuffs. Of equal durability is the *Opaque Oxide of Chromium,* which, although it has identical chemical properties with the transparent variety, does not possess the strength of color, being a mat, dull green.

Emerald Green is a pigment which is practically permanent to light, but, being sensitive to sulphurous gases and compounds, must be properly protected from these to insure stability. With most durable pigments Emerald Green is stable in mixtures, the principal exception being with the Cadmium Yellows. When Emerald Green is used, it is advisable to use the pigment alone, as in mixtures it has but little tinting strength and any danger of incompatibility is then removed. The pigments which, like Emerald Green, contain copper, are, however, best avoided by the Artist. To this group belong such colors as *Malachite Green, Verdigris,* and the blue copper pigments. They are sensitive to sulphur and unstable in mixtures with other pigments.

Another set of very durable green pigments are the *Cobalt Greens.* They are of weak tinting strength, but are exceedingly permanent to light and air and with other colors in mixtures. Sodium sulphide solution does not blacken these greens.

The *green lake* pigments do not form an important group, most of these being successfully employed only for commercial purposes. Usually the Artist may prepare his own greens on the palette, using Cobalt Blue, Ultramarine or Prussian Blue with the Cadmiums, etc.

The principal *blue pigments* are *Cobalt Blue, Ultramarines* and *Prussian Blue.* All of these colors are very permanent to light, insoluble in water or alcohol (detection of dyes) and durable in mixtures with other stable pigments. *Cobalt* distinguishes itself from the other two in being insoluble in acids and alkalies. *Ultramarines (New Blue, Permanent Blue, French Blue),* are destroyed by acids. *Prussian Blue* resists dilute acids but is discolored by lyes, for this reason can not be used as a Fresco color. Sodium sulphide will not blacken these blues, discoloration would indicate adulteration with copper blues.

The Cobalt Violets possess the strongest color of the durable violet-hue pigments. They are perfectly permanent to light, being also indifferent towards acids, alkalies and sodium sulphide. These properties readily distinguish it from the very fugitive aniline lake, *Mauve. Mauve* and *Magenta* are very strong colors but much too fugitive for Artists' use. Violets and purples may be easily mixed on the palette, using Cobalt or Ultramarine with Alizarin Madder.

The *natural* and *artificial ochres* and *umbers* are the most desirable *brown pigments. Yellow Ochre, Roman Ochre, Transparent Golden Ochre, Raw Sienna,* and *Raw Umber* are natural earth pigments deriving their color from oxides and hydrates of iron. The artificial ochres are called *Mars Yellow, Mars Orange, Mars Red,* etc. Both the native and artificial products are very durable in all techniques and may be successfully used in mixtures with other stable pigments. Mixtures of lake colors and organic pigments with the raw earth colors are best regarded as being of questionable stability. When these raw earths are calcined, they take on a decided red hue and are then dependable in mixture with all other pigments, being equally permanent to light and air, as the raw earths. They resist alkalies and are only slowly acted upon by strong acids. Raw Sienna and Yellow Ochre are sometimes toned with Chrome Yellow, which may be detected if the pigment is blackened by sodium sulphide solution.

Bitumen or *Asphaltum* should not be used by the Artist desiring permanency. The colors are of organic origin, composed of a variety of pitchy, tarry substances which partly decompose under exposure to direct sunlight. As oil colors, they are exceedingly slow dryers, and even after years they soften and "bleed" or diffuse through overlying layers of paint. Heavy applications readily cause cracking. *Vandyke Brown,* also being partly composed of bituminous matter, is unsafe for durability, fading to a cold grey tone under exposure to direct sunlight and should be replaced by Burnt Umber with Ivory Black.

All the *black pigments (Lamp Black, Blue Black,* and *Ivory Black)* are very permanent and durable colors, resisting both acids and alkalies. With all other pigments they are safe in admixtures. With the exception of Ivory Black, they are all principally composed of carbon. *Ivory Black* contains a varying percentage of bone ash; in consequence it is

partly soluble in acids, but is a better dryer in oil than the Lamp Blacks.

Oils, Varnishes, Siccatifs and Mediums.

I have found many Artists who were exceedingly conscientious in their selection of durable pigments, displaying a complete lack of technical knowledge of the vehicles they employ. The vehicles and mediums used in the various techniques are just as essential to permanency and durability as are the pigments.

Let us first consider the importance of the proper oils used in Oil Painting. For the Artist, oils may be generally divided into three principal groups:

1. *Drying Oils:* such as Linseed and Poppy Oil.
2. *Semi- or Slow-drying Oils:* such as Sesame, Cottonseed Oil.
3. *Non-drying Oils:* such as Olive Oil, Castor Oil, Cocoanut Oil.

The oils obtained from the animal kingdom are not practically adaptable for use in the Fine Arts.

Few of the volatile mineral oils, the lighter fractions of petroleum, such as Benzine, Naphtha, Gasoline, Petroleum ether, and sometimes Coal Oil may be used, but then only when their use is thoroughly understood. They find wider application as solvents for resins, as do also the lighter fractions of coal-tar, such as benzol, coal-tar naphtha, toluol, xylol, etc.

We must leave the discussion of oils, varnishes, etc., for a later time, as this subject is as comprehensive as the matter on pigments and must be taken up in detail as it is of much importance. We will therefore now mention only the most interesting facts.

The two principal drying oils, we have said, were *Linseed Oil* and *Poppy Oil*. By *drying* we mean that those oils absorb oxygen from the air, thereby becoming converted into a solid, tough, elastic, transparent mass. This form of drying may be contrasted to the manner in which such substances as turpentine and the lighter fraction of the mineral oils dry. These latter dry by evaporation. This may be readily illustrated by placing a small quantity of linseed oil in an open container and an equal amount of turpentine in another open container. After several days it will be noticed upon weighing each container that that which contains the linseed oil will have increased in weight about 10 per cent., whereas that which contained the turpentine will be practically empty. Again, upon closely examining the oil, we will find the mass to have dried with a considerably wrinkled surface (usually to be seen also on old cans of heavy paint which have stood open for a long time).

The oils belonging to the semi- and non-drying group, distinguish themselves from the drying oils in that they do not absorb oxygen from the air in such a degree as the drying oils and during their drying become partly rancid and do not yield tough, elastic, durable, transparent films, as do the drying oils. Linseed and Poppy Oils have been in use for several centuries and have proven conclusively their importance as painting oils and the Artist who, without further inquiry, makes use of the non-drying oils such as olive oil, castor oil, cocoanut oil, etc., is doing himself and his work a great injustice.

Linseed Oil and *Poppy Oil* differ somewhat in the time required to dry, Poppy Oil drying somewhat more slowly. Raw Linseed Oil contains a natural coloring matter which is somewhat objectionable to Artists, especially for delicate tints and for whites. These colors, when ground in Poppy Oil, do not show this yellow cast. When Linseed Oil is exposed to direct sunlight this coloring matter is bleached, but returns when the oil is again placed in the dark. Commercially, Linseed Oil is bleached by different methods and must be thoroughly washed free from the acid, etc., used in this process, in order to be desirable for Artists' use. I wish to warn the Artist particularly against the use of anything but the purest Linseed Oil or Poppy Oil, which have proven their merits so successfully in past years.

Turpentine, which is obtained by redistillation of exudations of various pine trees, is a very thin, volatile, colorless liquid used generally in conjunction with oils or as a solvent for resins. It is one of the most useful vehicles in oil painting.

The early painters had already discovered that by boiling linseed oil together with finely divided lead or lead compounds, a product was obtained which dried more quickly than the raw oil. Today many such compounds are made, some using lead, manganese, and in late years cobalt compounds, to produce *Siccatifs* which are very quick drying compounds. The use and abuse of Siccatifs requires lengthy explanation and cannot be discussed at this time. I do, however, wish to warn the Artist against their use, except for commercial work where durability and permanence are of secondary importance. It will usually be found that the speed with which a paint film is forced to dry by their use consistently detracts from the durability of the painting, not to mention the possible development of cracks and the rapid darkening ensuing from excessive use.

There are three resins which find widest application in the Fine Arts, they are *Mastic, Damar,* and *Copal.* The *Mastic* resin is soluble in turpentine, as is also the *Damar.* The *Copals* distinguish themselves from these in being practically insoluble in most ordinary solvents, requiring special treatment to yield varnishes of the highest durability. The usual method employed in preparing Copal Varnishes consists in heating the resin together with linseed oil and turpentine and frequently the addition of drying compounds gives quicker drying Copal Varnishes. Copal Varnishes yield upon drying the most durable protective films, but on account of the manner in which they resist all ordinary solvents, they are very tedious for the restorer to remove after aging, thereby endangering the underlying painting. Mastic Varnish can readily be removed from aged paintings with ordinary solvents, such as turpentines, etc., as can also Damar Varnish, and should for this reason not be employed together with the painting oils while painting.

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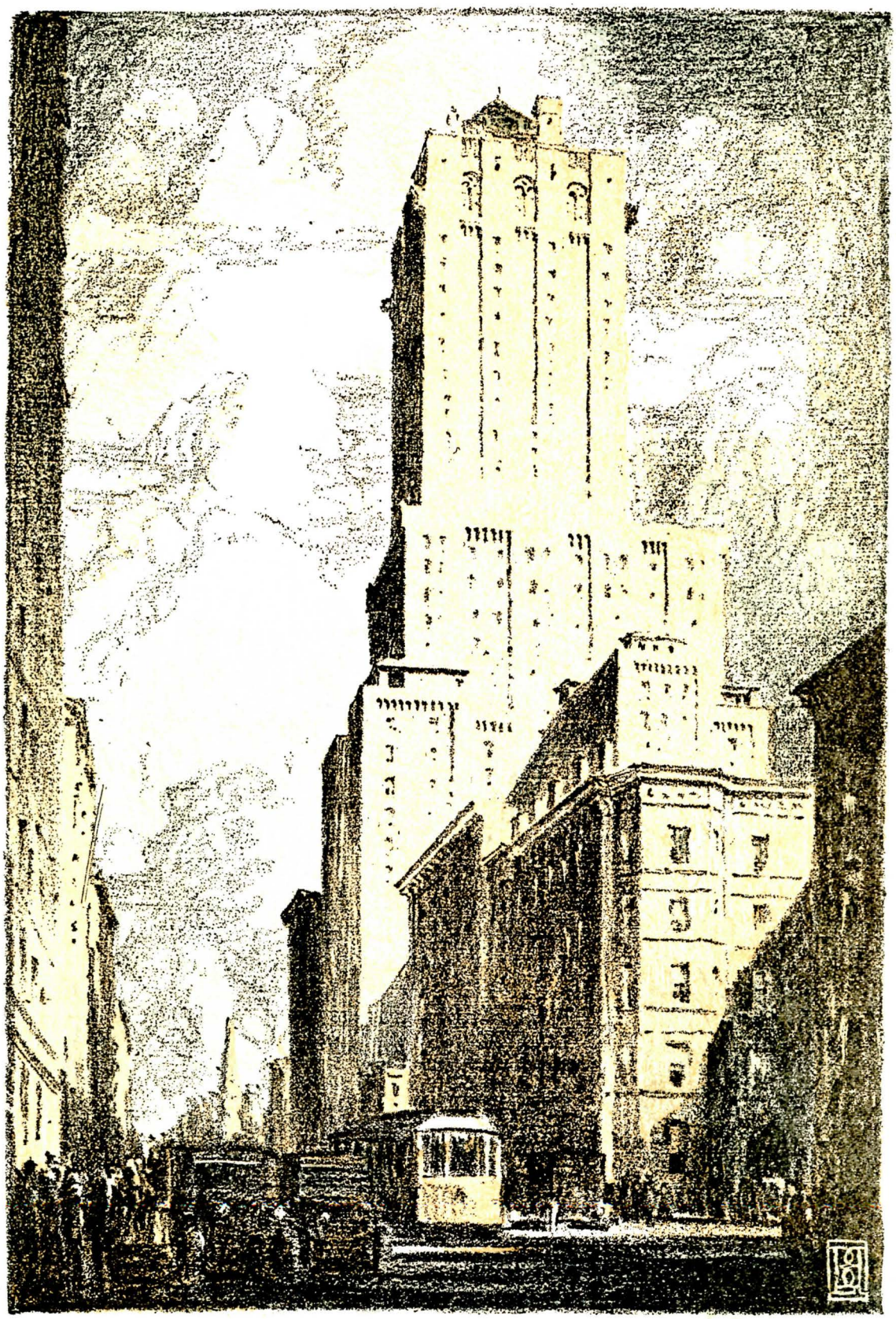

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PENCIL POINTS SERIES *of* RENDERINGS IN COLOR

PENCIL RENDERING BY OTTO R. EGGERS

SMALL HOME DESIGNED TO COST $16,000

PLATE XII

VOLUME VII NUMBER 4

This plate, which furnishes a particularly charming sample of Otto R. Eggers' intimate style of pencil rendering, shows a design for a small home to cost about $16,000. The design was made by Mr. Eggers for "McCall's Magazine," and was included in their series of "Small Houses Designed by America's Foremost Architects."

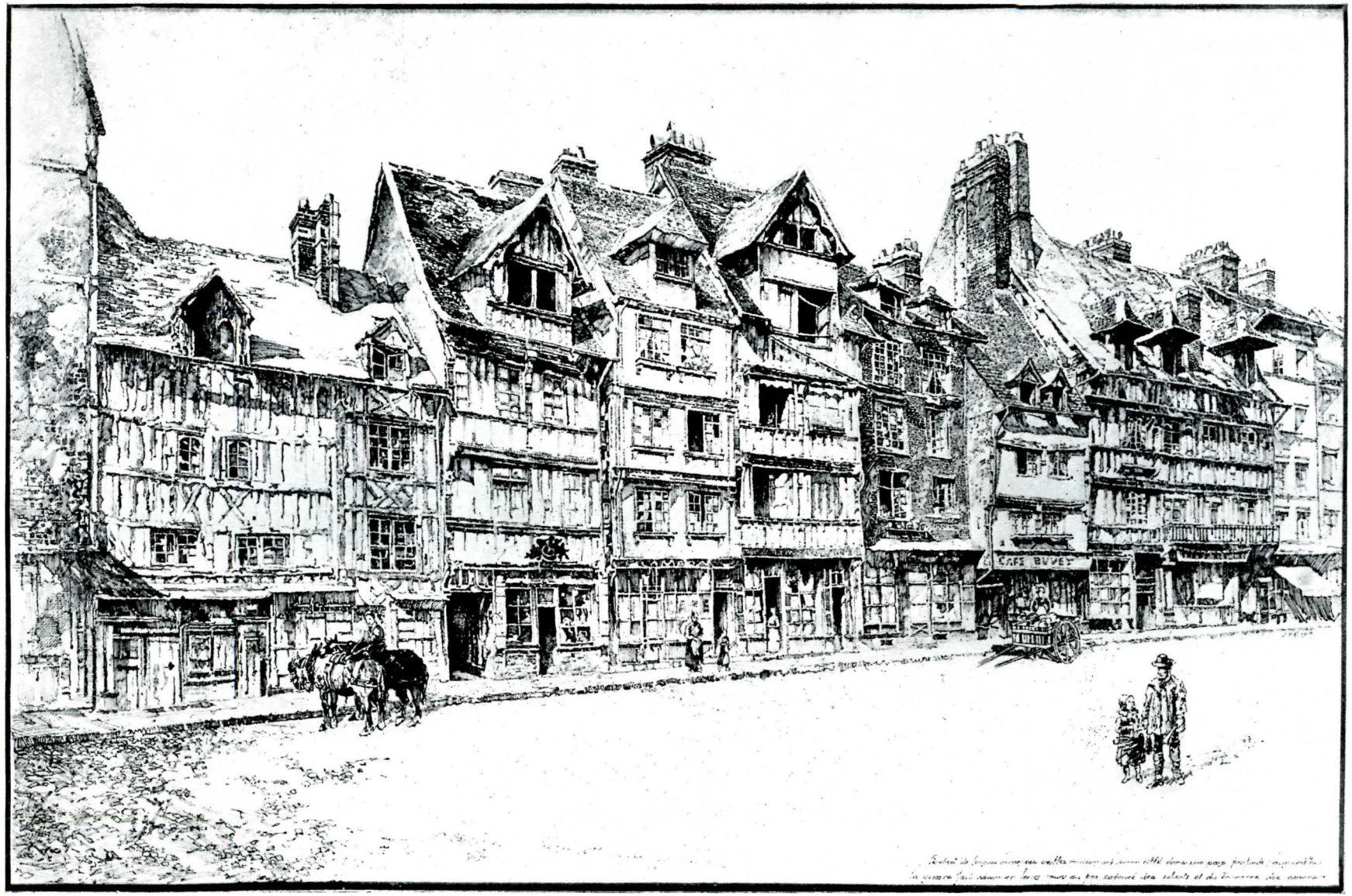
PENCIL NOTES BY T. MACLAREN

PORCH, COLLEGIATE CHURCH, ST. ANDREWS.

PLATE XIII

VOLUME VII NUMBER 4

This plate is reproduced from a drawing by T. MacLaren, Pugin Medalist and Traveling Student of the Royal Institute of British Architects. The drawing is an excellent example of the type of architectural notes which can be taken to advantage by the traveling student.



ETCHING BY JOHN TAYLOR ARMS

"LACE"

PLATE XIV

VOLUME VII NUMBER 4

The subject of the etching reproduced on the other side of this sheet is a famous row of old houses in the "Place Victor Hugo" in Lisieux, a little town in Normandie known for the picturesqueness of its old streets and houses of the sixteenth and seventeenth centuries. Mr. Arms made a drawing of this subject and later etched the plate from which we have made our reproduction. The title was suggested by the texture of the old house fronts which, with the variety of their materials and the delicacy of their details, suggested a bit of the lace which is made in such quantities in the neighborhood.

PENCIL POINTS

REG. U. S. PAT. OFF.

Published Monthly by

THE PENCIL POINTS PRESS, Inc.

RALPH REINHOLD, President F. W. ROBINSON, Treasurer
EDWARD G. NELLIS, Vice-President and Secretary

Publication Office—Stamford, Conn.

Editorial and Advertising Offices — 19 East 24th Street, New York

RUSSELL F. WHITEHEAD, Editor

Associate Editors

KENNETH REID E. L. CLEAVER

W. V. MONTGOMERY, Business Manager
RAY D. FINEL, Advertising Manager

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APRIL, 1926

MR. GILBERT IS GUEST OF THE CONSTRUCTION CLUB

AT THE MONTHLY MEETING AND DINNER of the Construction Club of New York, held on February 24th, Mr. Cass Gilbert was the guest of honor and the principal speaker.

Mr. Gilbert, having in mind the many perplexing problems facing the members of the Club in connection with their daily activities, very wisely and very generously decided to depart from the customary type of after dinner address and to give in an informal and off-hand way the result of his many years of observation and experience as applied especially to those fundamental principles which are so essential to success, and which, in the rush and pressure of modern business, are frequently lost sight of or ignored.

To the members of the Construction Club, architects, specification writers, engineers, builders, and the sales engineers of manufacturing concerns, all having much to do with the business side of the production of buildings, Mr. Gilbert pointed out that the business questions arising in such numbers are complicated with ethical questions more than is the case with many businesses because architecture is fundamentally a fine art and its practice is a profession. He pointed out that the Golden Rule is after all the ethical rule, but that it is sometimes difficult to know just what you would have the other fellow do unto you, especially when there are three or four "others" with conflicting self interests involved. So the application of this most excellent rule frequently requires patience and sometimes the apparent neglect of self interest.

Since justice is what should be sought in the making of agreements and the adjustment of differences, he urged that all those having to do with the business side of architecture make every effort to be just to all parties concerned. It is sometimes hard for a man to be just in his own cause, but the world esteems a man when it is found that he is just at all times whether the cause be his own or that of others.

The world looks for useful men and crowns them with success, but the world does not respect a useful man unless he also be a just man.

With respect to competition, which is always keen, Mr. Gilbert reminded his hearers that the man who makes the best goods and deals honorably can laugh at the world, and he added that if he also has the good sense to keep out of debt he has a mortgage on the world and can collect at will.

He reminded us of a man, an iron worker, who sells his product purely on merit, his price is the highest, the quality of his work as well as his name are known from coast to coast and he is always busy.

Mr. Gilbert advised members of the Club to stand squarely on their own feet, asking no favors of any man but thinking out and working out their own problems, either personal or business to a successful conclusion. He observed that the casual man has no success, that luck plays a small part in the careers of most men. Depend upon yourself, do not trust to luck or to anyone else if you would be really successful and achieve a substantial position in your chosen field, whatever it may be.

Mr. Gilbert recounted his meeting with the famous Dr. Bastinaelli and related anecdotes from the life of James J. Hill and Thomas Lowny, the great railroad builders, to illustrate this part of his address. He also quoted the well-known saying credited to Benjamin Franklin to the effect that "Competition is the life of trade." He expressed the conviction that Franklin did not have in mind the narrow limitations of competition in price.

His observations and his remarks on advertising and salesmanship showed a keen insight into present day problems and he advised his hearers to stick pretty closely to the time honored principles, considered by some old fashioned, rather than be led astray by some of the more dazzling but less sound practices and methods which have been developed in recent years.

Altogether Mr. Gilbert gave a most stimulating and valuable address which was greatly enjoyed by all those present.

At the conclusion of the address a rising vote of thanks was extended to Mr. Gilbert.

Just a few words about the Construction Club of New York may not be amiss at this time, since the proceedings of the Club have never been published and but little is known about it outside of New York City.

The Club was started during the winter of 1922-1923 by four men who saw the value of creating a group which would embrace in its membership architects, engineers, general contractors, sub-contractors and manufacturers of building materials, which would meet occasionally to talk over the many problems common to all. The Club is unique in that it has no dues, no by-laws and no officers, and is operated by a committee of five elected annually by the members. At each meeting one of the members is designated by the Committee to preside and is known as the Constitution, with full authority to run that particular meeting to suit himself. Meetings are held monthly with the exception of the three summer months. Interesting programs are arranged for each meeting and discussions follow the regular program. Reports of the doings of the Construction Club will hereafter appear in PENCIL POINTS.

NEEL REID

THE DEATH OF NEEL REID at Roswell, Georgia, on February 14th in his forty second year, was a distinct loss to the architectural profession not only of the South, but of the entire country.

Mr. Reid was born in Jacksonville, Alabama, attended the public schools and began his architectural training in a small office in Macon, Georgia. After a brief period in Macon, he entered the office of Willis F. Denny of Atlanta, Georgia, where he remained for several years. This was followed by a two year special course in Architecture at Columbia University and a brief engagement in the office of Murphy and Dana in New York City. Later he went to Europe, making an extended tour of Italy, France and England, sketching and studying. On his return from Europe he formed a partnership with Hal F. Hentz of Atlanta under the firm name of Hentz and Reid, later becoming associated with George F. Normann under the firm name of Normann, Hentz and Reid. After Mr. Normann's death the firm again became Hentz and Reid and later Rudolph I. Adler was admitted to the firm which has remained Hentz, Reid and Adler up to the present time.

Mr. Reid, as a member of these firms, designed many buildings, among which were the Howard Theatre, Rich Building, Peachtree Station, Hillyer Trust Building and many residences in Atlanta as well as buildings in many other parts of the South.

Mr. Reid was a man of exceptional talent, a most lovable character, and an unfailing source of inspiration to all who came in contact with him. Above all, he was a gentleman.

ALFRED DWIGHT FOSTER HAMLIN

ALFRED DWIGHT FOSTER HAMLIN, professor in the School of Architecture at Columbia University for twenty-two years, was killed in New York on March 21, 1926, by an automobile.

Professor Alfred Dwight Foster Hamlin, a born idealist, came of Puritan stock, and inherited that nobility of soul and courage which carried his father's crusade for Christian enlightenment to victory in the Near East. In that atmosphere he was born with the ideals which ruled his life, given as it was to the cause of helping others to see truth and beauty.

He prepared for his life work at Amherst, then at the School of Architecture of the Massachusetts Institute of Technology, and at the Ecole des Beaux-Arts, Paris, and later made extensive studies of the principal monuments of architecture in Christian lands.

He was accomplished as a linguist in both classical and modern languages, and his mother tongue, English, flowed in pure, beautiful volume. His writings clearly expressed his ideas in a forceful, convincing, and scholarly style.

His books on the "History of Architecture" and "History of Ornament" set a new standard of correct teaching in these subjects and his numerous essays and lectures are profound in illuminating the humanism of our inherited record of the building art.

To the School of Architecture and to the realization of his ideals of scholarship and professional attainment he gave his whole busy life.

A real architect in knowledge and feeling, his teaching was valuable to the student both in its sound instruction and cultural import.

In his teaching record of forty-three years at the University, Professor Hamlin was an indefatigable worker for the School, the success of which was his one ambition, but he always laid down his pen when a student came to him, for it was his pleasure to help the inquiring mind along the right road.

He was lovable, and beloved of his students and co-workers, with whom he worked in sweet accord.

Courageous in the right he was a fierce fighter against wrong, accepting no compromise in principles. To him the way of truth was normal, verity was always expected; his cleanly soul abhorred deception, and he could not abide any one so base as to cheat.

Professor Hamlin received the degree of M. A. from Amherst in 1885, and the degree of L. H. D. from St. John's College, in 1912. He was a Fellow of the American Institute of Architects, a member of the Archaeological Institute of America, of the City Plan Committee of the Merchants' Association, and of the Century Club. He was Chairman of the Art Committee to raise funds for the Cathedral of St. John the Divine.

Professor Hamlin became a member of the Broadway Tabernacle Church in 1882, and ever since then this church has been his chief interest outside of the University. There, for over twenty years, he conducted an adult Bible Class. At the time of his death he was a Senior Deacon. He had served on many important committees, and his advice was largely sought by the pastor, Dr. Charles E. Jefferson.

His interest in the Near East, especially in Armenia and Greece, continued throughout his entire life. In 1919 he made an extended tour of the Near East as a Special Commissioner of the Greek Relief Committee, for which he was decorated by the Greek Government.

Surely he digged not in the earth to hide the talent given him! He has gone to show his good work to his Master and to receive his just reward. His Master will say—"Welcome, good and faithful servant. Enter thou into the joy of thy Lord."—*Wm. A. Boring.*

SAN FRANCISCO ARCHITECTURAL CLUB

THE OLD CLUB QUARTERS at 77 O'Farrell St., which served us well since 1915, have at last been abandoned, due to the expired lease, unfavorable locality and inadequate accommodations. The S. F. A. C. has now realized the fulfillment of its hope and desires since its organization—a club building entirely to ourselves!

An old three story brick building has been leased and altered to the best of our financial means. Our new home is nearing its completion and we will be proud of it. Many hearty and sincere thanks to our kind donors!

Located at 523 Pine Street, it is just around the corner from Chinatown and yet near the heart of the financial district and the architectural offices. Here a new foundation will be laid for a stronger organization. It is our aim to continue the club's activity and to set a standard for the future generation of young members of our profession.

A brief outline of the convenience of our new Home is as follows:

The lounge room and offices are featured on the first floor. Its cozy atmosphere will make it a pleasure for the members to meet both socially and professionally. For a noon hour recreation, a billiard table is at the disposal of those members who take pleasure in the game.

The second floor area is devoted to the atelier with an adjoining library. One of the original features of the atelier is that its bare walls are to be characteristically adorned by the members and students.

The club has been exceedingly fortunate in procuring the services of Mr. Edward L. Fricke and Mr. Ernest E. Weihe as patrons. Both were students abroad, having received the benefits of the Beaux Arts, and are untiring in their efforts to advance and perfect the atelier.

A huge skylight throws a friendly tint over the quietude of the adjoining library where the members will find peace in their research work.

Accommodations have been made for students that are joining us each month. Massier Anderson and Sous Massier Blas are carrying out their duties. Twenty new members were initiated at our last meeting and we are anxious to have others join with us in the spirit of our happy surroundings.

The Banquet Room, Stage and Kitchen are well laid out in the basement, where our monthly meetings, exhibitions, jinks and other activities will take place. The Entertainment Committee promises a large and enjoyable program for its members.

We will announce our formal Grand Opening very soon and are proud to extend an invitation to all those who are interested in our House Warming.

It won't be long now, boys, so be patient!

The officers for the ensuing year are:—Ernest E. Weihe, President; Howard E. Burnett, Vice President; Clyde F. Trudell, Secretary; Ira H. Springer, Treasurer; Directors—Lawrence C. Stier, Harry Langley, and Arthur D. Janssen.

J. H. DEVITT, *Publicity Manager*

DETROIT ARCHITECTURAL BOWLING LEAGUE

IN TWO MORE WEEKS OUR SEASON will be completed and we are having a close race for first place, with the lead changing every week or so. It will be a difficult matter to pick the winner until the last ball is rolled. Any one of the first five teams at the present time has a good chance for the title. Following are the standings of the teams on March 19:

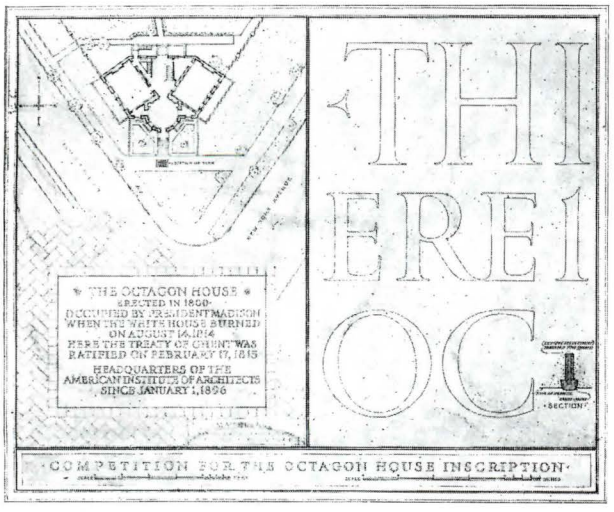
Team	W	L
Albert Kahn	47	28
Janke, Venman & Krecke	45	30
Smith, Hinchman & Grylls	45	30
Donaldson & Meier	44	31
Geo. D. Mason & Co.	43	32
McGrath, Dohmen & Page	39	36
Malcomson & Higginbotham	38	37
Weston & Ellington	26	49
Van Leyen, Schilling & Keough	26	49
Simmers & Waalkes	22	53
Individual High Score, 1 game —Kalsched, (A. K.)		267
Individual High Score, 3 games—Jolson, (A. K.)		649
Team High Score, 1 game —McGrath, Dohmen & Page		995
Team High Score, 3 games—McGrath, Dohmen & Page		2796

In an earlier number of PENCIL POINTS, the New York Amateur Bowling League brazenly boasted of the record-breaking scores they were making this year. In the thriving village of Detroit, these scores caused no little amusement for we had broken their *season* scores *every night*. A champion does not usually find it necessary to challenge a weaker opponent, but we did give them an excellent chance to demonstrate their championship calibre. So far, we have not had an opportunity of taking them on, but are still patiently waiting.

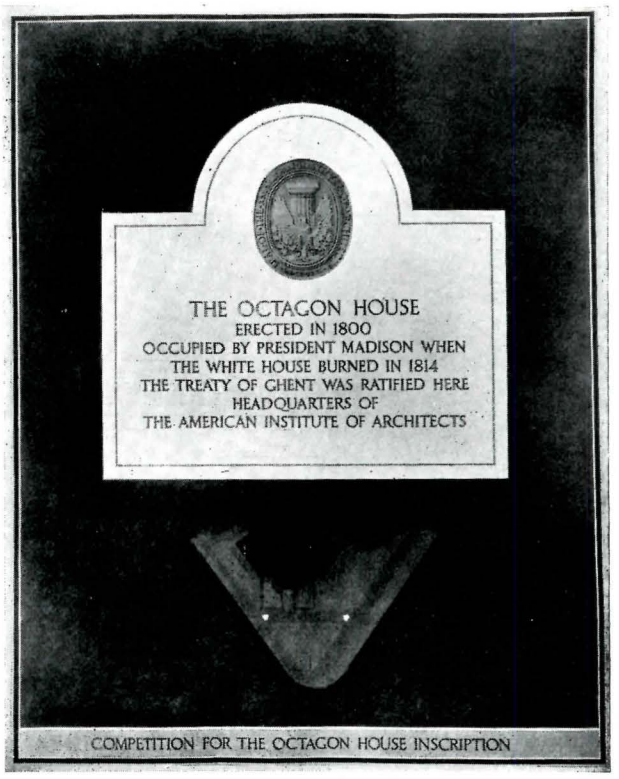
LESTER S. MANNING,
Secretary

COMPETITION FOR CERTIFICATES

THE NEW YORK BUILDING CONGRESS will award a first prize of $150 and a second prize of $50 for an appropriate design for a certificate to be presented in recognition of superior craftsmanship. The Congress desires a suitable form for such certificates which are presented to the outstanding mechanics in each major trade engaged on prominent buildings. The design should be simple and dignified, and express by emblems, human figures, insignia or other device, the purpose of the Congress in the award of such certificates. The Jury of Award consists of Harvey W. Corbett, Chairman; Howard Greenley and Raymond M. Hood. The competition will close on April 15th, 1926. For complete information apply to Wm. O. Ludlow, Chairman, Committee on Recognition of Craftsmanship, New York Building Congress, Room 1016 Grand Central Terminal, New York.



PRIZE-WINNING DESIGN BY AUGUST REULING



DESIGN BY HAROLD A. RICH, AWARDED SECOND PRIZE

PRIZES AWARDED IN A. I. A. COMPETITION

AUGUST REULING, NEW YORK, was awarded the first prize of $150 in the competition held by the American Institute of Architects for an Historical Device for the Octagon House at Washington, D. C. Mr. Reuling's design is reproduced on this page. The second prize of $100 was awarded to Harold A. Rich, Auburndale, Mass., and the third prize of $50 to J. T. Jacobsen of Philadelphia. Ernst C. Bachschmid, Washington, received a 1st Mention and W. Strudwick Arrasmith, of Louisville, Ky., 2nd Mention. Entries in the competition were sent in from various parts of the country, from Massachusetts to California and from British Columbia to Florida.

PRINCETON UNIVERSITY SCHOOL OF ARCHITECTURE

TWO COMPETITIVE PRIZES of eight hundred dollars ($800) each, in the School of Architecture, Princeton University, are announced for the year 1926-1927. The winners are exempt from tuition fees.

The purpose of these prizes is to place at the disposal of experienced draftsmen of unusual ability, who desire to complete their professional training by contact with the academic side of architecture, the advantages found in the School of Architecture, the Department of Art and Archaeology, and the Graduate School, of Princeton University.

The candidates shall be unmarried male citizens, not less than twenty-two nor more than thirty years of age on September 1st, 1926, and shall have been employed as draftsmen in architects' offices for not less than three years.

Applications to compete for the prizes must be filed on or before April 24th, 1926.

For application blanks, and regulations governing the Competition and Award, address The Secretary, The School of Architecture, Princeton University, Princeton, New Jersey.

LE BRUN SCHOLARSHIP AWARDED

WILLIAM FERRARI has recently been awarded the Le Brun Travelling Scholarship. Mr. Ferrari is twenty-five years old and at present is in the office of James Gamble Rogers in New York.

The report of the Jury, the prize winning drawings and the designs receiving "Mentions" will be published in the May issue.

THE NEW YORK ARCHITECTURAL CLUB, INC.

IN THE MARCH ISSUE OF PENCIL POINTS we described the location of our new club quarters, and also gave a general description of the layout. The alteration work is now rapidly approaching completion, and we have every reason to believe that when this number reaches the subscribers, the club and atelier will be entirely finished, and functioning in full swing.

Speaking of the atelier, which will be known as the New York Architectural Club Atelier, we are now in a position to give out a few details.

To begin with, we maintain, without the slightest fear of successful contradiction, that in the entire history of the Beaux-Arts Atelier system since it was first established in this country by the late Mr. Donn Barber, about a quarter of a century ago, there never was an atelier that started out with such bright prospects as ours. That is not merely an empty boast, as we will try to prove it presently.

The club is most fortunate indeed, in having already attracted the attention of, and in winning the hearty approval and cordial co-operation of some of the highest lights in the architectural profession. So generous was the response to our call, that we are forming what might aptly be called a *Super Board of Patrons* for the atelier, composed of *Mr. Cass Gilbert, Mr. Whitney Warren, Mr. John Russell Pope, Mr. Raymond Hood, Mr. Henry Hornbostel,* and *Mr. A. D. Seymour.* All names that stand out and above the architectural profession, like so many mountain peaks. Knowing the great demand on the time of these gentlemen, it would be most unreasonable to expect them to give a great deal of continuous attention to the atelier, but all have promised to make periodical criticisms of the work being done by the men, to act as judges, and to give us talks or lectures on various phases of the architectural profession at certain times, all of which will be prized highly by the men, since it comes from such good authority.

As Active Patrons of the atelier we will have *Mr. A. D. Seymour* and *Mr. Perry Coke Smith,* with *Mr. E. L. Babitsky* as Assistant Patron. These gentlemen of proven exceptional ability will actively criticise, and also carry out the suggestions of the Board of Patrons.

Independent of the Beaux-Arts Atelier, we will have a class in drawing from life, and if sufficient interest is shown, classes also in etching, color rendering, and pen rendering, also any other art activity that may be in demand.

We understand from the "Old Timers," all of whom are greatly enthusiastic over our atelier, that in their days most of the ateliers were in cold, dingy garrets or lofts, and even in ex-stables, poorly lighted and always uncomfortably cold. Here we are providing every student with comfortable working quarters steam heated and well illuminated, so he can give his entire attention to his work. We repeat that we make no idle boast, when we say that no atelier has ever started with equally favorable prospects, and we therefore expect to have some outstanding work accomplished by our boys.

The atelier committee, with the approval of the club's Board of Directors, has fixed the atelier dues at $60.00 per year, independent of the club membership dues, of which every atelier man must be a member. The atelier dues are payable quarterly in advance. The atelier committee is composed mostly of men with many years of atelier experience, and to judge from their plans, the Bohemian atmosphere as well as the usual atelier freedom and spirit will not be lacking.

At the present time the club dues are still $10.00 per year, without initiation fee, and all who have joined are considered charter members. However, it is very likely that on the 1st of July, the beginning of the fiscal year, the dues will advance considerably, and there will also most likely be an initiation fee, as the club membership is now well beyond the 600 mark.

The undersigned will cheerfully furnish any further information on anything in connection with the club or atelier, upon request.

BOWLING LEAGUE DIVISION

THE ARCHITECTURAL BOWLING LEAGUE has completed the 5 man tournament on March 4th, each team having bowled a total of 38 games, or 2 games with each of the other offices in the league. The Team from the office of Cass Gilbert has won the 5 man tournament again this year, making it two times in succession, with Messers Poll, Darren, Reiss, Zerfass and Read on the team. This entitles them to hold the trophy for another year.

The final standing in the 5 man tournament is as follows:

No.	Office	W.	L.	
1.	Cass Gilbert	35	3	
2.	Warren & Wetmore	32	6	
3.	Donn Barber	31	7	
4.	Guilbert & Betelle	29	9	
5.	A. C. Bossom	27	11	
	James Gamble Rogers	27	11	
	McKenzie, Voorhees & Gmelin	27	11	
6.	McKim, Mead & White	25	13	
	Starrett & Van Vleck	25	13	
7.	Peabody, Wilson & Brown	19	19	
8.	J. E. R. Carpenter	18	20	
	Thos. W. Lamb	18	20	
9.	Andrew J. Thomas	17	21	
10.	Holmes & Winslow	16	22	
11.	Schwartz & Gross	11	27	
12.	Benjamin Wistar Morris	10	28	
13.	Allen & de Young	4	34	
14.	Shape, Bready & Peterkin	3	25	
15.	Schultz & Weaver	0	38	(F.)
16.	W. L. Stoddart	0	38	(F.)

High team score was rolled by the Cass Gilbert team with 901. Second high team score is 870 for which the Warren & Wetmore and Donn Barber teams are tied, and which will be decided by a series of games to be rolled off for the medals.

Individual high score of 243 was rolled by George James of the Alfred C. Bossom office.

Individual high average of 168 for 38 games was rolled by Paul E. Nielson of the McKenzie, Voorhees & Gmelin office.

The 3 man tournament is now in full swing, and as only one round is played, the bowling season will terminate at about the end of April.

HENRY SASCH, Secretary,
c|o Donn Barber
101 Park Ave., New York City.

PERSONALS

EUGENE G. GROVES, ARCHITECT, has removed his offices to 1982 Broadway, Denver, Colo.

RUSSELL L. MCKOWN has opened an office for the practice of landscape architecture and town planning, at 910 Kahl Building, Davenport, Iowa.

C. L. BERRY, JR., ARCHITECT, has opened an office for the practice of architecture at 88 No. Main St., Salt Lake City, Utah.

EARLE C. STORRS has opened an office for the practice of architecture at 16 Norwich St., Worcester, Mass.

HELEN BAXTER and ELIZABETH COPE AUB are making architectural models at 100 Charles Street, Boston, Mass.

R. F. HENNIG, ARCHITECT, has opened an office for the practice of architecture at 834 Brandeis Theatre Building, Omaha, Nebraska.

CYRUS K. PORTER & SONS, have removed their offices to 1110-1116 Walbridge Building, Buffalo, N. Y.

EUGENE L. PLEITSCH AND ROBERT MARR PRICE have severed their connection with Preston J. Bradshaw and established the firm of Pleitsch & Price, Architects, Suite 1594, Arcade Bldg., St. Louis, Mo.

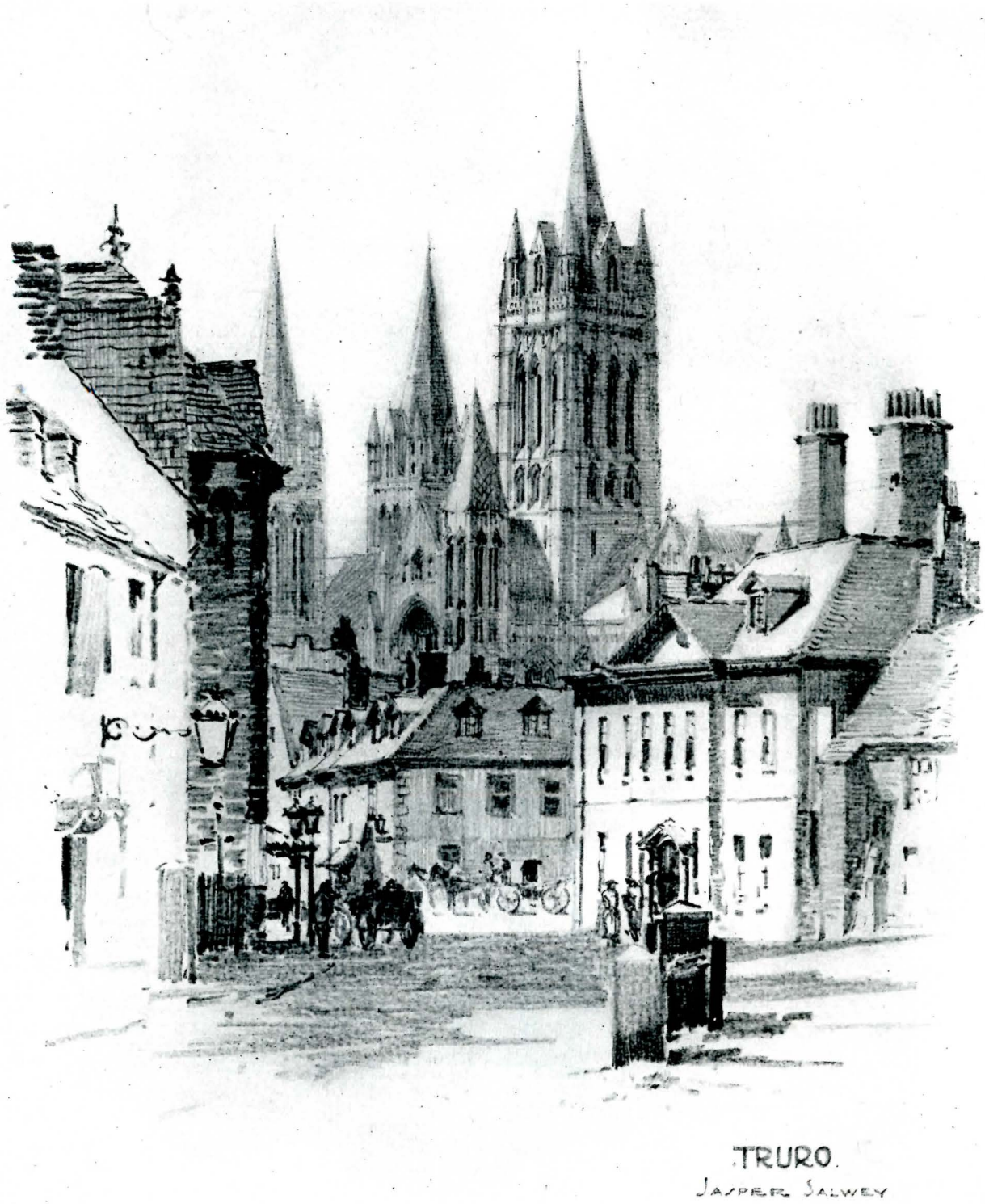
BUTLER & HASNESS, ARCHITECTS, have dissolved partnership. Mr. C. D. Hasness has formed a partnership under the firm name of Hasness and Albright with offices in Harrisburg, Pa.

RUSSELL SEYMOUR, ARCHITECT, formerly of Charleston, W. Va., has removed his offices to Jacksonville, Fla.

A. A. AEGERTER AND NORMAN I. BAILEY, formerly associated with the late A. B. Groves, have opened an office for the practice of architecture under the firm name of Aegerter & Bailey, 1904 Railway Exchange Bldg., St. Louis, Mo.

STANLEY WILSON, ARCHITECT, formerly with Starrett & Van Vleck, has opened an office for the practice of architecture at 505 Fifth Avenue, New York.

CARL GEWALT, ARCHITECT, is now with the Houlton Investment Co., First State Bank & Trust Co. Building, Hammond. La.



Courtesy of A. & C. Black

PENCIL DRAWING BY JASPER SALWEY

AMERICAN ACADEMY IN ROME

FROM LETTERS RECENTLY received by C. Grant La Farge, Secretary of the American Academy in Rome, from Gorham P. Stevens, Director, we quote the following:

"THE REGISTRATION HAS BEEN INCREASED by three during the last month.

	Fellows		Visitors		Visiting Students		
	Men	Women	Men	Women	Men	Women	Totals
C. S.	1	2	6	7	7	32	55
F. A.	13		1		16		30
Totals	16		14		55		85

"The staff in Rome held a number of meetings with the object of working out recommendations for some method of limiting the registration, so that the original purpose of the Academy, namely, to provide a center for research work, may be best fulfilled. The results of the meetings were reported to the Trustees.

"The following gifts have come in:

$4,000 anonymously for lot No. 5
$1,000 from Mr. James Hazen Hyde for lot No. 5
$ 500 from Miss Mary W. White for lot No. 5
$ 500 from Mr. and Mrs. W. S. Spaulding for lot No. 5

"The above sums, together with those promised, are enough to purchase lot No. 5, and pay the transfer taxes and the lawyer's fee. Mr. Richardson, who is now living in the villa which he recently bought and remodelled, is beginning to think of the planting and fencing of lot No. 5. Landscape Architect Newton, at the suggestion of Mr. Vitale, is working up the scheme under Mr. Richardson's direction. It is indeed fortunate that Mr. Richardson bought lot No. 5 when he did, for about three weeks ago a College for priests wanted to buy the Stolberg villa with the lots on either side of it; the College was willing to pay us well for lot No. 5.

"The Ministry of Fine Arts and the Italo-America Society of Rome have now issued a preliminary list of about 70 Italian villas which are "national monuments" and which may be visited by persons provided with entrance tickets purchased from the Italo-America Society. The scheme promises in time to be a valuable means of studying Italian gardens.

"Mr. Vitale passed through Rome. His time here was limited, but he fortunately managed to see how the collaborative problem was progressing."

"On Tuesday, January 5 the Fellows met to select one of the two collaborative programs submitted to them. They chose for their competition a Monumental Stairway in a Government Building. The building was to be an army, navy or state administrative edifice, the particular designation of the building being left to the individual teams. All three groups of collaborators selected the navy department as best suited to inspire them.

"The personnel of the teams was as follows:

Group I —Arthur Deam, senior architect.
Harry Camden, second year sculptor.
Michael Mueller, first year painter.

Group II —Francis Bradford, senior painter
William Douglas, second year architect.
Walker Hancock, first year sculptor.

Group III—Alvin Meyer, senior sculptor.
A. Clemens Finley, second year painter.
George Fraser, first year architect.

"Mr. W. Symmes Richardson, as Annual Professor in the School of Fine Arts, helped to establish the programs for the competition. He has offered valuable suggestions to each team as their work was submitted to him. Mr. Richardson's criticisms have been very concise but highly pertinent and they have been greatly appreciated by the men. The competition, in collaboration, closes on the 6th of February.

"Two new enrollments have occurred during the month in the Fine Arts School; John L. Evans of Pennsylvania on the Stewardson Architectural Scholarship and Alfred E. Poor, architect, on the Henry G. Woodman Travelling Fellowship. *The latter* is a comparatively new Fellowship from the University of Pennsylvania."

PHILADELPHIA ARCHITECTURAL EXHIBITION

THE TWENTY NINTH ANNUAL ARCHITECTURAL EXHIBITION to be held by the Philadelphia Chapter of the A. I. A. and the T Square Club of Philadelphia, in collaboration with the Sculpture Committee of the Art Alliance, will be held in the Galleries of the Art Alliance, 1823 Walnut Street, Philadelphia, from May 8 to May 31 inclusive. The architectural exhibits will consist of drawings, models and photographs of proposed or executed work; of structural, decorative and landscape architecture, academic drawings, sketches and paintings of decorative subjects.

PORTLAND CEMENT ASSOCIATION ANNOUNCE FREE COURSE

THE PORTLAND CEMENT ASSOCIATION will conduct a short course in *Design of Concrete Mixtures for Predetermined Strength According to the Abrams Theory.* The course will be given by the Association's engineers at the Engineering Societies Bldg., 33 West 39th St., New York, starting at 8 o'clock on the evenings of April 5, 7, 9, 14 and 16. There is no preliminary examination or entrance fee, but the course is not intended for beginners. A similar course will be conducted at the Drexel Institute, Philadelphia, by the Philadelphia office of the Portland Cement Association on the evenings of April 6, 8, 12, 13 and 15. Also a similar course will be given at Albany, April 20 to 23; Syracuse, April 27 to 30; Rochester, May 4 to 7; and Buffalo, May 11 to 14th. Complete information will be sent upon application to the Portland Cement Association, 347 Madison Avenue, New York.

AMERICAN GAS ASSOCIATION COMPETITION

THE AMERICAN GAS ASSOCIATION is offering $2,500 in nine prizes for plans for a six room suburban house. The competition is open to architects, draftsmen and students in architectural schools in the United States and Canada. The competition will close on May 15th, 1926. Information on the uses to which gas service may be applied in the home and the program of the competition will be sent upon application to the architectural adviser, William Adams Delano, care of the American Gas Association, 342 Madison Avenue, New York.

PROFESSOR PHELPS TO CONDUCT ARCHITECTS' TOUR

PROFESSOR ALBERT C. PHELPS, of the College of Architecture of Cornell University, will conduct an Architects' Tour during the coming summer. This tour again forms a department of the summer school of the Bureau of University Travel. The main sailing is from New York on June 16 and is due back in New York on September 11. The party will visit England, France, Switzerland, and Italy. Further information may be obtained from Professor Phelps, White Hall, Ithaca, New York.

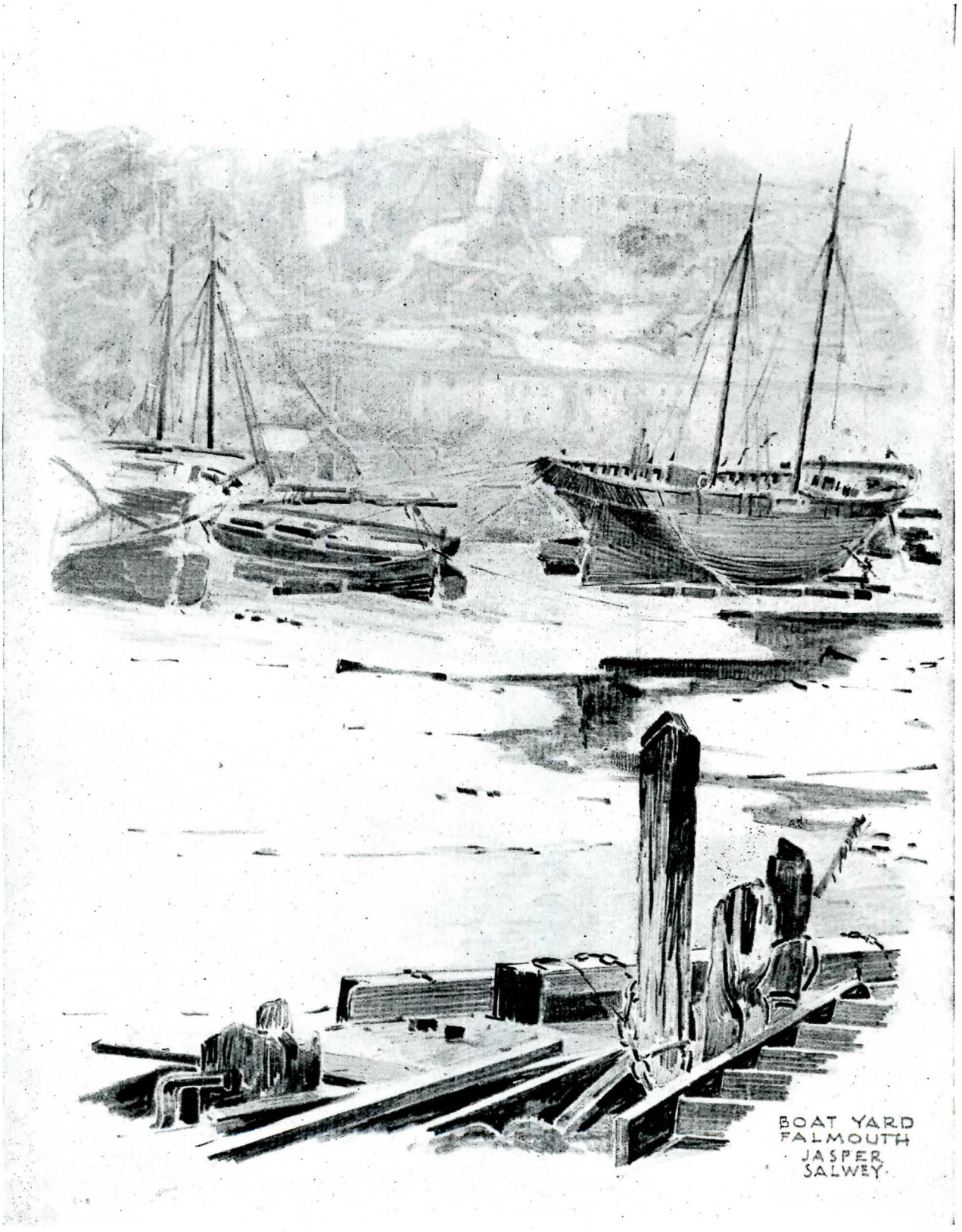
THE REGULATION OF OUTDOOR ADVERTISING BY LAW

By Frank B. Williams

THE MUNICIPAL ART SOCIETY of New York has published a bulletin entitled "The Regulation of Outdoor Advertising by Law," by Frank B. Williams. The subject is very ably handled and the bulletin should be of interest to all those interested in the beauty both of our cities and our country sections, as well as those who are interested in advertising and who desire to keep themselves informed on the legal aspects of the subject. Copies of the bulletin may be secured by addressing the Municipal Art Society, 119 East 19th Street, New York City.

BOOK OF SMALL HOUSE DESIGNS

The Community Arts Association of Santa Barbara, California, announces the publication of the Second Edition of its "Book of Small House Designs". There are 153 pages of perspectives, plans and details of small houses. The price is $1.50 per copy. This may be secured direct from the publishers.



PENCIL DRAWING BY JASPER SALWEY

SPRING IS HERE! HOORAY! The well-known sun has gotten the best of the snowdrifts, the song sparrows are flitting about in the underbrush building nests, etc., the sap is running up the trees, the cowslips are slipping all over the pastures, and the park benches are accommodating their usual quota of spring lovers. Ain't it a grand and glorious feeling?

The little prizes for the Competition closing March 15th have been awarded as follows:

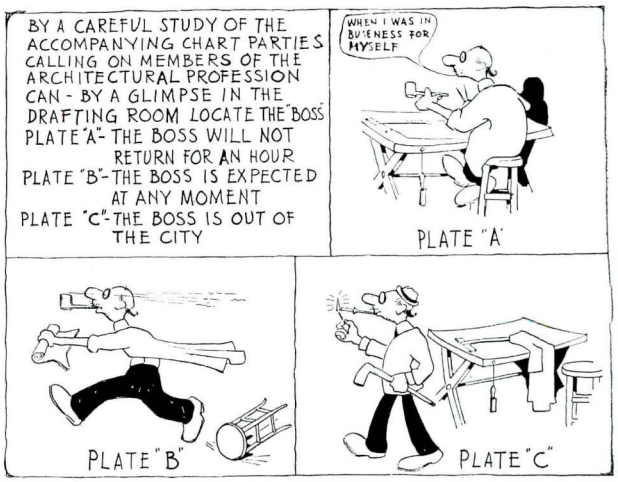
Class 1 E. M. Schiwetz
Class 2 goes to our old friend Oong Gow
Class 3 Robert Jones
Class 4 Eric Fleming

We take this opportunity of acknowledging the large number of contributions submitted this month for which, unfortunately, it was impossible to find space.

FRANK F. FREDERICK, Director of the School of Industrial Arts of Trenton, N. J., passes along this helpful little suggestion. You know sometimes the small things make a big lot of difference:

Is there ever a more trying moment than to finish a charcoal or pencil drawing and find your atomizer gummed up? No wire is handy to clean out the dry fixatif. Nothing to be done but send out for a new one. Take the new one, and, after use, run a pipe cleaner through it to absorb the fixatif and put it away with the cleaner in the small tube. The atomizer will always be in shape for use.

BOOKPLATE BY ERIC FLEMING
(PRIZE—Class Four—March Competition)



BY J. HENRY BELL

AND HERE IS A NICE LETTER from Brother Goldsmith of the University of Kansas. It makes us blush a little bit to print this letter but it does us a lot of good to know that what we are trying to do around here is meeting with such hearty approval from our readers. We thought when we started the New Year with an edition of 16,000 copies it would be a plenty, but it is not. The subscriptions are coming in so fast that the edition must be increased to 17,000 with the May number.

Editor, Pencil Points,
New York City, N. Y.
Dear Sir:

About a month ago I wrote you cancelling my subscription to PENCIL POINTS, pleading poverty and the fact that I saw it through the department subscription. Both facts remain as good as ever, but nevertheless I enclose check for five dollars for a three years' subscription. The point is that I want my own copy. Therefore I recently endured a bit of hardship and went without something else, thus saving the five simoleons, thinking that thirty-six successive copies of Pencil Points would amply repay me for what I endured. It was the January copy which decided me.

I might put it this way: "When is a luxury a necessity?" "When it is Pencil points."

Very truly yours,
(signed) Goldwin Goldsmith.

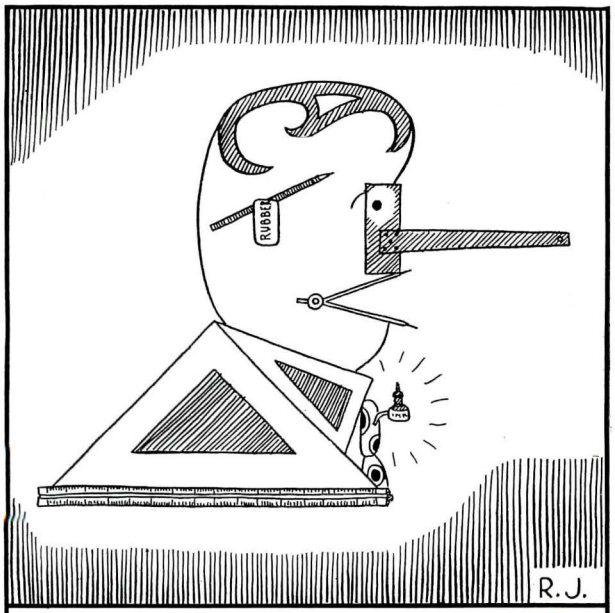
Having received the January issue, don't let me miss the February issue.

ODE TO MRS. C.

OFFICE TOILER
(PRIZE—Class Two—March Competition)

Oh, where's there a frau more sylph-like than thou?
And surely you'd stay so in future as now.
But take heed as I plead and ration your feed
To meal times, then only, to just what you need.
Cease nibbling and mungeing continuous snack
On candy and what-not or suppleness lack.
To stem the advance of chin numbers and tummie
And harness your runaway hard earned money.
Do this or miss far your chart weight at par
Like those willowy ones in Harper's Bazar.

Oong Gow



A CARTOONIST'S VERSION OF A DRAFTSMAN.

By Robert Jones
(Prize—Class Three—March Competition)

WEARIN' AWA'

She's tougher than leather and harder than nails,
This little old lady who rapidly fails
As she cleans up the drawings, takes out the mistakes,
And removes all the blots that the draftsman makes.

She's out at the elbows, her paint's getting black,
She's threadbare and shabby and bent in the back.
The inkstand's her boudoir, the wastecan her tomb;
Red Ruby—queen of the Drafting Room.

Anonymous

There once was an
ardent young builder
Who said he would
work for a guilder.
But his wife would
not stay
With so silly a jay
For the thought of her
loss nearly killed'er.

Robert Mosely Williams

WHAT PRICE ARCHITECTURE?

Pencil Pointer C. W. Welch of Gulfport, Miss., sent us a clipping of the following advertisement taken from the Daily Herald of that city:

WANTED—MISCELLANEOUS

Will give $10.00 for plans, two-story reinforced Concrete building. 310 West Beach, Biloxi.
Here is certainly a chance for some enterprising draftsman to get ten dollars for a few weeks work.

A CORRECTION

One page 130 of our February issue we misspelled the name of E. M. Schiwetz of Dallas, Texas.

COPIES OF PENCIL POINTS
WANTED AND FOR SALE

Mr. Harold C. Knight, 70 Lowden Ave., West Somerville, Mass., wants a copy of PENCIL POINTS for February 1922.

Mr. Carl Engelkamp, 1813 Garrard St., Covington, Ky. can supply copies of PENCIL POINTS as follows: June 1920, September 1920, November 1920, which he will sell for 50c. each.

Mr. R. W. Fisher, 1406 Baird Ave., Camden, N. J. can supply a copy of PENCIL POINTS for December 1923.

Mr. Paul H. Smith, 24 E. Division St., Chicago, Ill. can supply copies of PENCIL POINTS as follows: 2 copies of September 1920, 1 copy April 1921, 1 copy October 1921, 1 copy November 1922, 1 copy December 1922, 1 copy September 1923, 1 copy July 1924.

Mr. John E. Linnett, 25 Bancroft Road, Wellesley Hills, Mass. is anxious to secure copies of PENCIL POINTS for November 1920 and June 1924.

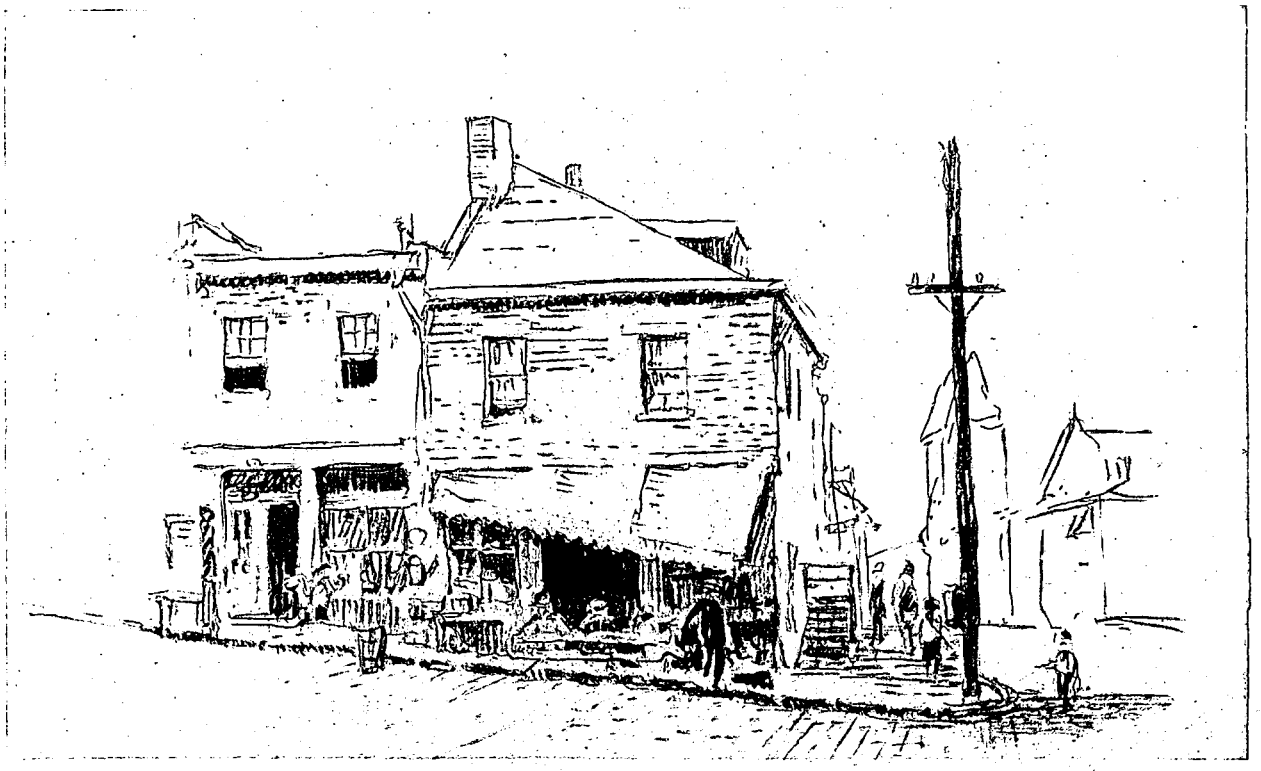
Mr. R. L. Sanstrom, c/o Berlin & Swern, 19 South La Salle St., Chicago, Ill. is anxious to secure copies of PENCIL POINTS as follows: July, August and October 1920, January, February, March and December 1921, also May 1922.

Mr. J. A. Blumberg, Central Technical College, Brisbane, Queensland, Australia, is anxious to secure copies of PENCIL POINTS for July and August 1920.

Mr. Lambert Bassindale, 321 Capital Bank Bldg., St. Paul, Minn. can supply copies of PENCIL POINTS as follows: October and December 1920, January, February, March, April, May, June 1921, May and June 1923, and May 1924. And he is anxious to secure July, August, September 1920, October, November and December 1921, January, February, March and April 1922.

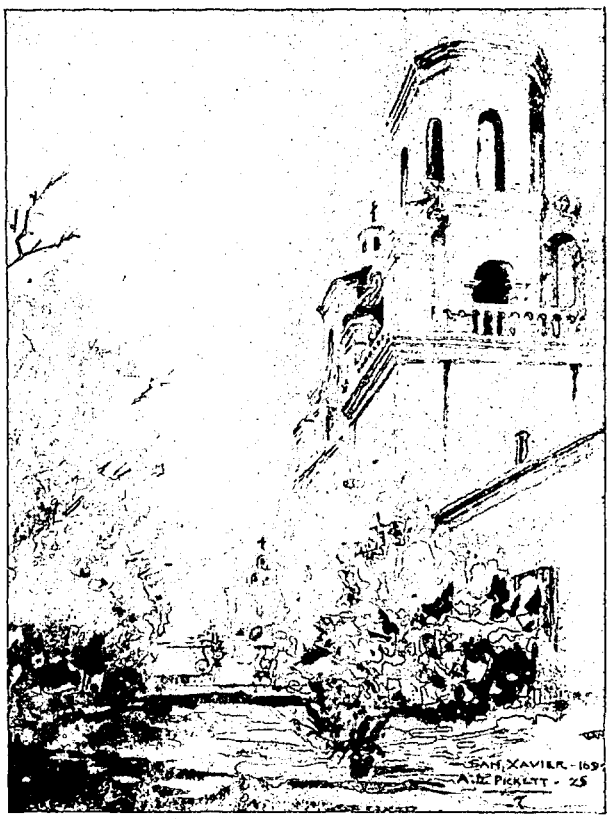
We will pay twenty-five cents each for copies of the December 1925 issue of PENCIL POINTS delivered in good condition to the PENCIL POINTS PRESS, Inc., 19 East 24th Street, New York City.

Bookplate by Roy W. Percival



PENCIL SKETCH BY H. C. DOUDEN

PENCIL SKETCH BY JASPER SALWEY



WATER COLOR SKETCH BY A. D. PICKETT

PENCIL SKETCH BY E. M. SCHIWETZ
(PRIZE—Class One—March Competition)

THE SPECIFICATION DESK

A Department for the Specification Writer

SPECIFICATIONS

By W. W. BEACH

PAINTING AND GLAZING, PART XVIII

AFTER PUBLICATION OF THE SPECIFICATIONS for Marble, Terrazzo and Tile Work, which appeared in the March issue of PENCIL POINTS, there remain only the Divisions of Painting and Glazing to complete the General Contract for our Consolidated District School Building. These last two Divisions are frequently combined, though they actually have little in common, except the fact that all old-time painters were also glaziers. Not so, to-day.

We combine the three last previous trades on the assumption that men would have to be sent from the nearest large city to do the work. But every town contains men who do painting and others who supply and set glass, hence different governing conditions are to be assumed for these latter trades.

As was intimated when discussing Plastering, the architect is more dependent upon the character of his painter for the production of a good job than he is upon his specifications. Once upon a time, it was customary for architects generally to eschew all mention of ready-mixed paints, unless to forbid their being brought upon the job. The painter was compelled to obtain the raw materials and mix them on the job—though it is doubtful if the superintendent spent a great deal of time watching him do it. There was also a question as to whether or not mixing by hand evolved a usable material equal to the machine-mixed product of responsible manufacturers.

At all events, it is evident that the one-time prejudice of architects against ready-mixed paints has more or less evaporated and we are sensibly guided to a large extent by the advice of painters who know their business and whom we wish to hold responsible for the work done. Some of these still mix their own and others favor the wares of some particular maker.

And what the architect wants is a good job, regardless of the material used. With a dependable contractor, that is what he'll get, barring accidents. With the other kind, Heaven help the poor superintendent. No one can foretell what he will get, until he has had the work done over a few times. His specifications will help him, 'tis true, but they cannot be counted upon to keep him out of trouble. Such guaranty has not yet been thought out. The best we can do with the specifications is wide open to criticism. But we will proceed with

DIVISION N. PAINTING AND VARNISHING

Note. The Contract and General Conditions of these Specifications, including the Supplementary General Conditions, govern all parts of the Work and are parts of and apply in full force to these Specifications for Painting and Varnishing. The Contractor shall refer thereto as forming integral parts of his Contract.

ARTICLE 1. *Work Included.*

(A) THE ITEMS under this Division include:

(1) PAINTING of all Exterior Wood and Metal Work.
(2) PAINTING of Certain Interior Wood and Metal Work.
(3) FILLING AND FINISHING of Wood Floors.
(4) SHELLACING, VARNISHING AND FINISHING of all other Interior Woodwork.
(5) ALL BURLAP AND CANVASS Wall Covering.
(6) PAINTING OF BURLAP, Canvas and Cement Plaster Wainscot and Certain other Plaster Surfaces, as called for.
(7) WHITE-WASHING WALLS in Boiler Room and Certain Walls in Basement.
(8) SUCH OTHER WORK as is herein specified.

ARTICLE 2. *General Description.*

Note. Under the headings of this Article, there is given, for convenience of Contractors, a brief mention, not necessarily complete, of the work included in this Division, full description of which will be found in the following Specifications, beginning with Art. 3.

(A) EXTERIOR PAINTING. All exterior wood and metal work shall be painted as specified. Woodwork shall first be primed.

(B) INTERIOR PAINTING. All exposed interior wood and metal work shall be painted, except that specified to be varnished, oiled or shellaced. Backs of all trim shall have one coat of paint. A ¾″ band of black paint shall be accurately and neatly painted on plaster just above all brick wainscot.

(C) GRAINING. Interior surfaces of all sash and metal doors shall be grained as specified in Par. H of Art. 8.

(D) WOOD FLOORS. All oak floors shall be filled and varnished as specified in Par. A of Art. 12, and all maple floors oiled as specified in Par. B of same.

(E) SHELLAC AND VARNISH. All hardwood trim shall be filled, shellaced and varnished as specified in Art. 11.

(F) WALL COVERINGS of canvas or burlap, shall be applied to certain wainscots as called for on drawings and shall be painted as specified in Art. 9.

(G) ALL CEMENT-PLASTERED WAINSCOT and other interior cement-plastered surfaces shall be painted as specified in Art. 9.

(H) WHITE-WASH shall be applied to all unplastered walls, partitions and ceilings in boiler room, fan rooms, engine room and basement air passages.

(I) SIGNS and card and program holders shall be provided as specified in Art. 10.

MATERIALS

ARTICLE 3. *Purchase and Delivery.*

(A) ALL MATERIALS shall be of quality and make hereinafter specified, or equal material approved by the Architect. Unless the Contractor makes written claim as to the unsuitability of any material, it is understood that he agrees to produce first-class work with the materials specified and will have same delivered at the building in ample time and in sufficient quantities so that the work will not be delayed thereby.

(B) ALL DELIVERIES shall be in Makers' original packages, with labels intact and seals unbroken. All seals shall be delivered to the Superintendent. Where specifications are not definite, or materials are submitted for use in place of those specified, they may only be used under previous approval. To this end, the Contractor shall submit the names and brands of all such materials in writing to the Architect well in advance of time same are to be used.

(C) TESTS. All materials shall conform to the latest requirements of the American Society for Testing Materials and shall be subject to such tests as said society prescribes for each specific material.

ARTICLE 4. *Paint, Oil, Etc.*

(A) LINSEED OIL shall be pure, thoroly settled, clear, refined, of approved make, and either raw or boiled, as required. No boiling will be permitted, of the hot raw oil called for.

(B) WHITE LEAD shall be strictly pure carbonate of lead, finely corroded, free from acid, and shall contain 70% to 75% carbonate of lead and 25% to 30% hydroxide.

(C) WHITE-WASH shall be an approved mixture of pure, slaked white lime, guaranteed not to rub off, peel, flake or crack. It shall be of sufficient density to insure, in 2 coats, an even uniform bright white color.
(D) SHELLAC shall be best quality orange shellac, cut with denatured alcohol, using not less than 3 lbs of hard gum-shellac to every gallon of alcohol.
(E) TURPENTINE shall be pure spirits, distilled from Southern pine.
(F) VARNISH shall be the best product of an approved Maker and shall be the kind intended by the Maker for the use to which it is put, either interior, exterior spar or floor varnish, as case may be.
(G) PASTE FILLERS shall be finely ground silica in pure linseed oil and japan drier, and shall be of approved make.
(H) LIQUID FILLERS shall be of same make as varnish, containing sufficient stain to produce work corresponding with sample.
(I) PIGMENTS shall be of approved quality and make and of selected color and shade.
(J) DRYER shall be a pure oil product, free from gum, rosin or petroleum derivatives.
(K) READY-MIXED PAINTS may be used where lead and oil are specified for wood or metal, provided the approval of the Architect to both make and brand are secured well in advance of the time same are needed.
(L) COLORS AND SAMPLES. Colors will be determined by the Architect and samples of all work shall be submitted to him for approval well in advance of time for beginning work.
(M) PUTTY shall be composed of 3 parts pure whiting to 1 part white lead and sufficient linseed oil and japan dryer to produce working consistency and proper drying qualities. Putty shall be colored where necessary, to match stain.
(N) SANDPAPER shall be No. 00. Fine steel wool may be used in place of same.
(O) OTHER MATERIALS shall be the best of their respective kinds, all in strict accordance with the specifications and with approved samples. Benzine or gasoline may be used in small quantities for cleaning only.

ARTICLE 5. *Wall Covering.*

(A) BURLAP shall be best quality wall material, free from projecting lumps, threads and prominent ridges, thoroly shrunk and filled with oil filler to overcome all tendency to soften under paste, pull in hanging or swell in joints.
(B) CANVAS shall be best quality, medium-weight wall material, prepared as specified for burlap.
(C) GLUE SIZING AND PASTE shall be of approved quality and guaranteed strength and permanency.

WORKMANSHIP

ARTICLE 6. *Preliminary.*

(A) INSPECTION. The Contractor shall inspect all work to be painted, varnished or oiled and shall call attention of Superintendent to all surfaces not in fit condition for covering, and to any other condition liable to adversely affect the quality of workmanship, and shall not proceed until all such defects have been corrected. Failure on the part of the Contractor to make such inspection and report, or the covering of defective work by the Contractor will, in either event, render him liable to re-execute, at his own expense, finished work affected thereby, at the option of the Architect. The Contractor shall give the Superintendent due notice and ample opportunity to inspect each coat of paint or varnish and shall not proceed with any coat until the last preceding is approved.
(B) ALL SURFACES to be painted or varnished shall be free from machine, tool or sandpaper marks, dust, insects, grease or any other thing liable to impair the finished work. No finish or paint may be applied to such surfaces nor to wet, frozen or rusty materials.
(C) ALL WOOD FINISH shall be carefully hand-smoothed and sandpapered. All knots and sap shall receive two coats of shellac before first coat of paint or filler is applied. All exterior woodwork shall be primed as soon as possible after delivery at the building. Knots shall be "killed" with lime where necessary. All rough places shall be sandpapered smooth before application of next coat.
(D) CASTINGS shall be cleaned with wire brushes, smoothed with emery and have all imperfections treated before application of first coat of paint.
(E) PLASTER shall be bone-dry and all patching and replacing complete before first coat of paint or size is applied. All walls shall be inspected and all "hot-spots" properly treated before first coat of paint is applied.
(F) SHEET METAL AND STEEL WORK will have first coats of paint applied before delivery at building. This Painter shall lightly sandpaper and dust off same before applying the additional coats herein specified.
(G) PUTTY shall be applied to all nail-holes, cracks and similar minor defects after application of primer or first coat of varnish. Putty shall be carefully applied to finish flush and be as nearly invisible as possible. It shall not be used to hide serious defects.

ARTICLE 7. *Wall Coverings.*

(A) SIZING. All walls for which burlap or canvas covering is specified shall first be thoroly glue-sized to cover all surfaces.
(B) BURLAP shall be applied in best manner to all wainscotings where called for, extending from top of base to height indicated, in each case. It shall be hung in vertical strips (wall-paper style) wherever height is greater than width of burlap. It shall be well pasted on back and special care used to make close, neat joints with woodwork, where moldings are not provided. Where same are provided, this Contractor shall have them removed and neatly replaced, ready for final nailing by Carpenters. All edges of burlap shall be well pasted and all butt-joints fitted close and properly rolled down. Immediately after each stretch is finished, it shall be sponged with clean water to remove all surface paste.
(C) CANVAS shall be applied to certain wainscots, as called for, and in same manner as specified above for burlap, except that joints shall be lapped instead of butted. After glue is dry, each lap shall be cut to a sharp line and the edges removed, so as to leave a perfectly smooth butt-joint, scarcely perceptible.
(D) GUARANTY. The Contractor undertaking this work hereby guarantees all wall covering applied under this contract not to peel, blister nor develop other defects during a period of one year after date of acceptance of the work of this General Contract.

ARTICLE 8. *Painting Wood and Metal Work.*

(A) MIXING. Except where the use of ready-mixed paint is permitted in writing by the Architect, all paints not otherwise specified shall be thoroly mixed in the following proportions:
(1) IN GENERAL. 100 lbs. white lead, 4 to 5 gals. boiled linseed oil, 1 pint japan or other approved dryer, and approved pigments ground in oil, as directed by the Architect.
(2) FOR PRIMING COAT on woodwork, 2 gals. of boiled linseed oil shall be added to the above quantities.
(3) FOR LAST COAT of all interior painting, 1 gal of turpentine shall be substituted in place of a like quantity of linseed oil in proportions above given.
(4) DRYER in cold or damp weather may exceed, by not more than ½ pint, the quantity given above.
(B) APPLICATION. Exterior painting shall not proceed in wet or freezing weather, but shall be carried on only under favorable conditions, so as to dry free from dust, insects or other objectionable matter. No coat shall be applied on a surface not thoroly dry. The finished work shall be free from brush-marks, spots, oil-clots, hair and other imperfections.
(C) EXTERIOR METAL WORK (other than wire guards and copper), after being thoroly cleaned with wire brushes and sandpaper, shall have all exposed surfaces (including all sides of metal sash and doors) primed with a good coat of metallic paint, in addition to shop-coat. After priming, two additional coats, of selected colors, shall be applied to all surfaces. Metallic paint of different color from first coat shall be used on all surfaces where color is unimportant.
(D) EXTERIOR WOODWORK. All exterior woodwork, including all window and door frames, shall have a priming coat of lead-and-oil paint as specified in Par. A, above, including all unexposed surfaces, immediately after delivery and before exposure to the weather. All exterior woodwork, including frames and sash, shall be given two good brush coats of paint selected, in addition, to priming coat. Abutting cards of wood finish shall be soaked in oil before erection.

(*Author's note*: The foregoing specification for priming should only be used where trade union rules make it imperative that all first coat work must be done at the building and not at the shop. Like many other such rules, they are not particularly concerned in the good of the work. It is much better that all frames, which are liable to exposure at the building, be primed before leaving the shop. If advisable, they can be inspected there, before priming. This applies also to finished cabinet work, which should not receive more than a final coat at the building, or a good oil rubbing.

(E) DOORS AND SASH shall have all upper and lower edges painted 2 coats. Sash grooves and edges of sash running in same shall be oiled with 2 coats of mutton-tallow or hot raw oil.

(F) INTERIOR METAL WORK, including radiators and exposed piping, but not including other heating, ventilating, plumbing and electric equipment and nickel-plated work, shall, after being cleaned as specified, receive 2 good coats of lead-and-oil paint of selected colors.

(G) INTERIOR WOODWORK shall have a heavy coat of priming paint on all concealed portions, immediately after delivery at the building. All interior woodwork, except where varnish is specified, shall have a priming coat of paint and 2 additional coats of paint of selected color.

(H) GRAINING. All sash, doors, transoms and frames (including those of metal), wherever adjoining finish is to be varnished; also inside of all entrance doors, except to boiler room, shall be painted 2 coats and grained by experts to perfectly match adjoining wood finish. All grained work, after passing inspection, shall receive a finish coat of spar varnish.

ARTICLE 9. *Painting Walls and Ceilings.*

(A) MIXING of all oil paint for this work shall be done as specified in Par. A of Art. 8.

(B) ALL CEMENT WAINSCOT shall receive 4 coats of lead-and-oil paint, the last coat stippled in approved manner.

(C) ALL BURLAP AND CANVAS surfaces shall be painted 2 good coats of lead-and-oil paint, in approved colors.

(D) ALL OTHER PLASTERED SURFACES specified to be painted shall first be prepared as specified in Par. E of Art. 6, then receive 3 good coats of paint in selected colors, the last coat stippled in approved manner.

(E) WHITE-WASH. All surfaces of walls and ceilings of rooms so specified in Article 2 shall receive 2 good coats of white-wash, or a spray-coat sufficient to thoroly cover all surfaces to density specified in Par. C of Article 4.

(F) PROTECTION. All floors, woodwork, painted work, glass, pipes, valves, engines, furniture and other equipment shall be carefully protected during painting, as this Contractor will be required to thoroly clean all paint spots from such surfaces and make good all damage resulting therefrom.

ARTICLE 10. *Sign Work.*

(A) ALL LETTERING shall be done by expert sign-painters, using standard approved block characters in black sign-paint, except where red is specified.

(B) EACH HALL-DOOR TRANSOM shall have a number of 3 figures, as directed, 5″ high.

(C) EACH EXIT DOOR from assembly hall and balcony shall have the word "EXIT" above in 6″ letters, in red sign-paint.

(D) DOORS to assembly hall, stage, gymnasium, principal's office, toilet and locker rooms and to class rooms, the designation of which is indicated on plans, shall have name of room lettered on panel, as directed, in 3″ letters.

(E) CARD AND PROGRAM HOLDERS, corresponding to samples in office of Architect, shall be provided for each class room door and for doors to assembly hall, gymnasium and principal's office, attached to door panel or wall, in approved manner, as directed.

ARTICLE 11. *Varnishing.*

(A) FILLER. All hardwood finish shall be properly filled immediately after delivery, to produce the approved shades; filler to be paste or liquid, as demanded by grain of wood. All filler shall be of uniform shade, smoothly and evenly wiped off to properly bring out the grain. All corners, moldings etc. shall be thoroly cleaned of surplus filler.

(B) SHELLAC. All woodwork specified to be varnished shall receive a good coat of shellac as soon as possible after delivery. Shellac shall be applied to hardwood only after it is filled.

(C) VARNISH. All woodwork specified to be varnished shall, after being shellaced, be given 2 coats of varnish, except that insides of bookcases and supply-cases shall have single coats. Interior varnish shall be used thruout, except on woodwork in bath rooms, locker rooms, toilet rooms, kitchen, cafeteria, clinic and household science rooms, for which spar varnish shall be used. Spar varnish shall also be used for final coat on hand-rails, window stools and other surfaces subject to severe usage. All varnish shall be flowed on smooth and even, thoroly covering all surfaces with each coat. Filler coat and first coat of varnish (except single coat inside of cases) shall be freely sand-papered and dusted off. Last coat shall be left in natural gloss, smoothly flowed on. Stops for windows will not be put on until after varnishing is completed, but shall have finish coat applied after being fitted and before being placed.

ARTICLE 12. *Floor Finish.*

(A) VARNISH. The wood floors of all rooms where varnish is called for shall be filled and stained to accord with approved samples and finished with 2 thoro brush coats of floor varnish, evenly flowed on.

(B) OIL. All hardwood floors, except those specified to be varnished, shall be given one good coat of pure hot raw linseed oil (heated to about 200° F, but not allowed to boil) immediately after being laid, and well rubbed in with cotton rags. A second coat shall be applied in same manner just before work is accepted.

DIVISION O. GLASS AND GLAZING

Note. (Same as precedes Art. 1 of Division N. This note is standard for all Divisions of the General Contract.)

ARTICLE 1. *Work Included.*

(A) THE ITEMS under this Division include glass and glazing of all sash, transoms, ceiling lights, skylights, partition lights and glass panels in doors, cabinets and cases; also other items herein specified.

ARTICLE 2. *General Description.*

Note. (Same as precedes Art. 2 of Division N. This note is standard for all Divisions of the General Contract.)

(A) PLATE GLASS shall be provided for all glazed doors in each story above basement (except where other glass is particularly called for) and in side-lights of vestibules.

(B) DSA GLASS shall be provided for all exterior sash in building (except where wire-glass is called for); for all transoms and for lights in partitions (except where plate or maze glass is called for) and for glazed doors in basement.

(C) SSA GLASS shall be provided for all glazed doors and panels in cabinets, cases and cupboards, except that panes larger than 4 square ft. shall be DSA.

(D) MAZE GLASS shall be provided for all windows, glazed doors, partition lights and transoms of all toilet, locker, shower and store rooms, clinic, offices and for glazed doors to gymnasium.

(E) MAZE WIRE-GLASS shall be provided for all ceiling lights.

(F) ROUGH WIRE-GLASS shall be provided for all skylights, except that one pane, as directed, in boiler room skylight, shall be of polished wire-glass.

(G) POLISHED WIRE-GLASS shall be provided in outside door to boiler room and in exit doors of assembly hall.

MATERIALS

ARTICLE 3. *Glass.*

(A) GRADES. Grading of glass shall be in accordance with standard practice, as interpreted by the Architect. Maker's billing, labeling or box-marking will not be accepted as proof of quality or grade of glass if, in the judgment of the Architect, such glass falls below the standard specifications for the quality called for. All glass shall be first-hand. All shall have smooth edges and shall be free from prominent blemishes.

(B) PLATE GLASS shall be best quality American polished plate of even thickness (not less than ¼″) and free from warp or other defects.

(C) DOUBLE-STRENGTH GLASS shall be "A" quality, clear, with good gloss, be well flattened and free from any but the slightest imperfections, such as air bubbles, blisters, burnt specks, burns, cords or strings. Any pane showing any such prominent defects further than ½" from any edge will be rejected. DS glass shall not be less than 1/9" thick.
(D) SINGLE-STRENGTH GLASS shall be "A" quality, as specified in preceding paragraphs, and shall not be less than ½" thick.
(E) MAZE GLASS shall be the commercial product so termed and shall be uniformly 3/16" thick, unless otherwise called for. Where so required, maze glass shall contain woven-wire mesh, as specified in the following paragraph.
(F) WIRE-GLASS shall be the commerical product so termed, in which a woven-wire mesh is evenly embedded thruout the center of the sheet. Unless otherwise specified, it shall be ¼" thick, with rough or ribbed surface. If specified to be "smooth" or "polished," it shall be smoothly polished both sides and be free from blemishes as specified for DSA glass. Where called for, wire-glass shall have "maze" surface one side.

ARTICLE 4. *Other Materials.*

(A) GLAZIERS' POINTS shall be standard zinc triangles or other approved "points".
(B) CLIPS, as provided by Makers of metal sash, shall be used for glazing all such sash in accordance with their directions.
(C) PUTTY shall be composed of a proper mixture of pure whiting, white lead and linseed oil to produce a working consistency and proper drying qualities. Special approved putty shall be used for metal sash glazing and for winter work.

WORKMANSHIP

ARTICLE 5. *Glass Setting.*

(A) CORRECT MEASUREMENTS for the sizes of all glass shall be taken from sash at the mill in sufficient time so that sash can be glazed immediately after delivery at the building or as soon as required for enclosing same. These actual measurements shall take precedence, in all cases, over dimensions indicated on drawings, except that the Contractor shall call the attention of the Architect to any apparent errors in sash sizes and secure ruling on same before cutting glass for such locations.
(B) GLAZING. This Contractor shall set all glass included in his contract. All shall be bedded in putty and back-puttied in best manner and secured with glaziers' points or clips, as case may be. Except where wood stops are called for, all glass shall have rabbets well filled with putty, smoothly and evenly finished. All glass in doors, all plate glass and all glass set without sash shall be bedded and back-puttied as above specified and securely fastened with wood stops, supplied with millwork. These shall be carefully removed, and replaced after glass is set, and shall be neatly bradded in place by Glazier, with brads of proper size, not over 12" apart, and not less than 2 brads in each stop. The Glazier shall be responsible for all damage to these wood stops as well as for all glass held by same. The Architect will direct, dependent upon seasonal conditions, (and without affecting the contract price) whether all outside sash shall be glazed complete, ready to be hung, before plastering is begun or after it is finished.
(C) ALL SKYLIGHTS shall be glazed with wire-glass of proper sizes and set in accordance with approved skylight details, either smoothly puttied or secured with spring members, as case may be. First lights over eaves all around shall have lower edges carefully bedded in putty or other approved material. One pane in skylight over boiler room shall be polished and located as directed.

ARTICLE 6. *Inspection, Replacement and Cleaning.*

(A) INSPECTION. This Contractor shall carefully inspect all glass before offering same for acceptance and shall leave same whole and complete thruout entire building at time of acceptance of the whole work.
(B) BREAKAGE. All glass supplied by this Contractor that is broken before acceptance of the entire work must be replaced by him without cost to the Owner, regardless of cause or time of damage. The Contractor shall include in his bid an amount which he considers sufficient to cover such contingencies, except that he will not be held responsible for general damage due to explosions, mob action or the like, or for damages in proportions of the building in direct control of the Owner. No claim for other undue breakage will be considered by the Owner, except that the Contractor may collect from others for known damage, without recourse to the Owner.
(C) CLEANING. Upon completion of the work, the Contractor shall have all glass that is included in this contract cleaned and polished by experts. All must be free from paint, varnish and plaster spots, care being taken not to scratch glass or damage woodwork, floors, plastering or other near-by finished work, all of which shall be left in perfect condition, ready for the opening of school.

PUBLICATIONS

OF INTEREST TO THE SPECIFICATION WRITER

Publications mentioned here will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS *by the firm issuing them. When writing for these items please mention* PENCIL POINTS.

"Allen On Fire Protection".—Data book on standard practice and notes on underwriters requirements for standpipe systems. Detail drawings and specifications for standpipe and hose units for all classes of structures —office and public buildings, hotels, hospitals, schools, theatres, 4 stories or less or 5 stories or more in height. Data on pressure regulation, diagrams. A.I.A. File No. 29e2. W. D. Allen Mfg. Co., 566 W. Lake Street, Chicago, Ill.

"Beautifying The Home Grounds".—336 designs of pergolas, trellises, lattice fences, gates, entrance arches, summer houses, garden furniture, working drawings, photographs and sketches. A valuable addition to the library of every architect. Price twenty-five cents. Southern Pine Association, New Orleans, La.

Published by the same firm, Southern Yellow Pine Flooring, Technical Bulletin No. 1, containing specification and design information and data for the use of architects and engineers. A.I.A. File No. 19e9.

Kitchen Designs.—Book of model kitchens presenting designs submitted in the Frigidaire Architectural Competition. Invaluable data as to the incorporation of electric refrigeration in residential plans. Delco-Light Co., Dept. C-32, Dayton, Ohio.

The Little Red Ball.—The Story of Good Wrought Iron.—An industrial story reprinted from the October "World's Work". Booklet on the subject indicated. 12 pp. 6 x 9. A. M. Byers Co., Pittsburgh, Pa.

Fireproof Homes of Period Design:—A most important book of 72 designs selected from drawings submitted in a national competition. The subjects are well presented and in addition to the illustrations much useful information is included which is especially applicable to small and medium size residence construction. The book contains specifications and detail drawings. 112 pp. 8½ x 11. United States Gypsum Co., 205 West Monroe St., Chicago. Price $1.00 to all except architects writing on their own stationery.

Hitchings Greenhouses.—Attractive booklet on the subject of Greenhouses, Conservatories, and data on Cold Frames. Profusely illustrated. Contains plans, layouts, information regarding heating, standard sections and list of books on Greenhouse operation. 59 pp. 8¼ x 11. Hitchings & Co., Elizabeth, N. J.

Exterior Lighting Fixtures.—Catalog J profusely illustrated, showing full range of exterior lighting fixtures for all requirements. Hundreds of designs. 108 pp. 8½ x 11. Smyser-Royer Co., 1609 Sansom St., Philadelphia, Pa.

Instant Hot Water For Every Need at Lowest Cost.—Booklet illustrating and describing Arco tanks for hot water supply. Many attractive color plates, sectional views, typical installations, measurements and data, tables. 24 pp. 8 x 10½. American Radiator Co., 1807 Elmwood Ave., Buffalo, N. Y.