PENCIL POINTS

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ON COMPETITIONS

SEVERAL ARCHITECTS with whom we have talked recently have lamented the fact that in the usual type of closed competition the selection of invited competitors seems to be made from among a limited group of well known and well established architects, whose design habits are more or less fixed. As soon as the names are announced, an experienced observer can, after reading the program, almost predict with certainty the *parti* that each will select and the manner in which his design will be carried out. Perhaps this is an advantage to the owner, for he can have some idea in advance as to what kind of a design he is going to get. But if this is so why hold a competition at all? On the other hand, if the competition is being held for the purpose of obtaining the best and most original design possible, is not this system extremely likely to defeat that purpose?

There are in this country many young men of great architectural ability who would, if given the chance, be anxious to take part in numerous competitions which are now closed to them. They would not be deterred by the fear of losing the time involved in the preparation of their designs, for their practices are not large and they can afford to gamble the necessary effort against the chance of winning. Their training in the schools has instilled into them the competitive spirit and they are eager to pit their abilities against those of their contemporaries. Furthermore, and particularly at this time when the trend of design is changing, they come to the field with fresh ideas, unhampered by habits of thought developed through years of conservative practice. Some of them are likely to surprise the world with the excellence and originality of their designs. If they do, it is to the owner's advantage; if not, there is no great harm done to anyone.

We all know of architects now solidly established as leaders in the profession, whose first successes came by winning or placing high in open competitions. Is there no significance in the fact that of the four Americans included among the finalists in the Columbus Memorial Competition, two were in their twenties. And this was not because the older men stayed out, for there were many distinguished names among the 450 participants. It is not difficult to recall other recent open competitions in which the winners were at the beginning of their careers.

The whole question of competitions is one which has been argued over from all angles but which has never yet been completely settled. We would like to have some discussion of the subject by our readers and will gladly print whatever communications of interest they may send in. If you have any pet ideas now is the time to air them.

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Courtesy of Schwartz Galleries

ST. FRANCIS, ASSISI—FROM A DRYPOINT BY SIDNEY TUSHINGHAM

Size of original—8¼" x 12⅜"

PENCIL POINTS

Volume X September, 1929 Number 9

A MASTER OF ARCHITECTURAL ETCHING

SIDNEY TUSHINGHAM

By Kineton Parkes

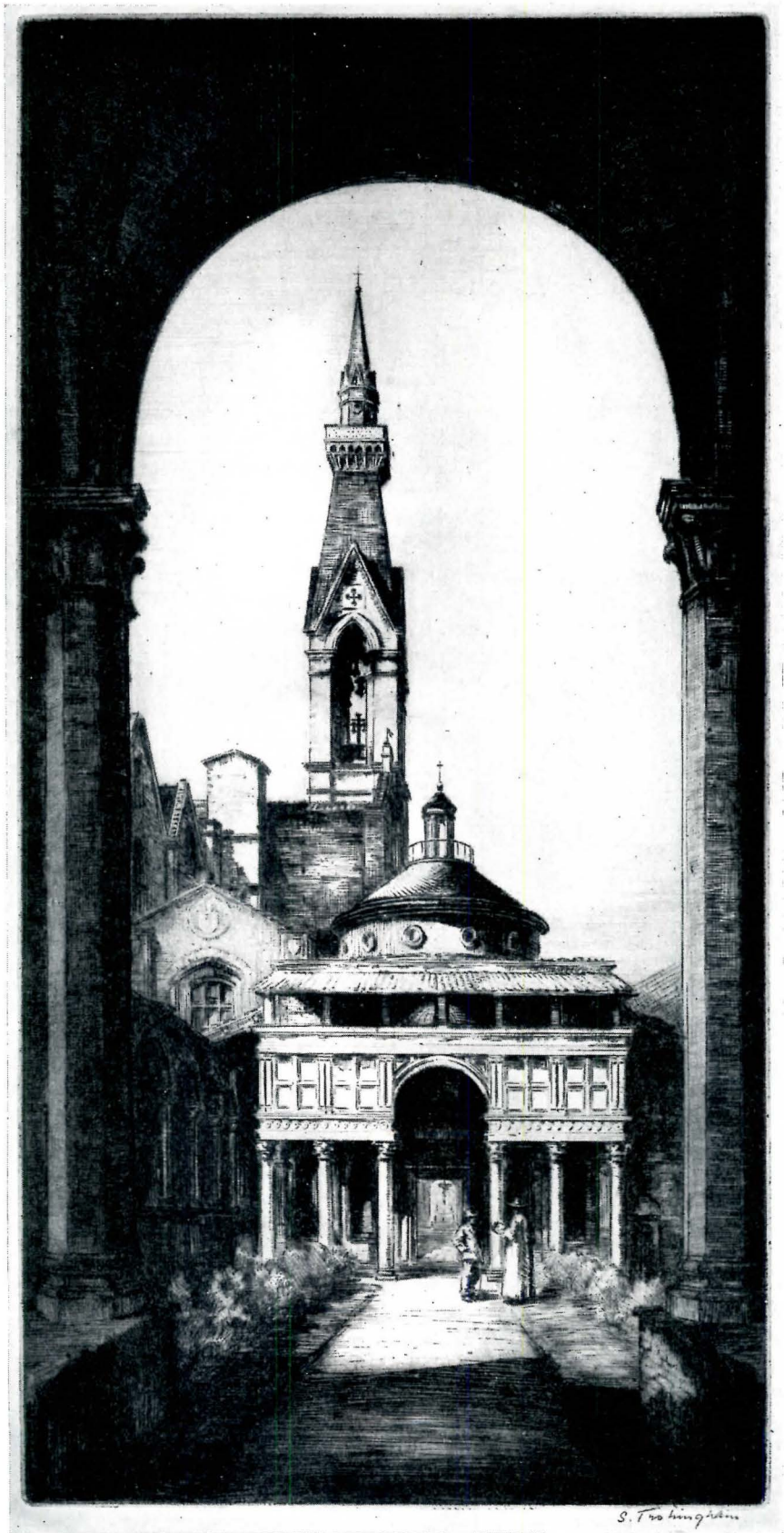
SIDNEY TUSHINGHAM has just made his century of etched plates. The moment is therefore a happy one and convenient for assessing the value of his *oeuvre*. A hundred plates in nine years is a considerable output and possible only to an artist who is systematic, as indeed Tushingham is. I may as well be systematic in my account of his work and his method of working.

In the first place, the plates fall into two divisions of figure and architectural subjects. In the latter there is a good deal of landscape but no essays in atmospheric effects. A broad light from the cleaned plate, glowing and pervasive, serves him instead. The architectural etchings group themselves according to country: England, Spain, Italy, Sicily. The method of procedure is one of easy travel and observation, during which periods the artist saturates himself in local color. He makes many sketches, and of the subjects which finally obsess him he makes careful drawings. On his return to his studio those drawings which after a lapse of time appeal to him most are selected and are carefully elaborated as to their details, becoming in themselves beautiful works of art. But their aid is sought only for the purpose of biting or engraving the copper plate.

Among the first 39 plates which comprised the artist's first contribution to the etched work of today from 1919 up to the year 1925 occur a number of pure etchings; waxed plates, that is, drawn on with an etching needle and bitten with acid. Of the 61 subsequent plates but few were bitten, the majority being drypointed. Tushingham's drypoint work is accomplished in the main by three tools, the shell needle, the diamond point used sparingly, and the burin. His etching is gradually approaching engraving, but with this essential reservation, that the burr or selvage raised by the tool is allowed to remain, producing the effect of richness which an etching has in contradistinction to the purer line of the metal engraving realized by the rubbing down of the burr. In some of these drypoints there is evidence of his working in combination of two of these tools, or even of three. There is some danger of overelaboration in this, some incitement to indulge in tone effects. In his architectural prints, however, Tushingham is an etcher pure and simple; a draftsman with the point as pure and sure as he is with the pencil and pen in his drawings, where everything is set out with meticulous care, nothing being left to chance, but allowing of the selection of detail when the plate is in hand. Fine as drawings, they are primarily induced as the mere bases of the engraved plates. Single-minded in his art as in his character Tushingham, while he experiments in his medium, always does so legitimately; he does not confuse one technique with another; he preserves always the distinctive values and his prints have invariably that richness and quality without which an etching is merely lifeless representation. He thinks in line, he works in line, but he expresses in mass; his art consists in the drawing of the fullness of form.

Although Tushingham has in nine years quite remarkably produced one hundred fine plates and destroyed others, especially in his first period, he has never hurried. He is very deliberate and conscientious in all he does. This is not only constitutional, it is hereditary. Readers of Arnold Bennett's novels and stories of the Five Towns will remember the Cards and other characteristic denizens of that bleak region now rendered romantic by the genius of the novelist. Sidney Tushingham's forebears were Cards and characters of the Five Towns. He himself was born in Burslem, where Arnold Bennett was brought up, in the year 1884. The elders of the chapels in Burslem, Hanley, Notre on Trent, and the rest of the Potteries were the terror of his early years, as was the case with Arnold Bennett. Later, however, they became his amusement and enjoyment and he has told me racy stories of self-satisfied Puritans who lived their lives beside their pottery kilns and in their Sunday schools and made small fortunes and larger local reputations. Sidney Tushingham inherited his art instincts as well as the solid basis of his character from both his parents. His father was engaged in the ceramic industry; his mother was a Wood; a direct descendant of those Woods of Staffordshire, Ralph Wood and his son Ralph who in the XVIII Century turned out in profusion those Toby Jugs, portrait busts, figurines, and pots for which collectors of china now strive.

Tushingham was himself a china painter at the age



Courtesy of Kennedy and Co.

PAZZI CHAPEL, FLORENCE—DRYPOINT BY SIDNEY TUSHINGHAM

Size of original—6⅞" x 13½"

Courtesy of Kennedy and Co.

SARAGOSSA—FROM A DRYPOINT BY SIDNEY TUSHINGHAM
Size of original—13¼" x 10¼"

of fourteen and while apprenticed he attended the Burslem School of Art to such purpose as to win a National Scholarship which took him to the Royal College of Art in London. This was in 1905. A little earlier the weekly money had amounted to twenty-five shillings on which the student was supposed to live and have his being and, moreover, to buy his drawing materials. As one of those students I remember we got our bed-sitting rooms in Chelsea and breakfast for seven shillings a week! Things are different now and the students wear pull-overs and play golf, faring sumptuously every day at the Students' Club. At the Royal College Tushingham was fortunate in joining the classes of Sir Frank Short, that master of all engraving processes, and so became an etcher. I have an idea that the hereditary character had something to do with it too, for twenty-five years ago etchings came greatly into favor with collectors, many of whom have waxed wealthy by means of this hobby. The Five Towns dourness may have influenced the young aspirant. In any event it proved most effective, for Tushingham etchings are in the first half dozen runners in the race.

There are three sorts of collectors: the knowledgeable one who is progressively satisfied with the output of the men whose work they collect and who value it solely for its intrinsic artistic quality; the competitive collector who must have what his brother collectors possess; and the venal collector who is only satisfied when the sale values of his artists are on the rise and who thinks therefore only of the money value of his solander boxes. With a vogue in print collecting all three varieties have to be on the *qui vive* for examples as, for instance, Tushingham prints never more than 75 impressions from his plates and sometimes less. The limitation of course automatically increases the value and the competition for a special favorite becomes acute. There is the further but rarer collector who is out for states, but this I regard as an abnormal craving and I do not believe that Tushingham collectors have too much encouragement in this phase. Tushingham is too sure and direct in his method of working. He would, I think, rather destroy a plate than manipulate one. He is conscientious, never works in a hurry, never scamps but never evades a difficulty. He is ever working towards

Courtesy of Kennedy and Co.

GIRALDA TOWER, SEVILLE—DRYPOINT BY SIDNEY TUSHINGHAM

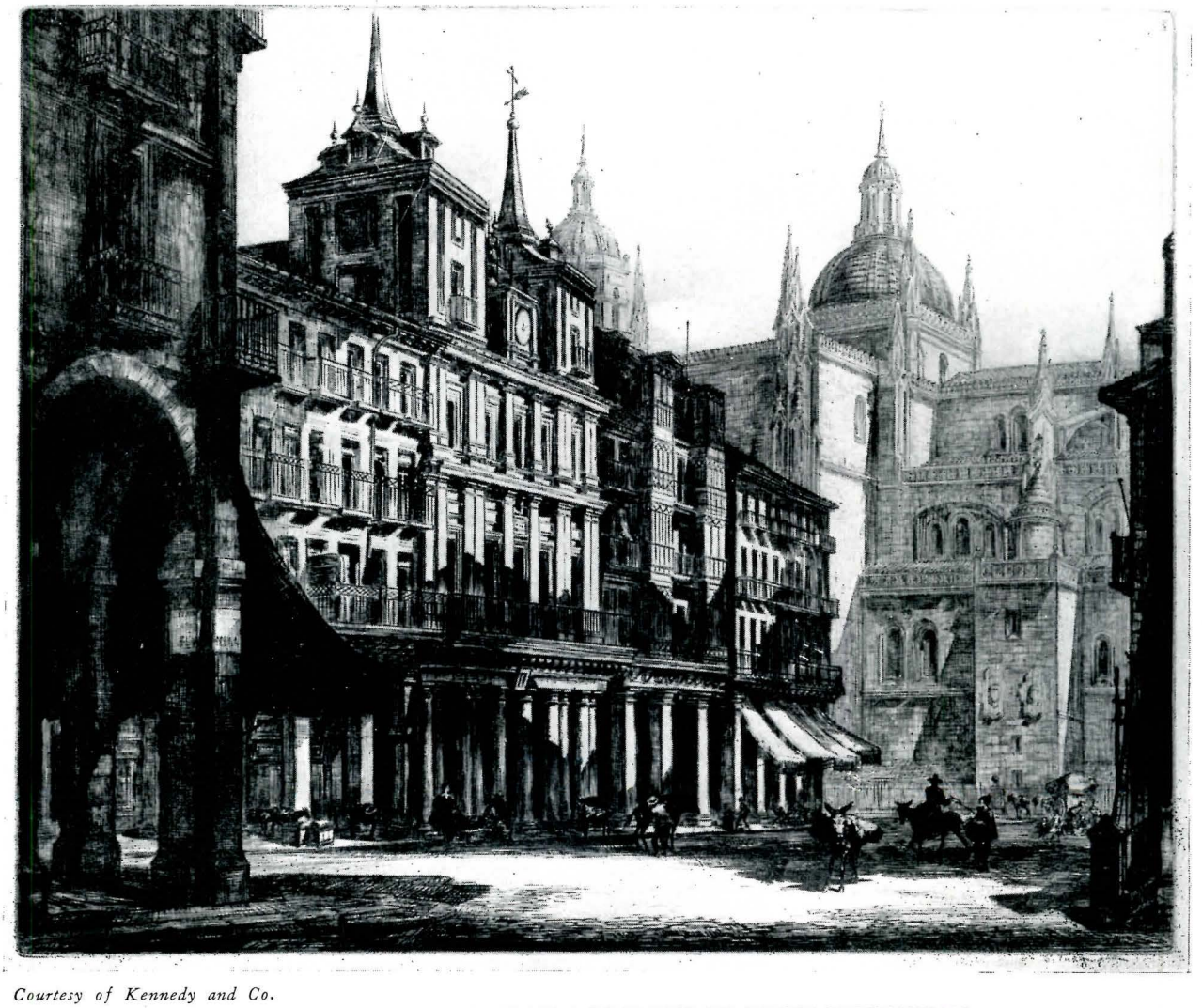
Size of original—6½" x 14"

getting the finest effects of his medium; line, structure, mass, quality, and ever increasing by experience its nuances. He does not depend for quality on any adventitious aid, but on legitimate graver work.

There is pronounced light and shade in the *Pazzi Chapel, Florence,* produced by the very simple means of cross-hatching, light and heavy, the balance nicely kept, the right-hand side of the plate very nicely modulated. During his Italian journeys Tushingham made many drawings and from them he selected several from which he made some of his best plates. The subject of one of the Rome drypoints is the *Church of San Giovanni e San Paolo* supposed to have been erected about 400 A.D. An engraving study in Romanesque architecture of a later date is represented in the stately plate of *St. Francis, Assisi,* showing the Tower Church of 1228 which contains the Giotto frescoes; the Upper Church completed in 1253, and the flight of XVIII Century steps from the one to the other.

Italy yielded many studies of the XIV Century, notable ones being the *Via Garibaldi at Montepulciano,* the *Porta Romana at Siena,* through which are seen the column of the Shewolf and Romulus and Remus as well as the *Palazzo Publico* with the *Torre del Manzia,* one of the highest and most graceful Italian towers of the XIV Century. Of the following century there are several examples, the most elegant of which is the *Palace of Piero Contarini* or the *C'a D'Oro* which was building from 1421 to 1436 and is heavily laden with magnificent architectural carving, more sumptuous than any other in Venice. Passing from such richness of detail, Brunelleschi's chapel added to Santa Croce (Circa 1430) seems quite plain, seen as it is in Tushingham's print through the heavy vaulted archway.

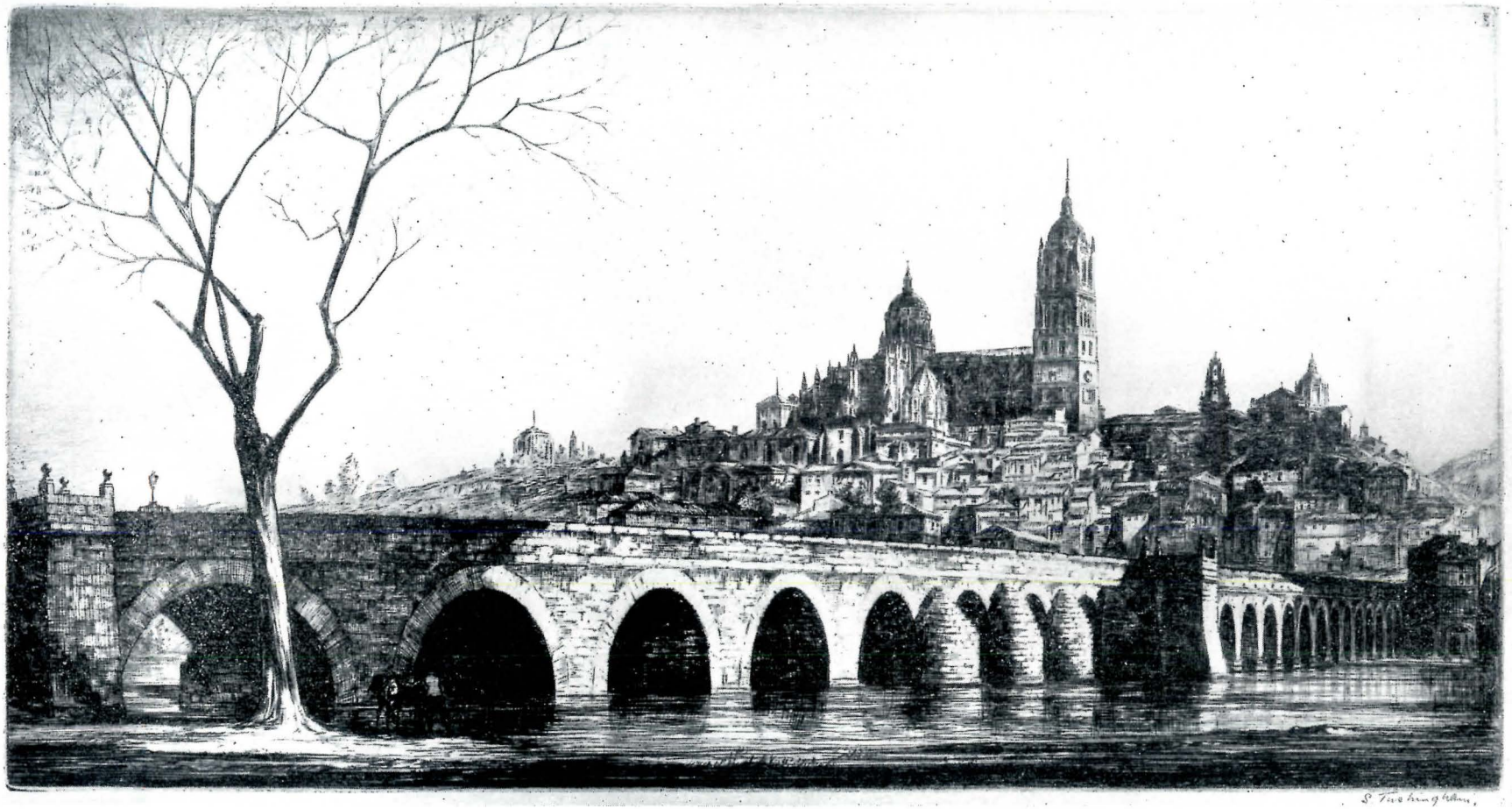
The cross-hatching which I noted in the *Pazzi Chapel* plate is developed to a refined degree in the much later *Plaza Mayor, Segovia,* a stately print exclusively architectural in interest except as regards



Courtesy of Kennedy and Co.

PLAZA MAYOR, SEGOVIA—FROM A DRYPOINT BY SIDNEY TUSHINGHAM

Size of original—13⅛" x 10¾"



Courtesy of Kennedy and Co.

ROMAN BRIDGE, SALAMANCA—FROM A DRYPOINT BY SIDNEY TUSHINGHAM

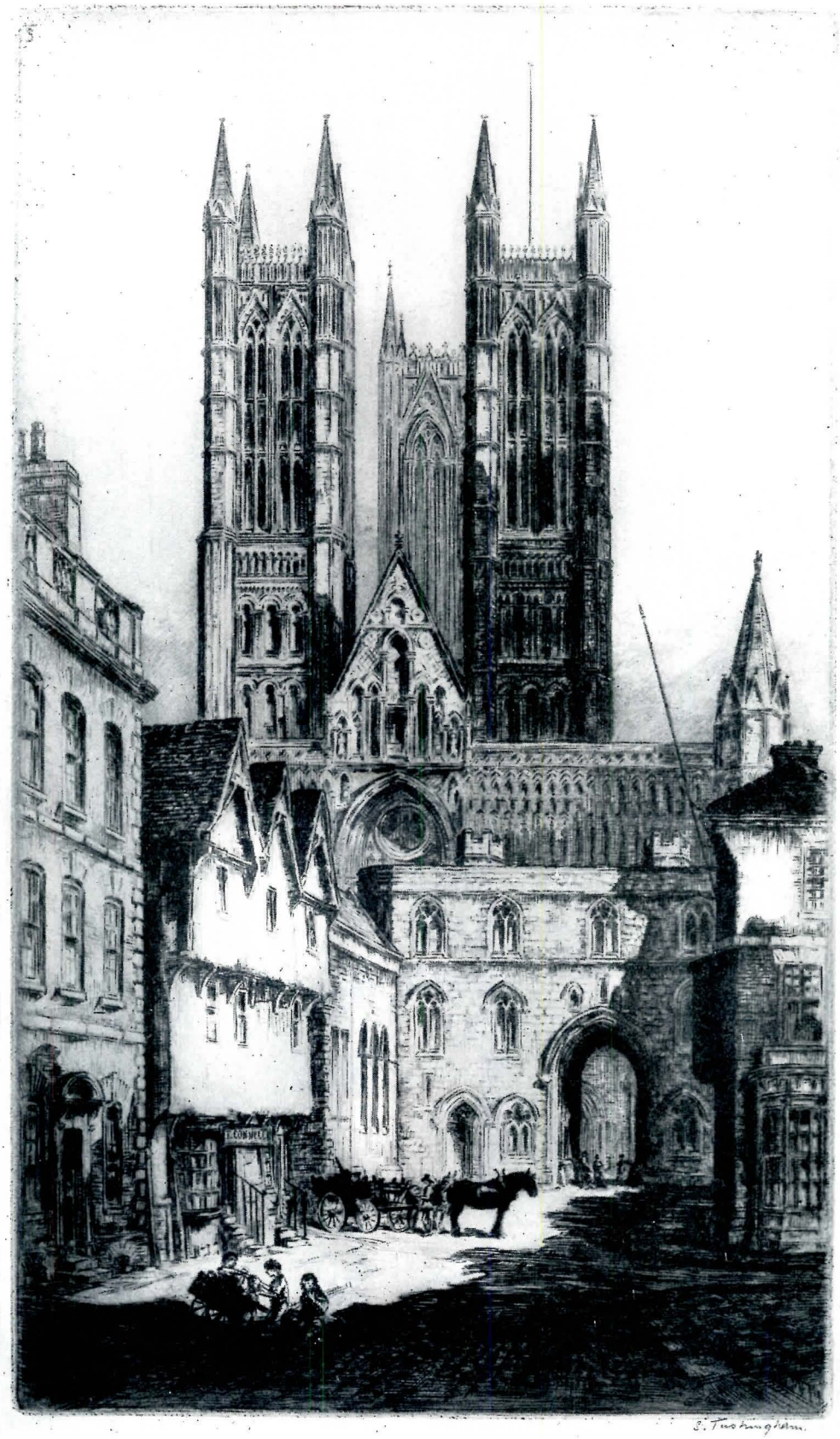
Size of original—14½" x 7¾"

Courtesy of Kennedy and Co.

GATEWAY, SEVILLE—FROM A DRYPOINT BY SIDNEY TUSHINGHAM

Size of original—11" x 11¾"

its technique, which is exquisite. On the left, for the most part in heavy shadow, is the XVIII Century *Aguntamiento* (town hall), the background being entirely occupied by the new cathedral begun in 1522 with its domes, pinnacles, and buttresses delicately and purely drawn in half shadow. Heavier work is found in *A Gateway of Seville* which for romantic feeling and human interest is not exceeded in all the prints; neither is it beaten in its richness of quality. It is a close-up, but with a vista. The main architecture is an XVIII Century postern bearing an ornate tablet of ecclesiastical heraldry and at the right side is a street shrine with tall open doors. The vista provides a view of the Giralda Tower which however is better exhibited in the fine upright plate bearing its name, derived from the quaint woman's figure with its Empire-looking costume which forms the weather vane *(giraldillo)*. This vane rests upon the very con-



Courtesy of Schwartz Galleries

CASTLE HILL, LINCOLN—DRYPOINT BY SIDNEY TUSHINGHAM

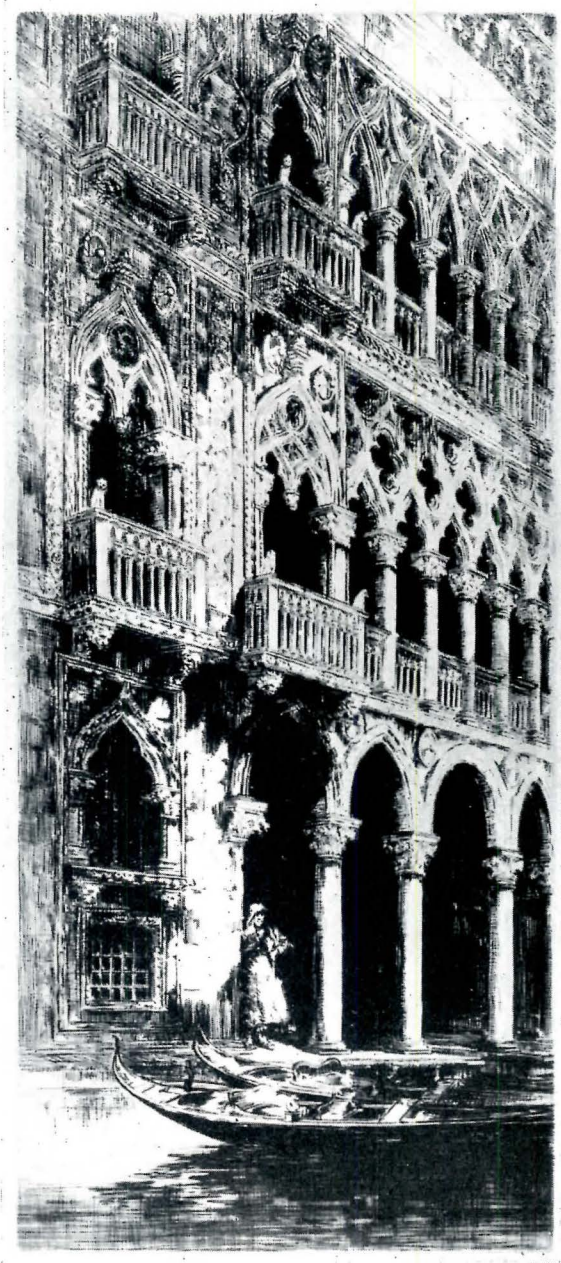
Size of original—7⅜" x 12½"

Courtesy of Kennedy and Co.
CHURCH OF ST. JOHN AND ST. PAUL, ROME—FROM A DRYPOINT BY SIDNEY TUSHINGHAM
Size of original—11⅝" x 11⅞"

siderable rococo addition supplied about 1568 to the top of the Moorish tower of 1184, making its height 305 feet. The *giraldillo* weighs one and a quarter tons but moves effectively with the wind.

Another Moorish survival is treated in the drypoint *Saragossa,* a striking plate with a fine landscape as a background to the architecture. The cathedral is the principal feature with its colored Moorish domes and two XVIII Century towers. Moresque with its right angle patterns offers a peculiarly fertile incentive to the engraving tool, giving opportunities for its ingenious exercise. Tushingham encounters it again in Sicily. The *Palazzo della Calsa,* derived from *El-Khâlisa,* appears in the plate named *Arco Santa Teresa, Palermo,* which exhibits in its massive masonry Norman-Saracenic remains. In the Palermo print of the *Palazzo Tribunali* entrance is a striking example of the mixture of styles: Norman, Gothic, and XVIII Century. Originally the *Palazzo Chiaramonte,* it was later the residence of the Viceroys and in 1600 the seat of the Inquisition. Returning to Spain, in the *Salamanca* plate the etcher has given a good representation of the fifteen original Roman arches of the famous bridge, the greatest bridge in Spain, and the

additional twelve arches built for Philip IV at the end of the Seventeenth Century, above which the town rises on its hill and is surmounted by the cathedral. Perhaps the finest architectural scene in England is portrayed in the rich and satisfying *Castle Hill, Lincoln.* On the left of the print is a Queen Anne house; next door is an overhanging gabled house of the XIII Century; then the later period gateway and, beyond, the amazing cathedral, Norman and Early English with its three high aspiring towers. Fine as are other English pictures which have received the attention of an artist's graver, nothing is so majestic as the Lincoln plate, but for simplicity and quiet charm the *Broad Gate, Ludlow,* calls for attention. These are only a few of the one hundred plates that Sidney Tushingham now has to his credit; only the *catalogue raisonné* that is to be published monthly by Connells of Old Bond Street, London, and Glasgow, can enumerate them all.



DRYPOINT BY SIDNEY TUSHINGHAM
C'A D'ORO, VENICE

Proofs of the Tushingham etchings may be seen in the Public Library, New York; the Art Institute, Chicago; the California State Library; the Museum of History, Science, and Art, Los Angeles; the British Museum, London; the Walker Art Gallery, Liverpool; and the Art Galleries of Derby, Cardiff, Glasgow, Southport and Stoke-upon-Trent. Wherever they are seen the architectural prints reveal not only the artist's love for the romance and form of buildings, their situation, their materials, and their styles, but they also indicate what is of greatest value in an etcher of architecture, his power of selection and the vision which prompts the angle for artistic treatment. It is in this that the real artist shows his powers, as much as by his technical ability, for it is by this he reveals beauty to the observer.

Sidney Tushingham is proud that after making his century, his work has come out so well. He is too honest by nature for false pride, but it is as obvious to himself as it is to those who collect him that he has succeeded. His love of travel, his love of life, his love of the food and wine of the countries he goes into, overcome his natural repugnance to various insects he encounters in some of the more remote spots in which he finds himself. His dislike extends to dirt—matter in the wrong place—and to disorder. He has a love of organized things like a fine bridge kept in order; his admiration for a ruin as such is quite lukewarm. He loves archaeology on its artistic side, but is left cold by topography as such. He loves to trace the phases of taste and execution which have enabled the ingenuity of man to produce works of art. He is matter-of-fact with reserves of romance; he faces beauty without affectation; he admires perfection in and as in life; he believes in enjoying life as he enjoys his work, without excesses. All his enthusiasms are well-ordered, he listens to music from Bach to Ravel as he looks at pictures, landscapes, and buildings, with thankfulness, and he plays the fiddle and the pianoforte with as much seriousness, but with less skill than he makes etchings. He is an artistic Puritan with a sense of humor; a Five Towns man in a London suit of clothes, "jannock," as they say in North Staffordshire when they like a man, which means honest, steadfast, and purposeful. As a painter-etcher he is with Meryon rather than with Piranesi, comparatively; historically he descends from the old engravers of the early printed books, but his knowledge is greater, his expression more expansive, and his technique finer. His prints have taste, quality, and distinction, but they possess an added homeliness; they come within the terms of ordinary human everyday feeling and comprehension. Sidney Tushingham as an artist has worked out the human equation.

THE GEOMETRY OF ARCHITECTURAL DRAFTING

PART II—THE APPROACH TO PRECISION

By Ernest Irving Freese

EDITOR'S NOTE:—*This continues the new series of articles by Mr. Freese which was begun in the August issue. The next installment will appear in October. Both text and illustrations are copyrighted, 1929, by the author.*

DRAFTING IS A universal and visible language. Its one and only purpose is to facilitate the communication of ideas. It is a vehicle for the translation of thought into "working-drawings." And these drawings are a means to an end; not an end in themselves. A working-drawing should be accurate enough to fulfill the purpose it is to serve. Anything more than this represents a pure waste of time. Anything less usually spells disaster. The precision with which a drawing has been made is not, necessarily, a criterion of draftsmanship. At times, precision, uncalled for, yields free rein to artistry. In architectural drafting, especially, an informative freehand sketch, made in a few minutes, will occasionally furnish all the data required in the execution, or materialization, of the work thus represented. In this occasional case, precise drafting is not essential. At other times, however, and in the great majority of cases, the highest degree of precision in drafting *is* essential; otherwise, to use the parlance of the drafting-room, the drawing will not "work out." In *all* cases, the *approach* to precision should be in direct ratio to the *necessity* for precision. The test of expert draftsmanship is not draftsmanship, so-called, at all; the test is whether or not the thing can be built from the information contained in the drawing. Literally and figuratively, the modern architectural draftsman must know *how, when and where to draw the line.* If a "sketch" will do the trick, he lets it go at that. But, when a problem confronts him that smacks of "geometry," he immediately reaches for his T-square, his triangles and his scale, and *works it out* to the best of his ability. And in this case, the common one, his speed-and-accuracy is the yardstick of his ability. Moreover, as has been quite convincingly demonstrated in Part 1, heretofore, practically *all* of the fundamental geometry of drafting inheres in the instruments of drafting. Hence, since technical drawing is nothing else but applied geometry, in some form or another, it behooves the high-speed draftsman of today to have, and maintain, instruments that are sensibly accurate: accurate to a degree that renders impossible the optical detection of their *in*accuracies. This, then, calls for a condition that closely approaches precision, that is, the approximation to accuracy should be practically its attainment. Such exactitude may possibly *measure* a hair, but it seldom *splits* it. There is, at times, a justification for erratic *drafting.* There never can be any justification for erratic *instruments.* If your instruments are *not* precise, and an occasion arises for precise rendering — well, you're just "out of luck," that's all.

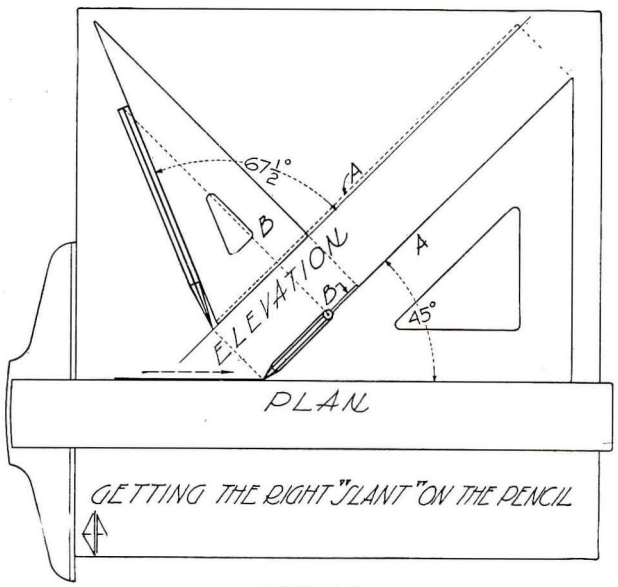


FIGURE 7

So, now, get out your triangles, T-square, and drafting-board, as well as your scales and protractor, and put them to the test, first sharpening a 6H pencil to a *long fine conical point* — which latter, by the way, is a point worth mentioning. To get the right "slant" on this point, refer to Figure 7. Place a 45-degree triangle, *A*, flat on the board and in contact with the T-square. Stand a 22½-degree triangle, *B*, on its short edge and, in this standing-up position, with its long edge perpendicular to the surface of the board, bring it snug against the hypotenuse of the lying-down triangle, as illustrated in both the plan and elevation given in the figure. Now lean the sharpened pencil in full contact with the hypotenuse of the upstanding triangle in such a manner that the point of the pencil rests in the right angle formed between the ruling edge and the board. The pencil is then in the correct drafting-position relative to the ruling edge along which the line is to be drawn. And this slant should be consistently maintained throughout the length of the line drawn—the guiding hand, in the meanwhile, being slid along the surface of the straightedge and the wrist twisted, if necessary, to maintain such uni-

formity of angle. At the same time, the little finger of the same hand should be pressed down on the straightedge with enough pressure to force the ruling edge of same into tight contact with the paper—the other hand, meanwhile, cooperating to hold the straightedge firmly in position. In drawing the line, the pencil should be "twirled" between the thumb and forefinger of the guiding hand so that the conical point always makes *revolving contact* with the paper. This operates to prevent the pencil point from wearing down quickly, and also results in clean-cut lines. When, however, the line shows any appreciable thickening, the lead should immediately be re-pointed by pushing or drawing a discarded razor blade along its entire length; the blade being held nearly perpendicular to the axis of the lead, and the pencil, meanwhile, being revolved alternately in each direction so as to maintain the true conical point.

In precise rendering, where a geometric construction line must be drawn to or from a fixed point, or between any two given points, if such points be slightly indented with a point of the dividers, the location of them can then be "felt" as the conical point of the pencil crosses them and, therefore, a more accurate line can be drawn through them than would be possible with a wedge point or chisel point on the pencil. Again, with a conical point on the pencil, the latter can be precisely placed at the location given, then the T-square or triangle, as the case may require, slid gently but firmly into contact therewith, and the required line drawn with precision and dispatch. Moreover, you can *see* where the conical point is going, and its trail becomes visible the moment it leaves the lead. Finally, the conical point can be used for the accurate transfer of measurement from the scale, for the plotting and drawing of curves, free-hand or otherwise, and for lettering or reference notations in connection with involved linear constructions—uses that are utterly at variance with a chisel-pointed pencil. And, in passing, it is also to be borne

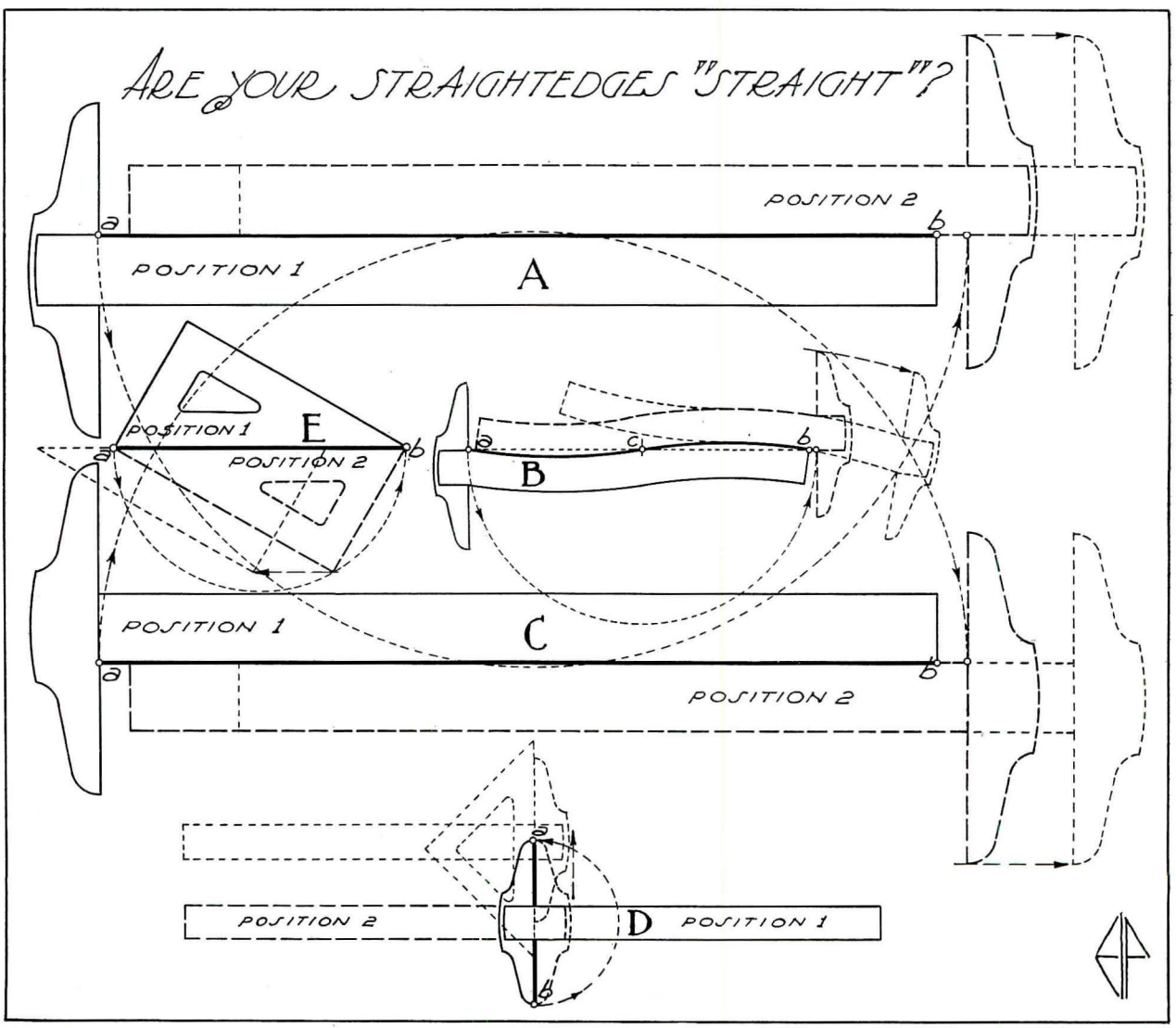


FIGURE 8

in mind that the conical point is the only consistent one for use in the compass: an accurate circle, being a line of *revolution*, can be generated only by a *point*—never by an *arris*. It is thus seen, that the conical point fulfills *all* the demands of precise drafting: the one well-sharpened and sharply-maintained point is all that is required. This, again, makes for speed at no sacrifice of precision. And it does away with all the "messiness" of sandpapering and rag-wiping of lead wedges and chisels. But it's often a hopeless undertaking to instruct an old dog in new tricks. So, if you are one of the "old dogs," you'll probably stick to your wedges, sandpaper, and rags. Well, anyhow, where a line is called for in the following tests of the instruments, *make it hard and fine and tight to the ruling edge*. That is the one *mandatory* instruction.

Tack down on your board, as smoothly and as tightly as you can, a clean piece of "detail paper" upon which to make the tests shown in the following illustrations. But, before proceeding with these important tests, let me make it obvious what it is that you are about to test. When you draw, or "push," a pencil along your T-square edge or along the edge of a triangle, the resultant line drawn on the paper is a gauge of two things: it is a gauge of the condition of the edge of the instrument coupled with a gauge of your ability to maintain the pencil at a uniform angle while the line is being drawn. The edge may be straight, yet the line wavy—or vice versa. In other words, you are about to test the line of contact of the pencil, which same is its line of travel against the ruling edge of the instrument. If that line of contact is *parallel with the plane of the paper*, then the test is of the *instrument*. Otherwise it is of your *ability to handle a pencil*.

Now for the *straightedge tests* indicated in Figure 8. Place any triangle flat on the board in any position, and call this position *1*, as at "E" in the figure. Draw the line *ab* along any edge, stopping short of the extreme points of course. Turn the triangle end for end, *without turning it over*, and bring to position *2*. If the ruling edge again coincides throughout with the line, and if it can be moved parallel with the direction of the line without in the least manner disturbing this coincidence, then that particular edge may be assumed as "straight." The assumption is practically correct, for, in instruments as thin as the celluloid triangles, the edges may be accepted as plane and as cut perpendicular to the face. The remaining edges may be tested in the same manner or, after one long edge has proven straight, the line drawn along this edge may be used to test any shorter edge. And, if the triangles exceed a sixteenth of an inch in thickness, they should be *turned over* and put through the same tests again. Very few *wooden* triangles will meet this test, which is the precise reason why such material is unfit for precise instruments.

The board upon which the "working edge" of the T-square is to be tested should be about the same width as the T-square blade is long. Place the blade across the board in the normal position indicated as *1* in diagram "A" of Figure 8. Then, as in the case of the triangles, draw the line *ab* along its edge, turn end for end, *without turning it over*, and again bring into contact with the line in position *2*. If, then, the contact appears perfect for the full length of the blade there remains but one chance in several million of the working edge not being straight. This one chance is shown at diagram "B," and is so far removed from probability as to be practically negligible. Nevertheless, by shifting the blade so that the same portion comes in contact with different portions of the line, any deviation from straightness because of any two identically apposed irregularities will at once be made evident, as diagram "B" whimsically illustrates. Now, after passing the total and partial "coincidence test," turn the T-square back to working position and place the shortest *straight* leg of a small triangle against its working edge. Slide the triangle along, endeavoring at the same time to "rock" it on the edge of the blade. If no such motion can be produced, this should remove all doubt as to the "straightness" of this particular working edge when the blade is used *right side up*. It is evident, however, that there are times when necessity or convenience demands that the T-square be used *upside down* as, for instance, when it is used as a long straightedge in any direction or as a long base for the triangles when a series of oblique parallels must be drawn. In these cases, because of the thickness of the head, unless the head overhangs some edge of the board, the T-square must be *turned over* in order that its one permissible working edge may come in full-length contact with the paper. Never should the edge opposite the working edge be used at all, for it is an almost impossible thing to find a T-square of which *both* edges are straight *and* parallel. Confine your usage and tests to this one *working edge*, which, always, is the uppermost edge when the T-square is in normal working position. When turned over, and the ends reversed, this edge will then again come uppermost. Now, unlike the triangles, the T-square blade possesses a *thickness* to be reckoned with. In other words, in the upside-down position, neither the triangles nor the pencils bear along the same surface or line as when the blade is used normally. Hence, the one working edge of this instrument should also be tested with the blade *upside down;* the manner of conducting this test being identical with the procedure already made known. The upside-down test is, however, shown at "C" in contradistinction to the other shown at "A," Figure 8. It is to be noted that all of the foregoing straightedge tests are performed upon the instruments in actual working position and in actual conjunction with the lines drawn therealong. For this reason, the tests as given are more reliable than tests made by applying a steel straightedge to the

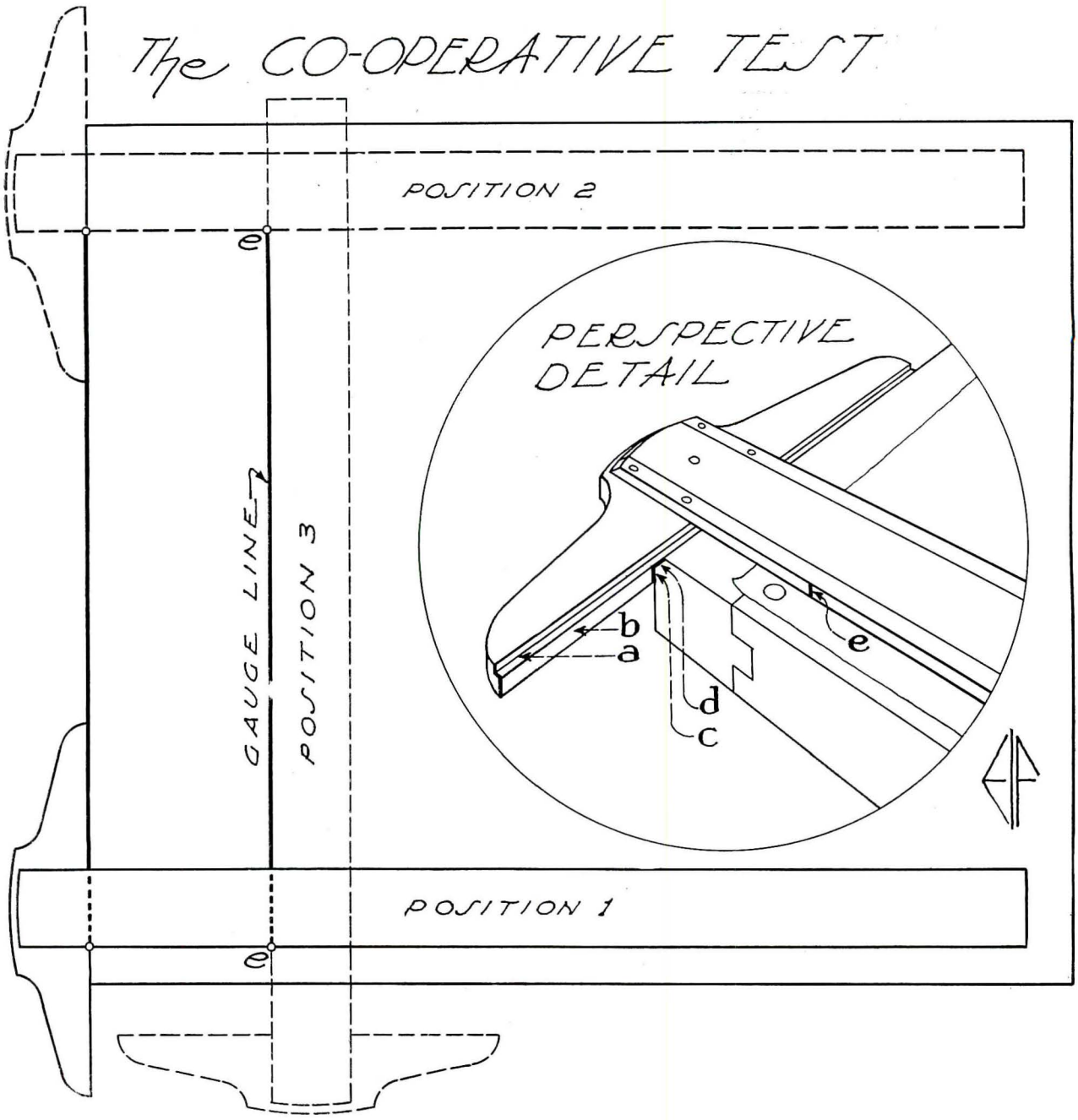


FIGURE 9

edges. It is, as a matter of fact, quite within the range of possibility that a blade that meets the steel straightedge test *will not draw straight lines*. And, in the final analysis, who says the steel straightedge is straight?

The final diagram of Figure 8, shown at "D" thereon, indicates a preliminary test for the head edge of the T-square blade. It is performed in the same way as the other straightedge tests shown in this figure. In the case of the T-square head, however, it possesses *not a ruling edge* but only a *contacting edge*. It should, therefore, be further tested in conjunction with the board as will presently be shown; for here the *important* thing is the line, or plane, of contact between them.

The straightness of the working edge of the board can *not* be tested in the manner heretofore exemplified for the triangles and T-square, for the working edge of the board is *not a ruling edge* and can not be brought into contact with the paper for testing in any such manner; for it is the *surface of sliding contact between the board and T-square head* that must be tested, *not* the upper arris of the board's edge. A reference to the perspective detail shown in Figure 9 will make this important contention obvious. As this detail indicates, the *surface of sliding contact,*

common to the two edges, is *below* the upper surface of the board . . . . as most assuredly it *should* be to remove any likelihood of the T-square being guided by a nicked or battered arris. In a properly-constructed T-square, a channel, *a*, is cut in the head edge to deliberately *avoid* contact with the board at the upper surface. And the draftsman himself, if he knows the significance of this notch, will also, as a further precaution, bevel the upper arris of the board's edge at *d*. As the figure clearly shows, it is the contacting surfaces, *b* of the T-square head and *c* of the board's edge, that should receive attention rather than the hypothetical arrises which do not exist or, if they do exist, should be immediately removed by chamfering. You have now seen exactly how the drafting board and the T-square must cooperate to produce parallel lines: the sliding conjunction must be such as to cause the T-square to *move in a straight line*. And it is this "sliding conjunction" that should be tested for straightness rather than the individual material edges. In other words the final test should be made with the *T-square operating on the board*. A simple and effective means of doing this is shown in Figure 9, but, preparatory to this final test, two other conditions should obtain: the T-square should not be rockable anywhere along the edge of the board nor should it, or the triangles thereagainst, exhibit the slightest tendency to generate the *converging parallels* facetiously exaggerated in Figure 10. If the edge of the board is plane, and if the head edge of the T-square has proved satisfactory under the preliminary "straightedge test" given at "D" in Figure 8, the above "rocking" and "concave" tests will yield no deterring results. If, however, the T-square can still be "rocked," then the board must be trued up with sandpaper or a plane until no rocking motion can be detected. Then proceed with the final test diagramed in Figure 9, conducting same as per the following instructions:—

About two inches from the head of the T-square, cut a permanent mark, *e*, vertically across the lower edge of the blade, as shown in the perspective detail of Figure 9. Then place the T-square in the lowest working position on the board, which is indicated as position *1* in the figure. Run the point of the dividers down the knife-cut gauge *e*, into the paper, making but a slight indent—just enough to be seen. Mark its location with a penciled ring. Then slide the T-square to the extreme upper position *2*, and repeat the marking of the gauge-point *e*. With the tested and proven working edge of the T-square in position *3*, draw the gauge-line *ee* between said points. Now, holding the head of the T-square firmly in working position along the left-hand edge of the board, slide same slowly downward from the upper to the lower position, meanwhile taking careful cognizance of the relation of the gauge-point *on the blade* to the gauge-line *on the paper*. If no deviation is noticeable in the T-square journey down the line, the line of travel is *straight* and, therefore, all lines drawn along the working edge of the T-square will be *parallel*. However, if the gauge-point *does* deviate from the line, the wooden edge of the board must be trued up, another gauge-line drawn, and the test continued or repeated until perfect registration of point and line is obtained. The "gauge-test" is conclusive, in the same way that the other working-condition-tests heretofore given are conclusive. This can not, in truth, be said of extraneous tests with a steel straightedge.

The T-square, in spite of its name, is *not* used as a "square." Hence, it is a waste of time to test same for perpendicularity of head and blade. Even if they were found at right angles to one another, they would not always remain so, for, in order to maintain a condition of absolute stiffness between head and blade to resist the cantilever action when in use, it becomes necessary, at times, to tighten the screws that hold the parts together. This would tend to throw the parts out of square if, indeed, they were square in the beginning. The function of the T-square, aside from the obvious one of affording a base for the sliding triangles, is that of a parallel-ruler. Yet some draftsmen, and many students, still assume that the T-square is a *square*. Otherwise, aside from "sloppy" draftsmanship, there is no way of accounting for the fact that they persist in drawing long verticals with the pencil held against the edge of the blade, meanwhile sliding the T-square upward or downward as the case may be. In any event, this practice is reprehensible. If the lines so drawn are perpendicular to the T-square (as they are probably imagined to be), it is purely accidental. They will always parallel the edge of the board, but seldom, indeed, will they be at right angles to the edge of the T-square. For greater emphasis, I have shown this condition highly magnified in Figure 11. If the T-square were *square*, that is, if the angle *c* were ninety degrees, then the triangle, pushed upward on the T-square from posi-

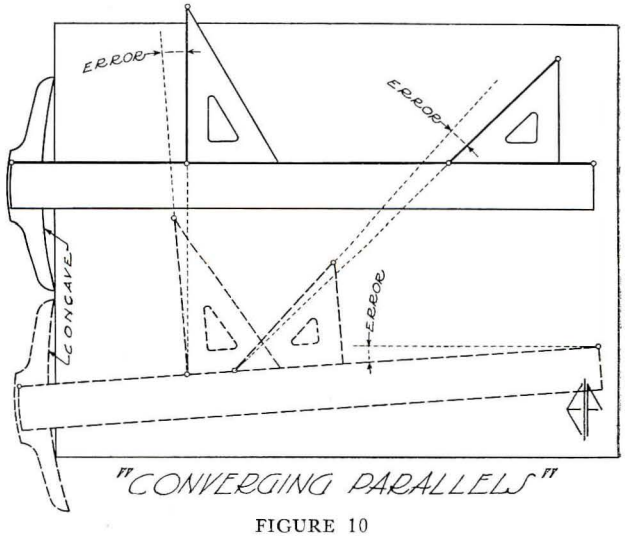


FIGURE 10

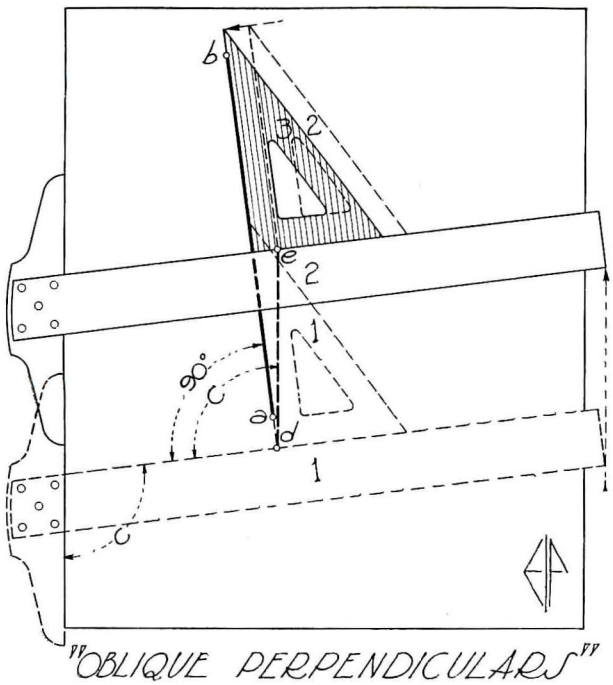


FIGURE 11

tion *1* to position *2*, would not have to be shifted from position *2* to position *3* in order to complete the perpendicular *ab* already started from position *1*. Again, if the T-square were square, the line *de* drawn with a pencil held against the rising edge, would coincide exactly with the line *ab* drawn along the edge of the triangle. In the drafting-room it is a common experience to find that a drawing made with one T-square must, if traced with another, be slightly shifted on the board so that the horizontal lines of same will line with the blade of the changed T-square. This is more evidence that the T-square is not a square. If any two *were* found that *would* draw lines coincident with one another, or parallel with one another, *on the same board*, this fortunate discovery would indicate merely the fact that the two blades were attached to their respective heads at the *same* angle, but not, necessarily, at *right* angles.

Again, it is neither usual, nor essential, that the ordinary-size drafting board be square, for the T-square is not, or *should* not be, ordinarily used on any but the left-hand edge. However, in the exceptional cases of specially-built boards for large-scale drawings, perspective work and full-size detailing, it is a great convenience and a time-saver to have the longer lower edge square with, or at right angles to, the left-hand edge. The T-square can then be used on both edges, and lines so drawn will then be perpendicular to one another *regardless of whether the T-square is square or not.* Figure 12 shows this, again in a somewhat uncommon degree. Let the angle at *a* be a right angle. And let the angle at *b*, between the blade and head of the T-square be *any* angle. Then the lines drawn along the same edge, in the two coordinate positions shown, will cross at *h*, forming *e*, a *right angle.* It is easy to prove. The quadrilateral figure *fghj*, like any plane quadrilateral, contains the sum of four right angles. Hence, since *b* plus *c* is *two* right angles, and *a* is a third, we simply subtract the given three from the required four and get *e*, *another right angle*, which also makes *d* a right angle.

In a "two-edge" board such as the one cited above, the right angle between the two working edges can be tested by drawing a series of T-square parallels in either rectangular direction, of which *kl* or *mn*, shown in Figure 12, might be one line of either series: and then by checking either series against the perpendicular edge of a large triangle, as clearly diagramed in the drawing. The ninety-degree angle of the *triangle*, however, must first meet the ninety-degree test hereafter to be shown. Also, the lower working edge of a board such as this should be tested in conjunction with the T-square operating thereon, and in the same way as has been shown in Figure 9 for testing the left-hand working edge. In this case, though, especially on a six-foot detail board, this edge will be too long to allow of drawing the gauge-line *ee* in one placement of the T-square. There exists, then, the necessity for locating one or more intermediate points *in the same straight line* without resorting to an inordinate six-foot "straight-edge," so-called. This can be done in a practical and precise manner by stretching a strong silk thread between the extreme gauge-points and, with the divider-point, carefully marking a few defining points coincident therewith, or possibly only the approximate center-point, through which, in successive stages, the straight gauge-line, *ee*, can then be accurately drawn on the paper—first removing the thread line. This "silk-thread-method"

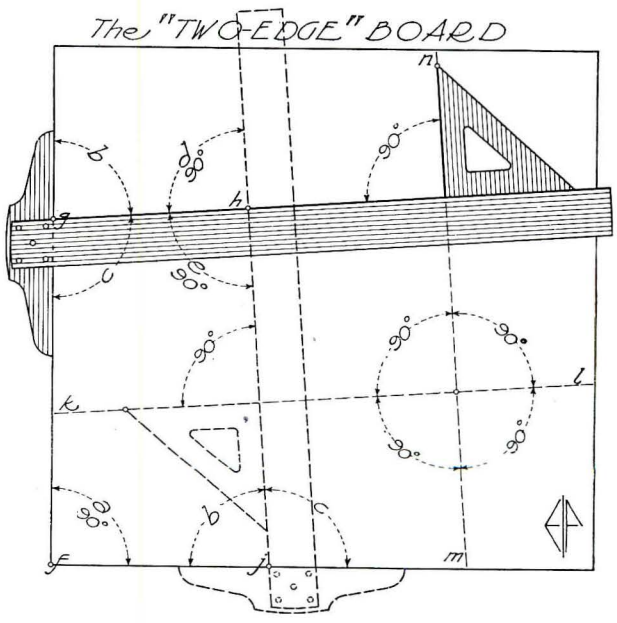


FIGURE 12

of locating intermediate required points on any long line defined only by its far-apart extremities, or of locating the point of crossing, or intersection, of any two such lines, or of fixing the points where such lines cross a circle or other given curve, *is worth remembering*. In the above cases, as well as in many other similar cases commonly met with in which the usual instruments are inadequate, it may prove not only expeditious, but possibly the *only feasible method* of achieving the required results. But it is apt to be more than a one-man task, depending upon the given conditions and upon the governing value of precision.

Now that your T-square *runs true* and your ruling-edges are *straight*, line up your triangles as in Figure 13 at "A," "B," and "C," for the 90-degree try-out. Place the triangle to be tested in position *1* against the T-square. Close to each end of the vertical edge—just far enough away to allow for the blunted corners—pierce the paper slightly with the point of the dividers held tight against the edge; thus marking the points *a* and *b*. *But draw no line between them.* Merely circle each with a freehand pencil mark—for identification. Then *turn the triangle over* and bring to position *2*, with the *same* edge exactly in line with *one* of the points. Then, if the *other* point is in line, the 90-degree angle is correct. If it's not, then round off *all three* angles to an inch radius and present the de-pointed instrument to the baby. It may then prove of some use in cutting teeth—but it has certainly been proven useless for drawing perpendiculars. Its "geometry" is all wrong. And so will yours be if you continue to use it. The best triangles made are not expensive—*if you test them before buying.*

Next: the 45-degree test. Slide any other triangle, designated as *c* in diagram "D" of Figure 13, into contact with the T-square and place its proven 90-degree edge vertical, as shown. Hold *c* firm and slide the 45-degree triangle into contact with it to position *1*. As before, mark the two points, *a* and *b*. Now *turn the 45-degree triangle over* to position *2*, in line with either one of the points. Then, if the other point is in line, the 45-degree angle is correct. If it's not—proceed as before. The last-given instruction is of such a general nature that it will not be repeated.

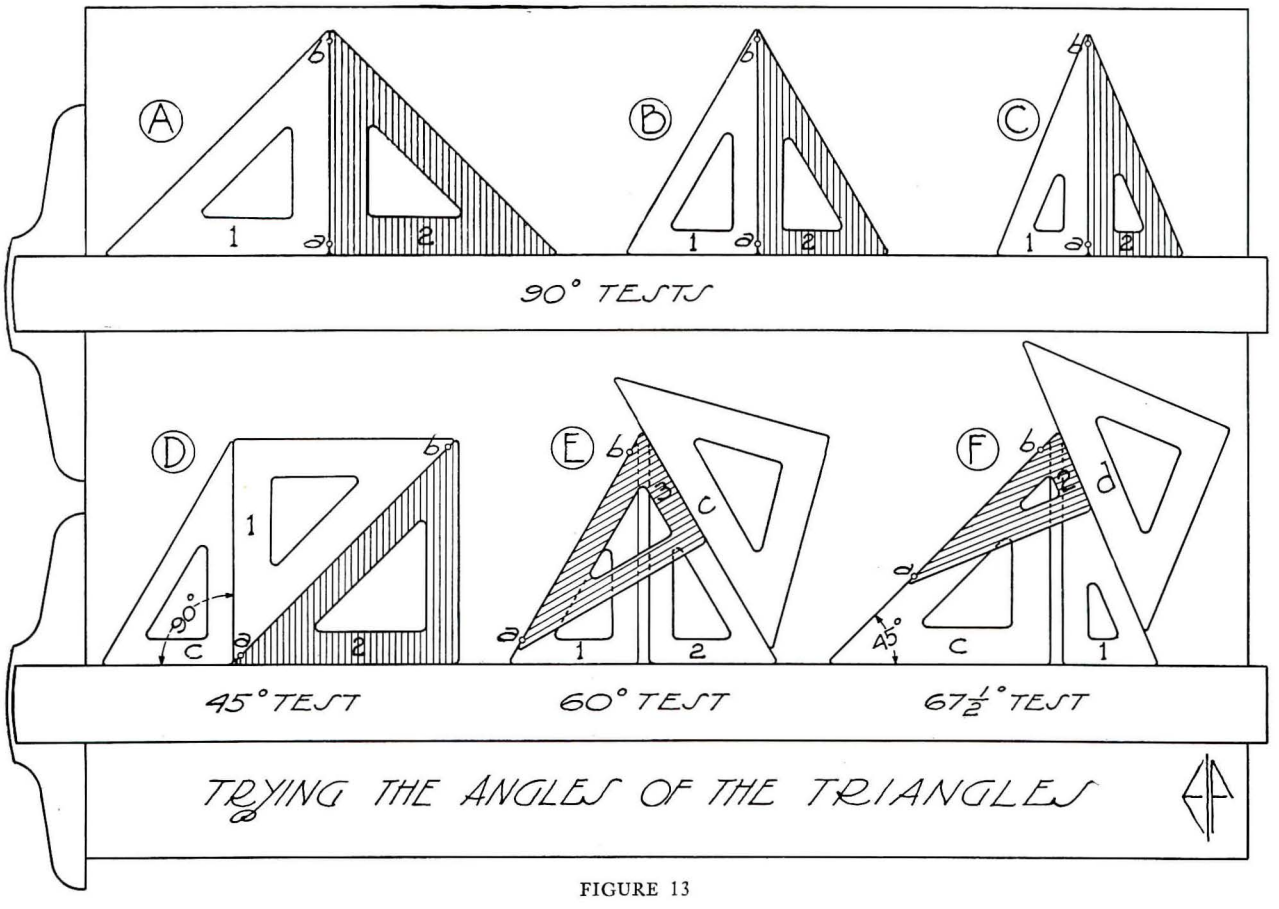


FIGURE 13

Proof of the 30-60-degree triangle is made as shown at "E" in the same drawing. Place it in position *1* and mark the two points, *a* and *b*. Place it in position *2* and, holding it firm, slide another triangle, *c*, into contact as indicated. Now hold *c* firm, and shift the other to position *3*, sliding same along *c* into exact alignment with one of the points, *a* or *b*. Then, if the *other* point is in line, the 60-degree angle is correct. Moreover, if the 90-degree angle of the

same triangle is also correct, then the 30-degree angle just naturally *has to be.*

And now for the test of the 22½-degree triangle: Place a proven 45-degree triangle, *c,* in the position shown at diagram "F," Figure 13. Mark the two points *a* and *b* a distance apart somewhat less than the length of the hypotenuse of the 22½-degree triangle. Then place the latter in position *1.* Hold same firm and shift *c* to position *d,* in undisturbed contact. Now hold *d* firm and shift the other from position *1* to position *2,* sliding same precisely into line with, say, the one point *b.* Then, if the other point, *a,* is in line, the 67½-degree angle is correct. And, if the 90-degree angle of the same triangle is also correct, then the remaining angle of 22½ degrees is *bound* to be.

Finally, as a consummate test for straightness of edges and trueness of angles, as well as proof of precise manipulation, perform the ceremonies indicated in Figure 14. First, as at "A," place the T-square in working position on the board and then, at the extreme *right-hand* end, draw the short line *ab* therealong so that no "paper" shows between the line and edge of blade. Then, holding the T-square firm, place any one of your triangles, *c,* against it in the extreme *left-hand* position designated as *1* in the diagram. Hold *c* firm, remove the T-square from interference, and move another triangle, *d,* into position *1* against *c.* Now slide *c* on *d* to position *2.* Next, slide *d* on *c* to position *2.* Is your T-square a "straightedge"? Are your triangles "straight shooters"? And has your manipulation been perfect? If so, the triangle *d* should now be in perfect contact with the line *ab* previously drawn with the T-square. This is a severe test. But you'll never be a *draftsman* until you and your instruments can stand it. Now try this one: pile up the three differing triangles in the *1-2-3* ensemble depicted at "B" in the same figure. Along the hypotenuse of *3,* which is a 22½-degree triangle, draw the line *ab.* Wreck 'em—and reconstruct two of them so that one of them again coincides exactly with the 7½-degree line *ab.* Can it be done—and still keep the contiguous ones in full contact, and the base one snug to the T-square? The figures on the T-square tell. Read 'em and weep!

The scale test at "A," in Figure 15, is not a test for accuracy of graduation, but a test to discover if the scale can be used *directly* to lay off measurements perpendicular to a given line, or to *draw* a measuring line perpendicular to said given line. As has been mentioned in Part 1, this property, if it exists, is a time-saver. If the following simple test is made at the time the scale is purchased, one can usually be found that will prove satisfactory. It is not an absolute requirement, but, rather, a desirable condition: the opposite edges should be *parallel* and the corresponding graduation marks on these edges should be *squarely* opposite. Hence: Place the T-square in working position on the board, as shown in the figure,

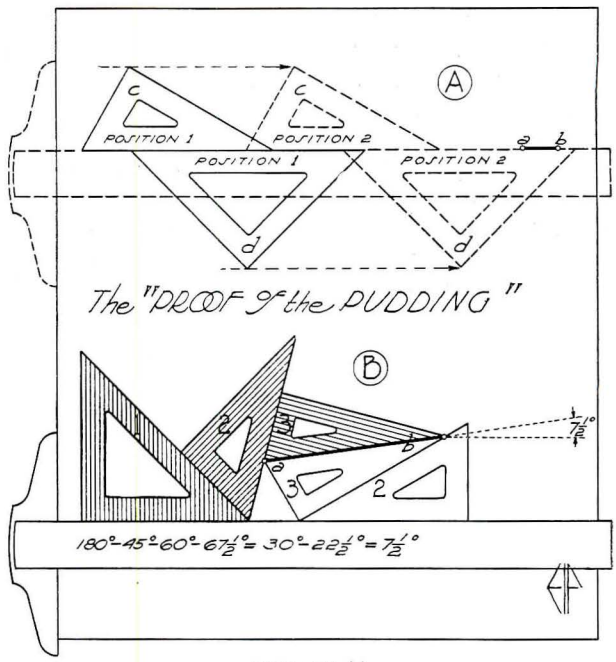


FIGURE 14

and lay the scale lengthwise in full contact with the blade, as in the diagram. Hold the scale firm, lower the T-square out of contact, and, with the divider-point held perpendicular to the paper and tight against the scale, make a slight indent in the paper at the three limiting graduation marks, *a, b,* and *c.* Identify these with a penciled ring. Remove the scale and slide T-square to *b.* If *c* is in line, the edges of the scale are *parallel;* assuming, of course, that they are *straight.* Lower the T-square and slide a triangle to point *a,* as indicated. If *b* is in line, then the end graduation marks on the opposite edges, as well as any other pair equally distant from the ends, are *squarely* opposite; that is to say, the line upon which they might be placed would then be at right angles to the edges of the scale. Hence, passing the above test, the scale can, without sacrificing accuracy, be used for the purpose noted. In no case, however, should the scale be used for drawing lines other than the ones mentioned, for, to use the scale as a ruling edge is to ruin the markings. And, even in the case of measuring lines, they should not be drawn the full length of the line of measurement, but in two short sections—one merely indicative of the point on the given line from which the measurement dates, and the other a very short one at the approximate place where the measurement ends. As a matter of fact, *any* two points marked some distance apart along the edge of the scale will serve to place it again perpendicular to the given line in case the measurement made on one edge has no corresponding mark on the opposite edge. Other valuable and time-saving properties of the scale, which, however, require no testing, will be fully elucidated in subsequent Parts of this work.

In Figure 15, at "B," is shown an original and

rigid test for protractors. Perhaps ten per cent, maybe not that many, of the protractors in use or for sale will pass it. The ordinary toy protractor is a *thoroughly unreliable instrument.* Where a close approach to precision is essential in angular measurement or circular arc division, a protractor measuring not less than eight inches in diameter is necessary and, even then, the utmost care in placing, and the closest scrutiny possible in transferring the angular measurement to the paper, is required. The most satisfactory protractors are transparent, *with the graduations on the side next to the paper. Any* protractor that does not satisfy every stage of the following test, should be rejected as unreliable. Conduct the test as follows, referring to diagram "B" of Figure 15: With any proven straightedge, draw the fine hard pencil line *ab* in any convenient direction. Then place the protractor in position *1*, so that the zero mark and the 180-degree mark exactly coincide with this line *when viewed perpendicular to the paper.* Then, IF the center point *c* also coincides with the line, proceed with the test. Hold the instrument firm, with the points *e*, *c*, and *d* on the line, and draw a penciled semicircle from *e* around to *d*, using the protractor edge as a guide. Then, with the point of the dividers held perpendicular to the paper and tight against the edge, make a slight indent in the paper at the points *e*, *c*, and *d*. Remove the protractor and draw a small freehand penciled ring around each point already marked, which identification should also be given to all other points hereafter to be marked. Now, with the *pen* compass, but with a *dry pen*, test the semicircle in the following manner: open the nibs of the pen to the full extent, and with center at *c*, adjust both the point of the compass and the inside leg of the pen to the radius *cd* so that they are perpendicular to the paper. Then, maintaining the legs in this vertical position, revolve the compass slowly about the center *c*, meanwhile carefully noting the relation of the revolving nib to the penciled semicircle already drawn. IF no deviation occurs in the entire journey from *e* to *d*, the protractor is properly centered and is truly circular. Next, replace the protractor in its exact original position *1*, centered at *c*. Mark off on the paper, with one point of the dividers, any equal consecutive divisions, *10-20-30*, etc., along the quarter circle *eg*. Next move the protractor to position *2*, parallel with the line *ab*, a distance equal to its radius, no more and no less, thus causing the center mark to coincide with the original end mark *e*, as unmistakably indicated in the drawing. Now, in the same manner as before mark off equal consecutive divisions of *double* the former magnitude and extent, along the semicircle *fhc*, resulting in the markings *20-40-60*, etc., as shown. Remove the protractor and, with a straightedge, test *c-10-20*, *c-20-40*, *c-30-60*, etc., for *absolute alignment.* IF the center *c* and any other two points radiating therefrom are NOT in line, then either the *protractor is worthless*, or your *technique has been careless.* And *that* instigates an inquiry which is quite beyond the scope of "geometry"!

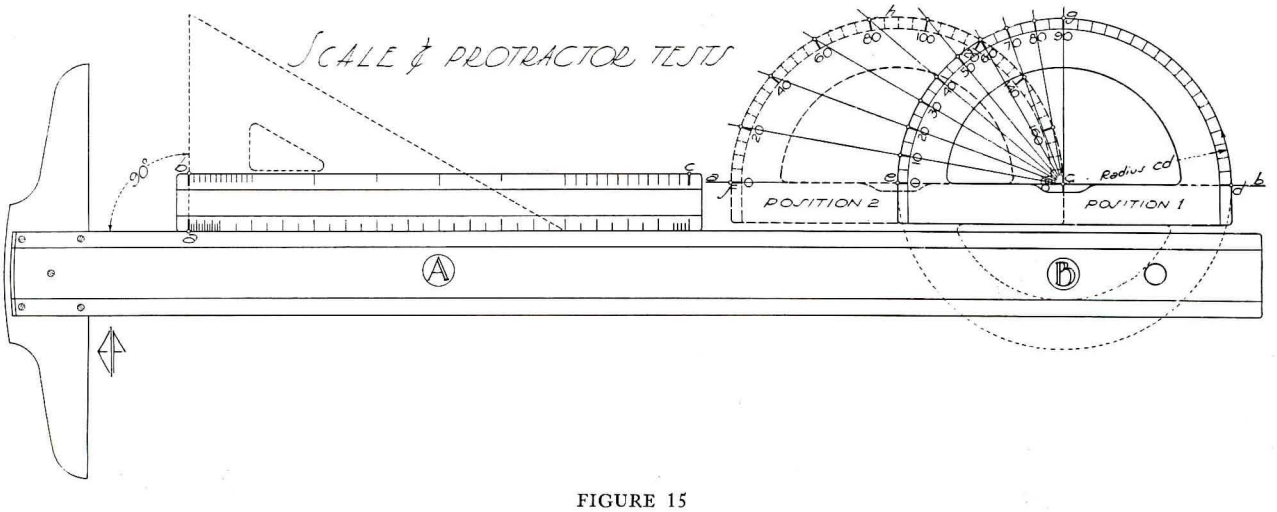
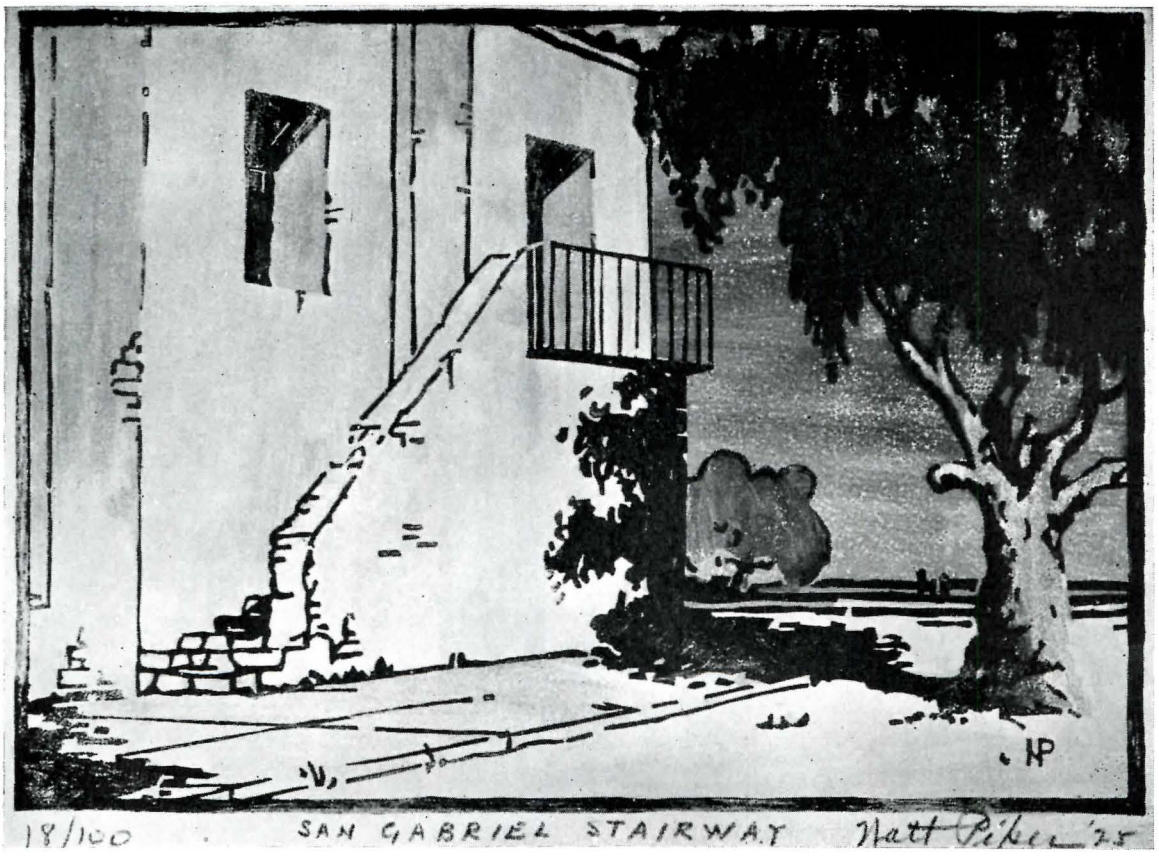


FIGURE 15

PLAZA ARCADE, MISSION SAN JUAN CAPISTRANO

FROM A PHOTOGRAPH BY NATT PIPER—SEE TEXT OPPOSITE



SAN GABRIEL STAIRWAY—FROM A COLOR BLOCK PRINT BY NATT PIPER

THE CALIFORNIA MISSIONS

THEIR EARLY HISTORY AND THEIR ARCHITECTURE—PART I

By Natt Piper

EDITOR'S NOTE:—*The author of this article on the California Missions is President of the Long Beach, California, Architectural Club and is also Secretary-Treasurer of the Southern Branch of the State Association of California Architects and Treasurer of the Painters' and Sculptors' Club of Los Angeles. The article will be presented in three parts, beginning with this issue, and we are sure that our readers will find it not only entertaining but architecturally informative.*

IN ANALYZING THE architectural development of the old Missions of California it is necessary to describe the closely allied historical background that was created along the Pacific Coast between the years 1542 and 1835. This historical setting is such a fascinating story that I know even the busiest of architecture's disciples will pause to read this brief sketch and, in the reading, gain a new insight into California history; a history of missionary zeal that is unparalleled; a history replete with the thrills of conquest, for it was a conquest, even if not of a decided military character.

In itself the name "California" smacks of romance, and it is as alluringly romantic today as it was several centuries ago, when, in a fanciful popular novel of the period, it appeared as the name of a fabled island populated with cultured and wealthy persons who lived thereon in a Utopian environment. The long peninsula extending southerly nearly fifteen hundred miles from the mouth of the Colorado river was first thought to have been an island and it is easily imagined how Cabrillo and his Spanish seamen, in a flight of fancy and with the memory of one of Old Spain's novels clear in their minds, dubbed it "California." The name was given to a vast territory at first because the intense greed of the fortune hunters, the militarism of the soldiery, the fervid zeal of the missionary priests who invariably accompanied the explorers, combined with a rather passive attitude on the part of the native inhabitants, led the Spaniards to

FOUNTAIN AND SOUTH PORCH, MISSION OF SAN FERNANDO REY DE ESPANA—FROM A PHOTOGRAPH BY NATT PIPER

occupy, "For God and the King," all of the territory between the rocky point of the peninsula, Cabo de San Lucas, and the Straits of Juan de Fuca, which is the entrance to the present Puget Sound.

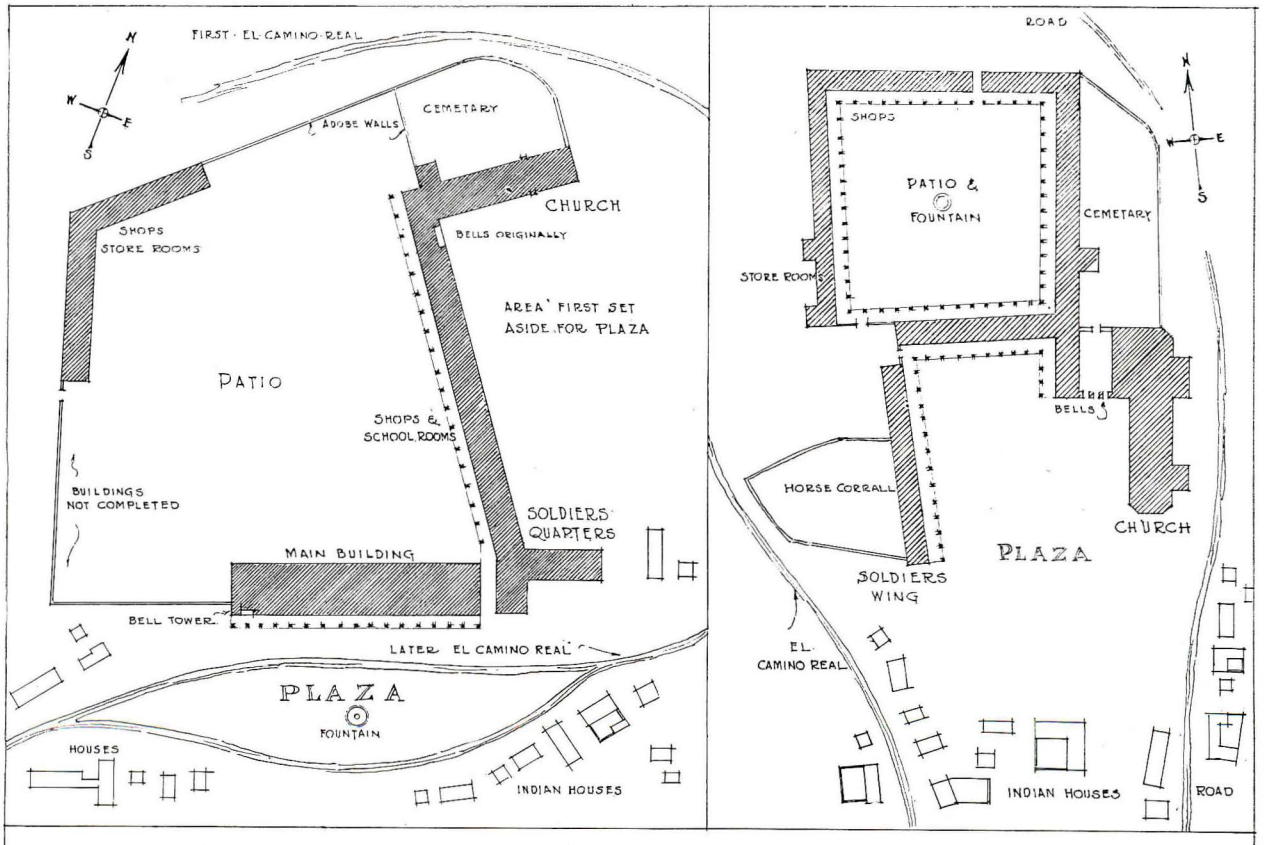
It was just before 1700 when this vast territory was first considered as two parts; the long arm of the peninsula being called *Baja* (Lower) *California*, and that portion north of the delta of the Colorado, *Alta* (Upper) *California*.

Baja California, being nearest Mexico City, the seat of government, was the first to be colonized, but even before this the Jesuit missionaries had established a line of a dozen or more missions thereupon. These institutions were not large, nor were they long to endure under Jesuit control, for the edict of Carlos, removing the Jesuits from their previous high ecclesiastical office in Spain, at the same time removed them from Mexico and her colonies.

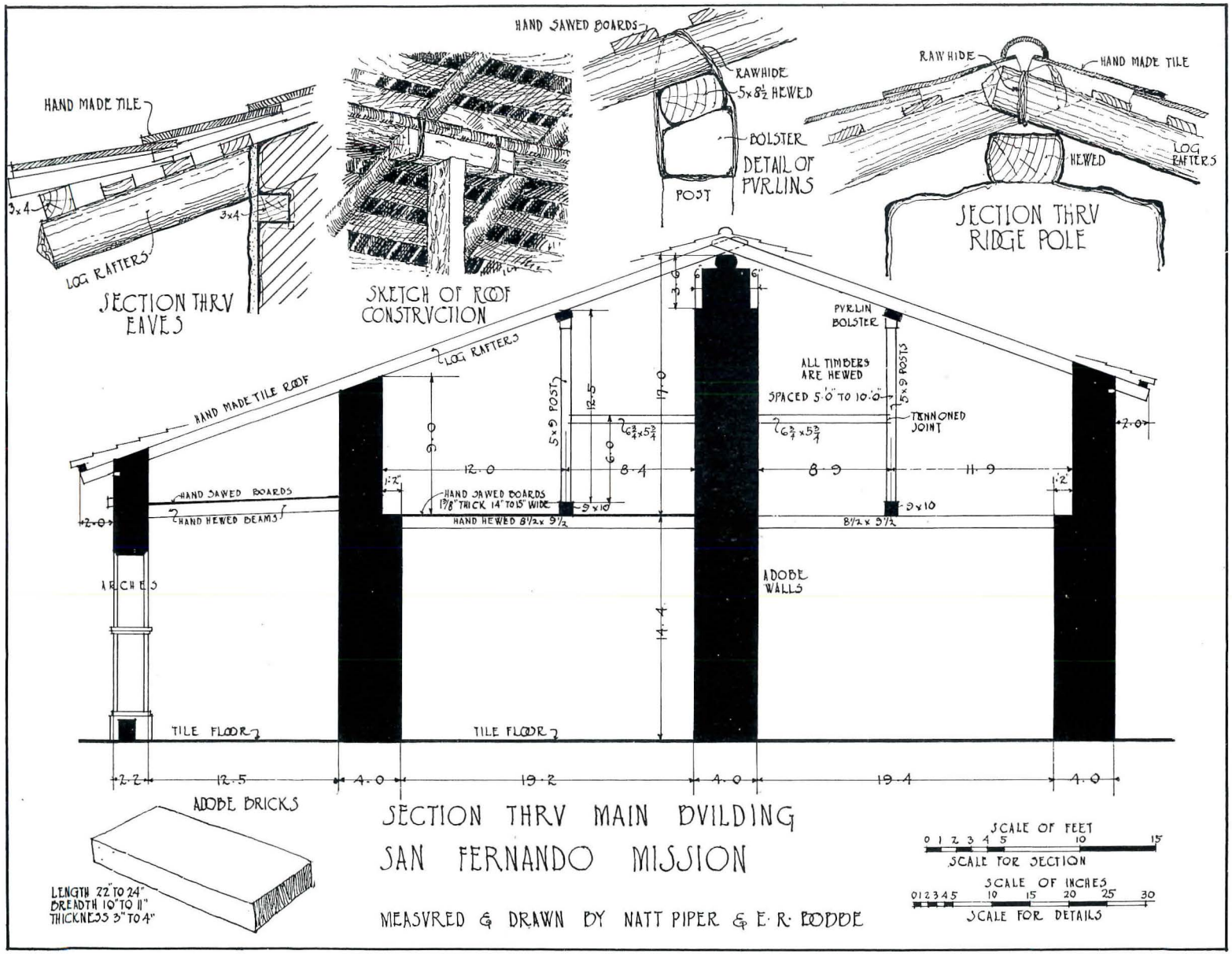
It was then that the operation of these peninsular Missions and their further progress was entrusted to the Franciscan order.

Fray (Brother) Junipero Serra, a zealous, devoted son of St. Francis—that Saint who, legend affirms, forswore riches and ease to promote Christianity—was selected by the Franciscan College of San Fernando in Mexico City to take charge. At the same time about twenty priests were delegated to serve under him. Serra was a man of great courage, with farsighted vision and with the executive ability to thoroughly complete any enterprise. He spent but little time in further development of the existing Lower California Missions, seemingly just enough to put the struggling outposts on a successful basis, because from the first he had in mind the conversion of the Indians in the more thickly populated regions of Alta California. In this resolve, he was actuated by reports of earlier explorers who told of a vast fruitful territory near and to the north of Monterey Bay.

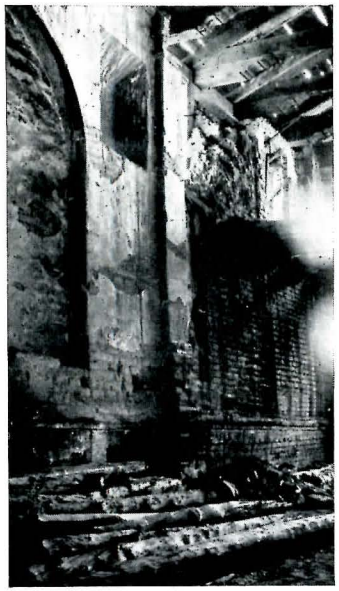
Another important person who had just been appointed governor of the Spanish Colonies was Don Jose Galvez. He was thoroughly in sympathy with Serra's ambition. He was an able organizer, and more religiously inclined than the governors who had preceded him. He is described as a large, generous man, full of optimism, and I suspect that he was the original California booster. His orders from Carlos were, after removing the Jesuits, to occupy Alta California, fortify San Diego and Monterey, estab-

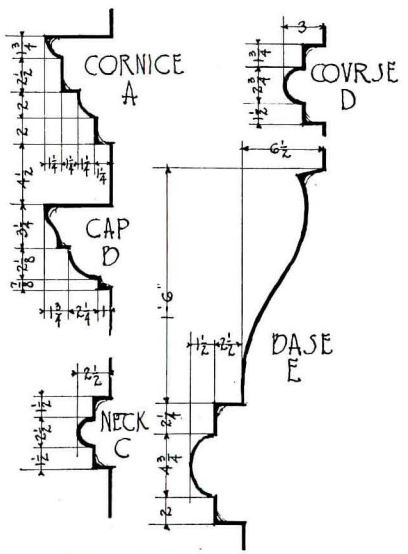


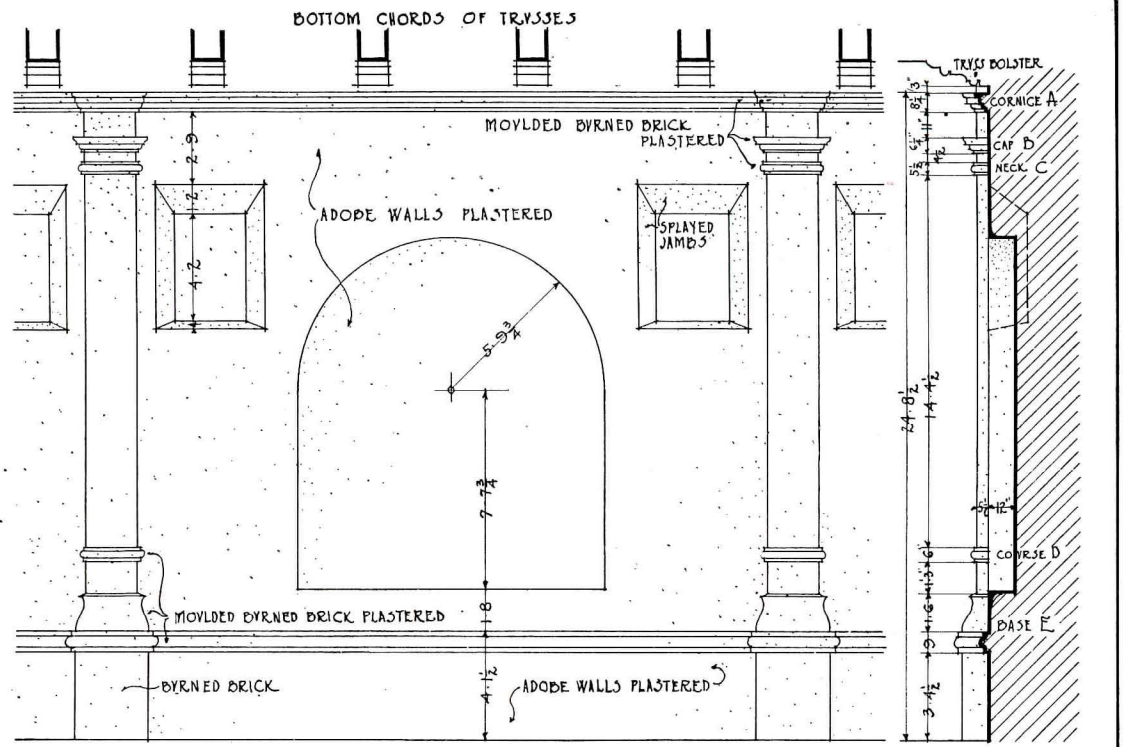
PLANS OF TWO OF THE MOST FAMOUS OF THE CALIFORNIA MISSIONS



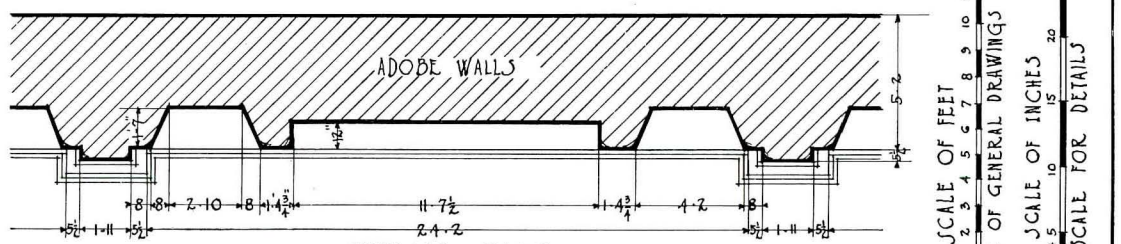
SECTION AND DETAILS OF MAIN BUILDING, SAN FERNANDO MISSION—DRAWN BY NATT PIPER AND E. R. BOBBE







TYPICAL ELEVATION



TYPICAL PLAN

SCALE OF FEET

SCALE OF GENERAL DRAWINGS

SCALE OF INCHES

SCALE FOR DETAILS

CHAPEL BAYS ~ SAN FERNANDO MISSION

MEASVRED & DRAWN BY NATT PIPER & E R BOBBE

CHAPEL BAYS, SAN FERNANDO MISSION—MEASURED AND DRAWN BY NATT PIPER AND E. R. BOBBE

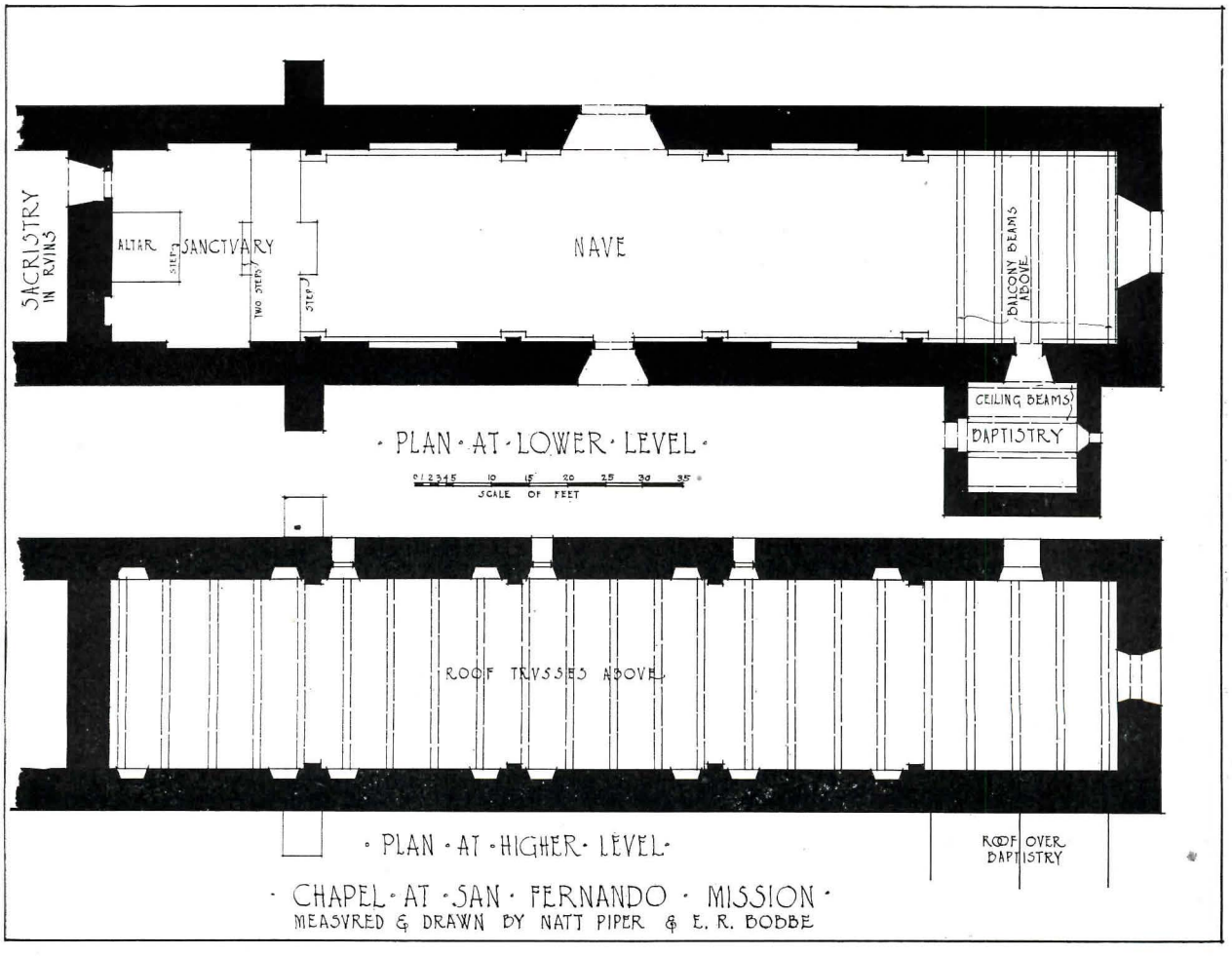
SOUTH FAÇADE, MISSION OF SAN FERNANDO REY DE ESPANA—FROM A PHOTOGRAPH BY NATT PIPER

lish garrisons, and to build wharves, particularly at Monterey, giving the Spanish argosies engaged in the Philippine trade a safe port of call on the upper Pacific coast, and to assist the Franciscans in establishing missions.

These two energetic men, one directed by religious motives and the other actuated by the spirit of adventurous conquest, lost no time in speeding preparations to fulfill their ambitions. Serra made several trips up and down the peninsula collecting supplies, vestments, and portable church furniture from the existing missions, while Galvez made numerous trips from the mainland to La Paz assembling additional stores and military equipment. He brought whole families as well to serve as colonists, together with their farming impedimenta and even livestock. This was during the summer and fall of 1768 and everything was collected in the town of La Paz, Baja California.

La Paz as I saw it in 1925 was a typical sleepy Mexican city of about 7,500 inhabitants. Although many of the same old picturesque stone buildings still stand, the place is no longer directed by the spirit of romance and intense excitement as it must have been in those adventurous days nearly two centuries ago.

It was decided to divide this first expedition into four parts, two to go by sea in the ships *San Carlos* and *San Antonio*, while two land parties under the command of Portola and Rivera y Moncada, respectively, marched to the chosen meeting place, *La Bahia de San Diego*—San Diego Harbor. At different times early in the year 1769 the four parties started, but the ship *San Antonio*, although last in starting, was the first to arrive. Three weeks later, the *San Carlos* dropped anchor with its entire crew ill of a contagious disease and unable even to launch a small boat. The two land forces arrived about the first of June, spent, weary, and ragged, and in their weakened condition fell easy victims to the epidemic that had spread throughout the whole camp. By the first of July nearly one hundred had fallen victims to the scourge, which was probably smallpox. The survivors, believing that upper ground was more healthful and easier to fortify, moved and set up a more permanent camp on a knoll just below what is now known as "Old Town," San Diego. On July 16, 1769, Fray Junipero Serra said mass and formally established the first mission in Alta California, *San Diego de Alcala*. In spite of the discouragement of these first weeks it



PLANS, CHAPEL AT SAN FERNANDO MISSION—DRAWN BY NATT PIPER AND E. R. BOBBE

was decided to carry out the rest of the King's orders. Captain Portola was placed in charge of a carefully selected group of men including Moncada, Father Crespi, and Ortega, who started north in search of the Bay of Monterey. They were totally unfamiliar with the country and marching sometimes far inland, lacking maps and similar data, it was no wonder that they failed to recognize the actual Monterey. Going farther north, however, they discovered the wonderful bay now known as San Francisco. When they returned, footsore and weary, they found that conditions in San Diego had gone from bad to worse. The ship *San Antonio,* in their desperate need, had been sent back with orders to bring more soldiers and supplies and meet the survivors who had resolved to march to Monterey. After the *San Antonio* had left, the Indians became intractable and troublesome. The remaining ship, anchored nearly three miles from the camp, was too far away to be adequately guarded and the natives had looted it completely. Continued sickness had resulted in more fatalities and many members were still ill.

Portola, alarmed at these circumstances, issued a drastic order to pack up and return to La Paz in spite of the earnest protestations of Serra and his devoted fellow-worker Crespi. The argument waged back and forth for several days, Portola declaring that the equipment was worn, the horses nearly gone, and that it was not possible to continue at this time, while Father Serra, sensing failure of his cherished enterprise, pleaded with Portola not to give up all they had gained. When hope on the part of the priests had been abandoned and they were almost upon the very eve of departure, the good ship *San Antonio* cast anchor in the late afternoon, bringing plentiful supplies, more soldiers, and fresh hope. This stirring episode, as many of us know, is the dramatic climax in the first act of the famous Mission Play, which is given annually in San Gabriel, California.

History often relates how a minor circumstance alters affairs. In this case, Perez, the commander of the *San Antonio,* had intended to go direct to Monterey Bay, because he supposed that the expeditions had reached there early in 1770, and Monterey had been chosen as a rendezvous. He had lost an anchor at sea, and only through this accident had he made the call at San Diego to get an anchor from the *San Carlos.* This chance call was surely the only thing that made the establishment of the future great Mission chain a certainty. The abundant supplies and fresh men that he brought put enthusiasm into the start that was immediately made by Portola, accompanied by both Serra and Crespi, in further search for Monterey Bay. They finally arrived there and, after hanging bells to the branches of trees, tolled them and held dedicatory services that established the second mission of *San Carlos Borromeo* on June 3, 1770.

Serra resolved to return to the camp in San Diego, as he was worried about the state of affairs there and felt that its location could be improved, so in company with a few soldiers, sailors, and Indians, he made his way back, but not until he had established a third mission, *San Antonio de Padua,* near Salinas, on July 14th, 1771, and left *Padre* Pieras in charge. This was destined to be one of the most prosperous of the chain. It is now one of those held by private owners. At my last visit, although the elevations were still imposing, it was rapidly going to decay. In the entrance vestibule, under large marble slabs, two priests are buried.

The fourth Mission, *San Gabriel Arcangel,* was founded September 8, 1771, and later in the fall of 1772, the fifth, *San Luis Obispo de Tolosa.*

The year 1776 saw two additional missions established, one of them *San Juan Capistrano,* destined to be the model from which several succeeding structures were built. It is today the best known and most picturesque ruin and would have been the most pretentious of the whole chain remaining to us, save for the fact that in 1812 an earthquake split the walls and the domed roofs fell in. Of the many worshippers massed inside for supposed safety during the tremor, forty lost their lives. This tremor did considerable damage to other parts also, later rebuilt, but the church proper was never repaired.

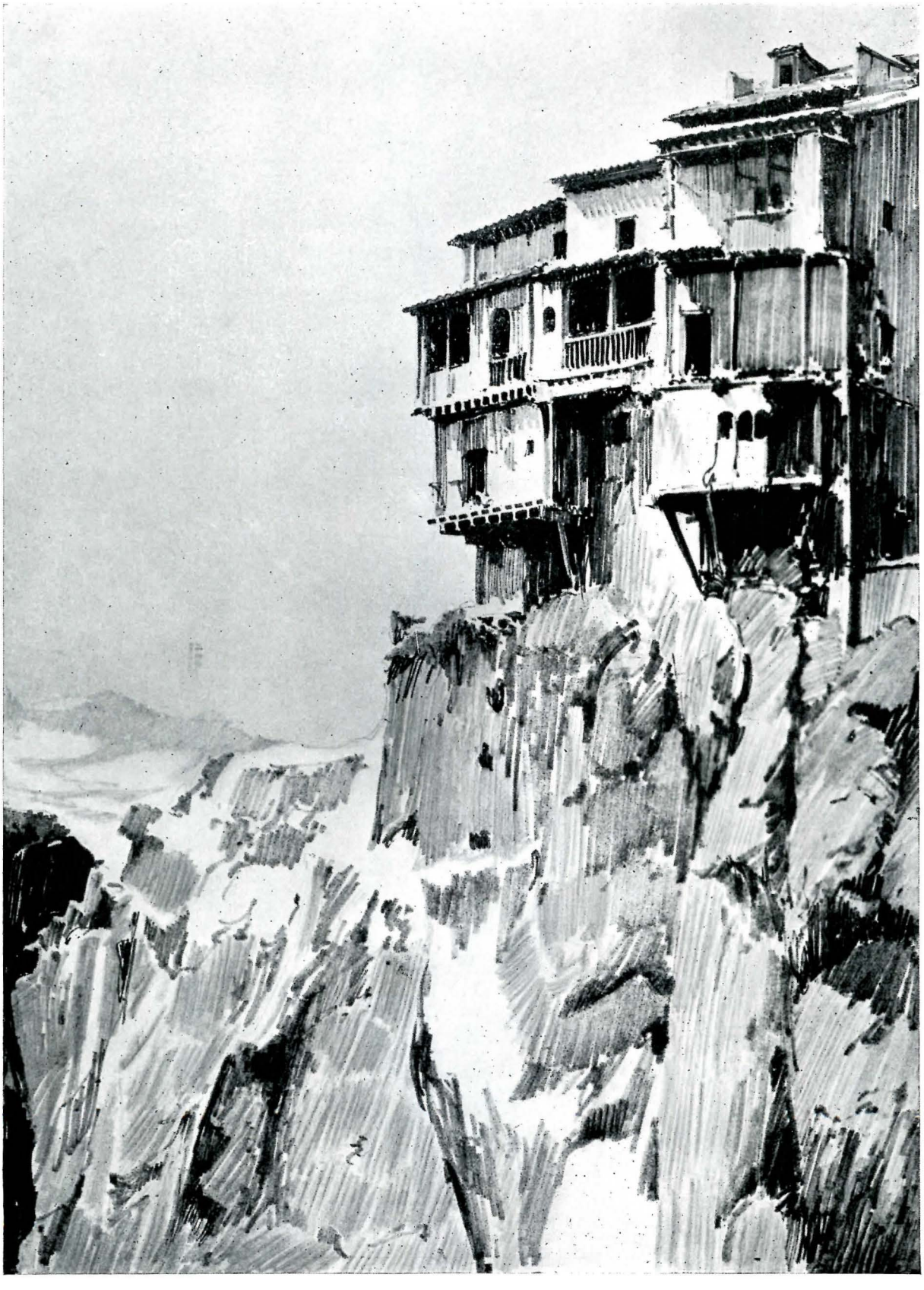
In the years 1777 to 1791 five more establishments were added to the chain, including the large mission of *Santa Barbara* and the smaller *San Buena-ventura.* The last named is today in a fine state of preservation, due to the freer use of stone, which was likewise used in great quantities at *Santa Ynez* and at *Santa Barbara.*

The progress of all these new missions was indeed gratifying; each year showing a gain in converted Indians and in the number of broad acres under cultivation. With the indomitable, tireless *padres* to train them, many Indians were taught trades and assisted in building the larger buildings which were begun as soon as possible.

In 1797, the year in which five missions were established, that of *San José de Guadalupe* led the list. *San Fernando Rey de Espana* was dedicated on September 3, 1797, the last one in that year. All of these were also very prosperous, inventories and lists extant show valuable holdings to the extent of several millions of dollars.

After these glorious years of expansion the establishment of missions dwindled till the last to be established was *San Francisco Solano* in April, 1824.

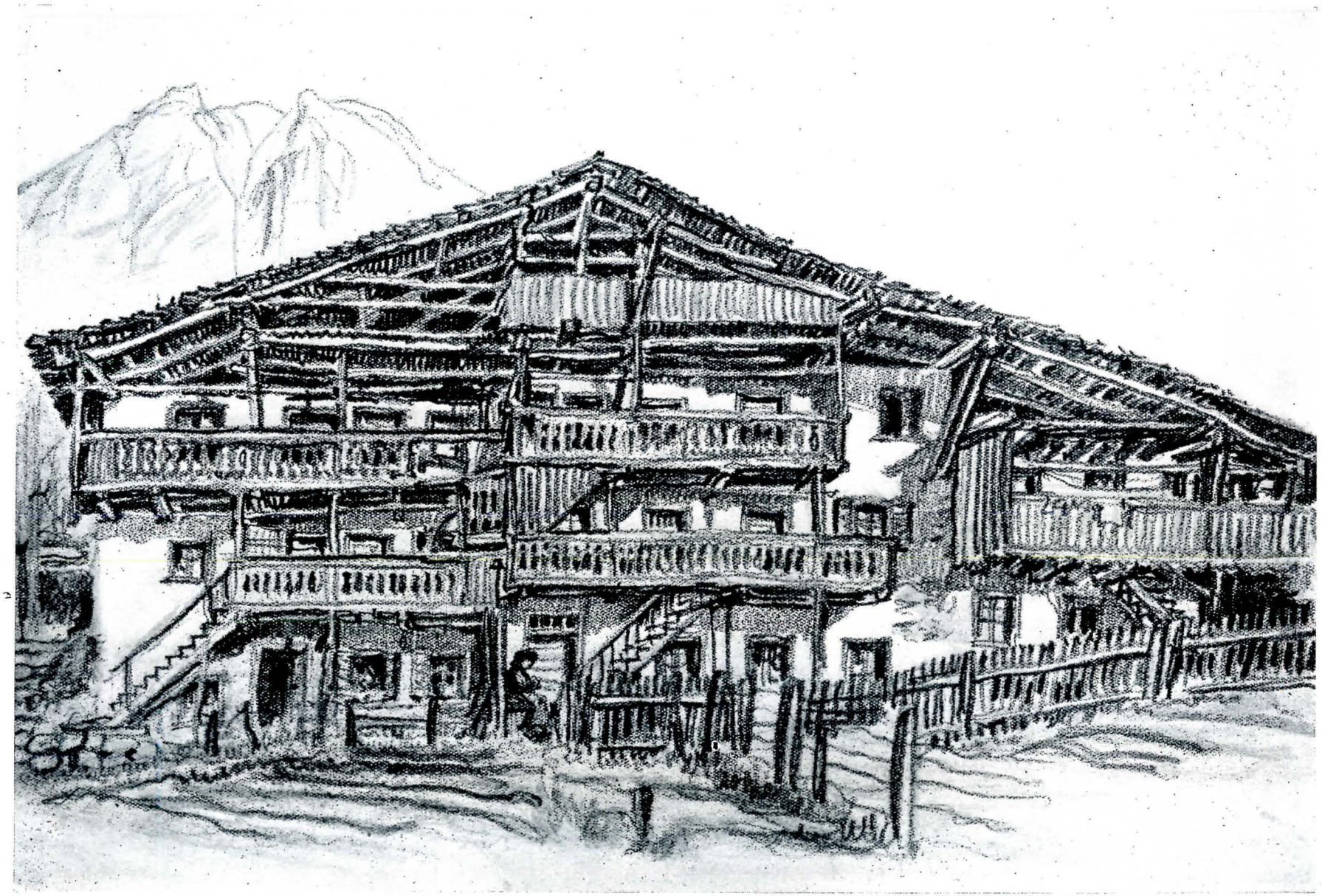
(*To be continued in the October issue of* PENCIL POINTS)



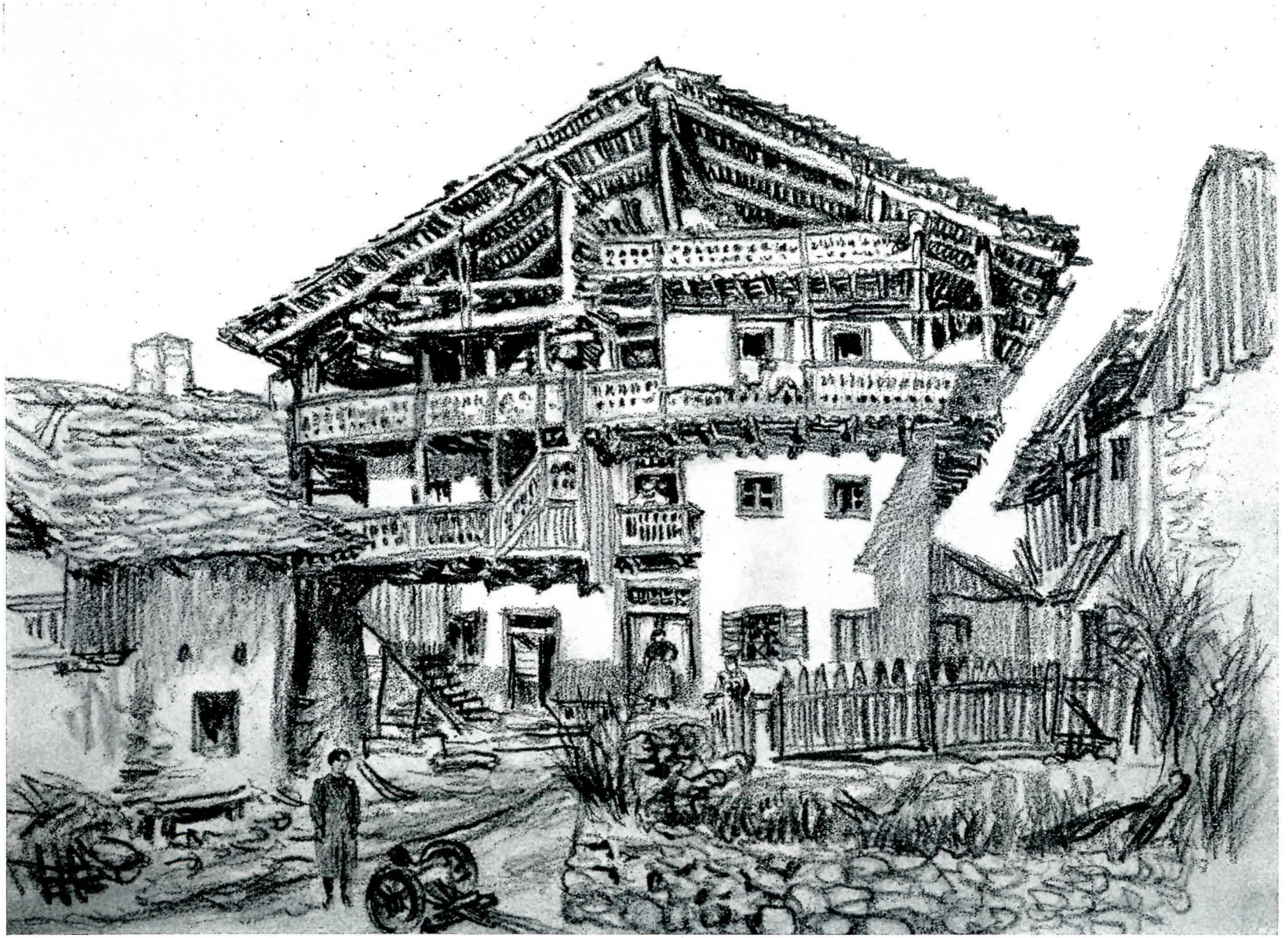
PENCIL SKETCH ON CAMEO PAPER BY A. THORNTON BISHOP—CUENCA, SPAIN

PENCIL SKETCH BY FRANK M. RINES—OLD BUILDINGS AT SOUTH LONDONDERRY, VERMONT

PENCIL SKETCH BY FRANK M. RINES—A VERMONT LANDSCAPE



FROM A PENCIL SKETCH BY RUDY DE GHETTO—A HOUSE IN THE DOLOMITES



FROM A PENCIL SKETCH BY RUDY DE GHETTO—A DOLOMITE HOUSE

PENCIL SKETCH BY A. THORNTON BISHOP—A RUINED ABBEY

PLATE XXXIII

VOLUME X NUMBER 9

This drawing was made in sepia with reed pen and brush, the pen being used for the line work and the brush for washes. The interesting quality of line which is obtained by the use of the reed pen gives an individuality to a drawing that makes us wonder why it is not more commonly used. The original measured 9″ x 11¾″ and was drawn on a warm white water color paper of smooth texture.

FROM A DRAWING IN SEPIA WITH REED PEN AND BRUSH BY WENDELL P. LAWSON
"MORET, FRANCE—PORTAIL DE L'ÉGLISE"

PLATE XXXIV

VOLUME X NUMBER 9

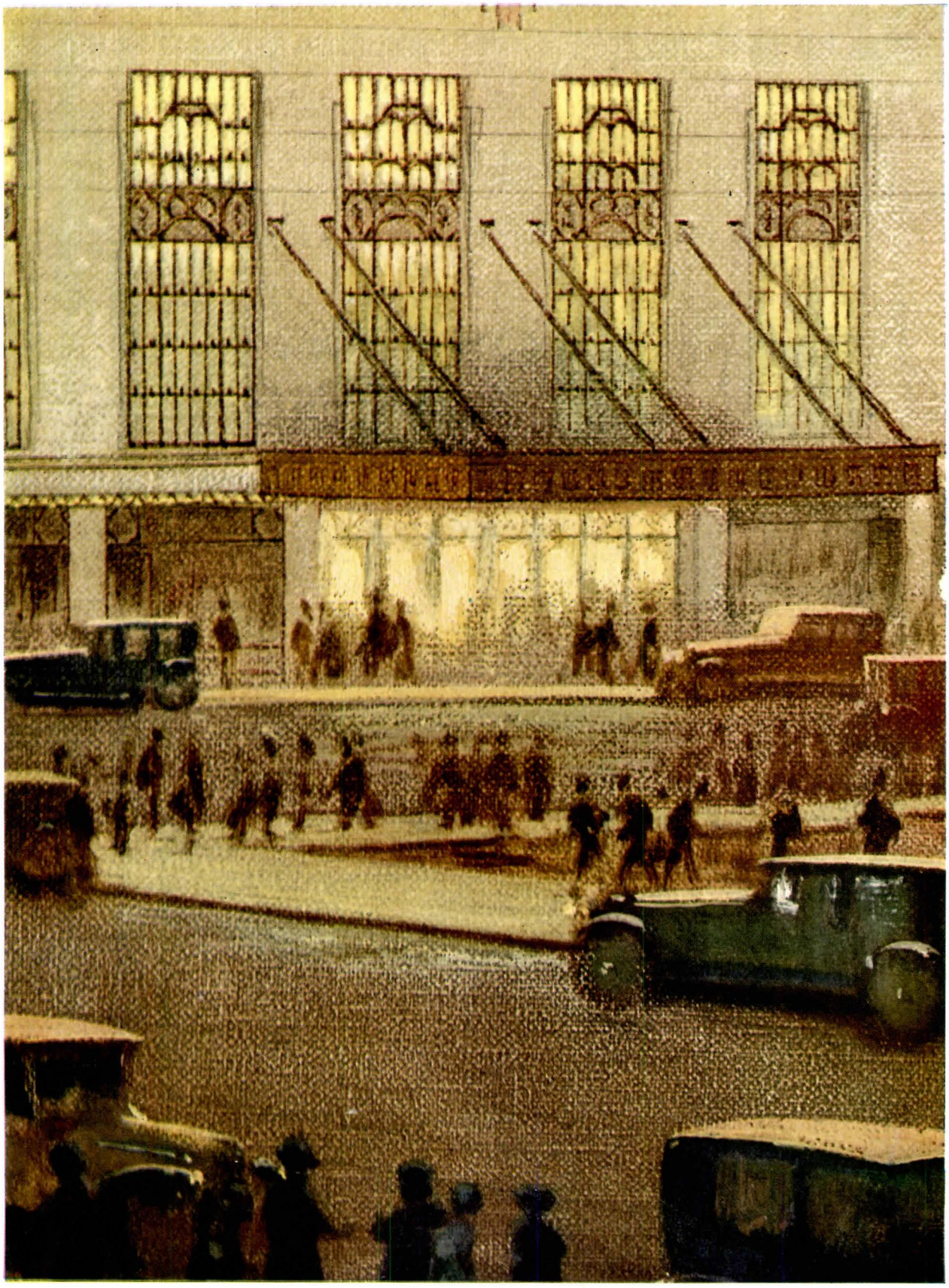
The cartoon for a mural panel shown on the other side of this sheet is one of a series of eight panels by Griffith Bailey Coale in the new building for the New York Athletic Club. This drawing shows Peter Stuyvesant strolling past a game of bowls in old New Amsterdam at the site now called Bowling Green. The game was played late summer evenings far into the twilight or even by the full moon. A sloop, the ancestor of our American fore-and-aft brig, lies in the river near an early Dutch house and the little girl encourages her father's bowling while the young mother pays her respects to the governor.

PENCIL CARTOON FOR A MURAL PANEL BY GRIFFITH BAILEY COALE

ONE OF A SERIES FOR THE NEW YORK ATHLETIC CLUB BUILDING—YORK AND SAWYER, ARCHITECTS

PENCIL POINTS SERIES
of
COLOR PLATES

We have shown here, at exact original size, a portion of Chesley Bonestell's drawing of the New Yorker Hotel, now being erected on Eighth Avenue from Thirty-fourth to Thirty-fifth Streets, New York. The entire rendering, which measured 38" x 64", is shown on the other color plate in this issue. The technique is very clearly shown by this detail and the two reproductions, taken together, give a fairly adequate idea of the entire drawing. The building is scheduled for completion on November first and will be the largest hotel in the world.



DETAIL REPRODUCED AT FULL SIZE FROM OIL PAINTING BY CHESLEY BONESTELL

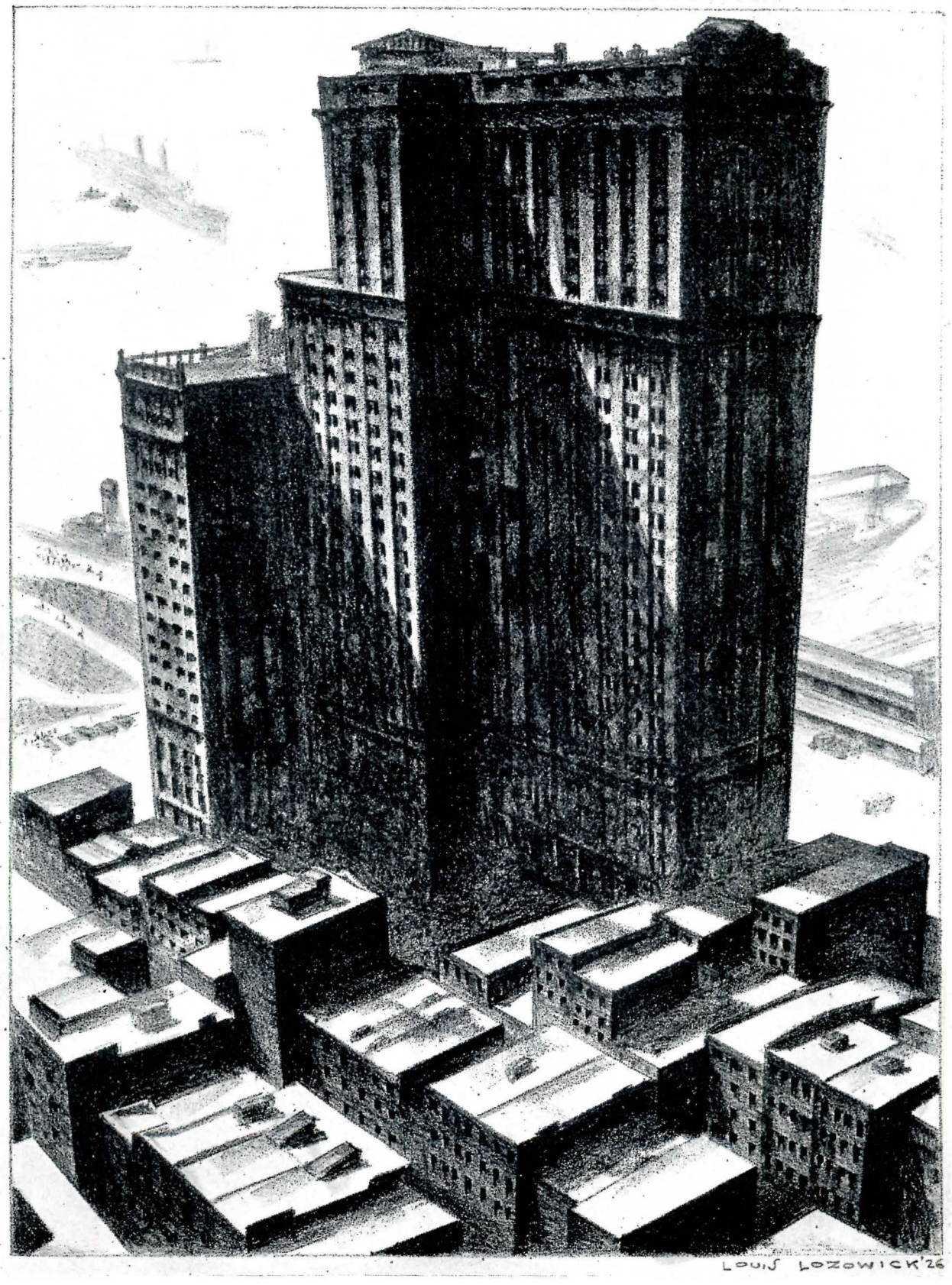
THE NEW YORKER HOTEL, NEW YORK—SUGARMAN AND BERGER, ARCHITECTS

THE NEW YORKER HOTEL, NEW YORK—SUGARMAN AND BERGER, ARCHITECTS

FROM AN OIL PAINTING BY CHESLEY BONESTELL

PENCIL POINTS SERIES
of
COLOR PLATES

The drawing reproduced on the other side of this sheet was made with a hard pencil on a fine grained canvas and then fixed with glue size. Thin oil glazes were then used to render the building—the highlights, sky, and foreground being painted in heavily over the glazes. The glue sizing prevents the drawing from being removed when the oil glazes are being wiped off so that as much detail may be preserved as the architect wishes. A detail of the rendering is shown as the other color plate in this issue.

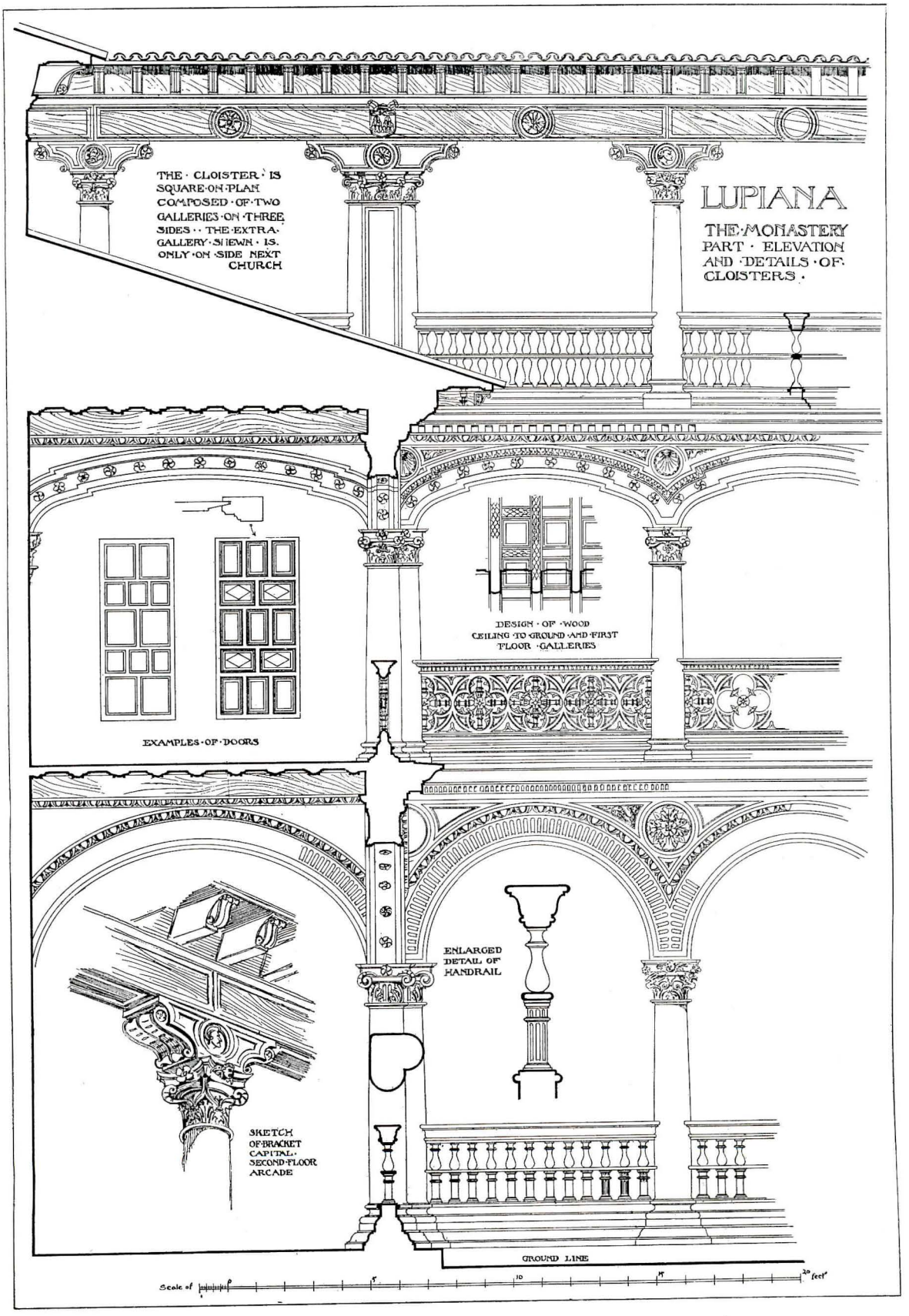


LITHOGRAPH BY LOUIS LOZOWICK
WHITEHALL BUILDING, NEW YORK

PLATE XXXV

VOLUME X NUMBER 9

This lithograph by Louis Lozowick, a young New York artist, measured, in the original, 7¾″ x 10½″ and was printed on paper of a slightly yellow tint which gave it an effective warmth. It shows an unconventional view of one of the tall buildings of lower Manhattan.



RENAISSANCE ARCHITECTURE AND ORNAMENT IN SPAIN

A PLATE FROM THE WORK BY ANDREW N. PRENTICE

PLATE XXXVI

VOLUME X NUMBER 9

"The remote situation of this disused old monastery, set amongst the hills some twelve miles to the southeast of Guadalajara, has doubtless prevented it receiving that attention which it deserves. The monastery was founded in 1330 by Diego Martinez, and was enlarged about the middle of the fifteenth century by Dona Alonza de Mendoza, and in 1472 Don Alonso Carello, Archbishop of Toledo, is said to have added the cloisters, which form the subject of this plate. Although the work has more the appearance of being built about 1520 —being similar in design and form to the archbishop's palace at Toledo, it is not so refined. It is difficult to say which building suggested the design of the other, but probably the Lupiana example was first built. The ceilings of the galleries have heavy beams of dark wood."

A. N. PRENTICE.

SIGNED BUILDINGS

By Russell L. Willard

Editor of the Building Supplement of the Literary Digest

MOST OF US BECOME more self-conscious when our work is being regarded or discussed than when we are discussing it ourselves.

The articles that I have read by members of the architectural profession concerning the advisability of having a building bear upon its exterior the name of its architect have something of a self-conscious tone. Perhaps this is only human or the aftermath of bad dreams during which the public is seen bandying the names of architects indecorously, pointing dirty fingers or even letting out catcalls as the opening ceremonies are in progress.

In any case the discussion of the subject usually revolves about a question of the modesty, or rather the immodesty, of such a practice. As architects are constituted with more than their share of modesty there are few articulate adherents of signed buildings among the profession. In this connection the supposed immodesty of the French might be ascribed as the reason for the existing custom of signing buildings in France to a fairly noticeable extent. Like other generalities, however, weaknesses are apparent; for example, the resistance is high in France to the economically successful American advertising methods, although the French need the business.

I recall that one writer feels that the identification would appear to be boasting; another brings up the question of the other factors that cooperate in the successful completion of a building, not only the composite effort within the architect's office but the contribution of various kinds of engineers, artists, craftsmen, and manufacturers. Partisans speak of the willingness to shoulder responsibility and outside the profession Mr. Menken, often quoted on the subject, would have the public given the opportunity to praise or blame with an eye peeled mostly for material suitable for the latter. The possibility of having the position of *les belles feronnières* of the architectural field established once and for all in the class of Caesar's wife is a nice idea but, alas, the institution of such a custom unfortunately might go unnoticed by most of the people. I say "unfortunately" because I believe that insofar as it was noticed, the architectural profession and the public would gain appreciably. Whether my reasons are worthy of consideration by architects and laymen interested in raising the standard of architecture, I cannot judge.

Whatever increase of attention the individual architect would obtain from such a custom is negligible in comparison with the fact that it would divide all new buildings into two distinct categories —those designed and those *not* designed by architects. So if the practice could be made national, it probably would be advocated in time by everyone with vision.

Architecture should have a positive cultural influence. Assumedly it is the part that the architect plays in the development of a building project. Let us say that this part is frequently not creative from the standpoint of art or originality; then it is allowable to state also that the architect's role usually makes for a more aesthetic result and a better building. If we accept *building beautifully, soundly, and with consideration for the protection of the owner* as a definition of ideal architecture and assume that most of the public do not know anything about art but know what they like (this is the situation of the majority, as may be painlessly discovered by admitting oneself to be in the same boat) then the public by this practice should have the opportunity to find out theoretically what is and what is not architecture, whether it looks good to them, and whether it seems to pay. Allowing even for a certain number of monstrosities from registered architects on the one hand and some works of genius among the brain-children of practical builders on the other, the public would get the "low down" with fair accuracy.

"What's in a Name?" was the title of an article I recently read on the subject of signed buildings in PENCIL POINTS. It was interesting and thoughtful but modesty triumphed and carried the author away in the end. I agree that there would not be much in a name if seven or eight thousand architects signed their buildings but the public would be taught what security on the investment may be represented by a title.

The drug manufacturers are telling the world about the dentist's services and the insurance companies are advising frequent and regular medical examinations. Until the manufacturers of building materials start to dramatize the architect, the authenticity of "Bill Jones, his mark" may be the symbol of a far-reaching and beneficial movement.

There is nowhere that this practice would be more useful than in residential work and here the signing of buildings would be somewhat of a novelty and might be objected to by the owner, but it is probable that his attitude would change if the matter were presented to him in the proper light. Of course, too, until prohibition cuts off the supply of material that is in fact intoxicating, embarrassment might result in some quarters. John Doe returning home might be confused on occasion if he chanced to approach that part of his dwelling which bore the inscription of Lucius Higginbothem, R. A. Such contingencies, however, could possibly be ironed out in another huddle between a committee of the American Institute of Architects and the Treasury Department, now that the Washington Plan has been disposed of.

At a time when the ethics of advertising by architects is a matter of considerable divergence of opinion and in the face of the growing need for greater architectural influence in the great building plans of our nation, it seems rational to give further consideration

to the use of these blunt but dignified testimonials to future generations. If ethics as well as modesty are involved here it may perhaps be of the type of convention which required women to retain a garment when they were in their bath.

In conclusion I submit the following newspaper advertisement of easel pictures. It indicates the potential popularity of signed buildings but suggests also the necessity for some sort of control.

WE PAINT PICTURES TO FIT ANY SIZE FRAME

Did you know that we operate a genuine hand-painted landscape department? Well, we do. One of our Buckeye Brand oil paintings should hang in every home. Our pictures sell for less because we employ only lightning artists, and have sky specialists, and foreground specialists and middle-ground specialists, and finishing-touch men who put in the windmills, sailboats, etc. For a small additional amount we will sign the painting with the name of your favorite artist.

SECOND ANNUAL CHURCH BUILDING COMPETITION

THE CHRISTIAN HERALD is again conducting a competition for Protestant churches. The program calls for photographs and plans of finished churches having a total seating of 150 to 600 persons that have been completed not earlier than July 1st, 1927. The competition is restricted to new structures and will be judged on the following basis: 1—Excellence of design; 2—Adequacy of building with regard to size and needs of congregation, and the constituency for which it is responsible in ministries of worship, religious education, fellowship and recreational activities; 3—Skill in selection and use of materials; 4—Economy in space and convenience of plan; 5—Adaptation to lot and orientation.

Prizes will be awarded as follows: First Prize—$500 to the architect and $500 to the church; Second Prize—$150 to the architect and $150 to the church; Third Prize—$100 to the architect and $100 to the church; also several honorable mentions.

The Jury of Award will consist of Harvey W. Corbett of New York, Philip Hubert Frohman of Washington, D. C., and Boston, and Elmo Cameron Lowe of Evanston, Ill. R. H. Blatter, consulting architect of the Christian Herald Bureau of Church Planning, will act as professional adviser.

The competition closes November 15, 1929. Copies of the program may be had upon application to the Christian Herald Association, Inc., 419 Fourth Avenue, New York.

GEORGE ROGERS CLARK MEMORIAL COMPETITION

THE GEORGE ROGERS CLARK SESQUICENTENNIAL COMMISSION has been established by resolution of Congress to erect at or near the site of Fort Sackville in Vincennes, Indiana, a permanent memorial commemorating the winning of the Old Northwest and the achievements of George Rogers Clark and his associates in the War of the American Revolution.

Funds for the design and erection of the Memorial have been authorized by Congress, sufficient funds to carry on the designing of the Memorial and to start its construction have been appropriated, and its site has been acquired.

The Commission desires to erect such a memorial as will have an aesthetic value comparable with its historic importance. To this end it proposes to institute an architectural competition for the design of the memorial structure and for the selection of an architect.

The competition will be open to all qualified architects who are citizens of the United States of America in addition to several architects who will be invited to enter the competition. Applications for entrance into this competition are to be addressed to Mr. William E. Parsons, 80 East Jackson Boulevard, Chicago, who has been appointed by the Commission as their Architectural Advisor for conducting the competition. These applications are to be made by letter stating the applicant's name, address and his associates if in a partnership or corporation. The applicant shall state his education, training and experience, together with a list of his most important architectural works, his affiliations with professional societies and business references. No application will be accepted after September 15, 1929.

The programs of the competition will be forwarded to those architects whose applications have been approved by the Qualifications Committee, on or about October 1, 1929. The duration of the competition will be between three and four months.

The program of this competition will be subject to conditions of the American Institute of Architects.

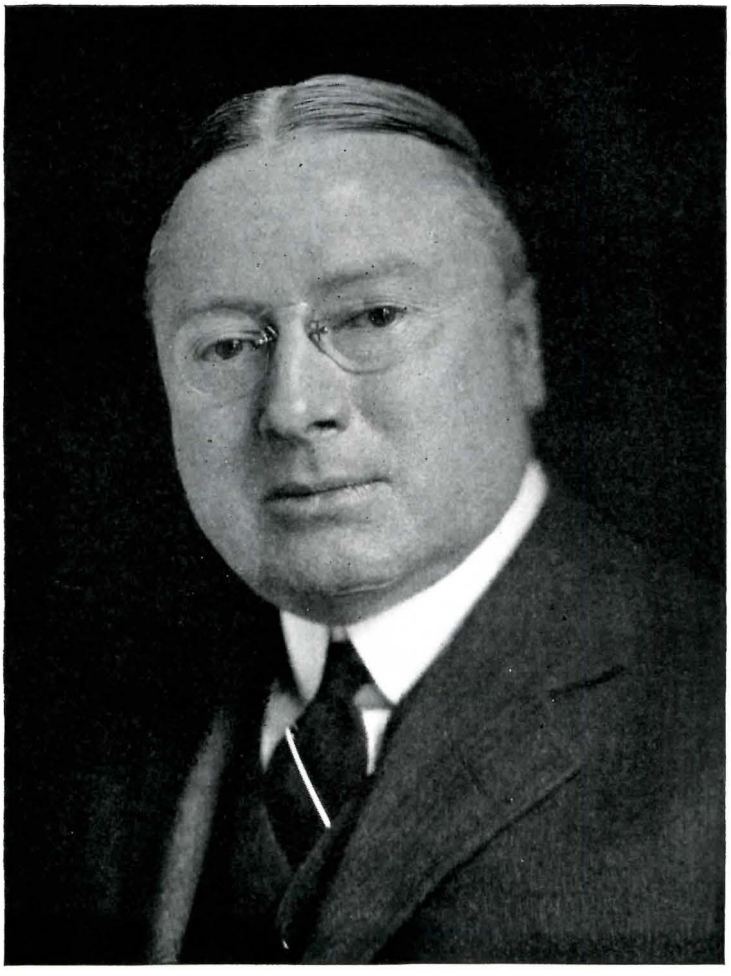
IN DISCUSSION OF THE HOLLYWOOD REPORT

A letter from Howard F. Baldwin, Architect, of Baltimore

"IN READING WITH INTEREST, if not avidity, the matter in PENCIL POINTS relating to the general subject of Adequate Compensation for Architects I am struck by the fact that those writing on the subject, including even the Hollywood organization, invariably seem to have overlooked a vital point throughout the whole discussion, viz. Competitive Bidding. This is a gospel worth while to preach, for the simple reason that no layman is capable of obtaining competitive bids, even on the basis of an architect's drawings and specifications. Much has been said regarding the value of an Architect's design and supervision, how these things insure the Owner his money's worth and boost resale value; but very little, if anything, seems to have been brought out about actual cash saving possible only for the Owner through Competitive Bidding.

"It might help a prospect to understand why your fee seems high to take him wading through pages and pages of elaborate cost data, but what is there to keep that from driving him into the arms of the cut-rater or the real estate promoter with a house ready-built? The simple statement that an architect's services save the Owner an amount in cash equal to two, three, or four times the amount of his fee would seem far more effective in the war against the cut-throat, the promoter and the speculative builder.

"The point seems yet to be brought out that in securing from six to a dozen competitive bids on a job these bids will vary as much as from twenty to fifty per cent; if the Architect's fee is even eight per cent, what a small price to pay for getting the low bid! Without competition what price ignorance!"



MILTON BENNETT MEDARY
1874--1929

IN THE DEATH of Milton Bennett Medary, past President and Gold Medalist of the American Institute of Architects, a great personality passes from the practice of architecture.

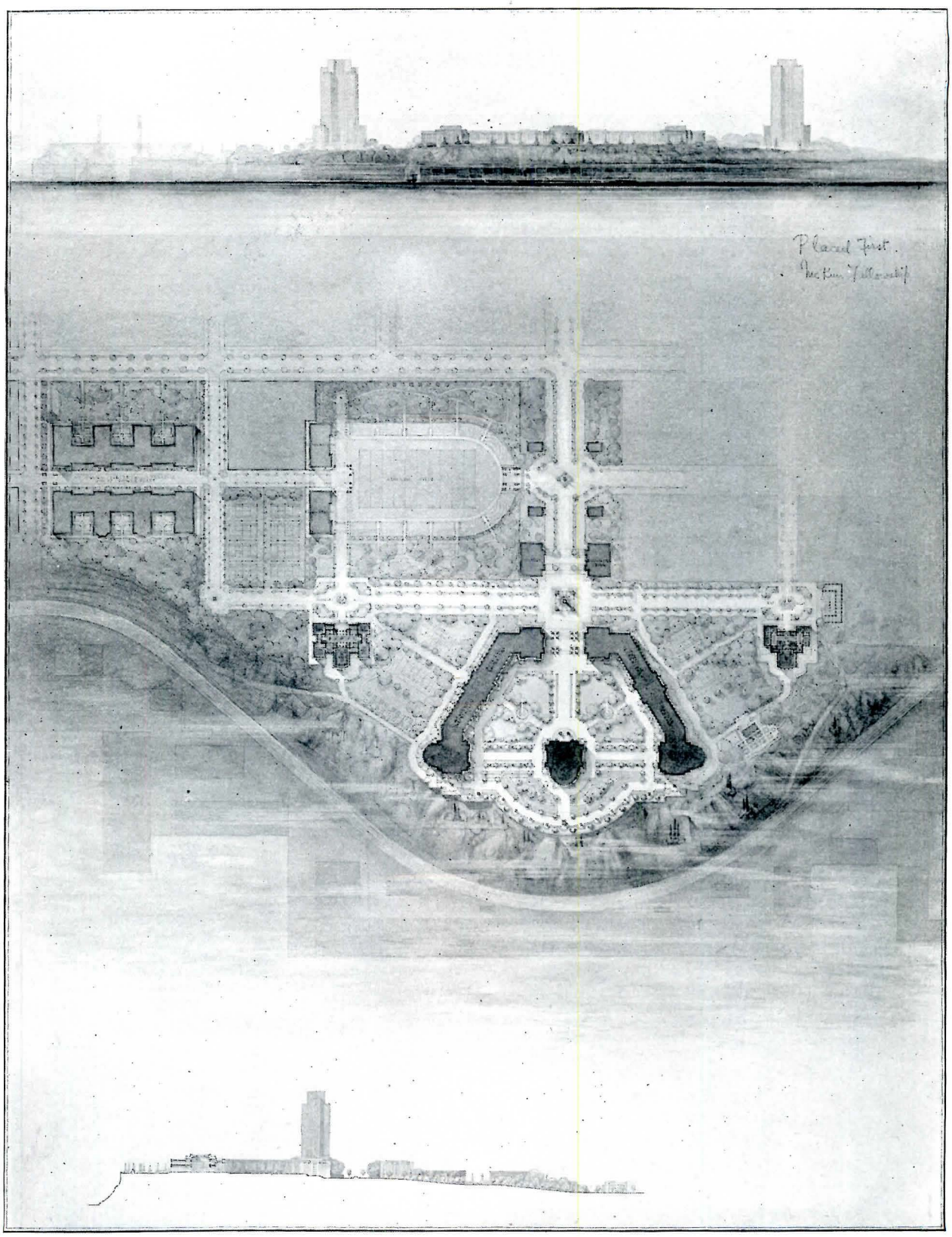
Broad knowledge, cultivated taste, sound judgment, and poetic vision characterize all of his works.

A sensitive appreciation of the aims and ideals of his fellow craftsmen, combined with an uncompromising artistic rectitude, brought to him leadership among the artists of his generation.

In his dealings with statesmen and men of affairs, combined wisdom, toleration, and gentleness made him an ideal advocate of the great verities underlying all constructive progress, and no man of his time has done quite so much as he to augment the respect in which the profession of architecture is held by the public.

His fellow architects will sorely miss the deep insight, the ardent enthusiasm, and the unfailing kindness which, for all those who have been brought into personal association with him, have made that association an enduring inspiration.

J. Monroe Hewlett.



"A GROUP OF EDUCATIONAL BUILDINGS FOR STEVENS INSTITUTE, HOBOKEN, NEW JERSEY,"
BY CARL B. TROEDSSON
WINNING DESIGN, COMPETITION FOR MCKIM FELLOWSHIP, COLUMBIA UNIVERSITY
(See text opposite and page 638)

COLUMBIA UNIVERSITY AWARDS MCKIM FELLOWSHIP IN ARCHITECTURE

THE MCKIM FELLOWSHIP in Architecture was awarded to Carl B. Troedsson of Hessleholm, Sweden. Harry Maslow of Elizabeth, N. J., was placed second. The subject of the program of the competition was *A Group of Educational Buildings for Stevens Institute, Hoboken, New Jersey.*

The Problem

It is proposed to remove many or all of the buildings now existing at Stevens Institute, and to arrange, with a comprehensive building plan, to cover the entire property with the exception of the lot bounded by Fifth, Sixth, Hudson and River Streets. The entrance to this property is through Eighth Street, off Hudson Street, with other entrances at Fifth Street and at different parts of the site as desired. Eighth Street is to be widened considerably, and to be arranged like a boulevard for an appropriate entrance to the Institution. Additional space can be added on both sides of the street.

It is proposed to limit the enrollment of this institution to 500 students, and to have sleeping accommodations for about 250 students. Day students will take their luncheons on the campus. Residences for the Faculty will be in apartments which are to be a separate group of buildings or only one building.

The buildings are to be of various types from two to sixteen stories in height. The group, as a whole, must look well from New York, the Hudson River, and Hoboken. The buildings will be divided into two main groups—"A" and "B." Group "A" will be on the hill, and is to contain the living and general educational buildings. Group "B" will contain laboratories, mechanical buildings, drafting rooms, etc., and will probably be on the lower part of the property. Part, however, may be on the upper and part on the lower property. The old buildings may remain or may be removed.

The main group "A" will consist of (1) Administration, (2) Library, (3) Academic Instruction, (4) Drafting Rooms, (5) Museum, (6) Students' Hall, (7) Faculty Apartments.

The secondary group "B" will consist of Laboratories—(1) Chemical, (2) Physical, (3) Mechanical, (4) Power Plant, (5) Electrical, (6) Hydraulic, and (7) Shops, gymnasium and exercising building.

Scattered along the edge of the property are chapter houses which are to be included in the general scheme. The ground is of various heights, and the plan will have to be accommodated to the lay of the ground. All students are advised to go to the property and look it over from the point of view of a building site, general accessibility, and view in all directions.

The winning design is shown on pages 636 and 638 and that placed second is shown on page 639.

The McKim Fellowship, which is provided by the late Charles F. McKim, is awarded every three years and carries an award of $2,250.

Mr. Troedsson is at present in Sweden where he will remain for the summer. During the coming year he will be travelling in southern Europe. He plans to spend some time in Vienna, studying under Pieter Behrens if possible. Before returning to the United States he expects to spend some time in Stockholm.

Mr. Harry Maslow, placed second in the competition, and Mr. Henry Grant, placed third, both received cash prizes from Stevens Institute.

MILTON BENNETT MEDARY

MILTON BENNETT MEDARY died suddenly on August 7th at his home at Bala, Pennsylvania.

He was a member of the firm of Zantzinger, Borie, and Medary, with offices in the Otis Building, Philadelphia.

Mr. Medary was born in Philadelphia on February 6th, 1874, and upon completion of his elementary education he entered the University of Pennsylvania.

From 1895 to 1905 he was a member of the firm of Field and Medary and upon the dissolution of this firm he went into practice for himself until, in 1910, he joined the firm of Zantzinger, Borie, and Medary.

In 1922 he was appointed a member of the National Commission of Fine Arts by President Harding, and in 1926 he was made a member of the National Capital Park and Planning Commission by President Coolidge. It was while serving in the latter capacity that Mr. Medary perhaps left his most distinctive indent upon the architecture of his time. His work earned him the appointment to the Board of Architectural Consultants of the United States Treasury Department, and he has contributed largely to the development of the City of Washington.

During 1918, as chairman of the committee of the United States Housing Corporation, he took an active part in designing workmen's homes in Bethlehem, Nevil Island, and Pittsburgh. He was consulting architect on the staff of Columbia University, and consulting architect for Mount Vernon, on the Potomac, and the Roosevelt Memorial Association. He was also a director of the Foundation for Architectural and Landscape Architecture, Lake Forest, Ill.

Among the buildings which Mr. Medary has designed are the Penn Athletic Club, Valley Forge Chapel, Fidelity Mutual Life Insurance Building, and the Bok Tower at Mountain Lake, Florida, which was completed during the past winter.

Mr. Medary was president of the American Institute of Architects in 1926 and was re-elected to the same office in 1927. He was a member of the Philadelphia Chapter of the A.I.A., of the T-Square Club, and the Architectural Alumni of the University of Pennsylvania.

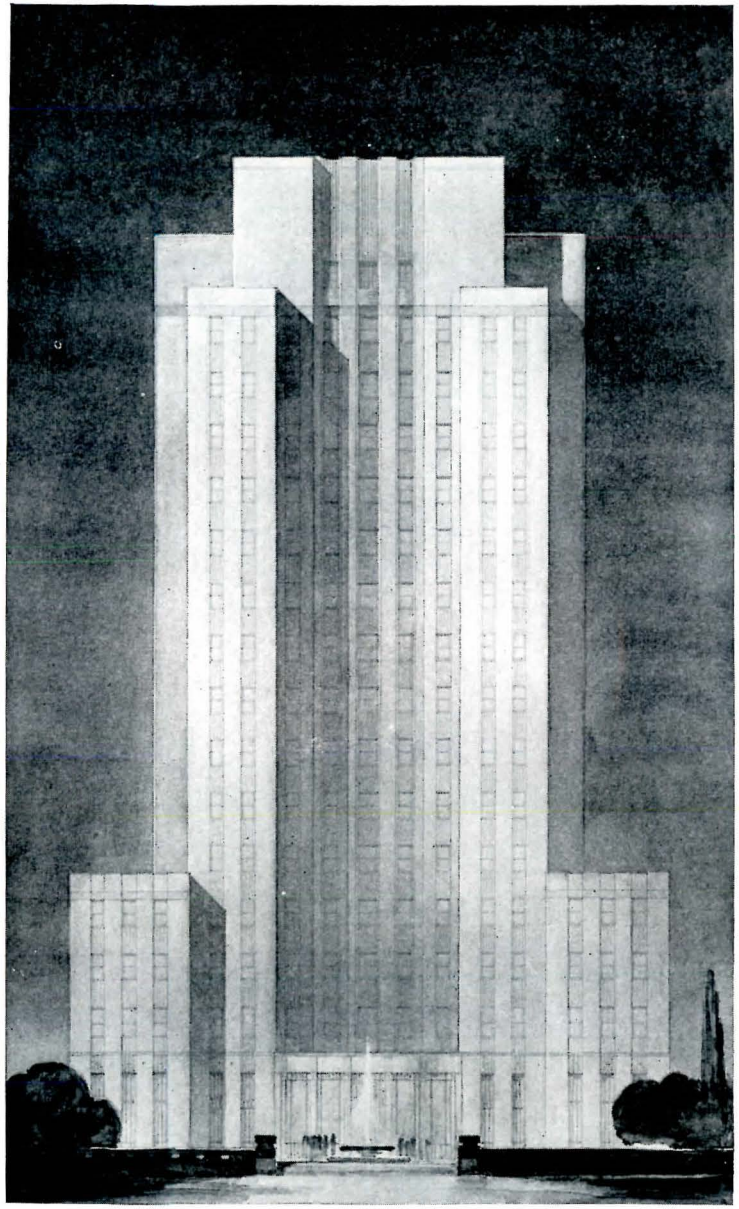
He was also a member of the Pennsylvania Academy of the Fine Arts, the Pennsylvania Museum and School of Industrial Art, Fairmount Park Association, American Federation of Arts, Historical Society of Pennsylvania, American Hospital Association, American Engineering Council, Seamen's Church Institute, Philadelphia Zoological Society, Academy of Natural Sciences, American Game Protective Association, Sons of the Revolution, American Society of Landscape Architects, honorary member of the Royal Institute of British Architects, and a member of the board of the Glen Mills School.

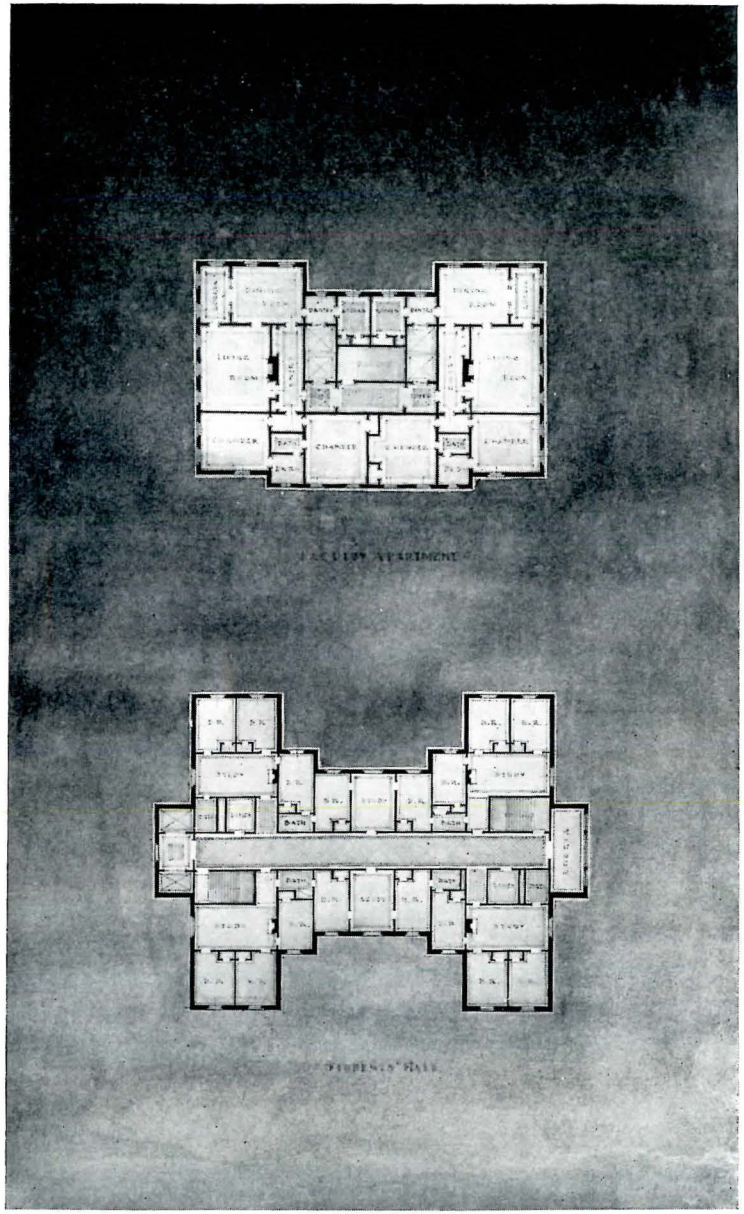
Among his clubs are the Art, Philobiblian, Wilderness, and Rittenhouse Clubs, Philadelphia; and the Century, New York, and the Cosmos, Washington, D. C.

Last April the Gold Medal of the American Institute of Architects was conferred upon Mr. Medary. In presenting the honor Dean Warren Powers Laird, of the University of Pennsylvania School of Fine Arts, eulogized his career as one "based upon those elements which we regard as fundamental to the soundest and most enduring success, natural talent, hard work and high ideals."

Besides his wife and daughter, Mr. Medary is survived by two sons, Richard and Milton Bennett Medary, 3rd, and another daughter, Mrs. William Norris.

A photograph of Mr. Medary and a brief eulogy by J. Monroe Hewlett are published in this issue on page 635.

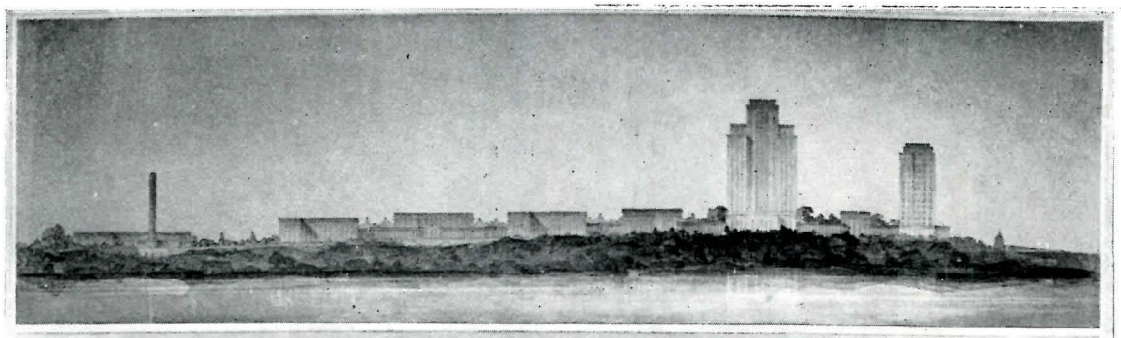




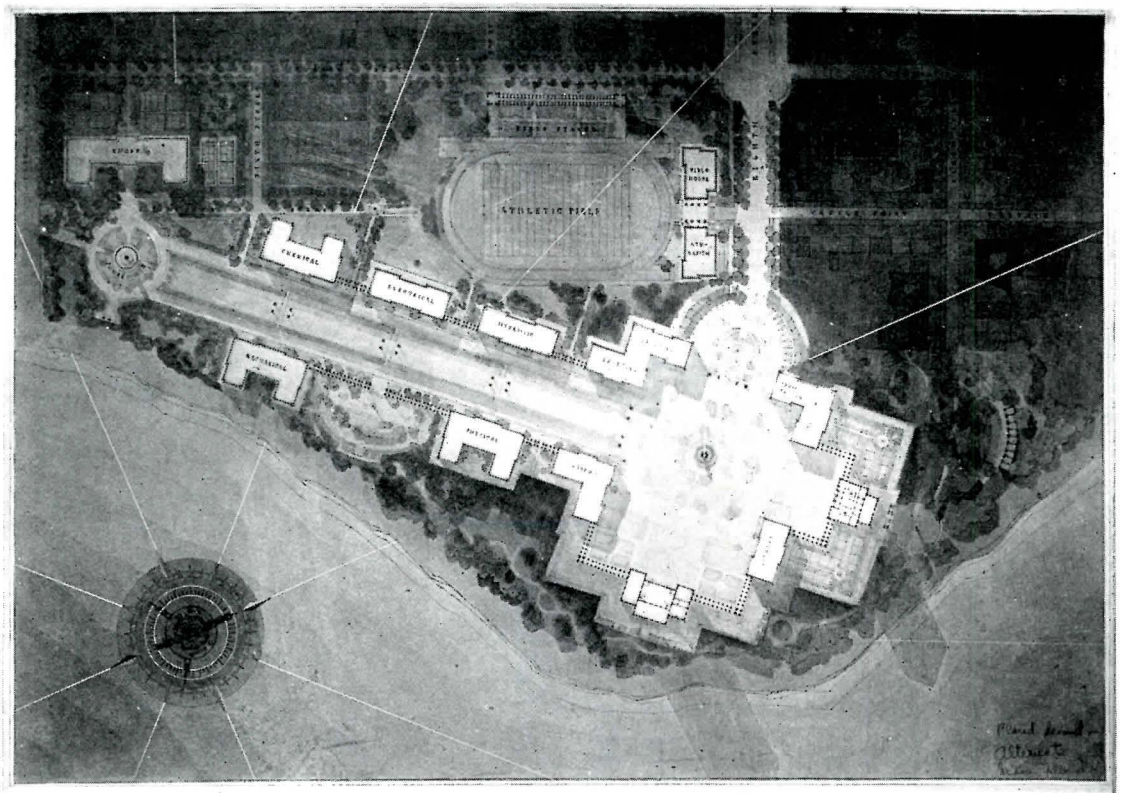
"A GROUP OF EDUCATIONAL BUILDINGS FOR STEVENS INSTITUTE, HOBOKEN, NEW JERSEY"—STUDENTS' HALL, BY CARL B. TROEDSSON

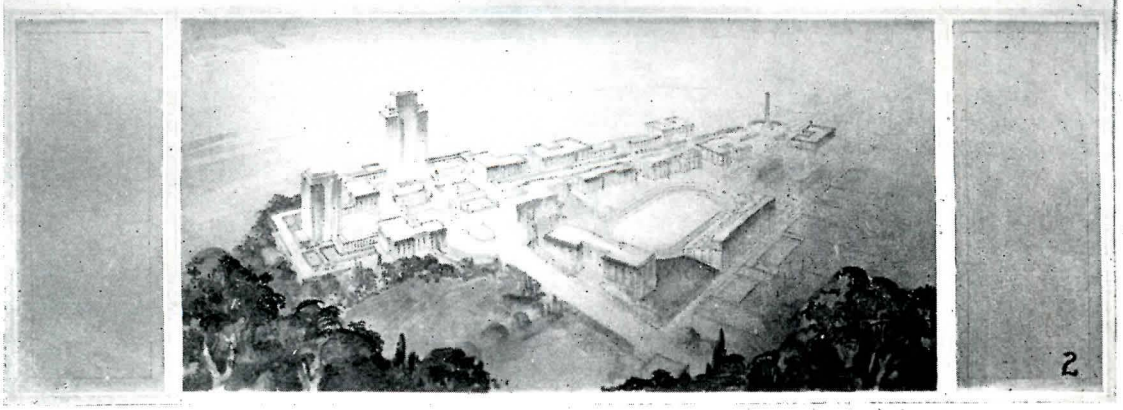
WINNING DESIGN, COMPETITION FOR MCKIM FELLOWSHIP, COLUMBIA UNIVERSITY

(See also page 636)



A PROPOSED GROUP OF EDUCATIONAL BUILDINGS
FOR STEVENS INSTITUTE OF TECHNOLOGY





"A GROUP OF EDUCATIONAL BUILDINGS FOR STEVENS INSTITUTE, HOBOKEN, NEW JERSEY,"
DESIGN BY HARRY MASLOW
PLACED SECOND—COMPETITION FOR MCKIM FELLOWSHIP, COLUMBIA UNIVERSITY

H. ROY KELLEY

PRIZES AWARDED IN NATIONAL BETTER HOMES ARCHITECTURAL COMPETITION

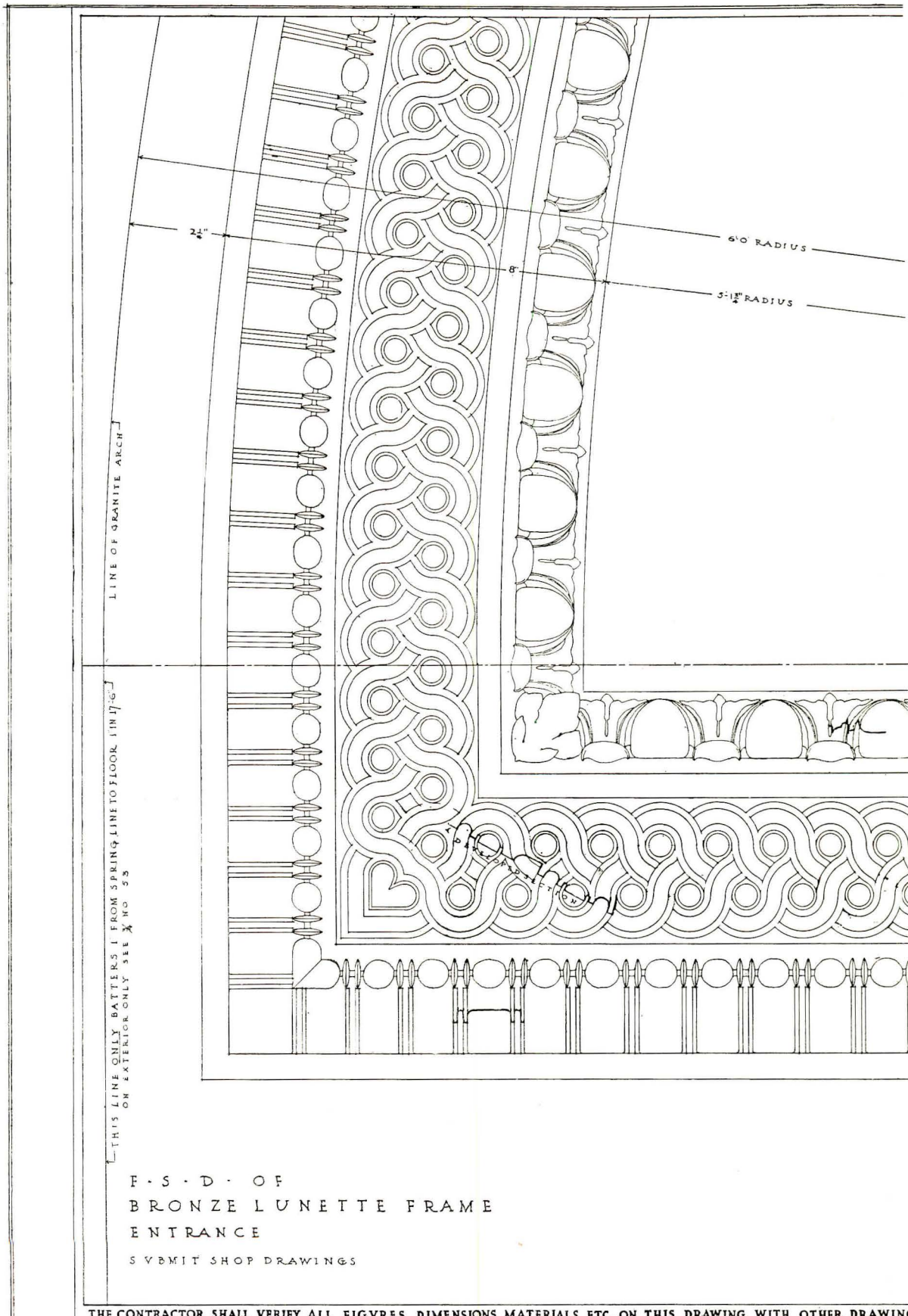
H. Roy Kelley is the winner of the first grand prize of $5,000.00 in the National Better Homes Architectural Competition. He is a graduate of the Architectural School of Cornell University. He also studied in the Atelier Laloux in Paris and is at the present time practicing in Pasadena, California. Mr. Kelley's winning design will be reproduced in the October issue of Pencil Points, together with those of some of the other winners in the competition.

Mr. Kelley is well known to the profession as a winner in competitions. Among the national competitions in which he has received prizes are the *Own Your Own Home Competition*, *Biscayne Boulevard Gasoline Filling Station Competition*, the *Competition for Biscayne Boulevard Traffic Signal and Street Lighting System*, and the *Chicago Tribune Five Room House Competition*.

The second prize of $3,000.00 was awarded by the National Jury to Harrison Clarke, of Los Angeles, California. The third grand prize of $1,500.00 was won by Amedeo Leone, of Detroit, Michigan. Honorable mentions were awarded as follows: Carlos D. Barragan and Earl Purdy, of New York City; J. R. Rowe and E. J. Hergenroeder, of N. S. Pittsburgh, Pa.; D. E. Stevens, of Cincinnati, Ohio; Fred E. Sloan and Elmer A. Johnson, of Chicago, Illinois; and H. Roy Kelley, of Los Angeles, California.

The winners of awards of $500.00 each, made by the Regional Juries, were as follows: Constantin A. Pertzoff, of Cambridge, Mass.; Francis Durfee Johnson, of Belmont, Mass.; Royal Barry Wills, of Boston, Mass.; Carlos D. Barragan and Earl Purdy, of New York City; J. R. Rowe and E. J. Hergenroeder, of N. S. Pittsburgh, Pa.; James G. Resh, of New York City; Samuel J. Collins, of Staunton, Virginia; W. N. S. Pugh, of Baltimore, Maryland; Forrest W. Coile, of Asheville, N. C.; Jefferson M. Hamilton, of Tampa, Florida; T. L. Waterhouse, of Atlanta, Ga.; Britton Kirton, of Jacksonville, Florida; Rhees E. Burket, of Detroit, Michigan; Hubert F. Howe, of Detroit, Michigan; Amedeo Leone, of Detroit, Michigan; D. E. Stevens, of Cincinnati, Ohio; Fred J. Abendroth, of Cleveland, Ohio; Fred H. Kock, of Cincinnati, Ohio; J. A. Sloan, of Arkadolphia, Arkansas; George P. Turner, of Birmingham, Alabama; Allen L. Bartlett, of Birmingham, Alabama; Alvin Grellinger, of Milwaukee, Wisconsin; Fred E. Sloan and Elmer A. Johnson, of Chicago, Illinois; Connor and O'Connor, of Chicago, Illinois; Otho McCrackin, of Hutchinson, Kansas; Mrs. W. M. Ingemann, of St. Paul, Minn.; H. H. Eads, of Minneapolis, Minn.; Sidney Nelson Wellborn, of New Orleans, La.; Miss Esther Duckworth, of Houston, Texas; Louis H. Hammeth and August Perez, of New Orleans, La.; Gordon F. Street, of Santa Fé, New Mexico; M. James Slack, of Denver, Colorado; Hollis Johnston, of Portland, Oregon; Jack Woodmansie, Ray Marks, and Hollis Johnston, of Portland, Oregon; Livingstone H. Elder, of Billings, Montana; H. Roy Kelley, of Los Angeles, California; and Harrison Clarke, of Los Angeles, California.

Honorable Mentions were made by the Regional Juries as follows: James A. Britton, of Chestnut Hill, Mass.; J. Howarth Young, of Cambridge, Mass.; John Pritchard Morgan, of Morton, Pa.; Franklin Scott, of White Plains, N. Y.; Alfred Kastner, of Astoria, Long Island, N. Y.; Herbert A. Magoon, of Babylon, Long Island, N. Y.; Howard R. Hutchinson, of New York City; John Donald Tuttle, of New York City; B. C. Flournoy, of Washington, D. C.; Eldred Mowery, of Washington, D. C.; Louis Philippe Smithey and Ernest R. Gilbert, of Roanoke, Virginia; Louis R. Moss, of Washington, D. C.; Jefferson D. Powell, of Jacksonville, Florida; Edwin Larson, of Tampa, Florida; Norman A. Skeels, of Gainesville, Florida; Milton C. Major and Branson U. Gambler, of Detroit, Michigan; E. J. Potter, of Detroit, Michigan; Charles Blessed and J. W. Leinweber, of Grosse Point, Michigan; Stanley C. Reese, of Detroit, Michigan; LeRoy E. Kiefer, of Detroit, Michigan; Harold H. Ehlert, of Detroit, Michigan; Walter J. Theis, of Dayton, Ohio; Fred Hoyt Elswick, of Louisville, Kentucky; Donald B. Walker and Lester E. Balstad, of Cleveland, Ohio; Roy W. Cheesman, of Dayton, Ohio; Conner and O'Connor, of Chicago, Illinois; Glicken and Kosvich, of Chicago, Illinois; Ray A. Alberton, of Chicago, Illinois; Russel A. Hiett, of Hutchinson, Kansas; Bayard F. Taber, of Webster Groves, Missouri; Milton V. Bergstedt and Francis V. Gorman, of St. Paul, Minn.; Isadore Shank, of St. Louis, Missouri; Scott C. Bagby, of Houston, Texas; Wallis J. Wade, of San Antonio, Texas; Joseph J. Patterson, of Fort Worth, Texas; Wm. Addison McElroy, of Houston, Texas; John M. Marriott and J. Fred Buenz, of San Antonio, Texas; Ernest F. Tucker, of Portland, Oregon; Wade Pipes, of Portland, Oregon; Roi L. Morin, of Portland, Oregon; Willard Bentley, of Yakima, Washington; Lloyd E. Curtis, of Los Angeles, California; John Fortune, of Los Angeles, California; John J. Landon, of Los Angeles, California; Carl E. Sjoberg, of Los Angeles, California; Lyle Reynolds Wheeler, of Hollywood, California; William Berger, of Walnut Park, California; Roy C. Kelley, of Capistrano Beach, California; Walter L. Moody, of



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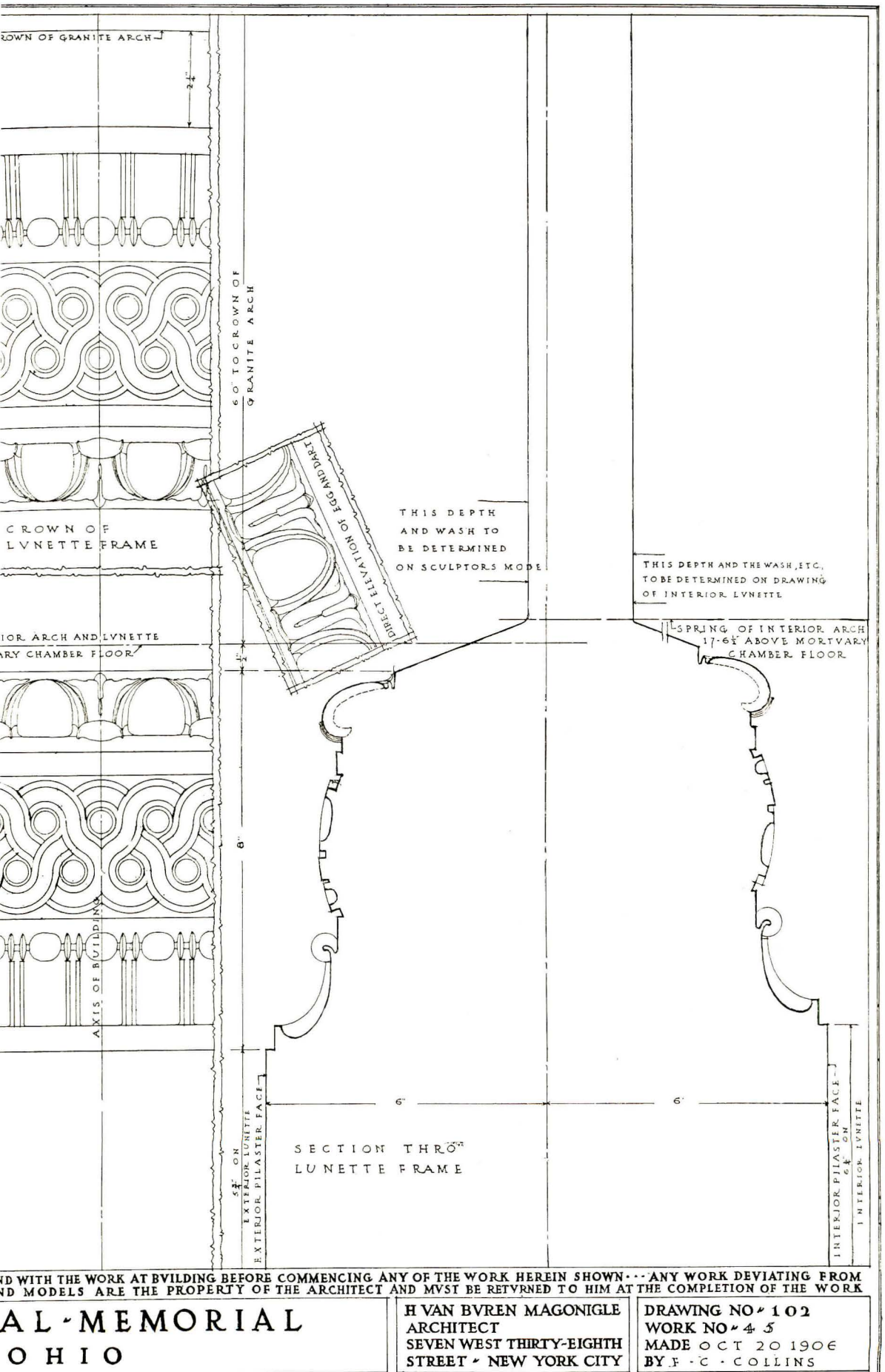

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OHIO

H VAN BVREN MAGONIGLE
ARCHITECT
SEVEN WEST THIRTY-EIGHTH
STREET · NEW YORK CITY

DRAWING NO · 102
WORK NO · 45
MADE OCT 20 1906
BY F · C · COLLINS

GLE, ARCHITECT—REDUCED TO EXACTLY ONE-THIRD ORIGINAL SIZE

DOME OF THE WILLIAMSBURGH SAVINGS BANK, BROOKLYN, N. Y.

(See details of construction on pages 650 and 651 and text on page 649)

Los Angeles, California; Albert William Ford, of San Diego, California; Louis E. Korn, of Los Angeles, California; and H. Roy Kelley, of Los Angeles, California.

Raymond M. Hood was Chairman of the Jury of Award of the National Competition, and C. Stanley Taylor of Taylor, Rogers, and Bliss, Inc., and a member of the firm of Lyon and Taylor, Inc., Architects and Building Consultants, of New York, was retained as consultant in the development of the competition program. A full announcement of this competition was published on page 193 of the March, 1929, issue. On page 656 of this issue is shown a design for a small house by H. Roy Kelley.

COMPETITION FOR A WAR MEMORIAL, CITY OF CHICAGO

TO ALL ARCHITECTS residing in the United States:

The War Memorial Committee of the City of Chicago, consisting of Mr. W. Rufus Abbott, Mr. Sewell L. Avery, Gen. Abel Davis, Gen. Milton J. Foreman, Gen. Roy D. Keehn, Mr. Robert P. Lamont, Col. Robert R. McCormick, Mr. Julius Rosenwald, Col. Howard P. Savage, Mr. James Simpson (Ex-officio, Chairman of the Chicago Plan Commission), Col. Albert A. Sprague, and Mr. Walter Strong, desires to announce that a nation-wide competition will be held for the Chicago War Memorial, with attractive prizes and in accordance with the usage of the American Institute of Architects. Programs will be issued September 1st and judgment announced early in December. Under this general invitation programs may be obtained up to October 1st by qualified applicants from Earl H. Reed, Jr., Professional Adviser, War Memorial Competition, 435 North Michigan Ave., Chicago, Ill.

EXHIBITIONS IN LOS ANGELES ARCHITECTS' BUILDING

THE ARCHITECTURAL exhibitions that have been held in the exhibit rooms of the Architects' Building in Los Angeles, California, during the past few months have created a great deal of interest and comment.

Two exceptionally worthwhile exhibitions are scheduled for the month of September. The first is that of Roland E. Coate, Los Angeles architect.

Mr. Coate is well known for his beautiful residential work, and in all his designs one can see the blending of the Colonial and Georgian types of architecture with the Mexican and Spanish, resulting in the Early Californian or Monterey style that is so very popular in California. Photographs and renderings of noted residences of both Los Angeles and Pasadena will be included in this exhibit.

For the second two weeks in September there will be a deviation in the exhibition to be held in the Exhibit Rooms. Instead of the usual architectural drawings and renderings there will be a display of beautiful rugs by Mr. John S. Keshishyan, Los Angeles collector. Included in this exhibition will be many modern weaves of reproductions of sixteenth century Ispahans, a number of so-called Polish carpets, several Caucasian and Asia Minor rugs, and an unusual prison weave Agra.

Although this exhibit is a variation from the usual ones held in the Architects' Building, it should prove of great interest to all those who are interested in architecture, interior decorating and building.

RIO DE JANEIRO TO HOLD EXHIBITION

THE PAN-AMERICAN CONGRESS of Architects and the Pan-American Architectural Exhibition will be held in the City of Rio de Janeiro in June, 1930.

THE DOME OF THE WILLIAMSBURGH SAVINGS BANK, AS IT APPEARS AT NIGHT

HALSEY, MC CORMACK & HELMER, ARCHITECTS

MR. WAID CORRECTS US

EDITOR'S NOTE:—*Mr. D. Everett Waid, in a letter commenting upon an article entitled "Steel Removed from Tacoma Building, Chicago, First Skyscraper in the United States," published in the July issue of* PENCIL POINTS *on page 496, calls our attention to an error as follows:*

"I HAVE REFERENCE to a paragraph in the July issue wherein it was stated that the Tacoma building in Chicago 'was the first building of what is known as a "skyscraper" type of construction ever erected in the United States.' The fact is that the first skeleton construction building was the Home Insurance Building erected in 1883-1884 at the corner of Adams and LaSalle Streets. It seemed a skyscraper in those days although only eleven stories in height.

"The Home Insurance Building was the first building in which the walls (except two which by law had to be bearing walls) were carried on the framing floor by floor; and from the sixth floor up the framing was of steel, the first use of steel in a skeleton construction building. A formal investigation of this matter was made many years ago and as a result one of the large ore ships running on the Great Lakes was named in honor of William Le Baron Jenney, the architect of the Home Insurance Building.

"I was interested because I started as a draftsman in Mr. Jenney's office. The firm of Jenney and Mundie had an office in the Home Insurance Building and I personally was a witness to the erection of the Tacoma Building in 1888-1889. That building made a sensation in the building world because of the rapidity of its erection. Great credit was due its architects, Holabird and Roche, and its builders, the George A. Fuller Company, both in its design and execution, but as to date it was five years later than the Home Insurance Building."

WATER COLOR BY J. M. ARELLANO OF MANILA

IFUGUA GIRL—MOUNTAIN GIRL OF LUZON, P. I.

THE ARCHITECTURAL CLUB OF LONG BEACH, CALIFORNIA

THE ARCHITECTURAL CLUB of Long Beach sponsored a competition for the award of Certificates of Honor to those architects, contractors, and owners whose work in various classifications of buildings was judged to have been the best during the past two years. All applications or nominations were submitted with photographs of the buildings. The competition closed on July 10, with about 150 photographs submitted. The Jury of Award consists of David J. Witmer, Architect, Past President of the Southern California Chapter of the American Institute of Architects, and Edwin Bergstrom, Architect, Treasurer of the National Organization of the American Institute of Architects. The judges commented upon the general high quality of the material submitted, and made careful inspection of all the buildings considered for awards, as well as judging from the photographs. Announcement of the awards will be made in the next issue of PENCIL POINTS.

The Club intends to hold a competition and judgment along similar lines every two years. Certificates will be granted to the Architect, the Owner, and the Contractor of each building selected by the Jury of Award. The entire proposition is sponsored by the Architectural Club of Long Beach, with the purpose of raising the general standard of design within the City of Long Beach, and also educating the public to a better appreciation of what an architect's services stand for. The competition was open only to architects maintaining an office in the City of Long Beach, and no awards were to be made except for work executed by the above architects within the City of Long Beach.

The Committee in charge of the competition included Hugh R. Davies, A.I.A., *Chairman,* Joseph H. Roberts, and Cecil Schilling.

PENN STATE COLLEGE OFFERS NEW COURSE

THE ENGINEERING EXTENSION DIVISION of the Pennsylvania State College is now offering a complete course in *Strength of Materials,* to be given by correspondence.

For full information regarding this course and others along engineering lines, write to the Department of Engineering Extension, State College, Pa.

ARCHITECTURAL PROMOTIONAL MAN WANTED

AN IMPORTANT ORGANIZATION in the building field is seeking a high class man to promote an interest in its products among members of the architectural profession. The man sought must have had architectural training, some experience in the field visiting jobs under construction or as construction superintendent. A man in the thirties who would rather do promotion or selling work than inside work is desired. Applicants must have good personality and the ability to meet people easily. State age, experience, training, and give references and salary expected in first letter. Box No. 030, care of PENCIL POINTS.

WANTED

BENJAMIN WISTAR MORRIS, 101 Park Avenue, New York, wants copies of *The Bulletin of the Beaux-Arts Institute of Design,* for February, 1925; October, 1926; and March, 1928. He will pay any reasonable price.

FIGURE 1

FIGURE 2

FIGURE 3

MODELS FOR THE MODERATE-SIZED HOUSE

By William W. Price, Architect

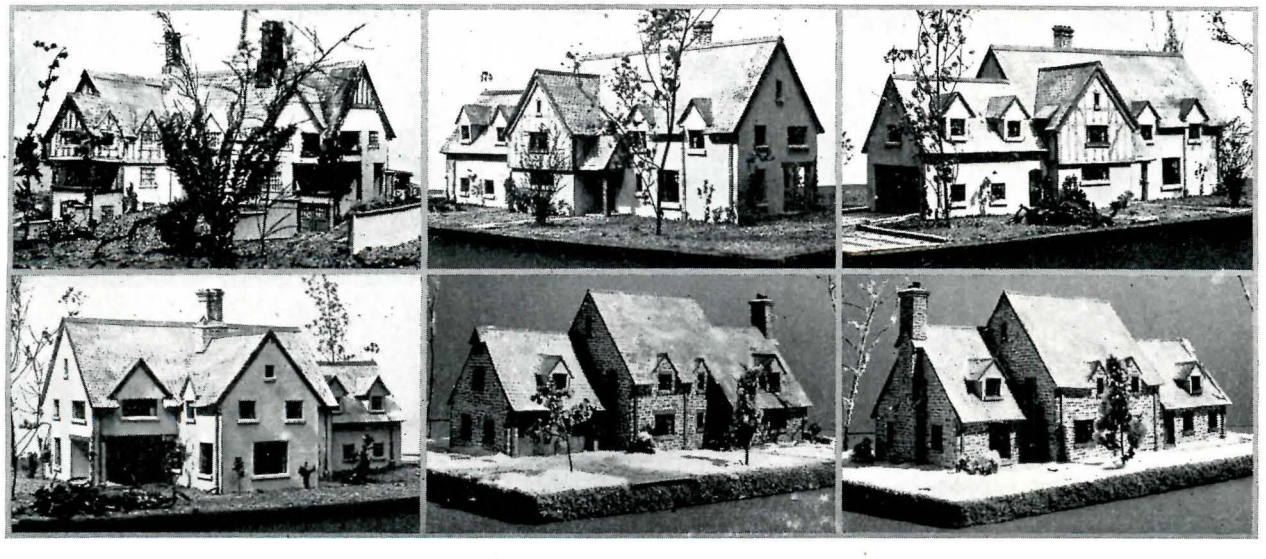
WE ARE ACCUSTOMED to seeing models of plaster or cardboard made for great office buildings or for very large dwellings, but usually the man who is building a house ranging from $18,000 to $25,000 does not get a chance to see how his house is going to look, unless he goes to a regular model maker. The architect, too, usually has little time to devote to model making and must turn his client over to an expert, if he insists on a three-dimension presentation.

However, with a sharp knife, medium weight illustration board, water colors, glue, and "plasticene," a model, more or less complete, may be produced in a very short time, in as little time, if the model is to be a sketch, as a careful perspective study. Figure 1 shows a view of such a hurried sketch model, with windows and doors painted on the surface, and "plasticene" used for grading and roughly suggested foliage. Crude enough, but still serving the purpose of giving the client that third dimension. Figure 2 shows a view of the building shortly before completion, from about the same point of view as the model photograph. Figures 3 and 4 are of another sketch model, at one sixteenth of an inch to the foot, with openings painted on and with foliage of bits of weed. The grass in this model was sawdust, painted green, and pressed into the "plasticene" base, which was used to indicate the fall in grade from front to back of the house, visible in the photographs.

Figures 5, 6, and 7 are of a larger, more carefully made model, one eighth of an inch to the foot. This model has openings cut out and filled in with theatrical gelatine, with muntins drawn in India ink and curtains and shades of white and blue paper behind them, as can be seen from the photographs. The foliage was, again, bits of weed, the driveway sandpaper, the grass, painted sawdust. The wrought iron gate at kitchen entrance, visible in Figure 6, was of screen wire. All these models had corners cut on a bevel, to mitre when glued together, and with small angles of heavy paper glued in the interior corners, to serve as reinforcing and to prevent light leaks. When finished, a hole was cut in the base to a frosted electric globe insert, giving the effect of lighted windows.

Figures 8 and 9 show another eighth scale model, made as described above, with downspouts and brick sills in relief and with deep reveals at doors, as seen in Figure 9. The snow for this model, after experiments with various materials, is of plain granulated sugar, wet in spots, and suggesting ice and slush very well.

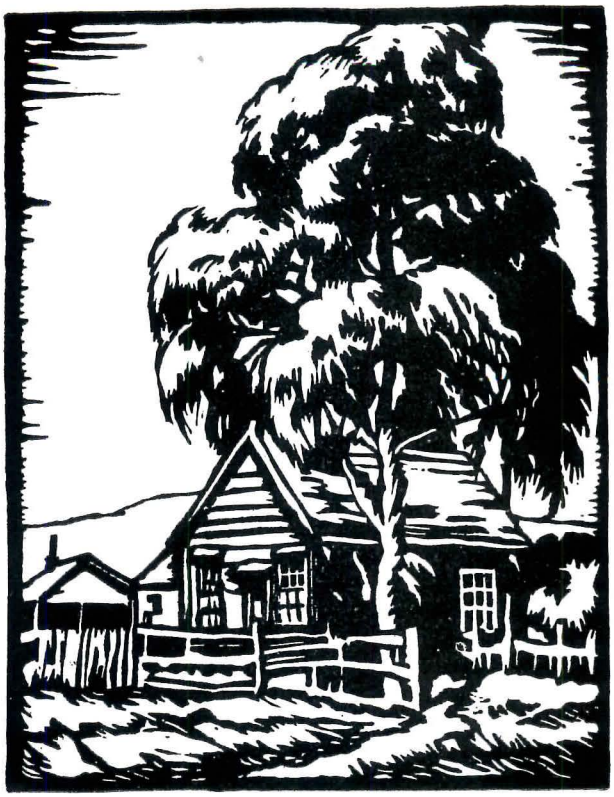
The time required for the smaller models ran about two and a half to three days, and for the larger ones, about a week, owing to the extra work on the openings. It has been the author's custom to allow $50.00 for an eighth scale cardboard model, if the building is not too complicated, and usually the client is glad enough to pay this amount for a visualization of his future home.



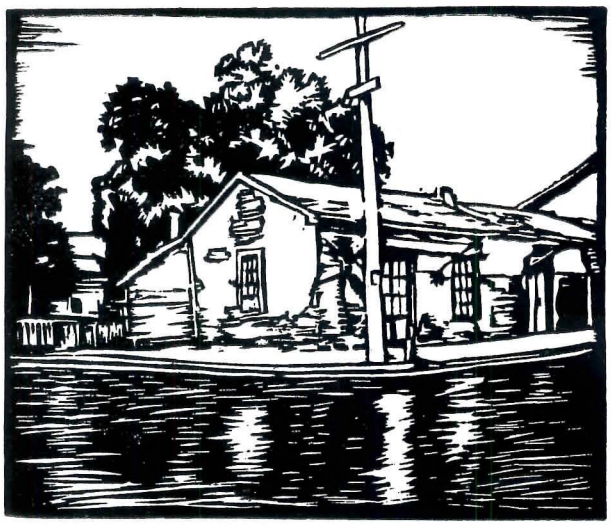
TOP ROW, FIGURES 4, 5, 6—BOTTOM ROW, FIGURES 7, 8, 9

MODELS AND HOUSES BY WILLIAM W. PRICE, ARCHITECT

OLD WASHINGTON HOTEL, MONTEREY
Original size, 6¾" x 8¾"



FISHERMAN'S HUT, SAN FRANCISCO BAY
Original size, 7" x 9"



WEST HIGHWAY, SAN JUAN
Original size, 9¼" x 8"

EUCALYPTUS GROVE IN CALIFORNIA
Original size, 7½" x 6½"

A GROUP OF WOOD BLOCK PRINTS BY WILLIAM S. RICE OF OAKLAND, CALIFORNIA
THE ORIGINALS WERE PRINTED BLACK ON JAPANESE HANDMADE SILK PAPER

This department conducts four competitions each month. A prize of $10.00 is awarded in each class as follows: Class 1, sketches or drawings in any medium; Class 2, poetry; Class 3, cartoons; Class 4, miscellaneous items not coming under the above headings. Everyone is eligible to enter material in any of these four divisions. Competitions close the fifteenth of each month so that contributions for a forthcoming issue must be received by the twelfth of the month preceding the publication date in order to be eligible for that month's competition. Material received after the closing date is entered in the following month's competition.

"Tommy Dolan" was thoroughly discussed—pro and con—until after three days and nights of session behind locked doors the Chairman of the Jury broke the news to a waiting audience that Clifford L. Thornton's sketch was without doubt The Tommy Dolan. Clarke L. Lewis, Jr., carried off second honors.

Without a doubt the Tommy Dolan Competition was a welcome inspiration to contributors to Here and There; never before have we received so many entries and never before was a Jury of Award called upon for such a momentous decision. Both of the portraits of Mr. Dolan submitted by the above named gentlemen are reproduced below.

For the rest of the entries—our heartfelt thanks! Awards in our regular monthly competitions went to:

Class I—George Nelson of New York
Class II—Barney D'Arcy
Class III—Milton Tucker of Philadelphia
Class IV—Howard D. Clary of Chicago
Good Wrinkle—Henry Sharp of Nashville, Tenn.

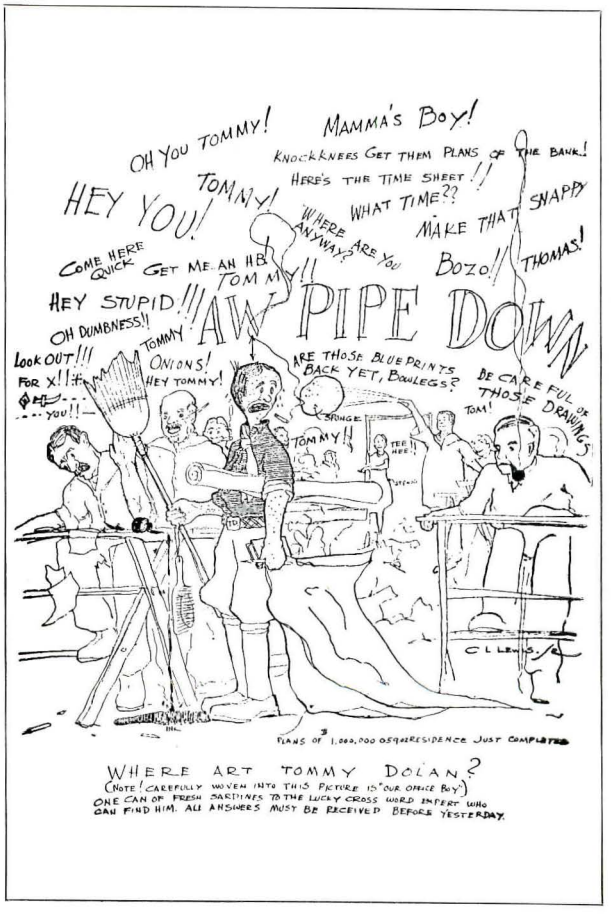
Mr. Clary, Class IV winner, sends along the following explanation of his General Conditions, printed on the following page:

"It has always seemed to me that Specification English is too terse and brutal; that its jerky, machine-like, pull-back-the-press-and-print-it-over-again, 'This contractor shall . . . . etc.' style reacts on the bidder's sensitive nature and brings to the surface all the baser instincts.

"I believe too that specification writers are too serious-minded, a condition brought on by handling weighty subjects and weightier prose.

"A new style along the lines of the enclosure (S-4-S and tongued and grooved on ends) would not only do much to lull the suspicions of the bidder, but would brighten the office by developing the specification writer's better nature."

Introducing Tommy Dolan, as Designed by Clifford L. Thornton, of Denver, Col.
(Prize Winner)



Clarke L. Lewis, Jr., of El Paso, Texas, Submitted This Tommy Dolan
(Placed Second)

THE DRAFTSMAN

By Barney D'Arcy

(PRIZE—*Class Two—August Competition*)

His work is not in portraits, murals, signs.
He scribes all day while sitting on a stool,
With pencil, T-square, angle and a rule
And overlooks a mesh of hard, straight lines.
He visions this new building as a tooth.
The street where it will set—a gaping mouth
That yawns for wider set-backs and the south:
Its beauty is its limestone,—steel—its truth.
Grim ironworkers perching in the sky
Blaspheme his plans while riveting a hole
And masons mixing concrete damn his soul
And carpenters his pencil and his eyes
Yet knowing this, do you suppose he'd change
For all the arts? Well, wouldn't he be strange?

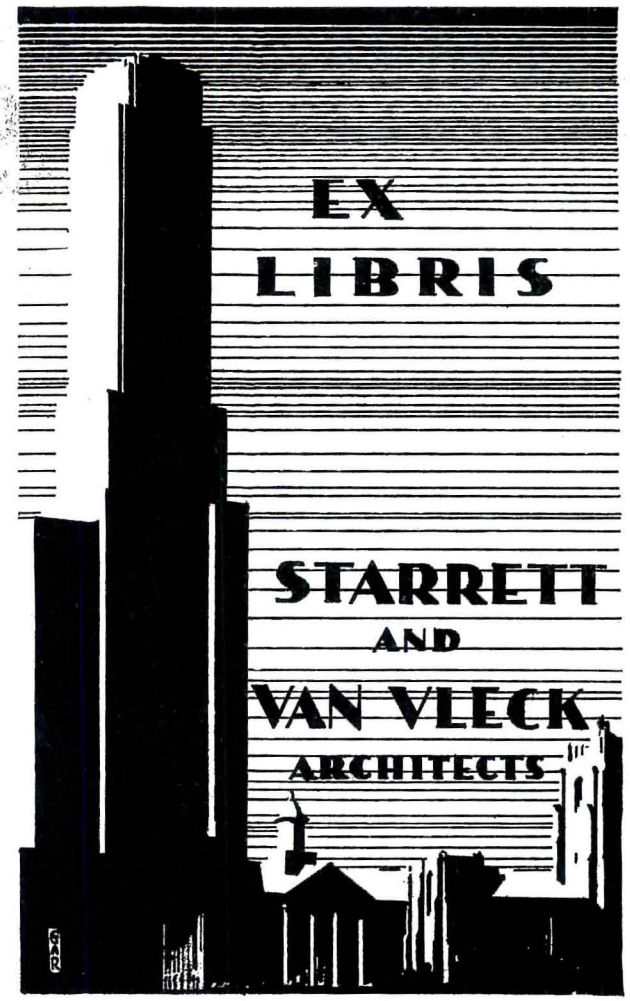
BOOK PLATE COMPETITION

THE OFFICE OF Starrett and Van Vleck, Architects, of New York, recently held a competition to secure an acceptable idea for a book plate for the firm's architectural library. The competition was open to all members of the organization of Starrett and Van Vleck.

The designs were judged by members of the firm as a Jury and a prize of $100 was awarded the author of the accepted design, reproduced at the right. Mr. Rackell's design becomes the property of the firm.

PENCIL SKETCH BY GEORGE NELSON OF NEW YORK

(PRIZE—*Class One—August Competition*)



DESIGN FOR A BOOK PLATE BY G. A. RACKELL

Prize Winner in the Office Competition Conducted by Starrett and Van Vleck

GENERAL CONDITIONS

By Howard D. Clary

(PRIZE—*Class Four—August Competition*)

The drawings and this document are, without a doubt,
As very nearly perfect as this office can turn out;
But, should some trifling error pass the checker's eagle eye,
Report it to the Architect. He'll thank you by and by.

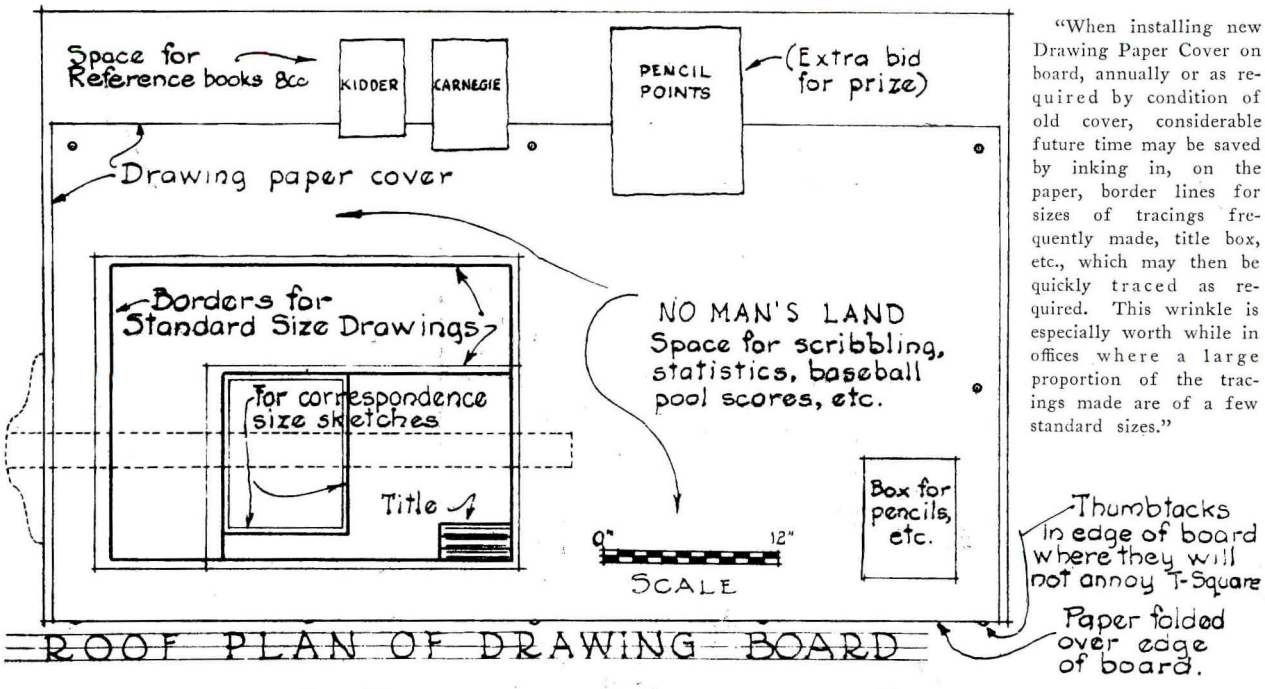
A thing's not always mentioned in the drawings and the spec,
But if it's found in either, be sure it's there on deck.
There won't be any extras if it's found in either one.
The draftsman's not a printing press, and when it's down, it's done.

The man who does the mason work must pay all permit fees,
Get water to the building site, and cut down all the trees.
Place red lights on the sand piles, repair the broken street,
Take rubbish off the premises and leave them clean and neat.

A foreman with authority shall supervise the work,
Facilitate inspection by the owner or his clerk.
Furnish all insurance and complete the work by fall.
The owner may accept one bid, or may reject them all.

EXCAVATING

Dig out the excavation by machinery or by hand.



"When installing new Drawing Paper Cover on board, annually or as required by condition of old cover, considerable future time may be saved by inking in, on the paper, border lines for sizes of tracings frequently made, title box, etc., which may then be quickly traced as required. This wrinkle is especially worth while in offices where a large proportion of the tracings made are of a few standard sizes."

A Good Wrinkle from Henry Sharp, of Nashville, Tennessee

(Prize—*Special Section—August Competition*)

Pile the black dirt separately, don't try to use the sand.
Back fill around foundation walls and tamp it till it's hard,
Remove the surplus filling after grading round the yard.

Concrete

The mixture will be one-two-four, ingredients the best.
Cement must be the Portland kind, of grade to pass the test.
The sand to be torpedo, and the stone half-inch or more.
The concrete must be spaded for the walls but not the floor.

The forms shall be securely braced and bailed out fairly dry,
Greased to keep adhesion down, and wired both low and high.
Leave necessary holes for pipes. Go down to solid ground.
Plaster on the outside and leave work whole and sound.

Brickwork

The backing of the press brick work, and all the other walls,
To be of hard burned common brick (use tile around the halls).
Build discharging arches over openings in the rear.
Bed carefully around all frames (this job's not brick veneer).

A header course you shall build in, for five the other way,
A dry course every twelfth course; and all around the bay
You'll build in shallow recesses where radiators go.
The grouting round the liners for the flue must be just so.

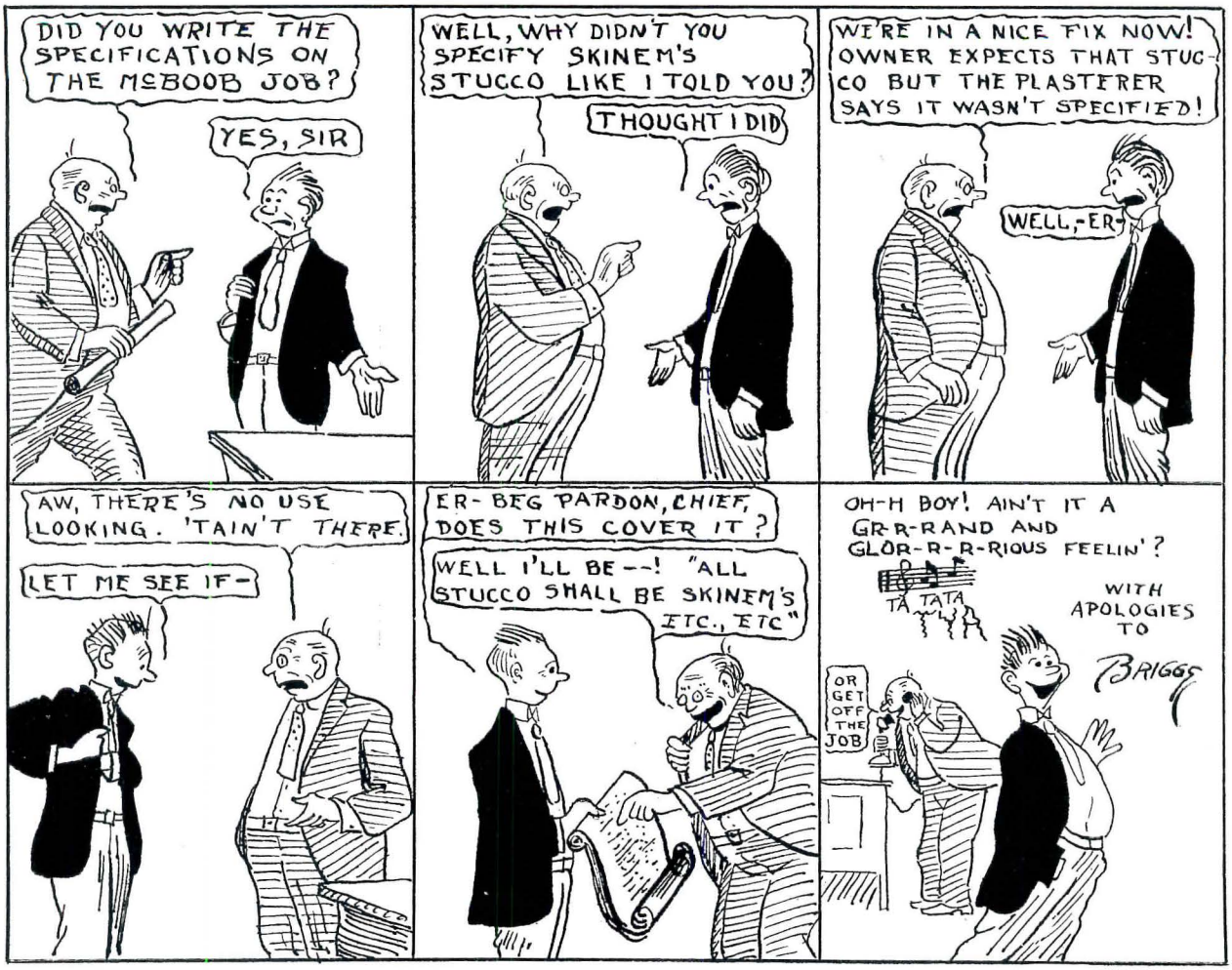
Build with care the boiler flue and set the cleanout door,
And let your bid state what you'll build it each foot higher for.
Build in anchors where they're needed, set all beams and plates,
Furnish all the ironwork and the ornamental gates.

The press brick work in front shall be laid up in Flemish bond
At forty bucks per M, the kind of which the owner's fond
To be laid plumb and straight to line, with colored mortar joints.
Please take care not to overlook these three important points.

A Tree Study by David Davis

Drawn on Cameo Paper

Ain't It a Grand and Glorious Feelin'? : : : :



CARTOON BY MILTON TUCKER OF PHILADELPHIA, PENNSYLVANIA

(PRIZE—*Class Three—August Competition*)

THE DRAMATIC CRITIC IS ASKED TO REPORT ON A NEW BUILDING

Submitted by Max R. Horwitz, of Los Angeles, Cal.

THE OPENING NIGHT of the new Whoosis Building, a combined hotel, garage, airport, and fresh vegetable market, drew a capacity house which came expectant and left loaded with costly souvenirs.

The combined Whoosis Building, a tragi-comedy in twenty-one stories, by one of the most popular of the younger architects, proved a good vehicle for the opening in which Tarzan and Tarzan (Builders) played a prominent part. Their performance in the role left very little to be desired. The requirements in this part in transition from basement to first story and first story to roof were very exciting. (See specifications PP. 122.)

A. F. Paganlove, the architect, is superb in his lower story elevations and though his boiler rooms and garage ramps are of a high quality, yet they suffer in comparison with the work in the lobby and elevator cabs, done in a much lighter mood.

He has an unrestrained style which approaches suavity itself and presents his part with a very convincing naturalness. The supporting cast includes Swenson and Johnson, heating and vent men, Ike Plaitoff, plumber, and Jacobson Company, roofers. All did exceedingly well—especially the latter who gave a written guarantee for twenty years' service. All in all it is a pretty fine thing and we venture to predict that the building will not long remain vacant.

(NOTE—*Properties by Hoosehow; ceiling lights and bathroom fixtures by Crane.*)

PHANTASMAGORIA

By James H. Berger

If thoughts were drops of rain, O Lord,
And mind a yawning chasm,
My mind would be a maddened sea,
A tempest-swept phantasm.

If thoughts were threads of silk, O Lord,
And mind a weaving loom,
The tapestries I'd fabricate
Would fill a Caesar's tomb.

If thoughts were grief-dulled men, O Lord,
And mind their land of sorrow,
The tongues of flame fanned in my mind
Would lick and char my marrow.

DOME OF THE CENTRAL BRANCH WILLIAMSBURGH SAVINGS BANK BUILDING, BROOKLYN, N. Y.

HALSEY, MC CORMACK & HELMER, INC., ARCHITECTS

THE DOME OF THE Williamsburgh Savings Bank Building presents an example of unusual construction necessitated by the rather strict requirements of the client that the building for the central branch should be provided with a dome of similar appearance to the golden dome on the original Williamsburgh Savings Bank Building, which since 1876 has become a well known landmark, and for this reason the bank wished to have this identifying mark perpetuated in the newer building, but with a modification made in the method of night illumination which would obviate the need for external reflector lights, as used on the old building, which presented an unsightly appearance and had other serious disadvantages.

The scheme finally evolved, and which has since demonstrated its entire practicability, was to build the dome of an open cage gilded copper construction with adjustable louvres arranged in such a position that the outside gilded surface would present the appearance of a solid dome, while the inner painted surface of high reflective power would reflect the illumination produced by flood lighting units placed within the dome for the night effect and would reflect in a similar way the sunlight for the day effect. At night, the flood lights are mechanically controlled so that the illumination is colored red, green, amber and white in succession, one color merging imperceptibly into the next. Details of the dome are shown on the following pages.

A LETTER FROM HERBERT S. STONEHAM

PRESIDENT OF THE TEE STONE CORPORATION

"I HAVE BEEN READING with great interest your analysis of cost paid to Architects, and should like to be allowed to suggest one reason why they are handicapped in getting their proper due. It is that the Architect so seldom signs his building, and consequently in the discussions of it by the Public, who are forced to see it, whether or not they like it, his is the last name thought of.

"For instance, the general discussions by the men in the street is as follows: 'What's that building?' 'That's a new bank.' 'Who's building it?' 'George Ohstron.' 'Who's got the contract?' 'Thompson & Starrett.' 'Who's the Architect?' and answer comes there none. That is, if it ever occurs to anyone to ask such a question.

"And if the man in the street is curious enough to try to find the Architect's name, the last place he will find it is engraved on the building.

"If a man writes a book, or a play, or an opera, or paints a picture, his name goes with it. Lawrence's "Blue Boy" is still Lawrence's, not Lord Lansdown's and not Archie Huntington's, but the building designed by the Architect is Woolworth's, or Altman's, or Tiffany's, and the Architect is lost sight of. Consequently, the general Public doesn't believe in the necessity of him, and I suggest to you, that the want of knowledge of the Architect's name hinders the Public from a true appreciation of, or interest in, Architecture.

"They are, on the contrary, interested in cost, and that seems to me quite the opposite to their interest in any other work of Art."

PHILADELPHIA ARCHITECTURAL EXHIBITION

THE AMERICAN INSTITUTE OF ARCHITECTS, Philadelphia Chapter, and the T-Square Club of that City, will hold their Thirty-second Annual Architectural Exhibition from November 1st to the 15th inclusive. The Joint Exhibition Board of the affiliated organization has announced that the Exhibition will this year, through the courtesy of John Wanamaker, Philadelphia, be held in the Art Galleries of that Store.

Holding an architectural exhibition in a department store is unique in that it is almost the first time in the history of such displays that a similarly dignified attempt is being made to take architecture to the people at large instead of relying upon the best examples of architectural work being seen only by that small portion of the public which usually goes to such an exhibit. In the past it has been customary to hold such affairs in museums, clubs, art academies or similar institutions and the new departure of this Philadelphia Group will be worth watching from many angles and especially from the standpoint of public interest and value.

Another departure from precedent established during the thirty-one years which the Philadelphia Exhibitions have notably contributed to the advancement of architecture and allied arts and their appreciation by the public will be the nature of the ceremonies on the Opening Night, October 31st. Through the further fine cooperation of John Wanamaker, Philadelphia, this private viewing will be in the evening when a special recital on the Grand Organ, within the spacious court of the Store, will be a feature.

The Joint Exhibition Board in charge of this year's display is Nicola D'Ascenzo, Chairman; Howell L. Shay, Vice Chairman; George Wharton Pepper, Jr., Secretary; James Bush-Brown, Treasurer; D. Knickerbacker Boyd, Managing Director; Herbert R. Leicht, Harry Sternfeld, and Isabel W. McCoy, Executive Secretary of the Philadelphia Chapter, A.I.A.

A Circular of Information is now available which, together with entry slips and labels, may be had upon application to the Executive Secretary, 112 South 16th Street, Philadelphia.

PHILADELPHIA ARCHITECTS' BASEBALL LEAGUE

THE PHILADELPHIA ARCHITECTS' BASEBALL LEAGUE terminated its schedule for 1929 with the following standing:

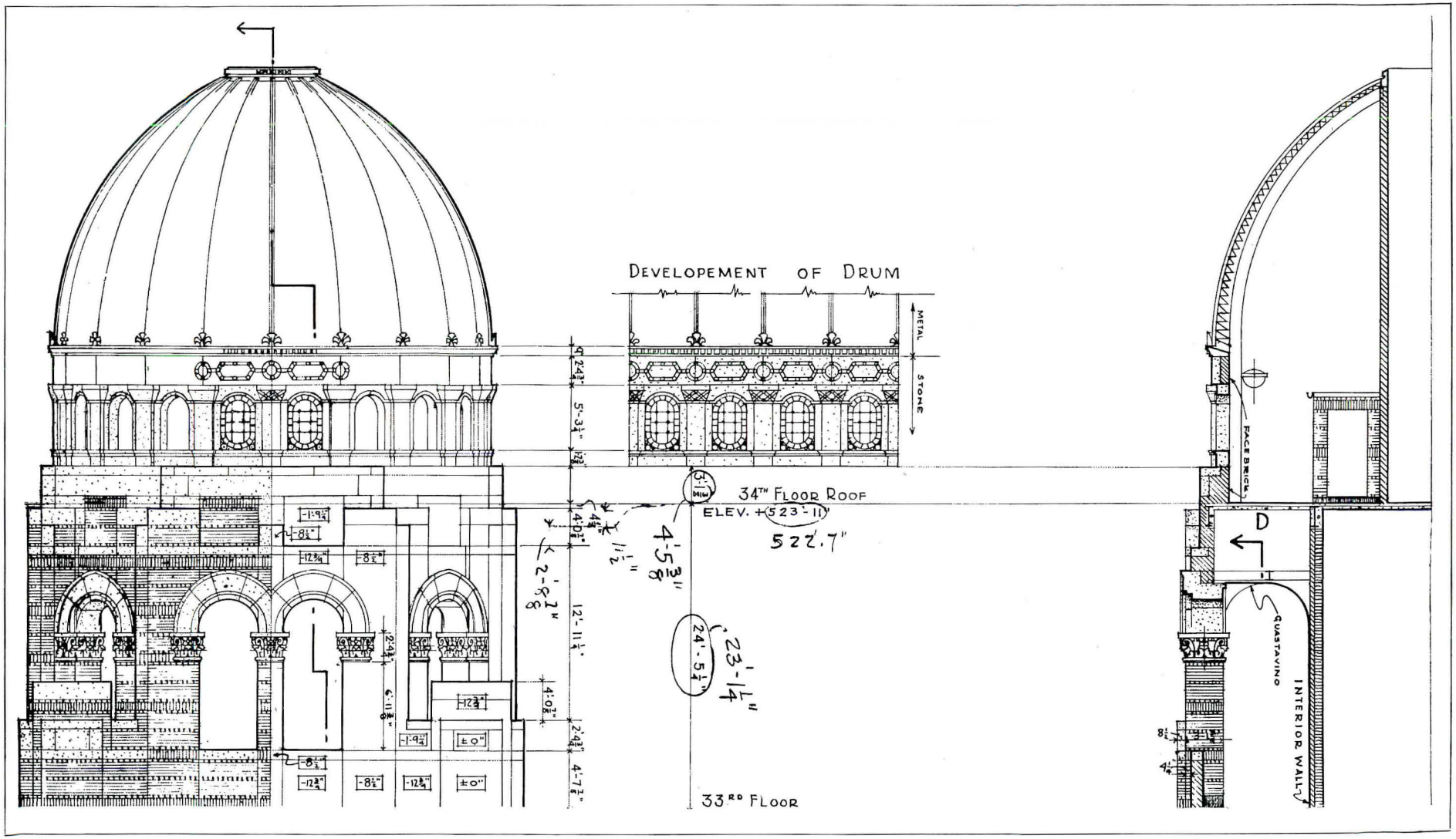
	Won	Lost
Board of Education	10	0
Ritter & Shay	7	3
Ballinger Company	4	6
John T. Windrim	3	7
Simon & Simon	3	7
Chas. Z. Klauder	3	7

The Board of Education carried off the Championship and earned the right to play the winner in the New York Architectural Baseball League on September 14th, in New York City. Ritter & Shay, winner in 1928, finished in the runner up position.

The competition and interest was far above that shown during the last season and the League has taken on the aspect of a permanent fixture in the architectural life of Philadelphia.

A CORRECTION

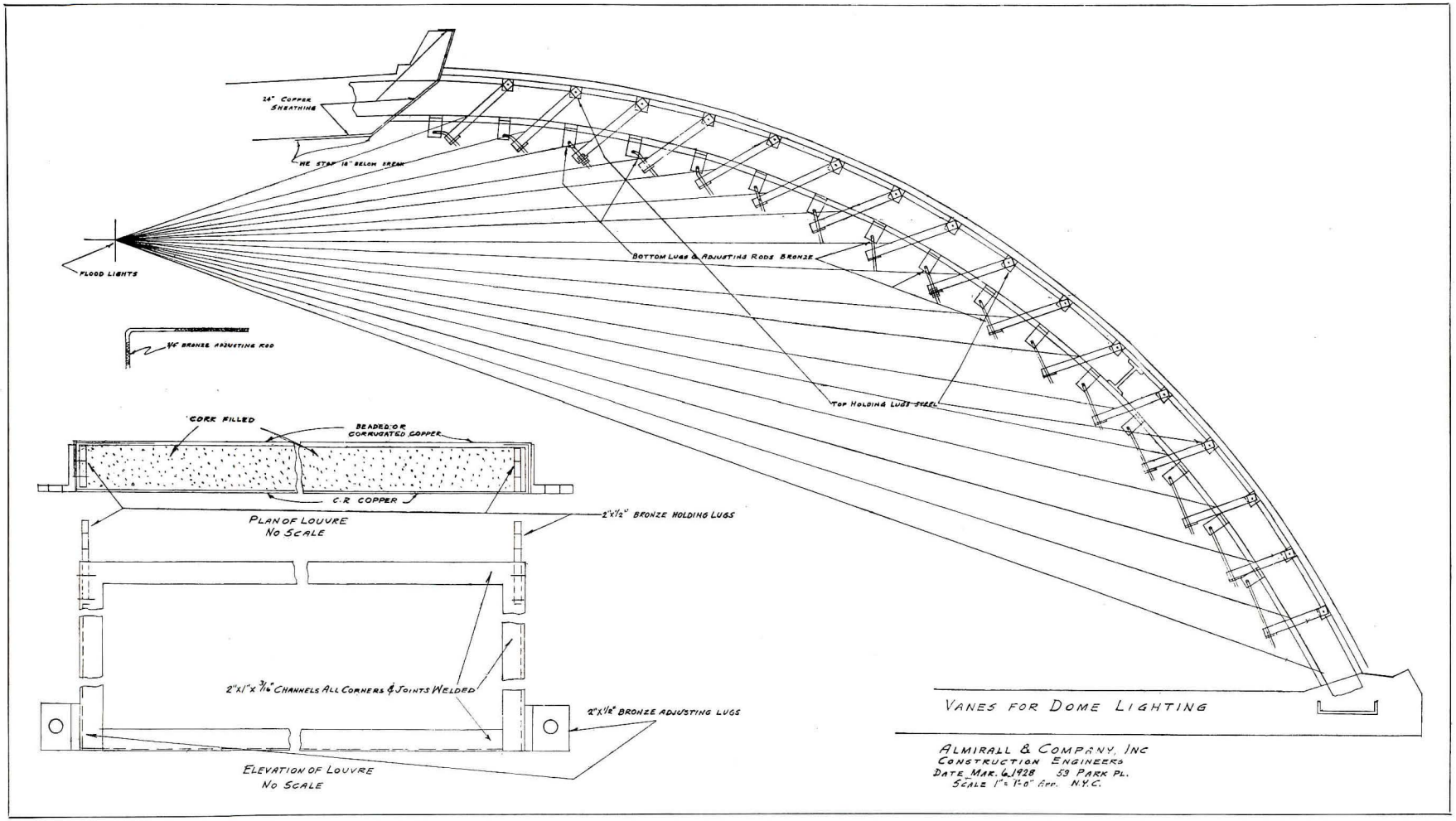
IN THE ADVERTISEMENT of the Ankyra Mfg. Co., of Philadelphia, appearing on the back cover of PENCIL POINTS for July, 1929, the architect of the Atlantic Building in Philadelphia was incorrectly stated. Joseph Franklin Kuntz, of Pittsburgh, is the architect.



DETAILS OF CONSTRUCTION—DOME OF TOWER FOR WILLIAMSBURGH SAVINGS BANK, BROOKLYN, NEW YORK

HALSEY, MC CORMACK AND HELMER, INC., ARCHITECTS AND ENGINEERS

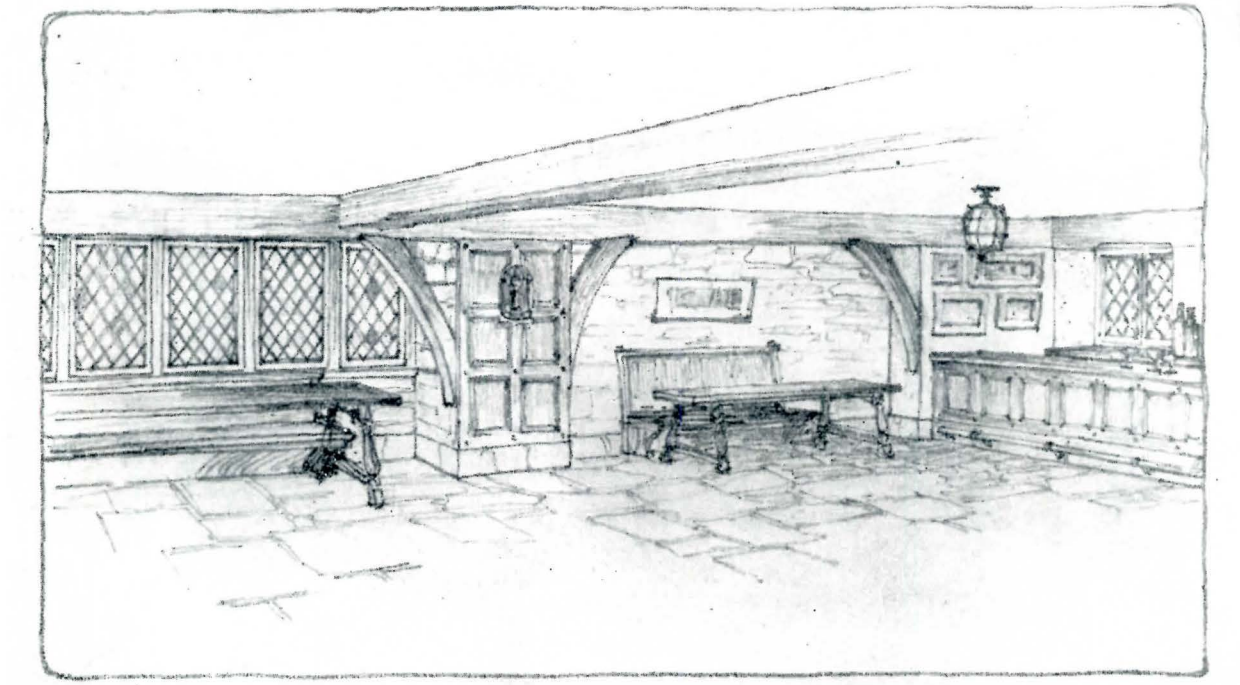
(See details of dome construction opposite and text on page 649)

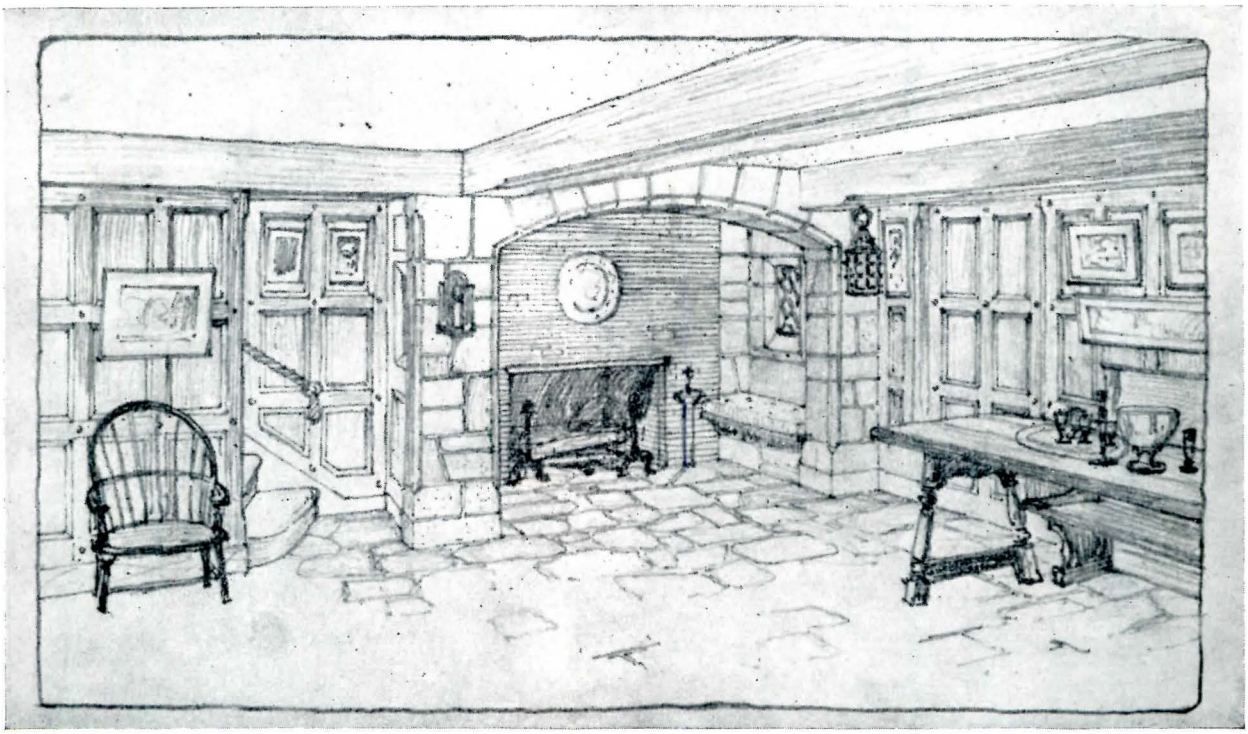


DETAILS OF CONSTRUCTION—DOME OF WILLIAMSBURGH SAVINGS BANK, BROOKLYN, NEW YORK

HALSEY, MC CORMACK AND HELMER, INC., ARCHITECTS AND ENGINEERS—ALMIRALL AND COMPANY, INC., CONSTRUCTION ENGINEERS

(See text on page 649)





STUDIES FOR A TAP ROOM IN A PRIVATE RESIDENCE

DESIGNED AND DRAWN BY HARRY C. STARR, ARCHITECT

THE DRAFTSMAN'S LIBRARY

International Airports, by Stedman S. Hanks; 195 pages, 5¾" x 8¼"; price $5.00; published by The Ronald Press Company, New York.

Just as our architects have turned to Europe for precedent upon which to base their designs for buildings in general, so they now can with advantage turn to Europe for information about the design of modern airports. The development of air transportation on the Continent has, for the time being, outstripped that in this country so that we are now in the position of being able to profit by what the European designers have found out about the practical ways of solving the airport problem. Lieutenant-Colonel Hanks speaks with authority in this book, for it is based on actual first-hand knowledge of what has been done abroad as well as of what has been developed thus far in this country. Much information on the details of foreign airport operation is given that has not heretofore been published and the design, construction, and management of the outstanding airports is described and compared with that of airports in America. The book is consequently likely to be of use to the architectural designer who is turning his attention to airports. It is a valuable addition to the only too slender list of existing books dealing with our most recent problem.

Recent English Domestic Architecture, by H. de C. Hastings; 104 plate pages, 11" x 14"; price 15s.; published by The Architectural Press, London.

The material originally presented in the much sought after issue of the Architectural Review (London) for December 1928 has now been published in book form and is available to those who were unable to procure copies of the original publication (which was out of print within two weeks after its appearance). The magazine articles by le Corbusier and others have been omitted but the designs for English houses of various sizes are all there—eighty-one of them, if we counted correctly. They have been arranged in a rough kind of chronological order according to the "style" in which they are dressed, so that it is possible for the reader to gauge the extent to which tradition influences modern design in England. All of the houses have, of course, been built recently, but the sequence through Tudor, Jacobean, and Georgian to the modern experiments at Silver End, gives an historical note to the collection which is not without value. At a certain point the houses, while not pretending to be *modern*, cease to bear any obvious signs of Georgian or other period tendencies. There are at least a half a dozen excellent *modern* designs which are based upon no precedent at all save honest use of materials and good planning.

In every case the plans are given as well as photographs or perspective drawings and in most cases also the total cost of the building, in pounds sterling, and the cost per cubic foot. Notes on each plate tell briefly what the materials were and how they were used. A surprisingly large percentage of the exteriors would look quite at home in American communities. The book will undoubtedly be much used by American designers.

Early Church Art in Northern Europe, by Josef Strzygowski; 167 pages, 6¼" x 9½"; price $8.00; published by Harper & Brothers, New York.

The tremendous interest in the architecture of the northern European countries, which has developed in this country during the past few years, has been principally directed toward the productions of contemporary architects —the so-called "modern" works. Of the architecture of past times in these countries we have heard little, for there has been a scarcity of books and other documents dealing with this background for contemporary work. This book, by a Professor of Art History in the University of Vienna, supplies us with a scholarly, well illustrated analysis of mediæval ecclesiastical architecture in northern Europe with special reference to timber construction and decoration. Most of the buildings illustrated and discussed will be new to the average architect, for a great deal of the material was collected from obscure parts of Europe, seldom visited by American travelers. The thoughtful designer can find in the book many fresh ideas which can conceivably be made use of in his own work, but whether or not he is interested in "cribbing" he can at least add materially to his knowledge of architectural history.

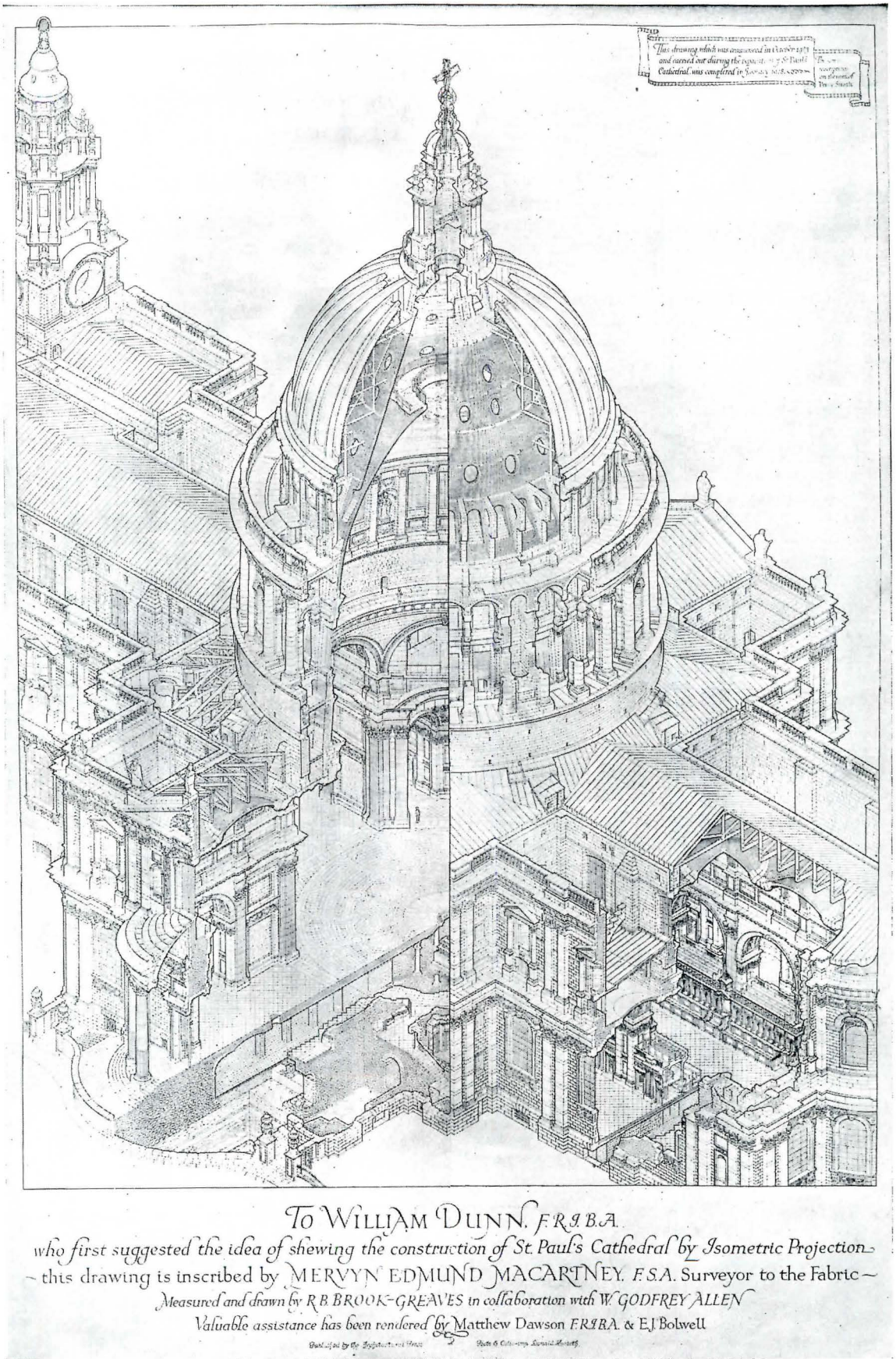
Plates of Building Construction, by W. R. Jaggard, with an introduction by Professor A. E. Richardson; 16 plate pages, 12" x 18"; price 8/6d.; published by The Architectural Press, London.

This collection of plates will be of interest to the American architectural draftsman chiefly for the opportunity it gives to compare English and American practice in construction. It is, in a way, a "British Knobloch," showing the methods of construction commonly accepted in the British Isles. Foundations, masonry, carpentry, trusses of wood and steel, joinery, terra cotta, slating and tiling, plumbing, drainage, and plasterwork are some of the things covered. The plates are all clearly drawn, with dimensions and explanatory notes. Mr. Jaggard was an authority on practical building construction and for a number of years was Lecturer in Construction at the London University School of Architecture.

Some Modern Sculptors, by Stanley Casson; 119 pages, 6¾" x 10"; price $2.75; published by The Oxford University Press, London.

In this book the work of some of the more important modern sculptors, including Barye, Rodin, Bourdelle, Malliol, Bernard, Mestrovic, Rosandic, Eric Gill, Modigliani, Gaudier-Brzeska, and Epstein, is critically analysed. Thirty-nine plates, showing selections from the best work of these masters, provide adequate illustrative material to give the amateur a fairly clear conception of the trend of sculptural design today. Any architectural designer can benefit from a careful study of this volume, from which he will gain a clearer insight into one of the arts sister to his own. Intelligent collaboration between architect, painter, and sculptor is impossible unless each knows something of what the other is striving for. The author of this work has provided a way to find out about the sculptor's side of the story, at least.

(Continued on page 655)



ISOMETRIC DRAWING OF SAINT PAUL'S CATHEDRAL, LONDON

BY R. B. BROOK-GREAVES AND W. GODFREY ALLEN—PUBLISHED BY THE ARCHITECTURAL PRESS, LONDON

(See text opposite)

THE DRAFTSMAN'S LIBRARY

(Continued from page 653)

An Isometric Drawing of St. Paul's Cathedral, London, by R. B. Brook-Greaves and W. Godfrey Allen; 32″ x 48″; price, ordinary edition 30 shillings, de luxe edition £3 3s. 0d.; published by The Architectural Press, London.

The original of this drawing, reproductions of which are now available, is thought by its publishers to be the largest and most important drawing that has ever been made of any building in the world (it measures approximately 12 ft. by 8 ft.), and its history is a remarkable one. We have reproduced it in miniature on the opposite page.

Mr. Walter Tapper, A.R.A., P.R.I.B.A., writing of the drawing, says:

> "This splendid isometric drawing, by Mr. R. B. Brook-Greaves, assisted by Mr. W. Godfrey Allen, shows the construction of St. Paul's Cathedral from the foundation to the summit.
>
> "It is the result of years of labor spent in investigating the exact methods of constructing the building, and in demonstrating these in a manner that the architect and layman can appreciate, although only experts can realize the patience and perseverance that such a work has involved.
>
> "The drawing is a novel way of placing before the modern student the scientific methods which Wren employed to carry his dome by means of masonry on to the eight great piers. Although today other means would be employed, yet it is no exaggeration to say that at the time it was a unique treatment scientifically developed.
>
> "Mr. Brook-Greaves has produced a unique drawing which should last for all time, both as a study in the construction of a great design, and as an example of masterly architectural draftsmanship for students to follow.
>
> "It may be confidently assumed that copies of this drawing will be found in every architectural school and technical library in the world, and in the possession of everyone interested in constructive architecture and fine draftsmanship."

The drawing has been reproduced by the collotype process to a size of about 48 in. by 32 in. on a fine cartridge paper mounted on cloth. It can also be obtained in four sections unmounted (measuring about 25 in. by 17 in. each) by those who would prefer to possess the drawing in this form.

In addition to the ordinary edition there is a small edition de luxe printed on handmade paper, and limited to fifty copies, each of which is numbered and signed by Mr. Mervyn E. Macartney, Surveyor to the Fabric of St. Paul's Cathedral.

L'Avenir de Paris, by Albert Guirard, published by Payot, Paris.

Professor Guirard by his latest work upon the future of Paris has treated with sane artistry the problems of city planning as applied not to a city in the abstract, but to a sensitive, beautiful, historic city facing the changes which tend to deface its intimate and subtle charm. The work gives constant evidence of careful technical study and of conservative and sensible solution. It will be most helpful to the student planning to visit Paris for a stay of sufficient length to become really acquainted there.

The work contains an interest beyond its immediate subject, in that it is one of the most excellent and fearless criticisms of the problems of the modern city in America as well as abroad, and abounds in sparkling observations which show the author's intimate knowledge of our own larger cities, clearly calling attention to the weakness as well as the power of American work.

The fact that Professor Guirard, though an American citizen, is by birth and training French, affords him the opportunity to write freely to the Parisian of the renewed building activity which attacks its established scale and beauty, but to do so with a vision of hopefulness for a greater beauty to come in the extension and further improving of the city.

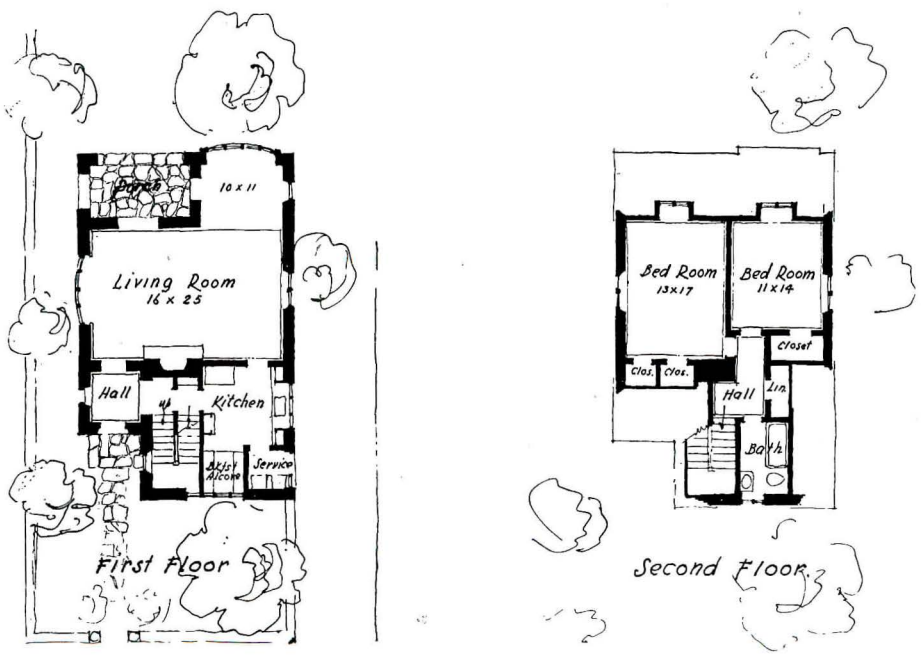
No matter how well one knows Paris, the detailed review and criticism of its buildings, boulevards, bridges, and historic churches, in their relation to the city of the future, comes with strong appeal from one who writes so clearly of the city he loves so well.

WILLIAM WARD WATKIN,
Professor of Architecture, Rice Institute.

Californian Architecture in Santa Barbara, by H. Philip Staats, with a preface by Charles H. Cheney; 125 plate pages, 8″ x 11″; price $7.50; published by The Architectural Book Publishing Company, Inc., New York.

Santa Barbara is noted for its many buildings of excellent design based on the precedent supplied by the early California Missions and by the architecture which developed under similar climatic conditions along the Mediterranean. In this book Mr. Staats has collected together a number of the best examples of what has come to be called the Californian Style and has shown them by means of admirable photographs and plans. The result is a useful reference book for architects and designers who are working in that style. More than half of the 125 plates are of residences. In addition there are fifteen plates devoted to Municipal Buildings (the court house, the library, a museum, a neighborhood house and two schools), sixteen plates of Churches, Clubs, and Theatres, and nineteen of Commercial Buildings (small shops, office buildings, studios, banks, etc., ending with the Biltmore Hotel). There is a surprising harmony which runs through these pages due to the unity of style which was happily adopted by the various architects represented. We are led to wish that architects of other communities might work together a little better toward the end of producing villages, towns, and cities of as satisfying a general aspect.

A PENCIL SKETCH BY RICHARD BOLLING



RESIDENCE DESIGNED FOR SOUTH PASADENA, CALIFORNIA

H. ROY KELLEY, ARCHITECT

THE SPECIFICATION DESK

A Department for the Specification Writer

LIME, CEMENT, AND PLASTER

By David B. Emerson

AN EXCELLENT ADDITION to the general equipment of a specification writer is a comprehensive knowledge of the various materials which enter into the construction of a building, the sources of supply, methods of manufacture and the uses to which each are best adapted.

Next in importance to the stone and brick from which a masonry structure is built are the cementitious materials which serve to bind the masonry together, and to furnish exterior and interior coatings for the rough masonry walls.

The earliest masonry structures were laid up with dry walls, without the use of mortar, and later stone and sun-baked brick were laid up in clay, which practice continued in isolated districts until comparatively recent times.

The first cementitious material to be used was lime, which is oxide of calcium, commonly known as "quicklime." It is produced by heating carbonate of lime, in the form of chalk, marble, or limestones which do not contain over ten per cent of impurities, to a temperature of about 800° Fahrenheit, when it becomes cherry red, thus driving off the carbon dioxide, and changing the calcium carbonate to calcium oxide. In addition to the materials mentioned above, the early settlers in this country frequently used oyster shells for making lime, they being practically pure calcium carbonate.

Heat has no effect whatsoever upon quicklime, but it has a great affinity for water and slakes with a furious heat, changing the oxide of calcium to hydrate of calcium, which is a sticky white paste.

Lime after slaking is ready for use as mortar, or as a plastering material as soon as it is properly cooled. Lime mortar hardens by absorbing carbon dioxide, commonly known as carbonic acid, from the air, and returns to its original form of carbonate of lime.

How, when or where lime was first discovered is unknown, but it was undoubtedly accidental, the result of heating limestone to the necessary temperature, then accidentally wetting the resulting quicklime and producing slaked lime which was found to have adhesive and cohesive properties and to harden with age.

This must have been very early in the dawn of civilization, as we know that lime was used for plastering in Mesopotamia as early as 3000 to 3500 B. C. According to Professor Hamlin the cohesive form of construction originated with the Assyrians and Chaldeans, so in all probability they were the first to make use of lime as a binding material for masonry. From these remote ages down to the present time, without cessation, lime has been used as a binding material in mortar, plaster and stucco.

Hydrated lime is a calcium hydrate produced by the mechanical slaking of fresh quicklime, using just enough water to satisfy the calcium hydrate, but not enough to produce a paste. The result of this process is a dry flocculent powder which is not affected by the air.

Hydrated lime has the advantage over quicklime in that it does not have to be slaked on the job and then allowed to age at least a week, and sometimes longer, but may be mixed directly with the sand, tempered with water, and used. Also, the slaking of lime is always done by laborers by "rule of thumb" methods, whereas hydrated lime is produced by scientific methods, and in consequence is as nearly uniform in its quality as is humanly possible. Lime mortar has been successfully used for centuries, and can be used for practically all classes of work, except that which is underground, or wherever an excess of moisture exists, as lime is non-hydraulic, that is, it will not harden under water. Also, on account of its hardening by the absorption of carbonic acid from the air, it is not the best practice to use lime mortar in the laying up of very thick walls, as the air can not readily penetrate to the interior of the walls and oxidize the lime. A certain percentage of lime, either paste or hydrated, added to Portland cement mortar increases both the adhesive and cohesive qualities of the mortar, and on account of its smooth, fatty consistency causes the mortar to spread much more readily than the pure cement mortar which works very short and sets rapidly. The addition of lime to Portland cement mortar also helps to waterproof the mortar, as it fills the voids and renders the mortar much denser.

Lime has been used as a plastering material for at least forty centuries, and probably for a much longer period, plastered walls having been found in the ruins of Egypt, Mesopotamia and Pompeii. In speaking of plaster today, one always refers to the covering of the interior walls of a building, as the covering of the exterior walls at the present time is always called "stucco," which was the name formerly applied to ornamental plaster work, like the "stucco duro" of the Romans and the Renaissance. It is perfectly safe to say that, after the centuries which it has been used, lime is still the best material known for plastering. The only valid objections to its use being that it must be slaked and stacked until it is absolutely seasoned before it can be used, which takes time and space which, with the rushing methods of our present-day construction, are points which must be considered; also, it does not harden quite as rapidly as the gypsum plasters.

In some classes of work, it is the only material which should be used, notably in churches, theatres and auditoriums, as it has the quality of absorbing and deadening sound, whereas the gypsum plasters, on account of their extreme hardness, produce echoes, thereby seriously affecting the acoustics of the building.

Lime stucco has been used for quite as long a time as lime plaster, as it has been the custom from the remotest periods to cover the rough masonry on the outside of buildings with lime plaster, the same as was done on the interior walls. This custom has been almost universal

wherever an inexpensive form of construction was desired, in practically every country where lime was made and used. As to the lasting qualities of lime stucco, and its ability to stand the weather, one has only to look at the old stuccoed houses in England, many of which were stuccoed on split oak lath and are still in very good condition after the lapse of three or four centuries. In this country lime stucco was successfully used in the Colonial days in and around Charleston, South Carolina, in Germantown, Pennsylvania, and in Northern New Jersey. In more recent times a number of lime stuccoed houses have been built in the district around Philadelphia, and in all cases, so far as I know, the stucco has stood perfectly. Concrete is improved in a number of ways by the addition of a small amount of hydrated lime to the original mixture, and it does not reduce the strength of the concrete when used in the proper amounts, as recommended by the leading authorities. Due to its smooth, sticky quality it renders the concrete much more plastic and easier to work, prevents the segregation of the aggregates, with the consequent honeycombing, and it renders the concrete practically watertight by effectively filling the voids, thereby making it practically impervious to moisture. Also, by lubricating the mass, it causes the concrete to flow better when it is chuted.

Right here let me say a word regarding the chuting of concrete; although it is allowed by many of the leading engineers, it is not a good practice. My reason for saying this is that I seldom if ever have seen concrete chuted where there was not an appreciable amount of cement spilled from the chutes, and nearly as much more left sticking to the chutes. Now it does not take the wisdom of a Solomon to know that the concrete in place doesn't get any additional strength from that cement, and a mixture that was once, one, two, four, becomes somewhere about one, three, seven.

Hydraulic lime is produced from limestones which contain from ten to twenty per cent of clayey matter. It is burned in the same manner as common lime, and is like it in that it will slake by the application of water, and differs from it in that it will harden under water. Hydraulic lime has never been made in this country, but was imported in small amounts before the manufacture of Portland cement was perfected. It was generally known as "lime of Tiel," as the larger portion of it was manufactured at Tiel and Scilly in France. The only reason for making any mention at all of hydraulic lime is that it bears certain relations to the cement industry, which will be taken up later.

The first cement so far as we have any knowledge was the *Puzzuolana* of the Romans, sometimes called *Puzzolan*. This was not a scientific cement, as we know it now, but a mixture of slaked lime and volcanic ash, which rendered the mortar hydraulic. This material is minutely described by Vitruvious and is mentioned by Pliny. The art of making this cement was never really lost, but was simply neglected, and it was not feasible in Western Europe or the British Isles due to the fact that they had no available supply of volcanic ash.

In the early days of English masonry construction, ground up brick and tile were sometimes added to lime mortar to render it hydraulic. The first hydraulic cement was produced in England by burning nodules of clayey limestone which were found along the seashore, and was called "Roman cement," although it was nothing like the Roman *Puzzolana*. This cement was of an inferior quality, and the supply of the material from which it was made was limited which brought about the experiments which resulted in the discovery of Portland cement. Portland cement, which is produced by calcining to the point of incipient fusion of an intimate mixture of carbonate of lime and clay mixed in the proper proportions, and then thoroughly pulverized, was discovered in 1824, by Joseph Aspdin, a Yorkshire brickmaker. Aspdin in his experiments used the macadamizing material from the roads, mixed with clay from the brickyards and burned in a kiln similar to those used for burning lime. The name Portland cement was not taken from the place of manufacture, nor from the source of any of its ingredients, but from its resemblance when set to Portland stone, a most widely used limestone quarried on the Isle of Portland off the coast of Devonshire.

The early Portland cements were not manufactured scientifically, but were made up by rule of thumb methods, and made so little progress that they were not introduced into London until about 1843. In 1845 when J. B. White and Sons started manufacturing Portland cement by improved methods its commercial success became assured. White's English Portland cement was first brought to the United States in 1865, and it was used in engineering work until it was driven from the field in the early nineties by the German Portland cements. The Germans, by reason of their more scientific methods, greatly improved both the process of manufacture, and the finished product, which gave them the control of the American market until the perfection of the American Portland cement at the beginning of this century drove them from the field. The first attempt at the manufacture of Portland cement in this country was made by David O. Saylor at Coplay, Pennsylvania, in 1874, and was not entirely successful, but it laid the foundations upon which the later success of the industry was built. At the present time the American Portland cements are superior to any others in the world. This is due in a great measure to the scientific methods of manufacture and the constant testing of the finished product by the manufacturers; in addition to this, the work of the American Society for the Testing of Materials has been of great assistance in the standardizing of the industry.

Portland cement has become almost if not quite indispensable to the building industry, for without it concrete would be practically an impossibility and without concrete our modern buildings would be almost an impossibility. Wherever masonry exposed to any great amount of moisture is to be laid up, a hydraulic mortar is necessary and Portland cement is the one absolutely hydraulic cement. In fact, it is impossible to enumerate the manifold uses of Portland cement which have developed in the past twenty-five years.

One of the more recent developments in the Portland cement industry is white Portland cement, of which there are two makes on the market at the present time. These cements are true Portland cements, and differ from the regular grey Portland cements in that the limestone and the clay from which they are made and the coal with which the clinker is burned are absolutely free from any of the salts of iron. In addition to this fundamental condition, there are certain more or less secret methods used in the quenching of the clinker, which add to the whiteness of the finished product.

White cement on account of the absence of oxide of iron is non-staining and can be used for laying up limestones, marbles and granites. It makes an excellent stucco and where the stucco is to be colored the neutral color of the cement renders it easy to tint, and makes delicate shades possible. When specifying Portland cement at the

present time, it is not necessary to specify any particular brand or brands, but merely to say that it shall meet the requirements of the specifications and methods of tests last adopted by the American Society for the Testing of Materials, which will insure the getting of a standard cement. The specifying of cement by brand is a relic of the old days of the natural cements, which were not standardized and which varied greatly in quality.

The latest product of the cement industry is "Lumnite" cement. This is a hydraulic cement the principal raw material in which is bauxite or aluminum ore. This cement does not set any more rapidly than the regular Portland cements, but once set it hardens very rapidly, developing as great strength at the end of twenty-four hours as the ordinary cements develop in twenty-eight days.

The discovery of this cement was the direct result of the World War. The French engineers, finding it necessary to have a quick-hardening cement for the building of heavy gun foundations, conducted a series of experiments which produced this cement which made it possible to pour foundations one day and put them into service the next day. In this country precast concrete piles have been made from it and driven to refusal in twenty-six hours, and in another instance a bridge was constructed with it, and in forty-eight hours locomotives and loaded freight cars were run over it. The rapid hydration, or early hardening of this cement, brings concrete in a very few hours to a point in its hardening beyond the danger of frost attack. Also, this rapid hardening produces a chemical action in the concrete which generates considerable heat, which is an additional insurance against the attack of frost. The only reason why this cement is not more universally used is the scarcity of bauxite which makes the cost of the cement about three times that of the regular Portland cements. However, in rush work this high cost is very often offset by the great saving of time. Before the discovery and perfection of Portland cement, natural cements were made in this country at Rosendale, Ulster County, New York, in 1823, and were first used in the construction of the Delaware and Hudson Canal. These natural cements were made from limestones containing from twenty to forty per cent of clay. The limestone was calcined at about 1000 degrees Fahrenheit, and then finely ground. Although the name Rosendale cement was quite generally applied to these natural cements, they were made in many sections of the country. In 1896 there were natural cement plants in over sixty different places, but nearly half of the output came from Ulster County, New York, and nearly half of the remainder came from the district on the Indiana side of the Ohio River near Louisville, Kentucky.

These natural cements varied greatly in quality and some of them were very quick setting, which was naturally a serious defect. In spite of these handicaps, they gave reasonably good results, and some large and important work was constructed with them, notable among which were the approaches to the Brooklyn Bridge, but the manifest superiority of Portland cement has driven them practically out of the field.

At the present time there are a number of cements on the market known as "brick cements." These cements are either natural cements burned from natural argillaceous rock, under fixed formulæ and under strict laboratory control, to insure a positive uniformity, or they are natural cements mixed with hydrated lime in proper proportions. The claims which are advanced for these different cements are that they are fatter than Portland cements, and do not require the addition of lime in mixing, which greatly reduces the labor of mixing, thereby materially reducing the cost of bricklaying. Wherever these cements have been used they have, so far as I know, given satisfaction. They set quicker than lime mortar, and develop a greater strength, although not equal to that of Portland cement, but far in excess of what is required for a brick mortar. Among the large buildings in which these cements have been used are the new Equitable Building, the Roosevelt Hotel, and the New York Times Annex in New York City, and the Benjamin Franklin Hotel in Philadelphia. In addition to the above cements there are some special cements manufactured which come under no general classification, but which are purely individual in their type. Among these special cements are the slag cements. These cements are classed as Puzzolan cements, and are produced either by the grinding of a mechanical mixture of granulated basic blast furnace slag and hydrated lime or by drenching the slag with water while it is still hot and mixing with a small percentage of hydrated lime and then grinding.

There are only one or two plants in this country which manufacture slag cement at the present time, and my only experience has been with cement which was manufactured at Birmingham, Alabama.

Slag cements are not and never have been extensively used, but they are very satisfactory as brick cements, and are endorsed by the Indiana Limestone Quarrymen's Association for use in setting limestone as it is absolutely non-staining. A new use for slag cement has been recently brought out in the waterproofing of concrete for dams, spillways and other work of that character, using one bag of slag cement to four bags of Portland cement.

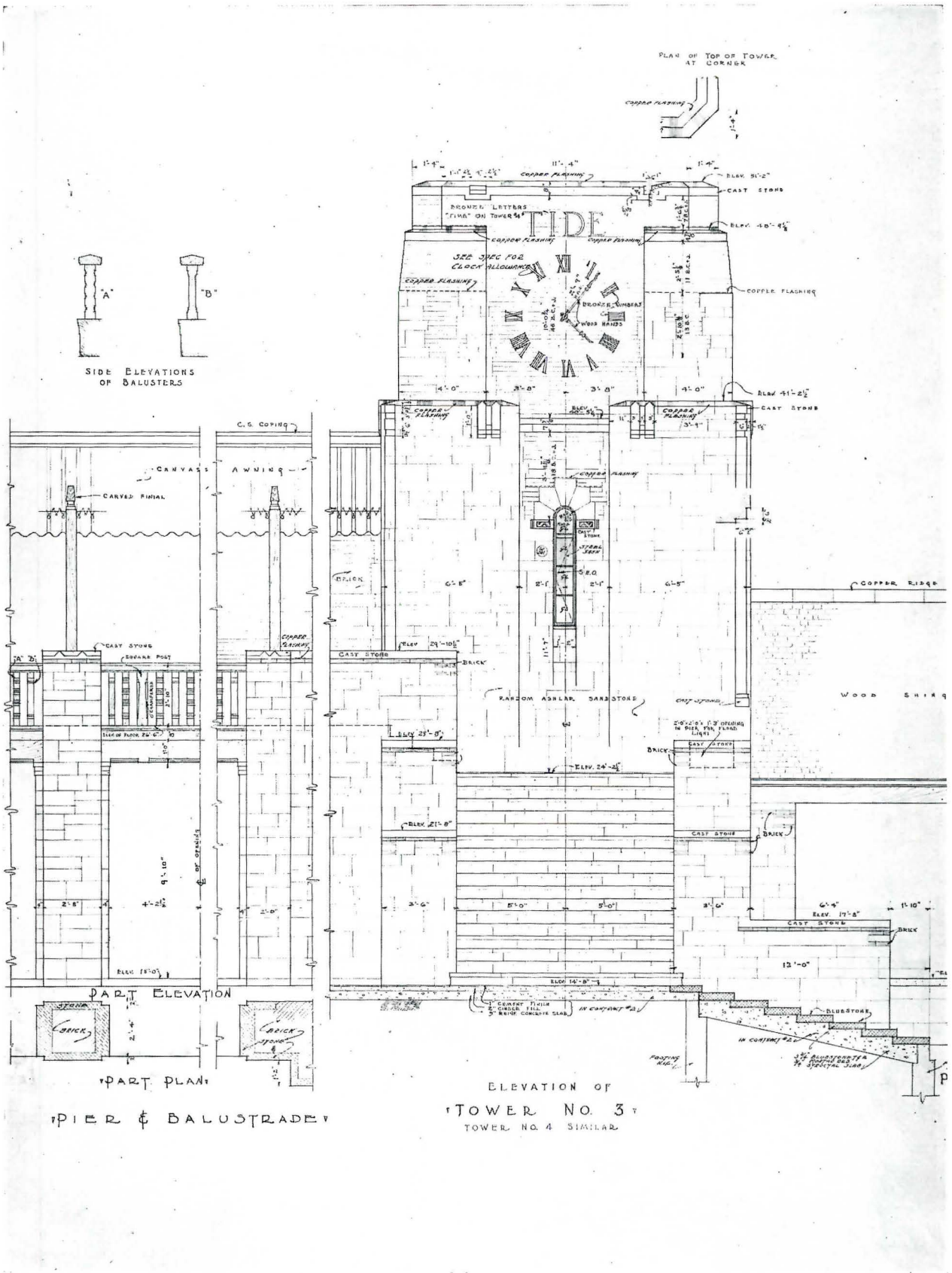
Another of the special cements is LaFarge cement, which is manufactured at Tiel, France. This is a grappier cement, which is a by-product, produced during the calcination of hydraulic lime. It is an absolutely non-staining cement, and develops very nearly the same strength as Portland cements. This cement is used exclusively for setting of limestones, granites and marbles. The first LaFarge cement to be used in this country was specified by the late Richard Morris Hunt, for the Yorktown battle monument, which was erected about 1882.

Plaster as we understand it today is a product of gypsum. Gypsum rock in its natural state is a hydrated sulphate of lime. This rock is pulverized, and then calcined at a low temperature (about 360 degrees Fahrenheit), which drives off about eighty per cent of the moisture which it originally contained. The product of this calcination or cooking process is what is universally known as "plaster of Paris." Calcined gypsum has a great affinity for water, and sets rapidly by crystallization.

The different grades of plaster of Paris are classified as: "moulding plaster," used for plaster decorations, cornice work, etc.; "casting plaster" which is used for casts, statuary, etc; and "gauging plaster" which is used in conjunction with lime putty or hydrated lime for finishing or white coating in plastering. These are all calcined plasters, and differ only in the time required for setting. The various so-called "hard wall plasters" are prepared from calcined gypsum, to which a retarder, which is generally a by-product of the tanning industry, similar in its nature to glue, has been added. This retarder is necessary, as otherwise calcined gypsum would set so rapidly that it could not be spread on the walls.

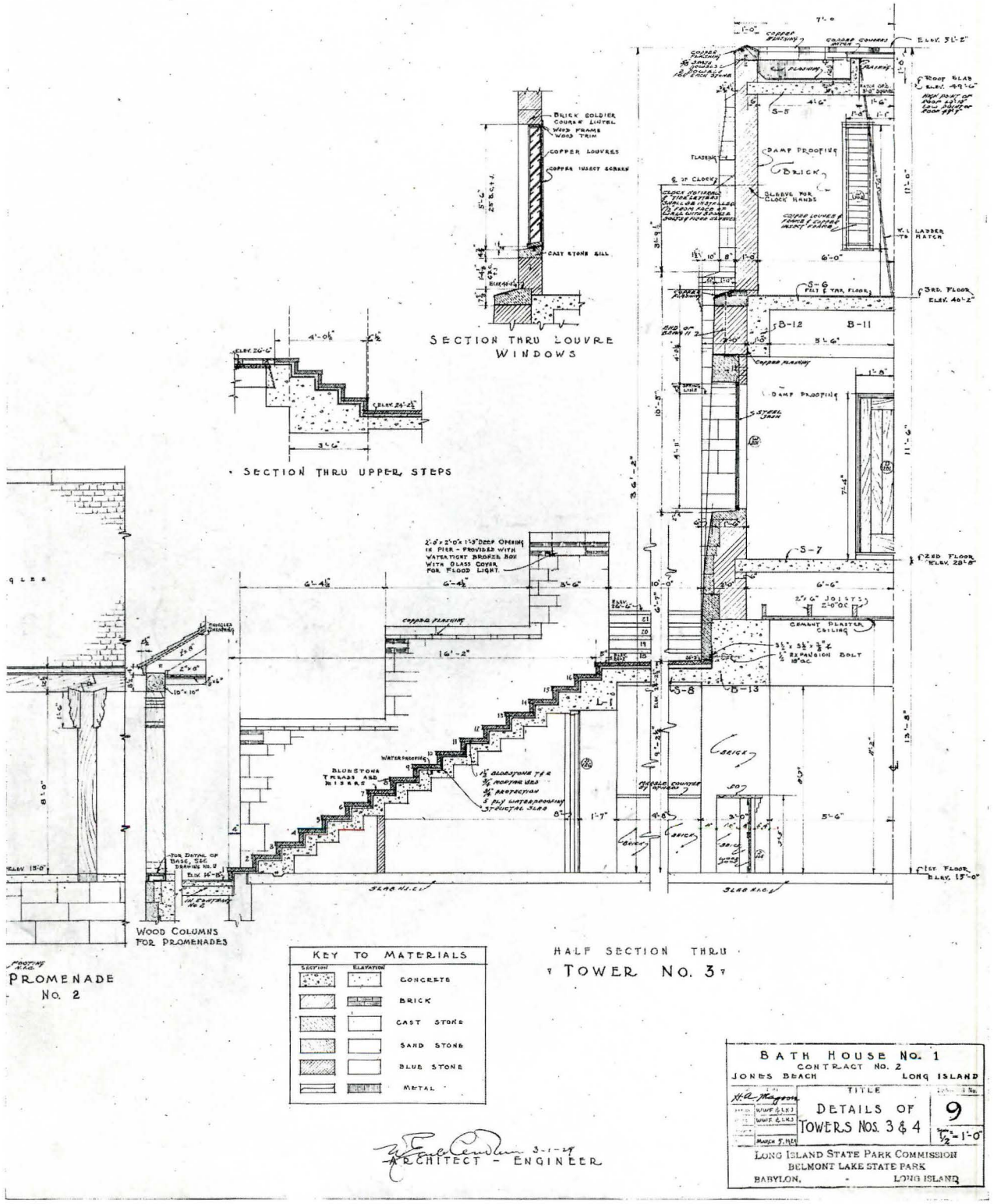
When the use of calcined gypsum first commenced is not absolutely known, but some authorities claim that the Egyptians used it; that may be possible and it not absolutely

(Continued on page 664)



DETAILS OF CONSTRUCTION FOR BATH HOUSE NO. 1, JONES BEACH, LONG ISLAND

W. EARLE ANDREWS, ARCHITECT



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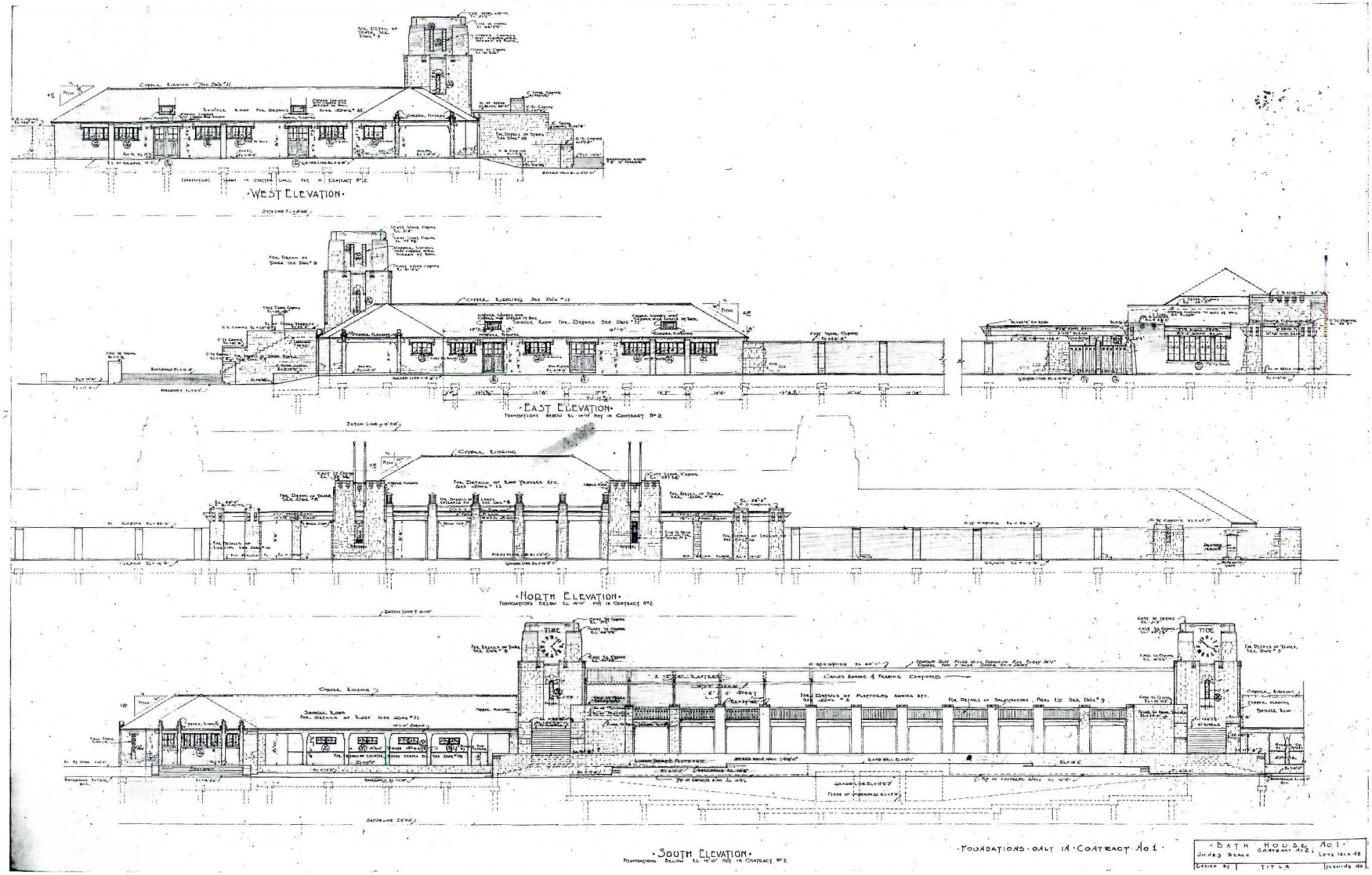

DETAILS OF CONSTRUCTION FOR BATH HOUSE NO. 1, JONES BEACH, LONG ISLAND

W. EARLE ANDREWS, ARCHITECT

SERVICE DEPARTMENTS

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale, or desiring to purchase books, drawing instruments and other property pertaining directly to the profession or business in which most of us are engaged. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed under this heading free of charge.

QUERIES AND ANSWERS. In this department we shall undertake to answer to the best of our ability all questions from our subscribers concerning the problems of the drafting room, broadly considered. Questions of design, construction, or anything else which may arise in the daily work of an architect or a draftsman, are solicited. Where such questions are of broad interest, the answers will be published in the paper. Others will be answered promptly by letter.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions. Such notices will also be posted on the job bulletin board at our main office, which is accessible to all.

SPECIAL NOTICE TO ARCHITECTS LOCATED OUTSIDE OF THE UNITED STATES: Should you be interested in any building material or equipment manufactured in America, we will gladly procure and send, without charge, any information you may desire concerning it.

Notices submitted for publication in these Service Departments must reach us before the tenth of each month if they are to be inserted in the next issue. Address all communications to 419 Fourth Avenue, New York, N. Y.

THE MART

William J. Dilthey, 120 Liberty Street, New York, N. Y., wishes a copy of August, 1928, PENCIL POINTS.

B. H. Krueger, c/o Tee Stone Corporation, 56-58 West 45th Street, New York, N. Y., would like to secure a copy each of January, February and March, 1929, PENCIL POINTS.

Burns Kattenberg, 2370 Johnson St., N. E., Minneapolis, Minn., has for sale a complete file of PENCIL POINTS from February, 1921, through April, 1925.

Raymond O. Peck, 55 Lincoln Avenue, Highland Park, New Brunswick, N. J., wants the January, February and March, 1929, issues of PENCIL POINTS.

N. C. Mather, 33 No. La Salle Street, Chicago, Ill., is anxious to secure Monograph No. 3 of Volume 2, and Monograph No. 1 of Volume 3, of *The White Pine Series.*

A. B. Kurzon, 105 W. Monroe Street, Room 902, Chicago, Ill., wishes a copy of April, 1921, PENCIL POINTS.

We are desirous of getting a copy of the April, 1926, issue of PENCIL POINTS. Communicate with W. V. Montgomery, Pencil Points Press, Inc., 419 4th Avenue, New York. Fifty cents will be paid for the copy.

William Koehl, Jr., 1900 Euclid Avenue, Cleveland, Ohio, desires copies of the January, May and June, 1924, PENCIL POINTS.

Wallace F. Yerkes, 820 Tower Court, Chicago, Ill., would like to obtain a copy of January, 1921, and June, 1925, PENCIL POINTS, and has for sale or trade a copy of the September, 1926, issue. Mr. Yerkes also has for sale a copy of *The Architectural Record* for December, 1925, and one for January, 1926.

Bernard Rowntree, Box 173, Route No. 1, Carmel-by-the-Sea, Calif., has for sale the following copies of PENCIL POINTS: 1926—February, March, April, May, June, July, August, September and October; 1927—February, May and September.

Miss Power, 582 St. John St., Quebec, Canada, is selling etching and engraving views of Old Quebec at moderate prices. Write to above address.

Arthur E. Nimitz, P. O. Box 1562, Sta. A., Chattanooga, Tenn., has the following copies of PENCIL POINTS for sale: 1924—September (2 copies), October, November, and December; 1925—February and March.

PERSONALS

LAMONT H. BUTTON, A.I.A., has moved his office from the Fitzimmons Building, 331 Fourth Avenue, to 2502 Grant Building, Pittsburgh, Pa.

MARGON & HOLDER, ARCHITECTS, have moved their offices to 18 East 41st Street, New York, N. Y.

KEMPER NOMLAND has changed his address from the Chamber of Commerce Building to the Architects' Building, Fifth and Figueroa Streets, Los Angeles, Calif.

CHARLES E. BUTNER, ARCHITECT, of Fresno, California, has opened a branch office under the firm name of Butner & Stranahan, 22-24 Glickbarg Building, Salinas, California.

HERBERT E. FOSTER has opened his own office for the practice of architecture at the new Daily News Building, Chicago, Ill.

FRANK C. WALTER has moved from 401 Wilcox Building to 405 Central National Bank Building, Tulsa, Oklahoma.

FREE EMPLOYMENT SERVICE

(Continued on page 162, Advertising Section)

POSITION WANTED: Draftsman desires to locate at Missoula, Montana; Spokane or Seattle, Washington. Twenty-six years of age, college graduate, three years' practical experience, good all-round general draftsman with special aptitude in lettering. Box No. 01, care of PENCIL POINTS.

OFFICE SPACE WANTED: Consulting structural engineer desires space in office of New York City architect who will give him sufficient engineering work to offset rent. Box No. 02, care of PENCIL POINTS.

POSITION WANTED: Architectural draftsman desires spare time employment. Box No. 019, care of PENCIL POINTS.

LIME, CEMENT, AND PLASTER

By David B. Emerson

(Continued from page 659)

improbable. We do know that it was used in England in the eighteenth century and how much earlier it is hard to say. Plaster of Paris has many uses in building construction, primarily of course for ornamental plaster work and as a gauging material for hard finished plastering. It is also used in the setting of interior marble work, and gypsum tile for fireproof partitions and floor slabs are quite extensively used. Gypsum wall plasters have been extensively used of late years, and on account of the comparative ease in mixing and the quick setting quality, they are particularly valuable in the big building operations in our larger cities. As they set up harder than lime plasters, they stand better where they are liable to be exposed to hard usage.

Keene's cement which was discovered and patented by R. W. Keene of London, in 1838, and first manufactured in this country in 1887, is a specially prepared gypsum plaster which is exposed to a much higher temperature in calcining than the ordinary plasters, to drive off the small amount of moisture which remains after the regular cooking, and then treated with a catalyzer, which is probably a strong solution of alum, as that was the original method in England where it was first manufactured, then reburned and ground again. The principal advantages of Keene's cement over the ordinary gypsum plasters are that it is not affected by moisture, it does not set as rapidly and can be retempered without injury, also, it sets much harder and can be given a polish almost equal to that of marble. Keene's cement is used principally for hard finished plaster and for cast and run work the same as ordinary plasters.

Now, the reader must not infer, from anything which has been written, that it was my idea or intention to show the superiority of any one material over the others, as such is not the case, but merely to give a general description of all three materials, and to give a brief outline of the principal uses of each.

A LETTER FROM CLINTON DE WITT

EDITOR'S NOTE:—*After reading David B. Emerson's article on "Pitfalls for the Specification Writer," published in the July issue of* PENCIL POINTS, *Mr. De Witt, who is connected with the Holt Hardware Company, of Oconto, Wisconsin, calls our attention to a further "pitfall" as follows:*

"MAY I CALL your attention to a further omission commonly committed by specification writers in flooring specifications. This is the failure to specify on maple floors the species of maple to be used. At present there are two distinct maple floorings being offered on the market, namely: that manufactured by the southern mills and another kind made by the manufacturers of Michigan, Wisconsin, and New York State. The maple used by the latter manufacturers is of a much stronger and harder texture than that offered by the southern people as you can readily prove by checking up with any of the forestry laboratories. However, there is such a difference in the cost of the two floorings to make it very much to the advantage of a contractor to use the southern maple instead of the northern if the specifications do not distinctly say that the maple flooring is to come from the Wisconsin, Michigan or New York State mills. Some of the Appalachian and adjacent mills call their flooring northern maple flooring as distinguished from the real soft maple which comes from the far south but this should not be confused with the true rock maple flooring made from the wood of the very slow growing maple from Wisconsin, Michigan and New York State."

REGARDING ELECTRICAL INSTALLATIONS

"COULD YOU as an electrical engineer, specifying engineer, master electrician, or contractor, testify as an expert on the witness stand that any installation that is put in and does not comply with the requirements of the National Electrical Safety Code is good practice? Is it reasonable to expect that any judge, jury, or client, would accept the word of any individual as an expert over the opinion and endorsements of the American Engineering Standards Committee?"

The above quotation is from the remarks of a very prominent attorney, who was discussing the legal status of the National Electrical Safety Code recently with one of the largest American manufacturers in electric products, located in Detroit, Michigan. This particular manufacturer has considered the matter of such importance that his company has announced to the electrical industry and to the general public the following policy in relation to the manufacture of their products:

"Effective at once, we as leading manufacturers of products for electrical distribution and control shall discontinue advertising, offering for sale and manufacturing all Live-face Electric Products not recognized and approved by the Safety Recommendations and Rules as published by the Department of Commerce, U. S. Bureau of Standards, in accordance with the procedure of the American Engineering Standards Committee.

"In line with this policy, we will no longer manufacture the following:

1. Live-face or Open Type Lighting Panelboards.
2. Lighting Panelboards having Main Fuses (not switched) or fusible only sub-feeds on the Panels.
3. Feeder or Distributing Panelboards having fuses only in the branches (not switched).

"As heretofore, we shall continue to devote our entire energies and resources to the increased use of electricity through promotion of safety electrical products for the protection of life and property."

This is a great forward step, and it is to be hoped that other electrical companies will follow suit.

COURSES IN ILLUMINATION FOR ARCHITECTS AND DESIGNERS

THE NATIONAL AND EDISON LAMP WORKS are offering courses in illumination at the Nela School of Lighting at Cleveland, Ohio, and the Edison Lighting Institute at Harrison, N. J. Architects and designers are invited to attend the school nearest them. The equipment and instruction in both schools are the same and there is an interchange of instructors. The following is the schedule for the remainder of the year 1929: September 19th, *Lighting Service Conference* at Harrison; October 7th, *General Illumination Course* at Harrison; October 14th, *General Illumination Course* at Cleveland; November 4th, *Home Lighting Course* at Cleveland. During 1930 the same types of courses will be given at each of the two schools. Those interested in taking the courses should make arrangements through the Nela School of Lighting, National Lamp Works of General Electric Company, Nela Park, Cleveland, Ohio.