PENCIL POINTS AS A TWO-YEAR-OLD

WE DO NOT intend to follow the precedent established by many well known department stores and hold a celebration every time we have a birthday, but we find it impossible to let this, our second anniversary, pass without a word to our charter subscribers and our other readers who have backed us with their subscriptions and made possible PENCIL POINTS as it is today.

Just two years ago we sent out our preliminary notice announcing the forthcoming publication of PENCIL POINTS as a journal for the drafting room. Over three thousand one hundred architects and draftsmen responded to the first call. We knew right then that this journal had a distinct field and would grow and prosper, provided we kept faith and delivered the goods. Probably no new publication was ever started at a worse time in relation to the business conditions prevailing with those from whom its support must come. Most architects' offices were little more than skeletons of what they had been, with hardly a job in sight. As a consequence many excellent draftsmen were out of work, but in spite of this the army of Pencil Pointers has continued to grow, so that now, just two years after we chuckled the good old hat into the ring, we number well over nine thousand, and the ranks are being added to every single business day of the year.

Architects, draftsmen and specification writers and students in the architectural schools have found this journal suited to their needs and have subscribed in large numbers for the paper. We are greatly pleased that we have been able, with the help of those men who have contributed so generously of their material, to publish a paper which has found its way to the affections of a large number of practising architects, many of the important men employed by architects, and also a substantial group of advanced architectural students.

The support we have received has imposed upon us an obligation which we fully realize and which we are determined to discharge to the very best of our ability. In carrying our work still further we want and frankly ask the co-operation of our present body of readers in two entirely different, but equally important respects. First, we are extremely desirous at this time, when the entire building industry is experiencing a healthy and unmistakable revival, to extend the influence of our paper by doubling our number of readers, as recently laid before you in letter form. There are still architects who have not sent in their subscriptions and there are still draftsmen and architectural students who either are not readers of PENCIL POINTS or who buy it through newsdealers or depend upon glancing over the copies of their friends. Every one of these men should get the paper every month, because only in this way can they be sure of complete files, which will mean so much in the busy months and years to come. We are constantly in receipt of orders for back copies of the first and second volumes which we are entirely unable to supply, and we have even been unable to secure some of the early issues by offering five times the original subscription price for them. We hope that every reader will take the time and make the effort necessary to bring one new subscriber to us.

The second form in which we want co-operation is entirely different. We want criticism, and we want suggestions direct from the men on the firing line. What would you like to see treated in PENCIL POINTS that has not yet been presented? What particular problems are confronting you and your acquaintances which could be discussed to advantage in this journal? Frequently a publisher asks for suggestions more or less as a matter of form and hopes to goodness he won't get any. We want a lot of them and we want them from all parts of the country, and from representatives of the different groups making up the total PENCIL POINTS family. While we as publishers may be likened to a broadcasting station, we want you to know that we also have a receiving apparatus here and we trust that you will give us many occasions to use it.

In our editorial next month we will discuss in detail certain editorial developments and additions which will go into effect with the June number, and in connection with our editorial plans for the balance of this year and for next year we want as many carefully-thought-out suggestions as we can possibly get. We told you at the start that we purposed publishing PENCIL POINTS with our readers rather than for them. Any success we may have had in pleasing our readers we attribute very largely to the co-operation we have had from you men at the other end of the line.
Hall in House for F. S. McIlhenny, Esq., at Chestnut Hills, Pa. Mellor, Meigs & Howe, Architects. (See text on the opposite page.)
A FRIEND asked me recently, "What is the difference between pottery and faience?"

He might as well have added enameled terra cotta to the list. I did so in passing the question on to divers manufacturers and experts and finally to one of the professors at an important university that has a whole department devoted to the study of the art. After receiving a somewhat noncommittal answer from the last gentleman, I said, "Well, then, which term ought one to use for all of these beautiful objects?" "If you are talking to the trade," he answered," you call it 'Ceramics,' but if you are addressing an amateur, you weigh heavily on 'Keramics.'"

Truth to tell there is really no very good dividing line between pottery and faience except that the former derives its name from pots and the latter seems to suggest plaques and tile. Differences in the clays are really matters of convenience or whim in manufacture. There are two general distinctions termed "white body" and "red body," but each plant uses its own mixture and many plants make both white and red tile, the white being usually somewhat softer than the red. The effect of the body on the appearance of the finished tile is only noticeable in the thinner and more transparent enamels or, of course, in the partially glazed tile.

As architects and decorators we have less to do with pottery per se, although urns and vases may play an important part in a composition and unquestionably do in furnishing. The hand painting of this more intimate work may run from miniature to the broadest kind of free design. In pottery, faience or terra cotta, the modelled body is so often associated with the colored design that it seems hardly worth while, in a curtailed review, to try to study it separately. Perhaps no other comment is needed than the reminder that a background should be less brilliant in color and perhaps darker in value than a motif. The Della Robbias reserved their bright yellows or whites for the subjects of their plaques. Many of the old Persian tiles were painted on a flat surface, but examination of the illustration of the faience decoration Medresse-I-Chan, at Shiraz, Plate XVIII of this issue, and of the exterior of a portion of the Mosque at Safi at Ardebil, Plate XIX, will reveal intricate examples of both painted and modelled patterns on the same individual tile.

The detail of the Blue Mosque shown on Plate XIV of the April PENCIL POINTS was tile mosaic.

There is a certain quality of broad decorative modern vase painting made at some of the English pottery works that would be most appropriate for wall tile decoration. It seems a pity that it is not imitated by our American tile manufacturers. Perhaps one objection may be that painted designs are not so readily fired at high temperatures and are, therefore, not as good for exterior work. But exterior work has to carry to a distance and is usually large enough in scale to be made up of small tile, a variety of mosaic. At any rate, the different colors may be separated by incisions or little ditches to keep them from flowing into each other while molten.

This firing of tile is perhaps the best distinction between pottery, faience and enameled terra cotta. Decorated china, hand-painted plates, etc., are often painted on the underlying white glaze and fired at low temperature in a small decorator's oven.

The next group, pottery and faience, are fired in kilns at a higher temperature, the body first, usu-
ally, the enamel separately afterward. They are enclosed in a coverless terra cotta box called a saggar, each successive box forming the lid of the one below it in the kiln. Where the tile, which have been moulded or cut out like cookies and dried out, are not to be enamelled, the saggars have small openings cut down an inch or less into the sides to allow the gases of the kiln to enter and produce the beautiful accidental fire flashings that are so much prized for certain work.

Terra cotta is burned in kilns with double walls so that the inside of the kiln is really a big saggar. It is fired at a still higher temperature, 2250 degrees, as structural strength is needed.

Different layers of slip or enamel are usually put upon the dried clay and all fired with the body in one operation. For enamelled terra cotta a material or slip that will close the pores is sprayed on and then one or two successive glazing materials are applied, one perhaps a flux and the other the real enamel color. All enamel contains a mixture called the “Base” which is the element that holds the color and forms the adhesive glaze. It must be of such a nature that it will unite with the body, else it will craze and perhaps crack off. The other distinctive parts of the enamel are the mineral that gives the color and a flux. Of course in many enamels the distinctive color may be a result of the influence of the color mineral on a particular base, and then the base has to be varied. For certain effects a tile is fired at a high temperature. Then a second glaze is painted upon certain portions and it is refired at a lower temperature that does not affect the first color. This may even be repeated a third time at a still lower temperature.

A more usual process in blending colors is to place a layer of one color on the tile and when this is dry, dip it in another color or paint, or dab the other color on pre-determined parts. When the enamels melt they mix together and produce very beautiful, more or less accidental, effects. If the heat is sufficient, they boil and bubble up together and when they have cooled there may result points where the under color has taken precedence of the upper. Usually the upper color predominates and the under color softens or tones it. Furthermore, some colors in drying will crackle or draw apart and may introduce an interesting texture contrast. See the panels on this page.

The designer of colored faience or terra cotta decoration must bear in mind that accidental colors are the rule. Even the intensity of a plain color is more or less uncertain. Of course before it is fired, no color gives any suggestion of the final appearance.

Past experience in the use of colored faience on the exteriors of buildings makes me feel that small tiles, forming a mosaic, are safer than large tile of a single color, even though the decoration is to be seen at a great distance. To illustrate: If a blue band, four inches wide, is required, it would be better to build it up of smaller triangular tile of slightly varying shades of blue than to set in four inch by four inch tile side by side, this despite variation of shade on each of the four inch tile.

I realize the process can be carried to excess and at times one may feel the need of a space filled by a simple, more even color, but the usual fault is in the direction of too great smoothness and too little

(Continued on page 37)
DETAIL OF PORTICO OF OCTAVIUS, ROME.
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"
The details of the portico of Octavius at Rome, reproduced on the other side of this sheet from a restoration by E. Paulin, are among the most virile of the many, well-chosen details of Roman architecture included by H. D’Espouy in his “Fragments d’Architecture Antique.” This sheet is also an example of masterly rendering.
FAIENCE DETAIL, MEDRESSE-I-CHAN AT SHIRAZ.
FROM SARRE'S "DENKMÄELER PERSISCHER BAUKUNST."
The detail of faience decoration from the main entrance of the Medressa-i-chan at Shiraz shown in the plate reproduced on the opposite side of this sheet is typical of the finer faience work of Persia. The skill of the designer in making a well distributed pattern of forms that are conventionalized, with an appreciation of the character of the material, and made to express the spirit of the people and the times while conveying the essential characteristics of the natural objects from which these ornamental forms were derived, commands admiration and affords a wealth of suggestions to designers in modern faience.
PORTION OF THE MOSQUE OF SAFI AT ARDEBIL.
FROM SARRE'S "DENKMÆLER PERSISCHER BAUKUNST."
The façade of the prayer room of the Mosque of Sa’d at Ardebil shown in the plate reproduced on the opposite side of this sheet is a most interesting example of the combination of faience with brick work, the former used as an enrichment, for which the simple brick surface provides an excellent foil.
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PLATE XX

PENCIL SKETCH, SEGOVIA
BY ANDRE SMITH

Courtesy of Arthur H. Harlow & Co.
The sketch by André Smith reproduced on the other side of this sheet is notable for the direct method of drawing and the production of a wide range of values by skilful use of a very delicate line. The freshness of the drawing is due to the artist's habit of working rapidly and making a drawing at a single sitting.
In this series of articles Mr. Valenti is taking the student step by step through a course in the direct construction or perspective plan method. Mr. Valenti, who is Instructor in Architecture at Washington University, St. Louis, Mo., is a graduate of The Royal Academy of Fine Arts of Brera, Milan, Italy, where he received the degree of Professor of Architecture. Mr. Valenti studied under Professor Ferrario, principal of the school of perspective at the Academy and scenographer at "La Scala," theater in Milan, and under other distinguished masters. Upon the investigations and the ripe practical experience of these men, he has based the course which he is presenting to the readers of this magazine. The method shown here, once it has been mastered, saves time and gives increased accuracy over the usual practice in laying out architectural perspectives instrumentally.—Ed.

Proceeeding, we observe in plan, Figures 52A and 53 (See March issue for all figures referred to), that the side wings extend to the left and to the right of the central unit 28'-6" and line with the centre of the tower (or centre unit) plus the cornice projections and are 43'-0" deep; also that these wings are not as high as the central unit or tower but reach only to within 5'-0" of the top of the tower. Consequently, first noticing in plan Figure 53, that the distance of these wings from the transparent plane is 18'-6", measure off this distance to the left of point A on the geometric line R S to point n. Then conduct a straight line from this point to measuring point M I on the Horizon Line, intersecting a line conducted from point A to vanishing point V P I. From this intersection f conduct a straight line to vanishing point V P II and where it intersects line a' V P I (which is the left-hand side of the upper limit of the tower) at e, lower a perpendicular to the ground plane. Conducting a straight line from point a" to vanishing point V P I, you will intersect this perpendicular at point e" which represents the lower point of the left-hand wing of the building 18'-6" away from the left-hand corner of the building and emerging exactly from the centre of the tower, plus the cornice projection, as shown in the plan at Figure 53. Lowering a perpendicular from point f until it intersects a straight line conducted from point C to vanishing point V P I at point M, we will have found the extreme left-hand lower limit of the left wing, and measuring up 35'-0" on line A C to point g representing the height of the wings (as indicated in the elevation in Figure 52B), and conducting a straight line from this point g on line A C to vanishing point V P I it will intersect line f M at point g' representing the exact height of 35'-0" or g' M on line f M 18'-6" away from the transparent plane, as indicated in the plan at Figure 53, and represents the extreme left-hand corner of the left wing of the building. Again by measuring off 84'-0" to the right of point A on the geometric line R S to point m, representing the total length of the entire building shown in the plan at Figure 52A, conduct from this point m a straight line to measuring point M II on the Horizon Line, until it intersects line A Z, at point m' which intersection will represent in perspective, from point A this given distance of 84'-0" as given in A m on the geometric line R S, or, in other words, A m (in the geometric) = A m' in perspective. This line A m' as was shown previously, represents the upper front limit of the solid containing the building. Now upon observation we notice that the wings of the building are 18'-6" back from the transparent plane, consequently having already found this depth at point n to the left of point A on line R S, and also having found point f at the intersection of this measuring line and line V P P I (A n in the geometric = A f in perspective); having also found point g' on line f M (A g in the geometric = f g' in perspective), we may now proceed to find g" which represents the upper extreme right-hand limit of the building. Conducting a straight line from point m' to vanishing point V P I and intersecting this line by another straight line conducted from point f to vanishing point V P II we will find p". We may prove also the following: A f = m" f" which in turn equals A n, the latter being in the geometric. Conducting a straight line from point g' (already found on line f M) to vanishing point V P II it will intersect a vertical lowered from point f" at point g'' thus determining the extreme right-hand limit of the building in g" g'' . Lowering a perpendicular from point f" indefinitely and conducting a straight line from point m" (which is the intersection of a vertical lowered from point m' and line C V P II) to vanishing point V P I, it will intersect this perpendicular at point g" thus determining the lower right-hand limit of the right wing of the building. Uniting point g" g' and M g", and closing with the lines e' e" and g" g' with what we already have, we will obtain the front elevation of the building in perspective. Now for the depths. From point A on the geometric line R S measure off in the scale of the picture 33'-6" to the left representing the depth of the tower as indicated in Figure 52A and Figure 53, (measure the full depth or distance from the front face of the steps to the back wall of the tower) and place this distance to the left of point A at point p. From this point p, using measuring point M I on the Horizon Line, conduct a straight line intersecting line A V P P I at point p', thence a line to vanishing point V P II intersecting line e' V P I at point p" which determines the depth of the tower in perspective. To prove: A p—on the geometric line R S equals 33'-6" indicated in the plan at Figures 53 and 52A. Therefore, A p in the geometric equals A p' in the perspective and also equals d p' .

The same is done to obtain the depth of the wings. For example: measure off the total distance from the transparent plane in Figure 53 to the rear left-hand corner of the building which, it will be observed, is 61'-6". Then place this distance, in the scale of the picture, to the left of point A on the geometric line R S at point t. Using once more the measuring point for this side, which is M I on the Horizon Line, conduct a straight line from point f to point M I intersecting line A V P P I (Continued on page 34)
Figure 155. St. Peter's, Rome.

Figure 156. Chamber of Deputies, Paris.
THE STUDY OF ARCHITECTURAL DESIGN
WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE OF DESIGN

CLASS B. PLAN PROBLEM. PART VIII.

Size, Scale and Proportion—(Concluded)

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—Ed.

In the two previous numbers we have studied the sizes of various architectural motives; we have seen how they vary, both in size and in proportion, within certain limits. To complete this study, let us look at two façades in their entirety—that of the Pierpont Morgan Library in New York, Figure 151, and that of the Butler Art Gallery, at Youngstown, Ohio, Figure 152. They are of the same length, 120 feet, and are here reproduced at the same scale: they are particularly interesting as being so nearly the type and the size of an average Class "B" plan problem. Each façade is of the three-motive type, and in each the central motive is sub-divided into three; in each case the central motive is a loggia, and in each a niche forms the principal feature of the end motive. The arches of the Butler Art Gallery are fifteen feet from centre to centre of column; the central arch of the Morgan Library is, as we have seen, slightly less, fourteen feet from centre to centre of column. These are particularly good examples to study for their scale and proportion, which are excellent, and also for the careful use of detail, of profile of mouldings, and of the placing of ornament where it will be set off by contrasting surfaces of blank wall. As is good proportions is brought out in executed work. The Morgan Library is so well known as to need no further illustration.

We need give no other examples. The value to the student will be in his making such a study of size and scale and proportion himself, devoting an evening to this purpose during the early stages of each problem.

In speaking of proportion so far we have used only terms of façade; however, all study of proportions is regulated by those of interiors. The natural order of study, for any program, is to make first a tentative disposition of the rooms and spaces required—that is the plan. Then must be determined the necessary heights of stories, of windows, of roofs—that is the section. In reality the plan is only a horizontal section, the section a vertical plan, and these two have as their resultant, a façade. The first study of façade will, of course, cause modifications here and there in plan and section; each of these studies—plan, section, elevation—is the complement of the others; they cannot be treated as successive phases of study.

The usual error is to make motives too small in scale—to crowd too many into a few feet. It is also a mistake to go to the opposite extreme; extravagant proportions do not give grandeur in composition. This grandeur of aspect is obtained partly by simplicity and unity, but also by the number of elements—a long façade should have a greater number of "bays" than a short one. Thus the façade of the Palace of Versailles fronting on the park, Figure 154, is...
Figure 151, Façade of The Morgan Library, New York, and Figure 152, Façade of The Butler Art Gallery, Youngstown, Ohio, are reproduced at Reduced Size from the “Monograph of the Work of McKim, Mead & White,” by Permission of the Publishers, The Architectural Book Publishing Co., New York City.
very simple in composition and grand in aspect, but notice how many bays are contained in the projecting central portion—23 bays in 330 feet. The effect of grandeur is here produced by the multiplicity of motives—and these motives are large, quite large. If the number of bays had been reduced to a few there would not have been the same effect of grandeur, even though the total façade had remained the same in size.

It is well to remember in this connection that while some architectural elements may vary greatly in size—that a column may be six or sixty feet high, an arch five or a hundred feet wide—there are other elements that are fairly constant, because they are related to human uses. Thus a balustrade is usually from three to four feet high. The portico of the church of St. Peter at Rome, Figure 155, has a

(Continued on page 34)
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Figure 158. Section, Palazzo Balbi, Genoa. From Reinhardt's "Palast Architektur Italiens, Genua."

Figure 159. Ground Floor Plan, Palazzo Balbi, Genoa. From Reinhardt's "Palast Architektur Italiens, Genua."
A VOCABULARY OF ATELIER FRENCH. PART II

BY RAYMOND M. HOOD

This is the second installment of a vocabulary which Mr. Hood, Architecte Diplomé par le Gouvernement Français and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this Journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—Ed.

C
Caboché: n. f.; (slang) head.
Cabot: n. m.; (slang) dog.
Calicot: n. m.; calico, (slang) a ribbon clerk.
Calque: n. m.; arch., tracing paper.
Calquer: v.; to make a tracing or copy.
Caméléon: n. m.; a peddler.
Caméléote: n. f.; an inferior merchandise; work that is badly done.
Camouflage: n. f.; the art of disguising.
Canouiller: v.; to disguise.
Canaille: n. f.; rabble.
Canard: n. m.; a duck; also, false news, a lie.
Carton-pierre: n. m.; paper-maché.
Cartouche: n. m.; an ornamental medallion; n. f.; a cartridge.
Céner: v.; to surround, to silhouette (as in a drawing).
Chat: n. m.; a racket, a scandal.
Chatouiller: v.; to upset, tothrow in disorder, to make a racket.
Chameau: n. m.; a camel; (slang) a bull, an error, a mistake.
Changement: n. m.; a change; changement d'esquisses, change from sketch.
Chapiteau: n. m.; the capital of a column.
Char: n. m.; a wagon, a car; also a float (as in a cortège or parade).
Charrette: n. f.; a cart; en charrette (slang, arch.)
Château: n. f.; the final drive to complete a projet.
Chaîne: n. m.; a wooden or iron frame; arch.: frame on which a drawing or painting is to be stretched.
Château: n. m.; a castle, also a palatial country residence; château d'eau, the architectural front of a reservoir of water.
Chef-cochon: n. m.; arch., the student in charge of the nouveaux in an atelier.
Cheval: n. m.; an easel.
Chic: n. m.; style; also used in the ateliers to mean, manual dexterity, or clever technique.
Chicane: n. f.; trickery.
Chichif: n. m.; (a) pretentions, airs; (b) arch., ornamentation.
Chiper: v.; (slang) to steal.
Chœur: n. m.; choir; arch., choir of a church.
Chouette: n. f.; (a) an owl; (b) adj.; (slang) bally, fine.
Chute: n. f.; the action of falling; arch., ornament disposed vertically in the form of a drop, as the "chute" of the Louis XIV style.
Clef: n. f.; (a) key; (b) arch., keystone of an arch.
Ciment: n. m.; cement; ciment armé, or béton armé, reinforced concrete.
Cocasse: adj.; (a) pleasant; (b) ridiculous.
Cochon: n. m.; pig; adj.; (slang) dirty, indecent, smutty; chef-cochon; the student in charge of the nouveaux in an atelier.
Cocotte: n. f.; a sort of iron pot for cooking; (slang) a demi-mondaine.
Collage: n. m.; sticking, mounting.
Colonne: n. f.; column.
Comble: n. m.; (a) ridge; (b) roof space.
Compas: n. m.; a pair of compasses.
Conciergerie: n. m.; and f.; the porter or guardian of a building.
Concours: n. m.; competition; hors-de-concours, adj.; ineligible to competition.
Contré-coller: v.; to float a drawing; literally, to stick against.
Coudroy: n. m.; an old rooster; (slang) a pretentious and ridiculous old fellow.
Corvée: n. f.; a difficult and thankless task.
Costaud: adj.; rich, well-to-do.
Costand: adj.; strong, powerful.
Couche: n. f.; (a) a bed; (b) a layer; avoir une couche, to be crazy or eccentric.
Couver: n. f.; color.
Coulis: n. m.; corridor, passage.
Coupe: n. f.; (a) a cup; (b) the action of cutting; (c) arch., a section.
Coupelle: n. f.; cupola.
Cour: n. f.; court.
Cours: n. m.; course of study.
Crasse: n. f.; greasy dirt.
Crayon: n. m.; pencil.
Critique: n. m.; a criticism.
Croquis: n. m.; a sketch.
Culot: n. m.; (a) the husk in architectural ornament from which grow rinceaux and volutes; (b) (slang) nerve, crust.

D
Dallage: n. m.; a floor or pavement of marble, stone or tile.
Delabrouiller: v.; to wash the face.
Dèche: n. f.; (slang) misery, want.
Désagréement: n. m.; arch., circulation or corridors of a building.
Dégotter: v.; (slang) to dig out, to find.
Dégoutant: adj.; disgusting.
Dégouter: v.; to disgust.
Denticule: n. m.; arch., dentil.
Dessin: n. m.; drawing.
Dessiner: v.; to draw.
Dérangé: n. and adj.; deranged, crazy.

(To Be Continued)
Photograph of a Model for a Proposed Church Building.  
Scale of Model One-eighth Inch Equals One Foot.  
Helmle & Corbett, Architects.

Scale of Model, One Thirty-second of an Inch Equals One Foot.  
Helmle & Corbett, Architects.
ARCHITECTURAL MODELS OF CARDBOARD, PART II

BY HARVEY W. CORBETT

This is the second installment of an article in which Mr. Harvey W. Corbett of the firm of Helmle & Corbett, Architects, New York, will tell exactly how he makes cardboard models of buildings; how he uses them for study in the process of designing and as a means of presentation. Mr. Corbett will go into the most minute details of the making of these models and will illustrate his descriptions with photographs showing the tools used and the various operations. There will also be numerous interesting photographs of models and of details of models. The making of landscape features, trees, hedges, lawns and other parts of the entourage will be described, also such incidentals as automobiles and figures.—Ed.

The photographs presented in connection with this article this month represent a cardboard model of a proposed church building at the scale of one-eighth inch to the foot, and a cardboard model showing the design of the proposed George Washington Masonic National Memorial, at Alexandria, Va., at the scale of one thirty-second of an inch to the foot.

As I stated in the first installment of this article, in the April issue, when I began making architectural models of cardboard, I worked at a rather large scale, one-eighth inch to the foot—the model of the church is one of these. Finding that I could attain my purpose by means of a model at smaller scale with less labor, I began making models at one thirty-second of an inch to the foot—the model of the George Washington Memorial is one of these. It is one of the most recent, just completed, in fact.

By referring to the photographs on these pages, one may see how much of the detail of the model at the larger scale had to be actually constructed of cardboard. It will be noted that the pilasters on the exterior and the moldings have been built up, (see page 31). It will also be noted that the ceiling is an example of rather elaborate building up, six thicknesses of mounted water color paper having been used in producing the required depth. The ornamentation of the ceiling is drawn on the paper in ink and rendered in polychrome with water color. The view of a portion of the interior shown on page 32 also indicates the extent to which it is necessary to construct detail when making a model of any but the more simple type of building at so comparatively large a scale as one-eighth inch to the foot. In this model the stained glass windows are represented by pieces of mica upon which the leading has been drawn in waterproof ink and the colors suggested by touches of water color. Miniature electric bulbs are concealed in the panels of some of the arches. The altar and its fittings, as well as the detail about the main entrance, were constructed with very considerable care.

This model consists of six pieces. There is a base or platform section, including the floor of the church, the portion of the walls from the floor level to grade and the grounds and walks around the building. Upon this may be placed, in their proper relation, the four walls. Each wall section is of a thickness that corresponds in the scale of the model to the thickness of the walls of the building. The walls are built of mounted watercolor paper, hollow but reinforced and firmly braced within. These walls are held in place on the platform by small dowels. Resting on the walls and held in place by dowels is the roof portion, on the under side of which is the ceiling shown in the photograph reproduced on page 30. Contrast with the model of the church the small-scale model of the Washington Memorial in which by far the greater part of the detail that would, of necessity, have been constructed in a model at one-eighth inch scale has been represented by rendering on the small-scale model. There is still quite enough to construct in a model of this kind.

The base of this model is built up to correctly represent the contour of the ground, the levels of the proposed terraces, and the grades of the roadways and paths—all the changes of level in the grounds. This was done by constructing a grid of...
Photograph of Base of Model for a Proposed Church Building. Scale of Model, One-eighth Inch Equals One Foot. Helme & Corbett, Architects.

Front Portion of Model for a Proposed Church Building.
Helmle & Corbett, Architects.

One of the Side-pieces of Model for a Proposed Church Building.
Helmle & Corbett, Architects.
mat board on the same plan as the cardboard arrangement used in an egg crate, the top edges of the pieces of cardboard were cut to the contour. One set of cardboard strips extends from side to side, while the other set extends lengthwise of the base. Where they cross, they are notched and halved into each other. The plan of the grounds was rendered on a sheet of mounted watercolor paper, the lines of the terraces were cut through and the whole laid down on the foundation just described, the flaps representing the terraces being forced up. The retaining walls were then built of cardboard set on edge. The point at which the memorial will stand is about one hundred feet above the level at the railroad station. The memorial itself will be two hundred feet in height.

The model shows trees, shrubs, areas of grass roads and other features all worked out to scale and in the appropriate colors.

In the plan view of the model reproduced on page 29, the memorial will be seen near the top of the picture. In the lower left-hand corner is the railway station at Alexandria, Va., with a train standing at the platform. In the lower right-hand corner is a block of suburban homes, representing the character of the outskirts of the city adjoining the site upon which the memorial is to be built. On the roadways are models of automobiles done to scale.

The George Washington Masonic National Memorial will contain in the central portion of the ground floor a large memorial hall. At the end of the hall opposite the entrance will stand a statue of George Washington of heroic size. The walls of the hall will be surrounded by a colonnade and it will be lighted with clearstory windows at the sides. Beneath these windows will be mural paintings of an historic character. At right and left of the memorial hall will be the commandery room and a lodge room for the local lodge at Alexandria. At the left of the entrance will be a room, fitted up as

(Continued on page 37)

Photograph of Portion of the Interior of Model for a Proposed Church Building. Scale of Model, One eighth Inch Equals One Foot. Helme & Corbett, Architects.
THE AMERICAN ACADEMY IN ROME.

FROM a letter received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, the Director, we quote the following:

"Mr. and Mrs. Mead have been in town through the month, and Mr. Mead has come to the Academy almost every morning for two hours. Mr. Mead has been present at the meeting of the Academic Council, and he has likewise attended a meeting of the Library Committee. He has signed a power of attorney which enables me to act in cases of emergency, a thing which Lawyer Del Prate has been anxious to secure for some time. His Majesty the King has decorated Mr. Mead with the order of Commander of the Crown of Italy, and Mr. Mead has called upon the King to thank him for the honor. Mr. Mead has always been a champion of Italian architecture, and the good which he has brought to America can scarcely be overestimated. As far as Italy is concerned, the Renaissance in America for Italian architecture has caused many students and architects to visit Italy. The faith which Mr. Mead has in the civilizing effect of Italy upon America is amply proved by the fact that he was an original incorporator of the Academy and has been, for the last eleven years, its president. He has called upon Mr. H. Nelson Gay, who now possesses the largest library upon the Risorgimento. Mr. Mead went over the proposed budget for next year, and he has given us great assistance in its preparation. Just before leaving Rome, Mr. and Mrs. Mead went through the alliance of the Faculty and arranged the new plants and trees about the Main Building. We now have a fine set of potted laurels. Mr. Kendall is giving these various plants, at least those which exceed the $200 voted for quick-growing plants, by the trustees.

"Professors Whieber and McCrea have both been asked to lecture before the British and American Archaeological Association.

"Professor Fairbanks has suffered from a touch of pneumonia and pleurisy, but he is now about again; in fact, he has gone to Florence for a few days.

"Landscape Architect Lawson is still in Paris, working on the graves of American soldiers buried in France and England. Nearly the entire chief's garden has gone to America, so that he is now occupying a position of responsibility.

"One excursion was made, namely, to the Villa Cattanea, situated between Tivoli and Frascati. This is a fine Renaissance villa, of considerable historical importance, and yet it has never been drawn out or photographed, due to the fact that it is seven miles from the nearest railroad station and in an inaccessible district. Landscape Architect Griswold is planning to measure the villa.

"A young Philippine architect, graduate of the University of Pennsylvania, has arrived.

"The situation in Rome is still unsolved, although this problem will be one of the first to be considered by the new ministry, which has just been formed. The American Ambassador and Lawyer Del Prate have had some success if it is possible to pull out some of our money, but without success—we are to be treated like all other creditors. The American Am-

K E I T H C E E T H A M is the winner of the Chicago Architectural Club's Annual Foreign Travelling Scholarship for the year 1922.

Mr. Cheetham was born in Australia, but for the past few years has been a Chicagoan and a very active member of the Chicago Architectural Club.

He has been engaged in architectural work for several years, having started in his native country. He has been connected with a number of the leading architectural offices in the West and is now associated with Hodgdon, Chicago.

Mr. Cheetham will leave about June 1 for Paris, where he expects to meet A. S. Morpeth, the winner of last year's scholarship, and make part of his journey in his company. He hopes to include in his tour many points of interest in Italy, France and England, and possibly some in Spain, studying as thoroughly as possible in each country.

The American Ambassador himself has money tied up in the bank. Professor Emerson, head of the Department of Architecture at the Massachusetts Institute of Technology, has sent $750 to assist those "Tech" men who are in difficulties on account of the closing of the Banca di Sconto, and other visiting students at the Academy have received assistance from their respective organizations in America.

"A Mr. George G. Booth, a publisher from Detroit, Michigan, has shown great interest in the Academy. He has come here twice and has not only seen all the studios, but has also gone into the question of our finances. Mr. Leonard saw him in America during the drive last year and has now secured a promise from him to contribute to the Academy when Mr. Booth returns to America.

"The washing plant is now installed and working; there are, however, a few adjustments which still need to be made in order to perfect it.

"A Swiss lady, who owns a fine ancestral castle in Switzerland, is trying to start a Swiss academy, and she has come to us not only for information, but also to see if it would be possible for the two academies to collaborate. She is willing to take our students into residence, and would like to have a similar privilege for her students when they come to Rome. I have explained to her that this is impossible, but that we would be glad to assist her students in every other way possible. Even under these conditions she is willing to take our students into residence, and perhaps something of this nature might be advantageous to our students after they have fulfilled their terms at the Academy and for the Musicians.

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K E I T H C E E T H A M.
THE STUDY OF ARCHITECTURAL DESIGN.

(Continued from page 25)

balustrade of six feet in height, but this structure never should be built greater than six feet high. It is quite a shock when one sees a human figure standing beside the balustrade, but where four feet is needed for architectural effect, where a balustrade is used to crown a parapet, or top the jet set on a pedestal as in Figure 156, the building of the Chamber of Deputies, Paris, is also done in the Seventh Avenue facade of the Pennsylvania Railroad Station in New York City, so that the height of the motive may be proportioned to the scale of the composition, while the balustrade still retains its proper relation to human sizes.

Steps also have their relation to human use; this is not a detail, but has an active and striking effect on design; many times sections are drawn showing ornate, complicated architectural motives surrounding a stairway which by reason of the size of the rise and tread of the angle from top to bottom, is nothing but a slide. Fire and panic laws prevent a stair being made steeper than 8-inch rise and 9-inch tread—which gives the angle shown in a, Figure 157. Note the slope; it is the steepest that can be used for a service stair or a fire tower. A domestic stair—by that I mean the stair in a small house or bungalow—is frequently made with 71/2-inch rise and 101/2-inch tread, as shown in b, Figure 157; in the better class of such work the figures are more apt to be 7-inch rise, 11-inch tread. The stair so conveniently laid out with a scale, with 4-inch rise and 13-inch tread, is shown in c of the same figure. None of these are "monumental" stairs; they are not suitable for the important vertical communications of monumental buildings. For such a stair—say, a 13/4-inch rise with a 121/2-inch tread, or a 5-inch rise and a 14-inch tread, as shown in d, Figure 157—is more suitable.

The effect of these different slopes on a section is considerable. In the first place, the lower the individual units of rise and tread, the clearer the contour lines which will be required to compass a given height, and hence the greater numbers to be handled. In general, the decrease in size of rise is accompanied by an increase in size of tread. It is true that the more uniform the stairway, the greater its total length, the total height being constant.

For an outside stair—the steps to a public building, or steps in a city park—an angle such as is shown in e, Figure 157, with a rise of 4 inches and tread of 16 inches in each case, is not suitable for use. These stairs are not utilized by the public. While in this country we have been in the habit of making our stairs too steep, possibly because of our general nattiness, or Europe or of our difficulty in coming to grips with the actor, we have been generally studied for monumental effects. The following examples are of interest in study:—

INTERIOR STAIRS

<table>
<thead>
<tr>
<th>Example</th>
<th>Height of Rise</th>
<th>Width of Tread</th>
<th>Angle in Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowler</td>
<td>5 in.</td>
<td>15 in.</td>
<td>20</td>
</tr>
<tr>
<td>(Escalier de la Colonade)</td>
<td>5 1/2 in.</td>
<td>15 1/2 in.</td>
<td>19</td>
</tr>
<tr>
<td>Versailles</td>
<td>5 1/2 in.</td>
<td>15 1/2 in.</td>
<td>19</td>
</tr>
<tr>
<td>(Escalier de Mabre)</td>
<td>4 1/2 in.</td>
<td>10 in.</td>
<td>18</td>
</tr>
<tr>
<td>Ingildie</td>
<td>4 1/2 in.</td>
<td>10 in.</td>
<td>18</td>
</tr>
<tr>
<td>(Escaileiroes designed for invalid veterans)</td>
<td>4 1/2 in.</td>
<td>10 in.</td>
<td>18</td>
</tr>
<tr>
<td>Lescot</td>
<td>5 in.</td>
<td>14 1/2 in.</td>
<td>20</td>
</tr>
<tr>
<td>(Escalier de la Présidence)</td>
<td>0 in.</td>
<td>12 in.</td>
<td>25</td>
</tr>
<tr>
<td>Hotel des Monnaies</td>
<td>ITALY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ROYAL GOLD MEDAL FOR ARCHITECTURE.

It is announced in the "Journal of the Royal Institute of British Architects" that Thomas Hastings (of the firm of Carrere & Hastings, Architects, New York) has been elected and his name is placed on the rolls of members of the Royal Academy. Upon approval of the award by His Majesty, the Medal will be presented to Mr. Hastings at a meeting on June 20.

PERSPECTIVE DRAWING, PART XXIII.

(Continued from page 21)

at point P. Then lower a perpendicular until it intersects line C't P', and consider line P't P to point P' P I on the Horizon Line, it will intersect line P't P', at point P', and enclosing with straight lines points e', g', m', and c', we shall obtain the perspective of the left wing of the building in its mass. Likewise, by using points of a perpendiculare from point f to line g', e', then uniting points of d to f to m, and back again, and d to a, and again, to g' to f', and m to a, etc., using the respective vanishing points as indicated in Figure 56, we have completed the operation and found the mass of the entire building. By this we have obtained the true perspective of the mass of the building, cutting it out, as it were, from a solid block, working from a perspective plan, and are able to show a mass of buildings in a matter of minutes and an area for our operations. In the following issues we shall continue to develop the perspective of the Pennsylvania Railroad Station into the details, until we shall represent the entire building, complete in perspective.
PENCIL POINTS

LIONEL H. PRIES

Lionel H. Pries, who has just won the Le Brun Traveling Scholarship for 1922, was born in San Francisco, California. He attended public schools at Berkeley, California, also the Lick-Wilmot School at San Francisco. He entered the University of California in 1916, and graduated with an A.B. degree in Berkeley, California, also the Lick-Wilmot Schools. Francis, California. He attended public schools at V. Pelo, Architect, Philadelphia.

Mr. Pries won the competition for the design of the "1920 Class Memorial Bench," now executed, on the campus of the University of California, one of the first uses of the native travertine. While at the University of Pennsylvania he was awarded the Arthur Spayd Brooke Medal for merit in design. He was placed second in the 1921 competition for the fellowship in architecture at the American Academy in Rome. He won an award in the 1921 Burdette Long Sketch Competition for 1921.

Mr. Pries is a member of Tau Sigma Delta (architectural honorary) and Tau Beta Pi (engineering honorary). He is a member of the T. Square Club, Philadelphia. He has been employed in the offices of Messrs. John Galen Howard and of Charles K. Sumner in San Francisco, and in the office of Mr. John F. R. Simler in Philadelphia. Mr. Pries is at present with Mr. Edgar V. Seeler, Architect, Philadelphia.

ST. LOUIS ARCHITECTURAL CLUB

The St. Louis Architectural Club from its humble beginning in 1894 has weathered the storms, grown, prospered and is starting on another season, the proud owner of its own quarters, with money in the bank, and a strong roster.

Among the innovations announced for the coming year will be the initial performance of an elaborate ritual ceremony of initiation, the result of much steady, earnest work on the part of the committee. Second, a "Tal Masque" that promises to rival any similar social function in the country will be given. Third, the traditional Theatrical Night will be revived. Fourth, "Ladies' Night" with a real, high-brow program will be a feature of the club's life. Fifth, stress will be laid on educational talks followed by quizzes. Sixth, there will be Radio Concerts.

At the annual meeting the following officers were elected: F. Ray Leimkuehler, President; Herbert Winkler, First Vice-President; Walter Wawrzyniak, Second Vice-President; Theron Groves, Secretary; Herbert Reinhardt, Treasurer; Herman Frauenfelder, Carl Trebus, Robert Rosebrugh, Executive Committee.

In May, Wm. B. Htner will talk to the club on school design.

FINAL COMPETITORS CHOSEN

The judges that judged the work in the preliminary competitions for the Prizes of Rome, have chosen the final competitors as follows: In Architecture—R. H. Botting (M. I. T.); W. G. French (Cornell); C. E. Fuller (Harvard and Columbia); G. K. Gerrlings (U. of Pa.); J. M. Hirschman (U. of Pa.); E. M. Loye (Minn. and Harvard); H. G. Marceau (Columbia); W. E. Miosa (M. I. T.); B. A. Weber (M. I. T.); F. A. Weitzel (New in Painting)—Alfred Fleoegel, R. O. Gifford and J. C. White. In Sculpture—Joseph Leye, L. T. Stevens and Wheeler Williams. A Fellowship for three years in the American Academy in Rome will be awarded to the winner in each subject.

SUMMER COURSES AT M. I. T.

This summer the Massachusetts Institute of Technology will offer courses in shades and shadows, perspective, office practice, elementary and advanced constructive design, elementary and intermediate architectural design and structural design. These courses will be given at the Rogers Building, Boston. Any of these courses may be substituted for corresponding winter work. Full information can be had from Professor William Emerson, 491 Boylston Street, Boston, Mass.

NEW ROCHELLE ART ASSOCIATION

A N Architectural Exhibition was held recently by the New Rochelle Art Association, New Rochelle, N. Y. The membership list of this association includes the names of a great many artists of distinction. Some of these artists work and live in New Rochelle, while others have homes in that city and studios in New York. It is stated that more than thirty per cent of the illustrations in fifteen of the leading magazines in the country are produced by artists living in New Rochelle.

MECHANICS' INSTITUTE

The work of students in the architectural classes at the Mechanics' Institute School was exhibited at the Institute, 20 West 44th Street, New York City, April 25. Instruction in these classes is free. The training of students in architecture is one of the educational work carried on under the direction of Mr. Louis Roullion, at the Mechanics' Institute by The General Society of Mechanics and Tradesmen.

PERSONALS

H. T. LINDBERG, Architect, has opened a branch office, under the management of his associate, John P. Staub, in the Union National Bank Building, Honolulu, Hawaii. OSCAR T. LANG, ARNOLD I. RAULGAND AND CARROLL E. LEWIS have opened an office for the practice of Architecture and Engineering, under the firm name of Lang, Raulgand & Lewis, at 627 Metropolitan Bank Building, Minneapolis, Minn.

WILLIAM C. PRESTO, Architect, has removed his offices to 716, Conway Building, 111 West Washington Street, Chicago, Ill.

MALCOLM MacGREGOR KILDUFF has opened an office for the practice of architecture, at 197 St. Mark's Place, New Brighton, Staten Island, N. Y.

LAYTON ALLEN AND HUBERT M. GARRIOTT have become associated in the practice of Architecture under the firm name of Allen & Garriott, Architects, with offices at 101 Lombard Building, Indianapolis, Ind., and 4 Masonic Building, Loganport, Ind.

WILLIAM C. TUCKER has just been retained as Consulting Sanitary Engineer for the proposed thirty-one story hotel on the block fronting on Liberty Avenue between 48th and 49th Streets, New York City. The equipment of this building will include a large swimming pool, club quarters, gymnasium, bowling alleys, etc.

GREGORY BURKITT WEBB, Architect, removed his offices on April 15 to the Winfield Building, 469 Fifth Avenue, New York.

GEO. J. LOHNENSTEIN has opened an office for the practice of architecture at 359 Fourth Avenue, Brooklyn, N. Y.

HEINMAN M. SOHN, Architect, has removed his offices to the Winfield Building, 469 Fifth Avenue, New York.

GUASTAVINO COMPANY, for many years located in the Flatiron Building, New York, has moved on May 1, to 1133 Broadway.

OSCAR VAILIT, Architect, has removed his offices to 565 Fifth Avenue, New York City.
ARCHITECTURAL DETAIL, PART XIII.

(Continued from page 12)

PENCIL POINTS

ARCHITECTURAL MODELS OF CARDBOARD.

(Continued from page 32)

a replica of the Masonic lodge room at Alexandria in which George Washington is shown. All the data concerning this room have been preserved and the room will be furnished with old pieces and it will retain original records of the Grand Lodge of Maryland.

The model of the memorial is so constructed that the tower portion can be lifted off in three sections. Other models for small buildings were carefully made and tried out and the design shown in the illustration on the following pages is the one adopted. This view shows only a part of the grounds represented in the model and the floor plan. In the next issue the details will go more deeply into the process of making models of this kind.
THE SPECIFICATION DESK

PART III.

By Otto Gaertner

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, New York, has written the most of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem—obviously matters of a more or less special nature.

The Constructing and Proportioning of the Parts of the Fireplace—In the case of the fireplace the first things to be considered are the design. Fireplaces are usually made from thirty to sixty inches wide. The actual fireplace should never be as high as they are wide, although the smaller-size fireplaces generally work properly if all the other features connected therewith are correctly proportioned and constructed. The usual proportions are for the height to be about two-thirds to three-quarters of the width. If the opening is too high, too much cold air will be drawn over the fire; and if it is too low, so that the draft will be retarded. To remedy this a metal shield is often built in the upper part of the opening to reduce its height. But such a shield is difficult to design so that it will not block the fireplace design and not look like an afterthought.

The depth of the fireplace opening is usually made from one to two and one-half times the height, but it should never be less than sixteen inches for burning coal and eighteen inches for burning wood. Twenty inches is better for burning wood in medium-size fireplaces and twenty-four inches for large fireplaces. The depth should never be more than twenty-four inches, however, as a deep fireplace will throw much heat into the room. To increase the amount of heat thrown out, the sides of the opening should extend four inches back from the facing and at right angles to it and then back on the sides so as to make the opening go up, rather than forward toward the center of the fireplace. This will make the width of the fireplace less at the back than at the front, and a smaller dimension must, of course, be considered in connection with the length of the logs to be burned or the size of the grate to be installed.

The back of the fireplace opening should be built upward with a forward curve or slant starting above the hearth at approximately one-third the height of the opening and carrying the curve on six or eight inches above the head of the opening, where the top of this slant forms the smoke shelf or back-draft shelf. As the word back-draft implies, the purpose of this shelf is to prevent a downward-moving draft from blowing the smoke back into the room. When a fire is started, the heated air starting up the flue causes a movement there. As the air is forced downward, the smoke is forced downward. But since the rising heated air occupies the forward part of the fireplace, the forced downward occurs at the rear of the room, where it strikes the draft shelf and is deflected upward toward the flue. This flue should be cleaned of all mortar dripping from the bricks and it should be free from soot afterward, otherwise this will lie at an angle from the front toward the back and the back-draft will be deflected downward into the fireplace carrying the smoke with it. The smoke shelf should be at least eight inches wide, and wider, if possible. If it is wide enough, its top surface can be covered with cement mortar to form a surface with a concave segmental cross section so as to deflect the downward draft to the upward draft at a tangent instead of at right angles. This helps to eliminate some of the friction of the opposing air currents.

The head of the opening should be supported on an angle-iron lintel, and the soffit of the head should never be wider than four inches. On the inside it should extend ten inches beyond the face before being bent upward and inward, on a slant toward the edge of the smoke shelf, to form one side of the throat. If the soffit is wider than this there is danger of the smoke striking it and being deflected into the room. This upwardly built-in soffit is then clipped off as before mentioned, but the surface may be parred back to a slight curve, since it is accessible and the parging can readily be replaced. The slant deflects the smoke into the throat and then upward to the smoke shelf above. The head of the opening may be made a brick stone arch. Cases where the angle-iron lintel is used may be omitted.

The front of the smoke shelf forms the rear of the throat whose position is governed by the depth of the fireplace and the size of the opening. The width should never be less than three inches and more than four and one-half inches, as the latter will let the air escape toward the flue before it is thoroughly heated, resulting in less velocity and a poor draft. There are several iron throat and damper combinations on the market that may be used in connection with the fireplace. Such a combination usually consists of a pivoted or hinged damper set in the frame and regulated by a bar back of the fireplace opening, and also support the masonry forming the head of the opening. But when such a combination is used the smoke shelf should not be omitted. It will be necessary, however, to raise it about eight inches or more inches wide.

It is important to see that the patented throat and damper, if used, has the opening as already called for, though it can be reduced in size by means of the damper. The space above should be shaped to be the most of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem—obviously matters of a more or less special nature.
PENCIL POINTS

by deposits of mortar drippings, brick, and other rub-
ishments, and by soot after the fires have burned out.
Our chimney fires are often caused by deposits of soot
with the consequent danger of the sparks being ignited
upstream. When fires occur in the flue, precautions
should be taken while it is being built, so that it may
be closed with masonry. Another precaution is to
place the fire box on the centre with the floor and
to draw them up as the flue is built. The top of the
fire box is temporarily when the chimney work is stopped
and when the flue is finished. During its use the flue should be cleaned about once a year with a
weighted brush or bundle of rags.

There should not be any openings into the flue other
than the one at the fireplace which it is to serve, other-
wise the draft will be affected and the fire hazard for
the building will be increased. The masonry around
the flue should be at least eight inches thick if it is of
brick, or four inches of brick and eight inches of
suitable concrete, having a minimum pitch of one inch
on top. The flue lining should extend at least two inches
above the highest point of the chimney. This insures
that the sides of the same size throughout instead of being cut
down at the sides and corners. The lining should fit closely, even where they are to suit
in the structure, and no broken pieces should be
used. If there is another flue in the same chimney, the
two flues should be built back to back, whether they are
both lined, they may be placed with one inch of
mortality between them, provided that no joints in the
flues come within six inches of each other. More
than two flues may be built together without a withe
between the flues being to separate all flues by withes, in order to help to stop air leakage
and to prevent the spread of fire from one flue to
another. All joints in the flue must be set so as to allow for

But there are still a few items in reference to the
fireplace which are important. Its walls should be
less than eight inches thick if of brick and not less
than twelve inches if of stone. If brick is used, the
back and side linings should preferably be made of fire brick
set in fire clay. The same applies to the back hearth.
The front hearth being of brick, stone, marble, or tile, laid
on a concrete fill placed over a trimmer arch or over a
concrete slab. Sometimes soapstone, two inches thick,
is used for the back hearth and linings, and sometimes
even more. This material should be laid out with
iron linings must be set so as to allow for expansion
and contraction, and for this reason a one-inch space
must be left between the flue and fireplace. The
flue should be built large enough to receive these linings and to
insure a proper fit. Proper proportions behind the linings must be closed off at the top with
masonry, and the flue should be thick enough so
that the rough flues are built straight back instead of
curved. The flues may be of brick, stone, marble, or tile,
the last two generally having a nappy surface around the outside edge. When marble is used, care must be taken to select a kind
that will not be affected readily by the heat, as in the
case of marble with seams that are decreted with

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pools. 8 pp. 8 1/2 x 11 in. U. V. Co., Ltd., 165 Broadway, New York.

Paint as a Point Pigment—Scientific treatise on prop-
cretics of zinc oxide. 16 pp. 6 x 9 in. New Jersey Zinc Co., 160 Front Street, Newark, N. J.

Doors for the Home and for the Public Library—Two
special bulletins covering modern metal equipment for
the one of the type which will be of interest to architects and
the other for special applications. Two bulletins cov-
ering the subject. With diagrams and specifications for
firms, halls and fire exits, corridor and com-

blown, and for stair, hall, and fireproof protection. Two
pp. 8 1/2 x 11 in. Pfister Door Co., 3147 Fourth Avenue, New York.

Roofing Slate—Illustrated brochure showing antique
and modern materials for all types of roofings. Two pag-
es of detail sheets and complete specification data. 24 pp. 8 1/2 x 11 in. Vendor Slate Co., Easton, Pa.

Reactively Operated Temperature Regulating Systems
—Catalog and handbook showing applications and special
device for different requirements. Diagrams and tech-
nical data. 23 pp. 8 1/2 x 11 in. Galvano Co., 125 E. 44th St., New York.

Dirtout—System of cleaning and regulating

Any publication mentione...
THE SCARAB CONVENTION

The sixth convention of the Scarab Fraternity, which in recent years has grown to be an annual affair, was held in Pittsburgh on March 31 and April 1. Last year's program was held in Chicago, and this year's plans are carried out the Scarabs in Chicago will play the host, and the Scarabs in Pittsburgh will play the guest.

Scarab was founded at the University of Illinois in 1906, and its present fellowship is made up of men and women interested in architecture and allied fields. The purpose of the organization is to bring men and women together, to aid in the professional development of each member, to encourage the students who aspire to be architects, and to provide a forum for the exchange of ideas.

Its members are picked from successful and prominent practitioners of the profession, and they are to be found in cities throughout the United States.

On the evening of the first day the visitors were guests at the Little Theatre in the Fine Arts Building. Dining place in the foyer and corridors of the building was the greeting made to the Scarabs.

On the last evening the Scarabs from far and near gathered at the First Street Hotel. After dinner at the Hotel, the Scarlet and the Grey were entertained at a reception in the absence of the retiring Grand President, Edgar J. McDonald, who spoke in his usual delightful manner.

The convention adjourned with a speech by Mr. Hornbostle, who related the history of the organization and the activities of the Scarabs. Those who came from afar were well repaid when Mr. Hornbostle radiated his enthusiasm and his elegant grace to his audience.

DALLAS ARCHITECTURAL CLUB HOLDS ITS FIRST ANNUAL EXHIBITION

The Dallas Architectural Club held its first annual exhibition. The exhibition was held in the Dallas Municipal Building and was attended by a large number of architects and engineers. The show was well-received by the public and was considered a success.

The exhibition was held to promote the work of local architects and to acquaint the public with the latest developments in the field of architecture.

The jury consisted of Mr. R. L. Faber, Adm. of Architecture for Eberhard Faber; Mr. W. J. Kellogg, A. M. College, who delivered an informal address on "Traveling Through Italy"; E. A. Wood, manager of the Civic and Service Department of the Chicago Architectural Club, and Mr. M. D. Long of the College of Industrial Arts at Denton, who gave an illustrated lecture on "Interior Decoration".

The prize for the best work in the competition was awarded to Mr. J. O. Walker, who spoke on "Our Products in Architecture and Art".

The exhibition was well-attended, with a large number of visitors coming to see the latest developments in the field of architecture.

AWARDS IN THE EBEBHARD FABER SKETCH COMPEITION

The jury in the 1929 Eberhard Faber Sketch Competition, which closed at noon on April 1, has awarded the prizes as follows:

First Prize, Fifty Dollars, to John F. Jackson, New York; for the sketch "At Pier 15, East River, New York." Second Prize, Twenty-Five Dollars, to L. W. Vohberg, Boston, Mass., for the sketch "Porte Noire de Montmartre, Paris." Third Prize, Ten Dollars, to I. E. McLean Poe, John Herron Art School, Indianapolis, Ind., for a sketch of "Our Home Products in Architecture and Art." Fourth Prize, Five Dollars, to Harold Kiefer, New York City, for "Scene in Mt. Rainier National Park." Fifth Prize, Five Dollars, to W. H. Butterfield, New York, for "Les Baux, Provence." Sixth Prize, Five Dollars, to H. G. Ripley, Boston, Mass., for a sketch of "Our Products in Architecture and Art." In judging the sketches submitted to the jurors endeavored to adhere strictly to the conditions of the program which stated that the judgment would be made on the basis of pictorial quality, skill in pencil technique and adaptability to use in advertising the Van Dyke drawing pens. Giving due weight to the last mentioned requirement resulted in the placing of some drawings that were not as technically perfect as others, but which might be the case if adaptability as an advertisement but not as a sketch.

More than one hundred forty sketches were received from all sections of the country, and the quality of the work was, in general, excellent.

The jury was unanimous in their decision that the drawings that could not be awarded prizes showed merit that should be recognized, and the following were given honorable mention: "Our Products in Architecture and Art" by V. Bates, New York; Oliver M. Waldr, "New York City," New York; and "Our Products in Architecture and Art" by H. E. Christensen, University of North Dakota, Grand Forks, N. D., who was also awarded a prize.

The jury consisted of Mr. R. L. Faber, Advertising Manager for Eberhard Faber, and Mr. R. W. Forster.